



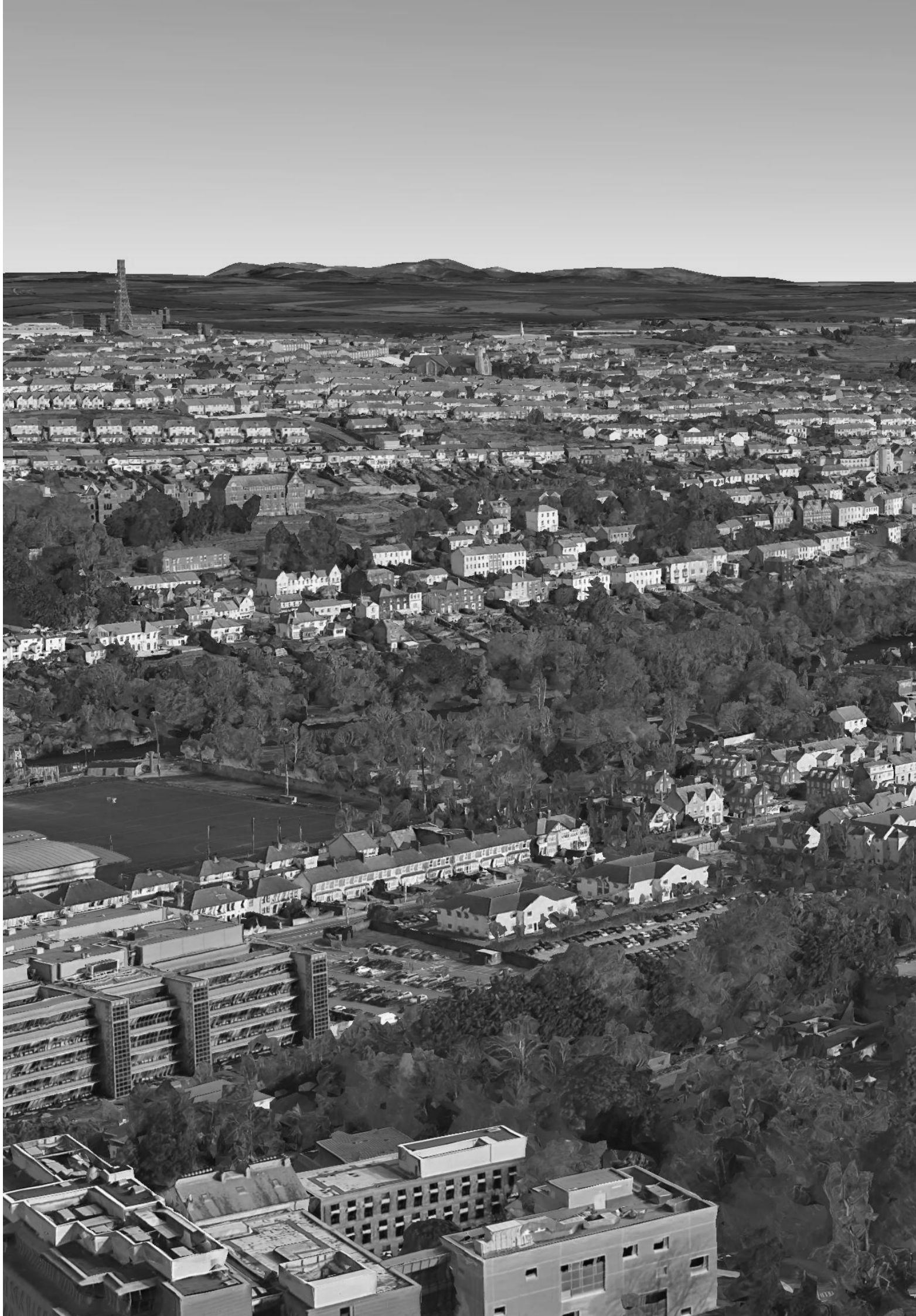


University College Cork Masterplan Review 2021



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1. INTRODUCTION

University College Cork is an award-winning institution with a history of independent thinking stretching back over 170 years. UCC is ranked in the top 2% of the universities of the world and currently has a student population of 21,500.

Increased student numbers, related faculty expansion, demand for student accommodation and the challenges of climate change, places increasing demands on the land in UCC's ownership.

In the last 20 years, UCC's presence in the city has expanded significantly beyond the main campus boundaries. The relationship between University College Cork and the city is changing, reflecting the synergy between places of learning in their urban context.

As one of the largest landowners and employers in the city, UCC has an increasing civic role, helping to co-ordinate social and economic activity, being a good neighbour and positively shaping the City, which strengthens its teaching and research.

At the time of writing, the University has been faced with the challenges of a unprecedented public health crisis of the Pandemic, and has responded as you would expect, resolutely and determined to make the business of teaching and learning available on and off campus.

Its presence therefore is more than physical presently, as its core business of enhancing the formative years of the current and future generations of the region is maintained.

As one of the largest landowners and employers in the city, UCC has an increasing civic role, positively engaging in societal and economic activity, being a good neighbour and positively shaping the City, balanced with its core ethos of teaching and research.

UCC also recognises its responsibility, in shaping the consciousness of future generations, conducting research and working with partners, to ensure it is

inclusive – meaning a focus on all people in society and the challenges they face.

The UCC Masterplan Review 2011 itemised the long-term expansion requirements for the University and identified development locations on the UCC lands whilst also predicting that additional land will be required to future proof UCC's future requirements.

This Masterplan Review looks at the principles that underpin and support the planned expansion of UCC and its changing context in the city.

The relationship is examined in terms of UCC's spatial connectivity and the relationship between the UCC landbanks and its local and regional contextual development, through consultation with UCC stakeholders including faculty leaders, students, administration and local authorities.

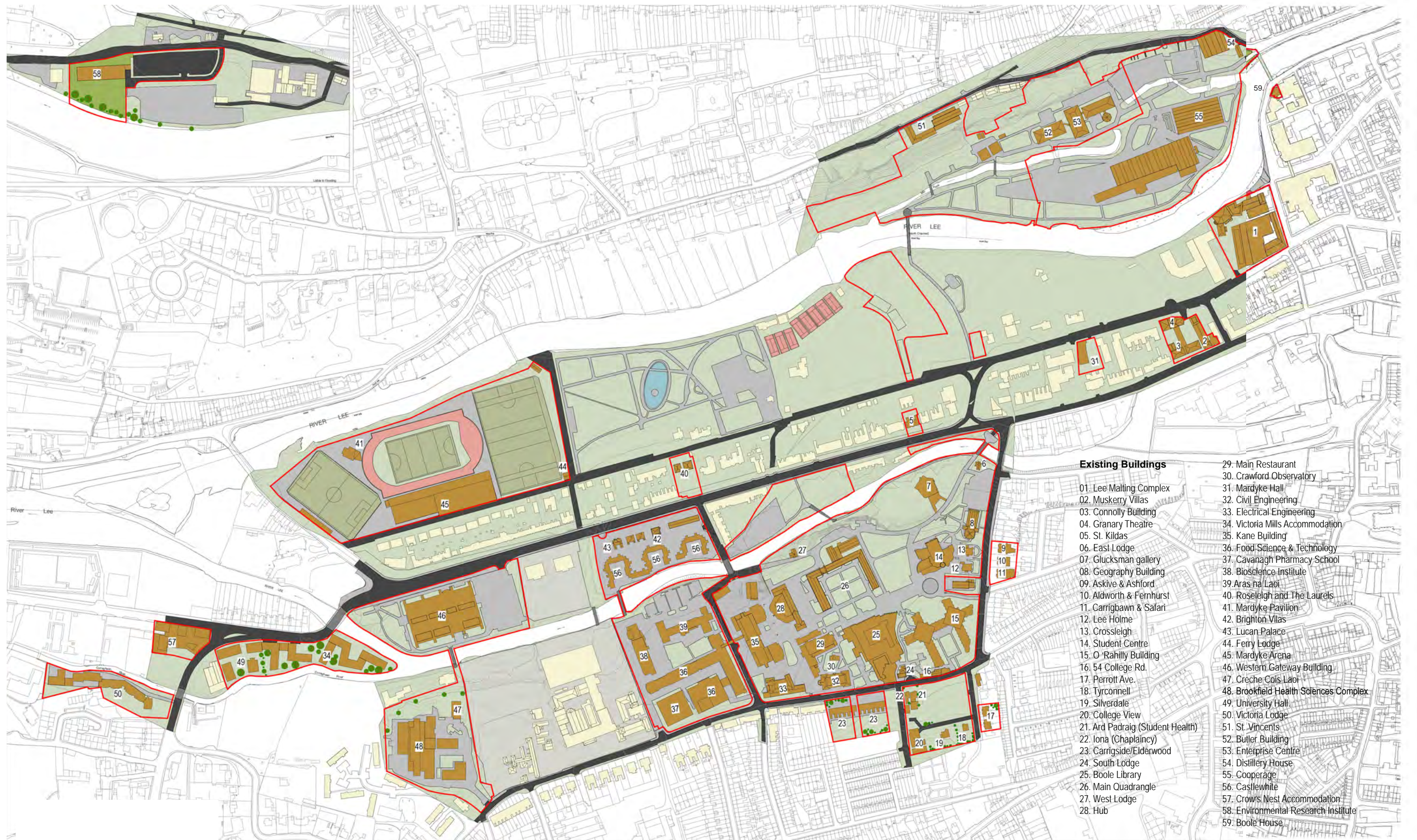
In recent years, innovation in campus planning involves a deep rethinking of the relationship between the built form of the university and the built form of its host city. The principle of the University as an enabler in the city, playing an important economic and social role, helping to co-ordinate economic and social developments at local and regional level implies that the traditional campus boundary is limitless.

UCC's physical expansion into distinct locations in the city has been gradual over the last decade, and this increase in its profile outside of the traditional campus perimeter offers opportunity to further develop UCC's relationship with the city socially and economically.

This masterplan review strongly recommends the policy of strengthening the identity of the University throughout its landholdings in the city and its function as an activator and enabler of growth in the region.



The Historic Core



UCC Properties - Existing Buildings

Key

- Existing Buildings
- UCC Properties



2. EXECUTIVE SUMMARY

UCC's Masterplan Review 2021 examines how the institution will develop, grow and evolve, physically, over the next period and to provide a framework for the development of the physical environment of the campus that will support the learning, research and academic ambitions of University College Cork.

UCC has set out its ambitious vision for the immediate future in its Strategic Plan 2017-2022 whereby it stresses its core values of creativity, transparency, freedom of expression, equality, respect, responsiveness, scholarship, integrity and diversity.

The Academic Strategy 2018-2022 proposes to achieve its goals by the development of a Connected Curriculum which will build on the substantive existing strengths of the University combined with the best international practice.

This Masterplan Review provides a framework in which the ambitions of the University can be realised within the context of the physical environment of the campus and its relationship to the city in which it resides.

We believe that a positive architectural and public realm is critical for the achievement of the goals set out in the academic and strategic plans. It is also critical that issues such as connectivity, mobility, sustainability, climate and the digital context are addressed as part of the plan for growth for the campus.

UCC is ranked in the top 50 Universities for Learning and Teaching in Europe, but it is also more than an award winning academic and research institution; it is an integral part of Cork and a key player in the economic, cultural and social life of the city and region. Therefore, the Masterplan addresses the wider context of UCC in the city and its wider hinterland we see the growth and development of the university in the context of its symbiotic relationship with Cork's own ambition for a sustainable and prosperous future.

Since its foundation in 1845 as one of the Queen's Colleges of Ireland, the University has expanded and developed to meet the challenges of the times.

Most recently, the Pandemic has forced an urgent response to online distance learning. UCC's digital modes of communication have much to offer both pedagogy and scholarship.

There is however a distinction between 'blended learning' and 'remote teaching'. The emergency pandemic adaptation is not the same as a thoughtful, intentional redesign of courses to alternative modalities.

Students already are familiar with advances in technology and will adapt readily to the blended learning evolution. The student social campus experience cannot be readily substituted with on-line interaction however. The physical campus will retain its unique appeal.

The open spaces and movement corridors on campus will come under fresh review – spatial flexibility, natural ventilation and connection to the exterior have never been more relevant. Staff interaction, management and the changing nature of work are in a transitional phase and need re contextualising as we move through 2021 and beyond.

Considerations underpinning the masterplan such as connectivity, use of the public realm, the digital campus, movement and spatial considerations could be considered as the primary areas in which UCC can plan a future campus which reflects a post Pandemic environment.

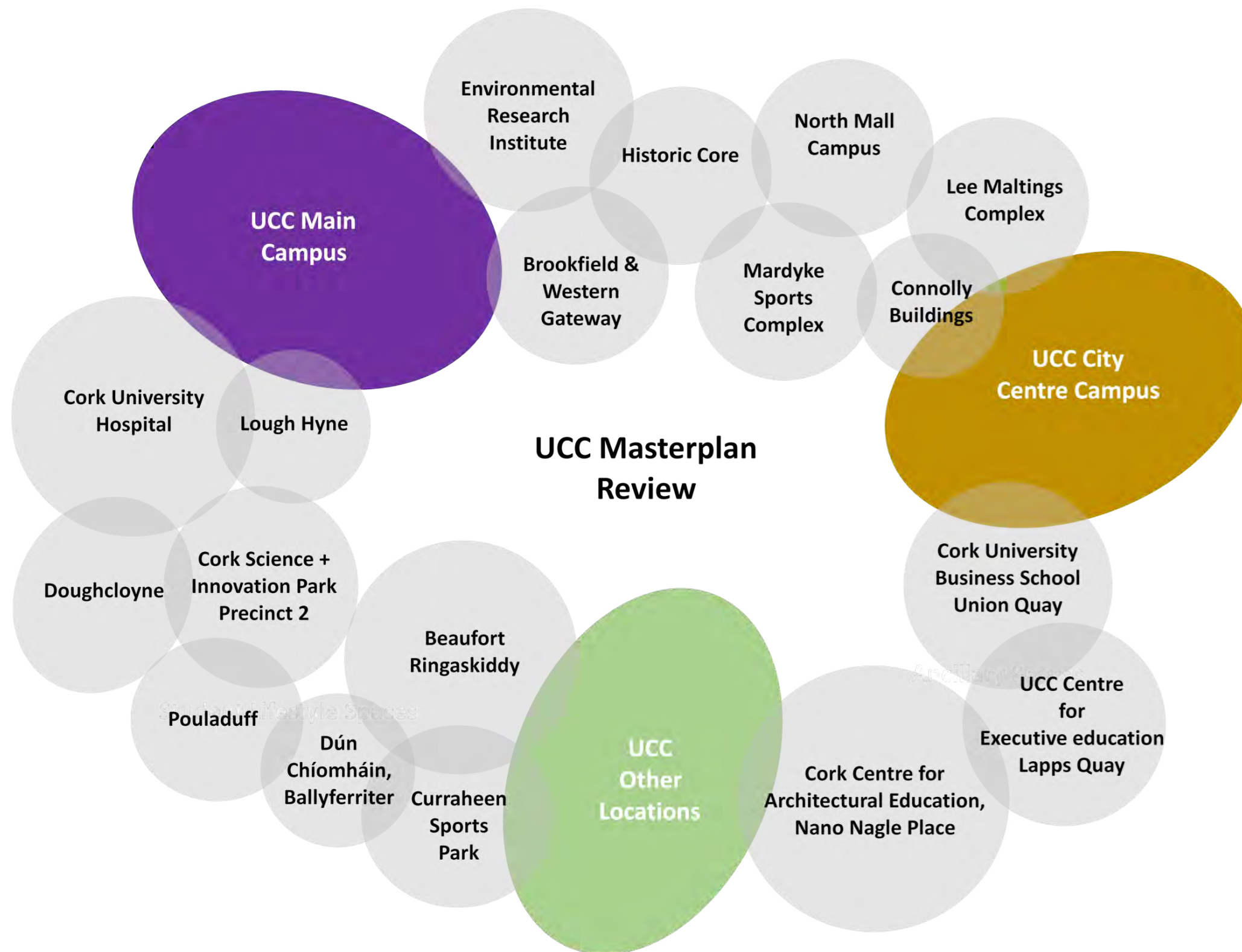
University College Cork remains a growing institution and this growth needs careful management. This Masterplan Review addresses the projected growth of the University in terms of consolidation, sustainability, mobility and infrastructure within the context of world class architectural and urban design excellence for the landscaped and built environment of the University.

The following considerations have informed the Masterplan Review:

- To promote a high-quality UCC experience in a vibrant, adaptable and sustainable environment
- To recognise that a continued diverse and inclusive community is among UCC's greatest strengths
- To ensure recommendations are flexible and responsive to future environmental and social requirements
- To prioritise the consideration of place making and connection to public realm
- To continue to invest in research and collaboration which underpins UCC's relationship with the City and region.
- To support the continued development of public transport infrastructure including pedestrian and cycle infrastructure for the Cork Metropolitan Area, to ensure high quality commutes for students and staff
- To ensure continued development of high-quality spaces for meeting, moving, exercising and socializing in the creation of a network of paths and character spaces
- To ensuring the continued development of an IT Masterplan with a digital infrastructure







Campus diagram







3. HISTORY OF CAMPUS DEVELOPMENT

University College History

The story of the development of University College Cork has been one of continuous growth and expansion driven by academic achievement in tandem with the development of the mercantile City of Cork. The University has been a key player driving the development of Cork over the last 170 years providing professional, research and academic graduates who have played a major part in the economic, cultural and scientific life of the city and region as well as on the national and international stage.

History of Development of University College Cork: 1849 to 2019

In 1845 the Queen's College Act established three new colleges "for the Advancement of Learning in Ireland": Queen's College Cork, Queen's College Galway and Queen's College Belfast. These Colleges were opened for teaching in 1849, and in 1850 were linked together under the umbrella of the Queen's University of Ireland, established by Royal Charter.

Over 50 years later The Irish Universities Act (1908) established two new Universities - the National University of Ireland and the Queen's University of Belfast and dissolved the Royal University in 1909. Under this Act, the National University became a federal University with its seat in Dublin and with three constituent colleges established by Charter: University College, Dublin; University College, Cork; and University College, Galway. The Queen's Colleges in Cork and Galway were given an entirely new status and title.

The Queens College Cork, now known as University College Cork, opened its gates for 115 students in 1849. The original lands acquired for the college were a mile from Cork city on a small escarpment overlooking the South Channel of the river Lee.

The original college building, built to greet its first students, the Quadrangle Building, was designed by Deane and Woodward Architects on lands known as the Gillabbey estate bought in 1846.

Sir Thomas Newenham Deane and Benjamin Woodward were the pre-eminent Irish architects of the Victorian neo Gothic style and were responsible for such key buildings of the era as the Trinity College Museum in Dublin and Oxford University Museum in Oxfordshire.

The Quadrangle Building remains the heart of the University and it was from this location that the campus grew organically throughout the Gillabbey estate, depending on available funding and the requirements of the educational establishment of the day.

The University added the Medical (Windle) building in 1875, the Crawford Observatory in 1880, Biology Building (Honan Building) in 1880, Berkeley Hall Student Residences (later the Honan Hostel) in 1885 and the Western Road Gate Lodge in 1889.

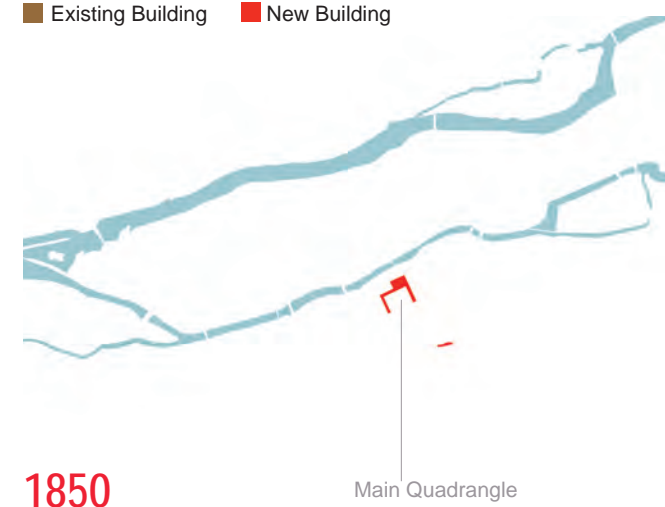
As the University grew it acquired more land between 1865 and 1885 including the Limekiln and Quarry sites, south of the original grounds and in the general area of the current location of the President's Garden. Perrott's Inch, along the river, was later acquired in 1893.

The University campus grew exponentially during the second half of the 20th century, with student numbers rising from 404 in 1910 to 1,300 by 1959. This expansion resulted in continuing land acquisitions including the Mardyke Athletics Ground in 1911 and continued with the purchase of Donovan's Land at the north east corner of the present main campus in 1918. Incremental land purchases in and around the main University campus area continued with the old Gaol site being purchased between 1946 and 1957. The Lee Maltings, further away from the campus on Dyke Parade, was purchased in 1969.

The University purchased a dairy farm in Curraheen in 1926 and this site, known as "The Farm" is the current location of the University's sports fields and is also the subject area of the current Curraheen Science and Innovation Park.

Historic Development of Main Campus Buildings:

■ Existing Building ■ New Building





1991



2004

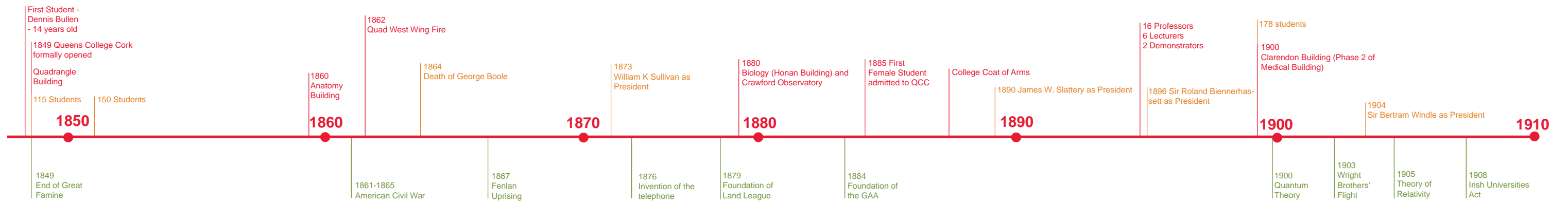


2009



2020

UCC Timeline: 1849 - 2019



3. History of Campus Development

During this period a number of key buildings were constructed including the New Arts Building (1910), Physics and Chemistry Laboratories (Civil Engineering Building) (1911), Biological Laboratories/Honan Biological Institute (1910), Collegiate (Honan) Chapel (1916), Faculty of Dairy Science (Geography Building) (1931), Mardyke Athletics Ground Pavilion (1932), Men’s Club and Restaurant (1940), Electrical Engineering Building (1954- 1965) and the Kane (Science) Building (1971).

From the 1850s up to the early 1970s the growth of the University building stock happened in an organic manner as numbers of students and funding for buildings and departments grew. From the 1960s, after the introduction of free second-level education and a general growth in prosperity, it became clear that student numbers would rise significantly and that the current mode of incremental development was no longer fit for purpose to cater for an enlarged new generation of students.

The first Campus Masterplan was developed by Murray & Murray, Pettit & Partners in 1972 to provide a masterplan

framework for the development of the University. This initial masterplan considered the desirability of a compact campus, the creation of an east-west pedestrian spine, recognition of the importance of courtyards and external linking spaces between buildings, grouping of buildings into a series of zones corresponding to the various schools and “core” communal activities. These fundamentals have been carried through a number of iterations and reviews up to the present day.

During the 1970s and 1980s the University added Aras Na Laoi (a former student hostel) (1977), the Food Science and Technology Building (1980), Boole library (1982) to the college portfolio within the context of the 1972 plan.

The 1990s saw further development for student welfare in the construction of the Castlewhite Student Residences (1994) and the UCC Student Centre (1995) as well as the O’Rahilly (Humanities) Building (1998) which was constructed on the site of the former Honan Hostel.

The new millennium saw the construction of the

Bioscience Institute (2002 & 2008), The Mardyke Arena Sports Centre Building (2001) the Glucksman Gallery (2004), Victoria Lodge and University Hall (2003 and 2006) all within the context of the 1993 Development Plan Review by E G Pettit & Partners with Garth May.

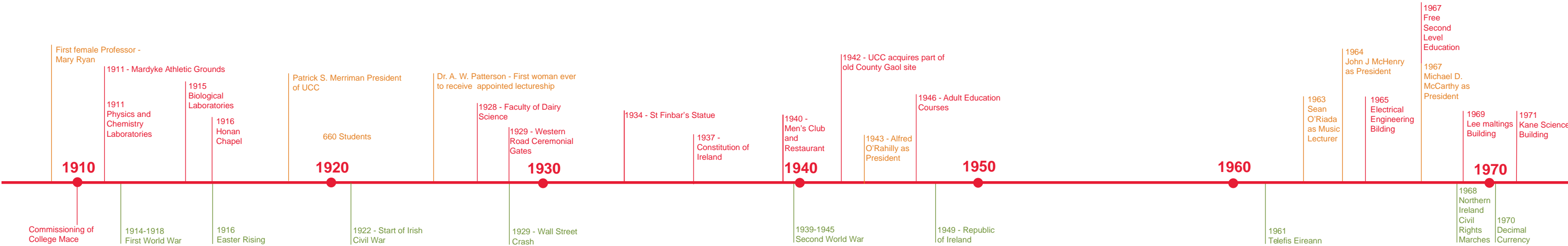
Within the last 10 to 15 years the University has expanded westward in the form of the Cavanagh Pharmacy Building (2006), the Brookfield Health Science Complex (2005) and the Western Gateway complex (2009) as well as the Post Graduate Research Library extension to the Boole (2007), all with reference to the Masterplan Review 2004 by BDP. It was during the period of this plan that the University also started to develop sites outside of the original main campus immediate area, such as the Environmental Research Institute (2005) on the Lee Road and the Tyndall National Institute (2010) at the Lee Maltings.

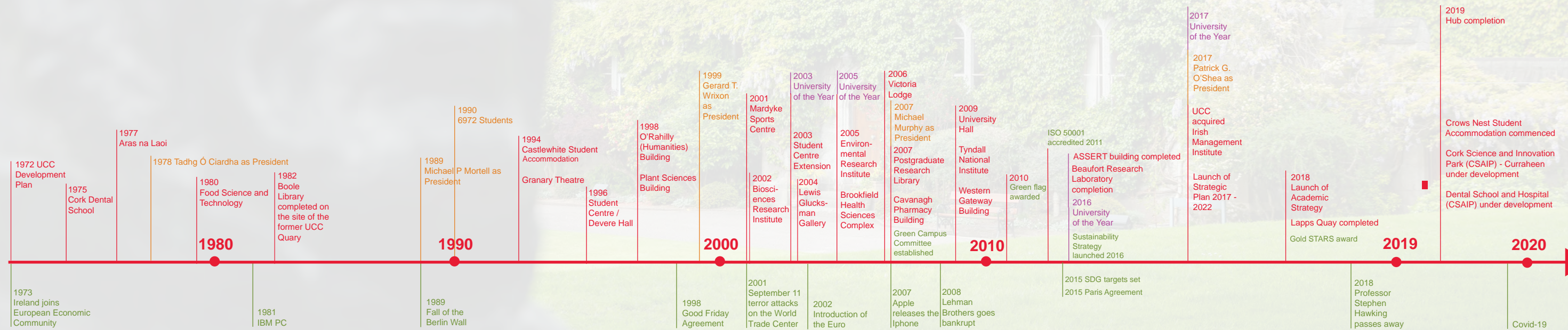
The period between 2002 and 2010 saw an intensive expansion of the University supported by strong national economic growth. This resulted in increased Government investment in third level institutions matched by philanthropic donations. The student population

increased from 13,000 to 17,000 students (+ 30%) during this 8-year period and the increase in building stock matched this extraordinary growth.

The University also increased its landholdings during this period acquiring the 5-hectare former Irish Distillers site at North Mall (jointly with the Mercy University Hospital) in 2005 and sites in Victoria Cross and Mardyke Garden in 2003.

The 2011 Masterplan Review by BDP and Friel Architects is the current Masterplan that is the subject of this latest Masterplan review. During the period of this plan the University has purchased the Crow’s Nest site for student housing and delivered the Beaufort Maritime Research building at Ringaskiddy (2015), the ASSERT Centre at Brookfield (2016) and the Cork Centre of Architectural Education at Nano Nagle Place (2017). Recently the University has completed the Business Executive Education Centre at 1 Lapps Quay in the City centre (2018) and the new Hub in the heart of the original campus (2019). Also during this period, the University concieved the Cork Science and Innovation Park Masterplan (2015) which will be the location of the





Statue of George Boole in front of the Main Quadrangle

3. History of Campus Development

Health Innovation Hub Ireland building and the new Cork University Dental School and Hospital.

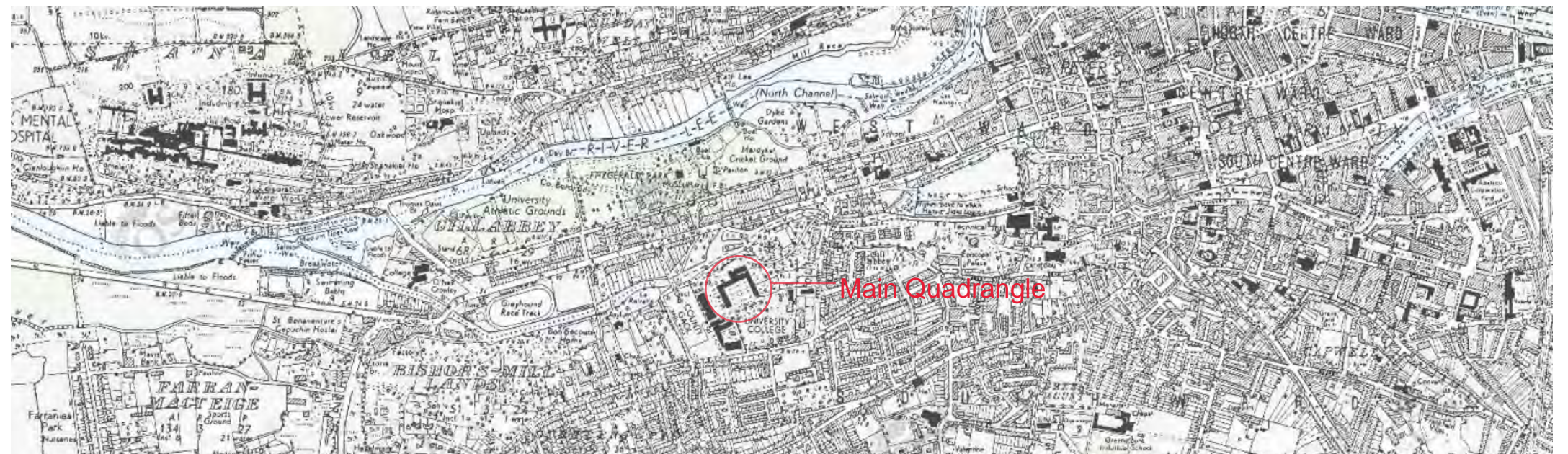
This story of UCC has been one of continued and gradual expansion. Student numbers have increased from 9,200 in 1993 to 21,500 in 2020.

This level of expansion in student numbers has been facilitated by forward looking stewardship in the acquisition of available land.

UCC has managed spatial acquisition through considered Masterplanning and strategic development as evidenced through the original Masterplan in 1972, updated in 2014, 2011 and through to this review which will take the University through its next stage of development.



6 inch Cassini map 1837 - 1842 - Prior to development of the university buildings (OSI)



6 inch Cassini map (OSI)



4. UCC Planning Context

General Context

This review is taking place as UCC is placing itself at the forefront of this new globally focused Irish economy, particularly in the areas of innovation and research.

Due to an expected increase in third level student numbers nationally there is an impetus for growth for Irish Universities, and UCC is expecting to increase its student numbers to 23,00 by 2025.

In order to meet this demand and provide a world class campus for the students and staff, UCC has plans to expand its overall campus space by up to 20 per cent in the next five years as part of a €350 million investment programme. This investment is the largest contribution to the local economy by any organisation in Cork.

This investment programme includes the New Dental School and Hospital, Cork University Business School, the expansion of the Tyndall National Institute and various associated projects.

As well as providing for increasing student numbers UCC has a focus on research and innovation in collaboration with industry and has developed a sustainable income stream in this regard. UCC contributes to FDI and domestic investment into the southern region with seven of the top ten pharma companies located in the vicinity and they all avail of the high-quality science and engineering graduates produced by the University.

More directly, UCC’s Tyndall National Institute, a world class research centre in integrated ICT hardware and systems, has a turnover of more than €30 million each year, 250 employees and more than 200 PhD researchers.

UCC’s Economic and Societal Impact Report demonstrates the positive impact that UCC has on the Cork region and nationally.

The Report shows that the University supports almost

15,000 jobs on an annual basis, which equates to approximately 1 in every 15 jobs in Cork city and county.

UCC’s total gross value-added economic impact amounting to €853 million annually; this output is produced for a €151 million state investment demonstrating an almost six-fold return for the Irish economy.

As well as a positive economic impact UCC has a major positive societal impact on Cork and the Southern Region making major contributions in the fields of culture, heritage and sustainability by means of investment in the arts, sports, and the environment.

In terms of a positive impact on a more equal society, UCC has taken a leading role in addressing barriers to third level education by widening participation to all. To this end 23% of the undergraduate intake comprises of mature students, students with disabilities and students from backgrounds that were not traditionally participants in third level education.

UCC is an important anchor for the city and region. The development of UCC lands in the city and region has implications for the Cork community in terms of increasing economic opportunities and for the social and cultural amenities which enrich the quality of civic life in Cork.

Strategic Plan 2017-2022

University College Cork sets out vision and shared ambition in its Strategic Plan 2017-2022 to be a leading university of independent thinkers with a mission for creativity, understanding and knowledge sharing for all.

The core values that underpin this vision are creativity, transparency, freedom of expression, equality, respect, responsiveness, scholarship, integrity and diversity.

To achieve this vision five goals have been set out in the Strategic Plan:



Strategic Plan 2017-2022 by UCC

- Implementation of an academic strategy to deliver an outstanding student-centred learning and teaching experience with a renewed and responsive research led curriculum
- UCC to be a leading University for research, discovery, innovation, entrepreneurship, commercialization and societal impact
- Create value for the community through an international outlook, informed and creative engagement with local and global issues
- Attract, develop, support and retain high quality staff
- Strengthen UCCs infrastructure and resource base

4. UCC Planning Context



The priority actions of the Strategic Plan to meet these goals include the delivery of an innovative, differentiated academic mission that cater for an increase in student numbers from 19,500 currently to 23,000 and expand UCC space by 20% accordingly.

The strategic plan for the next few years involves the creation of new buildings to account for this campus expansion including:

- Cork University Clinical Medical School
- Cork University Dental School and Hospital
- Health Innovation Hub Ireland building
- New Tyndall National Institute building
- Cork University Business School
- Life Sciences and Engineering
- Creative Hub
- improvements for the School of Law, Law library
- Upgrading the Kane building

This expansion will also cater for 720 new student accommodation spaces and plans to develop a new world class outdoor sports facility at Curraheen.

Academic Strategy 2018-2022

The University College Cork Academic Strategy sets out six priorities and thirty-five leading actions to guide the academic direction of the University for the years ahead.

The Academic Strategy builds on previous strategies and academic plans that has led to UCC being one of the most successful universities in the country as it has grown rapidly from a student population of a little over 7,000 in 1990 to a current population of over 19,500 today.

UCC is ranked in the top 50 universities for learning and teaching in Europe and is the leading Irish university for securing investment in research and development.

UCC is also renowned for its positive student experience with a 93% retention rate for first year undergraduates and

the fact that 94% of UCC graduates are in employment or further study within nine months of graduation.

In 2010 UCC became the first third level institute worldwide to receive the Green Campus Award and it is the only institution outside of North America to be awarded a Gold STARS rating and joins the likes of Princeton, Cornell and UC Berkeley in this achievement.

The Academic Strategy 2018-2022 has a vision to provide curricular coherence and to enhance the student and staff experience by the provision of a Connected Curriculum, whereby the holistic education experience of students is connected to the development of core values and attributes including diversity, social inclusion, ethics, social responsibility, climate change, sustainability, mental health, wellbeing and a wider engagement with civic society.

As stated in the Strategy document the “Core principle of our Academic Strategy is that student learning and research will be facilitated through a Connected Curriculum that aligns with demand, university priorities and effective assessment practices.”

In order to achieve this goal, the strategy has an implementation plan consisting of 6 priorities:

- Develop a Connected Curriculum, building on existing strengths and best practice globally
- Align curriculum offerings with demand and with teaching and research priorities
- Constructively align effective assessment with learning outcomes
- Facilitate students’ development of core values and graduate attributes
- Establish a student enrolment plan that aligns with student recruitment targets
- Reform academic governance such that innovation is enabled, coherence is restored and risk is reduced

UCC 2022 focuses on the final two years of the Strategic Plan 2017-2022, themed Independent Thinking - Shared Ambition.

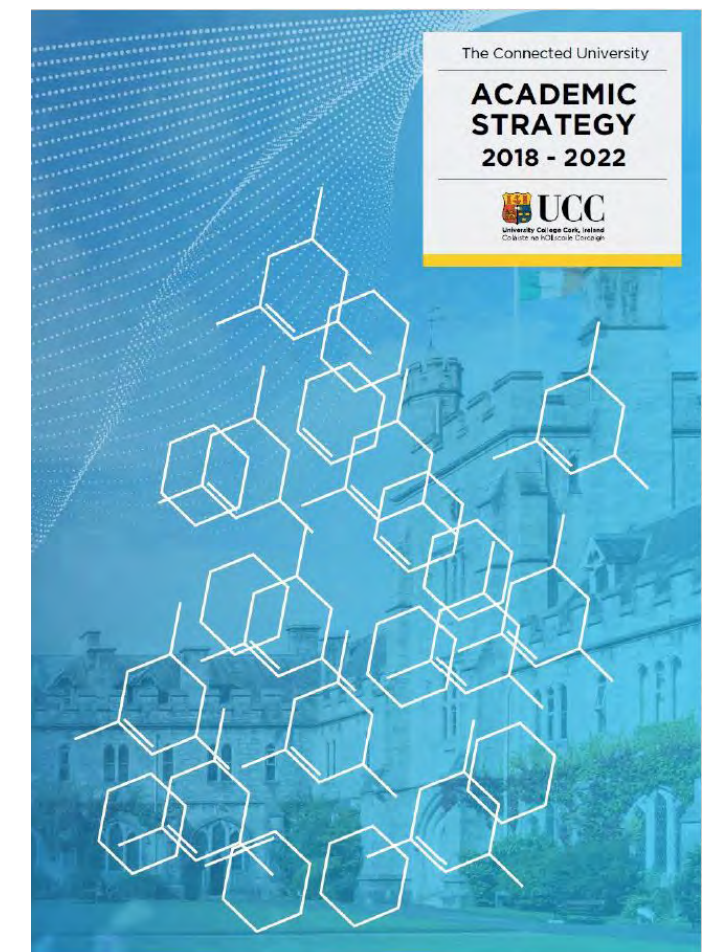
It sets out a thematic prioritisation of UCC’s strategy, as well as the transformative changes to its core operations in response to geopolitical challenges, the escalating climate crisis and accelerating societal and economic pressures associated with the Covid-19 pandemic.

This strategic pivot identifies UCC’s key strategic priorities for the period 2021-2022, clustered within five interconnected thematic pillars:

- Learning and Teaching
- Research and Innovation
- Student Success
- People and Organisational Culture
- Infrastructure and Resources

Deeply rooted in extensive collaboration both within and outside UCC, this two-year plan builds on UCC’s strengths in student focus, sustainability, and community and global engagement, to identify actions to respond to the current crisis and position UCC for long-term success.

This Masterplan review is aligned with the goals of the Academic Strategy in so far as it will provide the physical space and public realm for the delivery of a Connected Curriculum in all UCC’s locations in the city.



Academic Strategy 2018-2022 by UCC



4. UCC PLANNING CONTEXT - ACADEMIC AND CAMPUS PLANS

This Masterplan Review will be witness to even more expansion of the University as key buildings such as the Crow's Nest Student Accommodation, the Cork University Dental School and Hospital, the new Tyndall National Institute on the North Mall and the Cork University Business School in the city-centre.

UCC has a tradition of creating memorable and inspiring spaces to live, work and learn. It has an ethos of excellence in education and research achievement, as it has travelled on its journey from the intake of its first 115 students in 1849 to the more than 21,500 students who attend University College Cork today.

It is considered ever more relevant and timely to examine the fundamentals of previous UCC University Masterplan assumptions given the context of the changing environment of information technology, teaching methods, transport, connectivity and sustainability concerns.

The recent publication of the Cork Metropolitan Area Transport Strategy (CMATS) has enabled University College Cork to envisage its relationship with the city and metropolitan area in terms of mobility, connectivity and innovation.

A key component of this plan is the provision of an east-west rapid transit corridor which has been proposed as bus rapid transport (BRT) route and is now considered under CMATS as 'Light Rail Transit' (LRT) system.

The development of this corridor will provide greater certainty for future planning and development to pursue the higher densities required to meet National Planning Framework 2040 population and employment targets for Cork, and the planned expansion of third level educational institutions, including University College Cork.

This innovation Corridor will provide greater connectivity between the UCC main campus and Cork Science and Innovation Park, the proposed UCC Curraheen Sports Park, Munster Technological University, Cork University



The Main Quadrangle

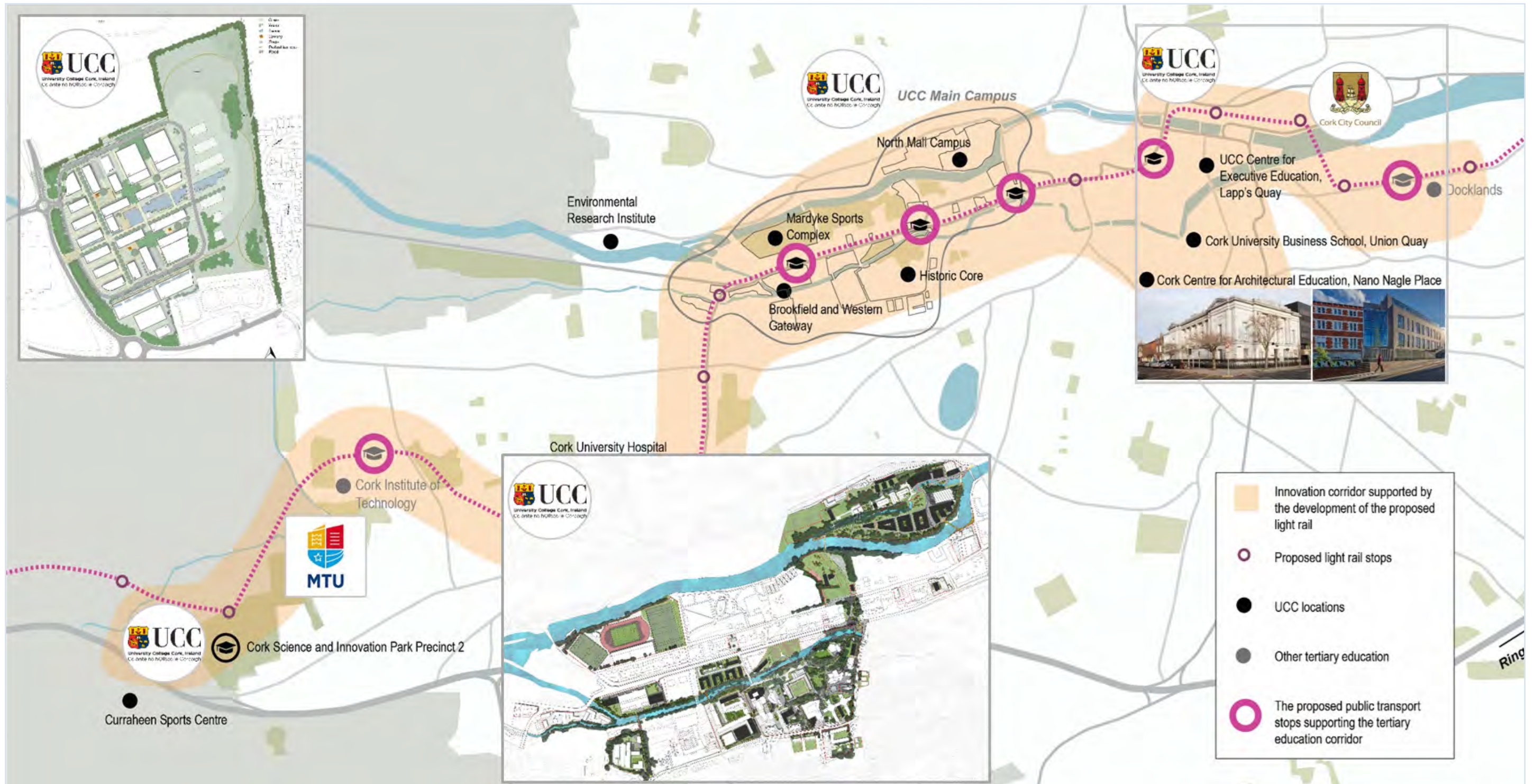
Hospital, the City Centre and the Cork Docklands to the east.

This Innovation Corridor will further enhance and consolidate University College Cork special place as a facilitator and promoter of research, innovation, business and technology based academic and commercial activity in Cork and the region. It is an objective of the University to continue its expansion in a sustainable manner on

campus and in its other locations in the city and region. UCC is committed to establishing and strengthening its presence in the north of the city and will work with Cork City Council on initiatives which build upon the principle of connected University and City.

A review of the projected demand related to student numbers over the next ten years will provide an indication of the Universities short term expansion requirements.

This Masterplan review considers the physical spatial development potential of UCC in the context of its likely future student demand requirements and its developing presence in the City.





5. URBAN PLANNING CONTEXT

Cork City Development Plan 2015

Cork City Council recognises the importance of UCC to Cork City in their Development Plan as outlined in Objective 14.12 and the role that UCC plays in the city and the contribution its education, and research and development activities make to the attractiveness of the city and region for investment:

Objective 14.12

University College Cork: To support the sustainable development and expansion of University College Cork as an educational facility of regional and national importance'

Cork City Council recognises that UCC sets out the strategies, projects and targets for its future. Cork City Council acknowledges the vision for UCC is to be a world class university connecting the southern region to the globe and therefore one of the key goals of the strategic plan is to strengthen the University's infrastructure and resource base.

Strategies to achieve this include:

- to develop the campus to further enhance the UCC experience and to contribute to the cultural attractiveness of Cork City;

- to improve the condition, safety and accessibility of buildings and pursue campus development to the highest standards.

It is recognised in the Cork City Development Plan that the continued growth in student numbers will require the provision of new buildings and therefore the City Council will encourage and support in principle, future expansion plans including intensification of the existing campus and/or new development at the North Mall Distillery and other UCC lands, which is supported in the South Docks Local Area Plan. The City Council supports the expansion of UCC activities, including its activities in partnership with other Institutions such as the CUH / HSE.

It is noteworthy that the Cork City Development plan references the contribution that UCC makes to economic diversity and innovation in Objective 3.2 Economic Diversity whereby it is noted that research and innovation in the Cork area are centred on institutions such as University College Cork and a number of leading associated research institutes such as the Tyndall National Institute (ICT hardware research), Environmental Research Institute and IMERC (Marine Energy).

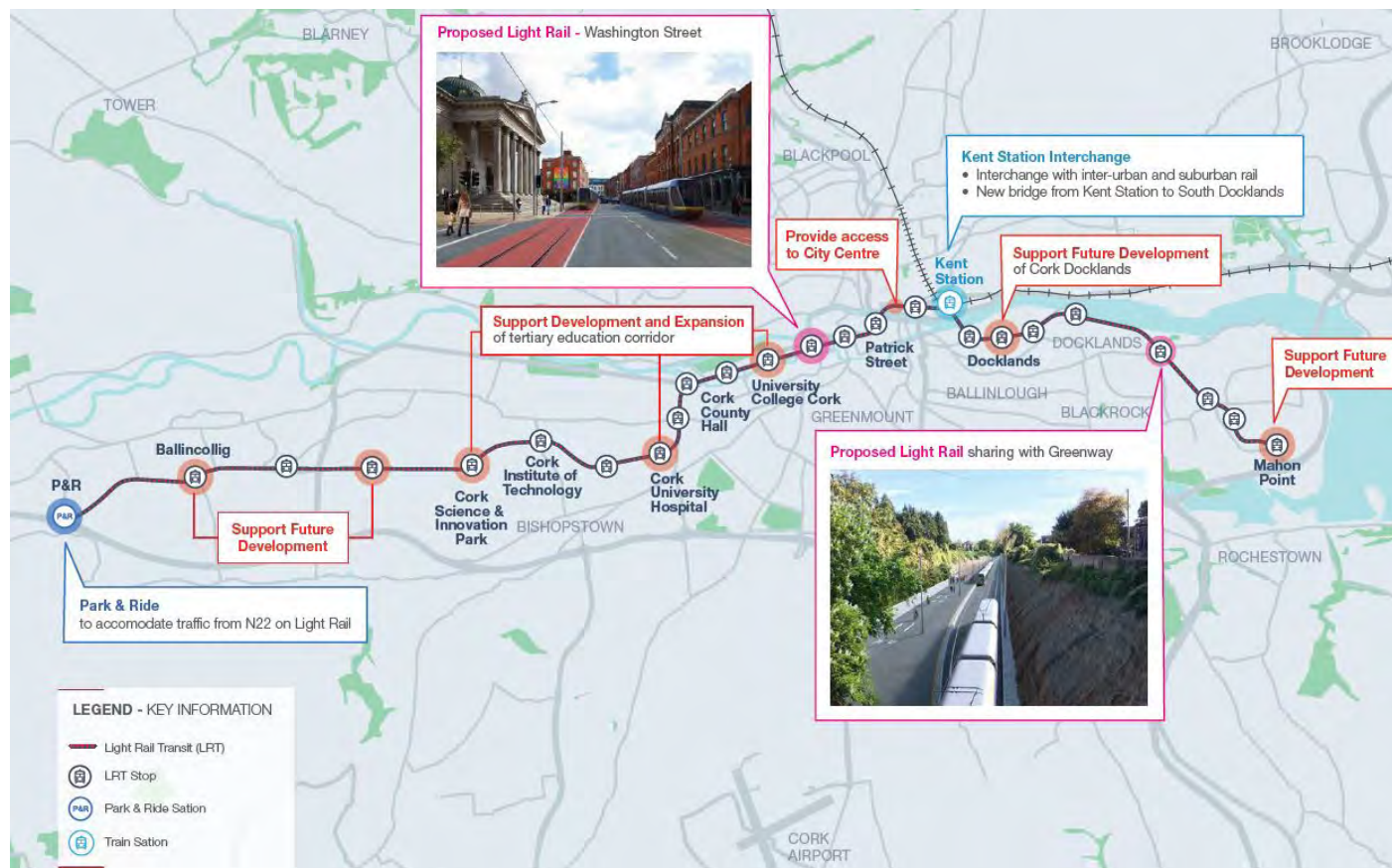
It is noted under Education and Health policy in the Development Plan that the role of UCC and CIT are of particular importance to the city as major employers as

well as educational facilities.

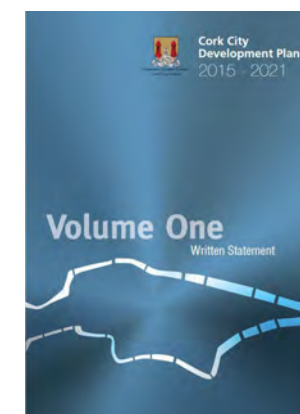
The Development plan recognises the collaboration between University College Cork and Cork Institute of Technology as being very important for Cork and also the collaboration between UCC and Cork University Hospital and the other major health institutions which also contribute significantly to the economy of the city.

Cork City and County Council's have commenced the preparation of a new Development Plan's for the period 2022-2028.

University College Cork is also recognised at a national and regional level with the importance of its connectivity to the city acknowledged in the National Planning Framework Ireland 2040 through its regional instrument the Regional Spatial & Economic Strategy (RSES) for the Southern Region. As can be seen under the Metropolitan Area Strategic Plans (MASP) objective 10: Education and Access to Talent that there is proposed a strategic east-west public transport corridor from Mahon to Ballincollig via the city centre, serving CIT, CUH, UCC, Kent Station, Docklands and Mahon Point thereby linking the University to key locations by rapid public transport corridor. This objective is further developed in the Cork Metropolitan Area Transport Strategy (CMATS) where UCC is identified as a key part of the tertiary education corridor for the proposed light rail transit (LRT).



CMATS Light Rail Plan



Volume One, Cork City Development Plan 2015



Cork Metropolitan Area - Transport Strategy 2040



Introduction

The recent publication of the Cork Metropolitan Area Transport Strategy (CMATS) has enabled University College Cork to envisage its future relationship with the city and metropolitan area in terms of mobility, connectivity and innovation.

A key component of this plan is the provision of an east-west rapid transit corridor which has been proposed as bus rapid transport (BRT) route and is now being considered under CMATS as Light Rail Transit (LRT) system. The over-arching objective of the LRT is to enable the Cork Metropolitan Area to consolidate land-use and transport along a high frequency, high-capacity public transport corridor.

The development of this corridor will provide greater certainty for future planning and development to pursue the higher densities required to meet National Planning Framework 2040 population and employment targets for Cork, and the planned expansion of third level educational institutions, including University College Cork.

While the LRT is in early planning stages the development of this important public transport corridor enables UCC to consider the development of an Innovation Corridor concept that will provide rapid access between the various campus and city centre UCC locations in a sustainable manner.

This Innovation Corridor will provide greater connectivity between the UCC main campus and Cork Science and Innovation Park which contains UCC academic and health science institutions, The UCC Curraheen Sports Park, Cork Institute of Technology, Cork University Hospital, the City Centre and the Cork Docklands to the East.

This Innovation Corridor will further enhance and consolidate University College Cork special place as a facilitator and promoter of research, innovation, business and technology based academic and commercial activity

in Cork and the region. As a primary contributor to trips generated in Cork City and environs, UCC is committed to the promotion of sustainable modes of transport and reduction of single occupancy car journeys amongst campus users, which will contribute to maintaining and enhancing the status gained as the world’s first ‘Green Campus University’.

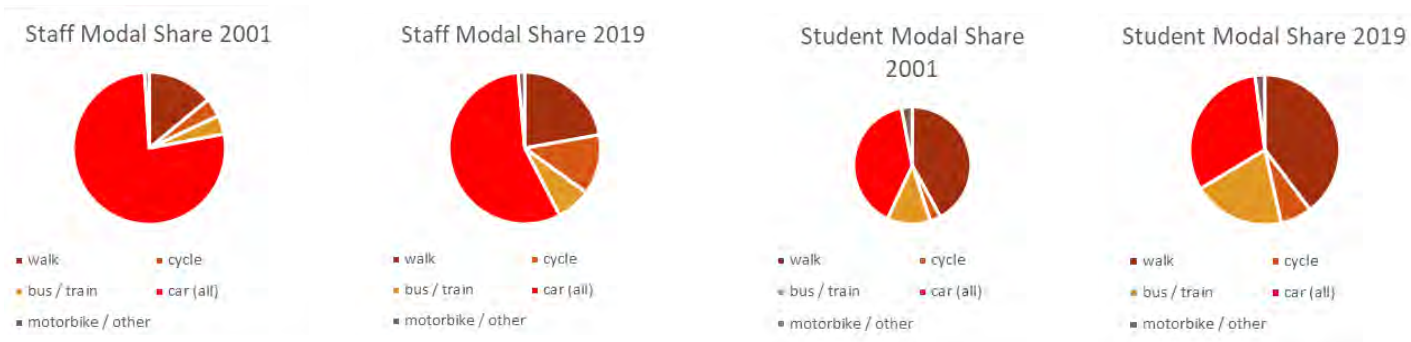
To this end, UCC has commissioned a series of studies on transportation over the past two decades to analyse prevailing trends in transport in the context of the University and environs and to put in place a strategy for influencing behavioural change and modal shift away from private car usage amongst campus users.

Strategic documents produced include:

- UCC Commuter Plan 2018
- UCC Campus Traffic Management Plan 2014 & 2017
- UCC Sustainability Strategy 2016
- UCC CSAIP Precinct II Masterplan 2015
- Site specific Mobility Management Plans for various planned developments.

The goals of the 2020 Commuter Plan update are congruent to this section of the Masterplan and provide a detailed assessment of transport strategies together with opportunities for implementation up to 2023.

In 2001, a detailed origin and destination and modal split analysis of all existing UCC commuting patterns was undertaken by Arup Consulting Engineers based on staff and student surveys. Follow up surveys were carried out by UCC in 2007, 2012, 2014, 2015, 2016, 2017, 2018 and 2019. The overall trend is strongly towards a reduction in single occupancy car journeys, for both staff and students, indicating the efficacy of UCC’s strategic planning for transport. The challenge which now faces UCC is to maintain this trend as the University expands, with a greater focus on development at satellite campus locations such as the CSAIP, Beaufort Maritime and



Energy Research Building and Union Quay.

It is envisaged that Cork will become the fastest growing city region in Ireland, with a projected 50% to 60% increase in population by 2040, which will have obvious knock-on effects on UCC. Therefore, in the context of this masterplan, the Cork Metropolitan Area Transport Strategy (CMATS) document published in 2020 is of particular relevance and provision of improved transport infrastructure at regional level is vital to UCC given the extensive nature of the campus.

Connectivity to UCC’s primary and satellite campus locations will be key to supporting future growth of the University while limiting any adverse environmental and societal impacts insofar as is practicable. UCC therefore made a submission to the Draft CMATS, which is broadly supportive of the proposals but requests that greater cognisance be taken of public transport links to some key strategic development locations for UCC. The University will continue to lobby and liaise with Cork City Council and Cork County Council and other statutory bodies to achieve additional physical infrastructure of benefit to UCC campus users.

The following sections assess transportation issues for UCC in the context of the existing scenario and future requirements to ensure progress is maintained towards provision of a sustainable, serviceable transport network.

- UCC’s landholdings are located throughout the city and the Metropolitan Area and are comprised of:
- The Main UCC Campus:
- Historic Core
 - Brookfield and Western Gateway
 - North Mall Campus
 - Connolly Buildings
 - Lee Maltings Complex (Tyndall National Institute)
 - Mardyke Sports Complex
 - Environmental Research Institute
- UCC City Centre Campus:
- UCC Centre for Executive Education, Lapps Quay
 - Cork Centre for Architectural Education, Nano Nagle Place
 - Cork University Business School, Union Quay
- Other UCC locations:
- Cork Science and Innovation Park Precinct 2
 - Cork University Hospital
 - Beaufort Maritime and Energy Research Building, Ringaskiddy.
 - Doughcloyne
 - Pouladuff
 - Curraheen Sports Park

6. Mobility

There is a real diversity across the nature of the UCC locations which provides real opportunity in the creation of a UCC identity in the off-campus locations.

Connections

Connecting the various elements of the UCC landbanks with strong infrastructure links is vital. Whilst overtime, significant connections will develop, it's likely that this will in the short term be mainly through a cycling network that is legible and makes movement around the various landbanks easy to navigate.

Pedestrian Facilities

UCC is a pedestrian dominant campus with a concerted effort to develop student housing within walking distance of its main campus. The effectiveness of this policy is evidenced by the fact that walking is the main mode of transport for almost 40% of UCC students. Future opportunity sites for student accommodation have been identified to allow for a more compact footprint which will bring students closer to their primary destinations.

The main campus contains attractive walking routes with adequately sized footpaths and is well connected to the surrounding roads and streets, with the newly installed Cavanagh Bridge to Perrott's Inch improving access from the Western Road side. The original UCC Commuter Plan (2005) identified key measures for improvement of the existing pedestrian network in UCC, with the most significant upgrades being the redesign of College Road and the Western Road/Donovan's Road junction upgrades.

Continuous review and maintenance of the high-quality existing pedestrian routes and provision of adequately lit and comfortable pedestrian infrastructure on the



Main Campus (including 'The Spine') and at key new developments such as the North Mall Campus and CSAIP sites will be the focus in future years, in addition to lobbying Cork City Council for further improvements to public spaces. On that theme, proposed upgrades to walking provision and BusConnects corridor improvements as outlined in CMATS should be brought forward as a priority in order to enhance the walking experience in the vicinity of UCC sites.

Cyclists

UCC's landholdings are relatively well-developed in terms of provision of cycle parking facilities. Cycle facilities are being added on a continuous basis, with 45 new secure cycle parking spaces being added at the Biosciences and North Mall Campus in 2019. UCC introduced a new bicycle service for all UCC staff members: the UCC Campus bike Scheme in 2011. UCC Buildings and Estates operate this communal bike scheme for UCC staff members. It provides all UCC members of staff with access to a bicycle for hourly use during the working day. Bicycles are available at various locations around the greater UCC Campus.

At present, there are 20 CampusBikes available at 8 locations: on the main Campus (8), Brookfield (2), Western Gateway (1), the Environment Research Institute (2), the North Mall Campus (Enterprise Centre) (3), Lee Maltings / Tyndall (2) and College View Workshops (1) and Dental Hospital (1). It is intended that additional bikes will be provided at several of these locations in the near future and provision of campus bikes will be extended to future developments at CSAIP, CCAE (Nano-Nagle-Place) and Union Quay to ensure full connectivity of the Cork City sites.

UCC also participates in the government's a Cycle to Work Scheme (tax relief scheme) since September 2009, with over 1000 bicycles issued to staff members in this time. Cycling as a mode of transport almost doubled in the immediate aftermath of the introduction of the scheme

(6% in 2007 to 11% in 2011), with 12.8% of staff cycling in 2019 indicating an increase over 7 years, albeit staff numbers have increased in this timeframe.

It should be noted that the 12.8% current modal share for cycling for staff is well within the target band (10% to 20%) outlined in the National Transport Authority's 'Achieving Effective Workplace Travel Plans' guidance document. While the scheme will continue to remain in place, other measures will now be required to influence modal shift of staff towards cycling even further. Furthermore, modal split of cycling for UCC students is 6.8% as of 2019, and an objective has been set in the 2018 Commuter Plan to increase this to 10% in line with National Policy.

UCC's Commuter Plan 2018-2013 has identified that the following factors, all related cycling conditions in road traffic, impact the most on bike use amongst staff and students:

- Quality of cycling infrastructure;
- Road Safety
- Driver behaviour

In this regard some measures (e.g. provision of showers/ lockers/parking) are implementable by UCC and the University will continue to improve the provision of quality parking, shower and storage facilities in conjunction with increased promotion of same. However other hard measures will require coordination with Cork City Council and need to be viewed in the context of CMATS and the Cork Metropolitan Area Cycle Network Plan.

The National Cycle Manual lists five key needs of cyclists regarding cycling infrastructure as:

1. Road Safety
2. Coherence
3. Directness
4. Attractiveness
5. Comfort.

In analysing the existing cycle facilities for UCC under

these metrics it is apparent that the existing inter-site network of key access routes to campus and between campus could be improved.

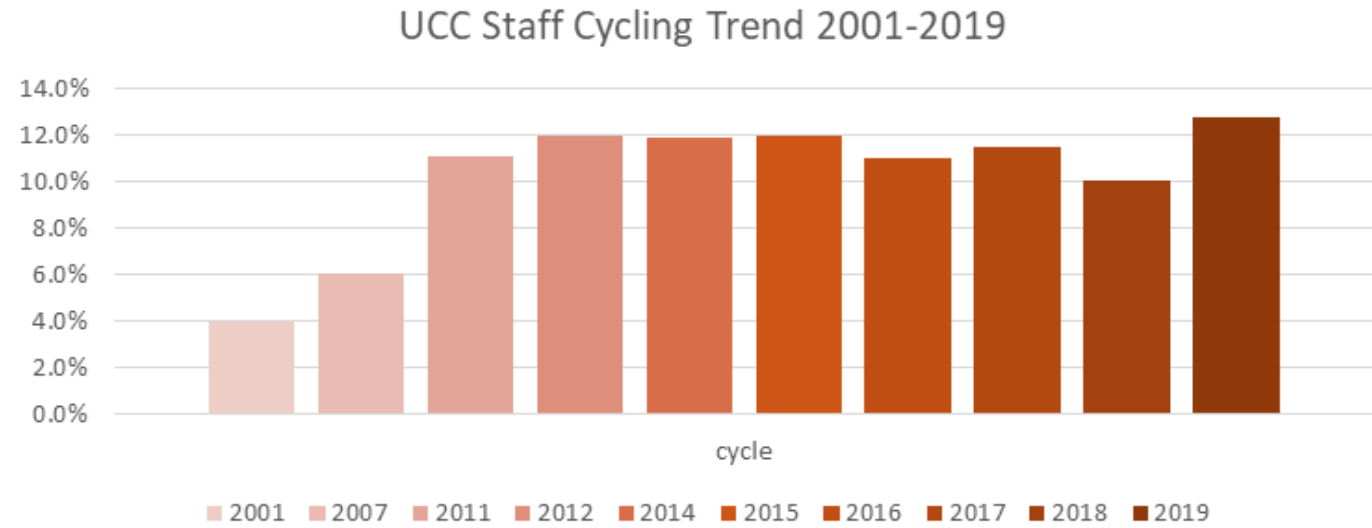
The Cork Metropolitan Area Cycle Network Plan has undertaken a detailed assessment of cycle route quality throughout the city including the safety quotient of each route and forms a basis for key infrastructure upgrade requirements. Proposals outlined in this document, in particular for the Cork City Centre Network and Cork City South West Network will be key to progress towards the ambitious 11% cycle usage target set out in the 2018 Commuter Plan.

While cycle lanes and tracks are currently provided in a piecemeal manner between UCC facilities, these do not interconnect in a coherent way at all locations to provide a developed Cycle Network with adequate connectivity to serve UCC commuter needs and to encourage increased uptake of cycling as a mode of transport.

Providing bicycle infrastructure creates the necessity for quality bicycle parking. High quality bicycle parking areas create consistent activity and movement in a public space and can be social catalysts as well as important meeting points on the main campus. Their locations should be carefully considered and whether situated at the back of a central space or as a part of it they will inevitably become nodes on the campus.

Public Transport

Bicycle Parking



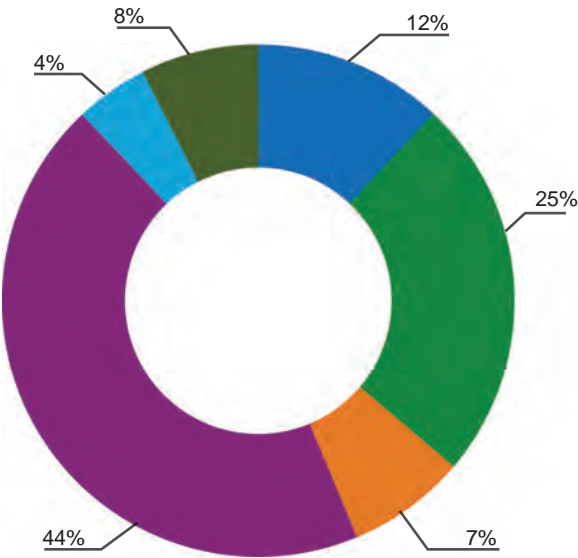
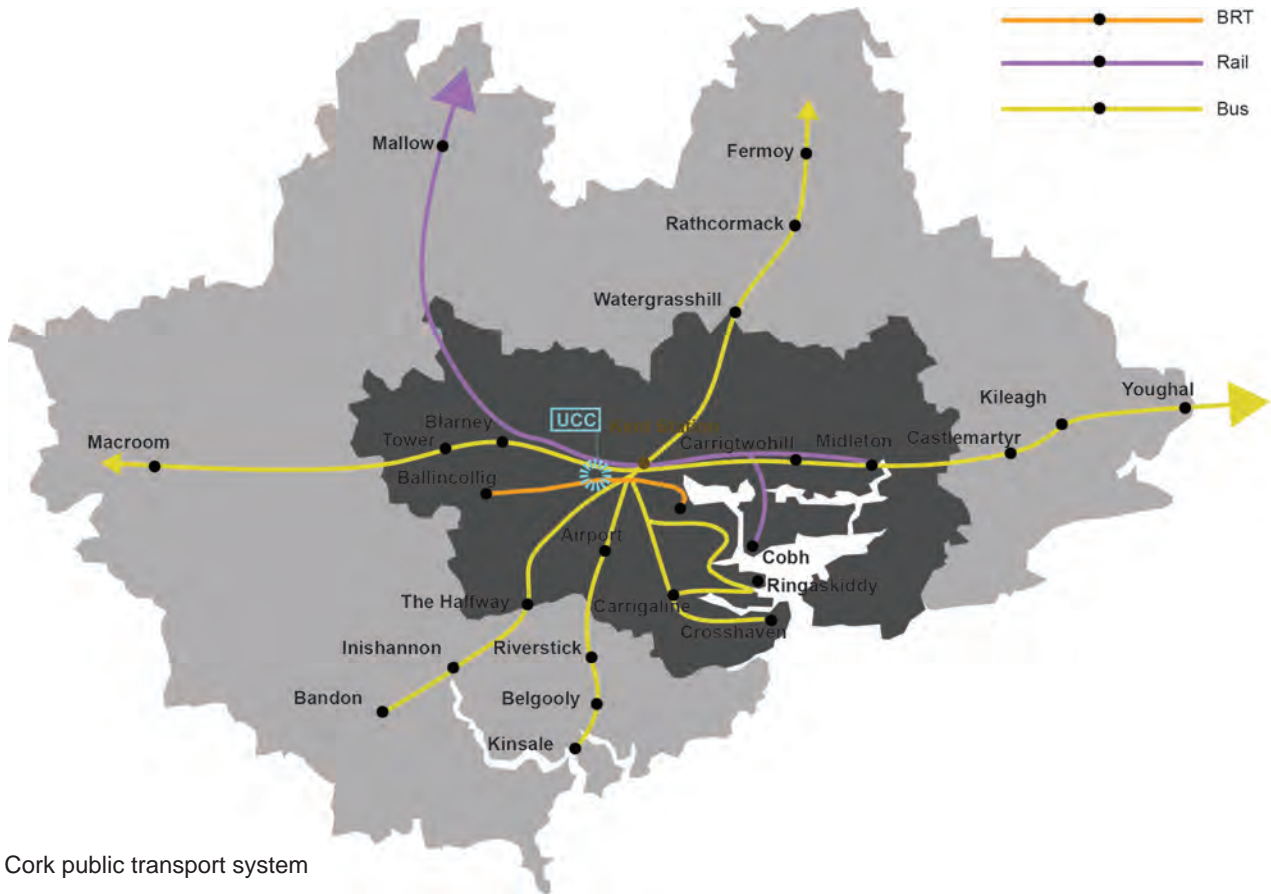


UCC's main campus is served primarily by 4 bus routes, (205, 208, 216 and 220). Each of these routes is relatively frequent, with services at 10 to 15-minute intervals at peak times. There is a perception amongst staff and students of UCC however that city bus services are not of sufficient quality, borne out by recent survey results which indicate that around 60% of both staff and students deem bus services as inadequate or in need of improvement as bus services often suffer from poor reliability, resulting from heavy traffic.

It is envisaged that the bus services mentioned above (in particular the 220 which passes closest to the Union Quay site) will become more availed of by students on completion of the proposed development at the Union Quay site, as the primary high density accommodation hubs in the Victoria Cross area are approximately a 40 minute walk from Union Quay, which is at the upper limit of walking distances for commuting purposes. In general, the bus services offer satisfactory access in terms of walking times to the various UCC satellite campus sites (generally less than 10 minutes) and frequency of services.

Key to improving the quality of public transport for UCC staff and students going forward will be the improvement of bus stop infrastructure. It is notable at present how few covered bus shelters are on the 208/220 route in the vicinity of Victoria Cross, and the 205-bus route on College Road. While the lack of shelter provision may be due to inadequate footpath widths in the areas in question, not having shelters serves as a discouragement to the use of buses during inclement weather and reduces user comfort for those who have no choice but to use bus services.

At a local level, UCC will display and make available



- Bus Lane (no cycle lane)
- Cycle Track - separated from road
- Cycle Track - immediately adjacent
- Cycle Lane (even within Bus Lane)
- Cycle Trail or Greenway
- Shared walking and cycling

Breakdown of facility type in Cork Area - Source: CMA Cycle Network Plan

6. Mobility

details of bus timetables, routes, stop locations and fares at appropriate locations in the campus. Real time departure and arrival times of buses near the UCC main campus will be made available on screens in the campus, and travel packs will be provided to new students.

Adequate public transport connectivity will be required to further promote the sustainability and viability of the CSAIP and Union Quay developments. Therefore, bringing forward further improvements to bus services and general infrastructure serving existing sites and opportunity sites as outlined in this masterplan will be key to the continuing expansion of UCC.

On-site parking

At present, there are approx. 1,239 staff parking spaces across the main Campus, Brookfield and Western Gateway buildings and North Mall Campus and 56% of staff drive to work each day. In addition to this 31% of students drive to the University. While UCC is committed to achieving a reduction of the modal share of single occupancy car journeys, this must be balanced against the consistently increasing student and staff populations and the inevitability that a significant proportion of staff and students will have a requirement to commute by car due to various factors.

Where reasonably practicable, UCC is committed to minimising on campus car parking whilst complying with best practice guidance and maximising land use efficiency as public transport improvements unfold.

Notwithstanding this approach, the University is intent on decoupling the link between parking demand and the provision of new University infrastructure. To this end, active management of existing car parking spaces is critical in ensuring that the objectives of sustainable transport are realised. In this regard UCC has already implemented satisfactory policies in terms of limiting student access to paid parking areas only and restricting entry to staff carparks through the use of enabled staff IDs, and this

policy will continue to be in place for developments at opportunity sites identified in this masterplan. Additional car-pooling spaces will be provided to help with the Commuter Plan aim of increasing the uptake of car-pooling amongst staff, and Electric Vehicle charging points will be provided on all major UCC carparks.

Park and Ride

UCC have well established Park and Ride facility at Pouladuff (200 spaces) and the satellite car park (Park and Walk) at Dennehy's Cross (180 spaces) and have access to the Black Ash Park and Ride facility with Cork City Council during term times. Annual travel surveys indicate that between 6% and 8% of students use Park and Ride facilities as part of their daily commute.

CMATS proposals for the increase of park and ride services and linking these directly to public transport routes would be beneficial to UCC, as would proposals to supplement strategic park and ride services with smaller local "mobility hubs", particularly on the northside of the City.

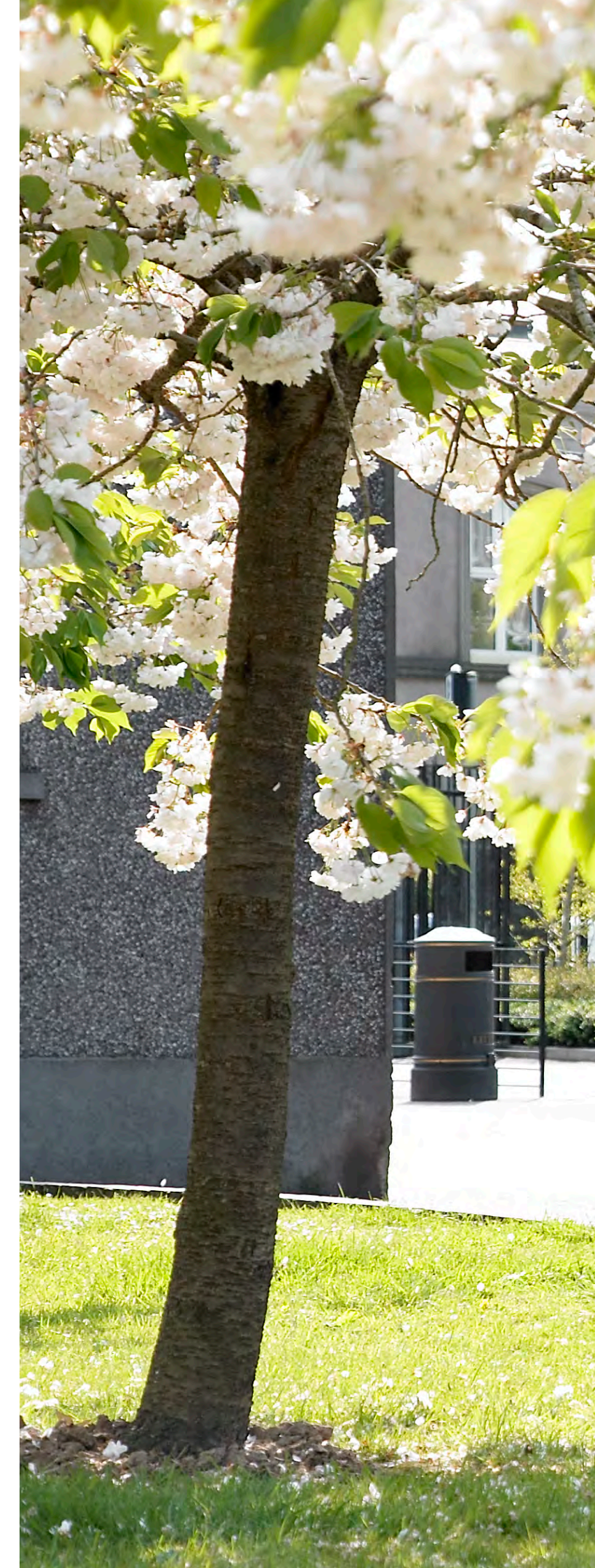
Development of these proposals as a priority and provision of direct links from park and ride hubs to UCC sites via shuttle bus and public transport will be key to reducing the demand for on-site parking.

Mobility Objectives:

UCC is committed to supporting sustainable transport measures for their students and staff and visitors. Car park spaces on the main campus in particular will gradually be reduced as the public sustainable infrastructure network is improved and expanded

Cycling and Walking Objectives:

Cycling and walking takes precedence throughout the main campus area and adjacent urban spaces supported by a commitment to implement high quality bicycle parking.





Oifig na bhFoirgneamh agus na nEasát
Buildings and Estates Office

Oifig na Seirbhísí
General Services Office

7. CLIMATE CHANGE

United Nations 17 Sustainable Development Goals

The 2030 Agenda for Sustainable Development provides 17 Sustainable Development Goals which are an urgent call for action by all countries, including Ireland, in a global partnership.

It is the aim of UCC to support these goals with Universities educating a creative and highly skilled workforce, and partnering with city leaders to use data and technology to improve the urban environment.

Sustainability

Given its pivotal role in academic, social and economic matters at local level and at national level, UCC supports an ongoing and indeed increasing commitment to a sustainable approach in the development and operation of the campus, building on strategies outlined in the previous masterplans and in the current Strategic Plan for the University.

The UCC Sustainability Strategy speaks directly to the United Nations Sustainable Development Goals and much work is ongoing across the university to assess how the goals are implemented across the campus.

Energy

The University is committed to responsible energy management as part of our overall environmental strategy and has a long track record in energy management, assisted with grant and technical support from the Sustainable Energy Authority of Ireland (SEAI) to support energy saving initiatives. UCC is the first third level institution worldwide and also the first public sector body in Ireland to be certified to ISO 50001. In the period 2019/20 overall electricity consumption reduced by 3% and gas by 7%. UCC reached an energy efficiency target of a 40% reduction in 2020. UCC is committed to further reductions in the coming period.

The UCC Sustainability Mission

- To facilitate the development and empowerment of future leaders in sustainability through our research, teaching and learning activities
- To engage our student body, staff and wider community in becoming active citizens for sustainability
- To minimize the local, regional and global environmental impacts of our educational, research, and ancillary operations, and infrastructural development
- To enhance the health and well-being of the University and wider community through the facilitation and promotion of healthy eating and living as an integral part of sustainable living
- To be an overall positive force in the journey towards creating a sustainable world for all

Green Campus Programme

The commitment of the university to sustainability was underlined by the accreditation of UCC with the prestigious international 'Green Flag' award, thus becoming the first 3rd level educational institution in the world to receive this award.

The Green Campus Programme identifies the campus as a community and it places significant importance on the inclusion of all sectors of the campus community in its environmental management and enhancement. The Green Campus Programme rewards long term commitment to continuous improvement by the campus community in question. This programme, sponsored internationally by the Foundation for Environmental Education and operated in Ireland by An Taisce, has seen the University save €300,000 in waste management

costs, reduce waste to landfill by nearly 400 tonnes and improve recycling from 21% to 60%.

Other measures which resulted in the Green Flag Award focused on savings in energy and water usage, and on sustainable commuting initiatives.

Following on from the publication of the university's Sustainability Strategy in 2016, the sustainability agenda is becoming fully embedded in UCC, with Green Campus and sustainability highlighted in the following university plans and policies:

- University Strategic Plan 2017 -2022
- Community Engagement Plan "UCC Together With and For the Community" 2017 -2022
- ERI Strategic Plan 2018 -2022
- Glucksman Gallery Strategic Plan 2018 -2022
- UCC Procurement Strategy 2017 -2022
- UCC Academic Strategy 2018 -2022
- Buildings and Estates Strategic Plan 2017 - 2022

UCC's Sustainability Strategy set out the goals and ambitions in incorporating sustainability into all aspects of university life. The Strategy focused on nine key areas:

- Sustainability Citizenship
- Teaching and Learning
- Research Food, Health and Wellbeing
- Landscape, Heritage and Natural Resources
- Recycling and Waste Management
- Energy, Water and Climate Change
- Procurement and Contracts
- Commuting and Business Travel

The Strategy also specifically calls for the use of the University's infrastructure for research and learning in relation to sustainability. Strong links are being built between the operational staff and its researchers, formalized in the first UCC 'Living Laboratory Seed Fund' in 2019.

Waste Management and Recycling

The University is committed to reducing the volume of waste generated and to increasing the proportion of that waste which is recycled. It endeavours to implement sustainable resource management practices based on reduce, reuse and recycle principles.

The University is striving to reduce the acquisition of new materials, re-using existing materials and to increase recycling to the best possible standards. All waste is being disposed of in a manner consistent with statutory requirements and a documenting procedure is being implemented. The University has a policy of dissemination of information on waste management to enable staff and students to stay continually informed on the University's waste policies and procedures.

Proactive measures have also been introduced in the area of recycling, including improved collection and management of waste (including on-site segregation of waste in Dry Mixed Recyclable and General Waste) with a consequential reduction in waste going to landfill.

Construction Process

In the procurement of buildings and related developments on UCC Lands, the University is extremely conscious of the need to ensure best practice in the area of sustainable design of the built environment.

To this end, briefs for new building and development reflect requirements for energy efficient buildings, incorporating both passive and active conservation measures. Design Teams adhere to the use of best practice standards such as BREEAM in order to measure the "green" performance of buildings during both construction and operational phases. The achievement of performance standards in excess of those reflected in national legislation and standards is required.

7. Climate Change



Energy conservation and other green measures are also being implemented in the ongoing programme for upgrading of the existing University building stock.

Carbon Footprint Report

A carbon footprint is a measure of the potential climate impact of the greenhouse gases (GHG) that are emitted directly or indirectly by an organisation's activities. The estimate, expressed in the equivalent of tonnes of carbon dioxide, is calculated using the internationally recognised Greenhouse Gas Protocol Corporate Standard.

Comparing the report with results from other universities suggests that UCC is performing well. However, the real value of this report is that it can facilitate the tracking of UCC's reductions in GHG emissions on a year by year basis. It can also facilitate comparisons between different buildings or complexes on campus.

A proposal for the establishment of an integrated Carbon Management programme for UCC, which would capitalise on the Carbon Footprint report, is currently under way, it sets out UCC's approach to reducing the Carbon impact and exceeding public sector objectives for 2030 and beyond.

Environmental Research Institute

Since 2000, UCC is also home to the Environmental Research Institute which has been assessed as being a Level 5 or "World Leading Standard" as part of an independent quality review of research at UCC.

Climate Adaptation Planning

UCC's climate action plan is currently underway taking into consideration potential impacts of future climate scenarios throughout all aspects of the campus. The plan sets out specific guidelines for making the campus climate resilient.



The United Nations 17 Sustainable Development Goals

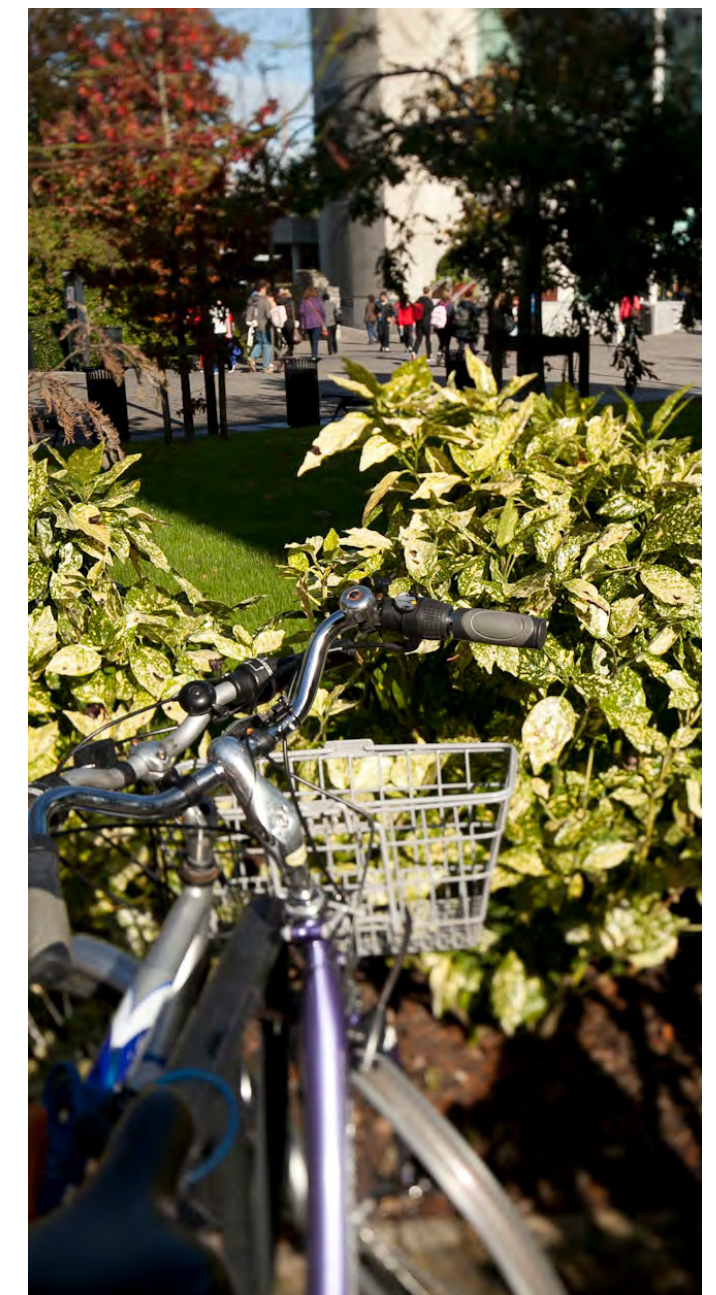
UCC continues to make great strides in reducing energy use. UCC exceeded the national targets with a reduction in energy intensity (per m²) of 57% over the period 2006-2018.

"Sustainability is part of how we do business now in UCC, for example our new Student Hub building, which sees a reimagining of the old Windle Building, is built to BREEAM Excellent Standard and will be the first building in UCC to implement the new Sustainable Print Management Policy"

John O'Halloran & Mark Poland
Green Forum co-chairs



Groups within UCC with responsibility for sustainability and green activities



Bicycle parking in the Historic Core

8. DIVERSITY AND INCLUSION

Diversity and Inclusion

Diversity and Inclusion have been a core focus of teaching, research and policy activity for a wide range of UCC staff and students for decades. At University level, the UCC Equality Committee has existed for many years and has advised the University on equality initiatives and produced equality strategies and annual reports.

- UCC believes that a diverse community is among a university's greatest strengths, and that an inclusive campus enhances the living, learning, and working environment for all.
- Diverse groups are better able to adapt to new technologies and ideas and to encourage the search for novel information and perspectives, thus leading to better decision making and problem solving.
- Diverse groups are more innovative, creative and adaptable than homogenous groups and can bring true vibrancy to communities.

UCC is committed to support and ensure inclusion for both students and staff and to not discriminate on grounds of gender, marital status, family status, sexual orientation, religion, age, disability or race. This also includes supporting components which ensure that people of all economic backgrounds are able to access the campus through sustainable transport and can find suitable housing and high-quality childcare. It makes sense to create a broad and diverse UCC Community and subsequently, creative and inclusive highly skilled workforce.

Universal Design

The physical environment of UCC continues to be designed to meet the needs of all people who wish to use it. This is not a special requirement, for the benefit of only a minority of the population, it is a fundamental

condition of good design in all areas in UCC's ownership. By considering the diverse needs and abilities of all throughout the design process, Universal Design creates UCC environments that meet people's needs.

People with Disabilities

UCC wishes to derive maximum benefit from the contribution of students and staff by ensuring that the abilities of students and staff with disabilities are never overlooked. UCC acknowledges the equal rights of people with hidden disabilities, and also that the same disability can vary in its impact and affect people differently.

UCC recognises that some people with disabilities may encounter greater difficulties than others in adjusting to life on the campus. Particular attention will be given to people with disabilities and assisting their performance in the initial stages on the campus. This includes creating a campus that goes beyond compliancy under Part M of the Building Regulations, as well as ensuring that all design work is undertaken considering the experience that people with certain sensitivities will have within a campus full of sounds, smells, obstacles and movement. UCC has recently created 'calm zones' on the campus for people with sensitive needs and installed a charging plug facility in the Hub.



The Peer Support Programme helps new students settle in

Universal Design Objectives:

- The UCC physical environment has regard to the ethos of Universal Design ensuring that the environment is equally accessible to all.

People with Disabilities Objectives:

- It is the aim to ensure that the abilities of all students and staff are never overlooked.
- UCC acknowledge and supports the equal rights and needs of people with hidden disabilities.

Diversity and Inclusion Objectives:

- UCC believes that a diverse community is among a University's greatest strengths and that an inclusive campus enhances the living, learning and working environment for all.
- UCC want to ensure that diversity and inclusion are a core focus.
- Diversity in UCC intensifies self-awareness, contributes to expanding the knowledge base and promotes creative thinking. A world class physical environment showcases people with diverse opinions, political views, and academic passions who can all learn from each other.







9. UCC MASTERPLAN CONSIDERATIONS

UCC Lands in Context - Topography

This chapter identifies significant contextual elements of the UCC Lands and their relationship with the city. For many, the main campus setting exudes the qualities that make the UCC experience special and embodies strong placemaking characteristics. It is considered that whilst UCC locations outside of the main campus are naturally at various stages of development, a primary consideration in the expansion of facilities will be to foster a UCC identity that embodies the principles of placemaking.

Factors such as orientation, location, density, topography, history, uses, vibrancy, politics and economics all interact to inform development patterns of the main campus and other UCC landbanks.

The Main Physical Elements of the UCC Lands are:

- Landscape
- Building Stock
- Views and Corridors
- Pathways and Connections
- Roads and Traffic
- Pedestrian Access
- Flood Plains
- Public Realm

River Lee

The Main UCC Campus is situated in the Lee Valley adjacent Cork City in an area of strong visual character. The Lee Valley is formed by the River Lee which has its source in the Shehy Mountains on the Cork-Kerry border. It flows eastwards towards Cork City and enters the sea at Cork Harbour.

The River Lee splits into two channels, forming Great Island on which Cork City has developed, and reaches the open sea between Whitegate and Crosshaven.

The choice of riverside locations is a feature of settlement

since earliest times – rivers provided both sources of food and routes for travel and exploration. This dependency may have been diluted by the passage of time, but it nevertheless remains a strong subliminal factor in the choice of locations for human settlement. It is therefore essential that the future development of the main UCC campus enhances and strengthens this relationship.

Development on an east-west axis as a key strategic driver in the expansion of the campus has been identified in previous masterplans (2004). This strategy responded not only to the subliminal impact of the waterway, but also recognised the positive impact of the existing topography on the character of the University, in addition to responding to practical issues such as proximity and ease of circulation from one part of campus to another.

The main UCC Campus continues to benefit from the combination of topography and water which makes it visually attractive and ecologically diverse as the river and riverside planting forms a significant part of the spatial ordering within the landscape hierarchy of the campus.

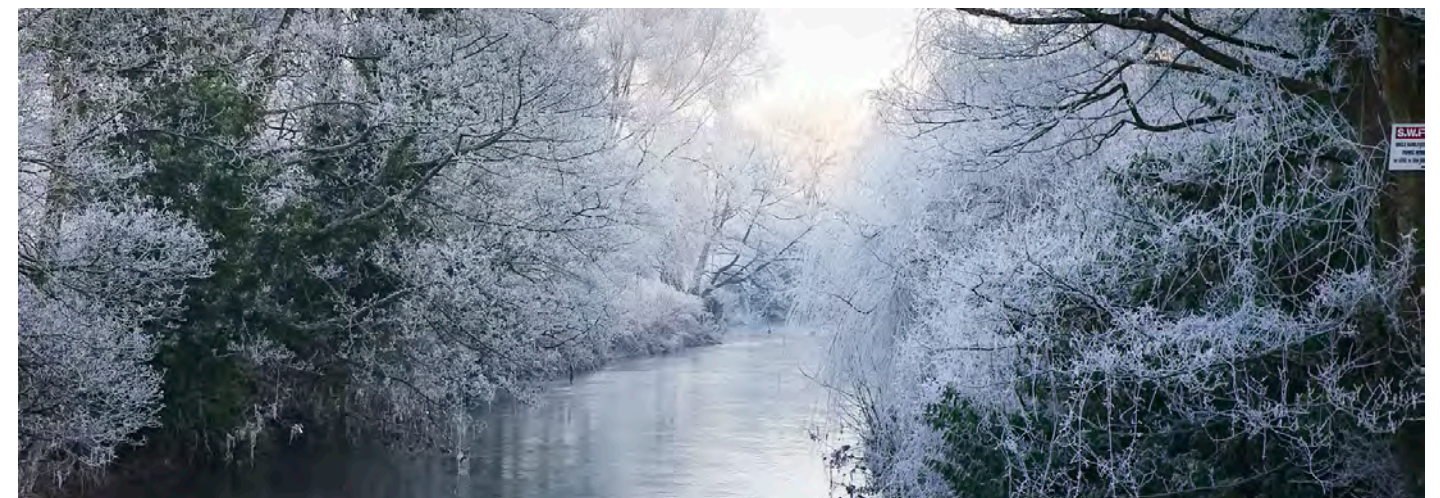
The existing riverside walks greatly aid the permeability of the campus in addition to enhancing links between the campus and neighbouring areas.

Away from the river, the landscape on the campus – both hard and soft - has been particularly important in defining spaces and circulation routes. Landscaping is a binding element, particularly where the building stock is visually diverse. It is resilient and self-sustaining, and in the context of UCC, it is of major importance in the definition of the character of the main campus.

Though an important linking device, it should also be recognised that the character of the river varies between the two principal channels. This variation is seen principally in the wider North Channel offering longitudinal and cross vistas in contrast with the more enclosed South Channel.



The UCC Central Campus is nestled in between the hills to the north and south within the Lee Valley



River Lee on the UCC Central Campus



The County Cork Coastline and UCC locations

UCC Lands in Context - Diverse Locations

UCC’s landholdings are located throughout Cork City and the surrounding area and are comprised of:

The Main UCC Campus:

- Historic Core
- Brookfield and Western Gateway
- North Mall Campus
- Connolly Buildings
- Lee Maltings Complex (Tyndall National Institute)
- Mardyke Sports Complex
- Environmental Research Institute

UCC City Centre Campus:

- UCC Centre for Executive Education, Lapps Quay
- Cork Centre for Architectural Education, Nano Nagle Place
- Site for Cork University Business School, Union Quay

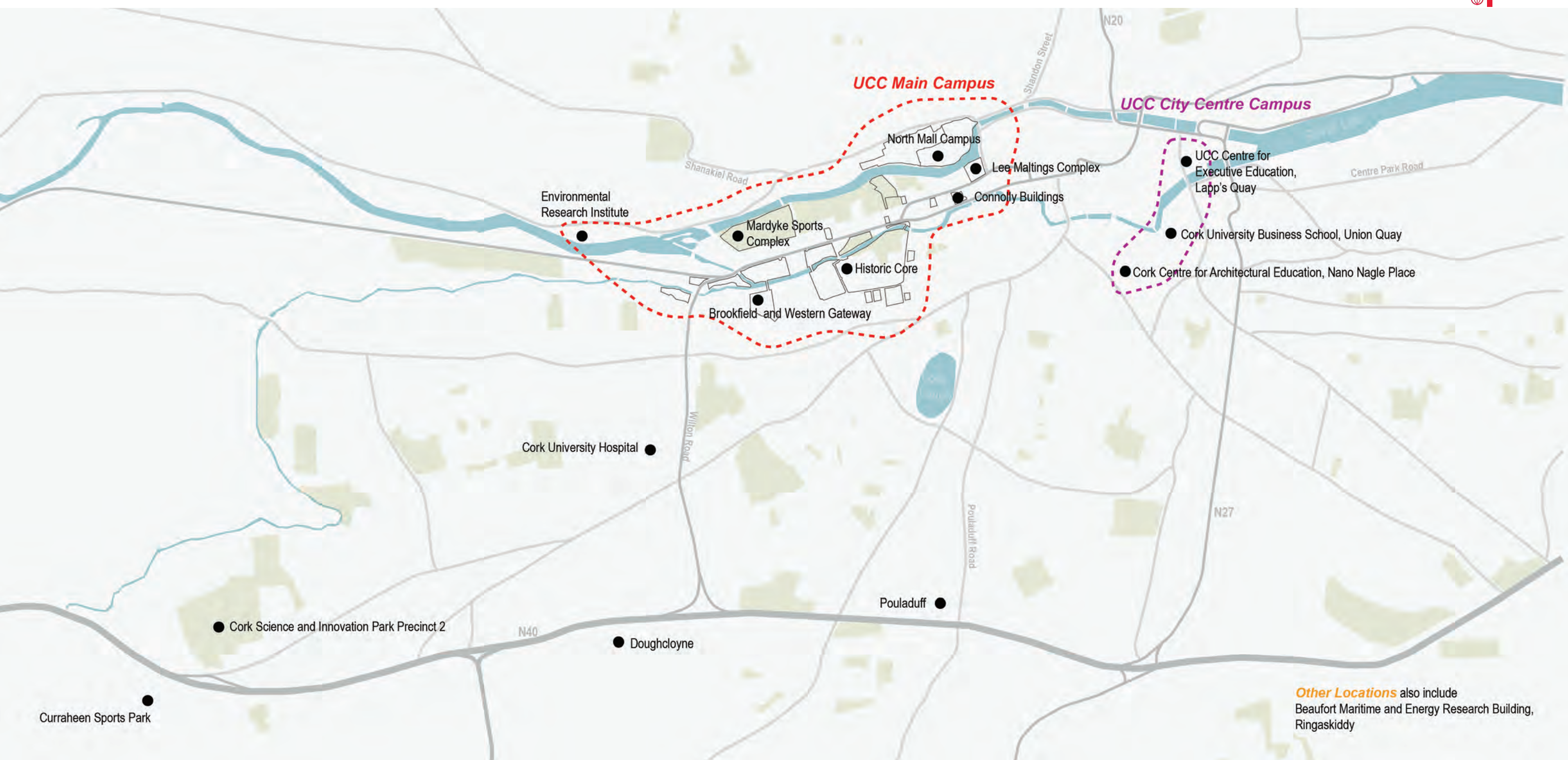
Other UCC locations Include:

- Cork Science and Innovation Park Precinct 2
- Cork University Hospital
- Beaufort Maritime and Energy Research Building, Ringaskiddy.
- Doughcloyne
- Pouladuff

There is a real diversity across the nature of the UCC locations which provides real opportunity in the creation of UCC identity in the off-campus locations.

Campus Areas

Campus	Area	Character
UCC Main Campus	Historic Core	Considered to be the central UCC campus and historic centre of University College Cork. The Historic Core is full of historic character and award winning contemporary architecture. It has a high quality public realm along the wooded riverside within walking distance of the city centre.
	Brookfield and Western Gateway	The Brookfield Health Science Complex is a contemporary group of buildings built around the historical Brookfield House. The Western Gateway Building is located on Western Road and opened in 2009, provides lecture theatres, undergraduate teaching laboratories, research laboratories and a riverside cafe.
	North Mall Campus	The former Irish Distillers site is partially in joint ownership between UCC and Mercy University Hospital. The site is large and flat, on a bend in the river with mature trees, defunct industrial buildings and is on the western edge of the city centre .There are a number of UCC faculties on the North Mall Campus, however the majority of the site is underdeveloped and there is opportunity for UCC expansion in this area.
	Connolly Buildings	The Connolly Buildings located in the former Presentation Brothers School on Western Road, a 3 min. walk from the main gate of UCC.
	Lee Maltings Complex (Tyndall National Institute)	The Lee Maltings Complex on Dyke Parade houses the Tyndall National Institute in a complex of contemporary and 18th century industrial buildings on the opposite bank of the River Lee to the North Mall Campus.
	Mardyke Sports Complex	The home of UCC Sport and Club Activities, a modern sports complex.
	Environmental Research Institute	The ERI is a stand alone research building located on the bank of the River Lee on the northern and western approaches to Sunday's Well and the city.
UCC City Centre Campus	UCC Centre for Executive Education, Lapps Quay	Lapps Quay in Cork city centre is the location for the Centre for Executive Education in the former Cork Savings Bank, an 18th century building and protected structure.
	Cork Centre for Architectural Education, Nano Nagle Place	Nano Nagle Place is a new visitor centre in the former Presentation Sisters convent in Douglas Street. It is a heritage and education centre that also accommodates the Cork Centre for Architectural Education (CCAEE) for UCC and CIT.
	Cork University Business School, Union Quay	The former Brooks Houghton warehouse on Copley Street and Union Quay in Cork City is the proposed location for the development of the new Cork University Business School (CUBS).
Other Locations	Cork Science and Innovation Park Precinct 2	UCC CSAIP Precinct 2 is an 18.3 hectares Masterplan Framework within the context of the Cork Science and Innovation Park in the western suburbs of Cork City at Curraheen. This is the proposed location for the Cork University Dental School and Hospital, Health Innovation Hub Ireland Building
	Cork University Hospital	This is the current location of Cork Maternity Hospital, UCC Academic Departments and Clinical Sciences and the proposed CUCMS.
	Beaufort Maritime and Energy Research Building, Ringaskiddy	Ringaskiddy is the location of the UCC Beaufort Maritime and Energy Research building in Cork Harbour opposite the Haulbowline Navy Headquarters. The Beaufort Building is adjacent to the CIT Maritime College. Further research/innovation related facilities are planned on the adjacent lands.
	Doughcloyne	Whilst the lands currently are industrial in nature, UCC will consider future development in accordance with the Cork City Development plan.
	Pouladuff	Whilst the lands currently are industrial in nature, UCC will consider future development in accordance with the Cork City Development plan.
	Curraheen Sports Park	Proposed sports facility, currently used for playing pitches, a pavillion and ancillary structures for equipment and maintenance storage.



Other Locations also include
Beaufort Maritime and Energy Research Building,
Ringaskiddy

Campus locations



UCC Lands in Context- Cork Science & Innovation Park

The Cork Science and Innovation Park (CSAIP) at Curraheen is an ambitious long term development project with the potential to deliver significant job creation and economic output for the region. The park provides an opportunity to bring together researchers, entrepreneurs, academics and technology intensive enterprises and drive the innovation agenda regionally and nationally.

Cork County Council developed its Framework Masterplan for the CSAIP in 2011. This document sets out the quantitative and qualitative criteria for the development of the Science and Innovation Park in Curraheen.

The park is made up of six different development precincts, totalling approximately 70ha. The total quantitative allocation of development (as per the Cork County Council Framework Masterplan) is 363,320m².

The University lands (Precinct 2) are located at the south east of the park. The overall area of UCC lands is 18.3 hectares and the quantitative allocation of development is 107,350m².

UCC propose to develop the Precinct 2 lands on a phased basis using best international practise for the development of science and innovation parks.

It is anticipated that the design and development of Precinct 2 will ensure that CSAIP will become a strategic employment location, an educational and research campus environment, a place of business, a public transportation node and an amenity area.

UCC developed its Precinct 2 specific Masterplan in 2015, which supports the concepts and objectives detailed in the Cork County Council Framework Masterplan.

The development of UCC's lands at Corks Science and Innovation Park has great potential to act as a beacon of progressive and sustainable development.

The UCC precinct can be much more than an extension of the University's research activities, it will be the bridge linking the research activities of the University to the employment, technology and wealth creating enterprises and organisations who will work with the University to the mutual benefit of both groups to develop a talent-pool and expand the research, development and innovation horizons.

The benefits of mixing research activities and teaching is a proven manner of stimulating collaboration.

It is a general objective of UCC to continue to develop the lands with the full teaching and learning experience of the student combined with the research and innovation opportunities.

Connectivity to the city and to the main campus will be facilitated and improved as public transport expands and develops. This is intrinsically linked to the success of the UCC lands at CSAIP.

Currently the Health Innovation Hub and Cork University Dental School and Hospital are being progressed in accordance with the Reddy A+U Masterplan completed in 2015 which demonstrates that the site has the capacity to deliver over 100,000 sqm of health, research, education and innovation accommodation.



UCC Cork Science and Innovation Park



Cork Science and Innovation Park Precinct 2 Masterplan



UCC Lands in Context- UCC Sports

UCC’s Sports Strategy identifies UCC as “a connected university, and sport plays an important role in connecting student and alumni communities, and engaging with the wider community”.UCC’s Sport Strategy supports the development of graduate attributes beyond the classroom for all students at UCC.

It seeks to “enhance the student experience while contributing to students’ health and wellbeing, building life-wide skills and lifelong friendships”.

Sport and physical activity underpins UCC’s Strategic Plan (2017–2022) to build and develop world-class sports facilities to attract and inspire high-performance athletes and to support all students in physical recreation.

In terms of existing sports facilities, the Mardyke is home to UCC’s major indoor sports centre (the Mardyke Arena), an outdoor running track and an all-weather pitch with facilities for rugby, soccer, hockey and GAA. Enhancement of the changing facilities and improved gym and spectator facilities are envisaged in this location.

The development of the proposed Cork Science and Innovation Park (CSAIP) at Curraheen will require the relocation of the existing sports facilities and construction of new facilities in a nearby location.

It is proposed to establish a major regional Centre of Excellence for Sport as part of the new development, with new indoor and outdoor facilities including grass and all-weather playing surfaces, stand and changing facilities.

Given the growth of student numbers and the consequential increase in demand for and usage of sports facilities, it is clear that enhanced sports facilities are required. Consideration will be given to the provision of gym facilities as part of the North Mall development, as a satellite operation of the main facility at the Mardyke Arena.

Through building and developing world-class outdoor sports facilities which supplement the Mardyke Arena’s indoor offerings, UCC can attract and inspire high-performance athletes as well as supporting students at all levels in physical recreation.

UCC will develop an inspiring destination for outdoor teams at a new UCC Sports Park in Curraheen to replace the present facilities at the Farm.

UCC will also work with key stakeholders, sporting organisations in the region and the agencies in Cork to support the provision and access to a quality network of community, sporting recreational and performance facilities.



UCC Sports at Mardyke



Draft UCC Sports Park



UCC Lands in context - A City Centre Campus

The UCC City Centre Campus includes the Centre for Executive Education at Lapps Quay, Cork Centre for Architectural Education, at Nano Nagle Place and potentially the location for the Cork University Business School at Union Quay. The successful growth of the university requires expansion beyond the Main Campus Historic Core into the city centre enhancing the social and economic fabric and revitalising the city and region. The recent opening of the Centre for Architectural Education and the Centre for Executive Education manifests UCC's presence in the city.

Cork Centre for Architectural Education

Located at Nano Nagle Place, CCAE is a joint venture between CIT and UCC to create a hub of architectural education in Cork. It offers better integration between all activities in the building, ensuring that students can get an even better learning experience allowing light and impressive views over the city.

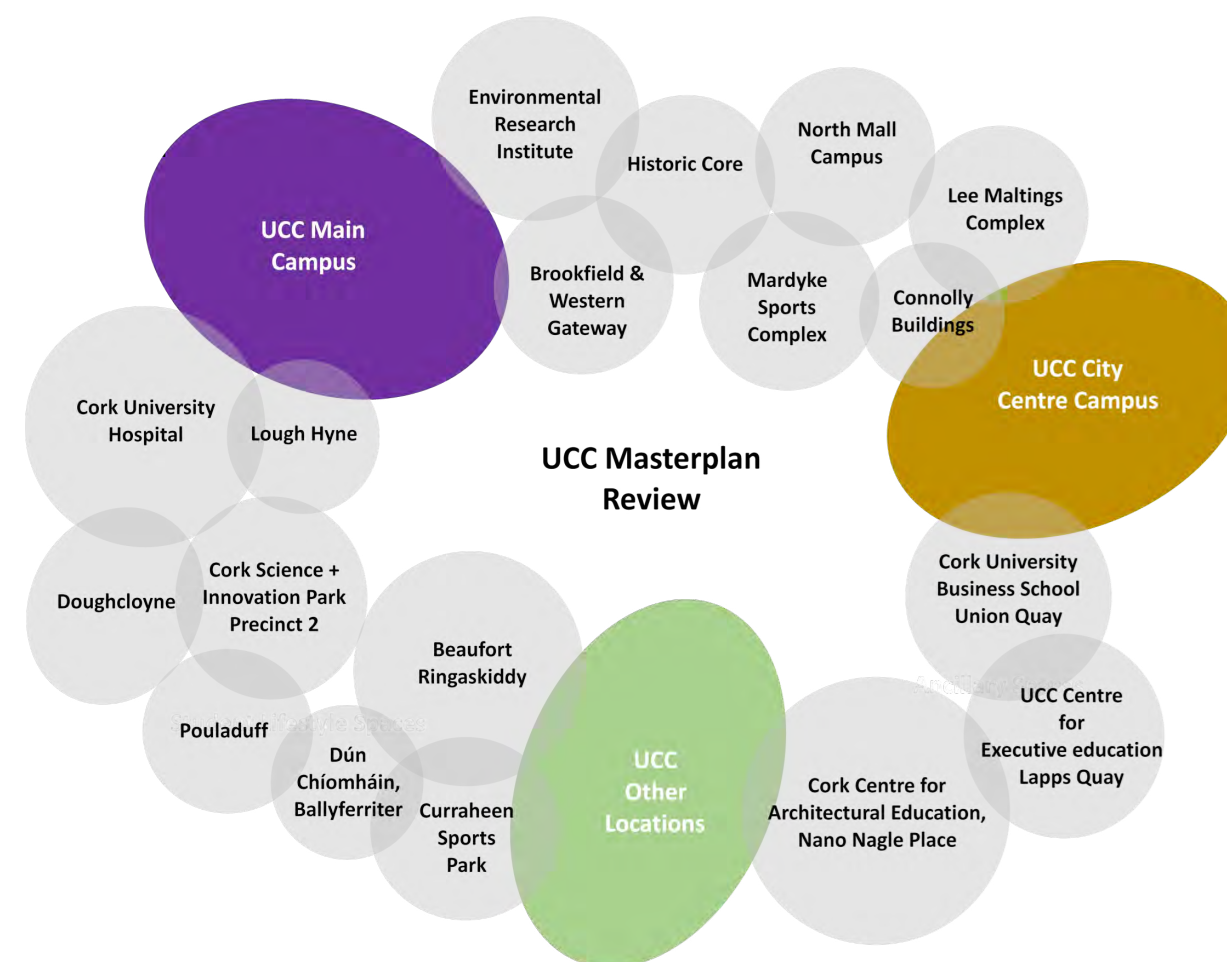
Lapps Quay

The refurbishment of the old Cork Savings Bank at No. 1 Lapps Quay and 16 Parnell Place houses the Centre for Executive Education.

UCC is committed to using this as a world-class executive education centre that will benefit existing regional and multinational business and serve as a hub for future inward investment to the city and broader region.

Union Quay

UCC has identified the lands at Union Quay as a potential future location of the Cork University Business School, subject to a masterplan layout. The lands could accommodate 4500 students and over 225 staff to become the heart of the Cork city business district. The site may also accommodate complementary university activities as part of the overall development of the site.



Centre for Executive Education, Lapps Quay



Cork Centre for Architectural Education, Nano Nagle Place

9. UCC Masterplan Considerations

UCC Lands in context - Main Campus Overview

City Centre and Cork Docklands to the East there is the potential to emulate the Main Campus with appropriate place making and character creation.

UCC's ability to bring people, students/researchers, staff and academics from different backgrounds should not be underestimated. UCC is a unique anchor to these locations attracting people from different backgrounds intermingling in an off-campus location will create "cultural swirl". This is further facilitated by permeable spatial and social boundaries, allowing practices, knowledge, and ideas to pass from one person to another.

The main UCC Campus offers world-class educational facilities provided in quaint, picturesque and charming settings on a campus which has close ties to Cork City, allowing for city centre commutes in only a few minutes. The surrounding residential areas, sports arena and North Mall lands create a true city centre campus.

UCC has significant presence in Cork City Centre with the development of the Centre for Executive Education at Lapps Quay Centre, the Cork Centre for Architectural Education at the Nano Nagle Place and the North Mall Campus all only a walk and cycle away. Continued connectivity to all these campuses is an important objective of this Masterplan.

Cork is a city with great opportunities for walking, everything feels a short walk away and this also manifests within the UCC Campus.

The close proximity to the city centre and the scale of UCC, in particular the Historic Core, is a significant factor in the allure of the spatial qualities of the spaces. UCC enjoys an established physical context of very high quality which includes both its connection to the surrounding landscape and indeed to Cork City Centre. This high quality reflects the benefits of the location of the main campus in the Lee Valley, in an area of strong visual character.

The UCC lands at Curraheen present connectivity challenges due to its location. However, it is noted that this will alter significantly over time, particularly with the development of the Dental School and Hospital and increased connection to the city through infrastructural development identified in CMATS.

UCC Identity

As UCC continues to expand in the city as well as on the satellite landbanks it is essential that there is still a sense of a united UCC identity. This unity can be supported through a number of interventions:

Infrastructure:

- Support of sustainable transport: bicycle scheme, public bus, shuttle bus, BRI, Light Rail
- Technological connectivity – the virtual campus experience

Spatial:

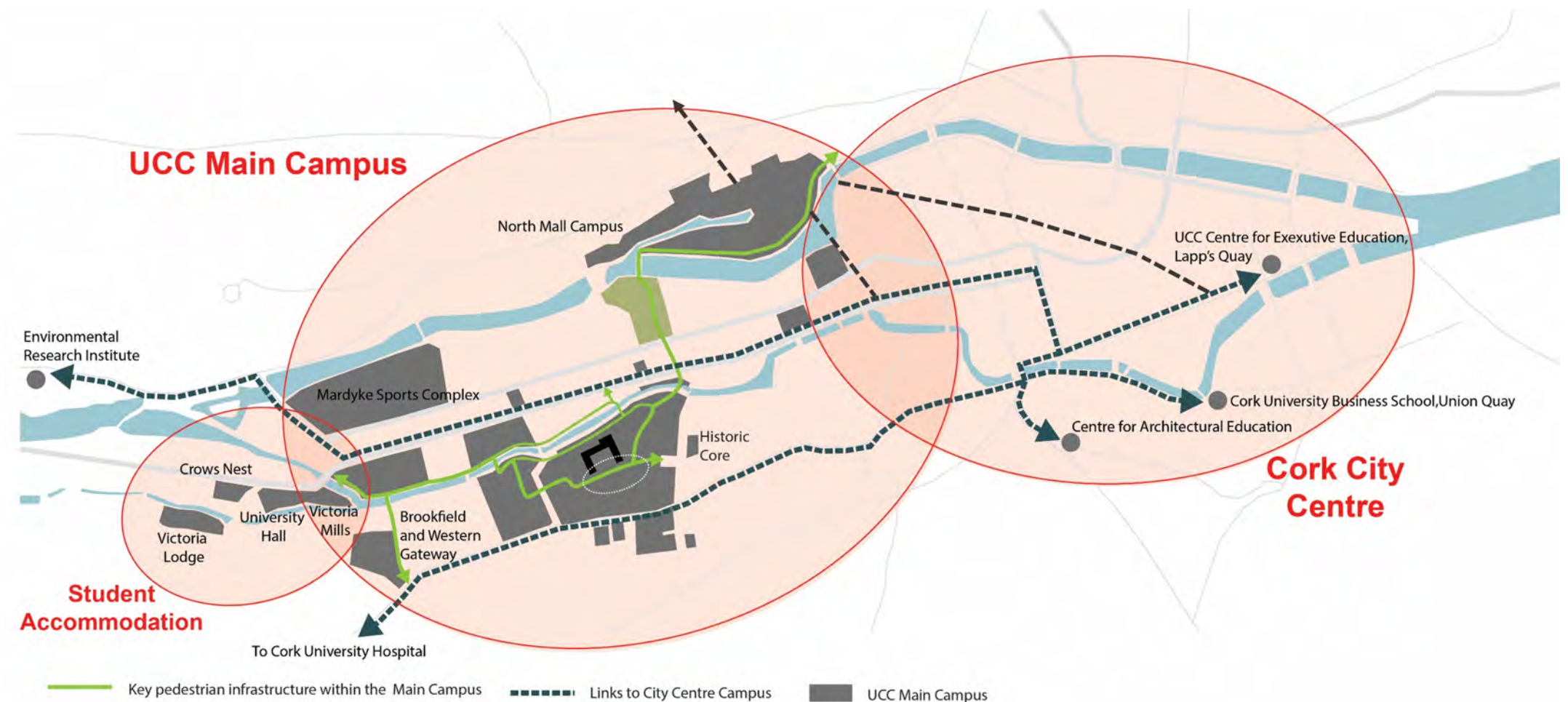
- Place making and public realm: An integrated design implemented throughout the UCC lands – spatial and visual connectivity
- Street Furniture such as benches, bins and lighting implemented throughout to create a visual design connectivity

Branding:

- Graphic Branding: similar signage and branding throughout UCC locations

Linking to City Centre and UCC Campuses

As the Main Campus continues to expand into the wider Cork City Centre and other locations it is important to try and enhance the unity throughout. This can be done by creating good connectivity, including creation of a design palette for materials and street furniture. For the locations that are not a part of the Main Campus, physically connected high-quality pedestrian and cycle infrastructure through the city is imperative.





UCC Lands in context - Main Campus Landscape

The Main Campus has a very varied landscape. The large cedars in front of the Main Quadrangle are a central landscape feature. The Honan Plaza is bordered by The President's Garden and the mixed fir planting in front of the O'Rahilly building, creating a green enclosure for the space. The President's Garden links the Honan Plaza to the river and the Glucksman Gallery. This area is the largest green open space on the campus and provides the pedestrian connection from the main entrance gate and the path along the river.

The other central landscape feature is the river edge. With green and lush banks offering a valuable biodiversity advantage, with great potential to become both a spectacular landscape corridor and a significant part of the infrastructure of the campus. The river landscape is easily accessible in the Glucksman Gallery Area and at the Western Gateway building and has potential to become a strong corridor on both sides of the river over its entire length. The landscape on the North Mall Campus is mostly wild with woodland planting, dry meadows and grassy edges.

Campus Trees

The iconic tree lined campus at University College Cork (UCC) has joined some of the leading arboreta in the world after being accredited by a prestigious global accrediting programme. To foster best practice the ArbNet Arboretum Accreditation Programme examines the conservation, maintenance, educational outreach and scientific collaborations of arboreta across the world. The Royal Botanic Gardens in Sydney, the Oxford Botanic Garden at the University of Oxford and the Arboretum De Paris are among the arboreta accredited globally by ArbNet, now the 2,500 trees across 42 acres at UCC join this notable list. These exist as individual specimens and as riparian groups along both the northern and southern channels of the River Lee. The visual amenity provided by UCC's tree resource on all

approaches to the campus is of immense benefit to visitors, staff, students as well as Cork City's residents. The corridor of trees can be followed through parks and walkways travelling east from the campus to the city and docklands and travelling west along the Lee Valley. One of the most valued views is on approach to UCC along the Western Road through the main gates and following along towards Perrott's Inch where the magnificent Aula Maxima building is framed by large mature and veteran trees on either side.

UCC is host to two champion trees that are listed on the Champion Tree Register of Ireland (held by the Tree Council of Ireland). One is a Wing nut (*Pterocarya fraxinifolia*) located between the O'Rahilly building and the Boole Library. There are many other wonderful specimens under UCC's care, and their history is now available virtually on a Google earth tour of 'UCC's significant trees'. The tree stock is predominantly mature and in good condition. An analysis provided by the tree management database also shows the excellent age profile structure UCC currently has, where frequent planting over the years has ensured a continual tree cover.

Trees and buildings can exist and complement one another. This is evidenced by the construction of the award-winning Glucksman gallery (2004) in the lower grounds, amongst some of the largest trees on campus. The approach taken to this project should be adopted for all future projects, large and small, if in close proximity to significant mature trees.

Biodiversity

The positive impact of biodiversity on the natural landscape is a great benefit to UCC. In the urban environment of Cork City, green spaces, such as those in UCC, add greatly to the mental and physical health of students, staff and the general public who spend time within the UCC grounds.

Biodiversity and its important function is under threat globally and locally. Over 20% of species are threatened with extinction in Ireland. The most recent assessment of the status of EU protected habitats and species in Ireland showed that 91% of the 58 habitats assessed have unfavourable conservation status.

During recent UCC Habitat Surveys, 27 different habitats were recorded on UCC campuses.

The main habitats are:

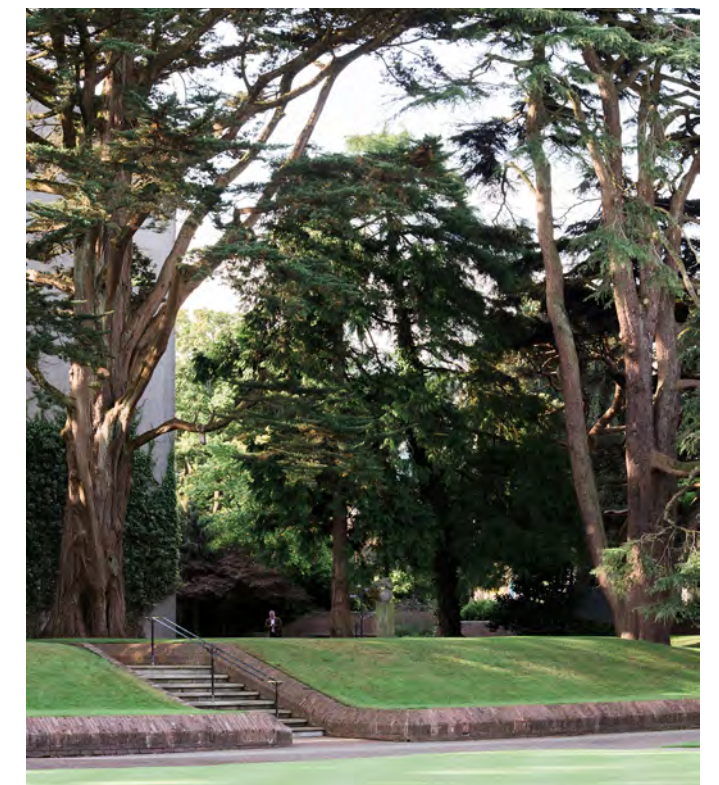
- Buildings and Artificial Surfaces
- Amenity Grassland
- Scattered trees and parkland
- Riparian Woodland
- Rivers: Eroding/upland rivers, depositing lowland rivers and tidal rivers
- Flowerbeds and borders
- Planted broadleaved woodland
- Treelines
- Hedgerows
- Stonewalls and other stonework

*UCC Biodiversity Action Plan 2018 – 2023

It is imperative that these habitats are protected and that anyone making changes to them understands the significant effects this can have for biodiversity on campus.

Good contouring in landscape works can help ensure that surface water from rainfall is directed where we want it to go to and also help avoid ingress into buildings, basements, and onto roads during flood events with overflowing rivers and lakes.

UCC recognises that biodiversity and natural landscapes are an important tool to negate the impact of climate change. It is important to identify and implement measures to enhance and protect biodiversity in UCC and ensure that biodiversity is integral to the planning and design process in all of UCC's future developments.



Cedar Trees in front of the Boole Library



Cavanagh Bridge



UCC Lands in Context - Main Campus Microclimate

Microclimates can be influenced by topography, landscape, vegetation and building structures. Given that landscape, vegetation and building stock continue to evolve on campus lands, it is clear that local microclimates will also continue to vary, possibly on a more accelerated basis than has been observed historically.

Proposals for the future development of the campus, whether new building, landscaping or even land acquisitions, must take full account of likely microclimates.

Climate Adaptation Plan

UCC is committed to leading the way and making the campus climate resilient pro-actively engaging with the experts on this matter. It is the aim to set up structures to develop, protect, enhance and evaluate proposals for the campus, including a holistic strategy for initiatives within the entire public realm.



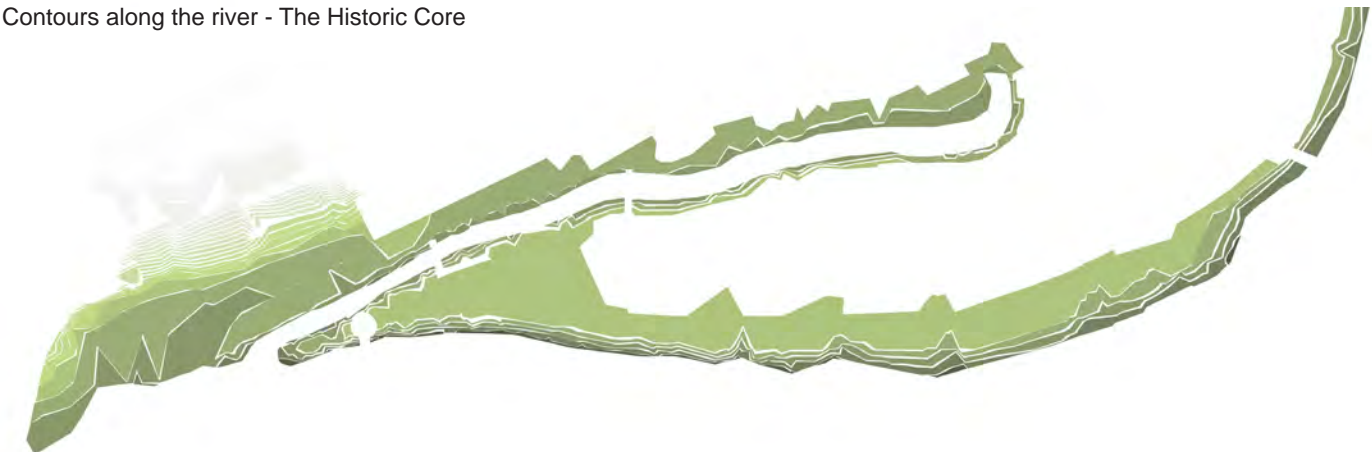
Contours along the river - The Historic Core



Contours along the river - Brookfield and Western Gateway



Climate Adaptation - water is captured in green spaces and absorbed or lead to water retention areas



Contours along the river on the North Mall Campus





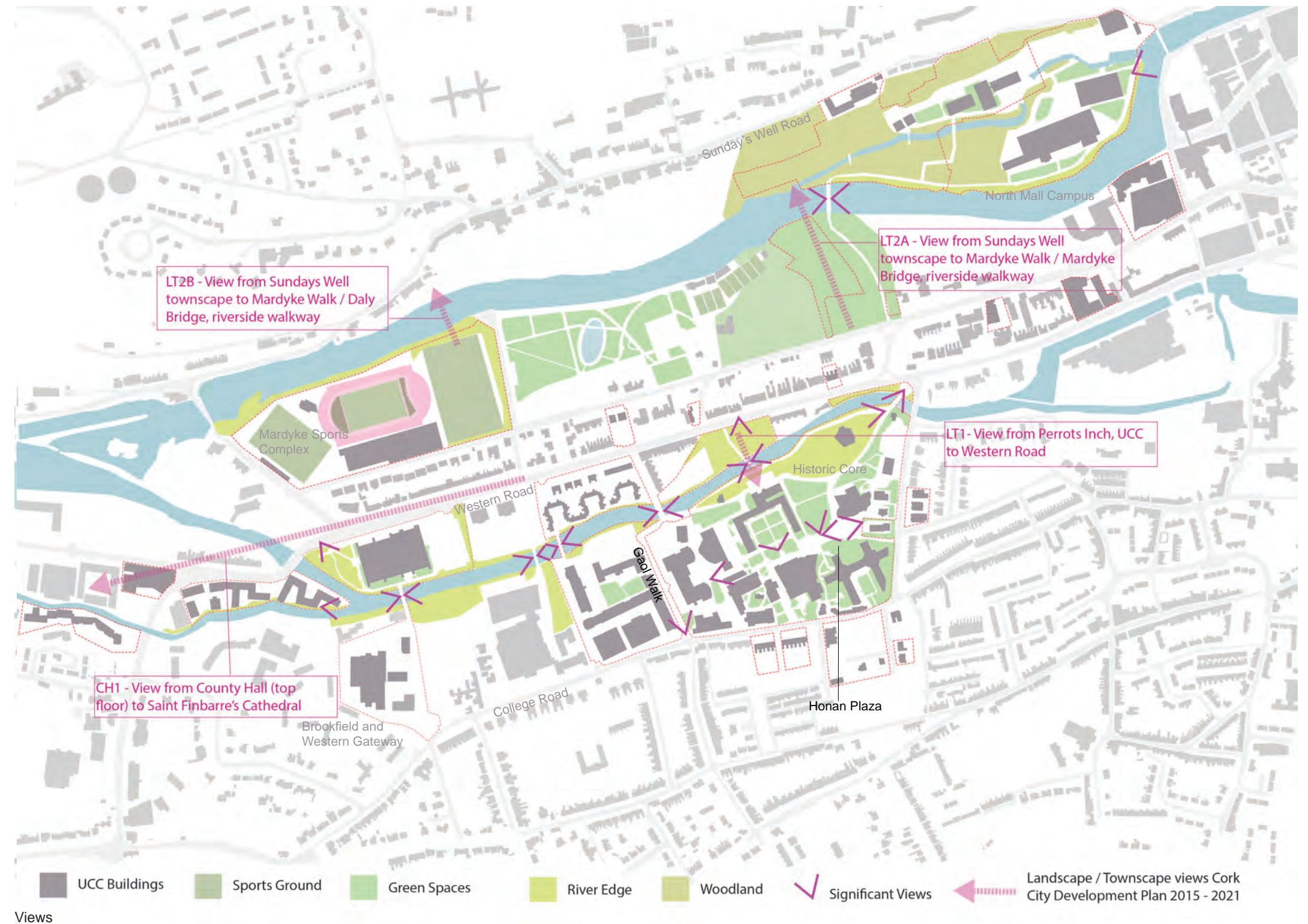
UCC Main Campus - Views

There are many picturesque views from the river-crossing bridges, in both east and west directions.

Within the main Campus there are framed views, East-West, between the Kane Building and the Honan Chapel, as well as along the Gaol Walk to the north.

From the North Mall Campus, the views are along the river towards the city centre.

Cork City Development Plan has also set out a series of protected landscape / townscape views from the main campus.





UCC Main Campus Entrances / Connections

The entrances to the main campus are located on College Road, Donovan Road and Western Road, with the North Mall campus connecting to the city centre.

Central Entrance Areas:

- Main entrance Gate - Western Road
- O’Rahilly Building entrance – College Road
- Boole Library entrance – College Road
- North Mall Entrance – North Mall

The main entrances are all framed suitably and gated. Many of the secondary entrances facilitate a sense of easy access to the adjacent residential areas and to the wider city.

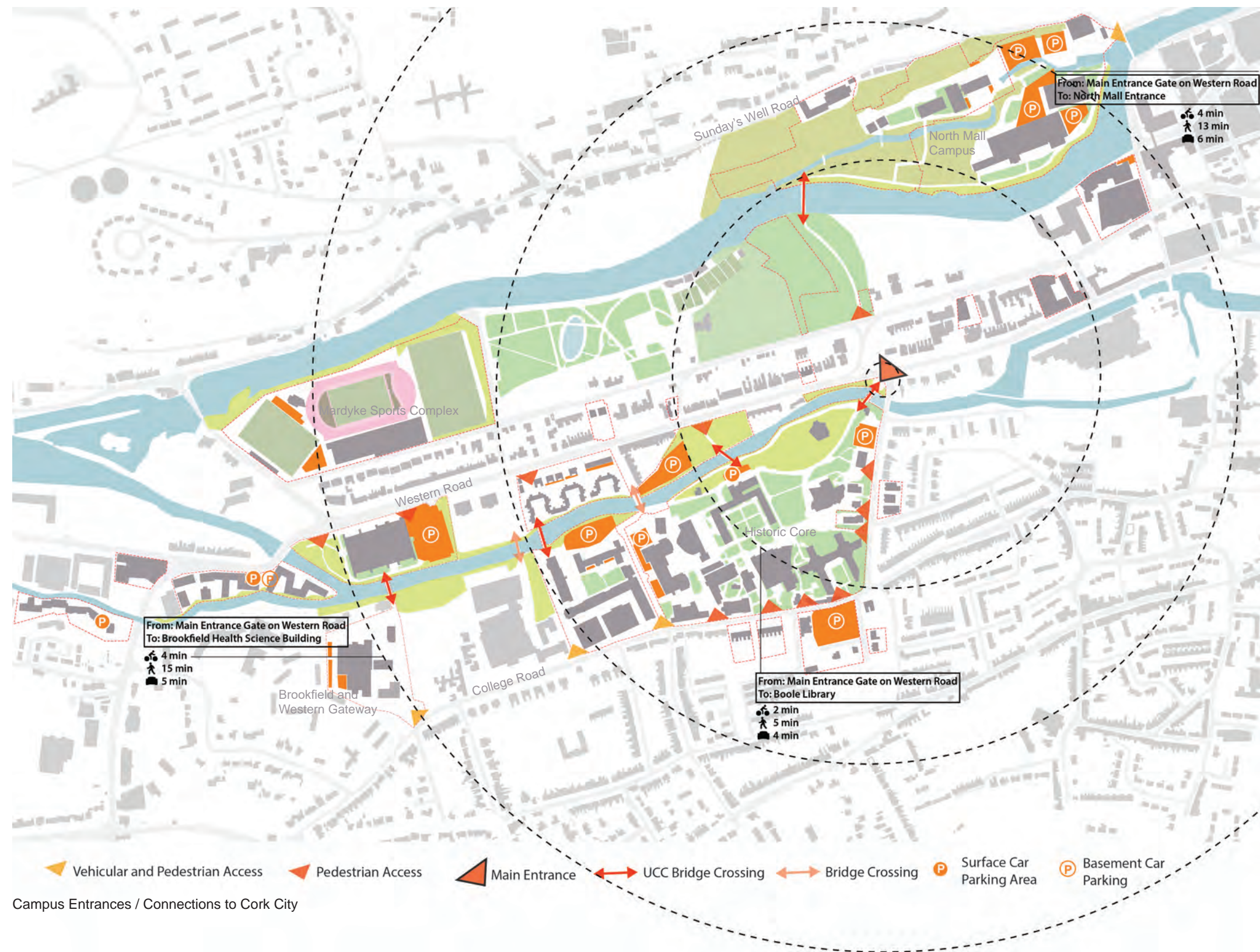
To increase awareness of the North Mall Campus and improve its connectivity to the south of the campus it is an objective to enhance the pedestrian link between the main entrance gate on Western Road and the entrance to the North Mall Campus from the Mardyke Bridge.

Walking Times

The campus is entirely walkable and journeys within the dotted radii are no longer than 15 minutes.

Parking Areas

There are currently a limited number of car parking zones on the main campus. The larger car parks are adjacent to the Western Gateway Building, in front of the Áras Na Laoi, on College Road and on the North Mall Campus.



Campus Entrances / Connections to Cork City

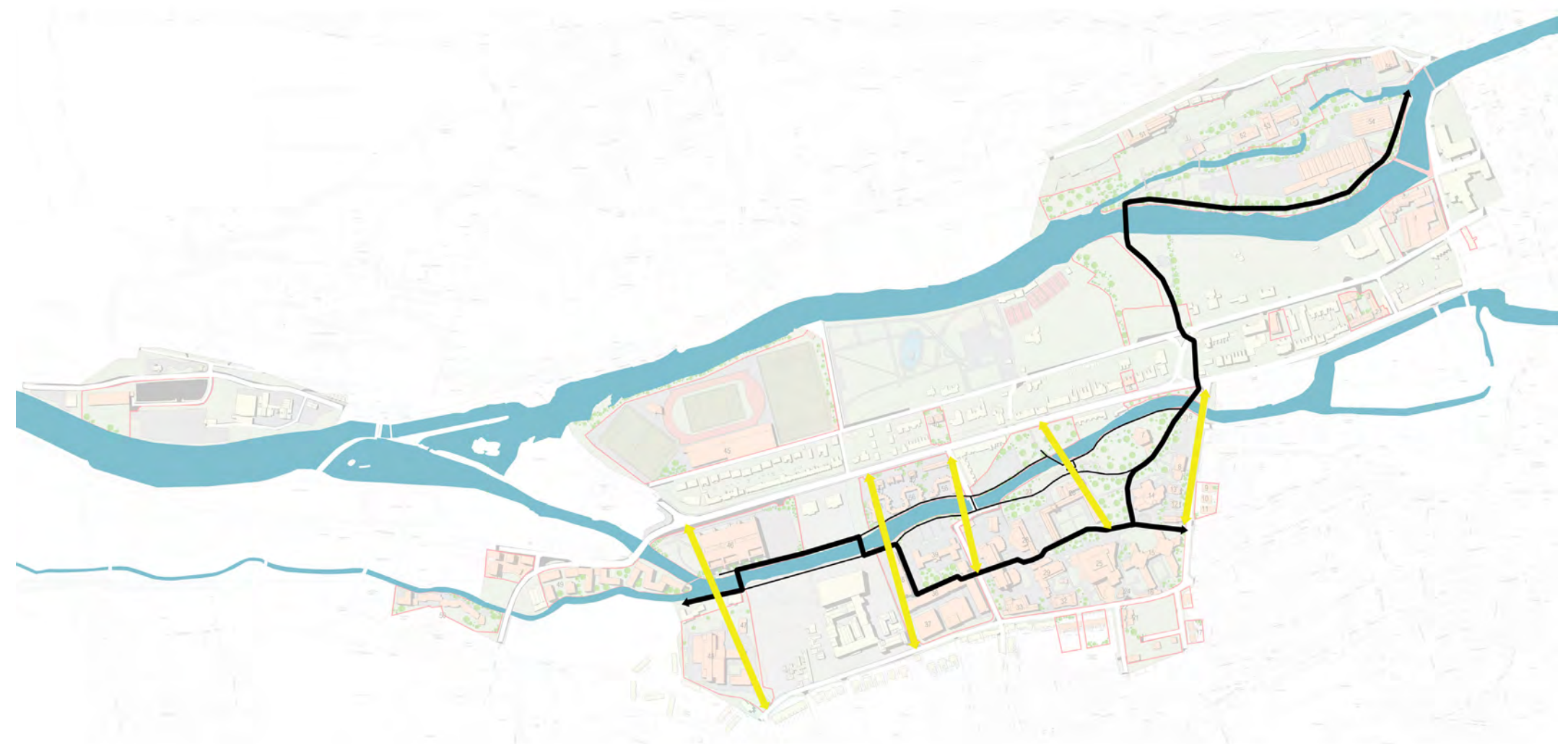
UCC Main Campus North - South Connectivity

The strong east-west pattern of movement and spaces across the Main Campus is identified as a significant spatial characteristic. Running parallel with the river, it allows easy connectivity to other green spaces, and to civic space along the valley floor, notably the banks to the river, Perrott's Inch, and Fitzgerald Park.

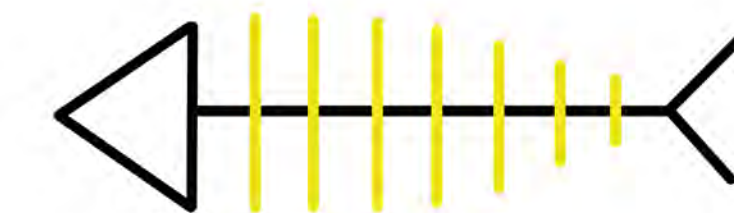
North-south connectivity requires more effort – dealing with crossing the river and level changes as the valley rises towards the edges. Open spaces further north and south in the city do not connect as well to each other, or to the river, as those along the valley.

The solutions at the main campus are evident, primarily in the elegant bridges; most recently the Cavanagh Bridge (2018) connecting Perrott's Inch with the lower grounds.

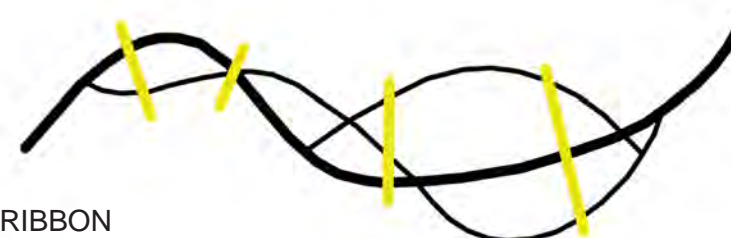
The physical and visual permeabilities of the main campus in the north-south orientation therefore are important factors in the landscape structure.



North - South Connectivity



SPINE



RIBBON



MOSAIC

The form of the 'spine' within the Historic Core is a fitting description of the linear route which connects some of the main open spaces: The Quadrangle and the Ampitheatre. On a larger scale, the routes in to and through the campus meander like a flowing ribbon, linking the mosaic of individual spaces.



9. UCC Masterplan Considerations

UCC Main Campus - Cycle Infrastructure

At present there is approximately 100 km of cycling infrastructure in the Cork Metropolitan Area, while there has been significant improvements the cycle paths do not connect in a coherent way to form a network for the city.

The streets surrounding UCC are some of the most used for cycling in Cork City. The streets are narrow and dominated by car usage.

On Western Road a one-way cycle path in the eastern direction connects to the city centre, while the low speed nature of College Road and Gaol Walk will accommodate cycling in the western and eastern direction and across the campus.

There are several Bike Stations around Western Road area with plans to expand the scheme further in the area.

Bicycle parking is provided throughout the campus, with additional spaces planned with each expansion project.

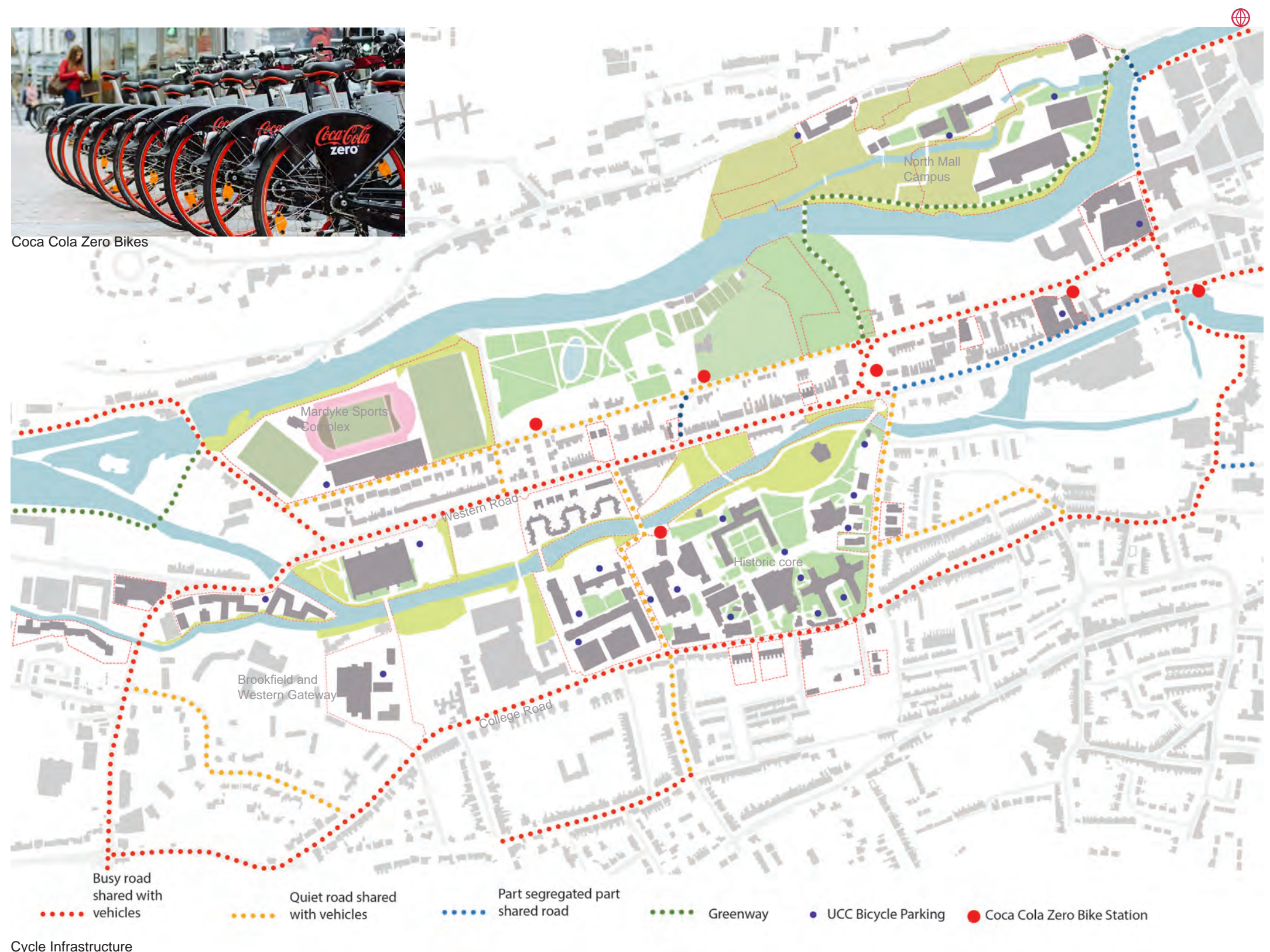
City Centre Connectivity

The City Centre is only a 5-10 min bike ride and a 15-20min short walk from the main campus.

The City Centre is also closely linked to the bike rental scheme with numerous stations in the areas of:

Cork Centre for Architectural Education
Lapps Quay
Union Quay

There is also a bike station at the train station and several located around the Main Campus.



UCC Main Campus - Public Transport Infrastructure

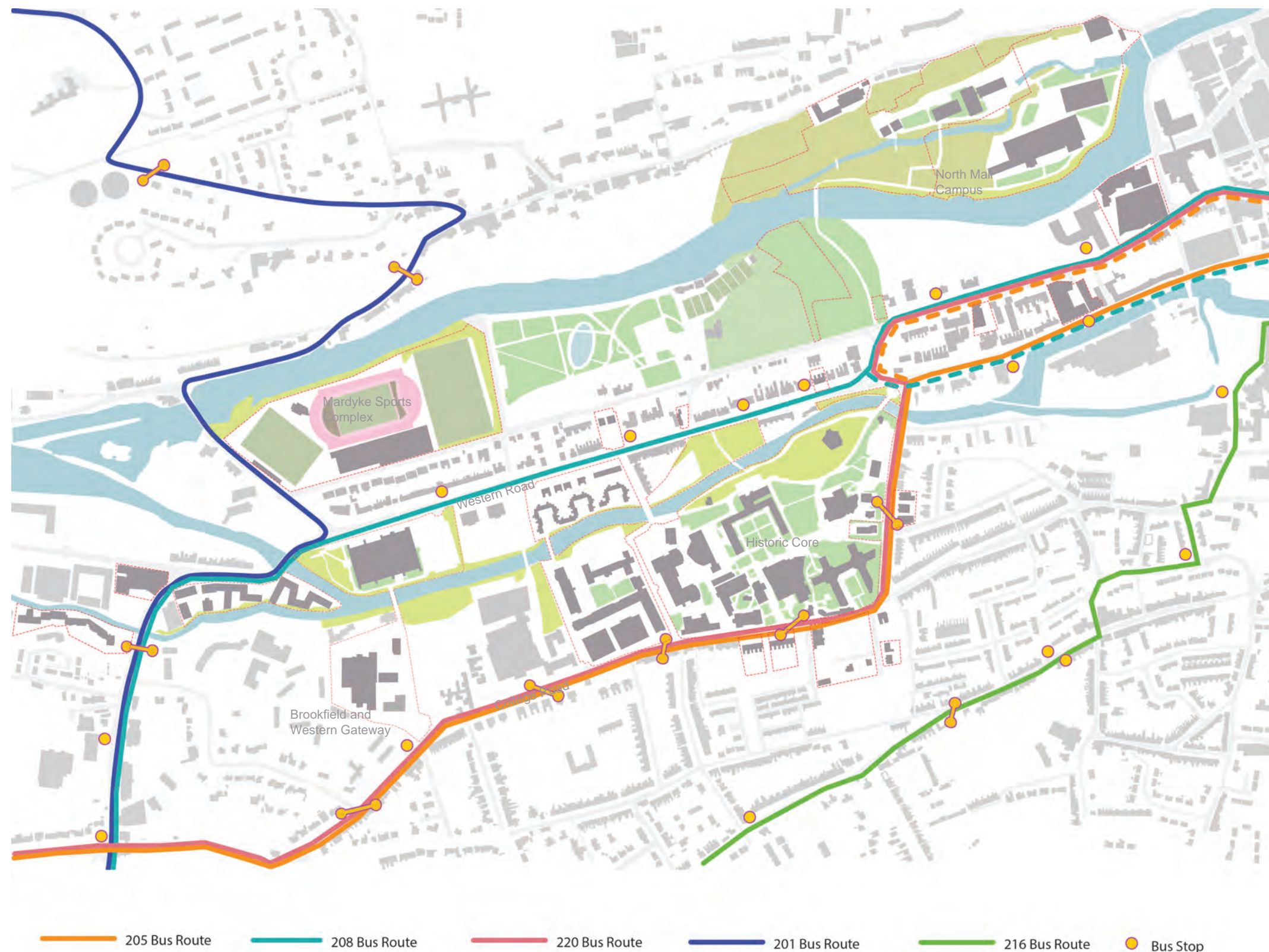
UCC encourages all their students and staff to use public transport and was the first university in Ireland to operate its own Park + Ride scheme.

At present there are three car parks available for the Park + Ride:

Pouladuff
Dennehy's Cross
Black Ash

Shuttle buses operates to and from several locations on the campus.

The public transport infrastructure surrounding UCC primarily consists of five bus routes - 201, 205, 208, 220 and 216. These run at 10 - 15 minute intervals. They are mainly used for connecting to locations outside the city centre or for commuting between student accommodation around Victoria Cross and the City Centre Campus locations.



Public Transport Infrastructure

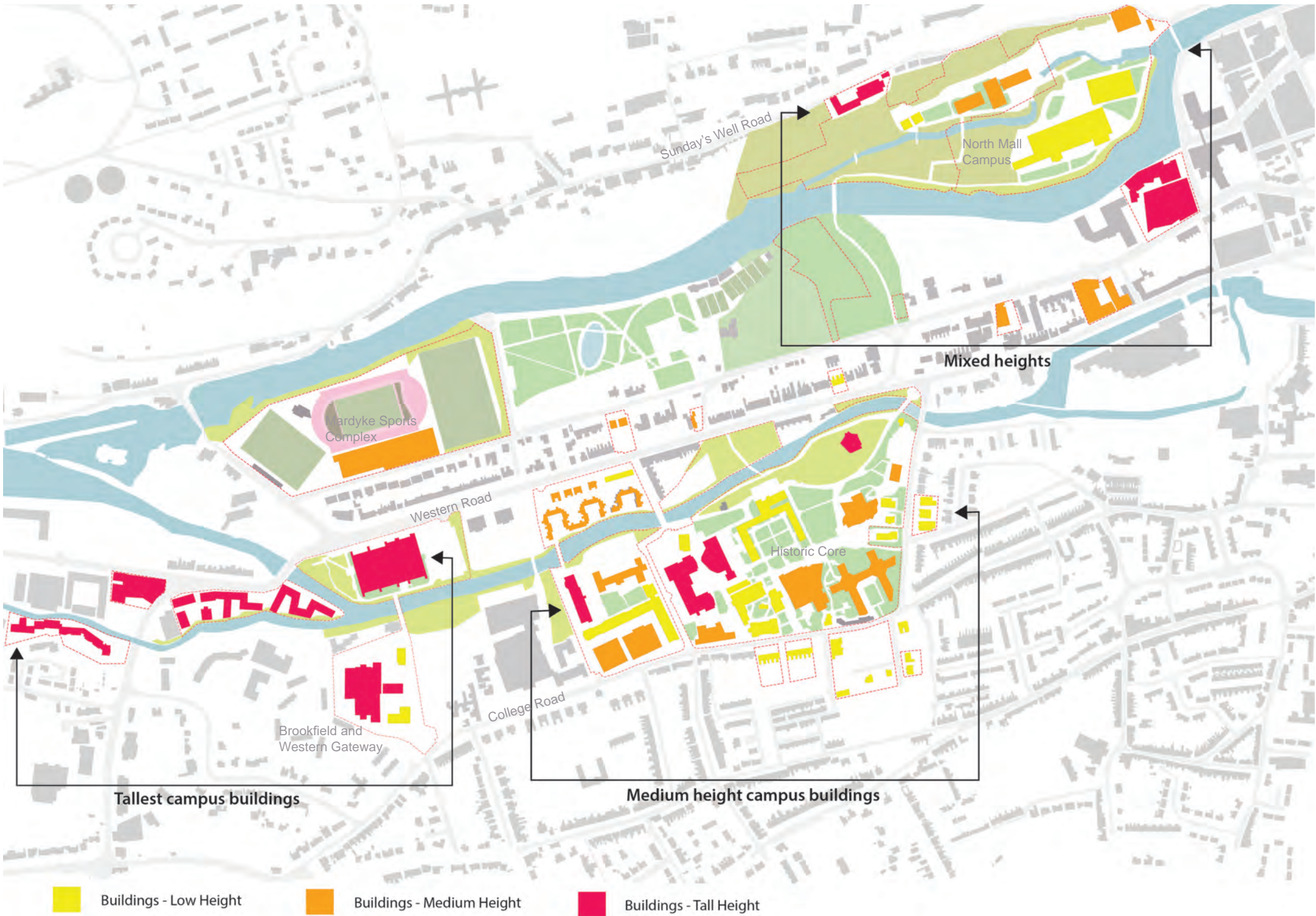


UCC Main Campus - Building Heights

Buildings are lowest in the older historical character area and range from 15-20m in height generally.



Kane Building - Scale on the campus



Building Heights

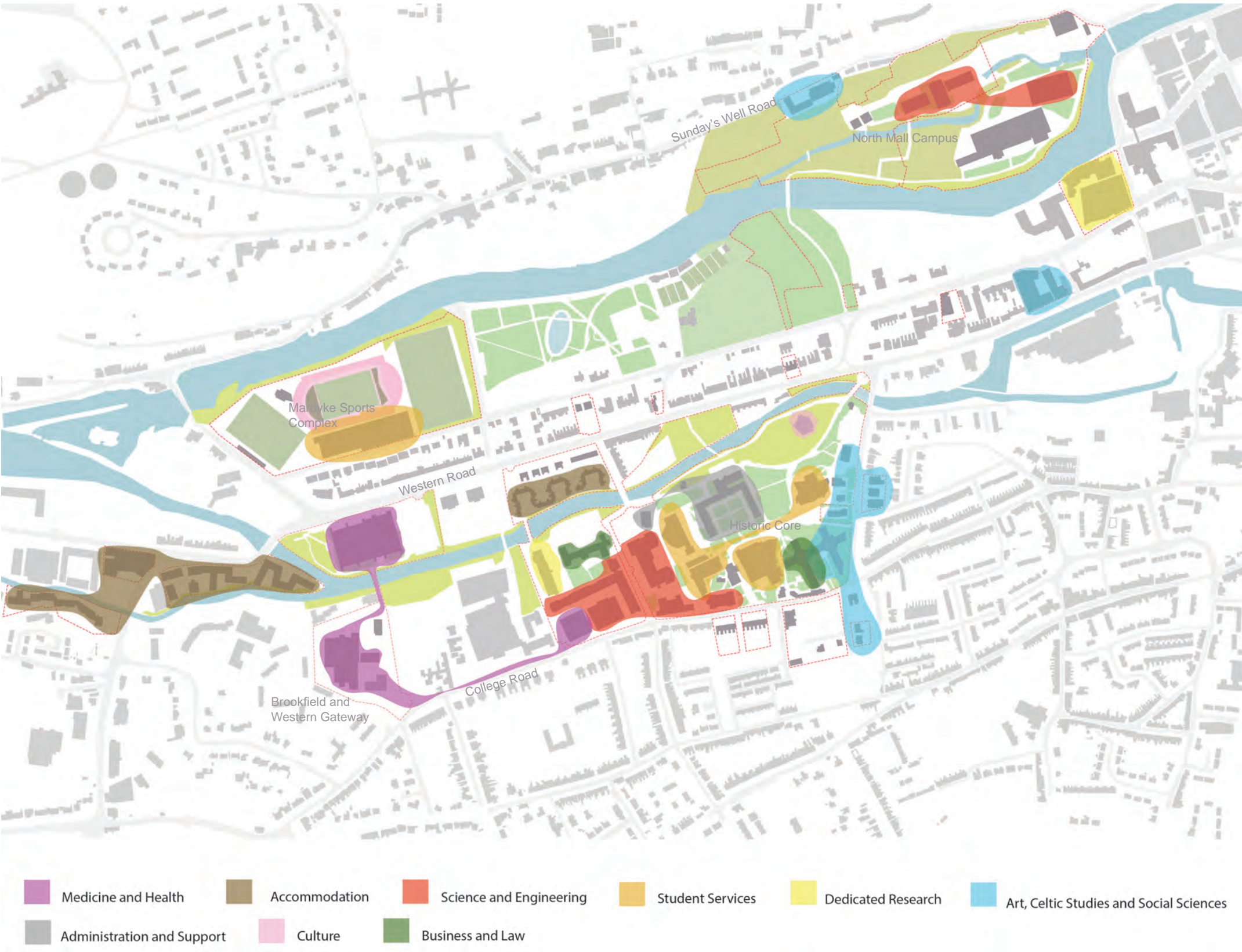


UCC Main Campus - Clusters of Use

The Medicine and Health Buildings are situated mainly in the Brookfield Health Sciences Complex and Western Gateway Buildings near the Bon Secours Hospital while the Science and Engineering Buildings are situated around the Kane Building and the Gaol Walk. The Arts and Business Buildings are mainly on the eastern side of the campus and on the North Mall Campus.



Visual connection between outside and inside in the Boole Library



Clusters of Use on Campus

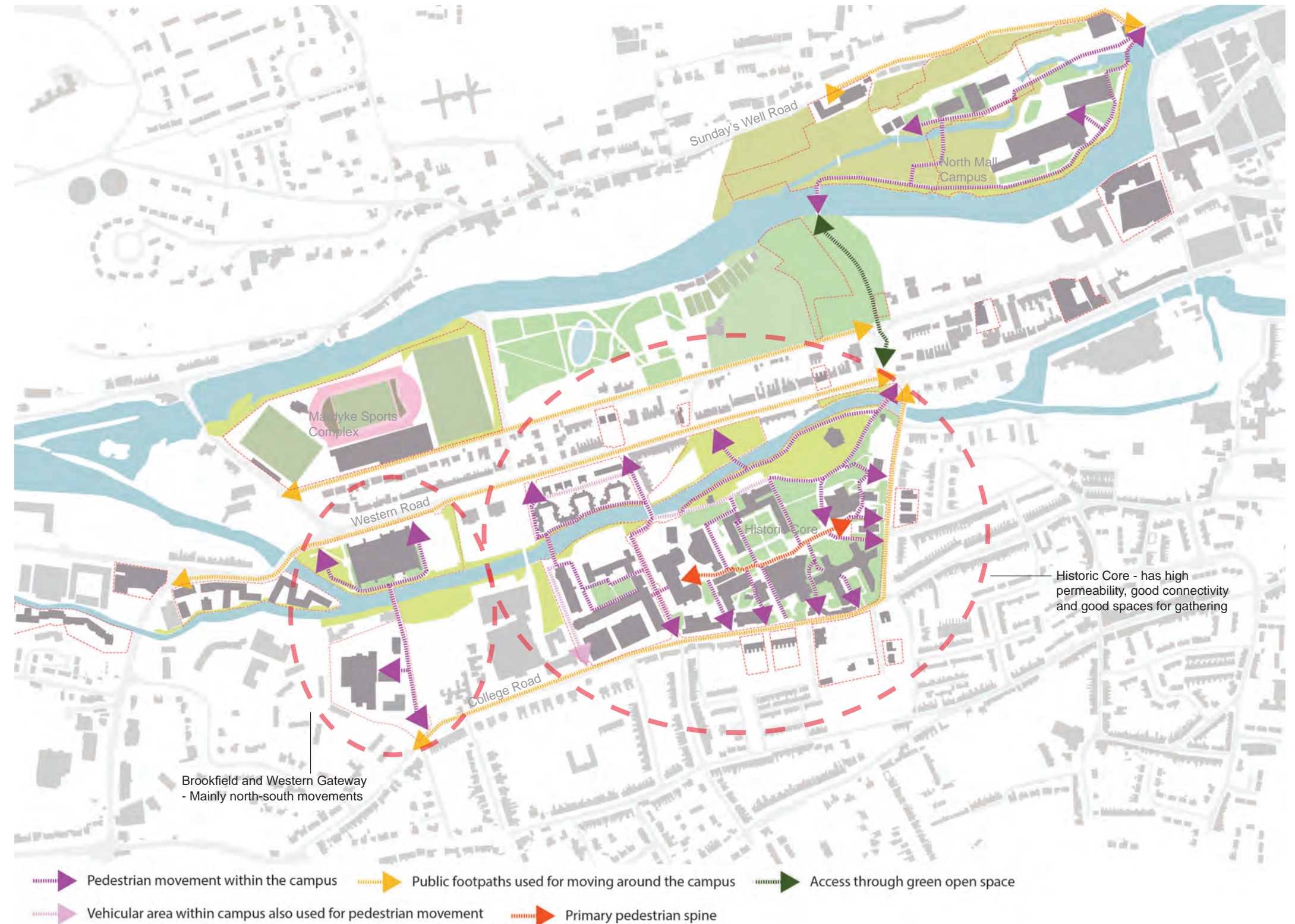


UCC Main Campus - Pedestrian Infrastructure

Campus pedestrian connectivity is mainly provided by:

- Internal campus paths
- River paths
- Public footpaths

The Historic Core has a particularly high quality pedestrian permeability.







UCC Main Campus - Vehicular Access

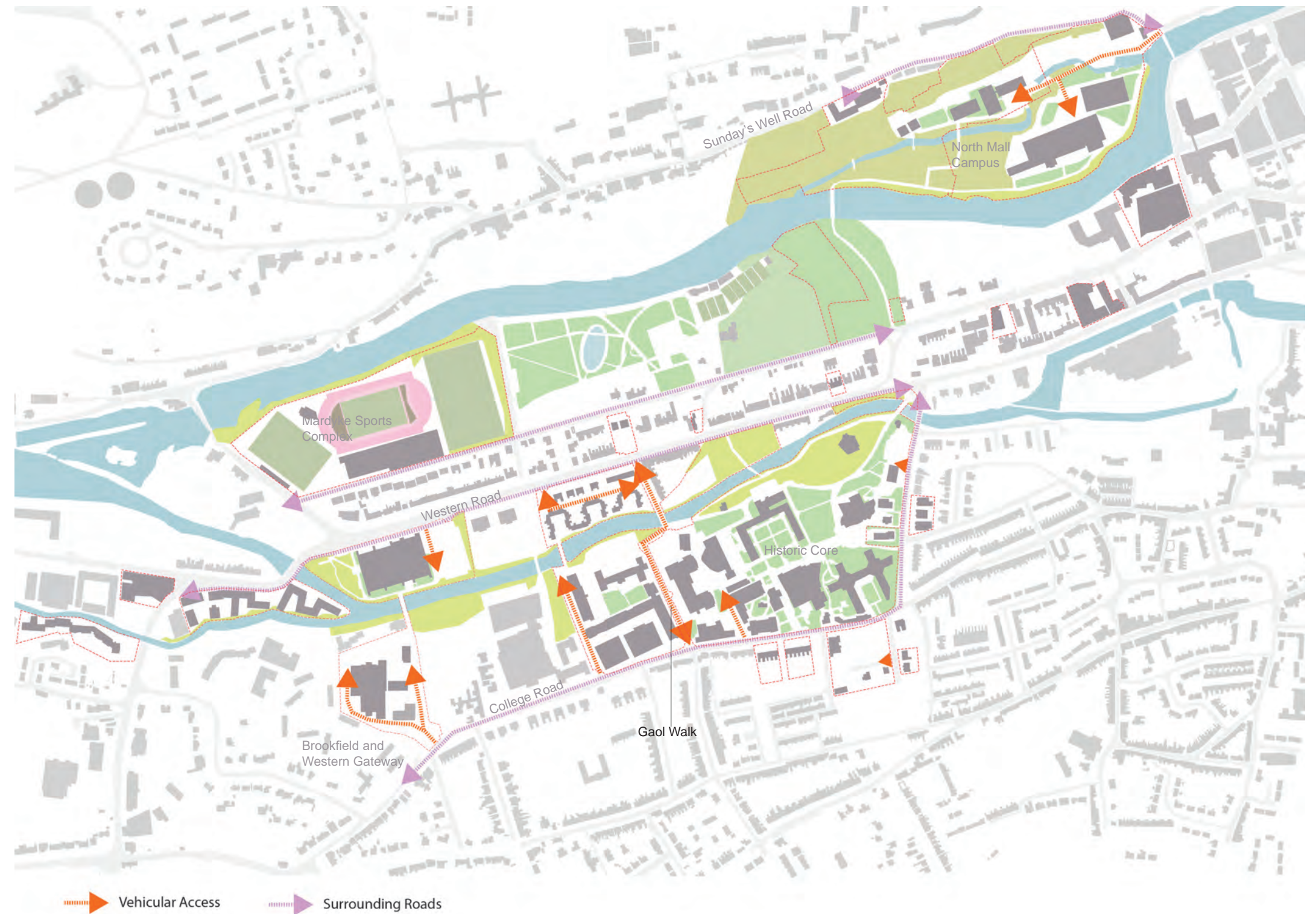
Vehicular movement within the campus is limited with service entrances from College Road and Western Road. Gaol Walk is the only vehicular road traversing the campus in the north-south direction. With its connection to the old Cork Gaol, the Gaol Walk has a significant historic character. Upgrading it with paving and planting would strengthen it as a historic feature.



UCC main entrance



Entrance gate to College Road



Vehicular Access



UCC Main Campus - Public Realm

The Honan Plaza and the area in front of the Boole Library are the ‘central plaza’s’ on the campus. The new public realm surrounding the Hub also provides an additional high-quality space on that spine.

Social Spaces

There are a number of central lawn areas that are popular for socialising including the Glucksman Gallery Lawn. The green open space in front of the O’Rahilly Building also has the potential to be further developed as a seating area for the Honan Plaza and the Amphitheatre.

Formal Spaces

The President’s Garden adjacent the Main Quadrangle and the Mansion Squares within the Main Quadrangle create formal areas that has a sense of historical importance. The Mardyke Garden and the North Mall Campus have great potential to develop further high-quality communal spaces linking the campus.



Communal Spaces

9. UCC Masterplan Considerations

UCC Main Campus - Public Realm

The main Campus remains a very attractive and picturesque public realm and there are some opportunities to further improve the use of the river edge as an amenity space.

Equally there are opportunities to improve the central spine area with paving, planting, street furniture and general de-cluttering.

Opportunities

Attractive amenity spaces with the potential to become increasingly active and vibrant places, particularly along the river edge.

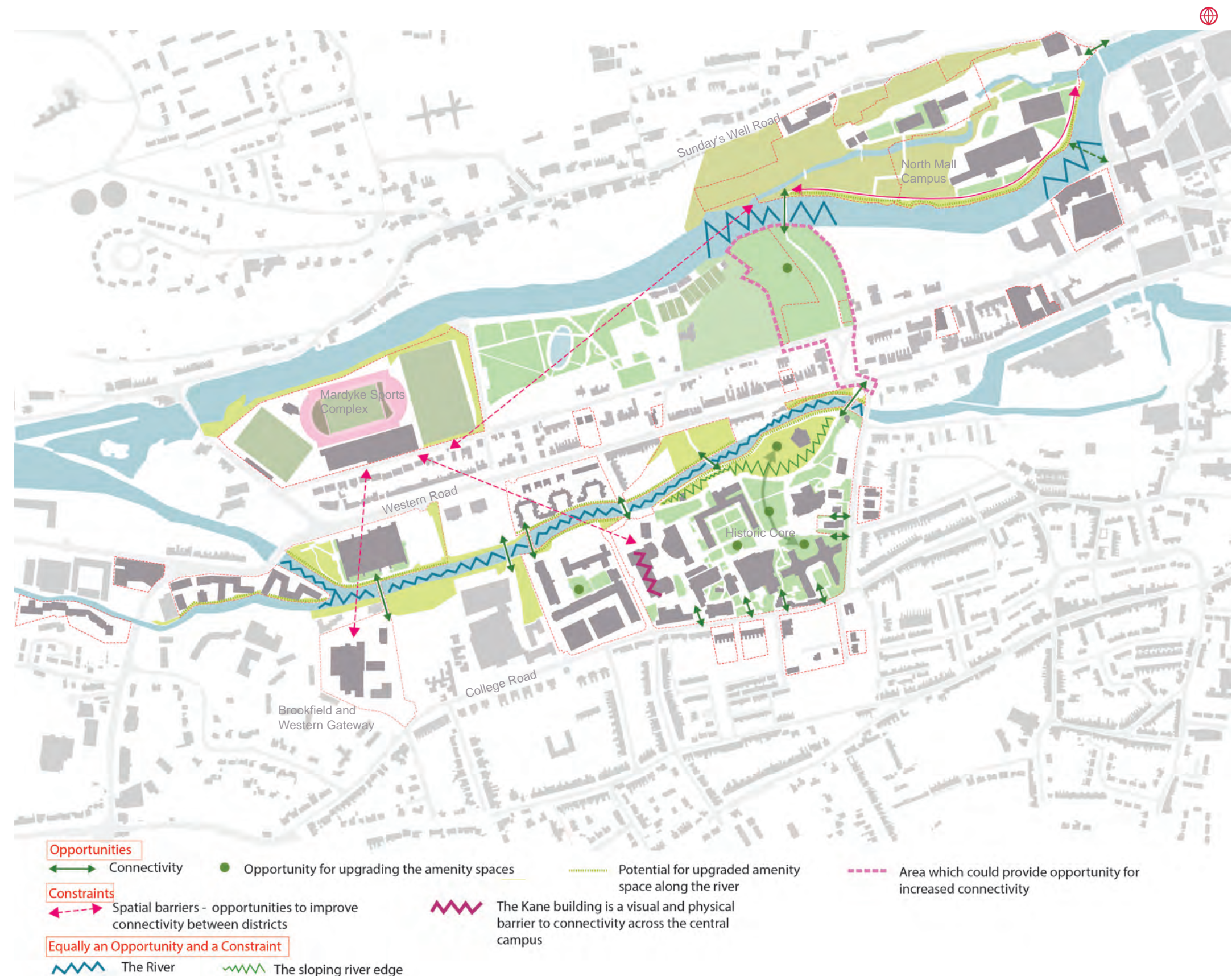
Removing on campus parking will facilitate expansion and reduce the impact of the car on the campus.

The Bon Secours Hospital is located between the Brookfield and Western Gateway Buildings. A shared pedestrian path along the river could improve connectivity.

Pedestrian links on the main Campus are strong and well laid out. The principle of further strengthening the 'spine' throughout the campus as a wayfinding device to link and serve the entire campus is a work in progress.

The paths along the river could also be an enabler to act as easy links for longer trips around the campus.

As with recent outdoor water stations, innovative devices provide opportunities to use outdoor areas in new ways. Also seating areas with shelter and solar panels could offer charging points and outdoor Wi-Fi.



Opportunity areas within the Public Realm of the Main Campus

UCC Main Campus - Landscape

The Main Campus has a very varied landscape. The large cedars in front of the Main Quadrangle are a central landscape feature. The Honan Plaza is bordered by The President’s Garden and the mixed fir planting in front of the O’Rahilly building, creating a green enclosure for the space. The President’s Garden links the Honan Plaza to the river and the Glucksman Gallery. This area is the largest green open space on the campus and provides the pedestrian connection from the main entrance gate and the path along the river. The lawn adjacent the Glucksman Gallery is designed to accommodate flooding in the event of rising river levels.

The other central landscape feature is the river edge. With green and lush banks offering a valuable biodiversity advantage, with great potential to become both a spectacular landscape corridor and a significant part of the infrastructure of the campus.

The river landscape is easily accessible in the Glucksman Gallery Area and at the Western Gateway building and has potential to become a strong corridor on both sides of the river over its entire length.

The landscape on the North Mall Campus is mostly wild with woodland planting, dry meadows and grassy edges.

Campus Trees

There are well in excess of 2,500 trees throughout the UCC campus. These exist as individual specimens and as riparian groups along both the northern and southern channels of the River Lee. The visual amenity provided by UCC’s tree resource on all approaches to the campus is of immense benefit to visitors, staff, students as well as Cork City’s residents. The corridor of trees can be followed through parks and walkways travelling east from the campus to the city and docklands and travelling west along the Lee Valley.

One of the most valued views is on approach to UCC along the Western Road through the main gates and following along towards Perrott’s Inch where the magnificent Aula Maxima building is framed by large mature and veteran trees on either side.

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Trees and buildings can exist and complement one another. This is evidenced by the construction of the award-winning Glucksman gallery (2004) in the lower grounds, amongst some of the largest trees on campus. The approach taken to this project should be adopted for all future projects, large and small, if in close proximity to significant mature trees.

Biodiversity

The positive impact of biodiversity on the natural landscape is a great benefit to UCC. In the urban environment of Cork City, green spaces, such as those in UCC, add greatly to the mental and physical health of students, staff and the general public who spend time within the UCC grounds.

Biodiversity and its important function is under threat globally and locally. Over 20% of species are threatened with extinction in Ireland. The most recent assessment of

the status of EU protected habitats and species in Ireland showed that 91% of the 58 habitats assessed have unfavourable conservation status.

During recent UCC Habitat Surveys, 27 different habitats were recorded on UCC campuses.

The main habitats are:

- Buildings and Artificial Surfaces
- Amenity Grassland
- Scattered trees and parkland
- Riparian Woodland
- Rivers: Eroding/upland rivers, depositing lowland rivers and tidal rivers
- Flowerbeds and borders
- Planted broadleaved woodland
- Treelines
- Hedgerows
- Stonewalls and other stonework

*UCC Biodiversity Action Plan 2018 – 2023

It is imperative that these habitats are protected and that anyone making changes to them understands the significant effects this can have for biodiversity on campus.

Good contouring in landscape works can help ensure that surface water from rainfall is directed where we want it to go to and also help avoid ingress into buildings, basements, and onto roads during flood events with overflowing rivers and lakes.

There are a number of low-lying green open spaces on the UCC campus lands that could be further developed as flood plains, to help absorb extensive rainfall. UCC recognises that biodiversity and natural landscapes are an important tool to negate the impact of climate change. It is important to identify and implement measures to enhance and protect biodiversity in UCC and ensure that biodiversity is integral to the planning and design process in all of UCC’s future developments.



Cedar Trees in front of the Boole Library



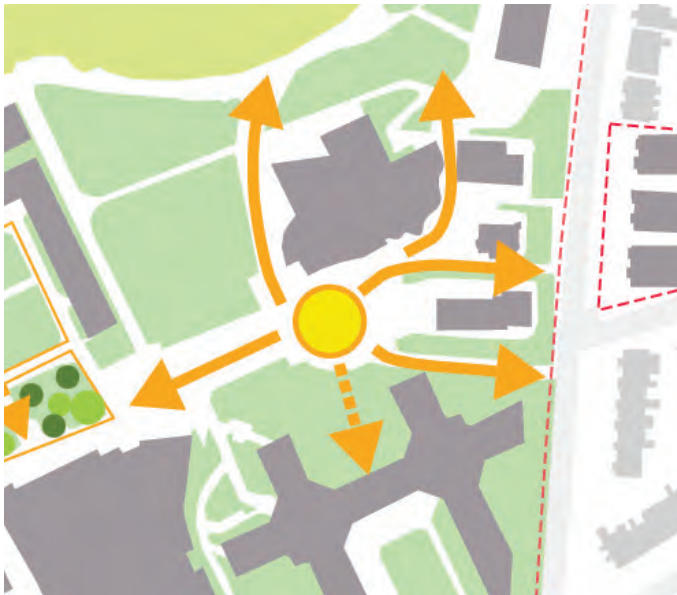
Cavanagh Bridge



UCC Main Campus - Landscape



The Quad and Boole Library forms a central space



Honan Plaza forms a central pedestrian distributor point



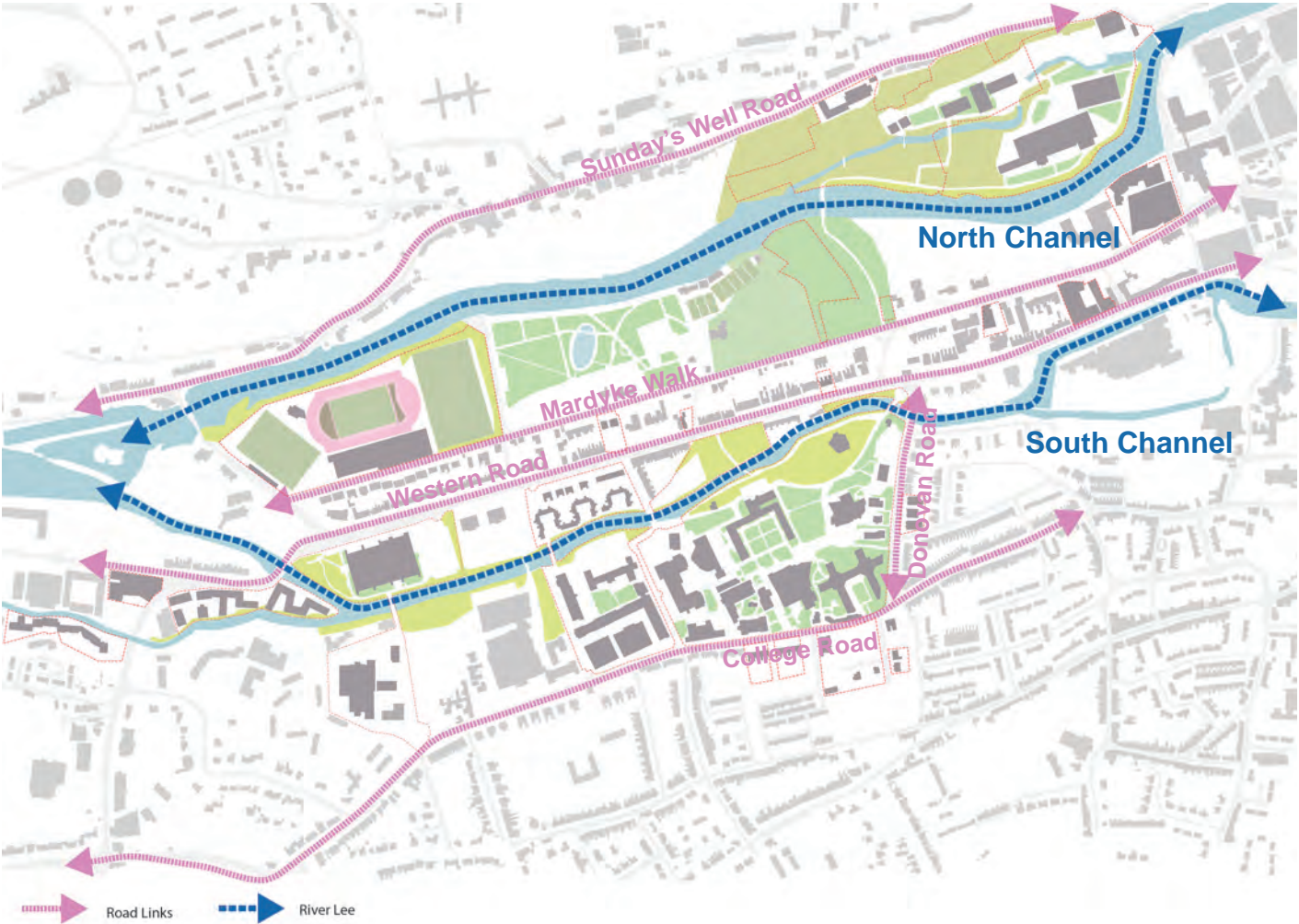
Main Quadrangle and The Quad



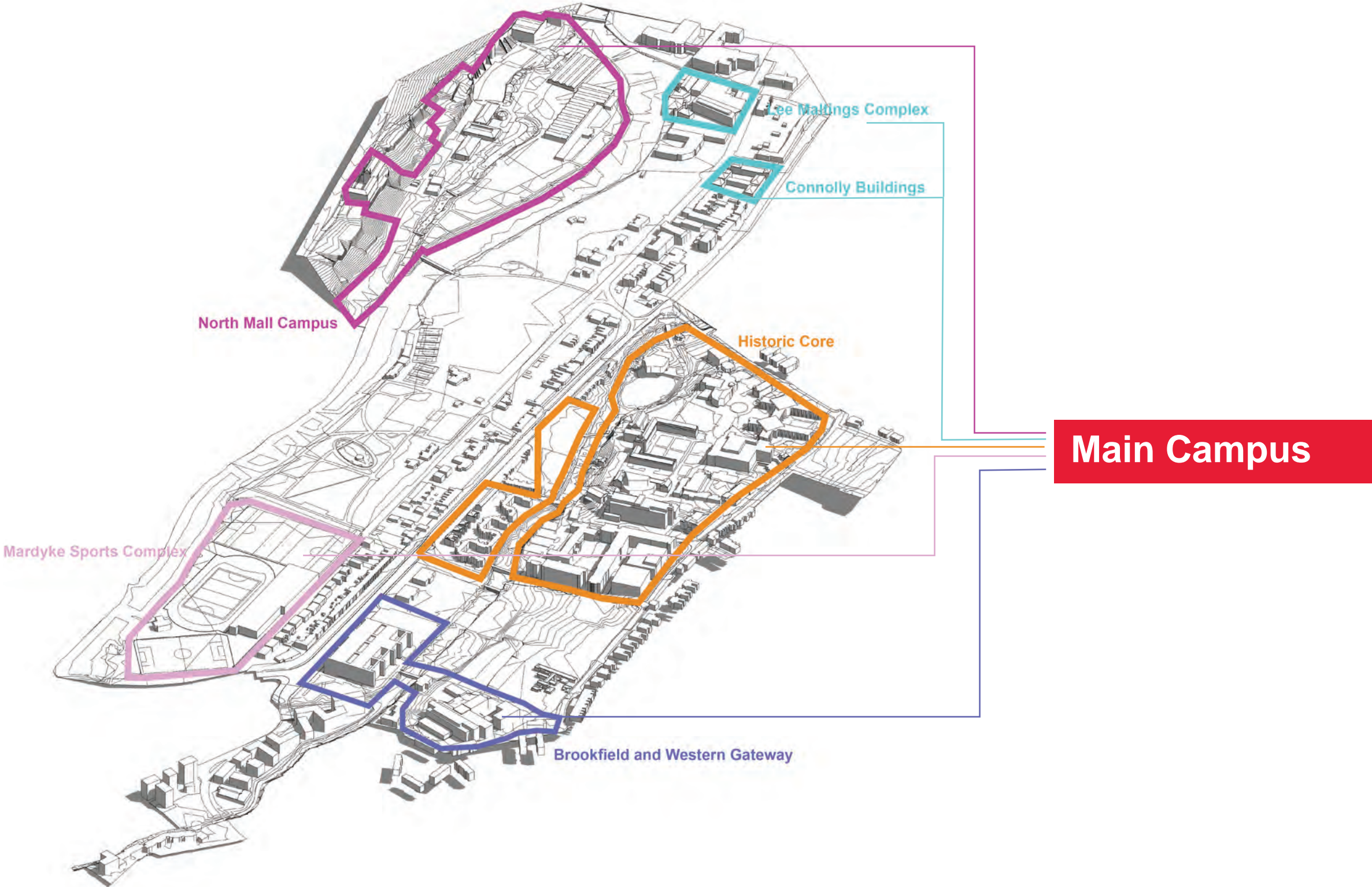
Honan Plaza Amphitheatre



The Kane Building



East-west River Lee and road structure



Main Campus areas



UCC Main Campus - Building Stock

There is great diversity in the main campus buildings, reflecting the various historical era's in which they were built. UCC's estate has grown significantly in the last 15 years and consists of purpose designed modern fit for purpose buildings and older buildings which are deteriorating in condition.

UCC Building Stock Condition:

25% are new buildings	(Category A)
47% are buildings in good condition	(Category B)
28 % of buildings require repair	(Category C)

In addition, the University is faced with a growing suite of legislative requirements (Universal Access, Energy, Heritage, Health & Safety etc) which place an increasing burden on the University to respond in a proactive and planned manner. The buildings in poor condition and the associated aging site infrastructure require ongoing attention. UCC recognises that the percentage of buildings which require renovation/refurbishment is a significant element and that some activities are currently accommodated in poor quality space that is not fit for purpose. UCC recognises that it needs to invest in its Building Stock and continues to seek multi annual funding to enable retention, repair and refurbishment of building stock.

UCC recognises that the percentage of buildings which require renovation/refurbishment is a significant element of the available University. Some activities are currently accommodated in poor quality space that is not fit for purpose. This places an imperative on identifying alternative expansion areas to facilitate both the decanting of facilities to enable repurposing and the creation of swing space to facilitate on going studies and research.

There is also an opportunity to review the nature of spatial use within these buildings considering the future of work, learning from the experience of remote working during the Pandemic.



Building Stock Condition

Key
Category A - New Building
Category B - Good Condition
Category C - Buildings requiring Repair

9. UCC Masterplan Considerations

Main Campus - Building Stock

Quadrangle Building

The Quadrangle Building is the definitive building of the campus, given that it is the original College building and given its iconic value to the University. In addition to the Aula Maxima, the building currently houses the President's Offices, teaching spaces and a staff common room. It is noted that the North Wing uses are inappropriate given the status of the building and the relocation of the admin functions is a future objective of UCC.

Hub Building

This facility over 5 floors houses a range of facilities for students. A new public space is created between the Windle Building and the Quadrangle which benefits the campus and is a welcome addition at this location.

Geography Building

This building is included in the Group 1 category in the UCC Conservation Plan. This categorisation reflects its place in the history of UCC, as the first building to be developed on campus during the period of emergence of the Irish Free State. The building is in need of repair and maintenance is required on an ongoing basis.

Student Centre

The building is in a good state of repair, having been extended in 2006. The building plays a key role as a "bookend" at the eastern end on the campus spine, in addition to accommodating a range of student facilities. Its role is underpinned by the Honan Square which acts as a major external social space, linked functionally to the Student Centre.

The O'Rahilly Building

This building was developed in two phases with the second phase being completed in 2000. At the time, the building represented a significant addition to the quantum of space in UCC and completed the development of the southeast corner of the old Main Campus. Access to and visibility of the building has subsequently been greatly improved by the Honan Square and O'Rahilly Square development,

including the provision of student common room facilities at the College Road boundary of the O'Rahilly Square.

Kane (Science) Building

The Kane Building was opened in 1971. It was an important and substantial addition to the University building stock at that time. It will be a priority to engage in a major renovation project to improve its connectivity and upgrade its fabric. This upgrading would complement and enhance increased permeability of the Kane Building at ground level, as part of the westward expansion of the campus spine.

Lewis Glucksman Gallery

The completion of the Gallery in 2004 represented an important addition to the campus in architectural and cultural terms. The building's iconic quality underpins the role of the main campus as a focus for high quality architecture and placemaking. The restaurant in the building also adds to the range of catering facilities available on campus.

Aras na Laoi

Aras na Laoi was originally an independent hostel for women students at UCC but has been in academic use since acquisition by the University in 1977. It has undergone significant renovation which has facilitated ongoing academic use. The site and surrounds offers additional potential for expansion and sensitive development as part of a future phase of its natural campus integration.

Main Student Restaurant, Old College Bar and Staff Restaurant

Given the central location of this building within the Greater Campus, a redevelopment of this area could allow for a limited increase in building area at this location, at the western end of Observatory Square. However, given the central location of the staff restaurant, consideration should be given to the incorporation of a new facility in any replacement development at this location.



Quadrangle Building



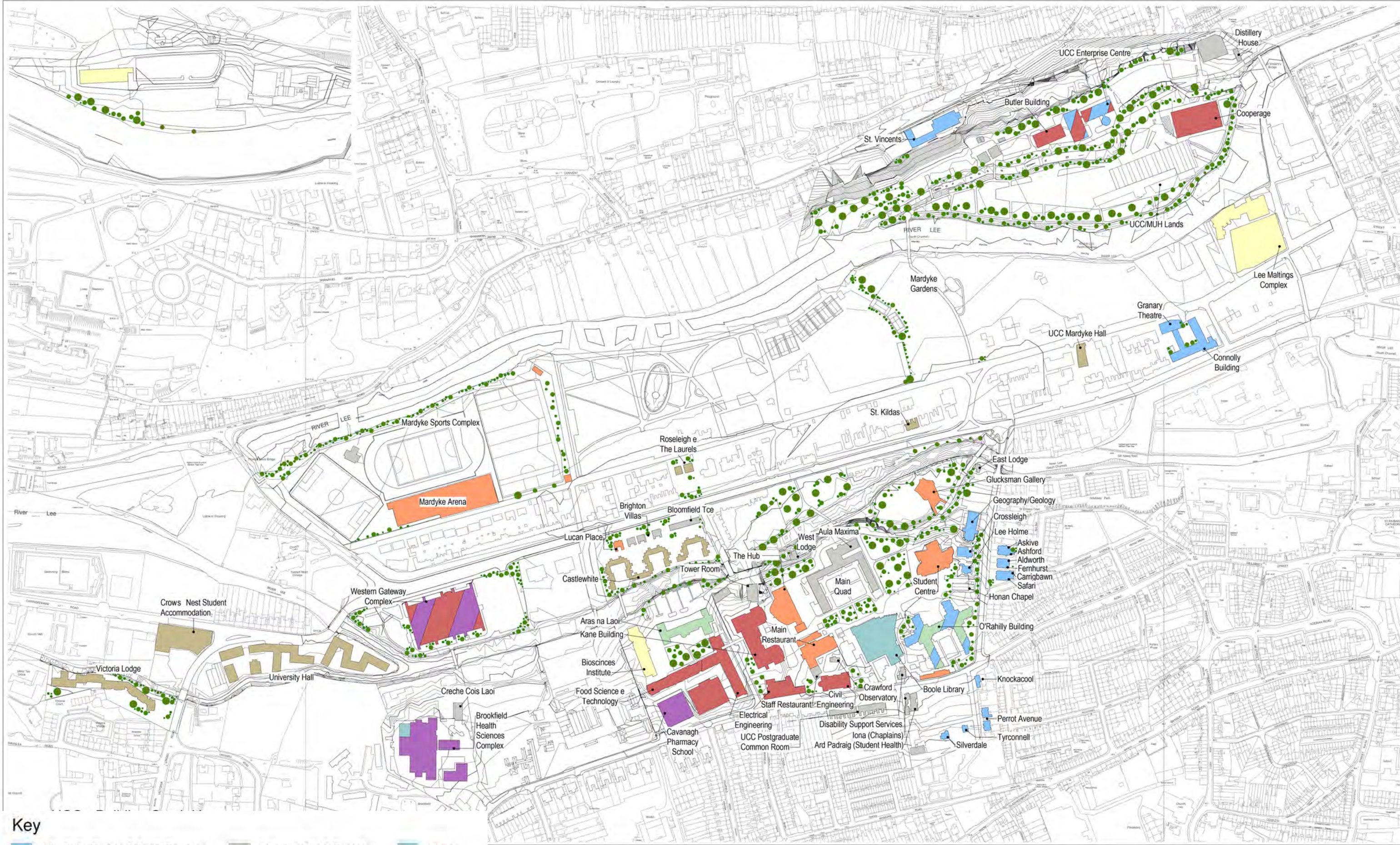
Student Centre



Glucksman Gallery



The Hub/Windle







Main Campus - Building Stock

Castlewhite Complex

The accommodation on the Castlewhite site on Western Road consists of purpose-built residential accommodation dating from 1991 in addition to a stock of detached houses (Lucan Place and Brighton Villas) and terraced houses (Bloomfield Terrace) which have been adapted for academic use. It is a natural development site for modern student accommodation and associated uses. New buildings forms opening up to the riverscape could provide amenity space between the buildings, and overlooking of the river, closely connecting it to the pedestrian infrastructure.

Biosciences Institute

The original building was completed in 2002 and was extended in 2006. Further extension or development at this location is not envisaged currently.

Pharmacy Building

As with the Biosciences Institute, the Pharmacy Building for the School of Pharmacy was completed in 2006. Further development or expansion is not contemplated at this location.

Block E

Block E was originally constructed as an extension to the Food Sciences and Technology Complex. The building lies directly on and forms part of the central pedestrian Campus route.

Connolly Building (Old Presentation School Complex)

This building is an important asset for the University in that it provides a significant level of lecture accommodation and related facilities for planning education and research, archaeology and conference facilities.

Ongoing investment in upgrading and refurbishment is required to allow for continued academic use. The lands afford some opportunity for additional expansion at this location.

Lee Maltings Complex

The Lee Malting complex is recognised for its iconic qualities, given its location on the banks of the North Channel and its history as a prominent part of the urban fabric of the city. The Tyndall Institute now occupies the entire Lee Maltings site, a world class state-of-the-art research facility.

School Of Music (St Vincent's)

As noted in the 2011 Masterplan Review, this building was adapted for use following acquisition in 1999. It is anticipated that it will continue to be occupied but will require significant ongoing maintenance and upgrading commensurate with a building of its age and condition. Significant improvements in connectivity to Main Campus, including stairs and lifts, are also required.

Environmental Research Institute

This facility, completed in 2005, is situated on the Lee Road some 2 km from the Western Gateway complex. The mission of the Institute is to support environmental research and education at UCC. There is some potential for further development on this site but any development would be related to the existing use of the building, possibly on the basis of a structure over the existing surface car park.

University Hall

This construction of the University Hall on a site adjacent to the Western Gateway development represents a significant provision of student residential accommodation on campus. Further development of the building is not foreseen at present.

Victoria Lodge

The Victoria Lodge development at Victoria Cross is another significant contribution to the quantum of student residential accommodation on or adjacent to the campus. Further development of this complex is not foreseen at present.



Pharmacy Building



Environmental Research Institute



Biosciences Building



School of Music - St Vincents

9. UCC Masterplan Considerations

Main Campus - Building Stock

Brookfield

The Brookfield Health Science Complex accommodates academic needs while conserving the original house which was identified through the campus Conservation Plan as a regionally significant building.

Its significance arises from the uniqueness of the house which was built using techniques more commonly found in industrial building of the time. The house forms an ordering device for the layout of the complex.

The development includes:

- The original Brookfield House
- Nursing School
- Medical School
- Therapies School
- Crèche

The complex consists of lecture theatres, clinical skills labs, computer labs, offices, a 200-seat restaurant, and other accommodation.

The crèche was located to the rear of the site in a separate two-storey purpose-built building. Significant elements of the original perimeter landscape were accommodated in the development.

Western Gateway Building

The Western Gateway Building defines the western corner of the campus. Originally the site of a greyhound track it comprises:

- Computer Science Department
- Mathematical Sciences
- Department of Physiology
- Department of Pharmacology

- Epidemiology and Public Health
- UCC Gateway / IGNITE
- Anatomy Department
- Department of Biochemistry
- Cork Cancer Research
- Biological Services Unit (BSU)
- Neuroscience
- National Suicide Research Foundation



The Western Gateway Building



Crèche Cois Laoí - Brookfield



Cooperage on the North Mall Campus



9. UCC Masterplan Considerations

Main Campus - Student Accommodation

Recent studies indicate that upwards of 50% of the student population of UCC live away from home, either in purpose-built student accommodation or in the private rented sector.

A substantial number of bed spaces have been added to the student accommodation provision on or adjacent to campus in the last 10 years. There are currently 1,279 beds of UCC on-campus accommodation. The principal centres of student accommodation under University control are as follows;

- Victoria Lodge
- Victoria Mills
- Castlewhite
- Mardyke Hall
- University Hall

A further 255-bed-space accommodation units are under construction at the site of the former Crow's Nest public house and restaurant in Victoria Cross.

Off-Campus purpose built Student Accommodation

The 2017 National Student Accommodation Strategy (NSAS) envisioned a need for more than 70,000 student beds nationally by 2024, propelled by a surge in enrolments in Irish universities.

In 2017, when the NSAS was issued, there were 3,788 student beds in Cork and some 33,441 nationwide. The strategy anticipated that supply would reach almost 55,000 by 2024, leaving a shortfall of some 21,000.

This included a situation in Cork City where there would be unmet demand for 1,901 student beds.

Currently its is estimated that there will still be a significant shortfall in the number of beds available, even if everything in the planning system that has permission (approx 1,619 bedspaces) is completed in full. It is noted

that there is still a significant unmet demand as far as the horizon year of 2024 as outlined in the strategy, with a projected shortfall in the best case scenario, where all extant permissions are constructed. UCC remains committed to the provision of accommodation where feasible. It is an objective of the University to increase its total bedspaces by an additional 500 in the short to medium term.

The UCC Office of Accommodation & Community Life is fully committed to the enhancement of the student experience in University College Cork and provides an information service to all students seeking any type of accommodation on campus, off campus purpose built and other types of rental housing and accommodation.



UCC's Crows Nest Accommodation currently under development



9. UCC Masterplan Considerations

UCC Main Campus - Catering

The University is keenly aware of the significant contribution of restaurants, cafes and other catering facilities in the educational and social life of the campus.

Provision will therefore be made in all developments for a range of catering facilities to encourage and foster social interactions between all campus users.

Furthermore, catering locations will generally be equipped with Wi-Fi to allow easy web access.

Catering spaces currently available on campus are as per table 4 (opposite). This represents a ratio of 1 dining place per 12 users (based on a student population of 21,000 and a staff compliment of 3,200).

An assessment in 2011 suggested that the ratio was circa 8 users per place.

Despite an ongoing disimprovement in the ratio in the interim, there does not appear to be a significant deficit in the catering provision on campus.

This can arguably be attributed to a number of factors:

- Possible higher usage levels per place, reflecting a change in eating habits, including the trend towards more casual dining and also a change in the nature of the food offers on campus
- Increase in the provision of automated food and beverage vending on campus
- Availability of convenient off-campus catering outlets, particularly in proximity to the Main Campus.

Specific policies for the long-term provision of catering on campus are as follows:

a) Restaurants (full service)

Continue the provision of full service catering at the existing student and staff restaurants at the main campus and other UCC locations in the region. It will also be an ambition to develop dining services associated with student residence clusters.

It is noted that the provision of such facilities helps to underpin the role of the university as a commercial and academic conference venue.

b) Snack and beverage service

The policy of providing snack and beverage catering as part of each new major development on campus will continue.

This policy will ensure that the provision of catering broadly matches any increase in student numbers on campus whilst also ensuring that catering is located in convenient proximity to the areas of greatest demand.

c) Vending:

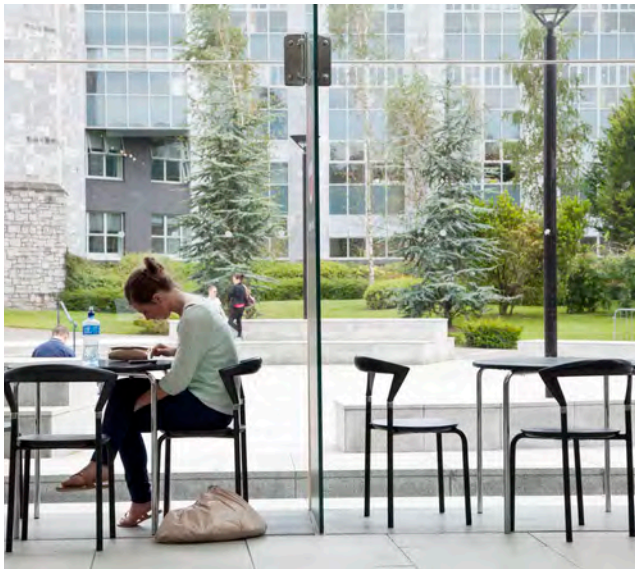
In addition to the provision of full service and snack restaurants, automated vending is playing an increasingly important role in the provision of catering on campus, particularly outside of normal opening hours.

It is envisaged that the automated vending provision will continued to expand on campus, particularly in light of the improvements in recent years in the quality of the vending offer.

It is proposed to maintain a ratio of 1 dining place to c. 12 users. Additional catering facilities will be provided in larger new developments where these developments are intended to accommodate an increase in the campus population. However, in parallel with this strategy, provision will be also made for catering in locations which facilitate ease of use by students, staff and visitors alike. Ideally, these facilities will be related to the Campus Spine on a basis similar to the facilities provided to date.



Location	Capacity
Main Campus Restaurant (Main Rest)	342
Main Campus Restaurant (Mini)	332
Staff Centre Cafe Oasis	232
Student Centre Bar	100
Bio Cafe	60
Brookfield Cafe	150
Cafe Glucksman	50
Staff Restaurant	120
Western Gateway Cafe	140
Western Gateway Elements	40
The Still (North Mall cafe)	25
Mardyke Arena	50
Elements Cafe (Kane Science Building)	75
O Rahilly Building Coffee Dock	72
Lee Maltings/Tyndall National Institute	110
The Hub (Roots Coffee Shop)	20
Staff Common Room	80
TOTAL	1,998





Crawford Observatory - the courtyard adjacent to the Boole Library and the Main Restaurant forms a well defined and intimate space on the Central Campus.



10. DEVELOPMENT STRATEGIES AND IMPLEMENTATION

UCC Development Strategy Overview

The Development Strategies in this masterplan review reflect the key strategic goals outlined in the UCC Strategic Plan 2018 – 2022:

- Enhance UCC teaching and learning and the overall UCC student experience
- Enhance and increase UCC's innovation, commercialisation and research output to the highest quality
- Strengthen UCC's external engagement and the contribution to society
- Strengthen and diversify the UCC resource base
- Improve the UCC staff experience

The masterplan deals with the physical environment of the UCC campus.

It supports the goals of the UCC Strategic Plan in providing a campus environment which supports enhanced experiences of studying, working and living on campus for both UCC students and staff.

Key Elements of Development Strategy

In translating the strategic goals noted above into specific development objectives for UCC, a number of primary factors have been taken into consideration:

Sustainability

Meeting UCC's present needs without compromising the ability of future generations to meet their own needs.

Quality of the Environment

Recognising, sustaining and improving the quality of existing internal and external environments on UCC lands.

Implementing detailed facilities management strategies to ensure that the existing building stock is being utilised and maintained at an optimum level.

Adaptability and Diversity

Ability of the campus to accommodate UCC's evolving needs particularly where these needs cannot be accurately identified in advance.

Character

Identifying and enhancing the unique identity of the UCC, particularly as a contributor to the overall image of the University.

Legibility

Clarity of UCC image and ease of understanding of place, as a contributor to the enjoyment of the UCC environment.

Recognising that UCC continues to evolve as a city centre/inner suburban campus, underpinning its position as a significant element in the civic fabric of the City.



10. Development Strategies and Implementation

Key Elements of Development Strategy

Forward Thinking

Acknowledging that the existing land bank within the Main Campus has limited development capacity and while arguably sufficient for short-to-medium accommodation needs, will be inadequate for the long term strategic needs of the University.

Consolidation of Main Campus

Continuing the policy which locates short-to-medium term development of the campus, insofar as possible, on lands on an east-west axis within the valley of the River Lee, on or in the vicinity of lands currently held by the University.

Clustering Use Types

Improving the coherence and usage of academic accommodation, by grouping accommodation, where benefits accrue. UCC remains committed to co locating Post Graduate, Undergraduate and Innovation where possible.

Expansion Opportunities

Giving consideration to the location of suitable developments outside the main campus at locations such as Curraheen, Cork Docklands and Ringaskiddy where the nature of the proposed development can potentially exist with some degree of independence of the Greater Campus.

Heritage and Identity

Emphasising the conservation of the character of the original campus and of the general sylvan character of the existing landscape and setting for University buildings.

Accessibility

Improving physical connections, principally to facilitate walking and cycling links, between the various campus locations and within each campus location.

Mobility Management

Implementing existing solutions for managed vehicle access and parking, allied to the policy of encouraging alternative means of travel to the University.

Energy Use

Ensuring that all development on campus including refurbishment of existing facilities has clear and ambitious green/sustainable goals when measured against internationally accepted norms such as BREAM standards.

Building Development

The University has strongly promoted the adoption of sustainable building design techniques throughout its building development programme.

As a result, the campus now contains some of Ireland's leading examples of sustainable education buildings.

The University will maintain its commitment to sustainability for all future new buildings developments and the redevelopment / refurbishment of its significant existing building stock.

In the case of new development, buildings will be designed to ensure that the attainment of comfortable internal environments is achieved through passive means as far as is practicable.

Therefore, the designs for new buildings will strive to maximise the number of hours in the year where daylight, natural ventilation and passive cooling can be utilised.

Good daylight levels should be achieved without incurring excessive thermal heat loss or solar gain and should not give rise to glare problems.

To maximise the energy savings potential of providing good daylight to internal spaces, artificial lighting installations will be provided with automatic controls which adjust the

level of artificial lighting in response to daylight levels and occupancy detection. In addition, low energy lamps and LED lighting will be used.

Natural ventilation strategies may utilise a combination of automatic and manual measures to introduce air to the building and should duly consider issues such as avoidance of excessive cold draughts building security and external noise.

Building security requires particular attention where natural ventilation is utilised during the night in conjunction with thermal mass to provide passive cooling. Thermal insulation and air tightness levels should exceed Building Regulation requirements.

In selecting materials to be used in the construction of new buildings, due consideration will be given to the resourceability and embodied energy of the proposed materials and whether these materials can be readily recycled.

Whilst every effort should be made to provide ventilation and cooling through passive means, it is accepted that this may not be possible for all building types or for all times throughout the year.

Where mechanical systems are required for ventilation, cooling and indeed heating of buildings they will be designed for maximum efficiency.

Mechanical and electrical services installations will include provisions for comprehensive monitoring of energy consumption and energy control systems that can be easily understood and operated by building users. Renewable technologies such as solar thermal and geothermal will be considered.

Mains water consumption will be minimised through the use of low-flow outlets. Rain water recovery will be considered for toilet flushing, particularly in student accommodation.

At the outset of each new development energy and environmental targets for the proposed building will be established. Such targets will reflect the best current practice.

10. Development Strategies and Implementation

UCC Main Campus - Opportunity Sites

A number of opportunity sites on the main campus have been reviewed to facilitate expansion space for the university.

Main Campus Historic Core:

Areas identified for potential expansion include:

- Kane Building extension
- Main Entrance site – Donovan Road
- Geography Building
- O'Rahilly Building extension
- Perrott Ave site
- Aras na Laoi
- Castlewhite Redevelopment
- Western Gateway Building
- ERI Building Expansion

As the Main Campus Historic Core develops it is considered a priority to preserve its original character.

Any proposed upgrading or extensions to the building stock and improvements the public realm are reviewed in this context.

The recent completion of the Hub, including the restoration of the old Windle Building, has created a significant new node on the campus for the entire university community.

Designed with informal and flexible learning spaces on each level it will support new ways of teaching and improve the support facilities for the students.

North Mall Campus

The former Distillery fields lands are jointly owned by University College Cork and Mercy University Hospital.

The Masterplan for the North Mall Campus manifests the opportunities for expanding substantially on this site including the new Tyndall Research Building and proposes redevelopment of the entire site into a combined campus for UCC and MUH.

UCC have a number of facilities on the site occupying the purpose-built Butler Building and Enterprise Centre and the converted Cooperage.

These buildings accommodate the School of Applied Psychology, the School of Biological, Earth and Environmental Sciences and associated research centres.

The main aspects of the plan are as follows:

The Distillery House building is a 2/3 storey protected structure (PS813), currently in use while the Butler Building is a purpose designed academic building and currently occupied by UCC.

Along the riverside walk are proposed a set of 6-7 storey buildings similar in height to the Mercy University Hospital and the Tyndall National Institute designed to mitigate against flooding risk. This development will incorporate a pedestrian bridge link to Grenville Place and to the MUH/Tyndall Institute in conjunction with the Lower Lee Flood Relief Scheme.

It is also proposed to create a pedestrian link to St Vincents (Music). This complements access from Sunday's Well Road and the northside of the city to the North Mall Campus, the Mardyke and UCC.

The masterplan includes the removal of the former Bottling Plant, the retention of the Cooperage and proposals for the remediation of the former industrial site and the enhancement of the natural environment The integration of the site into Cork's movement network, providing safe and convenient pedestrian and cycle routes to and from destinations in the city centre.

UCC Other locations

Cork Science and Innovation Park
This has been reviewed previously in Section 9, page 38.

UCC Sports Park
This has been reviewed previously in Section 9, page 39.

Cork University Hospital
In addition to its existing facilities, the University has ambitious plans to develop clinical research/educational facilities on the site of the existing Dental School at CUH, following its relocation to Curraheen. In addition UCC has plans to improve the educational facilities at HSE South/Southwest hospital group sites.

UCC Lands at Sandyford, Dublin
The UCC lands at Sandyford Dublin where the IMI is based is subject to a separate masterplan, which is currently under development.

Beaufort Ringaskiddy
The Beaufort Building is adjacent to the CIT Maritime College. Further research/innovation related facilities are planned on the adjacent lands, which is subject to a separate masterplan.

Doughcloyne/Pouladouff
The lands are located in primarily industrial locations and provide storage and related facilities. UCC will evaluate the future potential of the lands in accordance with the Cork City Development plan.

UCC Satellite Locations
UCC has a number of field stations throughout Munster which provide various facilities for the University in terms of research and teaching/learning. These include Dun Chiomhain, Ballyferriter and Lough Hyne etc.

UCC City Centre

UCC is committed to developing city centre locations and expanding its existing presence in the city.

Cork City Council have identified the docklands for major future development. UCC are fully supportive of potential synergies/collaborations and will explore all opportunities as they arise.

UCC remain committed to expanding and developing facilities in the north side of Cork City, as opportunities arise in conjunction with Cork City Council and other higher education providers.

Nano Nagle Place
CCAIE is a joint venture between CIT and UCC which has optimised the potential of the available land.

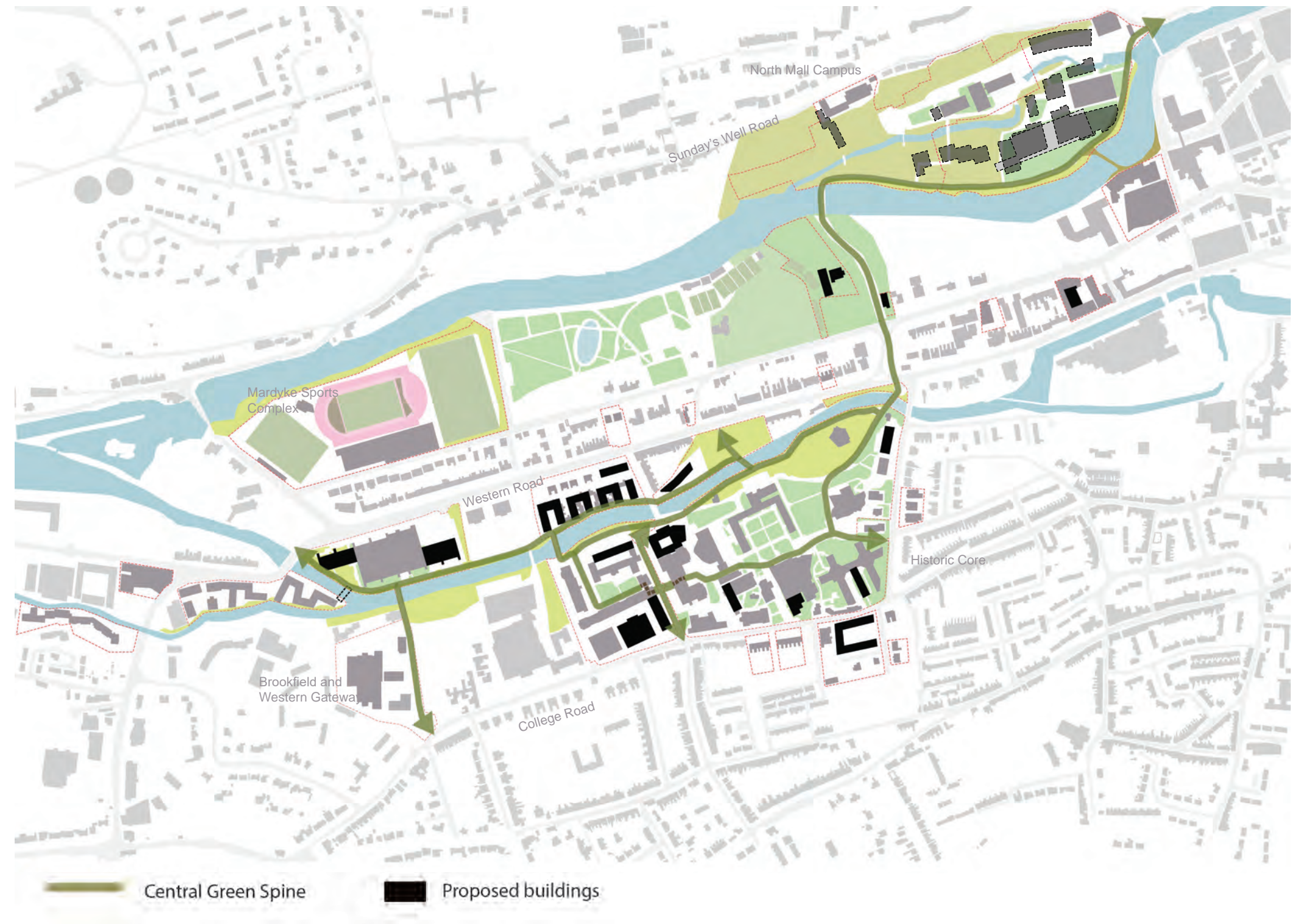
Lapps Quay
No. 1 Lapps Quay and 16 Parnell Place house the Centre for Executive Education. 15 Parnell Place offers potential expansion which will be the subject of a future feasibility study.

Union Quay
The lands will house Cork University Business School, and additional UCC facilities subject to a future masterplan.



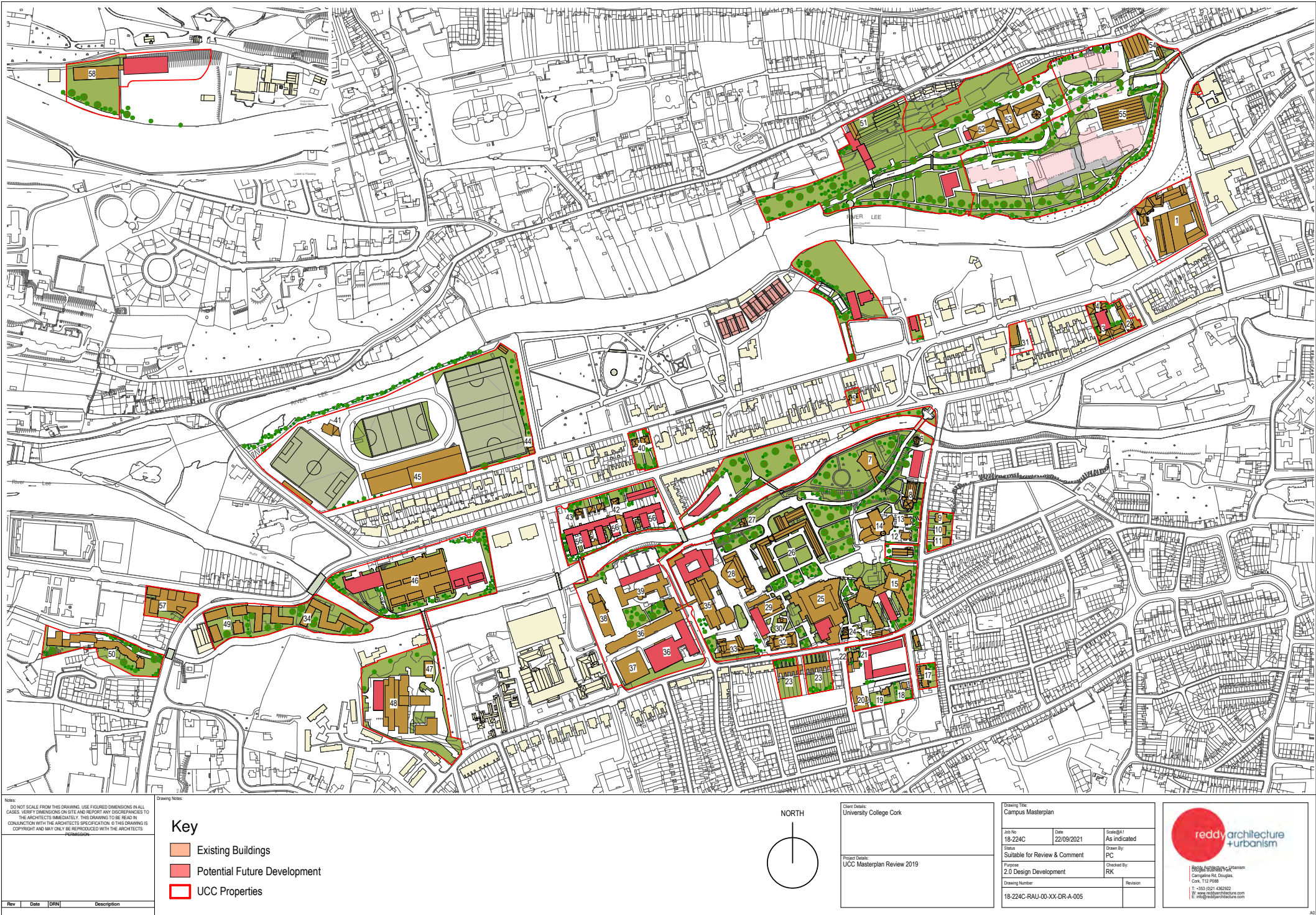
Main Campus - Opportunity Sites

- New Castlewhite buildings – Redeveloped student residences quarter facilitating access to the river
- Áras Na Laoi extension with amenity space fronting the river
- Courtyard adjacent the Food Science and Technology Building – potential for an “Urban Garden” food production and kitchen garden
- Proposed extension to the Kane Building – improving how pedestrians navigate the campus and cross the road network
- Proposed upgrade of Restaurant Building as a destination, connecting to the main pedestrian spine with entrance plaza
- Upgrade of public realm on the north and west side of the Boole Library
- Planted area to the front of O’Rahilly Building could facilitate additional seating as outdoor teaching spaces
- Extension to the O’Rahilly Building – improve legibility of the public realm at the main entrance
- Glucksman Gallery lawn
- Proposed extension to the Geography Building – further definition of entrance locations and passive surveillance of the public realm
- Proposed extension to the Boole Library – enhancing the connectivity of the library to the main spine of the campus
- Proposed building by Cavanagh Bridge – incorporating the locations for exercise and outdoor rooms



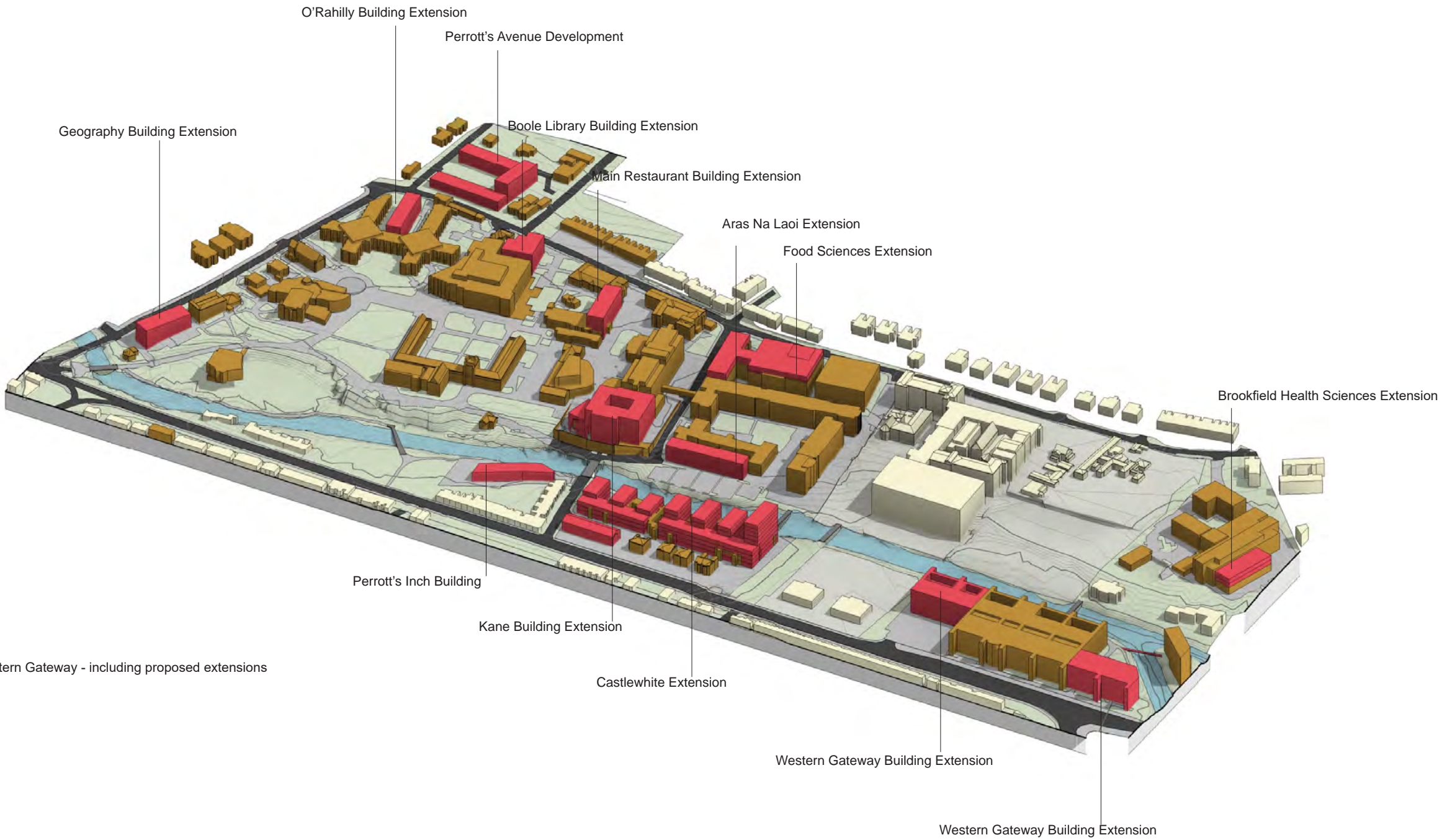


Main Campus - Opportunity Sites



Siteplan of the Main Campus - including proposed extensions

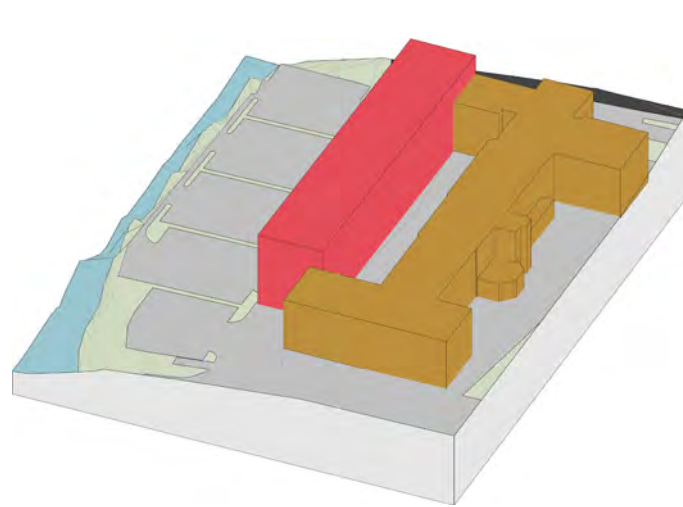
Main Campus - Opportunity Sites



Axonometric of the Historic Core and Brookfield and Western Gateway - including proposed extensions

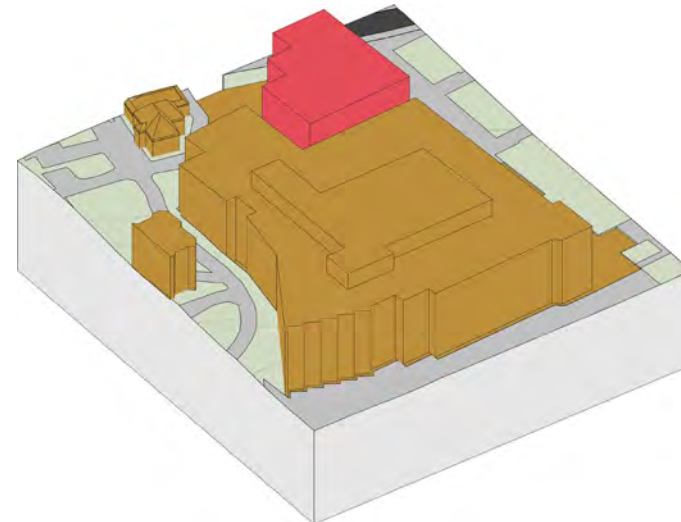
10. Development Strategies and Implementation

Main Campus - Opportunity Sites



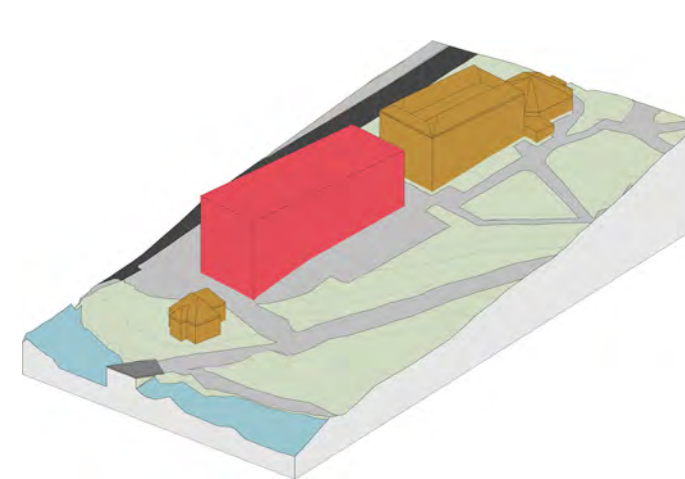
Áras Na Laoi Extension

Áras Na Laoi extension, is a tall rectangular volume that addresses two main spaces, the small sheltered courtyard to the existing Áras na Laoi Building and a newly created waterfront public corridor providing access and amenity space. The extension will create a visual relation with the Castlewhite apartments across the water.



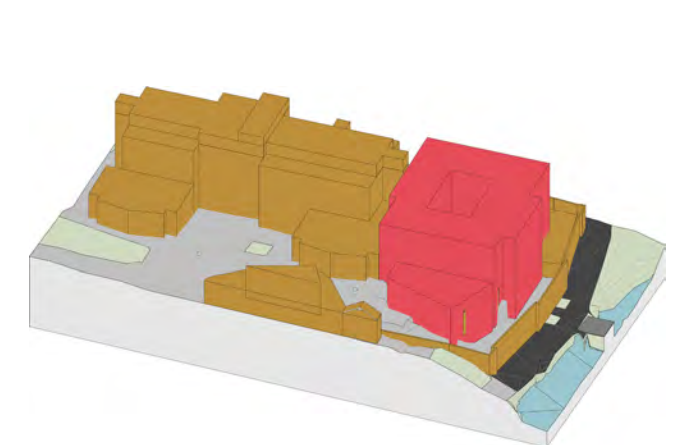
Boole Library Extension

With rapid changes in use of the library, due to technological advances and UCC's proactive efforts to equip the library to serve as a focal point, a volume is required that can plug into the back of the existing library and provide the trans-functional and flexible spaces that its users will need in the future.



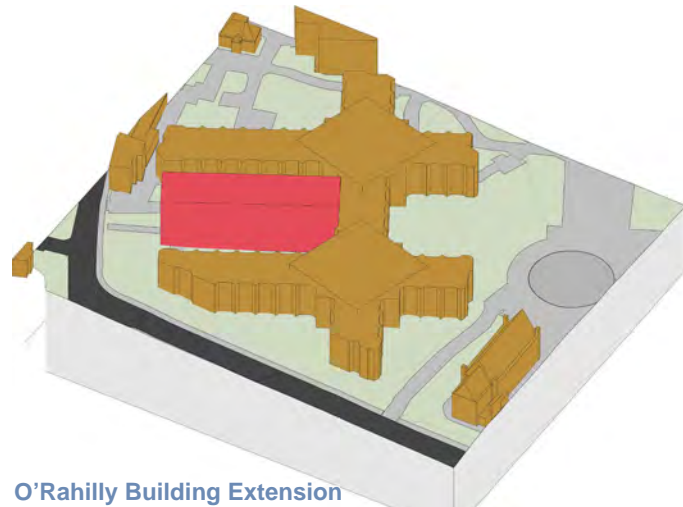
Geography Building Extension

A tall orthogonal block projects from the existing Geography Building, addressing the road on one side and the stepped green landscape on the other. This is a landmark building location and the block will assist in framing the iconic view from the UCC gates and create a vibrant front facing the Glucksman gallery.



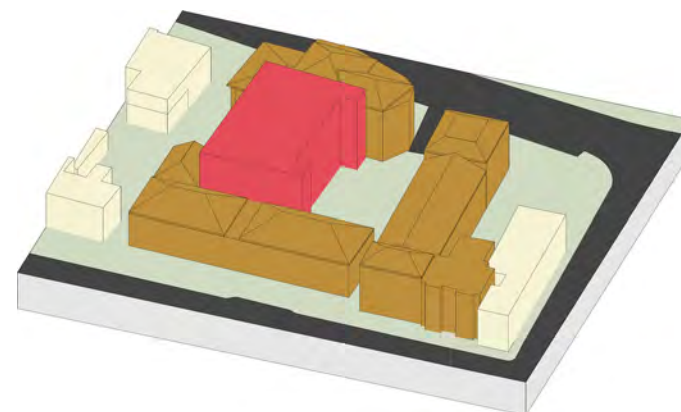
Kane Building Extension

The Kane Building extension is in a form of a sizable orthogonal block, broken up to assist passive ventilation and natural light. The volume will become a landmark building, visible from the Gaol Walk which the façade should address as it rises behind the Gaol walls.



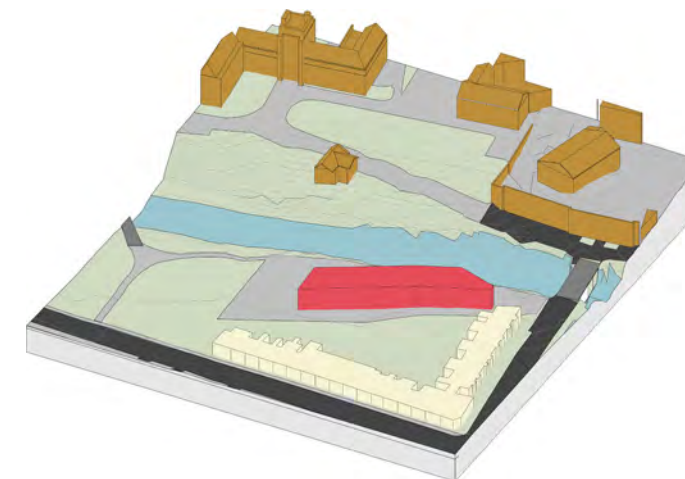
O'Rahilly Building Extension

The O'Rahilly Building extension is a carefully articulated infill in the courtyard to the back of the existing building. It will work in conjunction with the landscape design to the front (the amphitheatre side) to make the existing building more permeable and provide additional space.



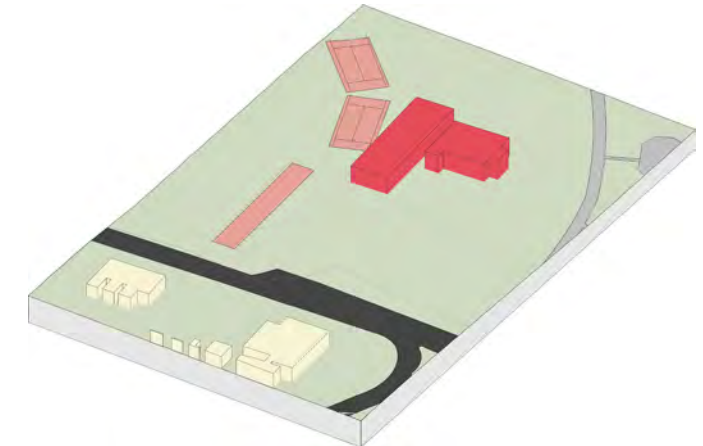
Connolly Building Extension

The Connolly building extension is an infill in the central void of the courtyard. It will assist with passive light and ventilation as well as providing sheltered social spaces. The recent Feasibility Study for the Granary Theatre is proposing to renew the building and its facilities, upgrading it to the current industry standard and making it inclusive and accessible to people with disabilities.



Cavanagh Bridge Building

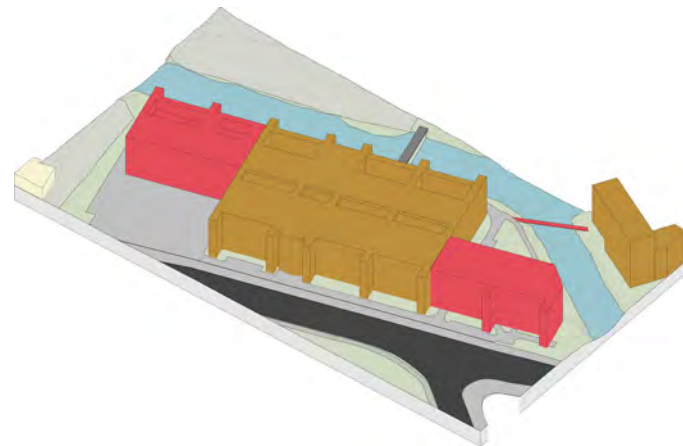
With the development of the Cavanagh Bridge link, there is an opportunity to place a building on the northern bank of the South Channel of River Lee.



Mardyke Garden Building 1

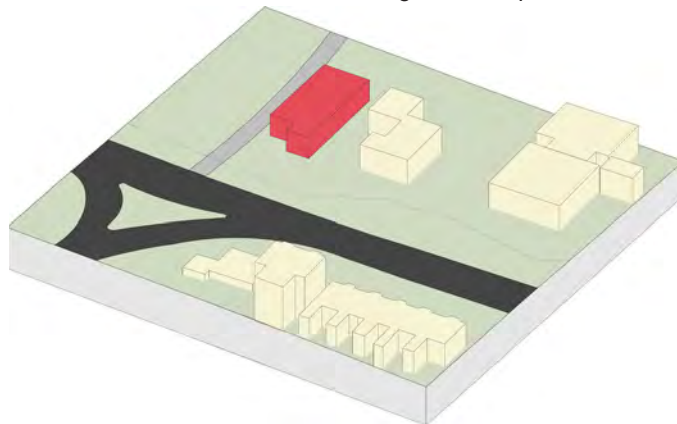
As the Mardyke Garden continues to develop as a link between the Main Campus and the North Mall Campus it is proposed to incorporate a few smaller buildings within the park to ensure continued use and activity and provide passive surveillance.

Main Campus - Opportunity Sites



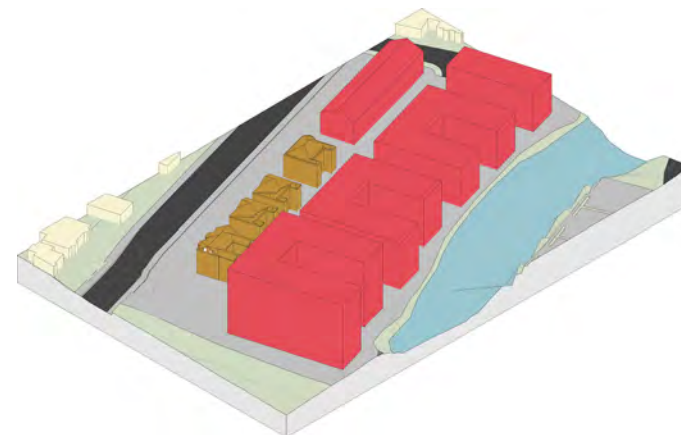
12.3.9 Western Gateway Building Extensions

The East and West extensions follow the existing building structure and adds 2 bays to either side of it. The proposal would aim to keep the current architectural language of the existing buildings but form a more formal and sheltered entrance on the east side, including a space for the future bridge to the Victoria Mills accommodation for a more integrated campus.



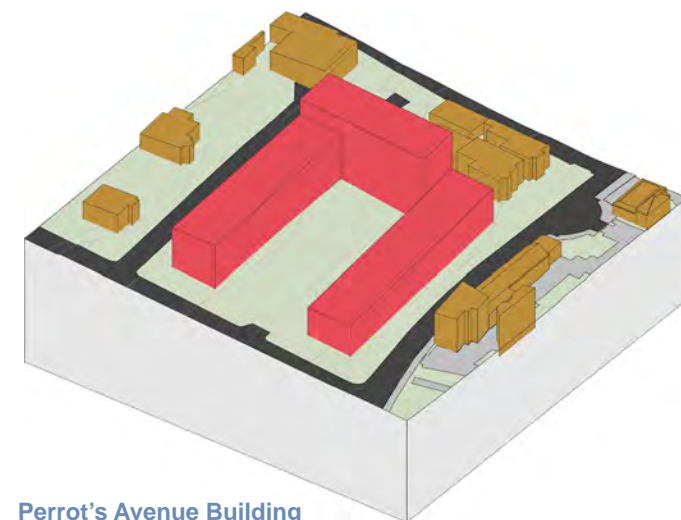
Mardyke Garden Building 2

It is also proposed to consider the south eastern corner of the Mardyke Garden as a space for development, providing space for a building addressing Dyke Parade and the Mardyke Gardens entrance.



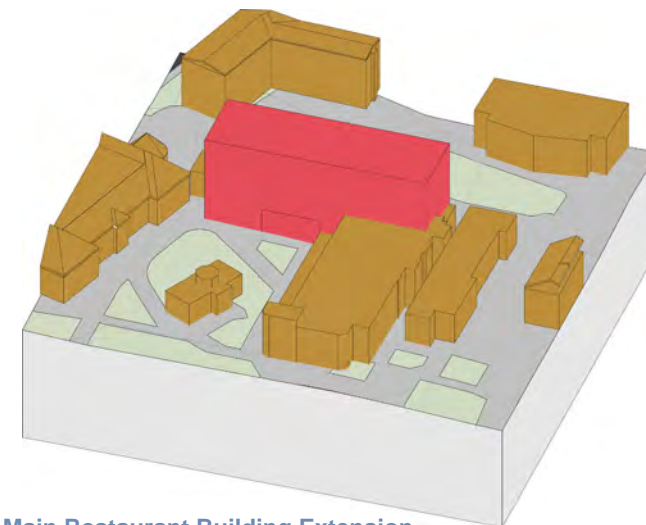
12.3.10 Castlewhite Buildings

Currently serving as low-density student accommodation, a mixed-use, high-density student accommodation/academic building is proposed. Making best use of the prime location and maximising the use of waterfront space will ensure vibrancy and activity day and night. The use of solid and void blocks creates usable sheltered spaces providing attractive outdoor social spaces. The elongated volume on the north addresses the Western Road.



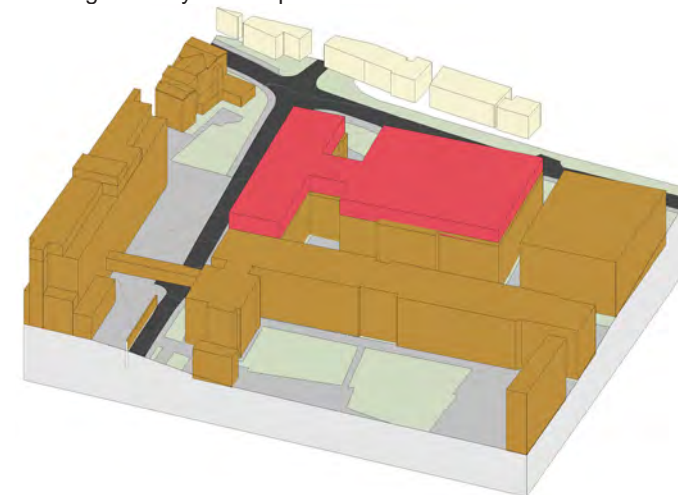
Perrot's Avenue Building

The proposed extension is in the form of 3 blocks that sit on a podium. Each block addresses the neighbouring buildings and together they create a courtyard area.



Main Restaurant Building Extension

The Main Restaurant and the Building & Estates Office is situated at the heart of the campus. An L-shaped Block framing the Observatory and addressing the Electrical Engineering Building will support and enhance this feature space. Additionally, the art deco façade at the entrance of the Main Restaurant should be preserved as it holds a lot of character and speaks to the building diversity on campus



Food Science Building

Designed to facilitate an additional storey for expansion, the addition of a full floor of accommodation enables local expansion for the University.

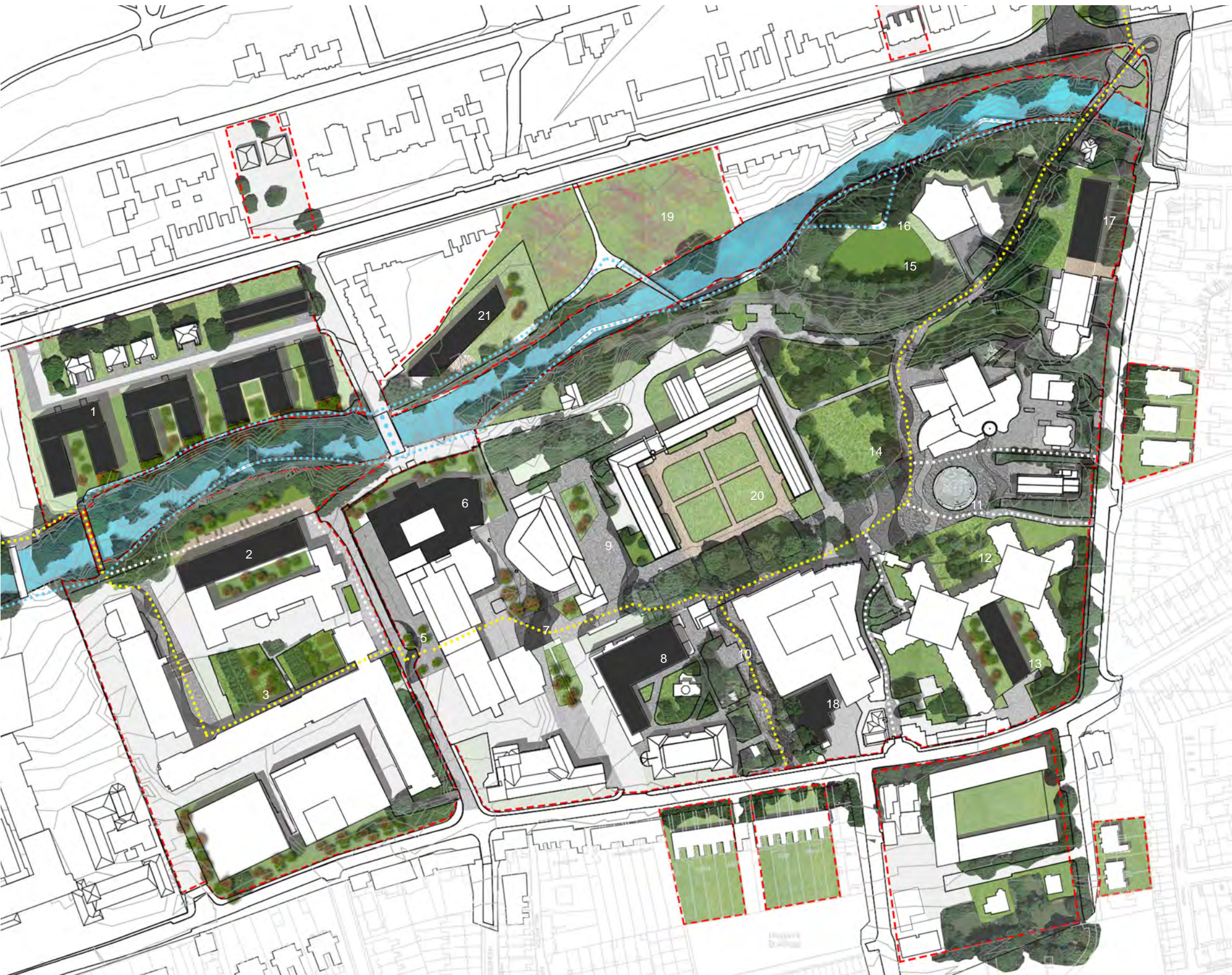
10. Development Strategies and Implementation

Main Campus - The Historic Core

1. Proposed Castlewhite buildings - upgraded student residences
2. Áras Na Laoi extension with amenity space fronting the river
3. Courtyard adjacent the Food Science and Technology Building
4. Food Science Building extension
5. Gaol Walk Plaza
6. Proposed extension to the Kane Building
7. Hub Plaza
8. Proposed upgrade of Restaurant Building
9. Hub entrance area
10. Upgrade of public realm on the north and west side of the Boole Library
11. Honan Plaza - widened and with upgraded paving surface
12. Planted area to the front of O'Rahilly Building to be used as seating area
13. Extension to the O'Rahilly Building
14. President's Garden
15. Glucksman Gallery Lower Ground
16. Pedestrian structure on the Glucksman Gallery roposed extension to the Geography Building
17. Proposed extension to the Boole Library
18. Wildflower Meadow
19. The Quadrangle
20. Proposed building by the Cavanagh Bridge

Legend

- ● ● ● ● Main Spine Pedestrian Path
- ● ● ● ● Secondary Paths
- ● ● ● ● River Path and Boardwalk
- Proposed Building
- Existing Building
- Upgraded paving area
- Upgraded or proposed landscape area



Proposed Plan - The Historic Core



10. UCC Physical Context

Main Campus
How opportunity sites can enhance Character Areas

The UCC Main campus is one of the most pleasant higher-level campus environments. The elegant entrance from Western Road, pedestrian focused frameworks and varied lush landscape support excellent spaces and places and a variety of areas of true character.

It's worth considering the qualities of each of these in the context of campus expansion, as defining the usability and programme of them is helpful when developing or extending campus locations.

A review of existing character areas suggests how high-quality place making can be managed and potentially enhanced as a part of the holistic network of spaces for the entire campus.



Glucksman Gallery Lower Grounds

- Uses:
- Gathering
 - Performance Space
 - Outdoor cinema
 - Meeting
 - Sitting
 - Recreational Amenity Space

This low-lying flood plain has amenity opportunity, as usable space on a day to day basis as part of the green network of spaces on the campus,



Honan Plaza seating



Performance



Outdoor Cinema



Sports



Gathering



President's Garden

- Uses:
- Gathering
 - Meeting
 - Sitting
 - Recreational Amenity Space
 - Horticultural Amenity Space

There are several significant feature trees on this lawn which is a popular gathering, meeting and socialising space. Following the suggestions of the Biodiversity Study, less formal planting is encouraged here in favour of pollinator planting. It is proposed to continue to protect and develop the President's Garden as a horticultural amenity.



Mature Horticultural Planting



Gathering



Honan Plaza

- Uses:
- Urban Plaza
 - Performance/Teaching Space
 - Movement network
 - Meeting/Gathering
 - Resting

The Honan Plaza amphitheatre is the central urban space and hard surfaced gathering point on the campus. It is a central focal point in the hierarchy of public spaces. Some latent potential exists for wayfinding devices, seating/street furniture and lighting to maintain its primacy in the UCC Main Campus pedestrian spine.



Urban Space



Gathering



Movement Network



Main Campus
How opportunity sites can enhance Character Areas



Áras Na Laoi extension

- Active front facing the river to be developed as part of the pedestrian infrastructure
- Sitting
- Amenity Space

Food Science and technology Building Courtyard

- Food Growing / Kitchen - Community Garden
- Movement
- Sitting

The area in front of the Áras Na Laoi extension, facing the river can create an amenity space as an integral part of the pedestrian river network. A recreational seating area overlooking the river.



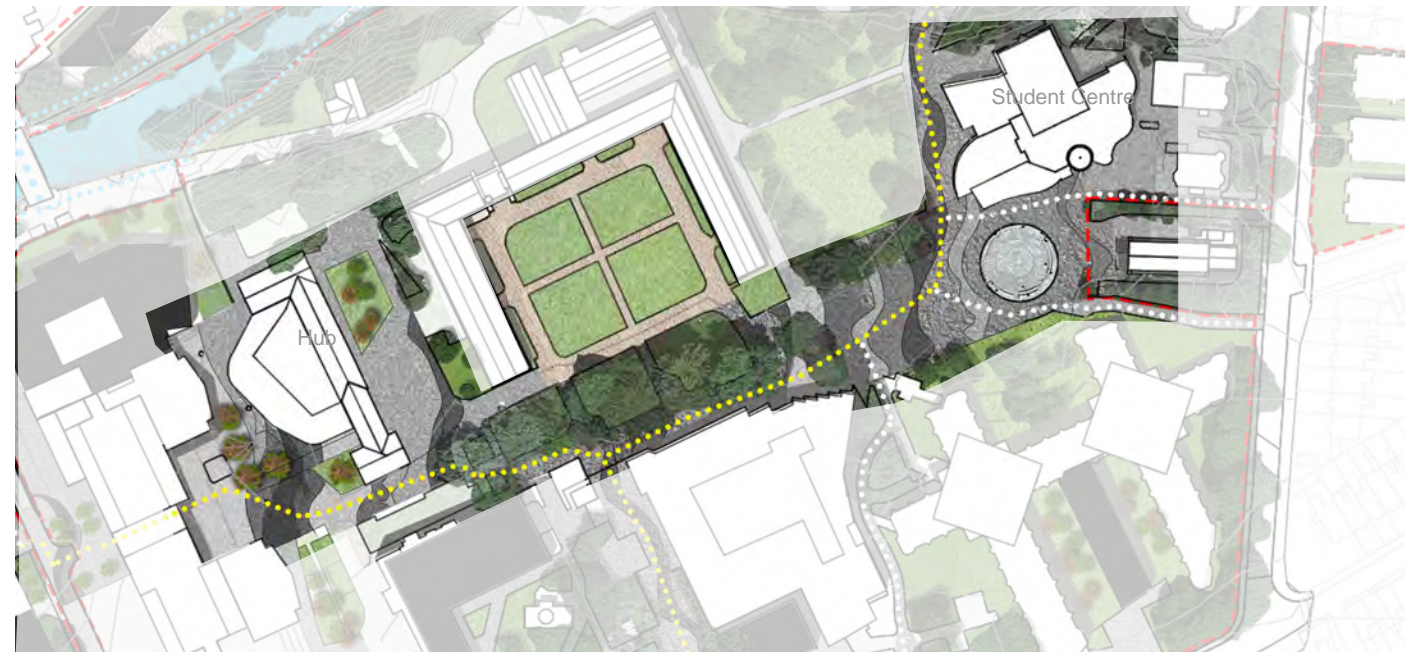
Kitchen Garden



Seating Area



Movement Network



Central Pedestrian Spine

Uses:

- Wayfinding
- Movement
- Connection and Entrance

The central spine area forms the central axis on the campus incorporating the avenue of mature trees in front of the Boole Library as a significant campus feature. The synergy, history and connection between these 3 spaces makes this one of the most important and exciting spaces on the campus.



Urban Space



Gathering



Movement Network

The concept of a spine was proposed in the 2004 Masterplan Review as the principal thoroughfare or 'main street' for the campus. The concept had its genesis in earlier masterplans but the need for such a linking device was heightened by the physical extension of the campus and the consequential need to link the newly acquired lands to the Main Campus area. This need has been underlined by the development of the sites at the Western Gateway and at Brookfield.

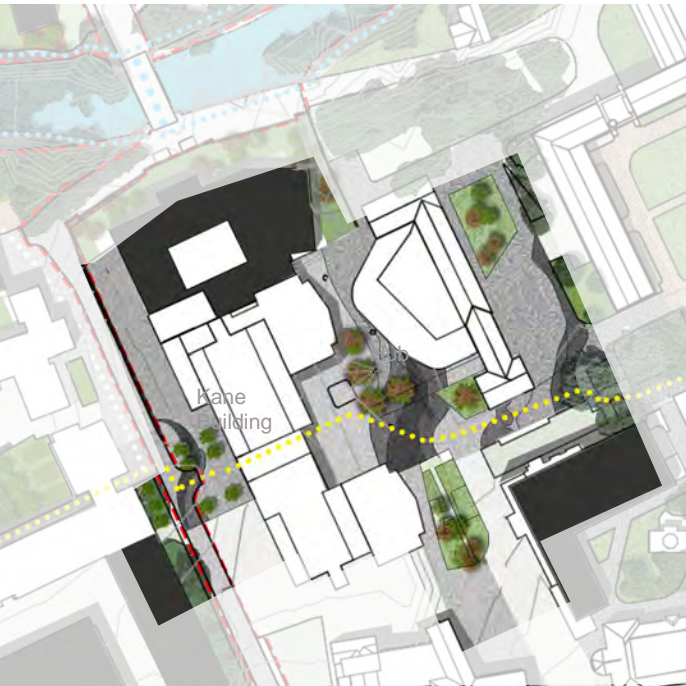
The 'Spine idea' is derived from the visual straight link from the Honan Chapel to the Kane Building passing the Main Quad. This concept is expanded by increasing wayfinding and legibility. Using similar materials to the Honan Plaza and New Hub building, the hard and soft landscape will further define movement through the campus.

The current "dumbbell" effect generated by the Western Gateway and Brookfield buildings to the West and the Historic Campus to the East, would be balanced somewhat by the westward extension of the campus spine as a major linking device on campus.



Honan Plaza and the Student Centre

Main Campus - Character Areas
How opportunity sites can enhance Character Areas



Hub and Kane Building Public Realm

- Uses:
- Moving
 - Meeting
 - Gathering
 - Sitting

The recently completed Hub will sit across the entrance to the Kane Buildings creating an exciting new urban plaza between them. It is proposed to extend the Kane Building to the north. This will support the development of an urban space within the Gaol Walk with the potential to incorporate the historical portico a part of a new development.



Urban Space Gathering Movement Network



Castlewhite

- Uses:
- Residential Amenity Space
 - Meeting
 - Moving

It is proposed to rebuild the student residences on the Castlewhite Site. The U-shaped buildings will provide amenity space between the buildings, and overlooking of the river, closely connecting it to the pedestrian infrastructure. It will be a priority to complete a pedestrian movement and permeability access to the Western Star lands.



Residential Amenity Spaces Outdoor Socialising Areas Movement



Gaol Walk

- Uses:
- Movement

The Gaol Walk was originally the road leading to Cork County Gaol. It cuts through north/south across the entire southern campus from College Road to the Gaol Bridge and across the river to Western Road. As a narrow road framed by two tall buildings, it has potential for landscape and public realm improvements.

Framing one side of the Gaol Walk is the Food Science and Technology Building. With its landscaped courtyard it offers an optional addition on the east-west campus axis or visitors can choose to walk to the northern end of the Gaol Walk and continue their journey along the river.



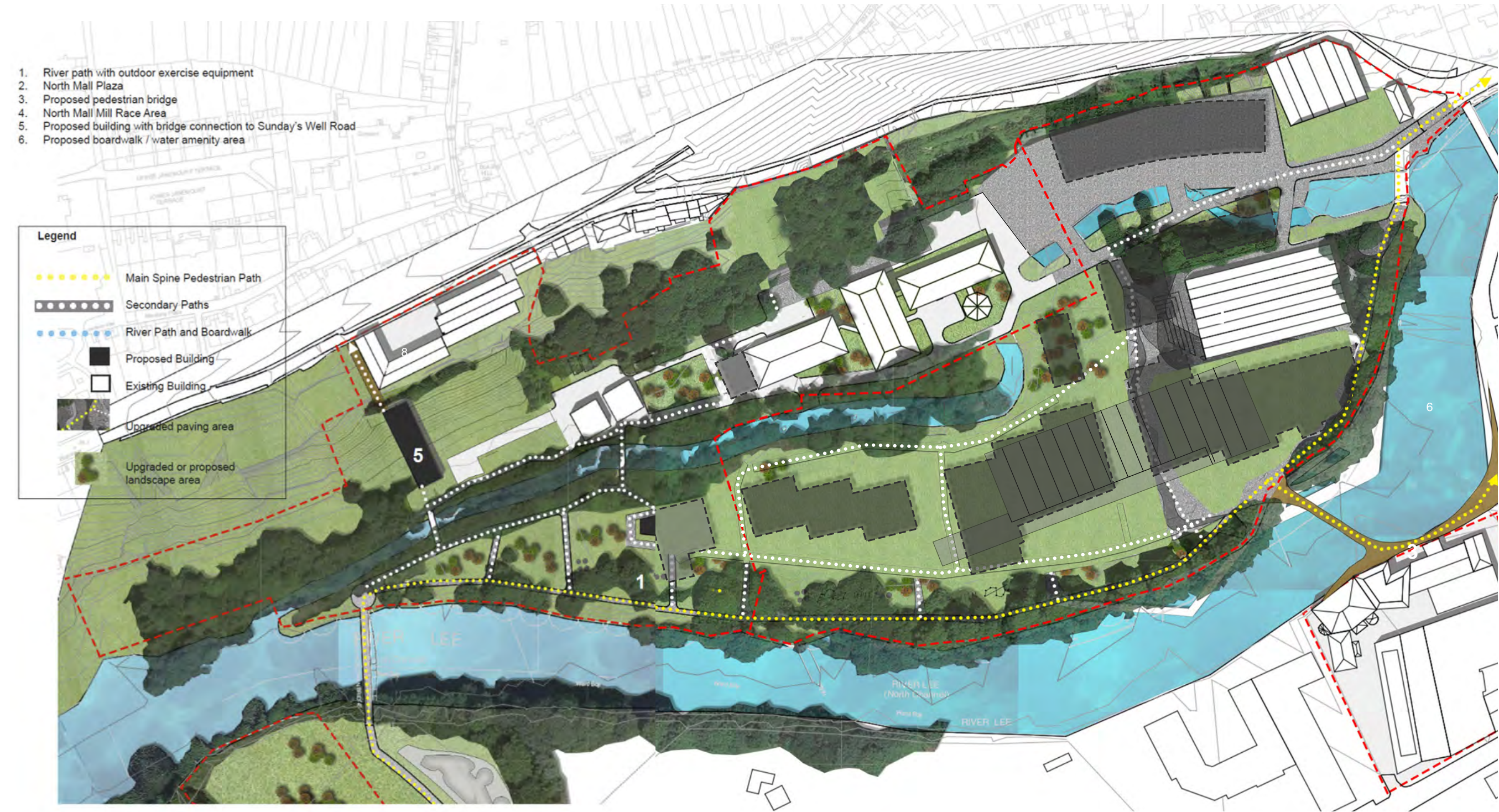
Movement Network



Section - showing planting greening of the Gaol Walk



Main Campus - North Mall
How opportunity sites can enhance Character Areas

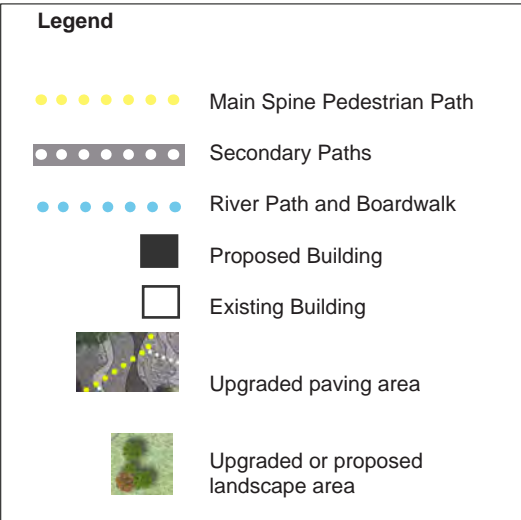


10. Development Strategies and Implementation

How opportunity sites can enhance Character Areas

Main Campus - Brookfield and Western Gateway

- 1. Proposed enhanced pedestrianised environment from College Road to the Western Road
- 2. River front park
- 3. River path
- 4. Western Gateway Plaza



Brookfield Health Science Complex



How opportunity sites can enhance Character Areas

Main Campus - Brookfield and Western Gateway

Brookfield / College Road Bridge Link

- Uses:
- Movement Network

Access from College Road across the Brookfield Health Sciences Complex, across the River Lee and to the Western Gateway Complex is an important link supporting the permeability of the campus. Ensuring that this link is wide enough for consistent large amounts of pedestrian traffic is imperative. It is proposed to widen the footpath along the Brookfield Health Sciences Complex.



Moving network



Western Gateway River Park

- Uses
- Moving Network
 - Seating areas
 - Closely connected to the river

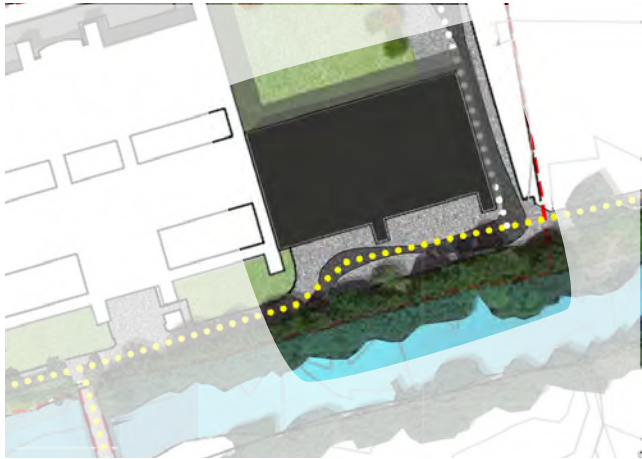
A proposed new building of the western side of the Western Gateway Building will form a protected south-facing green area overlooking the river.



Moving network



Seating



Western Gateway Plaza

- Uses:
- Moving Network
 - Seating areas
 - Hard surfaces
 - Closely connected to the river

This river-facing area will provide an intimate plaza, that is equally a part of the pedestrian infrastructure as well as a front area facing Western Road.



Moving network



Seating



Hard Urban Space

How opportunity sites can enhance Character Areas

Main Campus - Mardyke Garden and Dyke Parade



Legend

- Main Spine pedestrian path
- Secondary paths
- River path and boardwalk
- Proposed Building
- Existing Building
- Upgraded paving area
- Upgraded or proposed landscape area

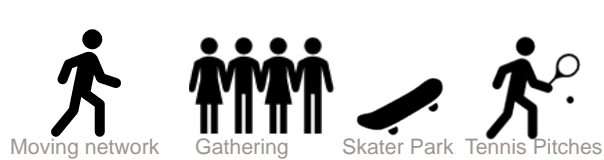
- 1. Dyke Parade
- 2. Proposed building on the corner of Mardyke Garden and Dyke Parade
- 3. Proposed building in the Mardyke Garden
- 4. Proposed tennis courts
- 5. Park and play area
- 6. Lands connecting to Tennis Courts

Mardyke Garden

Uses:

- Moving Network
- Amenity Area
- Skateboard Park
- Tennis Courts
- 5-a side pitch
- Exercise
- Seating

Mardyke Park is an important link between the Main Campus and North Mall Campus. A number of components will upgrade this area significantly, including incorporating buildings to the area to provide passive surveillance as well as provide a number of usable amenity spaces to ensure activity and vibrancy throughout the day.



Dyke Parade

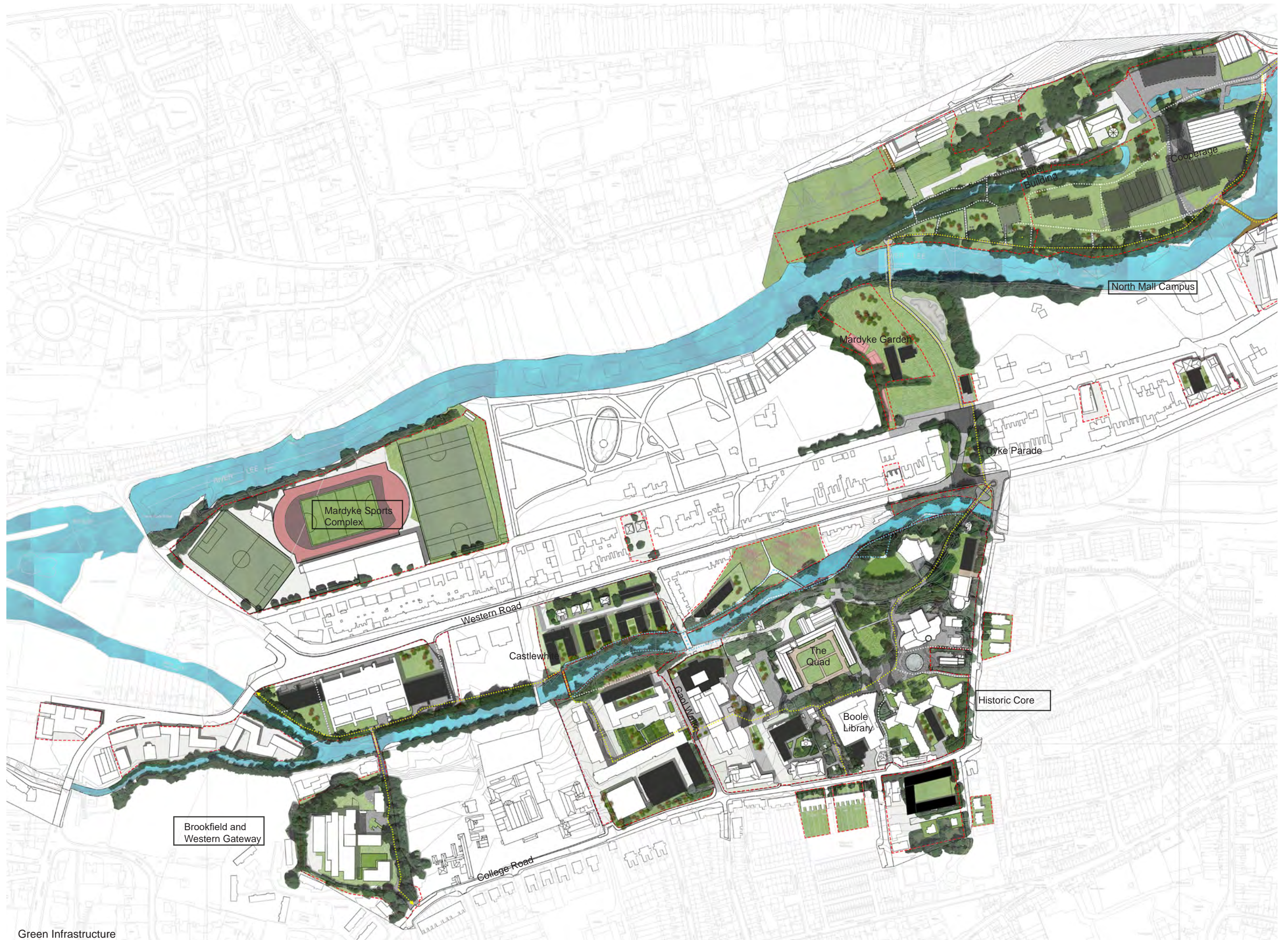
Uses:

- Moving Network
- Seating Area
- Public Square

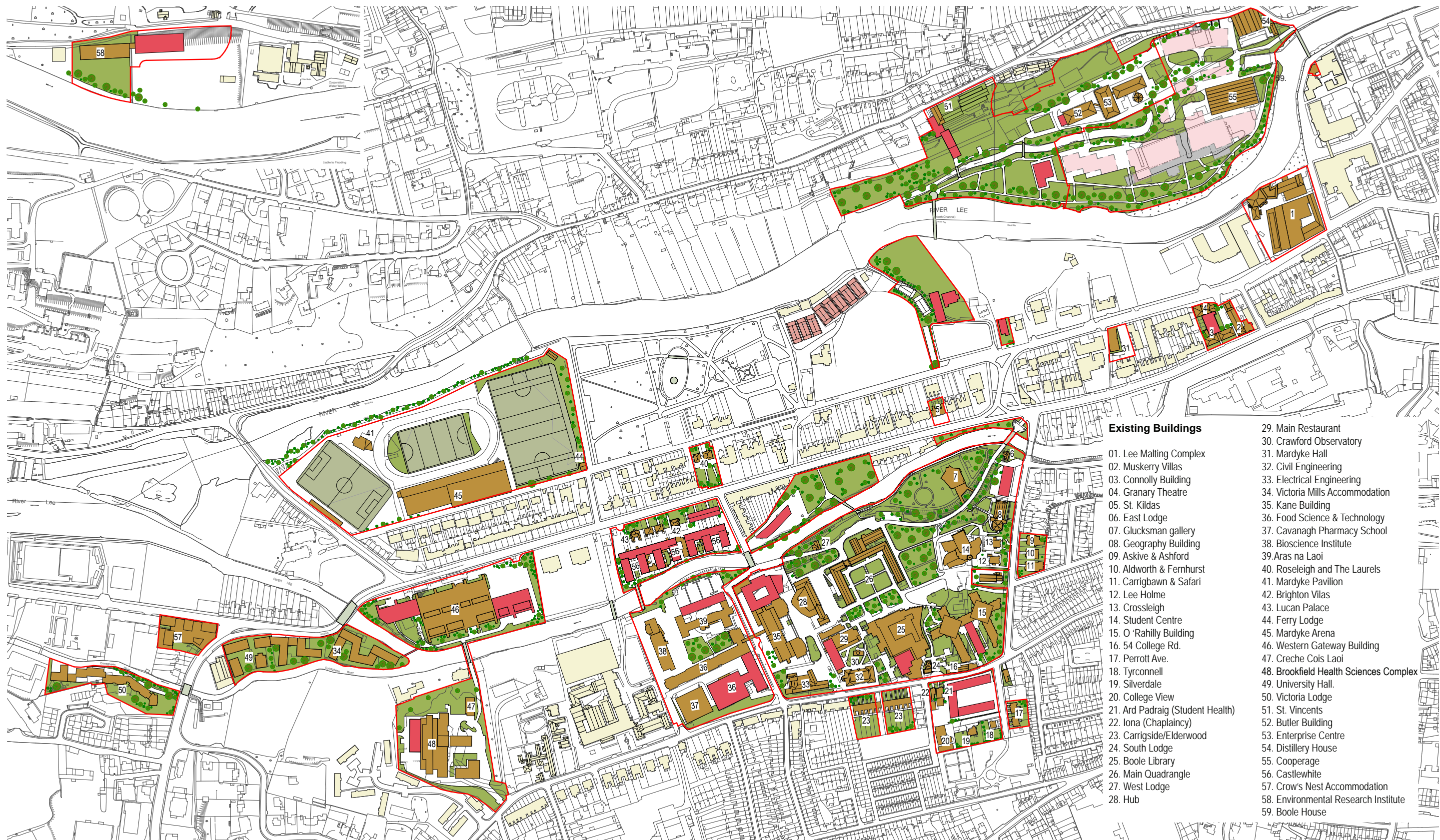
Dyke Parade is the link between the Main Campus and Mardyke Gardens. There is further potential to create a strong urban space with Cork City Council here which could prioritise pedestrians, but also allow cars to travel through.



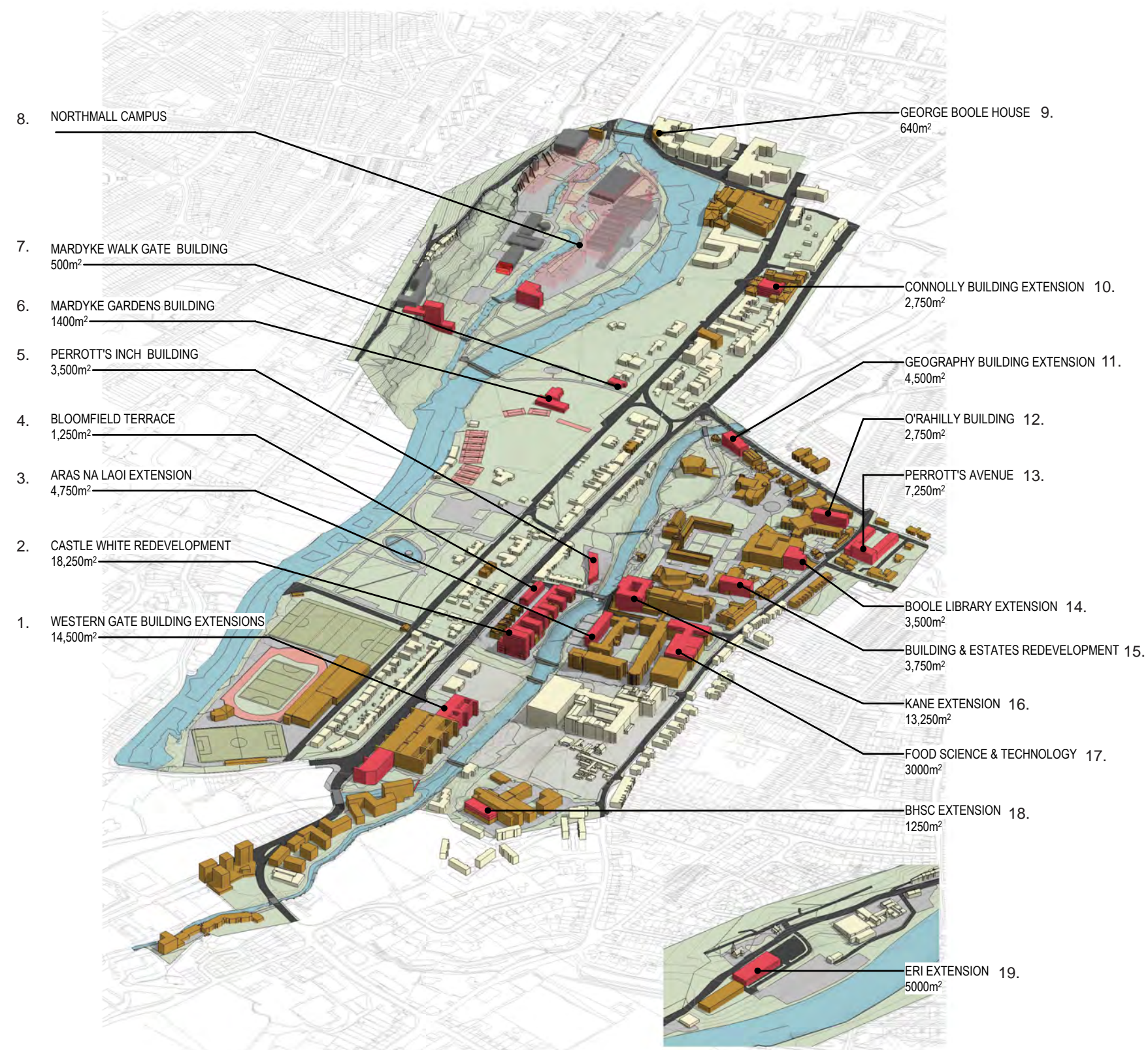








UCC Masterplan area with potential future development



Masterplan Capacity Study	m²
1 Western Gateway Building Extensions	14,500
2 Castlewhite Redevelopment	18,250
3 Aras na Laoi Extension	4,750
4 Bloomfield Terrace Building	1,250
5 Perrott's Inch Building	3,500
6 Mardyke Gardens Building	1,400
7 Mardyke Walk Building	500
8 North Mall Campus Buildings	41,325
9 George Boole House	640
10 Connolly Building Extension	2,750
11 Geography Building Extension	4,500
12 O'Rahilly Building Extension	2,750
13 Perrott's Avenue Building	7,250
14 Boole Library Extension	3,500
15 Building and Estates Redevelopment	3,750
16 Kane Building Extension	13,250
17 Food Science & Technology Building Extension	3,000
18 Brookfield Health Sciences Complex Extension	1,250
19 Energy Research Institute Extension	5,000
Total	133,115
City Centre Campus	25,720
CSAIP (33% of 107,350)	35,425
Total	194,260

10. Development Strategies and Implementation

UCC Accommodation Requirements and Proposals

The Masterplan review 2011 supported that where further land is required, that it should be acquired in the Greater Campus area. This recommendation aligns with regional, local and University policies. It represents a traditional sustainable approach to planning for future campus expansion.

In recent years however, innovation in campus planning have continued to involve a deep rethinking of the relationship between the built form of the university and the built form of its host city. The principle of the University as an enabler in the city, playing an important economic and social role, helping to co-ordinate economic and social developments at local and regional level implies that the traditional campus boundary is limitless.

UCC's physical expansion into distinct locations in the city has been gradual over the last decade, and this increase in its profile outside of the traditional campus perimeter offers opportunity to further develop UCC's relationship with the city socially and economically. This masterplan review strongly recommends that the University continues to acquire lands to enable its policy of strengthening the identity of the University in the city and its function as an activator and enabler of growth in the region.

Existing Space Provision

In the context of this masterplan review, a study has been undertaken to assess current space provision on campus against a number of established norms. In addition to an assessment of the existing situation, this exercise supports a projection of the future space requirements for UCC.

It should be noted that space norms can vary widely, depending on a number of factors e.g. programme area, teaching hour per week, staff student ratios etc.

Studies suggest that undergraduate space allocation varies greatly both between faculties and between universities. It has also been noted that norms have reduced in recent years possibly due to more effective management by institutions of space allocation and usage.

Table 2 provides a comparison of current student numbers with the recognised FTE norms for higher education (HEA and AUDE) which are a sound basis for benchmarking spatial requirements.

1. HEA norms which propose an allowance of 10m² (gross floor area) per undergraduate and 20m² (gross floor area) per postgraduate student
2. The Association of University Directors of Estates (AUDE) which propose a 18m² per FTE for research intensive universities

The space provisions for the existing student numbers in UCC when subjected to both the HEA and AUDE norms indicate that there is a shortfall of accommodation currently to meet demands. The university has an ambitious capital development programme (see table 13) which aims to address the current space requirements. Further developments/opportunities will emerge during the masterplan period.

It is noted that a projection of anticipated growth and expansion requirements further highlights the Universities immediate and long term challenges. A comparison of future demand versus future expansion illustrates there is an ongoing need to acquire lands to facilitate modest expansion requirements for the University.

UCC FTE Trends - Summary of FTE Numbers					
	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Undergraduate	13,549	13,840	14,206	14,412	14,637
Total Postgraduate	4,717	4,698	4,980	5,221	5,454
Total	18,266	18,537	19,185	19,633	20,091

Table 1 UCC Summary of FTE

Existing Academic Space Provision for Students	
Actual Existing Academic Space Provision (excluding student residences)	231,000 m ²
20,091 (2021 Total) Actual Space Provision 73% (UG) : 27% (PG).	(11.5m ² /FTE)
UG@10 m² + PG@20 m² Space Required (HEA Norms)	146,370 + 109,080 = 255,450 m ²
AUDE EMR Student Building Requirements (Association of University Directors of Estates)@18m ²	361,638 m ²
Current Shortfall	24,450 - 130,638 m ²

Table 2 Existing Space Provisions



UCC Future Space Requirements

Projected UCC spatial expansion requirements are tested based on two scenarios - uplifting student numbers from 21,091 to 23,000 students and again to 25,000 students for a likely area demand to meet nominal expansion in the short to medium term.

The floor area requirements to accommodate projected capacities are indicated in tables 3-6 and suggest a significant shortfall in the existing UCC building stock and current available space.

UCC Future Space Provision

Allowing for issues of site diversity, proximity issues and similar, it is clear that the existing landbank can accommodate the short term building requirements of the university, assuming that the student/floor area ratio of 12.9m²/student is applied.

However, an increase to 18m²/student, allowing for site diversity and proximity issues would require an increase in landbank and spatial requirements.

Given that this is based on indicative norms for area allocation per student and with regard to UCC's significant quantum of existing building stock requiring refurbishment/repair, it is clear that significant further lands are required which would allow the achievement of a floor area/student allocation of 18m²/student in the medium-to-long term.

Projected Space Requirements for 23,000 Students	
Academic space requirements for 23,000 students based on current HEA norms	
16,100 Undergraduates @10m ² /student*	160,100 m ²
6,900 Postgraduate@20 m ² /student*	138,000 m ²
Academic Space requirement for 23,000 students	298,100 m ²

Table 3 Projected Space Requirements

Projected Space Requirements for 25,000 Students	
Academic space requirements for 25,000 students based on current HEA norms	
17,500 Undergraduates @10 m ² /student*	175,000 m ²
7,500 Postgraduate@20 m ² /student*	150,000 m ²
Academic Space requirement for 25,000 students	325,000 m ²

Table 5 Projected Space Requirements

Projected shortfall 23,000 Students		
HEA Norms	298,100 m ²	67,100 m ²
AUDE EMR	414,000 m ²	183,000 m ²

Table 4 Projected Gross Shortfall

Projected shortfall 25,000 Students		
HEA Norms	325,000 m ²	94,100 m ²
AUDE EMR	450,000 m ²	219,000 m ²

Table 6 Projected Gross Shortfall



UCC Masterplan Development Areas

The table opposite indicates the current UCC pipeline of projects and development as submitted to the Higher Education Authority for 2021 National Development Projects review.

Current Pipeline Buildings	
1. Cork University Business School - New Facility	17,000 m²
2. Cork University Dental School & Hospital - Relocation	9,480 m²
3. New Facility / Expansion of Tyndall National Institute	16,437 m²
4. Innovation Hub Building	3,750 m²
5. Cork University Clinical Medical School	2,400 m²
6. Crow’s Nest Student Residential & Health Centre	8,660 m²
Total Current Pipeline Buildings	57,727 m²
Future Pipeline Buildings	
7. Interdisciplinary Science Centre – Kane Extension	10,000 m²
8. Creative Hub (Phase 1 (URDF Proposal) & Phase 2	10,000 m²
9. PRTL1 6 Biosciences	6,000 m²
10. Specialist Germ Free Biological Facility	1,650 m²
11. Clinical Sites University Hospital Waterford, South Tipperary General Hospital & University Hospital Kerry	2,700 m²
12. New Clinical Research & Education Facility on site of Vacated Dental Hospital at CUH	20,000 m²
13. New Engineering Building	10,000 m²
14. Life Sciences building	4,500 m²
15. Outreach and Access Centre	1,300 m²
16. Public Health Building	5,000 m²
17. George Boole House/Tyndall Innovation	640 m²
18. APC Innovation Centre	4,000 m²
Total Future Pipeline Buildings	75,790m2
Total Pipeline	133,517m2

Table 7 Total UCC Pipeline Projects

11. THE DIGITAL CONTEXT

Introduction

The Pandemic challenged all places of learning in many new and unexpected ways. As UCC took measures and made efforts to minimise physical attendances, the challenge of the day to day business of learning and teaching focused a bright light on the robustness of UCC's infrastructure for remote learning and teaching.

Like all places of learning during the pandemic, UCC was not the hub of activity it normally was, but this did not mean that UCC was closed and learning and teaching were very active online. In UCC digitalisation has already broken down the physical barrier and distance learning students have been attending classes from home for some time before Zoom and Microsoft Teams became commonly known mediums

This crisis has increased the reliance on Information Technology and the concept of a true Digital Campus.

The digital environment in UCC had already been redefined in the last decade and the pace of this change is now accelerating. The modern UCC student brings expectations in terms of how UCC interacts with and supports them in their learning journey. Students are

already well placed to engage online when applying for courses and programmes, a process which naturally follows through to course selection, registration, induction, assessment, graduation and post-graduation on-going engagement.

UCC already possesses the capability to develop and deliver an entire degree programme online which is a natural extension of its academic reach.

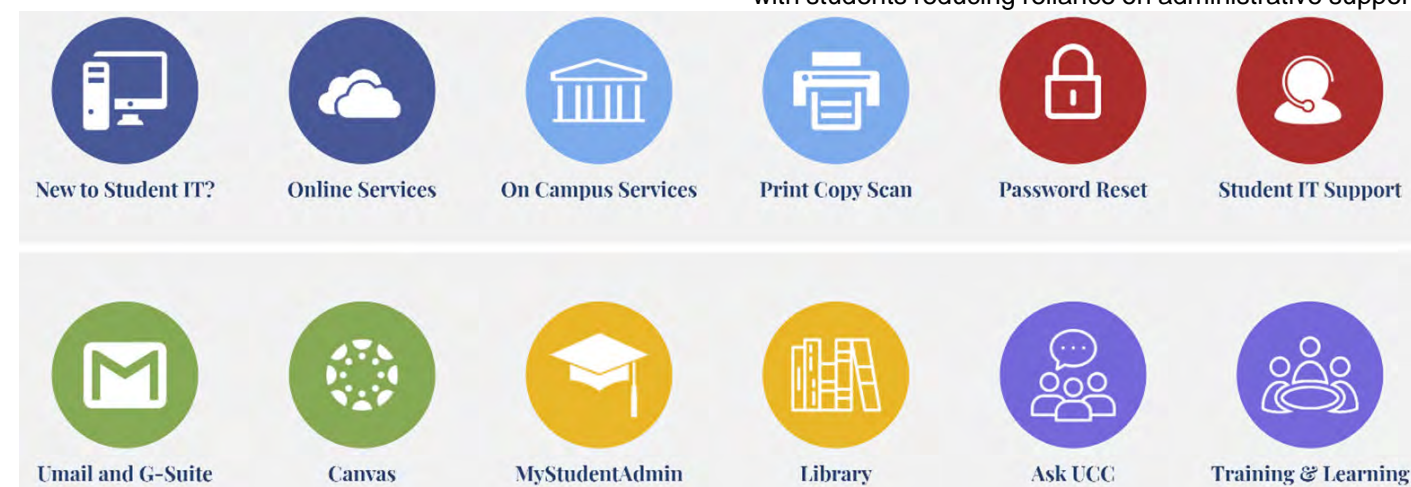
UCC can lever its infrastructure the opportunity to deliver an enhanced range of services taking advantage of new technologies and applications.

UCC's digital technologies can improve communication with, collaboration between, and socialisation of students.

Academics can be encouraged to explore and implement new teaching techniques through the use of digital collaboration tools.

Technology enables a more effective and co-ordinated approach to student welfare and the delivery of student services.

UCC is taking advantage of social media in communication with students reducing reliance on administrative support.



UCC IT Services

UCC can extend its ability to deliver lectures, tutorials, assessments and grading information to remote students however, learners of all types also need to be present on campus in an environment that challenges them and fosters new ways of thinking about the world.

After the Pandemic, what will remain is a new need to identify the redefined purposes of blended learning, virtual + physical presence and ensuring the right balance between them, for teaching and learning for the future.

IT Masterplan

The importance of the digital network, the power of IT as an enabler and the future reliance on same shall not be underestimated. A lot of future building and campus solutions will be reliant on the strength and reliability of stable digital networks.

An emerging theme for buildings is the concept of the 'Smart' building that in turn extends to the 'Smart City' or 'Smart Campus'. Technology now provides endless opportunities to deliver buildings that are more energy efficient, that can create value for the university, that



UCC IT Opportunities

can improve user experiences, and that can deliver key services to occupants when and where required. IOT/ Building sensors and ubiquitous Wi-Fi is becoming the norm while staff and students are demanding services and spaces that can enhance the learning experience and that can deliver services to them when and where they need it.

Any buildings 'Master Plan' must include a digital/ technology strand and IT Services must ensure buildings are future proofed to leverage technology. There are several pillars that need to be considered under this 'IT strand'.

Firstly, the networks and infrastructure (the foundations) must be solid and capable of meeting the IT demand of today and the future. Layered on the infrastructure is the technology and devices that can deliver services or gather information, such as digital displays and sensors. The data that is generated by devices and sensors can then be leveraged to improve performance of buildings, improve user experiences, and/or facilitate the deployment of new services. IT Security is a fundamental requirement. This is becoming more critical as buildings and devices become increasing connected and dependent on the data networks.

Future new builds and refurbishments of the campus estate must at least consider how technology can be deployed and used to deliver the following benefits or services.

1. Reduce energy consumption:

Technology must be considered as an enabler to reduce energy consumption, to reduce the university carbon footprint, and to deliver real cost savings to the university.

2. Improve Building Efficiency:

Technology must be leveraged to identify under/over used resources within a building. It needs to make sure

that spaces are used optimally and that heating/lighting etc. are optimised.

3. Predictive maintenance/management:

Technology must be used to detect and monitor building performance, to predict potential failures and activate maintenance procedures before alerts are triggered. With better insight into how buildings are used and operated it is easier to plan preventative maintenance.

4. Increased productivity:

Technology can be used to enable 'Smart' buildings that are designed to deliver a more comfortable experience for occupants.

5. Better use of resources:

Data generated by smart buildings can provide insights that can be leveraged in planning and improving services for users. It can also be used to develop new services.

6. Personalisation:

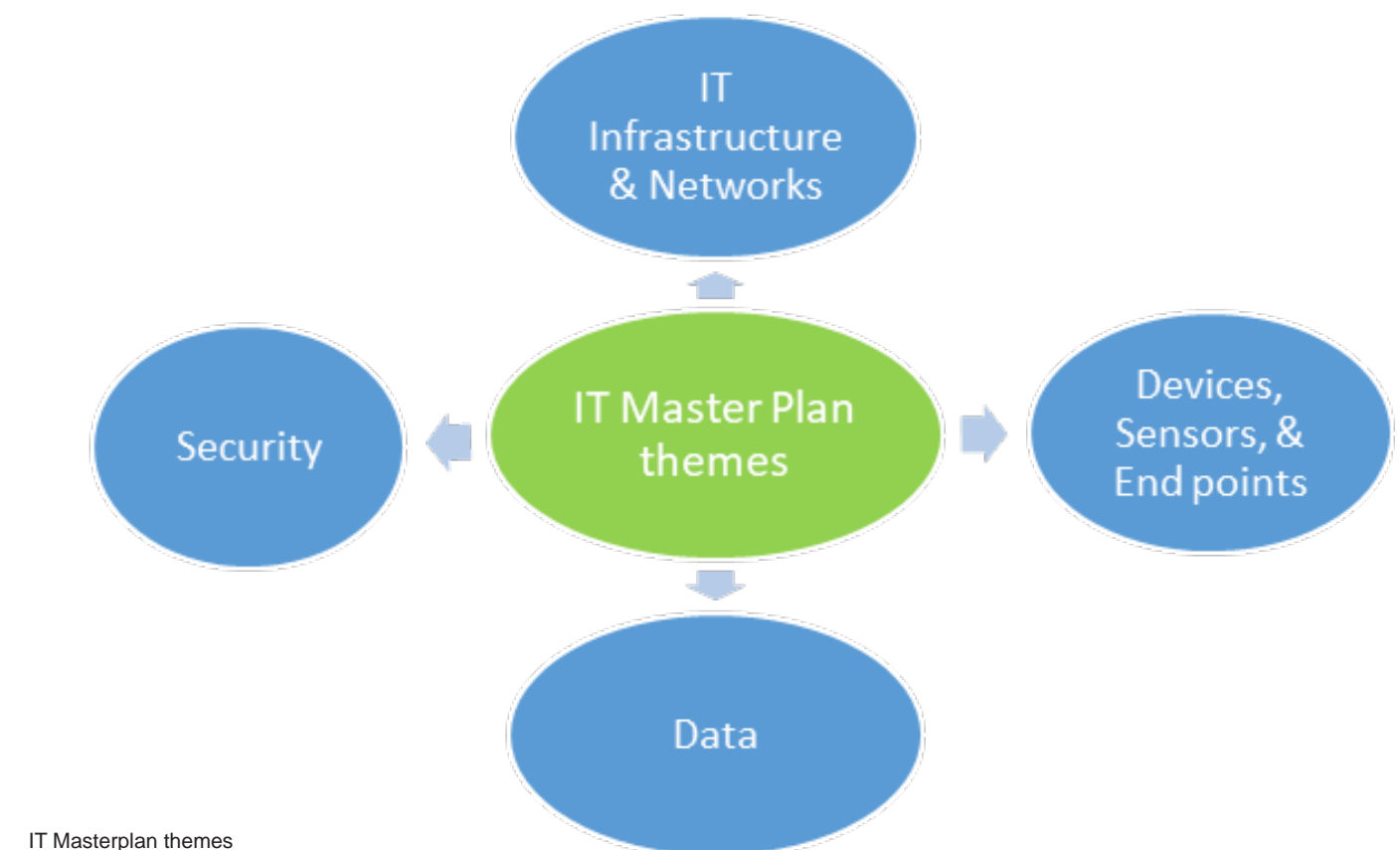
Data and connected buildings can help provide personalised experiences for staff and students. That can range from wayfinding, environmental settings in office spaces (lighting and heating), free desks in library or space in canteen etc.

7. Infrastructure resilience:

Critically Networks and technology underpin the smart building. In the past the building network or infrastructure was separate to the data or IT Network. This is no longer the case and the operations and management of smart modern buildings are dependent on a secure and resilient network that is connected to the rest of the campus and internet.

Commuter plans, parking availability, traffic flow, restaurant occupancy, waiting times, room and desk occupancies, wayfinding are just some of the added services or value where technology can help in delivering buildings that are smarter. The key success however will be dependent on a resilient and fit for purpose IT network.

This chapter aims to highlight some of the future trends and solutions that need to be considered in all future developments.



IT/Network Infrastructure

The requirements for IT infrastructure are relatively simple and definable. The infrastructure is the IT backbone of any building that facilitates the digital services. Most services and users at this stage are reliant on the data networks.

- Wi-Fi is becoming the preferred mechanism for staff and students to consume services. Therefore, all new buildings must ensure that the Wi-Fi service is available in all areas where staff and students will be located. In practical terms, for example, this means detailed Wi-Fi surveys based on designs to optimally locate access points and post build surveys to validate that the service is appropriate. Furthermore, there must be a recognition that other devices/sensors within buildings may leverage Wi-Fi.
- The wired network is still critically important. It is envisaged that the LAN will be a key part of the building fabric. The LAN will run key buildings services including backhaul Wi-Fi, CCTV, BMS, Access Control, Digital signage, and realistically any fixed type devices. Staff and students may still have access to the LAN and as such office and desks may continue to be served by LAN connections. The other consideration is the development in PoE – the data network and equipment can now deliver power to many devices – for example lighting.
- Given that the buildings will be highly dependent on the data networks it is important that the various comms rooms and closets are classified as critical areas of the building. As a critical part of the building fabric the building design and construction must consider separate power isolation for data comms

rooms supported by UPS and generator, appropriate cooling, as well as security measure such as internal CCTV and secure access leveraging access control.

- Finally, connectivity from buildings back to main UCC comms rooms and data centres is vital. All new major buildings or buildings that are deemed critical must have resilient fibre back to the main UCC network cores.

Sensors/Technology

The 'Smart Building/Campus/City' is very much based on connectivity and connected devices or sensors. These devices will be the mechanism to gather raw data that will be leveraged to generate insight/analytics and that can also be used to deliver services or value to the university, staff, students, and other stakeholders. These devices or endpoints may sit on the UCC data networks in most cases (there may be situations where the public 3G/4G networks will be used and the emergence of 5G technology must be considered).

There is a lot of technology available now to provide solutions to problems or to deliver new services. However there needs to be a clear business strategy or rationale before deploying. The IT network can be the enabler, but the business must have clear requirements. For example:

- Parking across campus is an issue particularly during peak times. There are opportunities to leverage the IT infrastructure and technology to alleviate this problem and/or better inform users to direct them to locations where parking may be available.
- Similarly, there is increasing demand for lecture and office space. Again, technology can be leveraged to measure occupancy levels in real-time or near real-time. This can in turn help the university maximise space

utilisation and provide improved service.

- Sensors and technology can dramatically improve building performance and drive the green agenda. Sensors sitting on the network can measure temperature, lighting etc. and in turn reduce energy consumption.

IT Services needs to work closely with B&E and designers to identify how technology will be deployed in any new buildings.

Data

IT Services can help the university build data repositories and capabilities that will be key to the 'Smart Campus'. The campus generates large amounts of data from BEMS, Wi-Fi, Access Control, etc. This should be considered when envisioning the utilisation and functionality of new buildings.

Security

Cyber security must be a basic principle for all IT deployments and new buildings. That means comms rooms must be appropriately secured. However, it also means that the network design must be capable of supporting the new types of sensors and IOTs – without endangering the main business systems, data, and services.

As we see more 'nontraditional' devices residing on the network supported by external third parties the vectors for cyber-attack increase. In most cases these are non-managed devices and pose a considerable risk to the digital estate of the university.

Funding

The budget allocation for the IT Infrastructure needs to reflect the criticality of this service. The IT requirements in this document will require careful consideration and investment from the start of each project.



Guidelines/Checks

- All new buildings should have resilient fibre links – using diverse routes to connect the building back to the main communication hubs on campus
- Network communications rooms and closets need to be designed to have resilient and segregated power.
- The network will run critical services and, there is a growing trend to power devices over the data network using PoE. Therefore, consideration must be given to universal power supply within the comms rooms, and backup generators that can power the comms rooms during periods of extended power outages.
- All cabling must meet IT Services requirements and standards. Designers will adhere to IT Services standards for cabling and comms room layouts when commencing a project.
- All comms rooms must be secured from unauthorised access and controlled by CCTV and Access Control swipe.
- Cooling shall be provided to all comms rooms but the main data centres shall require N+1 cooling strategy.
- Mobility within a building must be a key principle and as such appropriate Wi-Fi deployment is required. External Wi-Fi must be considered for all new buildings to deliver enhanced connectivity for all users. In addition mobile coverage over 4G (and 5G) in the future must be considered, all new building design shall ensure that mobile coverage is achieved throughout the building.

Site survey for both Wi-Fi and mobile coverage must be part of all new building designs.

- The project team must arrange to meet with UCC IT at an early stage in the project design stage to discuss their proposals and ensure that all requirements are being met and in line with the smart buildings vision.

Spaces/User Groups

It is important to realise that different spaces have different requirements and also to consider that different user groups have different needs. It is important to engage each stakeholder early in the design to understand what technology will be required and how it will be used. Considerations must be given to how users will access services (Wi-Fi or LAN), digital signage, technology in the classroom, unique research requirements etc.

Examples of different spaces:

- Admin Areas
- Research Areas
- Campus Companies
- Teaching Spaces
- Collaboration Spaces

Examples of different user groups:

- Students
- Staff/Researchers
- Third Parties/Visitors/Other
- Students living on Campus

The purpose of the masterplan document is not to dictate the IT requirements for each but more over to ensure that the needs of the different spaces and different user groups are considered and agreed with UCC IT at an early stage in each project.

Smarter Buildings & Data

The advent of IOT will be a dramatic change in how buildings will operate in the future. How buildings will operate in the future will be enabled by data and geolocation. The following items are therefore very important to be considered in the early stages of a project.

- Room Tagging - room numbering to be consistent throughout
- Occupant Comfort – create opportunities for automatic personalisation of the room to user preferences. (example, light levels, temperature preferences)
- Energy Consumption – the thermal heating and cooling energy put into rooms to be activated by presence detectors and also room booking system/ software.
- Building Maintenance and preventative maintenance - The enormous mass of data generated by building automation systems can be constantly monitored and analyzed to find on-going operational problems (hot and cold problem areas, broken dampers or valves, equipment that doesn't turn off). How can the IOT system create preventative maintenance regimes rather than reactive maintenance.
- Centralised Campus control centre – consideration to be given to a centralised building controls centre – assuming all buildings will be controlled using software and IT hardware. (rather than BMS's)
- Software platforms – any technology system being installed should be open protocol. Any software that is not open protocol should be discussed with UCC IT department for approval.
- Cyber Security – is the building safe from cyber treats

- Data Standardization and Applications — can you standardize the data output of automation systems using an open source solution to label or “tag” building data so it can be ingested by a third party easily.

Other items for consideration for smart buildings:

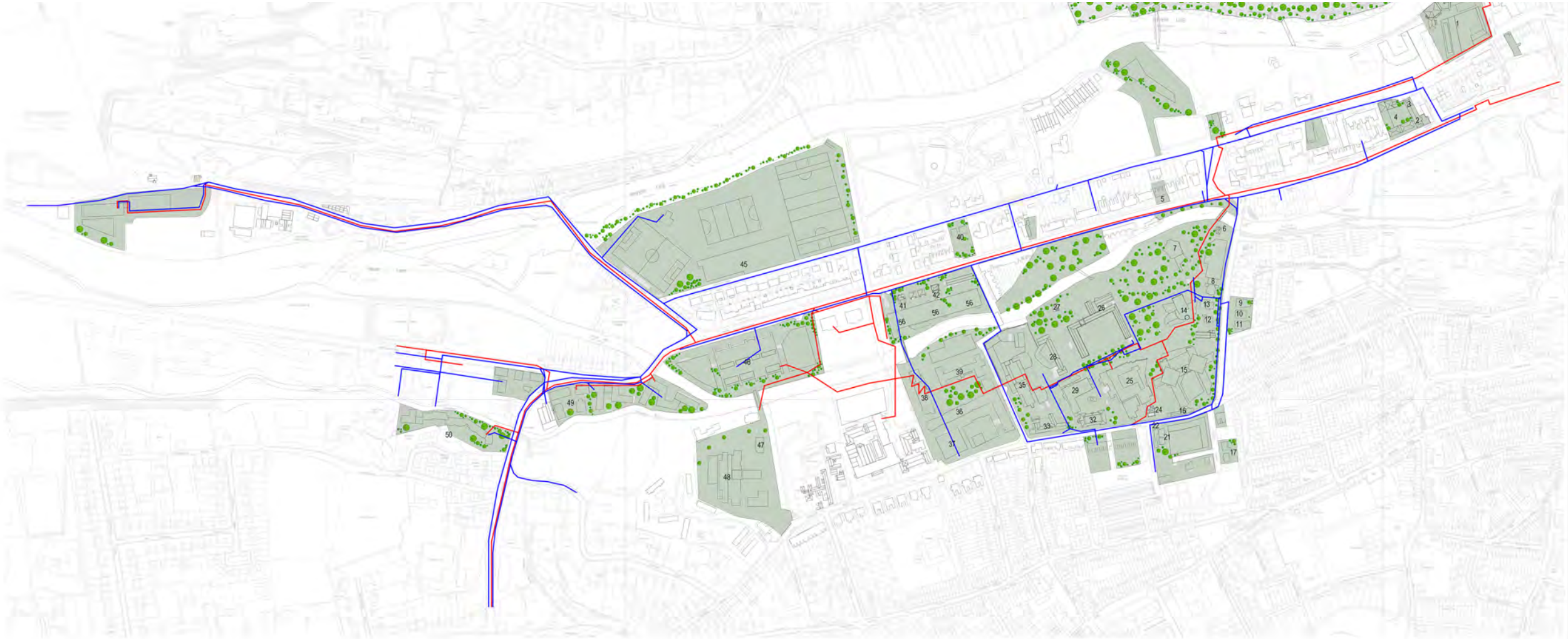
- Room occupancy and trends
- Smart Lighting
- Energy usage/efficiency (sensors & automation)
- All car parks shall be connected to the LAN. This is required to centralise the data to feed future car parking and commuter information/commuter plans.
- Car charging – where are the unoccupied charging spaces? How is this communicated to the user?
- Library Seating – where are there free library seats
- Hot seating/desking
- Hot rooms

Personalisation

Consideration should be awarded to the use of technology for personalising the user experience in UCC.

For example:

- Inclusion – can we embrace technology to facilitate this, to cater/deliver services to users with disabilities
- Room preferences



LEGEND

- ENET OPTICAL FIBRES
- ER OPTICAL FIBRES

DRAFT



EXISTING BUILDINGS

- | | | |
|----------------------------------|---------------------------------|---------------------------------------|
| 1. Lee Malting Complex | 23. Carrigside/Elderwood | 45. Mardyke Arena |
| 2. Muskerry Villas | 24. Disability Support Services | 46. Western Gateway Complex |
| 3. Connolly Building | 25. Boole Library | 47. Creche Cois Laoi |
| 4. Granary Theatre | 26. Main Quadrangle | 48. Brookfield Healthsciences Complex |
| 5. St. Kildas | 27. West Lodge | 49. University Hall |
| 6. East Lodge | 28. Windle Building/Student Hub | 50. Victoria Lodge |
| 7. Glucksman gallery | 29. Main Resturant | 51. St. Vincents |
| 8. Geography/Geology | 30. Crawford Observatory | 52. Butler building |
| 9. Askive & Ashford | 31. Boole Lecture Theatre | 53. Enterprise Centre |
| 10. Aldworth & Fernhurst | 32. Civil Engineering | 54. Distillery House |
| 11. Carrigbawn & Safari | 33. Electrical Engineering | 55. Cooperage |
| 12. Lee holme | 34. Reception Centre | 56. Castle White |
| 13. Crossleigh | 35. Kane Building | |
| 14. Student Centre | 36. Food Science & Tecnology | |
| 15. O'Rahilly Building | 37. Cavanagh Pharmacy School | |
| 16. 54 College Rd. | 38. Bioscience Institute | |
| 17. Perrott Ave. | 39. Aras na Laoi | |
| 18. Tyrconnell | 40. Roseleigh | |
| 19. Silverdale | 41. The Laurels | |
| 20. College View | 42. Brighton Vilas | |
| 21. Ard Padraig (Student Health) | 43. Lucan Palace | |
| 22. Iona (Chaplins) | 44. Ferry Lodge | |

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Rev	Date	Description	Orig
Client			
University College Cork			
Name of job			
UCC MASTERPLAN			
Title of Drawing			
FIBRE OPTIC CABLING SITE PLAN			
Drawing No.			
C19013-EDC-00-00-DR-E-2000			
Scale @ A0	As indicated	Model Manager	Project Manager
		TT	ROF
EDC Mechanical & Electrical Consulting Engineers			
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