Master of Science in Urban Planning / Master of Architecture
Columbia University GSAPP

RECONNECTING
BELFAST

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Richard Plunz, Nicholas Klein

Who, blowing up these sparks
For their meagre heat, have missed
The once-in-a-lifetime portent
The comet's pulsing rose.

Seamus Heaney
Exposure, 1975.

This modest collection of ideas owes much to the people in Belfast who so generously give of their time and knowledge during a week in March 2017 when our team of graduate students from Columbia University visited to examine what might be next steps in reconnecting the center of Belfast to its urban hinterland. This mandate was defined by our client, the Belfast City Council and its Office of City Centre Development. Our team comprised a mix of 18 urban planners and architects who examined the issues in relation to strategies for changes to physical infrastructure and urban policy. Our client urged us to think about the challenges and opportunities facing Belfast in the coming years, and to define particular change agents that might jump-start positive new development.

For hundreds of years, the urban core of Belfast functioned as the cultural and economic heart of the city. Beginning in the 1960s, with the Troubles, the connections between the Centre and the residential neighborhoods were severed by physical and psychological barriers. While peace has returned to the city in the years since the 1998 Good Friday agreement, the Centre still remains cut off from much of the rest of the city.

Our effort entailed five teams that each worked to identify possible concept plans for deployment in reconnecting the City Centre with its residential hinterland.

MITIGATING WALLS
On the Western border of the City Centre, the Westlink motorway acts as a partition between the urban core and the residential neighborhoods in the West of the city. This study proposes that the city of Belfast take advantage of the fact that the Westlink channels travel over a limited number of crossings by building directly on top of the intersection and making the street safer for pedestrians. These two interventions will provide new retail space and help connect the City Centre with the residential areas.

WALKING THE CENTER
Belfast City Centre is well suited to creating a strong walkable pedestrian core. Already, there exists a network of lively pedestrian shopping streets. This study calls for expanding the existing pedestrian environment and to ensure that the streets are used during the evening, not just at night. In addition, this proposal suggests creating a walkable and bikeable corridor along the north-south axis of the City Centre. This spine would connect the burgeoning Ulster University campus and transit hubs at the North with the dynamic Queens University south of the Centre.

ENHANCING TRANSPORTATION
Belfast should work to establish a robust transit network. This study suggests a number of changes to the transit system, new services and policy proposal which can work to provide alternatives to car travel in Belfast. The biggest change is re-design of the bus routes. Currently, almost all bus routes terminate at City Hall. As a result, Belfast residents wishing to travel by bus to anywhere else need to transfer. This proposal suggests that the transit system is redesigned to circulate buses throughout the City Centre in a circular route dotted with several multimodal transit hubs. These hubs will be located at major destination centres. Along with the bus network changes, the proposal offers a plan for developing ferry routes along the River Lagan and transportation policies that encourage travel on foot, bicycle and transit.

RECLAIMING VOIDS
In the past decade, the new development in Belfast has been concentrated outside of the City Centre in City Quays and the Titanic Quarter. These two districts are physically separated by the River Lagan, large motorway infrastructure and undeveloped parcels surrounding these two. This study proposes to bridge these voids and re-connect the historic centre of the city with these new vibrant economic centres. A important goal would be to create inviting streets and destinations within the void and to make these places destinations in and of themselves. These changes will help break down the separation between the historical and the emerging business districts.

CLUSTER AROUND TECH
The final study suggest to encourage the development of tech clusters. Belfast is currently a leading city for information technology. New start-ups and established firms have recognized that the city has established universities that specialize in information technologies, particularly security. Belfast enjoys advanced IT infrastructure, including robust fiber optic connections to financial capitals including London and New York. This proposal argues that Belfast

Figure 1.1
Previous page: "Belfast, United Kingdom". 54°35'42.72"N and 5°56'08.72"W. Google Earth. August 15, 2016. July 12 ,2017.

should leverage these existing assets and direct future growth in several new hubs within the City Centre.

Together, these five proposals suggest strategies for Belfast to reconnect the City Centre with residential neighborhoods. In a sense, our recommendations simply reflect the ideas and sentiments that we received in March, from those more versed than we in the intricacies of project-making within the Belfast political and economic context. Perhaps what we have produced is less provocation than affirmation of the obvious. And obvious is our status as "outsiders, but in this capacity we hope to be especially useful. Even if commonplace, our studies may none-the-less prove to be important as new "sparks" toward a promise of Belfast's "once in a lifetime portent;" and provide a level of design detail that will be important in continuing local dialogue and initiative toward fulfilling the promise of its future.

MITIGATING WALLS

WALKING THE CENTER

FILLING THE VOIDS

ENHANCING TRANSPORTATION

CLUSTERING AROUND TECH

HISTORY

Belfast today is most often associated with a single dark chapter of its history, the Troubles. This is the name given to a thirty-year sectarian conflict that began in the 1960s and engulfed the city, along with other urban centers in Northern Ireland (notably Derry), in intense guerilla-style warfare, turning ordinary streets into battlegrounds. Belfast is, of course, rich in history and culture far beyond the immediate causes and consequences of the Troubles, yet it is undeniable that this conflict continues to shape its future.

Origins of Conflict: The Norman Invasion to the Battle of the Boyne
The Troubles are most often thought of in the simplest terms: Catholic versus Protestant. While it is undeniable that the advent of the Reformation in the early 16th century opened deep and traumatic fault lines throughout the British Isles, in Ireland there already existed ancient fissures—political, social, and economic—which were only widened by religious discord. The Troubles were inextricably linked to these conflicts and, from its earliest history, the city of Belfast was shaped by them. Though archaeological evidence indicates that the region around Belfast Lough—the tidal inlet into which flows the River Lagan—has been inhabited since the Bronze Age, its earliest permanent settlements were the fortifications of Norman invaders built in the 12th century. The most impressive among them, Carrickfergus Castle, lying about ten miles north of Belfast's City Centre, was the stronghold of John de Courcy, a Norman knight who established hegemony over much of northeastern Ulster.

The Norman invasion of Ireland, which began in 1169, is an instructive starting point for any narrative of the origins of sectarian conflict on the island. It is the point when the histories of Ireland and England converge, forever altering the fate of both countries. The fact that the forces of the Plantagenet king of England, Henry II, were invited onto Irish soil to by one of its chieftains, Diarmid Mac Murchadha, illustrates that the intertwining history of the two countries cannot be separated from the internal politics of either. Mac Murchadha was a king of Leinster, one of Ireland's traditional Gaelic polities, who had been deposed by his rival, Ruaidhri Ó Conchobhair, king of Connacht and, later, the last "High King" of Ireland. Mac Murchadha fled to England to appeal to Henry—a great-grandson of the Norman conqueror William I and one of the most formidable rulers of his time—for assistance in reclaiming his throne. Henry gave Mac Murchadha leave to recruit an army from among his vassals in England and France and, in exchange, Mac Murchadha pledged fealty to the English crown. The leader of the invasion force was the Cambro-Norman lord Richard de Clare, 2nd Earl of Pembroke, who was called "Strongbow." Of great significance to the future course of Irish history were two events of the Norman invasion. The first was the marriage of de Clare to Mac Murchadha's daughter, Aoife, known in England as Eva of Leinster. Aoife became the Countess of Pembroke and, after Mac Murchadha's death, de Clare claimed, "jure uxoris", the throne of Leinster. Thus, de Clare initiated the practice of intermarriage between the Norman and Gaelic nobility. In time, the Normans were so thoroughly assimilated into Gaelic culture that, by the 16th century, there was little to distinguish Norman families from Ireland's traditional clans.

Nonetheless, at the time, Ireland's chieftains opposed de Clare's claim to Leinster, which had no basis in Gaelic law, leading to the second significant circumstance of the invasion: to support his vassal's position in Ireland—and, perhaps, fearing that Strongbow would one day unite the Gaelic clans and declare himself king—Henry II landed a much larger invasion force at Waterford in October 1171.

Henry justified his intervention by citing a sixteen-year-old papal bull, Laudabiliter. Promulgated by Adrian IV, the only Englishman ever to serve as pope, the bull allegedly[1] granted Henry the right to invade Ireland and impose Gregorian reforms on the Irish dioceses, a process which had begun at the Synod of Kells in 1152. Thus, one of the earliest concerted attempts by an English ruler to secure dominion over Ireland—for which the primary motivation was certainly political—took on an important religious dimension. Henry considered it his mission to bring the independent character of the Irish Christian tradition, dating back over eight centuries, in line with the practices of the wider Church. Pope Adrian's successor, Alexander III, later confirmed Henry as Dominus Hiberniae, "Lord of Ireland," a title which was originally independent of Henry's position as King of England. In 1177, Henry granted this new title to his youngest son, John. When John succeeded to the English throne in 1199, after the death of his elder brothers, he appended Lord of Ireland to his other titles and, for the next three centuries, all subsequent English kings claimed the Lordship "suo jure".

Though, in theory, the Lordship encompassed all of Ireland, in practice the new Hiberno-Norman aristocracy enjoyed considerable autonomy. The descendants of the Norman invaders, families such as the de Clares, Burkes, Butlers, and FitzGeralds, administered the lands they had gained either by conquest, by negotiation, or by intermarriage with the native Irish gentry. In the 13th and 14th centuries, a unique, hybrid culture emerged, in which the Normans adopted the Gaelic language, customs, and religious practices, and in turn introduced feudal administration, laws, and modern agricultural techniques into Ireland. They established an independent Peerage of Ireland—among the most prominent were the Earldoms of Kildare, Ormond, Desmond, and Ulster—built and expanded towns and roads, and assembled the first Parliament of Ireland in 1297. By this time, the part of Ireland directly administered by the English kings had been reduced to a small area surrounding Dublin, known as "the Pale." Despite the calamities of the 14th century—notably the ill-fated invasion of Ulster by Edward Bruce, younger brother of King Robert I of Scotland, a severe famine in 1315-7, and particularly the arrival of the Black Death in 1348—for the most part, Ireland prospered under the influence of the Gaelicized Normans. Were it not for the tumultuous events of the 16th and 17th centuries, it is likely that this prosperity would have continued, sparing Ireland the sectarian strife of later eras.

The century-long (and ultimately unsuccessful) efforts of English kings, beginning with Edward III, to secure and expand their hereditary dominions in France, followed by the thirty-year dynastic struggle between two Plantagenet cadet branches, the House of Lancaster and the House of York, known as the Wars of the Roses, largely kept English attention (and armies) away from Ireland. This changed with the accession to the throne of Henry Tudor, a Welsh commander who defeated the last Plantagenet, Richard III, at the Battle of Bosworth Field in 1485, and subsequently married Richard's niece, Elizabeth of York. Henry's son and successor, Henry VIII, who was crowned King of England

and Lord of Ireland in April 1509, would transform the fate of the two countries and, indeed, of Europe itself.

The history of Henry's reign and involvement in Ireland once again illustrates the role of internal English politics in shaping the country's policies toward Ireland. Had it not been for Henry's epochal break with the Church of Rome in the 1530s—prompted as much by struggles for supremacy within his court as by his desire to wed Anne Boleyn—his establishment of an independent Church of England, and his excommunication by Pope Clement VII, the king's actions in Ireland would have taken a very different course. Throughout the Lordship period, the principal administrator of English rule in Ireland, with direct authority over Dublin and the Pale, was the Lord Deputy. This position was historically held by members of the FitzGerald family, who, as Earls of Kildare, were the pinnacle of the Irish peerage. Thomas FitzGerald, 10th Earl of Kildare—who, like most of his family, was both sympathetic to the deposed House of York and staunchly Catholic—served as Lord Deputy of Ireland during the crisis of the 1530s, putting him into direct conflict with Henry. When his father, Gerald, was imprisoned by Henry in the Tower of London, Thomas organized a rebellion against England, offering the Irish crown to the Holy Roman Emperor Charles V, the nephew of Henry's jilted Catholic first wife, Catherine of Aragon, and laying siege to Dublin Castle. Though Thomas was counting on widespread support among the Catholic Irish nobility, it did not materialize. Henry's forces arrived in July 1535 under the command of Lord Leonard Grey, 1st Viscount Grane, and soon after routed the rebel army. Thomas surrendered, was sent to the Tower, and was executed at Tyburn, while Lord Grey assumed the position of Lord Deputy.

Though most did not engage in open revolt, the Catholic and fiercely independent Hiberno-Norman aristocracy still posed a threat to Henry's authority in Ireland and his plans to subdue the Irish Church through the seizure of ecclesiastical properties. His chancellor, Thomas Cromwell, conceived of the policy of "surrender-and-regrant [sic]," which required Irish nobles to turn over their lands to the king, who would then restore them by royal charter, which could, of course, be revoked at any time. At the same time, Henry sought to bring Irish laws into conformity with those of England; to extend the usage of English language and customs beyond the Pale; and to bind the Irish and English nobility closer by granting loyal Irish lords titles in the Peerage of England. Perhaps the greatest concern for Henry was that, after his excommunication in 1538, his title Lord of Ireland, which had originally been granted to the English monarchs by the authority of the pope, could now be rescinded by the pope. Thus, in 1541, Henry pressured the Irish parliament to create a new title, "King of Ireland," in personal union with crown of England.

The most contentious policy of this period was the "plantation" system. An escalation of the surrender-and-regrant policy (which faced considerable resistance) and much more punitive in nature, the plantations were created on land confiscated from recalcitrant Catholic nobles in Ireland, with Protestant yeoman brought from England as tenants. The plantations were expanded after Henry VIII's death in 1547, by his successors Mary I and Elizabeth I. The latter seized vast tracts of land in Ireland's southernmost region, Munster, beginning in the 1580s, accelerating the process of plantation.

With the death of Elizabeth in 1603 and the accession of her cousin, James VI of Scotland, as the first Stuart monarch of England and Ireland, both the

Figure 2.2
*View of Royal Avenue, 1890-1900.
(Source:
<https://www.torontofamilyhistory.org/
wp-content/uploads/2015/06/800px-Roy-
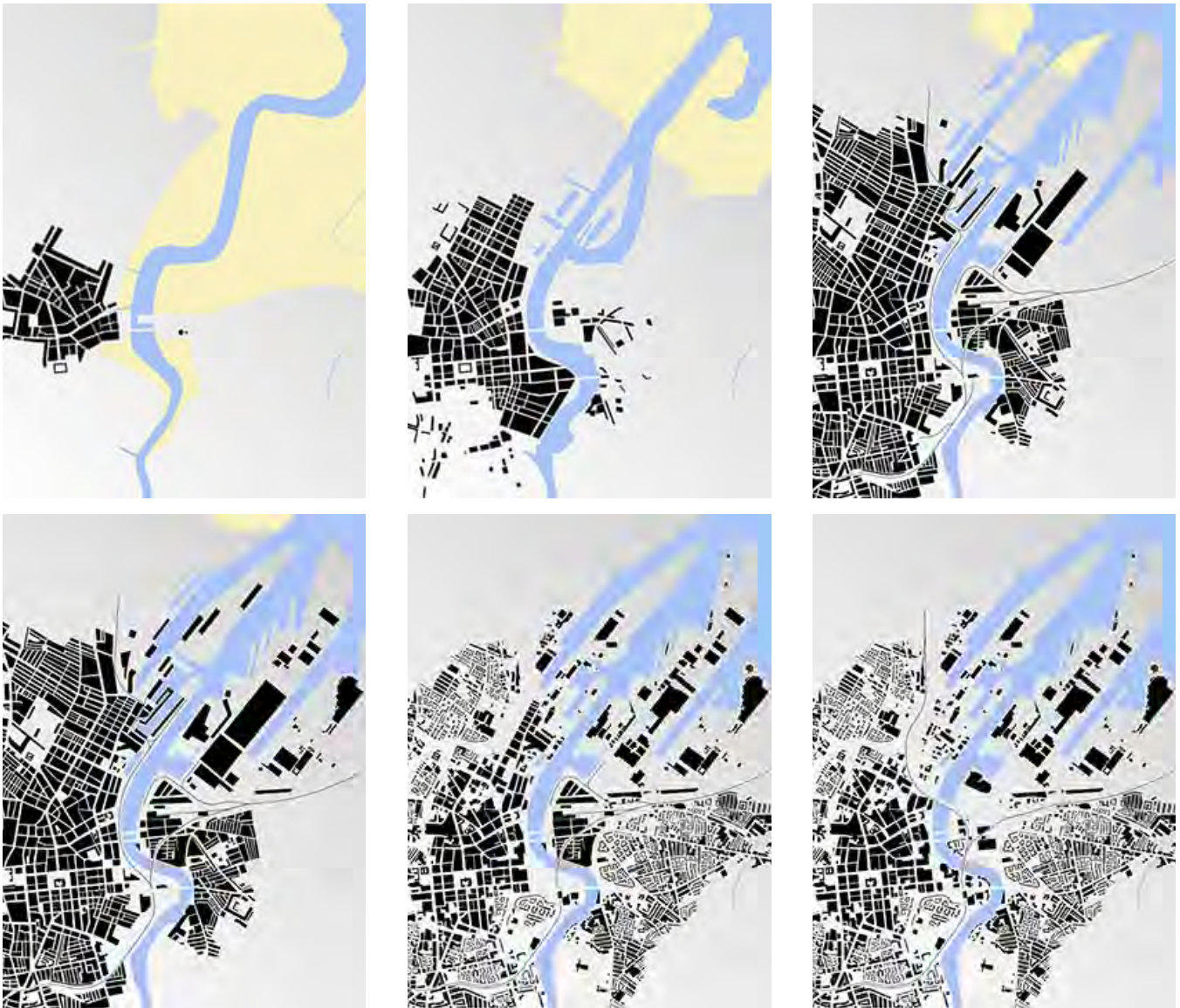al_Avenue_Belfast2-1890-1900.jpg>)*

Figure 2.3
The evolution of Belfast's urban fabric.

old Gaelic nobility and their Hiberno-Norman countrymen—who came to be known as the "Old English" to contrast them with the newly arrived Protestant administrators and settlers from England—had some cause to expect a measure of relief from the worst excesses of the plantation. The Stuarts after all, were not English but Scottish Gaels, who had ancient cultural and linguistic ties to Irish Gaels, particularly in the northern region of Ulster. Moreover, James' accession coincided with the end of a bloody conflict known as the Nine Years' War. Led by a powerful Catholic Gaelic nobleman, Hugh O'Neill, Earl of Tyrone, the rebellion erupted when the English attempted to extend the plantation system into Ulster in the early 1590s. O'Neill's forces were defeated at the Battle of Kinsale, but by the terms of a subsequent peace treaty, the rebellious nobles were pardoned and the English pursued a policy of accommodation, endorsed by the new king, which may have led to a lasting political settlement.

	Northern Ireland	Percentage	United Kingdom	Percentage
Economically Active	887,000	73.5	33,406,000	78.3
• In Employment	837,000	69.3	31,802,000	74.5
• Unemployed	50,000	5.6	1,604,000	4.8
Economically Inactive	310,000	26.5	8,894,000	21.7

Source: Nomis Official Labor Market Statistics
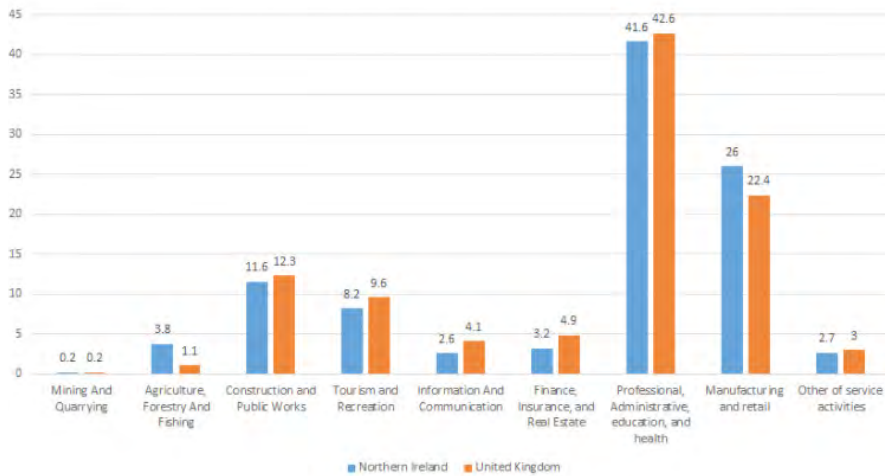
Source: Nomis Official Labor Market Statistics

However, three events undermined this tentative rapprochement. The first was the appointment of Sir Arthur Chichester as Lord Deputy of Ireland in February 1605. Chichester, a veteran of the Nine Years' War whose brother had been killed by allies of O'Neill at the Battle of Carrickfergus, was fervently anti-Catholic and opposed to the tolerant posture of his predecessors. In November 1605 came the Gunpowder Plot, an attempt by a group of radical English Catholics to assassinate James and members of Parliament. In the aftermath, James sought to suppress the restive Catholic elements of Irish society. The ensuing rise in tensions pushed O'Neill and a group of his supporters into exile on the continent in September 1607, where they sought support for an invasion of Ireland by the Spanish, who were then at war with England. The so-called "Flight of the Earls" prompted the final rupture between the English crown and the Gaelic and Old English aristocracy of Ireland. Chichester seized the lands of O'Neill

Figures 2.4 & 2.5

Top: Employment statistics for Northern Ireland and the United Kingdom.

Below: Workforce employment statistics for Northern Ireland.

Figure 2.6
*The launching of a ship into Belfast Harbour.
(Source: <http://news.bbc.co.uk/2/hi/in_
pictures/8009842.stm>)*

and his cohorts and granted them to English and Scottish nobles, initiating the plantation of Ulster. He established Belfast, then a minor settlement, as the administrative center of the north, laying out its first town plan. Ultimately, the period of Hugh O'Neill's dominance marked the highwater mark of both the old political order that had persisted since the 13th century, as well as of Ireland's traditional Gaelic culture.

SOCIAL AND ECONOMIC CONTEXT

As the capital of Northern Ireland, Belfast's economic performance is closely related to the whole region. Northern Ireland has the lowest economic volume among all the UK regions. Last year, the region has a GVA growth per head about 1.4%, the second lowest. Similarly, the total GVA growth also ranks the second lowest. Although the situation is partially due to its low population, it is also undeniable that the Troubles have left the region with long-term negative impact, which is mentioned in the history part.

Specifically, the economy of Northern Ireland has mainly two characteristics: low economically active population and lack of industry diversity.

As it is shown in **Figure 2.4**, which compares the economic activity between Northern Ireland and United Kingdom based on employment rate, the percentage of economically inactive population of Northern Ireland is 26.5%, about 5% higher than the UK average. Besides, among the economically active population, the percentage unemployed population of Northern Ireland is 0.8% higher than the United Kingdom. Thus, it is obvious that Northern Ireland's economy is relatively inactive compared to the whole country.

Regarding the diversity of industry, the region has a long history of dominant employment in public sector, which could be seen in **Figure 2.5**. The workforce jobs percentage of Professional, Administration, Education and Health is as high as 41.6%, almost half of the entire workforce. However, for tourism and financial services, the kind of industries that the administration expects to drive the economy in the near future, the total workforce jobs percentage is merely around 10%.

The total economic volume of Belfast city is relatively small compared to either other important UK cities or European cities. Nevertheless, thanks to the investment it attracted and several development plans it formulated, the economy is seeing a high growth in recent years.

It is illustrated **Figure 2.7**, in 2015, both its growth in total GVA and GVA per head ranked 1st among all the UK cities, which showed its great potential for further economic growth.

Currently, the city is still struggling with attracting more young talents and professionals. But it has already invested heavily in certain industries which it assumes to be the future leading industries for overall economic growth.

First, with increasing companies move into Belfast, the cyber security industry is thriving due to its importance for information protection. The biggest move made by the Belfast government so far is the investment in building Queen's University's world-leading cyber security department that up to about £38 million. Except for the constant investment in the industry, the city is also going

Growth in total GVA and GVA per head in UK cities, 2015
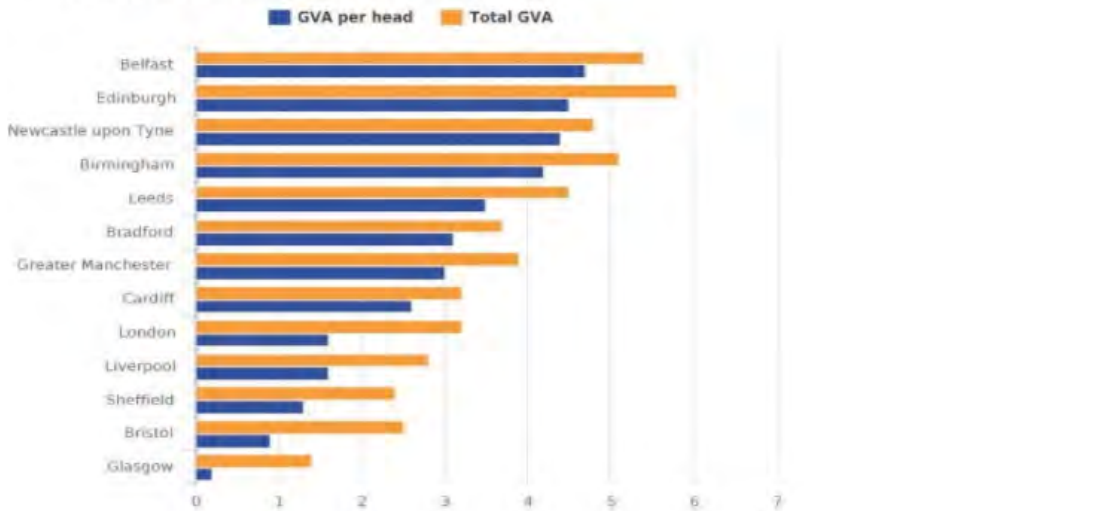
to hold OWASP AppSec EU 2017, one of the biggest cyber security conference in the world, that could possible bring more investment and cooperation into the industry.

Second, tourism is playing an increasingly significant role in Belfast's economy. In 2012, the total number of visitors reached 7.59 million while £416 million has been spent. The growing numbers of visitors to Belfast has increased confidence in tourism investment, helping to drive over £1bn worth of infrastructure investment across the city, including new hotel development, top class visitor attractions, which is improving the social fabric of the city.
It is also noticeable that the opening of Titanic Belfast has played a significant role in attracting more tourists. The museum, which is mostly of the history of

Figures 2.7 & 2.8
Top: Comparison of growth in various UK cities.

Below: The announcement of Brexit in the press.

Figure 2.9
The Reconnecting Belfast Studio team from Columbia University visiting the Belfast Castle.

Belfast's economy and the shipbuilding industry, won the 1st place of the world best tourist attraction in 2015. However, the museum and its close location to the Harbour also caused an uneven investment in the city. Titanic Quarter currently has a fully developed plan with great funding while other parts in the city are relatively ignored in terms of economic development. Therefore, the development of City Centre plays an important role in balancing the city's economic structure geographically besides renewing the area itself.

In addition to the new growing industry, historically, trade is the leading industry for generating most of its economic revenue, where manufacturing industries such as linen making and shipbuilding account for the highest percentage in its export.

DEMOGRAPHICS

The city of Belfast has a diverse demographic structure. Numerous minority groups lived in Belfast for the past 80 years. Chinese and Irish are the dominant minor ethnic group in the city. There have also been numerous Eastern European settlers moving in lately with the expansion of the European Union. The City Centre population is mostly composed of single youngsters, students and elderly people, while families mainly live in suburbs. Though years past, the city is still haunted by the Troubles with numerous ranges extremely isolated by religion, legislative issues and ethnicity. The major religious group are Catholic and Protestants.

Population density. The city has an uneven distribution of its population caused both by historical reason and religious reason. Due to the military force in the City Centre during the Troubles, the area tends to be avoided by local residents. Such tendency results in an extreme low population density in the City Centre, which is lower than 0.0025 resident per square meter. In other areas, population is also unevenly distributed because of the peace wall, separating people by religions. As Catholics currently has a growing population in the city, the Catholics side of the wall is more likely to have a high density.

Religion. The major 2 religion groups of the city is Protestants and Catholics. The conflict between both is still ongoing, but has been much better compared to previous years due to different kinds of coordination and intervention including the construction of peace walls. Due to the low residential rate, the City Centre is currently not dominated by any religious group.

At present, the Catholic population accounts for about 49% of the total population, while Protestants is about 42%. It is noticeable that, Protestants is currently suffering from a high proportion of aged people while Catholics population is mostly composed of young adults. Thus it is predictable that the population of Catholics will keep increasing in the following years. In addition to the difference of population proportion and structure, the two religions groups still live separately by the peace walls built years ago. It is said that the walls are planned to be demolish in 2023, but the implementation is still at doubt considering the tension and long-term division exists between both. Regarding City Centre development, although religious group is not the top problem to concern, it is one of the essential factor to consider when resolves housing issues properly.

Migration. In terms of inward migration, there's a slight increase in recent year. However, the total number still only makes up to less than 2% of the entire population. Among the inward migration, mostly originate from growing European countries such as Czech. Although the proportion is relatively low, the employment rate of emigrants is about 86%, higher than the average of Northern Ireland itself. The emigrants group also contribute greatly to the economic growth of the region. Thus, the government expects greatly on the groups to further increase and contribute.

Concerning outward migration, the total is also increasing while youngsters make up for a very high percentage of this group. And that is partially due to the economically inactivity of the area as young people are eager for more opportunities. Therefore, in recent years, the local government has invested a lot into educational institutes and startups in order to attract more young

Figure 2.10
Belfast City Hall.

people to stay. That could possibly transform the current outward trend to some extent.

BREXIT AND THE FUTURE

Currently, the most significant international political issue for the region is Brexit and its future relationship with the European Union. **Figure 2.8**. Domestically, the issue will still mainly revolve around the conflict between local political parties, largely divided by religions.

First, among the four kingdoms of the whole country, Scotland and Northern Ireland turned out to be the only two that vote for stay. Specifically, in Northern Ireland, Belfast is the only region that votes for stay along the eastern coastline. And such result is understandable considering the decrease in funds and the increase in border control that the region will face due to Brexit. EU currently offer diverse kinds of funds with a total about 3.5 billion euros to the region for purposes including border control, export subsidy and agricultural development. Several important projects in Belfast such as the Waterfront Hall Renovation was completed under large amount of fundings from EU. It is imaginable that, if EU retrieves the fund after Brexit, the progress of many development projects will be affected.

FIELD STUDY

The studio visited Belfast in March 2017 to gain a more thorough understanding of the issues we were tasked with addressing and present our ideas to the Belfast City Council. This site visit was influential in shaping our views of the city. Before the trip, we had been working based on information gathered from the internet, books and other resources. Our trip to Belfast gave us the opportunity to add a new body of knowledge based on first-hand experiences to our previous knowledge about the city. We adapted our previous ideas of the city to inform our proposals for Belfast's City Centre.

We got a first-hand look at the spatial manifestations of Belfast's conflict through a tour of the peace walls and the city's Protestant, Catholic, and interstitial areas. This provided particularly important information for framing the issues, as our considerations invariably approached Belfast through the lens of a post-conflict city. Some Belfast residents, it turns out, viewed the peace walls as a form of protection while others saw it as a menace. This revelation changed our understanding of the conflict's spatial legacy, as our previous imaginings of the peace walls as detrimental to the city were disproved. The tour also helped frame our understanding of Belfast's partisan political system as well as physical partitioning, which are both based on religious denomination.

Interactions with the city and its residents also helped shape our views of Belfast. We had opportunities to interact in formal and informal settings with Ulster and Queens University students and faculty, Belfast City Council employees, and other professionals. Our experiences of going through the city with residents opened up discussions about the city's nuances and inner workings. Through these relationships and interactions with residents, we visited local establishments and learned about local festivals and activities. Our conversations about Belfast's past, present and future were also the significant influence to our awareness of the way Belfast was approaching its future. Local interventions, including home-grown architectural and urban narratives, blended with policy and economic changes to improve the city.

Importantly, we discussed our proposals with a number of people from different backgrounds on our trip. At Ulster University, we presented our proposals to students, Ciaran Mackel and other faculty members. The feedback and conversation generated were helpful for our future iterations of the proposals. Feedback from our presentation to Nuala Gallagher, the Director of City Centre Development contextualized our proposals in Belfast's historical, economic, political and religious context.

PLANNING CONSIDERATIONS

Planning issues in Belfast are principally focused on three sectors.

HOUSING
No one lives in the City Centre. One of the significant problems in Belfast is that no one lives in the City Centre. Everyday during the daytime, the city provides us with an impression of vigor and vitality, especially in the area around the City Hall there are cars and people everywhere. After 6 pm, however, all the streets become empty and we could only find people in the bars.
When we ask local people about the reason for this situation, we were told that as most of the lands in City Centre were privately owned, it was quite difficult to implement any residential development. Everyday in the morning, citizens living outside the City Centre enter the City Centre for school and for work while in the evening, they left the City Centre as soon as they are off duty.

TRANSPORTATION
High rates of car ownership & use. According to Cooper, Ryley and Smyth (2001), Belfast was the most car dependent city in the UK. Because of the separation between residential area and City Centre, more than 78.8% of residents private motorized transport in their journey to work.

Big urban highways between the City Centre and elsewhere. To make matters worse, the disconnection between City Centre and elsewhere has long been a serious problem. Because of its intense social segregation and history of political violence (Cooper, Ryley and Smyth, 2001), segregated residential areas are separated from the neutral City Centre. The City Centre is surrounded by highways and there are only a limited number of roads connecting it with those residential areas.

Traffic congestion during rush hours. During rush hours, almost all the working class flood into and out of the City Centre through these limited number of roads at the same moment. As a consequence, serious traffic congestions happen in this low-density city probably everyday.

All public transits lead to City Hall. The highest car ownership is partly caused by the absence of public transit. When looking into the bus lines of Belfast, we could discover that the terminal of most lines is the City Hall. However, as mentioned by students in Ulster University, the price of taking the bus was too high to them and at the same time the buses could not take them to their destinations.

ECONOMY
Based on the previous analysis on the economy context, performing similarly to the general condition in Northern Ireland, Belfast is facing an inactive economic environment and a lack of industry diversity. Furthermore, it is also in need of attracting more young talents and professionals. With the recent investment and companies moving in, Belfast is facing a great growing potential. According to Belfast TechNation's investigation, in the past few years certain amount of investment went into Belfast, which was improved through the work of local angel network HALO and funds such as techstartNI and the Invest Growth Fund, 38% of technology firms reported that they were still facing limited opportunities to access finance. 34% of them said the public was lack of awareness of local digital industry.

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3 MITIGATING WALLS
Augustus Haney, Lingran Meng, Edward Palka

The theme of this section, "mitigating walls," refers to what is perhaps the best known characteristic of the city of Belfast: its partitions. **Figure 3.1**. The most prominent of these are the so-called "peace lines," separation barriers composed of brick, concrete, iron railing, and corrugated steel. In some sections, the peace lines are a pastiche of various materials, offering a powerful illustration of how they have been heightened and fortified over successive periods during the Troubles.

The peace lines stretch more than 21 miles across the face of Belfast, in long, irregular bands or in short, stabbing salients, and are the starkest reminder of the city's violent past. However, they are not the only physical barriers that warp the urban fabric of Belfast. An often overlooked component of Belfast's city planning in the crisis years are its roadways, the subject of this section of the report. As will be shown, the nature of road design in Northern Ireland's capital is as significant an obstacle to reconnecting Belfast as the more visible peace lines, and the two elements are intimately linked.

The first peace lines were makeshift barricades thrown up amid the tumult of a five-day riot in August 1969, improvised from burned-out cars and heaped rubbish, and intended to block marauding Protestant and Catholic street gangs from coming into contact. When the British Army deployed to Belfast on 14 August 1969 to restore order, it began to fortify the existing barriers at designated "flash points" with iron fencing. Later, particularly after the collapse of Northern Ireland's parliament, the Stormont, in March 1972 as a result of its inability to guarantee security, the British military commanders in Belfast prioritized strengthening and extending the peace lines, as well as creating a "cordon sanitaire" around the city's commercial and administrative center. To achieve this latter objective, the British mainly relied mainly on the tool of road design, which would have a great impact on the physical development of Belfast. Many scholars have examined the contribution of this "defensive planning" approach in the 1970s and 1980s to Belfast's ongoing urban challenges (Dawson 1984; Hackett et. al. 2012).

The most important single element of transportation planning undertaken in this period was the Westlink (also called the A12), discussed in detail in this section. The Westlink carves a broad swathe through the middle of Belfast, as shown in the map at left. For most of its 1.3-mile length, it is submerged below grade, with limited pedestrian access and crossings for east-west traffic at only four points. As detailed in this section, the Westlink is a significant barrier between the prosperous City Centre and the struggling neighborhoods of East Belfast.

Figure 3.1
Above: Belfast's gated sidewalks.

<Source: https://media-cdn.tripadvisor. com/media/photo-s/07/82/od/fa/security- gates-as-you.jpg>
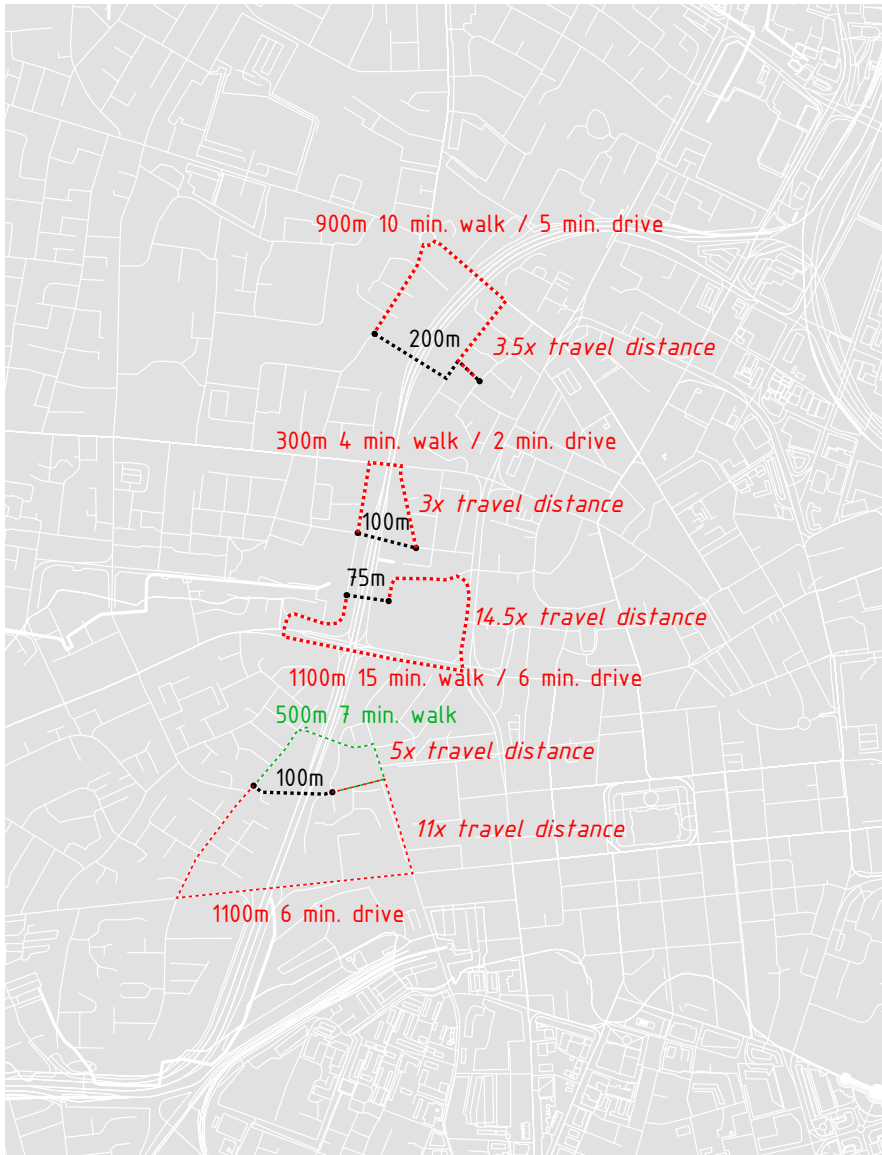
THE WESTLINK & TRAVEL TIMES

Figure 3.2 is a powerful illustration of the impact of the Westlink on the daily life of residents of East Belfast. The prime commercial and business district of Belfast's City Centre is not more than a half-mile from the residential districts of Shankhill and Falls, where a significant proportion of they city's working class population lives. Yet, either by car or on foot, the ease of access between these areas is greatly hindered by the interposition of the Westlink. The diagram shows how greatly walking times between any two given points on either side of the Westlink have been increased by the building of the roadway. In one stark example, the distance between a residential and a commercial building of only 75 meters, becomes over 1,100 meters when you take into the design of the Westlink and the adjacent cul-de-sacs.

THE WESTLINK & FALLS ROAD

The Westlink is a significant barrier that requires efforts to mitigate its impact at various points along its length, as can be seen in the diagram on the preceding page. This section, however, looks at one particular point along the Westlink: the intersection with Divis Street, a local extension of Falls Road, shown in **Figure 3.3.** The selection of Divis Street/Falls Road as a point of intervention is due to a number of factors.

First, it forms one of the Westlink's busiest junctions, handling nearly 70,000 cars per day, versus approximately 92,000 for the Westlink as a whole (according to data released in September 2016 by the Northern Ireland Department of Infrastructure). Furthermore, Falls Road, along with Crumlin Road to the north, is one of the two major east-west collector roads leading from the historic residential quarters of East and North Belfast to the City Centre.
However, Falls Road has significance beyond its role in Belfast's transportation mix. Both Falls Road and the neighborhood surrounding it were the epicenter of much of the political violence that occurred during the Troubles. The area was developed as one of the original outgrowths from the historic core of Belfast in the mid-19th century, and is characterized by the terraced housing, built mainly for Catholic laborers in the linen industry. To this day, the Falls is predominantly working-class. When the city began to implement housing redevelopment programs in the 1960s, it was a focal point of the nascent Catholic civil rights movement (one of the central issues of which was the equitable provision of housing). Indeed, the riots of August 1969 began as a series of peaceful marches to protest against discrimination in the allocation of housing and jobs. Protestant reactionaries entered the Falls at the start of the riots and set fire to many of its streets, creating the initial "flash point" of the Troubles. The first permanent peace line was built between along Beverley Street, which runs parallel to the northern portion of Falls Road, to separate the Catholics of the Falls from the Protestants of the neighboring Shankhill area.
Today, the Falls and Shankhill are synonymous with the worst violence of the Troubles. The Divis Tower, at the intersection of Falls Road/Divis Street and the Westlink, was not only the largest housing development of the 1960s, its roof also served as a crow's nest for British Army snipers. This history makes the intersection of Falls Road and Westlink an ideal candidate for re-imagining the interface of these two neighborhoods and the City Centre.

900m 10 min. walk / 5 min. drive

200m   *3.5x travel distance*

300m 4 min. walk / 2 min. drive

3x travel distance

100m

75m   *14.5x travel distance*

1100m 15 min. walk / 6 min. drive

500m 7 min. walk

5x travel distance

100m

11x travel distance

1100m 6 min. drive

RESIDENTIAL
AREAS

UNDEFINED
ZONE

CITY
CENTRE

SHANKILL   A12

FALLS   DIVIS STREET

Figures 3.2 & 3.3
Top: Direct distance, walking distance and driving distance across the Westlink.

Below: Site Location.
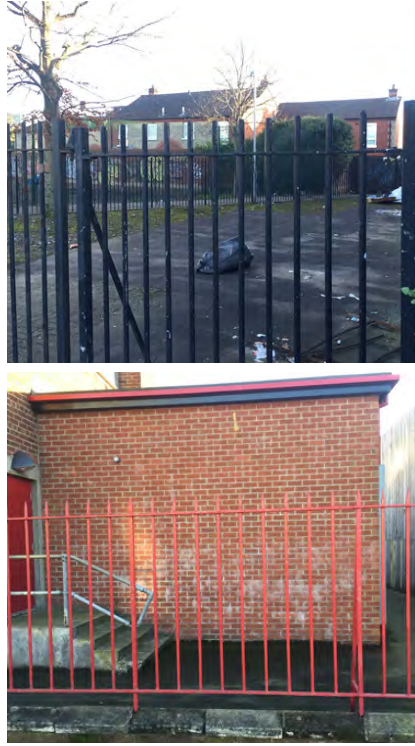
Figures 3.4
Left: Intersection of the two roadways.

Middle: Impression of the neighborhoods along the A12 highway.

Top right: The northeastern corner of the target intersection, a further illustration of the blighted condition of the periphery of the Westlink and other transport inventory.

Below right: Traffic in late afternoon, before the evening rush hour has begun.

THE WESTLINK & FALLS ROAD: CURRENT CONDITIONS

Our target site is located at the intersection of the Westlink (A12) and A501 roadways. A12 is a sunken highway cutting off the residential neighborhoods of Shankhill and Falls from the City Centre, while A501 is a highway spanning over A12 at this intersection, containing Divis Street, an extension of Falls Road. Photos in **Figure 3.4** were taken in mid afternoon on a weekday, and illustrate the following characteristics.

Low Walkability. Though there are sidewalks on both sides of the highways, the roads are so wide, with so many separate times pedestrian crossings, as to make it inconvenient and inhospitable to cross. At this time of day, otherwise a busy commuting hour, very few pedestrians are observed crossing the roads. This critical crossing point is dominated by automobiles.

Fenced Neighborhoods. As a legacy of the security issues during the Troubles period, we noticed that all of the neighborhoods around are fenced and isolated from the surrounding environment. The residential buildings are setback substantially from the road, leaving large abandoned spaces. Many of the streets extending from the core of the residential areas reach dead ends at the Westlink. If the residents from these neighborhoods want to cross the road, as shown in the discussion of walking times above, they would have to take a must more circuitous route.

Blighted Periphery. The areas around are characterized by low-density housing, vacant lots, extensive surface-level car parking, and this previously described "buffer zone.
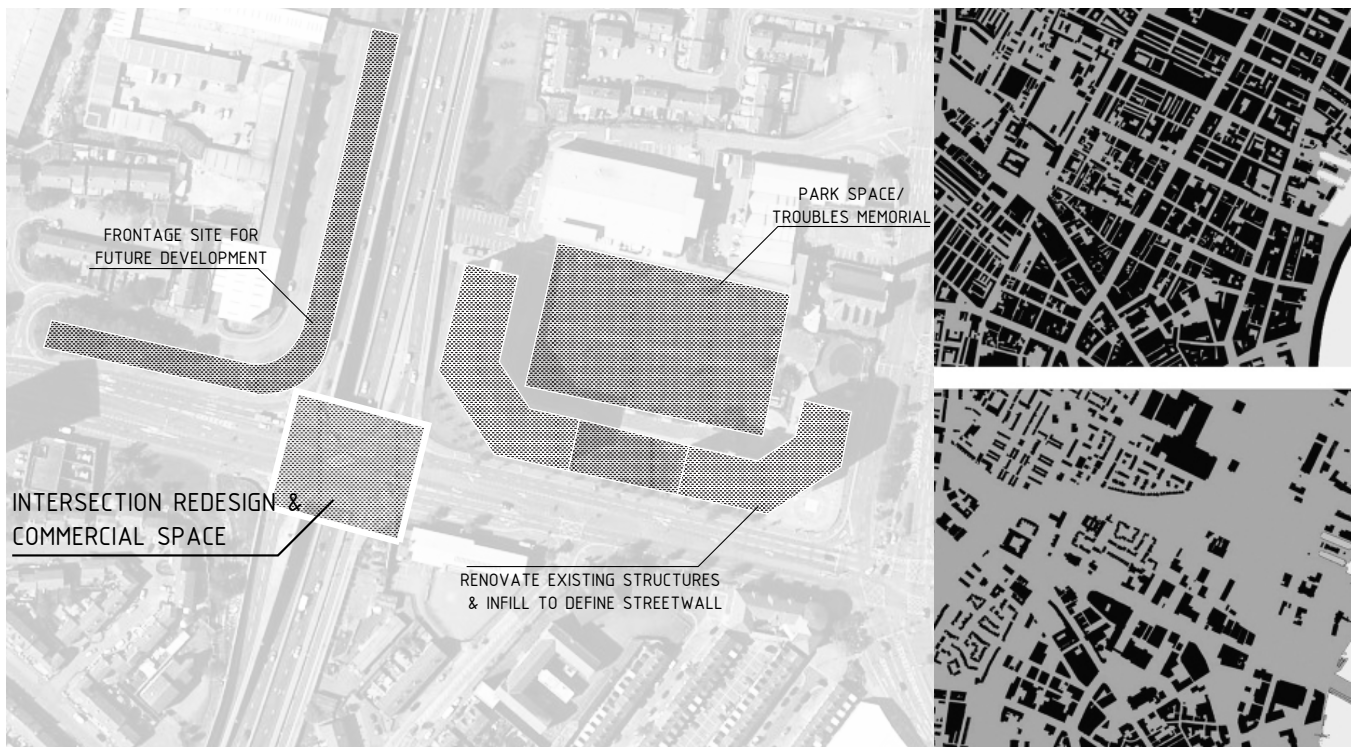
Data and local residents suggest that rush hour brings severe congestion to the intersection, further reducing its appeal as a pedestrian crossing point, which worsens the isolation of the neighborhoods to the west of A12 from the City Centre.

Figures 3.5 & 3.6
Left: Layout of the Westlink and Divis Street intersection.

Right: Mid-20th century road building destroys urban fabric. (Source: Journal of Transport Geography, 2012.)

OPPORTUNITIES FOR INTERVENTION

The aerial photograph above provides an overview of the layout of the Westlink and Divis Street intersection. As shown in Figure 3.5, the road infrastructure related to the Westlink has a tremendous impact on the built environment of the peripheral areas. Many of the streets dead end at barriers separating the Westlink and Divis Street from the surrounding uses, reflecting the emphasis on "barricading" roadways that prevailed at the time of construction. **Figure 3.6**.

In addition, most of the structures face away from the roadways, creating inward-looking, insular pockets that do not foster interaction and exchange. This situation creates many opportunities for intervention: the undeveloped "no man's land" created by an access road and buffer zone between the residential areas and the edge of the Westlink; or the half-empty campus of Belfast Metropolitan College, which is moving to new facilities and most of which is taken up with a parking lot.

In general, there is a complete lack of street frontage to generate pedestrian activity. However, for such activity to thrive, there must be pedestrians, which is undermined by the car-oriented design of the intersection at the heart of the area. This is the true crux of the problem, and as such it is the focus of this section.

Figure 3.7
The cap constructed over the sunken highway in Columbus, Ohio, flanking the crossing bridge and allowing for additional retail space.
(Source:
*<http://udis-tmc.blogspot.com/2011/10/ pedestrian-ways-parks-over-roadways. html>)*

CASE STUDY: UNION STATION, COLUMBUS, OHIO

The question is, how do we mitigate the effects of the roadway intersection design described in the previous section? The highway cap at Union Station in Columbus, Ohio, provides a possible clue. **Figure 3.7.** It is a good example of reconnection between two areas separated by a highway. During the late 1960s, the construction of Interstate Highway 670 cut off downtown Columbus from the city's Short North neighborhood. There was only a stark highway bridge spanning the sunken highway and linking the two areas, reflecting the car-centric planning attitudes of the day.

An innovative project, covering the sunken freeway with a caps and using the reclaimed space to reconnect neighborhoods that were torn apart by the highway, opened in 2004. Instead of building greenways or parks over the freeway as in Seattle, Boston, Phoenix, and Hartford, Columbus architect David Meleca programmed the new highway cap at Union Station for retail uses, trying to intensify the urban experience rather than provide a relief from it. The middle bridge carries a major north-south road, High Street, over the highway while the flanking bridges form platforms for retail buildings.

Costing only $9.4 million, the pedestrian-friendly cap was regarded as a clever design that makes the highway "disappear," enriching the city-scape. Pedestrians can easily forget that they are walking over a bridge that spans a sunken interstate highway. Restaurant and shop owners in Short North
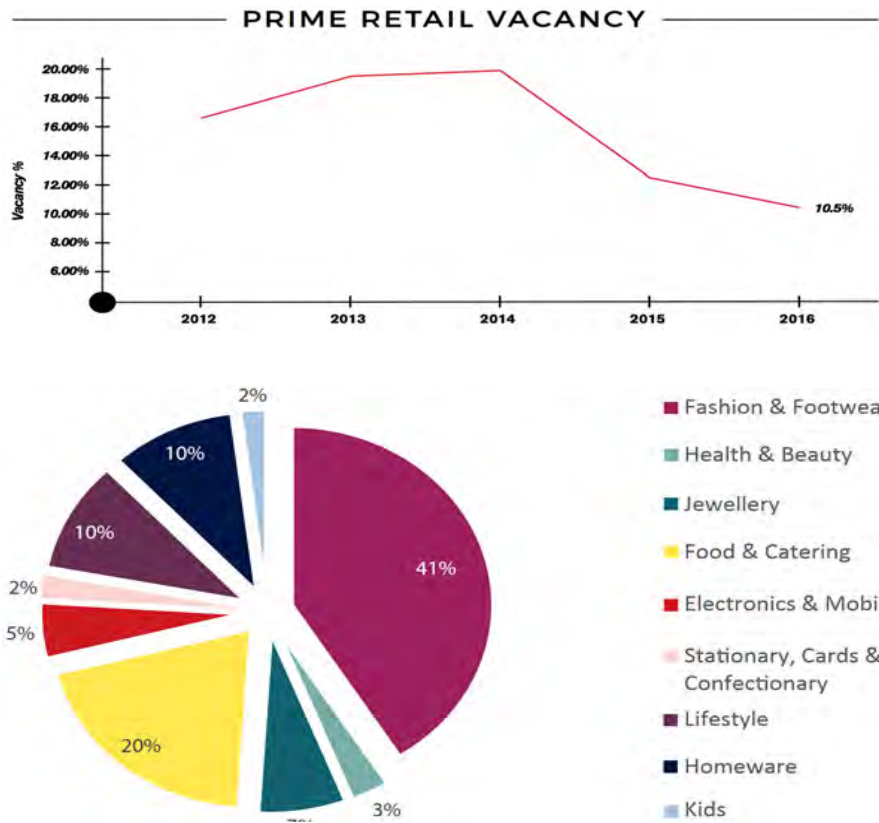
experienced an increase in traffic from conventions at the nearby Greater Columbus Convention Center, to which it was connected by the new cap.

RETAIL IN BELFAST

According to CBRE (2017), "2016 was a year of continued recovery within the Northern Ireland retail market, with a particular focus on Belfast as the Regional Centre." In 2017, the retail core in Belfast witnessed 32 new lettings during the year accounting for around 126,000 sq ft. As a result, the vacancy level in Belfast City Centre continues to decrease significantly. **Figure 3.8.** "It is anticipated that the current weakness of sterling will continue to fuel retail business" in Northern Ireland, the report claimed, which will significantly benefit Belfast. Because of the high level of demand in rental units, a lack of supply is anticipated for both the City Centre and peripheral areas, which will drive up retail rents. All of this supports developing more retail in the vicinity of the City Centre. However, given arcane zoning regulations, new development is exceedingly difficult, which is why our target site offers a unique opportunity to program the reclaimed area for retail uses.

Figures 3.8 & 3.9

Top: Prime retail vacancy rates in central Belfast have been declining for several years, leading to an increase in rents. (Source: Lisney Q42017 Outlook Report.)

Below: Fashion & footwear took up the highest percentage of retail space in Belfast, with food & catering ranked second. (Source: Savills World Research, Northern Ireland, 2016.)
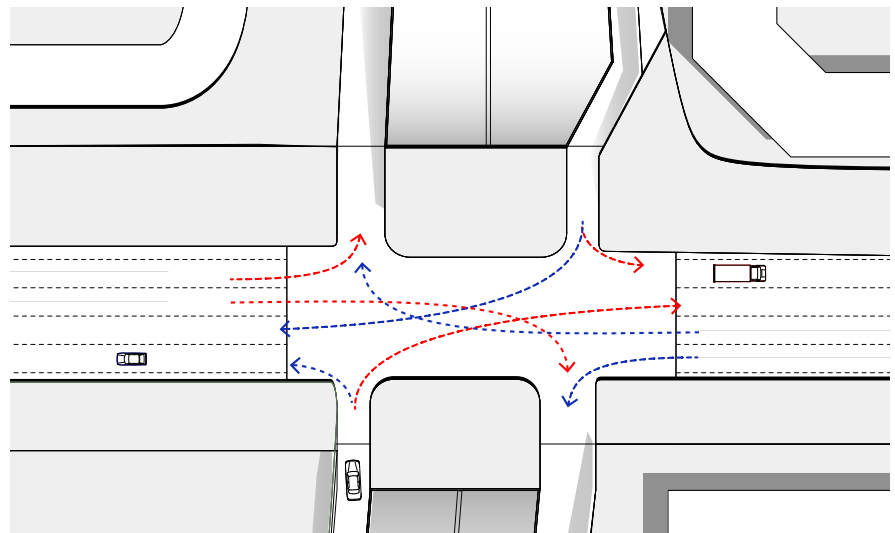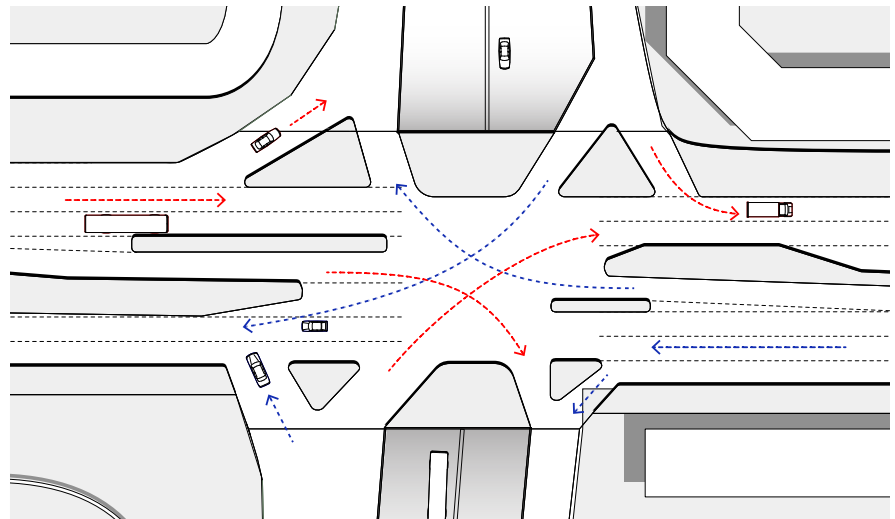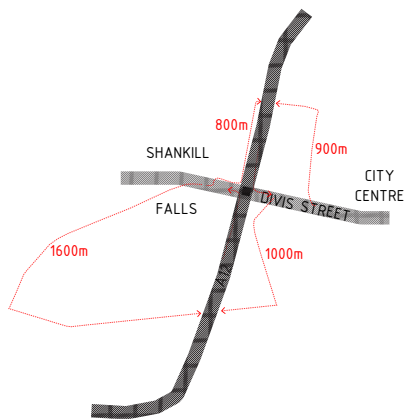
Figures 3.10, 3.11 & 3.12
Above: Effect of proposal on traffic patterns during construction.

Right (top): Existing condition.

Right (below): Proposed redesign.

EXISTING CONDITION

The Westlink/Divis Street Junction is a bewildering array of turn lanes, islands, approach ramps, and pedestrian crossings, as in **Figure 3.11.** For a pedestrian to cross from the residential areas on the left side of the diagram to the outermost zones of the City Centre on the opposite side of the roadway (on the right of the diagram) requires crossing as many eight different timed crosswalks, each on a separate program, amid some of the heaviest traffic in Belfast. Unsurprisingly, the areas of the City Centre immediately adjacent to the Westlink, despite the presence of a vast number of consumers just a few hundred yards away, is completely devoid of street-front retail.
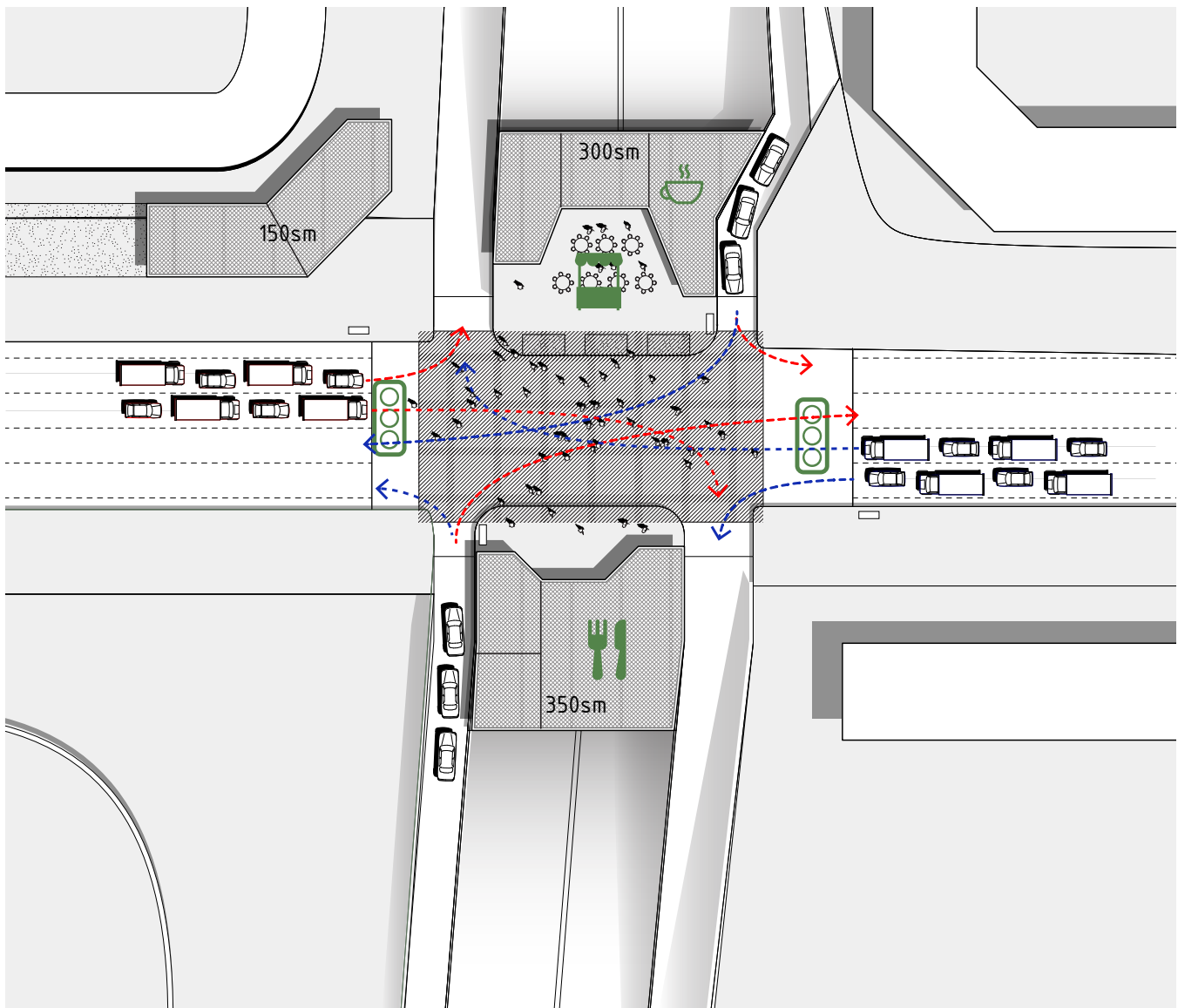
PROPOSED REDESIGN

The proposed intervention at the Westlink/Divis Street junction would dramatically rationalize both the layout and traffic flows, reorienting the design toward the pedestrian experience. The number of lanes leading on and off the Weslink and requiring access ramps, would be reduced, allowing land to be reclaimed on either side of the roadway. The number of islands would also be reduced, as would the number of dedicated turn lanes. **Figure 3.12.** Smart traffic meters could be employed to ease any increase in congestion as a result of the redesign, but the great benefit would be the reclamation of land through lane reduction, and also through extending the width of the crossing with new "caps," similar to those in Columbus, that could be programmed to productive uses. **Figure 3.13.**

Figure 3.13
Plan of proposed design.

0'   10'   25'   50'

0'   10'   25'   50'
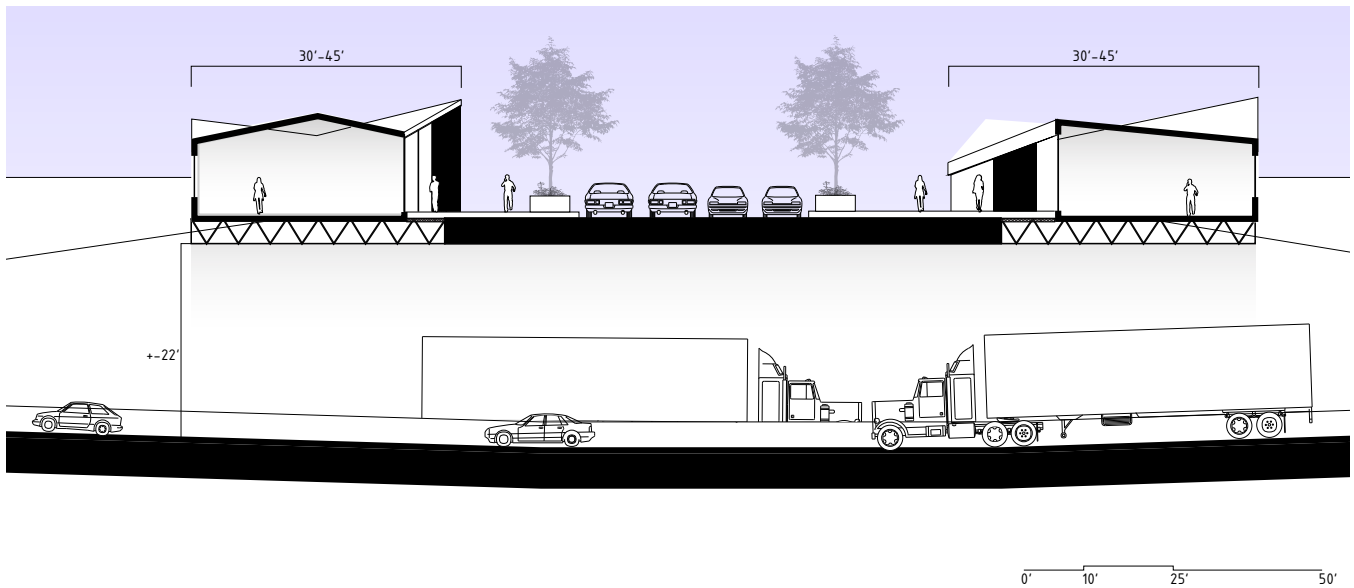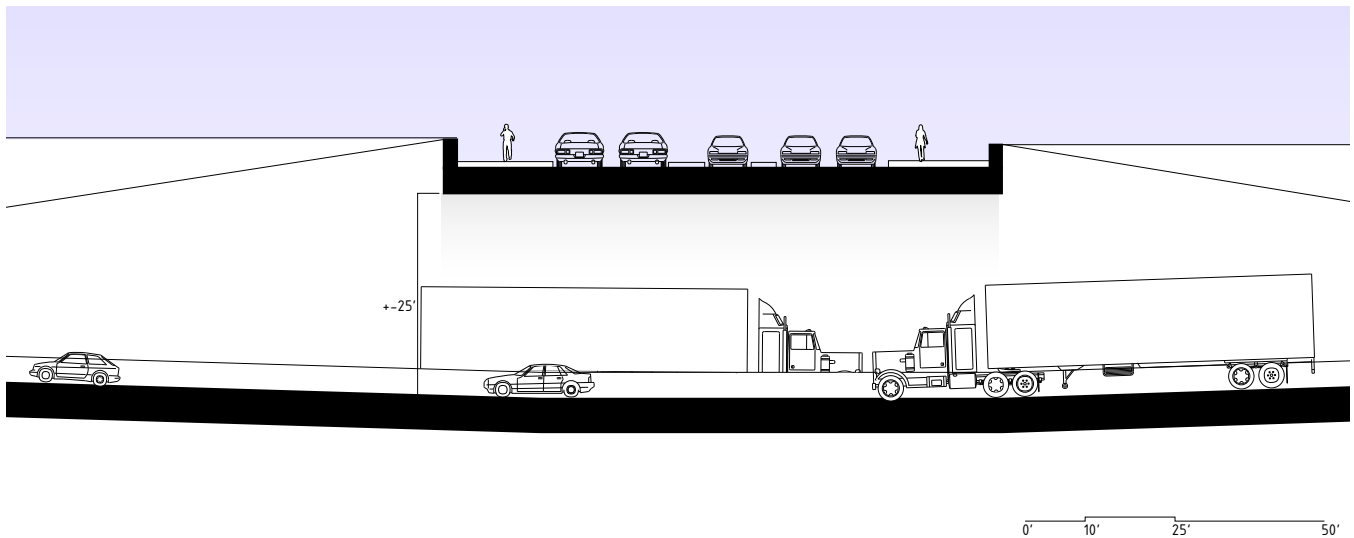
Figures 3.14 & 3.15

*Top: Existing section, looking west along Divis Street, with Westlink passing beneath.*

Below: Proposed redesign of the intersection, showing truss extensions of highway cap, with additional retail space.

PROGRAMMING THE BRIDGE

In total, this proposed redesign of the Westlink/Divis Street intersection allows a total of over 800 square feet to be reclaimed, from the reduced number and rationalization of the lanes, as well as the widening of the bridge onto two east-west caps flanking Divis Street.

BENEFITS OF HIGHWAY CAP OVER A12.

We could imagine that every day after finishing work or school, instead of driving directly home (which in many cases is outside the City Centre) some people driving along either A12 pr A501 could choose to stop at this cross for a nice experience interacting with each other, or it could be a gathering spot for

Figure 3.16
Plan of proposed design.
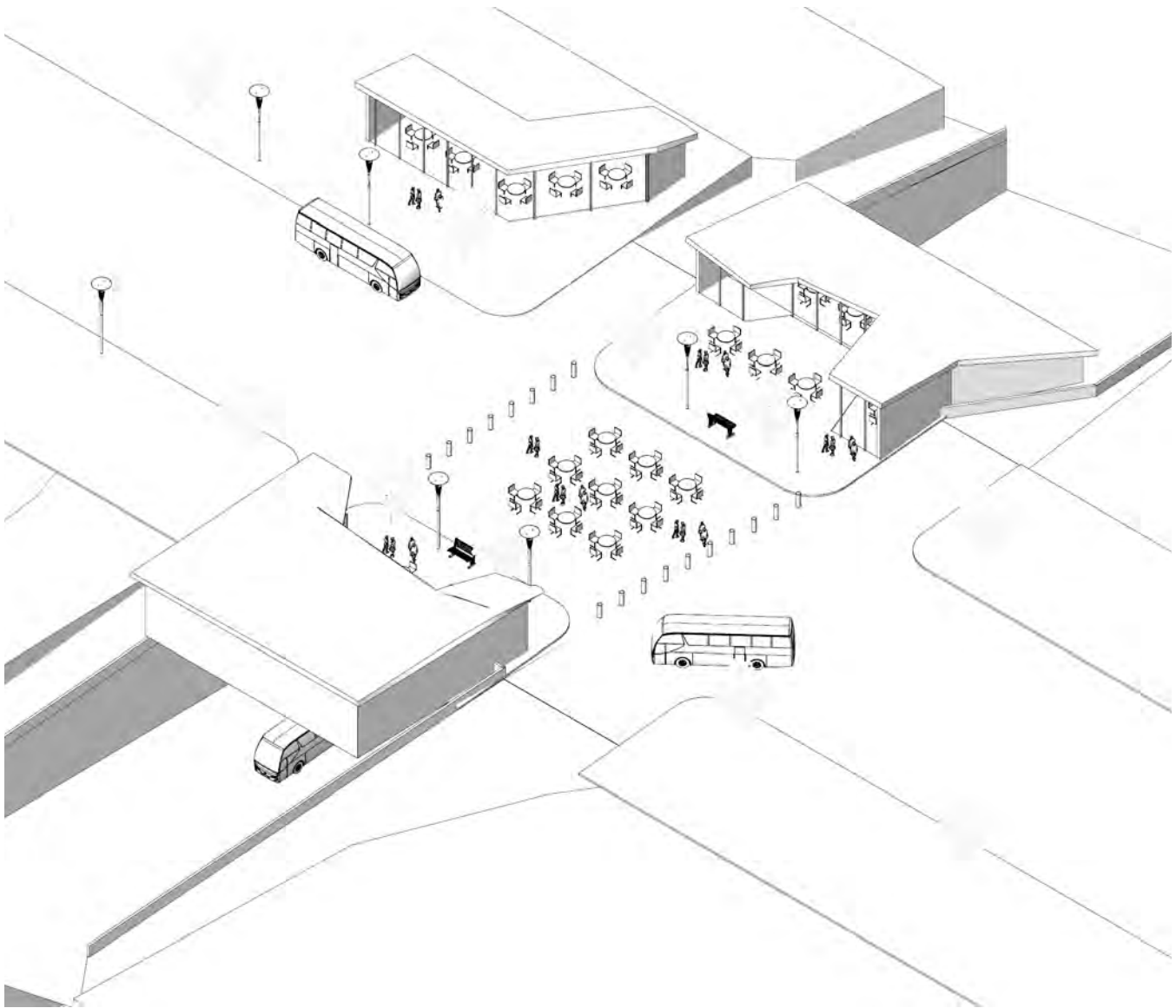
young people. In addition, residents of Falls and Shankhill will now have a local retail center that is inviting and is within walking distance of their homes. The Westlink becomes less of a barrier because it is built over with new uses. It would even be possible to close the crossing to traffic on weekends, and support a farmer's market or other community gathering. **Figure 3.16-17.**

EXECUTING THE PLAN

Belfast City Council. The most important first step in executing this plan for the Westlink/Divis Street intersection is to approach the Belfast City Council to receive feedback, adjust the particulars of the design, and create an executable construction program. An environmental impact study will certainly need to be prepared.

Figure 3.17
Future life of Belfast citizens at the intersection.

Transportation Planning in Northern Ireland. Another important constituent in this process would be the Northern Ireland's Department for Infrastructure, which is responsible for transportation planning. This body would have final say over find the design of the highway cap. As an example, in many US states, highway departments carried out regulations to restrict the material and style of the structures over highways to avoid distracting the drivers when they are driving.

Community Buy In. As important will be building support for the idea among the communities that would be most directly benefited by the proposed project: Shankhill and Falls. In this case, the proposal will create a common, shared amenity for both neighborhoods.

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4 WALKING THE CENTER

Madeleine Haslam, Angela Li, Melinda Martinus

BACKGROUND

The walking environment of Belfast plays a crucial role in supporting the transportation system and improving the economic development of the city. Enhancing the walking experience will contribute to the economic development of the city. That is particularly the case for City Centre, the most economically active area in the city. In cities such as Amsterdam and Copenhagen, advanced pedestrian networks are proven to bring in more tourists and trigger economic development along the walking corridor.

Belfast has an strong pedestrian network in the City Centre and is ripe for expansion and improvement. During the Troubles, the City Centre was walled off from the rest of the city by police checkpoints and railways, referred by locals as the 'Ring of Steel.' The security controls created a large automobile-free network of streets surrounding City Hall.

Today, much of the pedestrian network within what was the 'Ring of Steel' remains and offers a pleasant walking environment. However, it is not perfect. Belfast is one of the cities in Europe that has the highest car dependencies. In the areas outside the 'Ring of Steel', many lots are used for parking. Most of the Belfast population who live outside the City Centre park their cars in these areas then walk to work within the Centre. And the conflict still caused deep psychological trauma and discouraged residents from visiting the Centre even after the Good Friday Agreement was signed.

To address such a challenge, this proposal aims to examine Belfast's existing pedestrian network and create a model to improve the current pedestrian network by extending it out from the south to the north of the City Centre towards three major destinations — the vibrant Queen's University campus in the south of the City Centre, Ulster University's new campus in the City Centre where 7,000 students soon will be living and studying, and Yorkgate Train Station where residents from North Belfast travel to and from the City Centre. In the end, the network will be extended to more retail centers, train stations, and tourist sport and supported by nodes that are able to alleviate high vehicular traffic and transform idle spaces into more active and attractive spaces.

Figure 4.1
Pedestrian zone around City Hall.

BELFAST PEDESTRIAN NETWORK MILESTONE

Despite of all historical issues, the City Centre's walking environment also witnessed two milestones. The first one is the establishment of pedestrian zone. It is a certain form of street, concentrated around City Hall, where all vehicles are only permitted to run under 20 miles per hour. **Figure 4.1.** Pedestrian zones largely improved the safety level of walking environment and encouraged people to walk around more.

The second one is the introduction of Coca-cola Zero Bike, a public bike system with about 40 dock stations in the City Centre. It diversifies the options for the city's transportation system greatly. It is an enjoyable experience to biking around the city either for commuting or enjoying the view thanks to the introduction of the bike system.

Based on the long-term development together with the two milestones, the walking environment of the city has a solid physical foundation. It is well connected to surrounding commercial centers especially in the area near City Hall, offering a vibrant walking experience. It could be seen in the picture on the left that on Donegall Place, there's an ideal combination between the commercial elements and pedestrian system, which is highly active and attractive.

The studio's site visit in March was a turning point for the proposal development. Initially, the studio supposed that to expand the interaction around City Hall to the entire center, a larger scale of connection should be founded between the most important commercial centers because they are essential economic generators for the entire city. However, during the site visit, a series of new issues were spotted which led to the studio's new idea on proposals.

PEDESTRIAN NETWORK ISSUES

Few Belfast residents live in the City Centre and as a result, there is a drastic difference between the walking experience during the day and at night. During the day, the main streets in the area look quite active and enjoyable with many people walking around. However, during the evening, the streets empty out creating a 'ghost town'.

Another problem is that too much of the road space is given to parking, which disrupts normal walking and biking paths. This is a result of unreasonable street design, where vehicles and bicycles share the same lanes in many circumstances. Also, a great number and poorly design of fences obstruct access of many places to the general public.

Scattered mostly in the northern part of the City Centre, underutilized spaces also account for a high proportion for the overall land usage. Most of them are vacant lots that are yet to be developed while others are parking lots. The most glaring one is the large vacant land near A12 and M3. The existence of those under-utilized space has not only lowered the efficiency of land use and the planning process for economic development, but also destroyed the walking experience as they normally look messy and dirty. **Figure 4.2.**
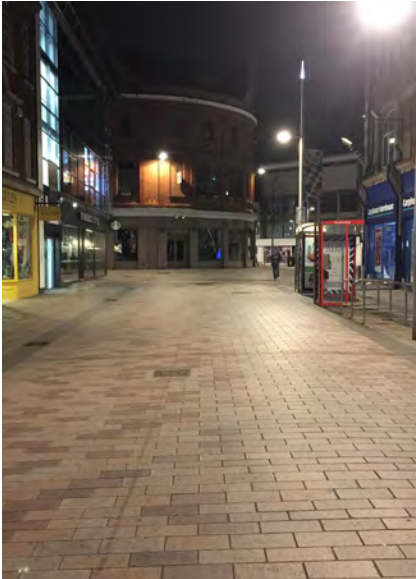
Figure 4.2
*Pedestrian network problems in Belfast
(left-right): day and evening time issue,
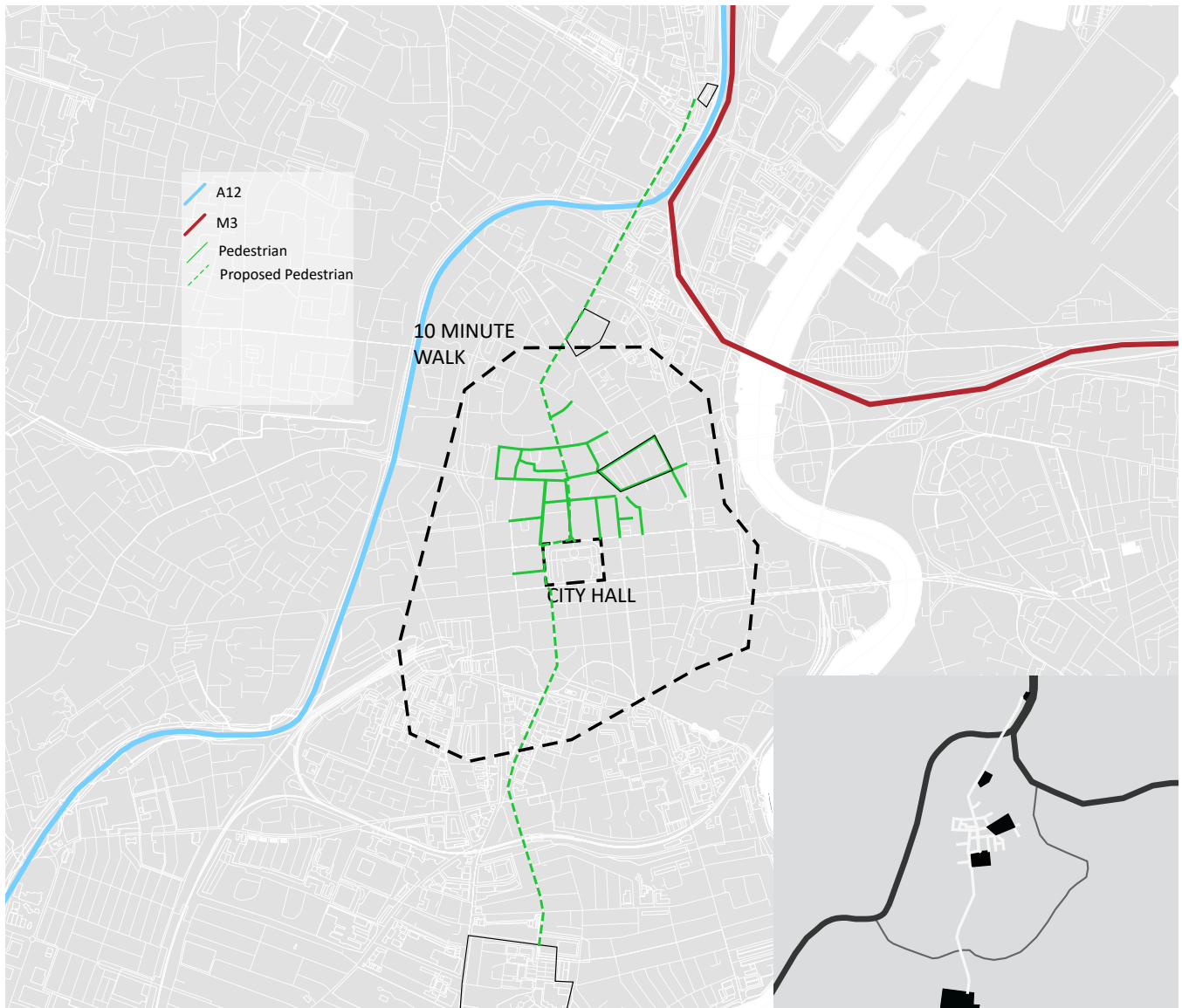on street parking and fences, and
underutilized spaces.*

Figure 4.3
North-South corridor expansion.

ESTABLISHING NORTH-SOUTH CORRIDOR

To address the pedestrian network issue in City Centre, we propose a long corridor that runs throughout the City Centre from the vibrant Queen's University campus, just south of the City Centre, to the massive new Ulster University campus, where thousands of new student will soon be living, studying and working – and on north to the Yorkgate Train station, where many workers, residents and students travel to and from the City Centre. **Figure 4.3.**
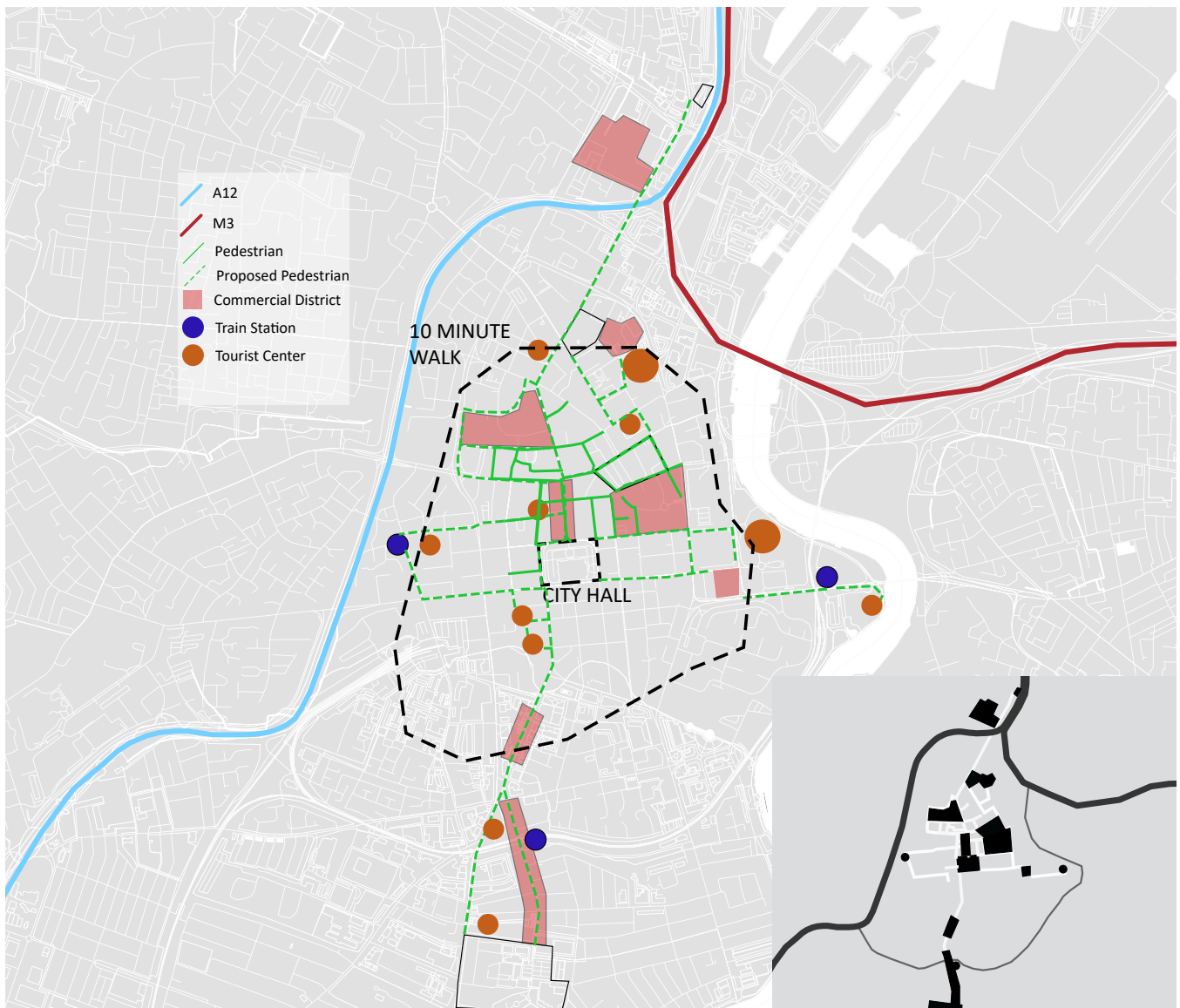
CONNECTING CENTERS

Following the corridor established in the prior map, other important commercial, tourist and transportation centers will be connected to the network, including major commercial centers such as the Victoria Square Shopping Mall, Castle Court Shopping Mall, and Saint Annes Square. **Figure 4.4.** In order to encourage more people to walk, the network then must also be expanded to train stations – such as Great Victoria Street, Central Railway Station, and Botanic Station, and tourist sports – such as Ulster Museum, Grand Opera House, and Belfast Waterfront.

Figure 4.4
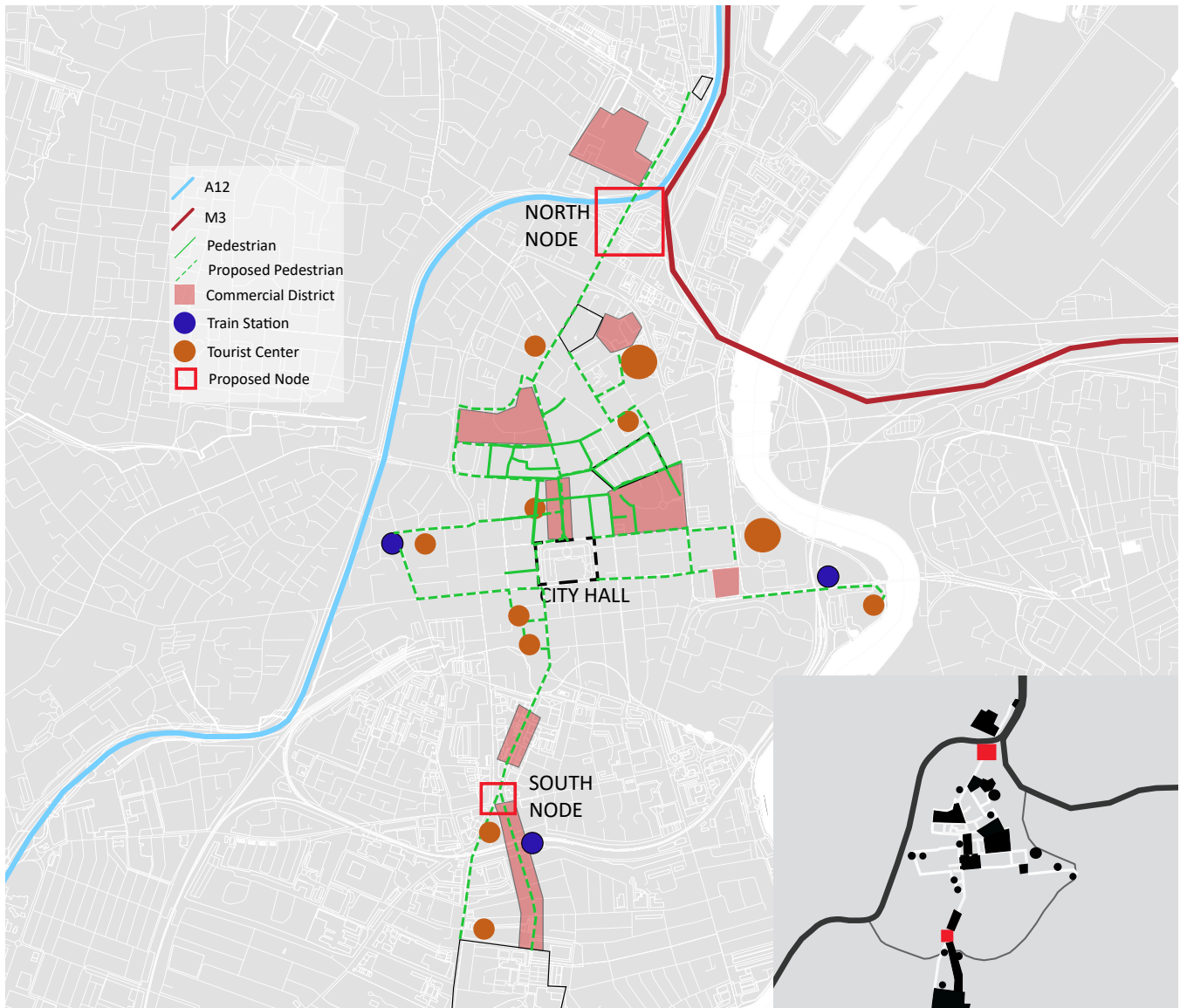*Commercial Centers, train stations, and tourist sports expansion.*

Figure 4.5
Walking nodes development.

CONSTRUCTING NODES

Finally, to maintain connectivity in this network, nodes in the form of active green spaces and complete streets should be developed in the north and south corridor. **Figure 4.5.** Not only will this network create connectivity between centers, these nodes will also play an important role as public space that improves the walking experience in the north and south part.

With this network, there will be more people walking to create both day and night time vibrancy and the economic development along the pedestrian corridors will be triggered.
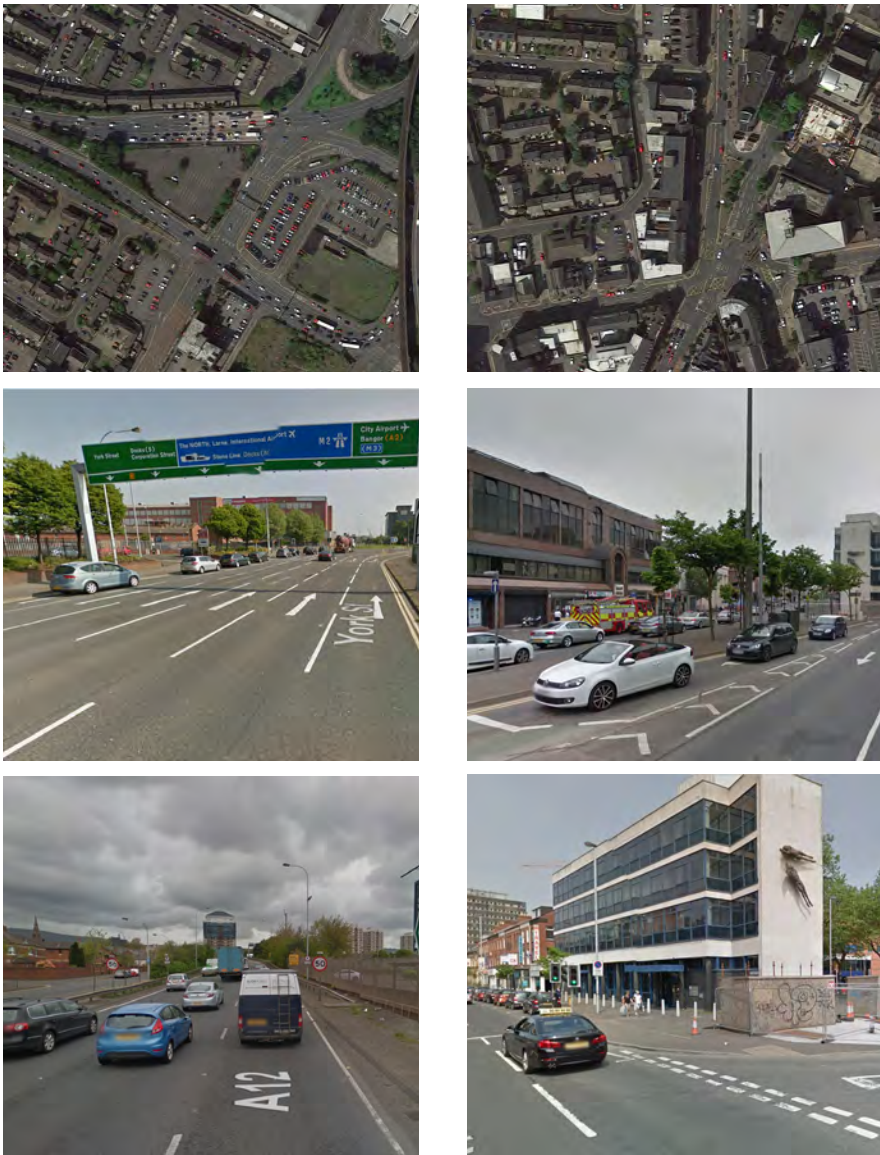
NORTH NODE CHALLENGES

In its existing condition, the north node that connects Yorkgate Train Station and Ulster University has a heavy vehicular traffic, with two heavy intersections and six lanes of traffic. Many lots along the street corridor are underutilized as parking spaces. **Figure 4.6.**

SOUTH NODE CHALLENGES

In its current condition, in the intersection between Botanic Avenue and A1 Street, there is a triangular underutilized space that disturbs pedestrian walkability. **Figure 4.6.**

Figure 4.6
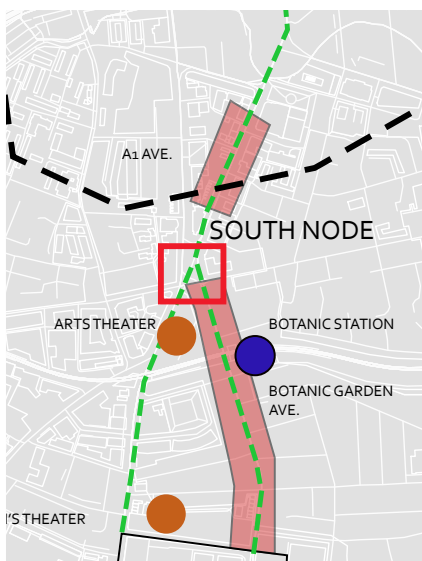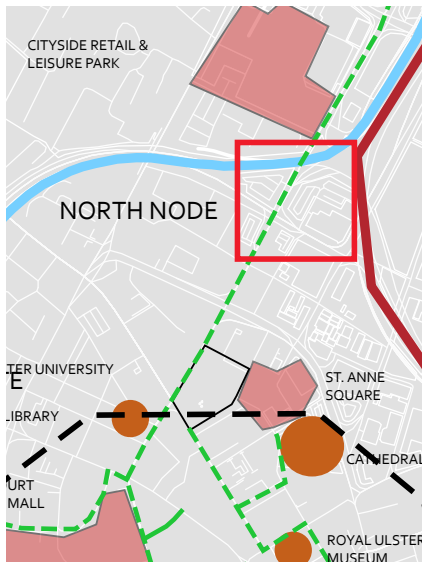*Walkability Issues in north (left) and south node (right).*

Figure 4.7
*North and south node before design
intervention.*

NORTH NODE INTERVENTION

To alleviate the heavy vehicular traffic in the north node a walking network
between Ulster University and Yorkgate Station should be improved. As seen in
the previous analysis, the walking experience is this area is unpleasant. The road
that connects these two destinations has six lanes of traffic and is surrounded by
parking lots.

The distance from Ulster University to Yorkgate Station is only 0.6 miles with a 5
minute walking time. This means that it is highly possible to improve pedestrian
network there.
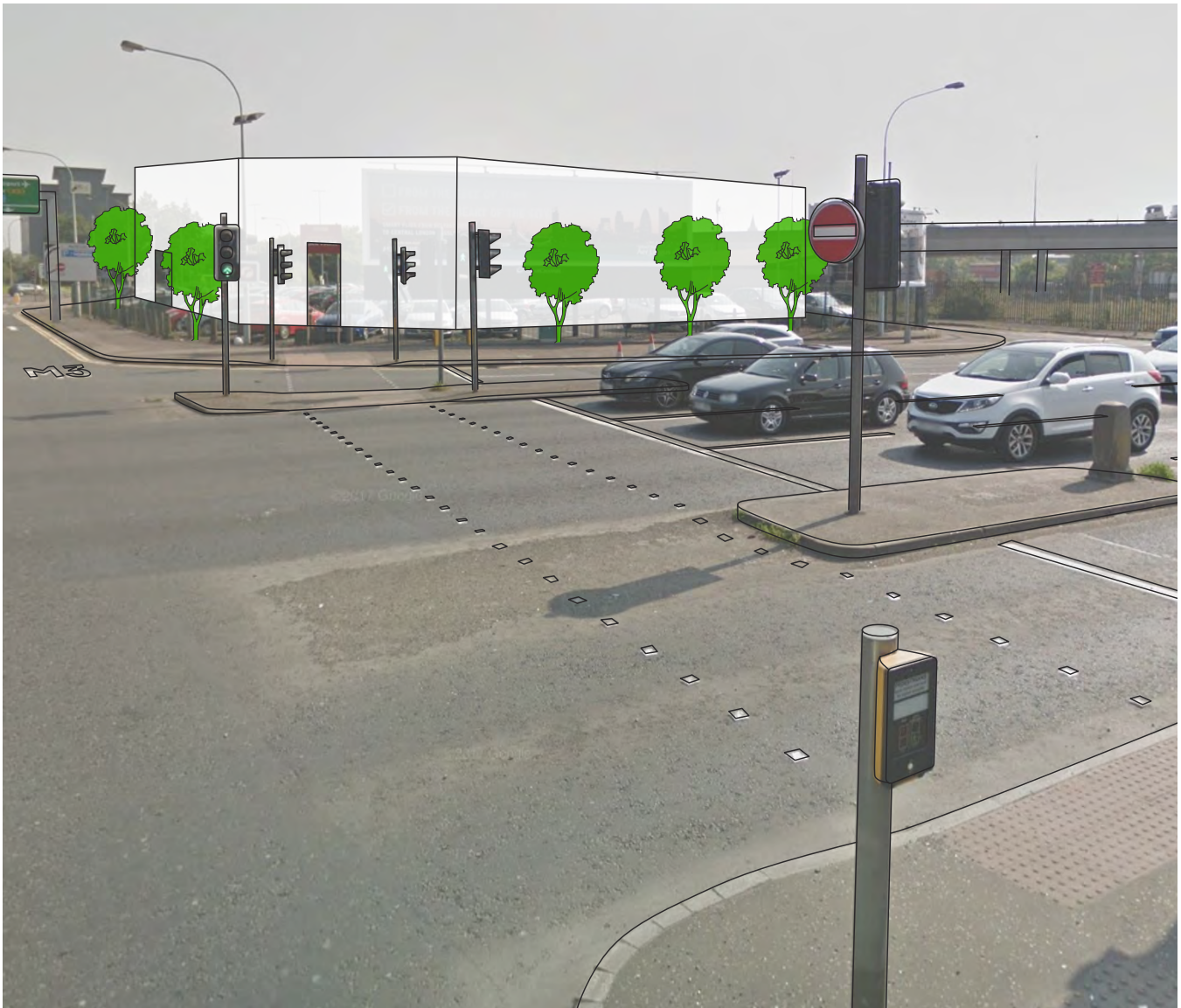
This proposal aims to introduce a complete street network with bike lanes and sidewalks, also converting these large parking lots to active spaces. We believe that by providing a better network, more people from North Belfast would be less dependent from car and shift to train or bicycle as a main transportation mode to go to the City Centre. Also, this network would trigger more young students from Ulster University to walk and boost the vibrancy and economic activity in the surrounding area. **Figure 4.8.**

Figure 4.8
Design intervention for north node.

Figure 4.9
Design intervention for south node.

SOUTH NODE INTERVENTION

From Queen's University to City Hall is generally quite nice and we propose establishing an active node to enhance walking experience. There are many cafes and restaurants along Botanic Avenue that attract people on foot. This vibrant corridor has several streets and intersections which can be easily improved.

For example, we propose making changes to the intersection of Botanic Avenue and A1. The triangular-shaped space will be converted into an active space with open air cafe and kiosks. Along with an active space, a bike station and biking route extension should be upgraded in this area in order to generate more people to come and create vibrancy in this area. **Figure 4.9.**

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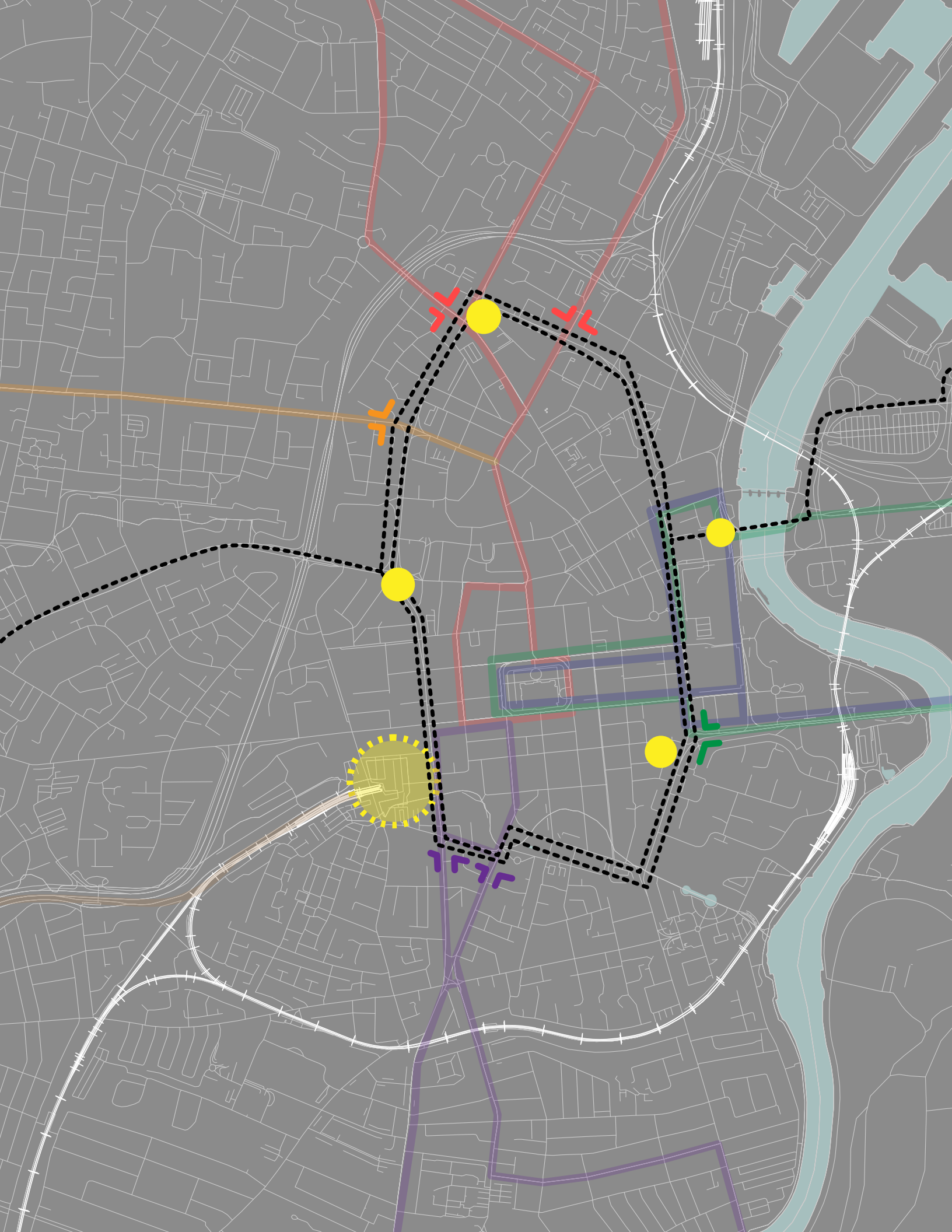
5 ENHANCING TRANSPORTATION

Whigham Covington, Yanling Deng, Tola Oniyangi, Coco Ke Shi

INTRODUCTION

Our proposal seeks to leverage Belfast's existing transportation system in a series of changes, improving mobility and connectivity throughout the city. Our proposal consists of three main parts: an expansion of existing bus lanes, connecting existing transit systems through multi-functional mini-transit hubs, and an introduction of a ferry system connecting the city via the River Lagan. Finally, the proposed place-making strategies will work to revitalize the city, as a destination with activities after dark and on the weekends. Overall, our proposal serves two main functions: to provide alternative transportation options and to relieve difficulties in using any mode of transportation.

During our visit to Belfast, we spoke to many individuals about their experiences and thoughts concerning the transportation system. Most reviews were unfavorable, often focusing on the unreliability of the buses, disjointed routes, and costs.

Ulster students said they live near Queens University even though it is 40 minutes away by walking. They would rather walk than take the bus to avoid transferring buses and paying twice.

Using public transportation is quite inconvenient because all buses go to the City Centre, which for many is not the final destination. Additionally, bus transfers are not free, which riders incur additional costs when traveling into and within the City Centre. **Figure 5.4**.

A resident's commute typically takes 10 minutes by car and 31 minutes by walking. On the bus, however, her commute takes 35 minutes because the student has to walk to the bus to the City Centre, walk to transfer and then walk after the last leg of the trip. The bus costs about the same as a taxi when there's no traffic, leaving no incentive to ride the bus.

Many people in Belfast drive to and from the city as a result of convoluted bus routes, few options for using other modes of transit and a surplus of parking.

BACKGROUND

During the Troubles, the Belfast City Council limited investment in the public transportation system because burning and hijacking buses were common forms of protest (Cunningham 2017). **Figure 5.1**. The city implemented a no-parking zone inside the City Centre from mid-1970's, and around that same period, placed concrete blocks, bollards and other impediments on roads to deter car bombs (Switzer, & McDowell, 2009). Peace walls further restricted movement in Belfast, segregating communities from one another (Switzer, & McDowell, 2009). While army patrols and bollards are no longer present, the psychological effect of these barriers remains (Switzer, & McDowell, 2009).

Figure 5.1
Burning and hijacking of buses during the Troubles.
(Source: http://www.vintag.es/2015/06/pictures-of-northern-ireland-troubles.html)

Many people view the City Centre as a "no-go" zone after dark, and a place for economic but not necessarily social activities. Moreover, the peace walls serve as an identifiable physical reminder of the Troubles and subdivision that marked the latter half of the 20th century (Switzer, & McDowell, 2009).

Belfast's City Council is not in charge of making transportation decisions - this means that national and regional bodies not necessarily in tune with Belfast's needs make decisions on a large-scale rather than local level. The Department for Infrastructure (DFI) is in charge of all transportation policies and initiatives (Belfast City Council 2017c). Belfast's public transportation services, called Metrolink, NI Railways and Ulsterbus, are subsidiaries of The Northern Ireland Transport Holding Company (NITHC) (Belfast City Council 2017c). The NITHC is a national, public corporation under which Translink operates Metrolink, a bus system which only serves the Belfast area, Ulsterbus, a regional bus system, and Northern Ireland Railways, a national railway system (Belfast City Council 2017c). Due to the nature of this relationship and the large oversight of the DFI, the Belfast City Council has not been able to fully implement their visions for Belfast's transportation system. To achieve the goals within the vision for Belfast, an integration of transportation planning powers with the community and local planning powers of the Belfast City Council is needed (Belfast City Council 2017c). This will allow for a more seamless and localized planning process, providing the Belfast City Council the ability to implement proposals.

BELFAST'S TRANSPORTATION SYSTEM

Currently, Belfast's public transportation system primarily includes a railway and bus system. **Figure 5.3**. A public bike sharing system was introduced within the City Centre in 2015 (Belfast City Council 2017c). There are 12 bus routes that go to the City Centre, walking distance from City Hall, with a bus stopping at the City Centre every ten minutes (Translink). Though the frequency of buses stopping in the City Centre is seemingly a positive for riders however, the bus system does not adequately serve residents living outside of the City Centre, therefore there is a lack of ridership.

Bus routes are disjointed and connections are difficult to find. Belfast's bus system has the potential to extend its current reach, increasing connectivity for Belfast, in its entirety. **Figure 5.2**. From 2012-2014, 68% of Belfast residents lived within 6 minutes of a bus stop (Belfast City Council 2017c).

The City Centre itself is quite compact and walkable, with a number of pedestrian-only streets and alleyways. Consequently, the challenge lies in bringing people from outside of the City Centre into the City Centre, opposed to moving people around inside of the City Centre. This sentiment was mirrored in the Belfast City Centre's Local Development Plan for 2020-2035. The plan identified a need for connectivity both within and outside of the city, socially inclusive/sustainable travel patterns, and regeneration as key factors in the development of Belfast's transportation system (Belfast City Council 2017c). A goal of Belfast's transportation scheme, in terms of sustainability, is shifting from high numbers of driving to cycling and walking, which Belfast has the capacity to do (Belfast City Council 2017c).

There are only four train stations along five train lines within the Belfast City Centre (Translink 2009). Their relative lack of connection to other transportation options makes them an inconvenient mode of transportation. As a result, trains

BEFORE

AFTER

Figure 5.2
Proposal diagram: before and after.
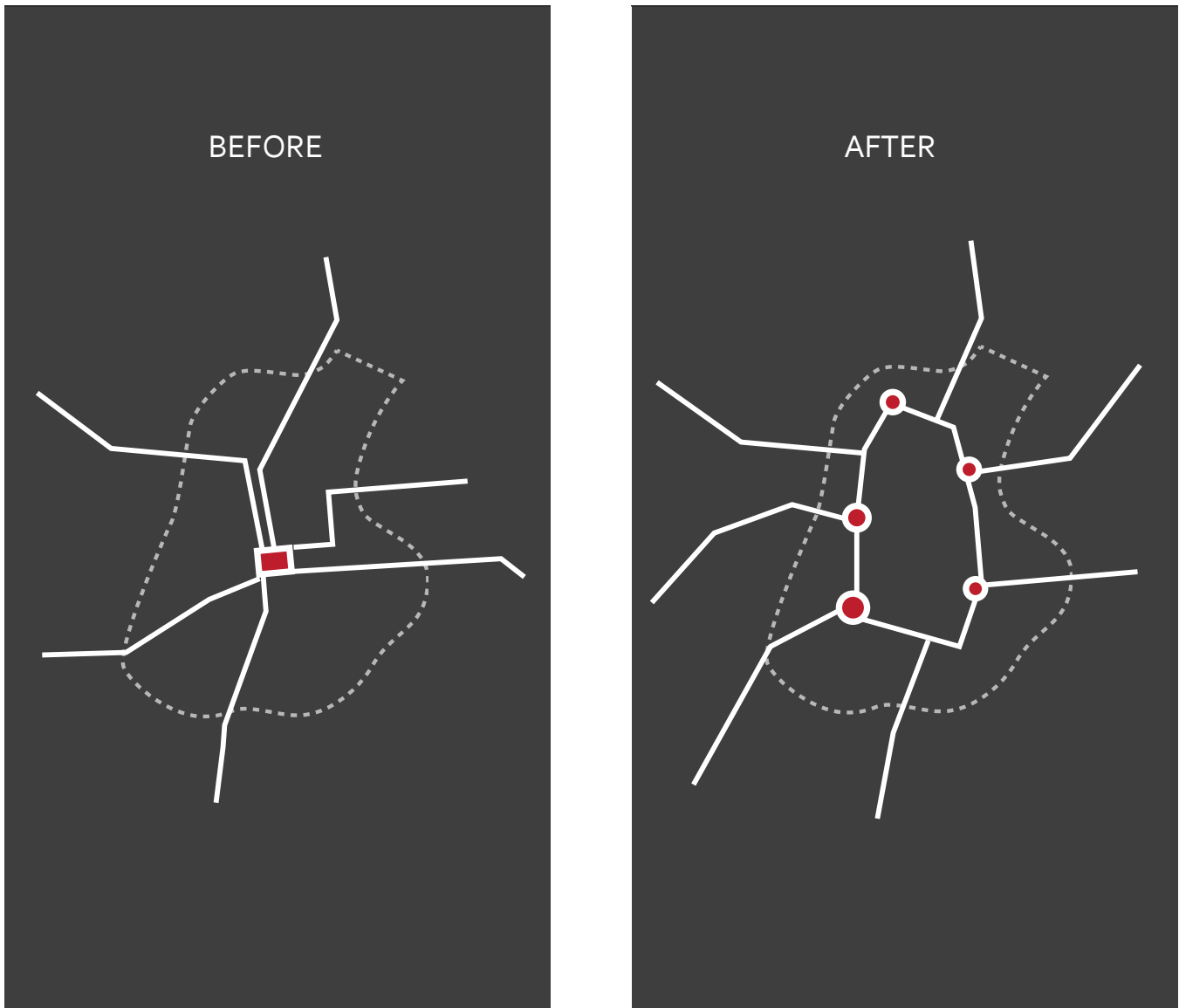
located both within and outside the City Centre can be an inconvenient mode of transportation. From 2012-2014, 62% of households had minimal access to train stations, exceeding 44 minutes to access the train, and walking was not a viable option (Belfast City Council 2017c). There are six or seven trains per hour at peak times, approximately every ten minutes (Translink 2009). Although trains come rather frequently, the train system's small service area is a deterrent to using this transportation option.

The Belfast bike sharing program, Belfast Bikes, has had a higher degree of success in terms of patronage. It is quite affordable and priced according to length of use. Users pay £20 for an annual subscription and £5 for a three day subscription (Belfast Bikes 2017a). In terms of usage, the first half hour is free, users pay 50p for up to one hour, £1.50 for up to two hours, £2.50 for up to three

Buses congregate around City Hall, which acts a de-facto transit hub

○ Existing Transit Hub

○ Bus Transfer Points

• Bus Stops

Bus Lines

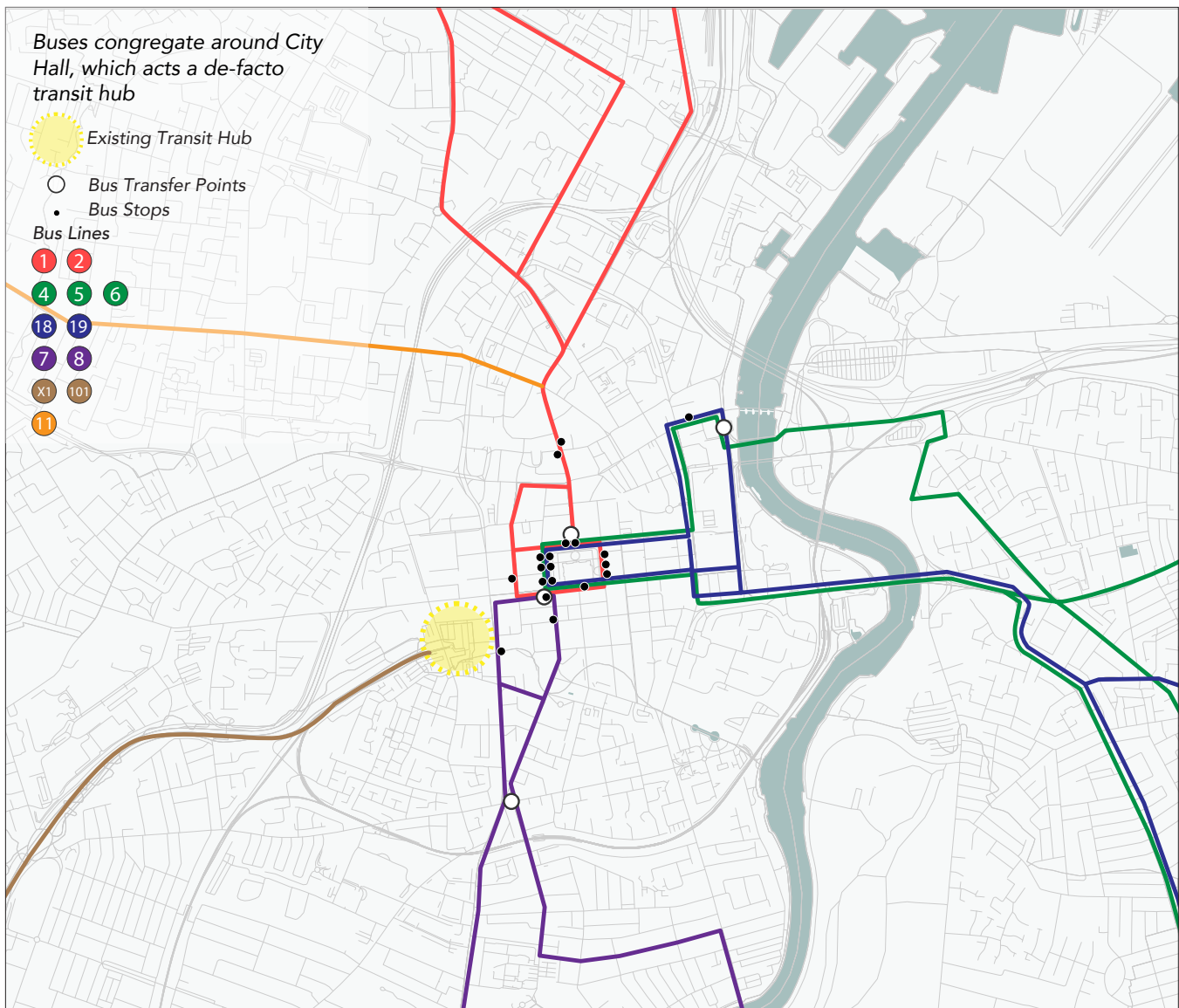1 2
4 5 6
18 19
7 8
X1 101
11

Figure 5.3
Existing BRT system.

hours, and £3.50 for up to four hours (Belfast Bikes 2017c). For every half hour after 4 hours up to 24 hours, users are charged £2 (Belfast Bikes 2017c). There is a late return charge of £120, a dam age fee that can go up to £120, and a £20 charge for loss or damage to the anti-theft lock (Belfast Bikes 2017c). There is a website and app, with updated real-time information, dedicated to Belfast Bikes. The number of docks has increased from 30 at its introduction in 2015 to 40 docks today (Belfast City Council 2017c). This process has been gradual, and there are currently a number of planned locations for new docks (Belfast City Council 2017c). While it is available both within and outside of the City Centre, docks are highly concentrated within the City Centre (Belfast Bikes 2017c). Belfast Bikes is a relatively small initiative, and its limited reach makes it an unsustainable system for people either traveling medium to long distances or going to places outside of its service area. This limits the bike sharing program's

Figure 5.5
Typical path of student from Queen's University to Ulster University.

ability to be a viable alternative to driving. Seeing as Belfast Bikes is rather affordable and costs less than any other transportation option, an expansion of the system would be incredibly beneficial to Belfast.

Generally, disjointed bus routes, limited train and bus coverage, as well as the lack of connections between different transportation modes are the Belfast transportation system's major problems. Although 37% of all Belfast households owned a bicycle, an alarmingly low 1% of journeys used bicycles from 2012-2014 (Belfast City Council 2017c). Public transportation accounted for a similarly low 8% of distance traveled, while cars made up 81% of the total distance traveled (Belfast City Council 2017c). Since Belfast Bikes' introduction in May 2015 to February 2017, the number of bike rentals totaled 388,773 (Belfast Bikes 2017d). There is potential for increasing this number through strategic initiatives,

Add express **Ⓐ** *line along inner ring road*

Add **Ⓑ** *line to from Titanic Quarter to/along the inner ring road*

Add **Ⓒ** *line to from the west to/along the inner ring road*

Extend all lines coming to city center along ring road ⅃∟

Redistribute transit pressure from City Hall to mini hubs ●

CLIFTONVILLE

Ⓐ

Ⓑ

ULSTER
UNIVERSITY

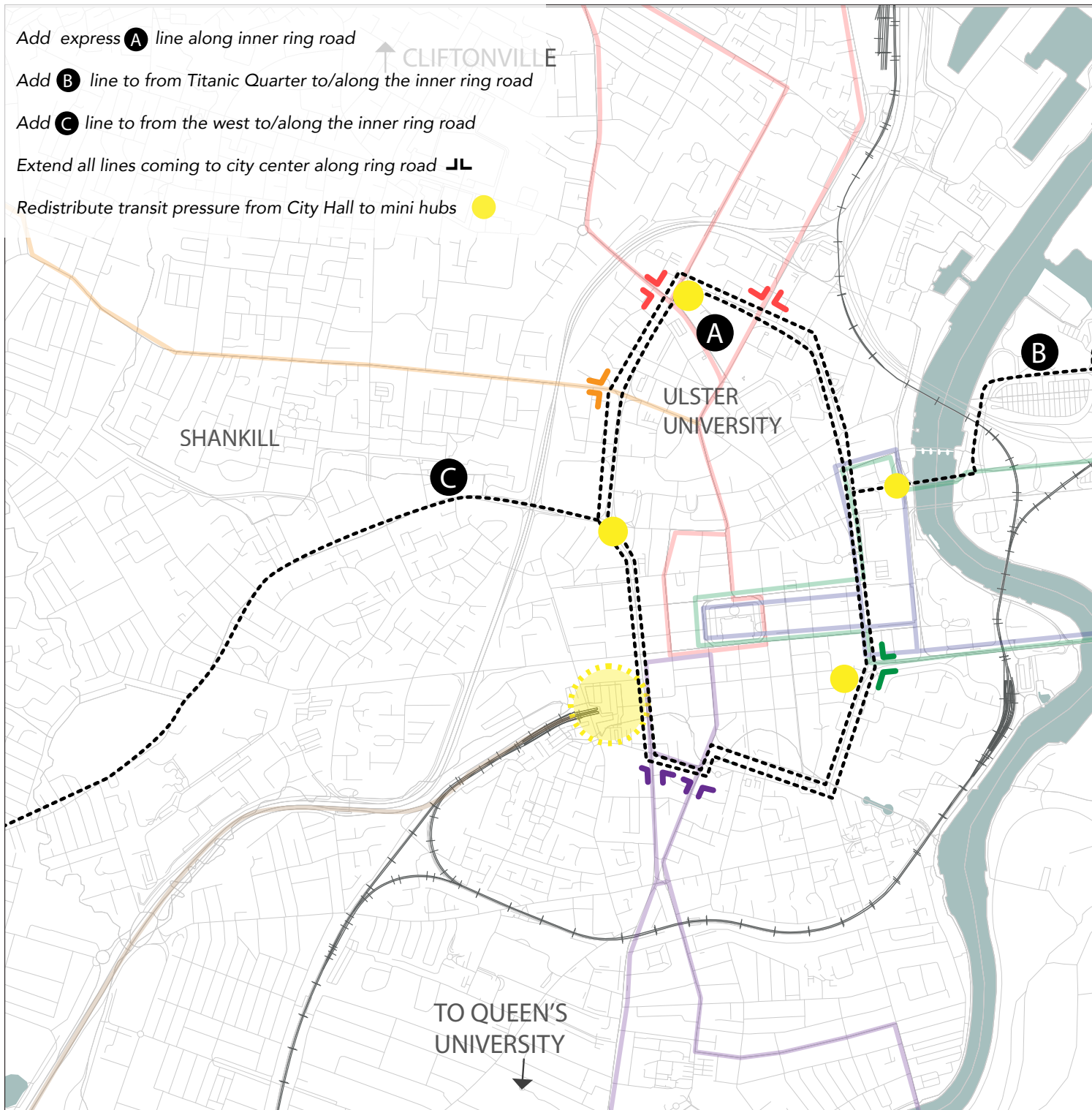SHANKILL

Ⓒ

TO QUEEN'S
UNIVERSITY

Figure 5.5
Proposed Bus Route System

TO TITANIC
QUARTER

achieving a goal of more sustainable transportation patterns. Belfast's investment in an interconnected transportation system, and development of a robust system of cycling lanes would go a long way in encouraging people to use cycling as a transportation option. Belfast also needs to develop a train system that is local, rather than regional, in order to tap into the large number of people who use private cars to travel.

Belfast has a few key challenges to reckon with based on future changes in the city. For one, Ulster University is in the process of relocating their Jordanstown campus to the Belfast City Centre (Ulster University Economic Policy Centre 2015). As a result, there will be a large increase in Belfast's student population. This relocation puts additional pressure on Belfast's housing stock, transportation, and other resources. Belfast also faces a challenge of connecting areas surrounding the City Centre to the City Centre via easily accessible public transportation options.

Belfast's future plan responds to these various challenges in a number of ways. The transportation plan in the Belfast Metropolitan Area Plan (BMAP) proposes an extension of the Great Victoria Railway Station to link it with the Europa Bus Centre, creation of "an area of parking restraint", development of the port and riverside, and improvement of access to the Belfast Harbour among other things (Belfast City Council 2017c). The city also plans to develop its cycling infrastructure and expand Belfast Bikes to areas outside of the City Centre (Belfast City Council 2017c). Importantly, this plan acknowledges the transportation system's previous underinvestment and highlights the need for an integrated transportation system (Belfast City Council 2017c).

The Belfast Metropolitan Area Plan (BMAP) Open Space, Sport and Outdoor Recreation Strategy looks at the revitalization of Belfast through its public space and recreational areas. The plan aims to increase the available space for recreational activities both indoors and outdoors, develop a network of greenery and open space (Belfast City Council 2017b).

PROPOSAL

Our proposal for Belfast's transportation system aligns well with both the Local Development Plan and Belfast Agenda. Belfast Conversations, a city council-led initiative to gain insight on the needs and desires of residents and community groups, has been integral in the process of creating the Local Development plan (Belfast City Council 2017a). From these conversations, the key issues that emerged were a need to improve public transport infrastructure, strengthen the economy, leverage the city's compact size and deepen its connection to the natural environment, and enhance citizen participation (Belfast City Council 2017a).

To this end, Belfast is building a new multi-functional transit hub, serving as a "gateway" to the city, and linking the different modes of public transportation (Belfast City Council 2017c). The Belfast Transport Hub will be located on the site of the Europa Bus Centre, connected to the Great Victoria Station (Belfast City Council 2017c). Additionally, Belfast is introducing a Bus Rapid Transit system to improve bus services and connect East Belfast, West Belfast and the Titanic Centre to the City Centre (Belfast City Council 2017c). Finally, some proposals to improve Belfast's urban space focus on creating pockets of small spaces, introducing identity-defining spaces in strategic points, creating spaces for
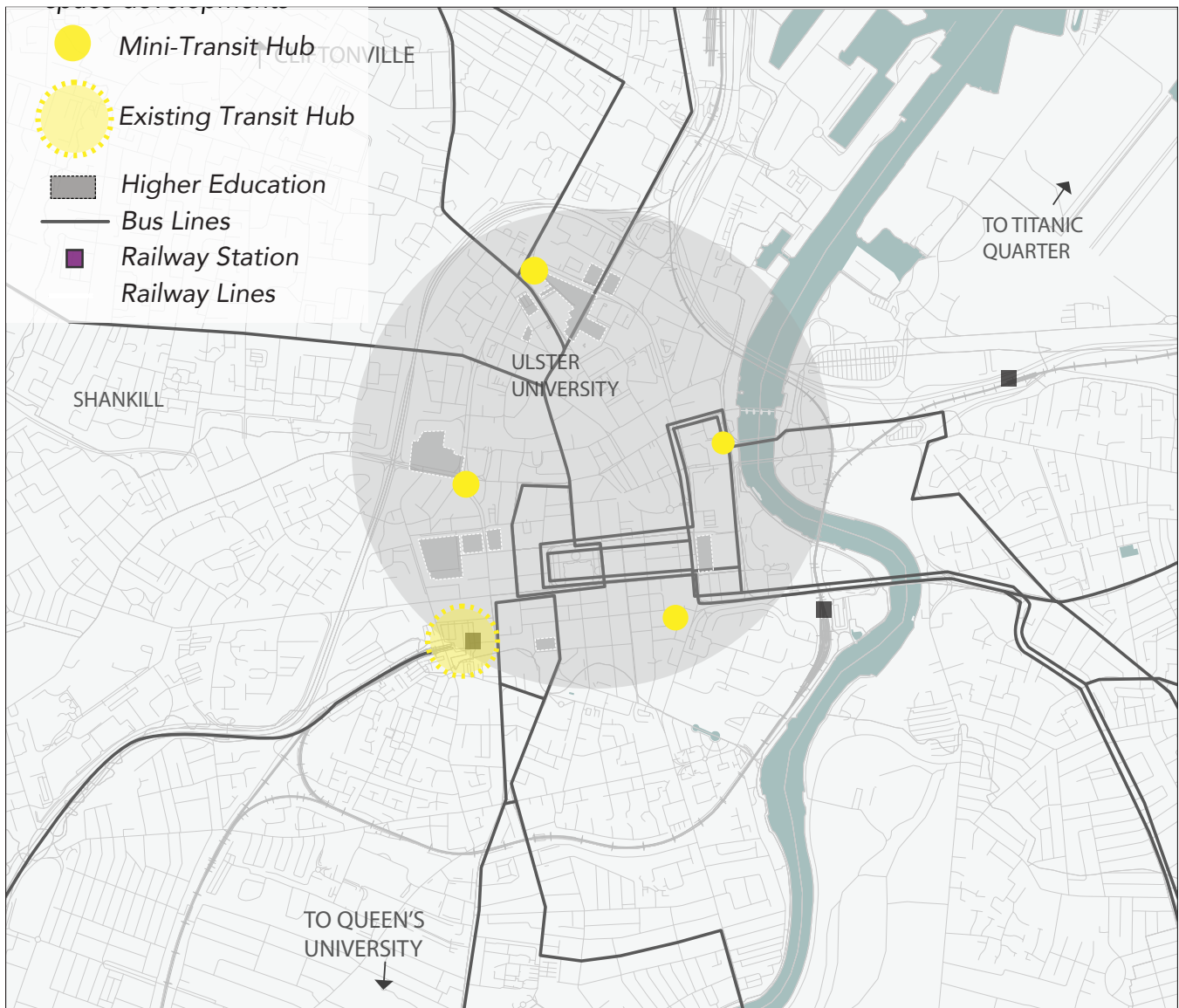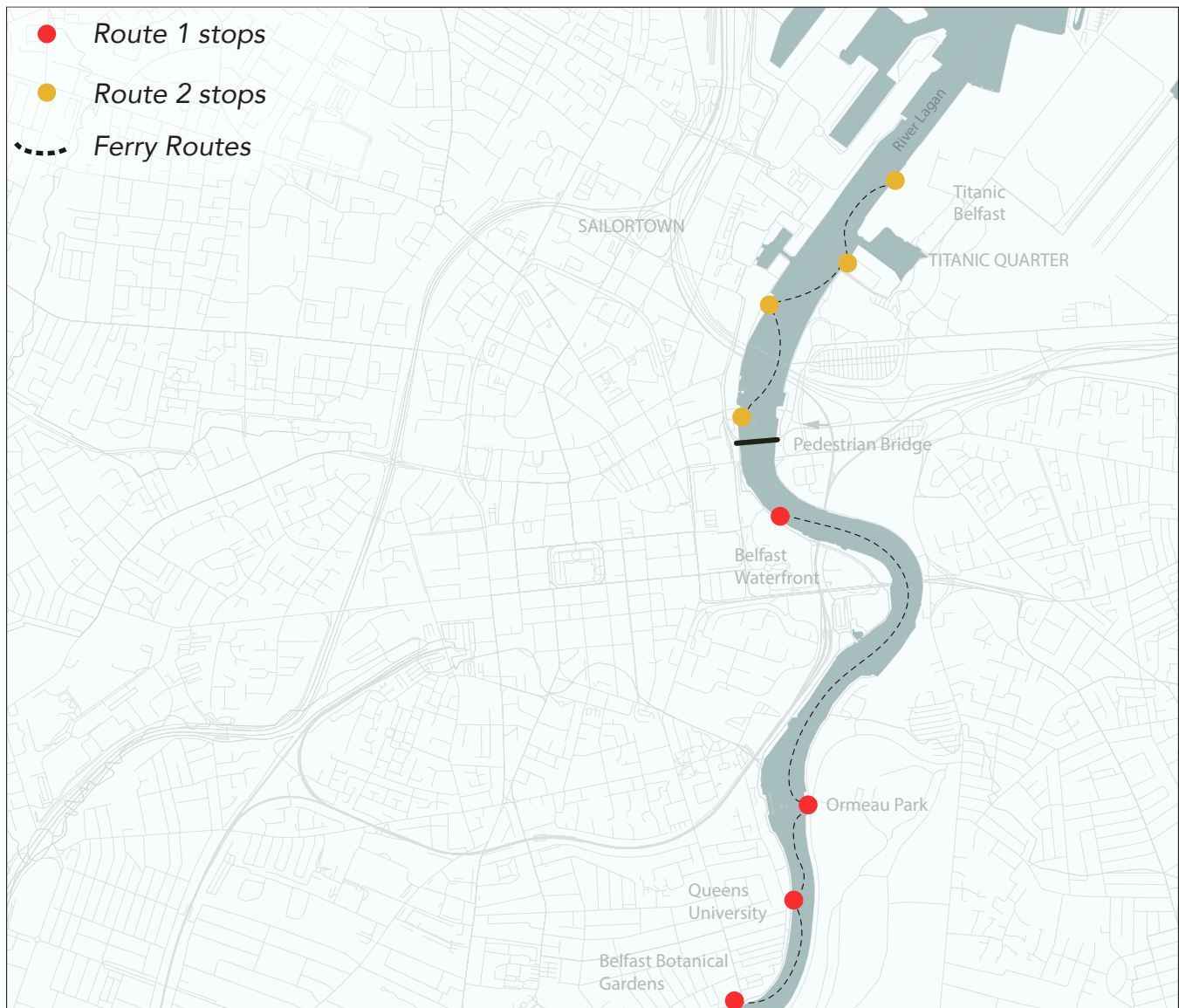
Figure 5.6
Proposed Mini Transit-Hubs.

"placemaking" through urban design, and linking these urban interventions to one another (Gaffikin, McEldowney, Rafferty, & Sterrett, 2008).

Two significant characteristics we would like to address in Belfast's City Centre are that activity comes to a halt at 6 pm and there are too many cars on the road. To this end, we propose a number of physical and intangible interventions to invigorate Belfast's City Centre and increase the number of people taking public transportation instead of driving.

The first of these proposals is a ferry route to connect people outside of the City Centre to the City Centre via the River Lagan. **Figure 5.7**. This ferry system will have two routes: one going north from the pedestrian bridge across the river, and one going south from the pedestrian bridge. The proposed ferry line serves

- 🔴 *Route 1 stops*
- 🟠 *Route 2 stops*
- ‧‧‧‧ *Ferry Routes*

SAILORTOWN

River Lagan

Titanic
Belfast

TITANIC QUARTER

Pedestrian Bridge

Belfast
Waterfront

Ormeau Park

Queens
University

Belfast Botanical
Gardens

to connect the areas south of the City Centre to the City Centre, then connecting areas east of the City Centre. Specifically, we are connecting Queens Quarter to the City Centre, along the waterfront, continuing the route to the Titanic Quarter. This route will stop along different points of interests for students and tourists, which are high in activity. We see the ferry as a commuter option, encouraging the utilization of public transportation and reducing the number of people driving into the City Centre.

The second proposal aims to increase the efficiency of the bus system through an expanded bus route with mini-transit hubs as shown on **Figure 5.6**. This bus route improves on the existing one by expanding bus coverage to transportation deserts both within and outside of the City Centre. The mini-transit hubs will be mixed use, and these functions other than transportation will encourage activity

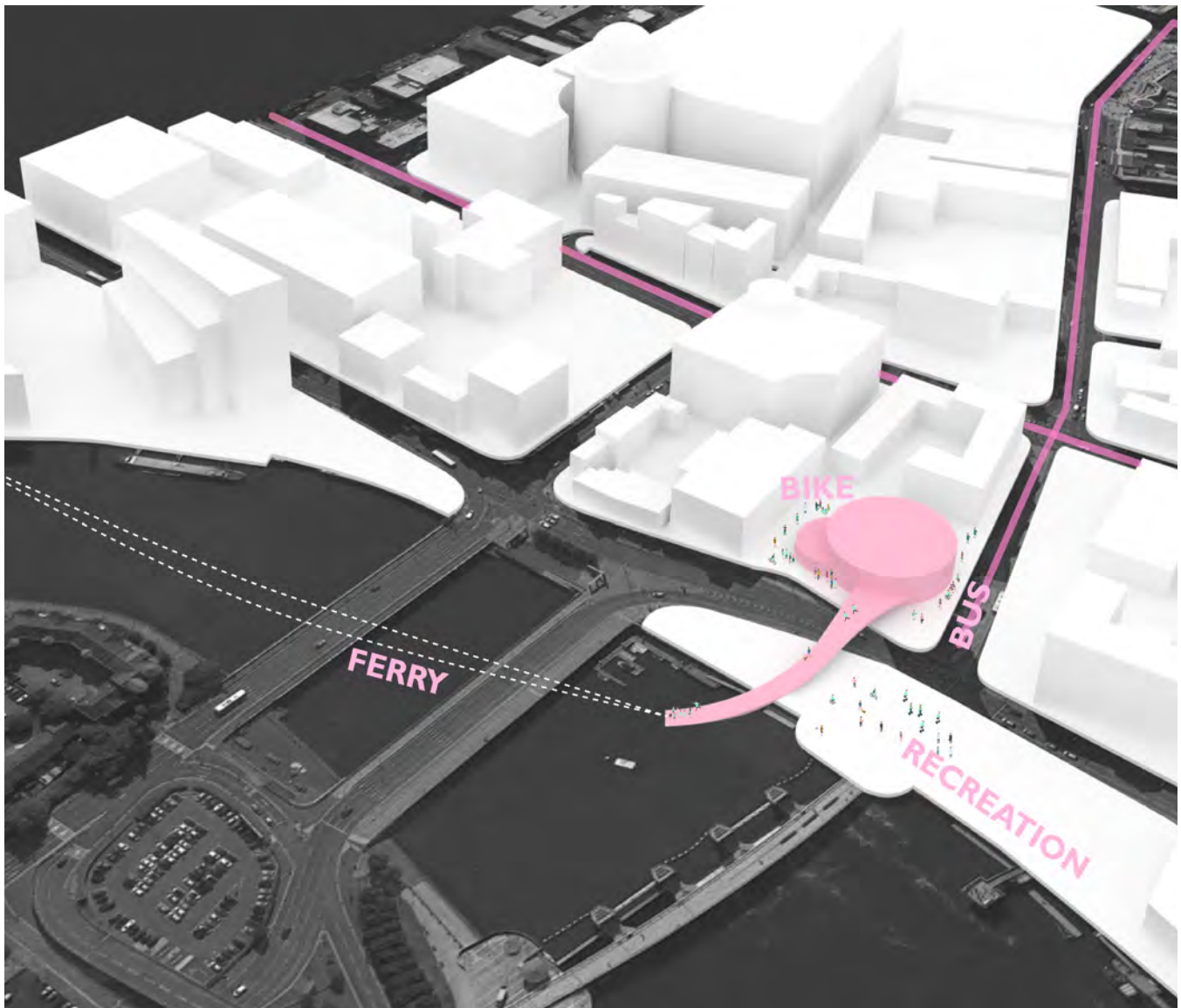**Figure 5.7**
Proposed Ferry Route.

Figure 5.8
Proposed location of Identity Hub.

in the area. These work hand-in-hand to transform Belfast's current bus stations from depots to vibrant, multi-functional spaces. The mini-transit hubs locations were chosen based on proximity to student housing and other transportation options.

The process of selecting new bus stops along our proposed route should be done in a gradual responsive process. There can be pop-up bus stations for a period of time to identify demand, as well as a public process, where residents can propose bus stop locations. This will help Belfast introduce bus stations that satisfy customer demand.

Placemaking is our strategy to increase the liveliness in the Centre after dark through temporary interventions that invigorate the space and where activities can go on after dark. We are targeting areas around mini-transportation hubs and major transit stops for placemaking. **Figure 5.9**. This will leverage the density of people in those areas and draw people out towards the city.
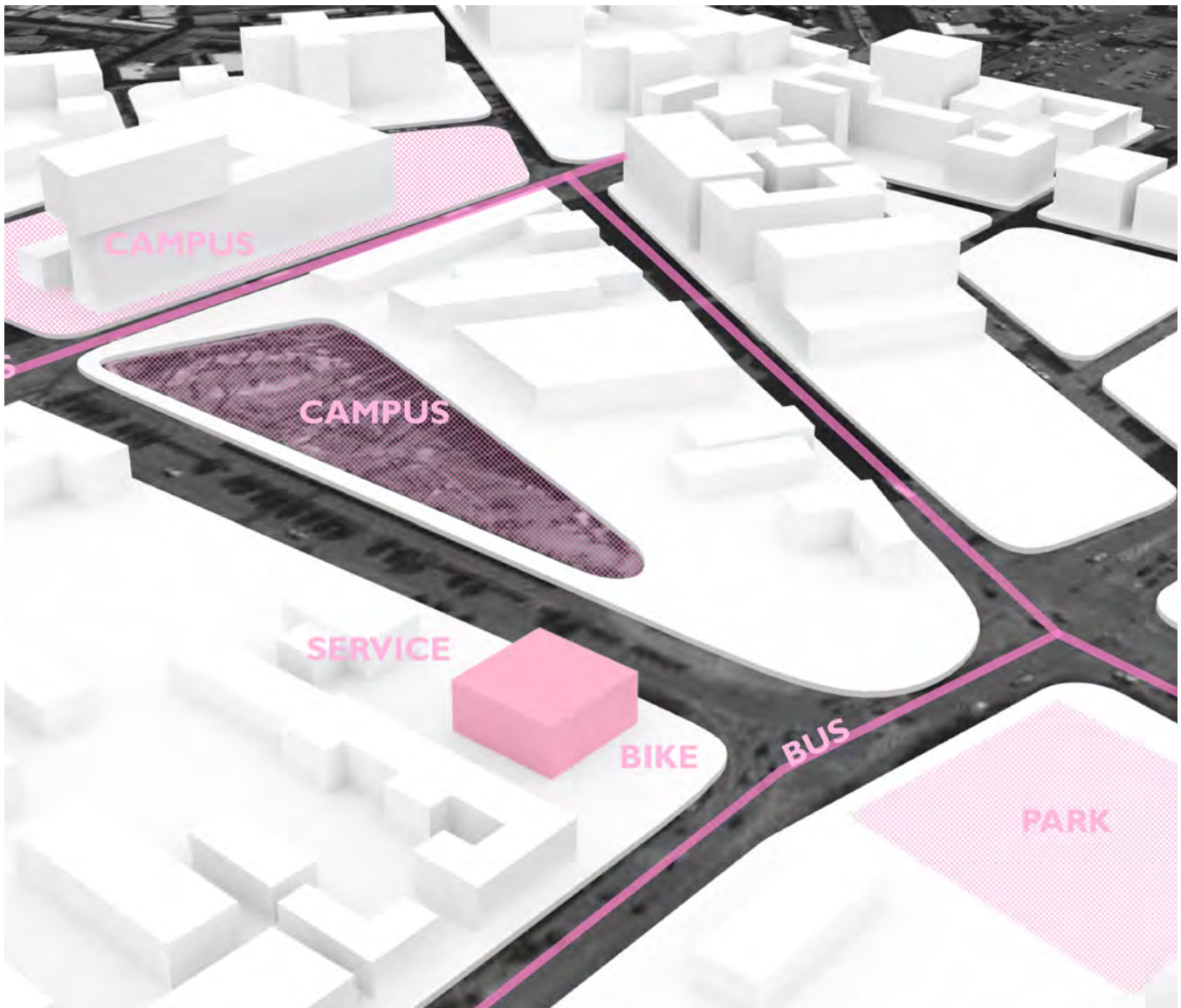
Figure 5.9
Identity Hub.

Figure 5.10
Proposed Location of University Hub.

Two potential sites have been identified: north of the university and by the river. The first is prime location because of the lack of vibrant spaces for university students to gather and interact. Here, we are proposing an interactive public space with ample seating and activities such as food and shopping. **Figure 5.10**.

The second location by the River Lagan is ideal because of its connection to the popular Victoria Square, as well to the bus station, train station and ferry stop. Here, we are proposing a landmark installation, the Belfast sign, that will call and serve the citizens.

Figure 5.11
University Hub.

Figure 5.12
Policy Diagram.

POLICY RECOMMENDATIONS

As a complement to these sweeping changes to the physical transportation system, our proposal includes policy recommendations that aim to encourage public transportation use in Belfast. These recommendations generally use economic and social considerations to influence the behavior of Belfast residents.

Our first policy recommendation is to implement High-Occupancy Vehicle lanes. Drivers with 3 (or another chosen number) or more passengers will have access to a lane, only to be used by those who are carpooling, with higher speed limits. This will incentive drivers to carpool, reducing congestion.

The second recommendation is geared towards students, for whom the burden of cost is acutely felt. Reduced or free bus fares for students would have a positive impact on students' lives and allow them to use public transportation freely. This can be done through student passes limited to those with verified student status, and can be in partnership with Belfast's educational institution, potentially subsidizing the cost for the Belfast City and whomever else bears the cost.

Alternatively, Belfast could make public transportation free within the City Centre and introduce tolls for cars coming into the City Centre. This toll could take the form of congestion pricing for cars entering the City Centre during rush hour, for example. A combination of these two policies would help push public transportation to the forefront of transportation options for going into the City Centre.

Next, we suggest simplifying the process to obtain permits for public activities, especially those outdoors, serving as a catalyst in enhancing the city's vibrancy. It would help present Belfast as a place that is welcoming to public activities such as pop-up stores, food and shopping fairs, etc. Also, simplifying the process for mixed-used development could encourage vibrancy, bring different uses to spaces, potentially enhancing the existing space.

We encourage an increase in the efficiency of Belfast's transportation system an essential component of our proposal. Buses and trains need to increase their frequency and be responsive to user patterns to increase ridership. Buses, trains and the bike sharing program should also expand their service areas to reach a greater number of people. A system for tracking buses and trains in real time is a necessary investment as it will partially solve the problem of unreliability.

On a more institutional level, encouraging staggered work hours in the city would help ease the traffic and bus congestion at the beginning and end of the work day.

Finally, a gradual removal of surplus parking within the City Centre will encourage car users to consider using public transportation. Reducing the number of parking spaces will allow for this land to be used in ways to increase vibrancy within the city.

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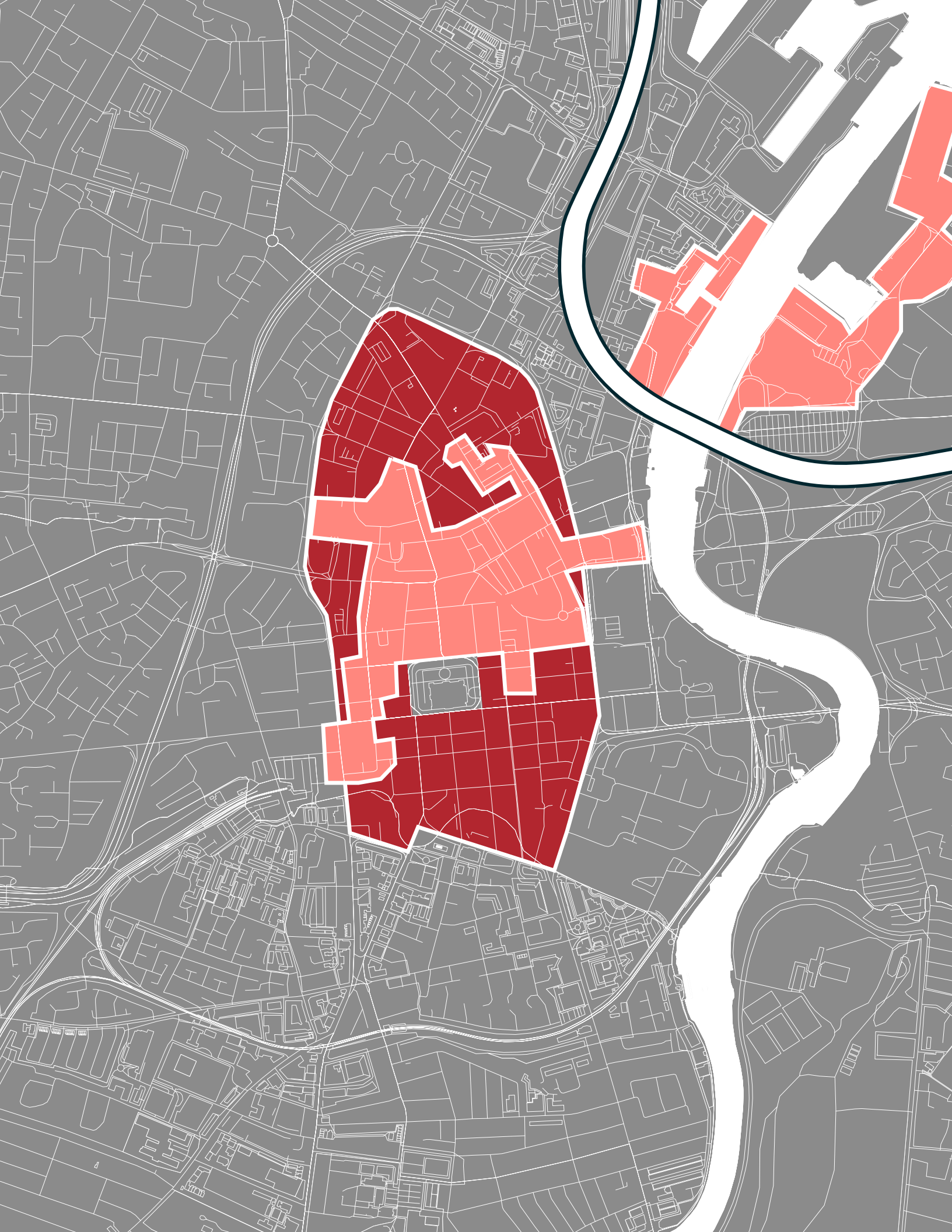
6 RECLAIMING VOIDS

Faraz Butte, Abraham Murrell, Weijian Bi and Jeffrey Wan

Our Proposal seeks to connect the new developments in North East Belfast, by reclaiming voids left by the Lagan Bridge overpass, and regenerating the pedestrian city.

Recent years have seen heavy investment in areas around the historic harbor, such as the Titanic Quarter and City Quays, as well as the construction of a new main campus for Ulster University. These mixed-use developments are providing new housing, leisure, commercial, and educational opportunities for Belfast as well as utilizing the valuable space around the waterfront.

However, these developments remain physically and psychologically divided from the City Centre by the M2/M3 highway as well the York Interchange. The existence of an elevated highway, combined with entrance/exit ramps, had and continue to have a devastating effect on the fabric of the area, making movement through the area difficult and unpleasant. In addition to completely destroying the inhabited neighborhood of Sailortown, fourteen additional hectares fell into decay, which are now empty lots or parking lots. This uninviting environment keeps the new developments isolated, hindering their potential to benefit the City Centre and residents of Belfast.

In order to reconnect the Harbour to the City Centre, our proposal takes two approaches to mitigating the barrier that the Lagan Bridge Overpass creates:

First, we hope to create pedestrian friendly linkages between the northern edge of the City Centre, which includes Ulster University, that will connect to the Harbour. By utilizing the space underneath the overpass, the numerous dead-end streets and vacant lots would rejoin a grid network, allowing for easy pedestrian movements through this part of the city.

Secondly, the reestablishment of the street grid and pedestrian flow would allow the current vacant lots between the City Centre and the Harbour to be redeveloped, opening up valuable space between the Harbour and City Centre, solidifying the connection and increasing the supply of available square footage to development.

Belfast Harbour has been a crucial part of the city's history as the home of a prosperous shipbuilding industry. Despite its decline, the Harbour is beginning to see revitalization that has the potential to re-establish its place as central to Belfast's identity. Our proposal seeks to reconnect the Harbour to the city by recreating the former street grid and easing movement between the Harbour and City Centre.
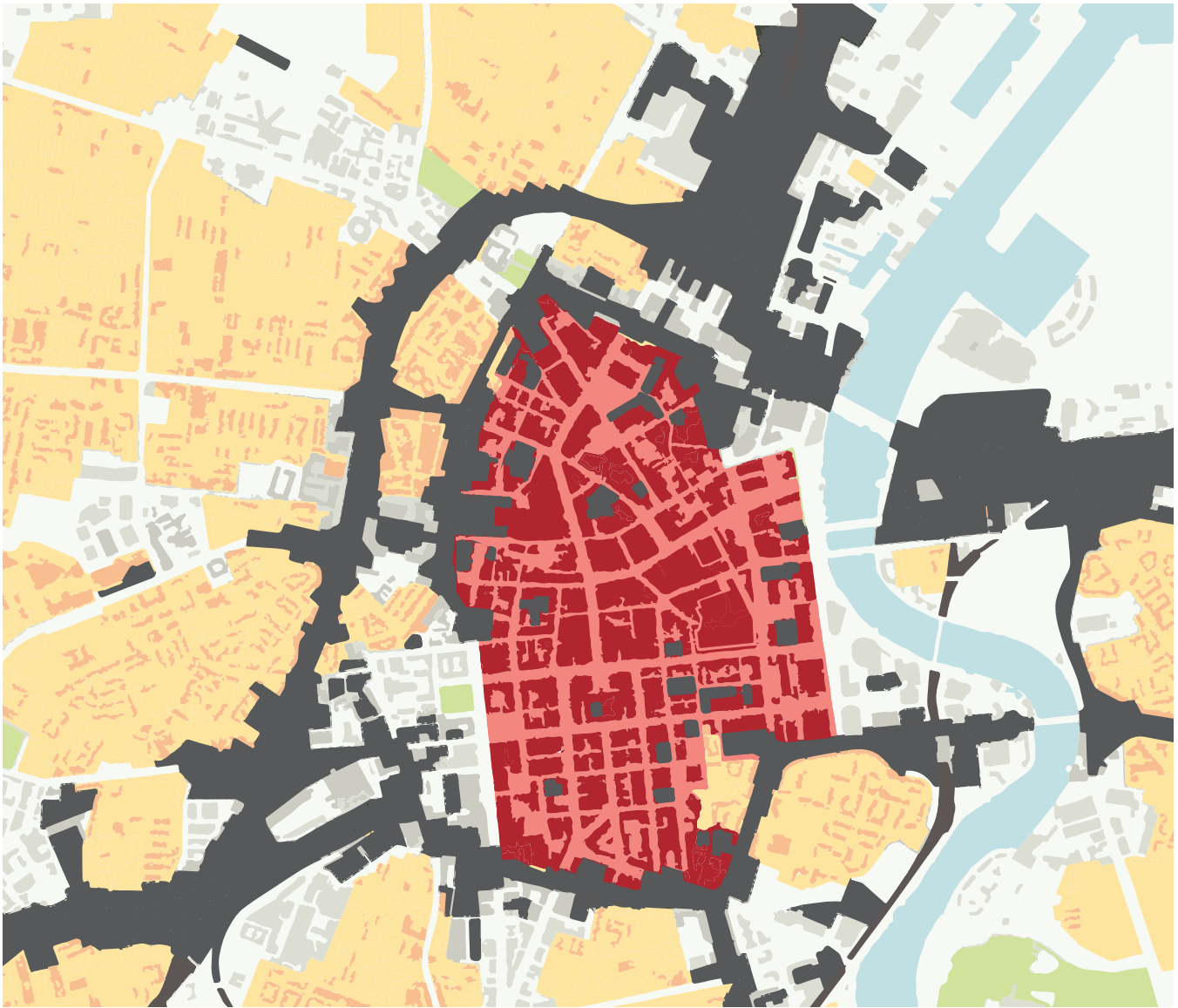
0   200m

Figure 6.1
Belfast City Centre isolated from the rest of the city by highways and the shatter zones created by them.

■ *Main commercial area devoid of housing.*

■ *Residential Areas.*

■ *Highway Shatter Zones.*

The creation of a highway can have devastating effects on the existing urban fabric, especially when it passes through a downtown area. In the case of Belfast, in addition to the area directly destroyed by the highway itself, numerous lots fall into disuse because they become disconnected from the urban fabric or become less desirable. The result is a large area of disused land, known as shatter zones.

Figure 6.1 shows how Belfast City Centre, a thriving commercial zone, is isolated from the rest of the city by these shatter zones. This is detrimental to the urban life both in the City Centre and the surrounding residential zones as well.
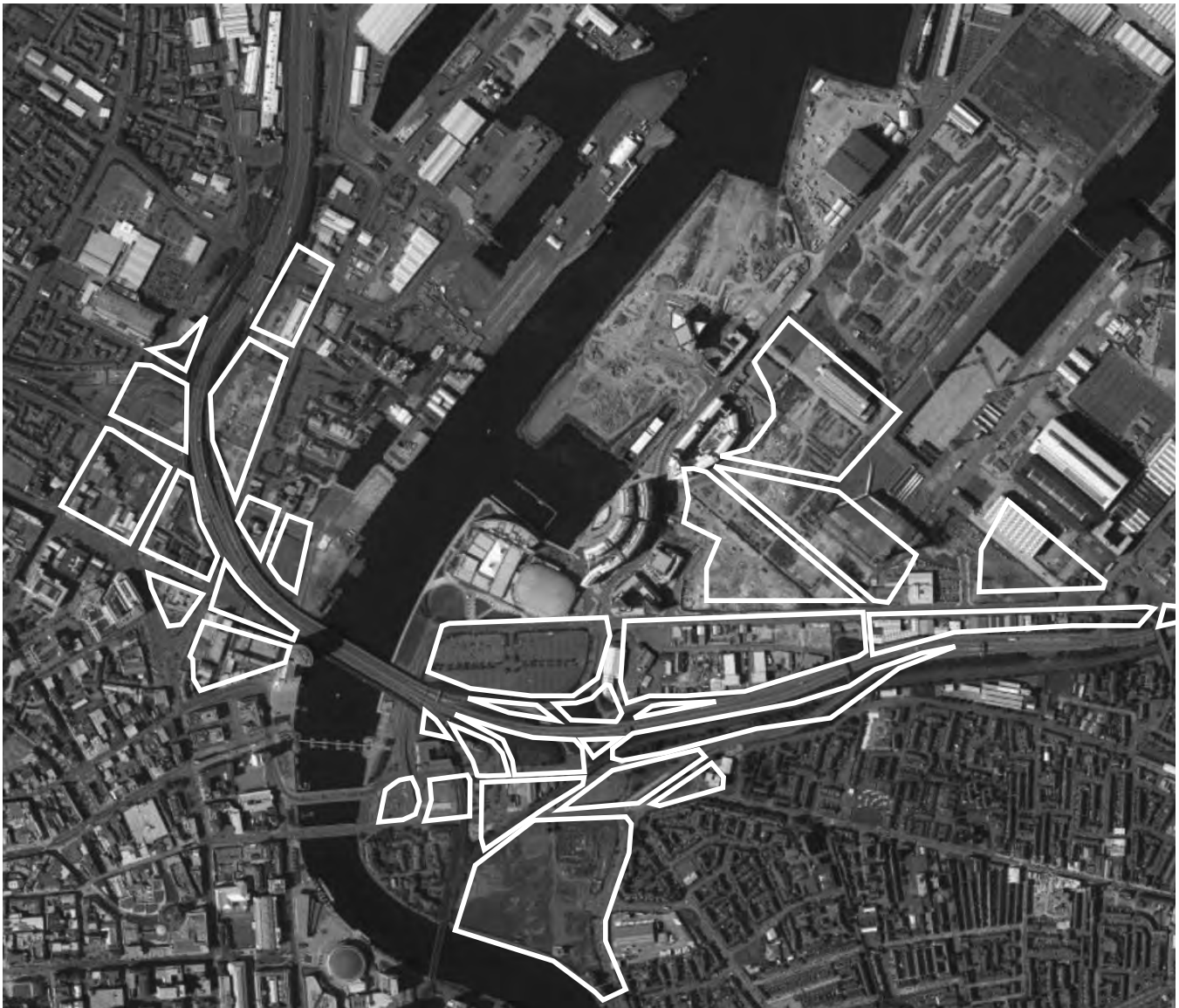
Figure 6.2 shows the extent to which the highway has devastated the urban fabric. Shatter Zones, outlined in white, amount to 13 hectares and surround the highway on both sides. These shatter zones are currently being used as parking lots, scrapyard, brown fields or are simply sitting unused.

With the development of Belfast Harbour, these shatter zones can play an important role in the growth and development of Belfast. With strategic planning and development, these lots can provide valuable space that will reconnect the street grid, and ease movement between these two parts of the city.

Figure 6.2
A close-up of the Lagan Bridge Overpass and the shatter zones surrounding the highway.
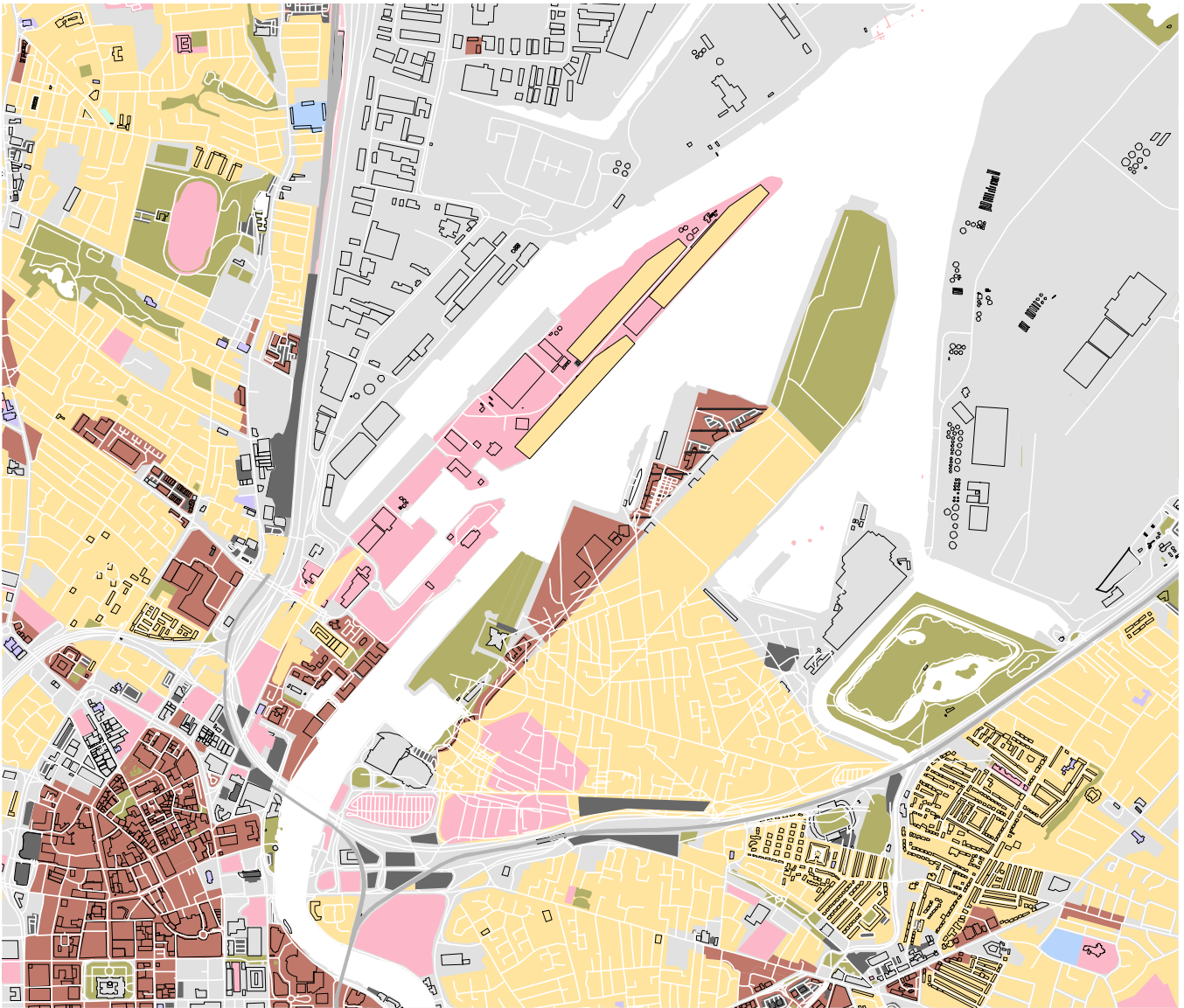
Figure 6.3
Possibility of an expanding City Centre that incorporates the Harbour.

If the barrier posed by the Lagan Bridge Overpass is mitigated, the City Centre has the opportunity to expand to the North East, incorporating the new developments around the Harbour. The developments will cease to be isolated from Belfast, but rather a part of the urban fabric. The areas on the waterfront can provide ideal recreation and residential areas for residents, as well as reconnecting the historic shipyards to the city. **Figure 6.3** shows a potential future for the City of Belfast where the expanding City Centre joins with the Harbour through new development. Areas that fell into disuse with the flight of industry and the creation of the M2/M3 highway network can be reclaimed for the growing city.

Belfast Grade A Office Supply and Demand Forecast (2014-2018) in 1,000 sq ft
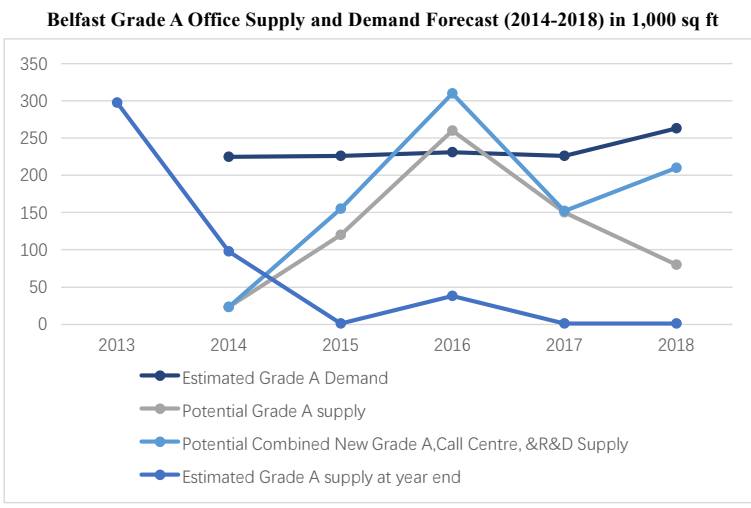
Demand 25% ▲

Supply 46% ▼

Source: RSM McClure Watters
Lisney Northern Ireland Office Update 2015 4th Quarter 2015

Employee and Real Estate costs, City of London and Other Selected UK Cities, 2015
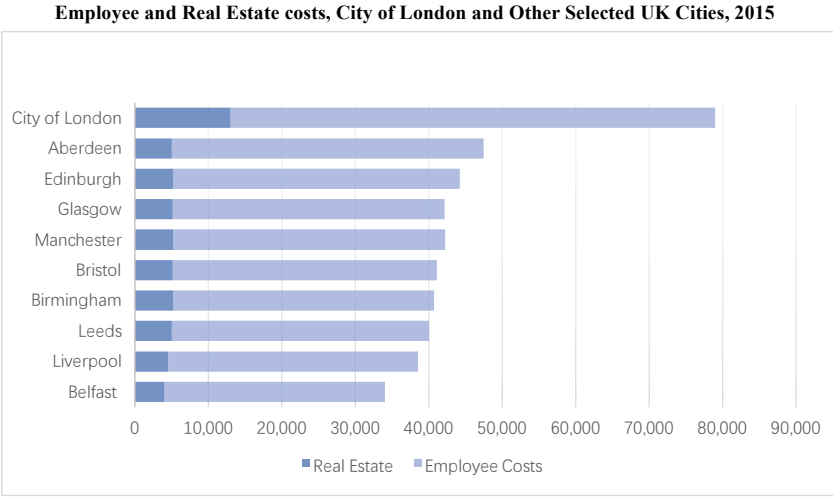
Source: CBRE Research

There will be a significant gap between the demand and supply of grade A office supply in 2018, where the demand will increase by 20%-25% while potential supply will decrease by over 40%.

Belfast City Centre's Business Improvement District (BID), which is considered the Central Business District has limitations regarding building heights, therefore, it is against the zoning regulations to construct buildings higher than 6 stories. To accommodate growing office space demands our proposal recommends incentivizing development near the Lagan Bridge Overpass to improve connectivity.

Figure 6.4
Supply and demand of Grade A office space in Belfast.
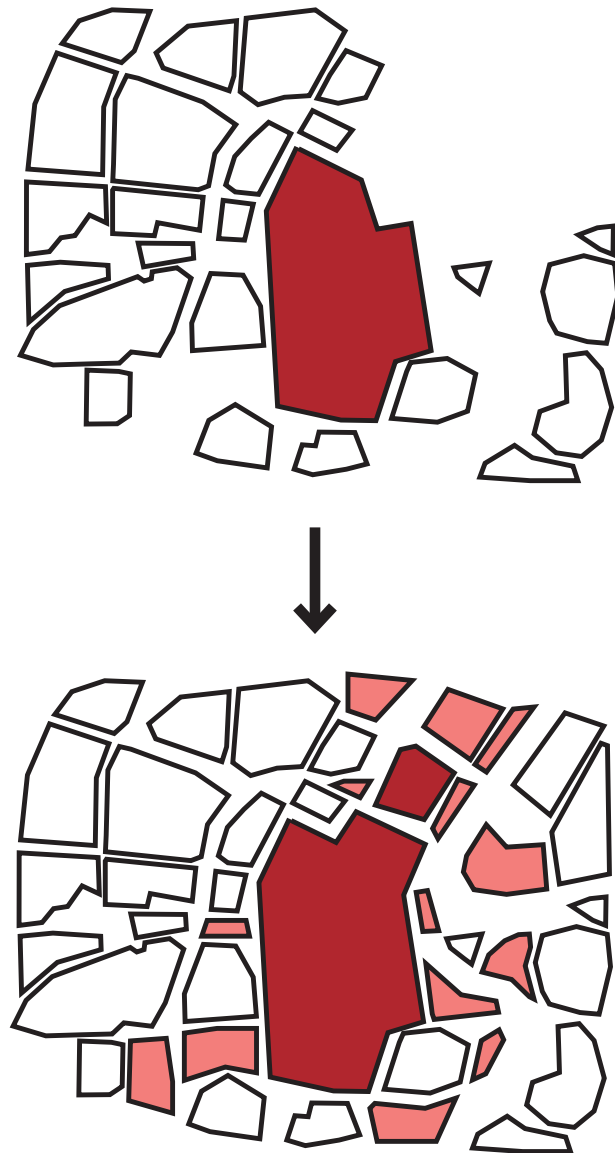
Figure 6.5
Conceptual diagram of expansion of Belfast City Centre through reclaiming surrounding lots.

■ *Commercial*

□ *Residential*

■ *Mixed Use*

On a conceptual level, our proposal seeks to extend the reach of the City Centre by filling the voids between residential and commercial areas.

Figure 6.5 shows how the City Centre can grow to include areas around the Harbour and River Lagan. By reclaiming space lost during the creation of the highway network, a gradient of commercial, mixed use, and residential areas become available to the expanding city.

ULSTER U

CITY QUAYS

TITANIC Q

CITY HALL

Belfast Harbour holds enormous potential for the City of Belfast. New pedestrian connections between existing commercial areas and new mixed use developments would allow their integration into the urban fabric, greatly benefiting the residents of the city.

The natural beauty of the city, its Harbour, and the River Lagan provide immense potential for Belfast as a tourist destination as well as providing high quality of life for its residents. By creating pedestrian linkages under the Lagan Bridge Overpass, the City Centre will incorporate the new developments and waterfront, connecting two important parts of the city. **Figure 6.6**.

Figure 6.6
Aerial view highlighting current development projects, potential pedestrian linkages, and potential lots that can be redeveloped.

Current Development

Potential Development

Pedestrian Linkages

Figure 6.7
Diagram of current Lagan Bridge Overpass, including surrounding road network and empty lots.

The existing fabric of North Belfast, is disconnected by the Lagan River overpass The highway creates several dead ends and vacant lots, as well as high traffic volumes and non-pedestrian crossing as it runs through the city fabric. **Figure 6.7.** Even though all three aforementioned developments are within walking distance of this area, the barrier that the Lagan Bridge Overpass creates prevents them from integrating into the city and forming a cohesive network. The potential that the Belfast Habour could serve for the city and for the influx of students that will come with the new Ulster University campus is severely hindered by the overpass. However, this can be mitigated without altering the highway and road network.

By re-establishing the street grid, and urban fabric under the Lagan Bridge
Overpass with pedestrian linkages and new development, the city can
expand towards Belfast Harbour. These pedestrian linkages will connect all
three developments to each other and the City Centre. Additionally, this
redevelopment will reuse lots that were destroyed or fell into disuse due to the
highway construction to help supply a demand for commercial and residential
uses. Not only will this serve as a destination for residents, but will allow for
easily movement between the City Centre and Belfast Harbour.

Figure 6.8
*Potential reestablishment of road network
and reclaimed lots.*

*New Commercial, Office,
and Retail Space*

New Pedestrian Streets

Figure 6.9
Scenes around the Lagan Bridge Overpass.

The Lagan Bridge overpass is a clear physical boundary within the city. The elevated highway breaks the urban fabric and limits the connection between the two sides. The vacant and under utilized spaces and parking surface around the highway act to further divide opposite sides of the city, creating not only unwalkable areas between the two sides, but disconnecting the areas where people live and work.

By redeveloping under the overpass our proposal aims to allow the character of Belfast to stretch under the existing infrastructure thereby connecting the urban fabric. In the series of collage perspectives, shown in **Figure 6.10,** the potential for continued development around the overpasses is re-envisioned with several possibilities: as park space at the rivers edge, housing under the over pass, or Entries connecting adjacent areas.

Figure 6.10
Potential pedestrian, residential, and leisure areas along linkages under the overpass.

Figure 6.11
*Possible leisure area under the overpass that
uses existing Belfast urban fabric as inspiration.*

Figure 6.12
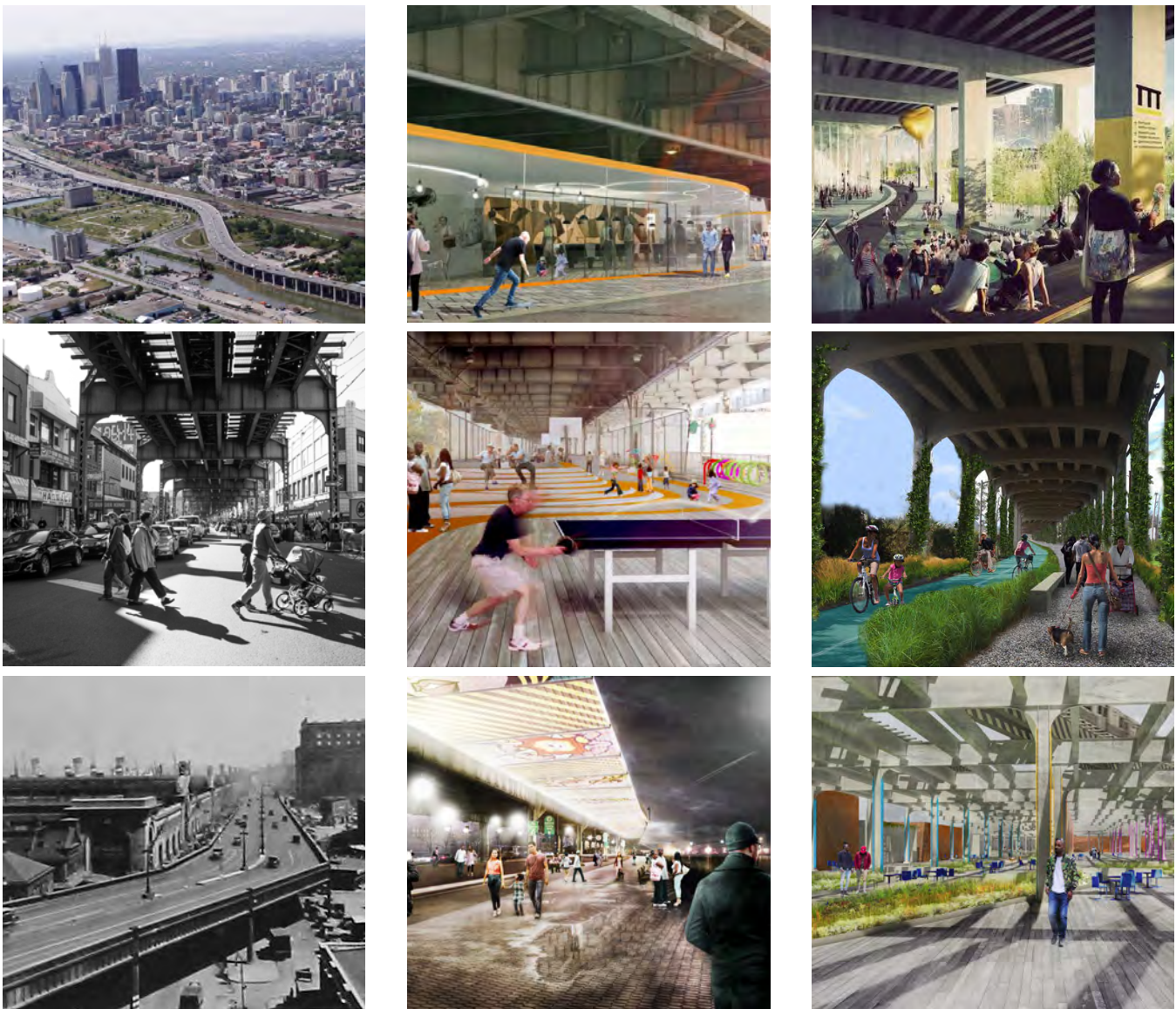*Possible Grade-A office space next to the overpass.*

Figure 6.13
Precedent studies for redeveloping the Lagan Bridge Overpass - The Gardiner Expressway, Under the Elevated, and the Big-U.

(Sources: <https://stephaniecalvet. files.wordpress.com/2014/07/gardiner_ expressway.jpg>, <http://hyperallergic. com/wp-content/uploads/2015/06/ underelevated12.jpg>, <http://www. rebuildbydesign.org/our-work/all-proposals/winning-projects/big-u>, <http://inhabitat.com/toronto-plans-to-use-its-urban-freeway-as-the-roof-of-a-massive-park/under-gardiner-expressway-toronto-2/>, <http://www.nyc-architecture. com/GON/westsidehwy.jpg>)

In order to get inspiration for this project, we looked at several intervention proposals that could serve as precedent for working under the Lagan Bridge Overpass. Three examples stood out as particularly relevant: The Gardiner Expressway in Toronto, Canada and, Under the Elevated and the Big-U in New York, USA. Each of these projects seek to revitalize space underneath elevated roads or rails and make use of the previously unused space underneath. The reclaimed area serves as public and retail space for residents, both enhancing neighborhoods as well as serving as a destination for leisure.

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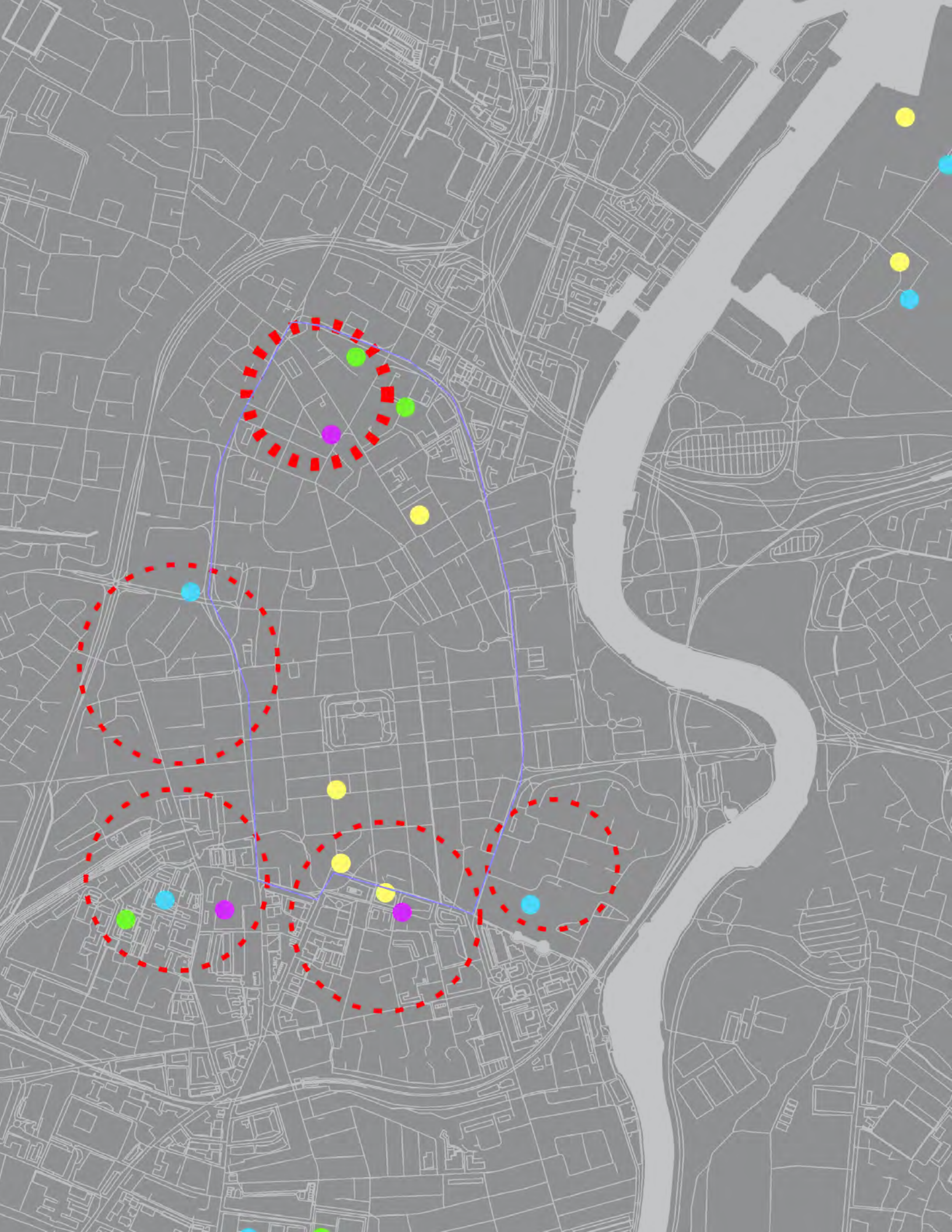
7 CLUSTER AROUND TECH

Adede Amenyah, Yunyue Chen, Steven Kyle Cook, George Yang

INTRODUCTION

Belfast's economy experienced a golden age of growth and development in the latter part of the 19th century, which was historically driven by the linen and shipbuilding industries. Today, there is much excitement and promise about the future the economy holds and many are looking to the technology sector as a driving force for this growth and development. To stimulate this new wave of growth, we propose the development of technology clusters across the City Centre, that will work to spur on a culture of entrepreneurship and breathe new life into the vacant buildings dotted across the city.

The technology industry in Belfast is a leading sector for its urban economic development. Its high level of productivity and good use of the pre-existing talent base will help the economy to experience long-term growth. In recent years, newly established technology start-ups have begun to appear in Belfast who are seeking to take advantage of Northern Ireland's knowledge economy growth, which is nine times faster than that of the rest of the UK. We believe that our proposal will contribute to local economy growth, retain the younger generation in Belfast and enhance property values in the near future.

PROJECT ASSUMPTIONS

The development of the technology industry in Belfast will lead the growth of the local economy and bring some energy and vibrancy to the city.

According to statistics sourced from the 2017 Tech Nation Report, the average Growth Value Added (GVA) from 2013 to 2015 for the technology industry in Belfast amounted to £531m, compared to $9,793m of total GVA in 2014. Currently, there are a number of technology industry start-ups situated in the City Centre. With the growing trend of leading tech firms moving in, the Belfast tech industry has much potential for growth.

This proposal focuses on the strategy of clustering and will propose a specific design strategy for a focused development site. Different aspects of analysis will be conducted and will be the basis on which we give our plans and recommendations. The implementation and time sequences are proposed in the last part of this report, where we summarize its benefits and limitations.

METHODOLOGY

We gathered and analyzed data regarding real estate property prices in Belfast. Combined with vacant sites analysis, we were able to conduct feasibility

Figure 7.1
*Harland and Wolff shipbuilding industry.
(Source: <http://img2.thejournal.ie/
article/415566/river?height=400&ver-
sion=416115>)*

studies which informed our proposals for tech cluster locations and the focused development site.

During the field trip to Belfast, we interviewed locals, such as Mr. Kain Craigs who is a member of the Global Shapers Community. We received suggestions for the location of potential cluster sites and useful feedback on our work in progress.

Finally, we conducted several case studies such as Silicon Alley in New York City, and Detroit's Techtown District, from which we extracted design strategies and policy guidelines for the implementation of such a project.

HISTORY AND PRESENT

Belfast played a significant role in the industrial revolution and acted as one of the major industrial centers of the world until the late 20th century. Furthermore, Belfast was the center of the shipbuilding and linen industries at the time. Harland and Wolff was established in 1861 and it created the legendary RMS Titanic in 1912. It operated the largest and most productive shipyard in the world and employed roughly 35,000 workers. Similarly, Belfast was well-known for its Irish Linen. The Linen Quarter south of City Hall was a vibrant linen manufacturing cluster that enabled Belfast to become popularized as "Linenopolis".

The current technology industry in Belfast has made a large contribution to its local economy. From 2010 to 2014, the digital tech industry in Belfast experienced 34% growth in GVA. From 2013 to 2015, its annual average GVA amounted to £531m. Presently, a number of leading firms and tech startups are dispersed within the City Centre, while others are beginning to cluster together in the Titanic Quarter. According to the 2017 Tech Nation report, 67% of the start-ups think that Belfast offers a good quality of life. 61% see a potential for growth in the tech sector, and 58% regard cost of living to be relatively low. However, the industry faces some challenges. The market lacks highly skilled workers, firms need greater access to finance, and there is a low level of awareness of the digital industry.

DRIVING FORCES

In order to encourage tech development in Belfast, we identified three main driving forces. First is the availability of vacant buildings with historical and functional value. It is important for the government to recognize that these buildings provide a good match for tech firms, who are less prescriptive about the nature of their workspaces.

The second driving force is the talent pool. Graduates from higher educational institutions such as Ulster and Queen's University, will help sustain the industry by either providing their skills for employers, or launching their own businesses. The universities will also serve as an active platform for communication, networking and engagement within the community.

Lastly, agglomeration provides an incentive to attract more firms because it cuts down costs and fosters an knowledge sharing system which is beneficial for the development of tech companies. Domestic and foreign investments will also be critical in helping these companies to expand in the near future.

Tech sector startups
Tech sector firms
Tech sector leaders
Talent anchors
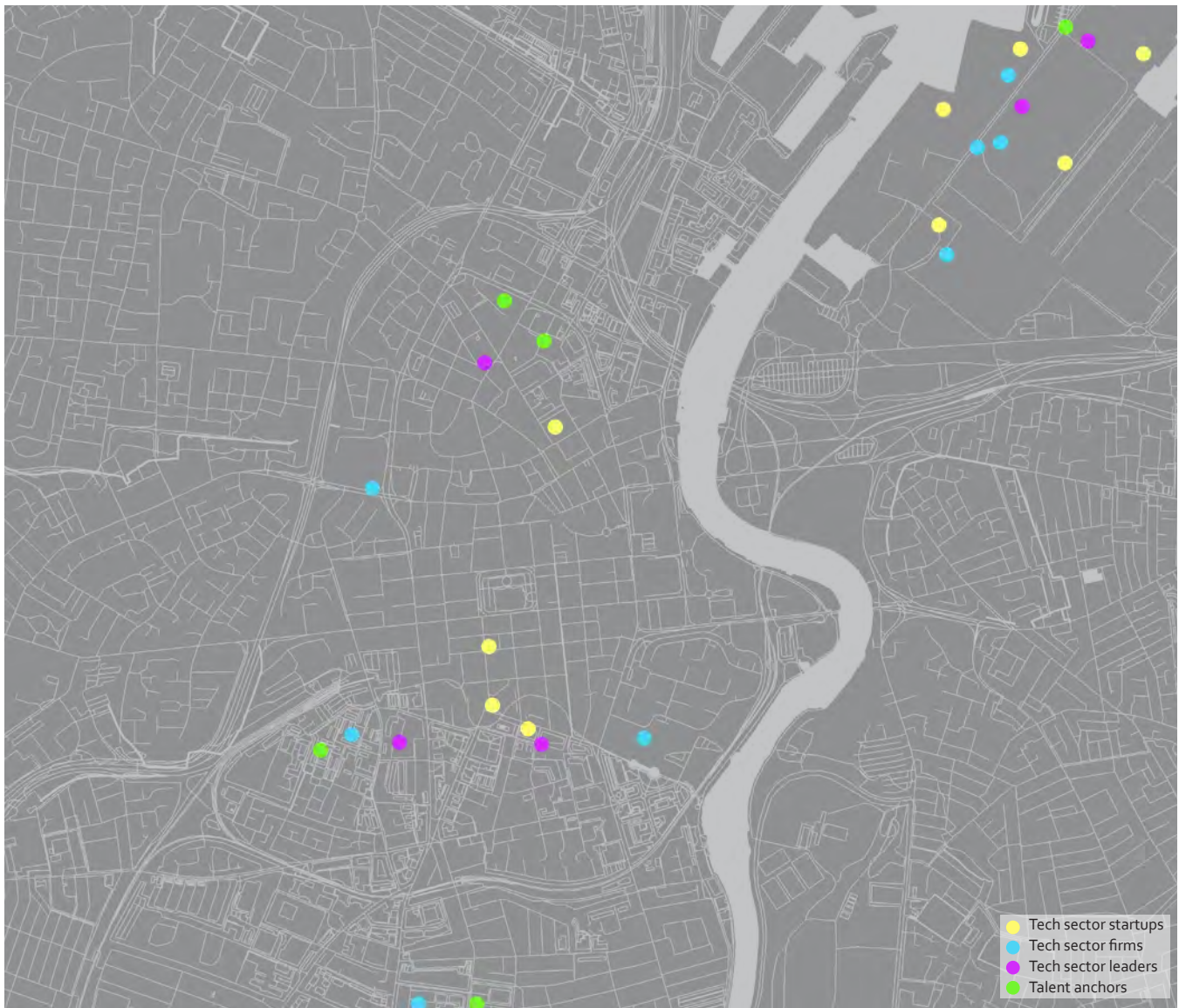
DISTRIBUTION OF TECHNOLOGY FIRMS

Figure 7.2 shows the distribution of tech firms which includes industry leaders and startups. Companies situated in the Titanic Quarter show a clear tendency to cluster. However, firms in the City Centre are relatively isolated, with only small clusters developing in the southeastern and southwestern corners of the City Centre.

Belfast has a well-developed fiber optic cable network which gives the city an advantage in engaging in rapid transatlantic transactions. This infrastructure will support the flourishing of the proposed tech clusters.

Figure 7.2 & 7.3
Location of tech industries.
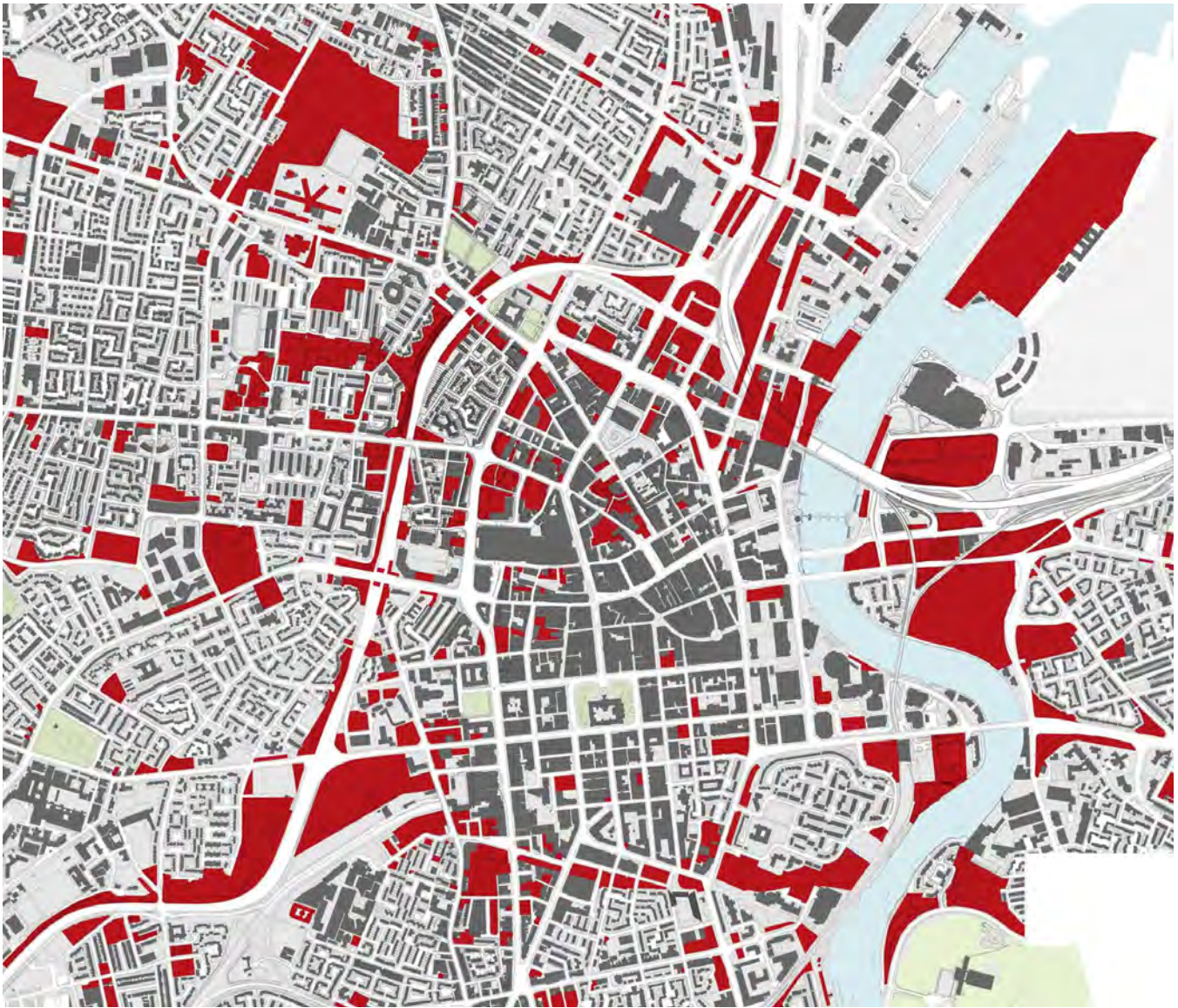
Figure 7.4
Vacant Sites Map.

■ *Vacant sites*

VACANT SITES ANALYSIS

Figure 7.4 shows the vacant sites within the Belfast City Centre area in 2009. The majority of vacancy is located surrounding the core of the City Centre, and is distributed close to the highways and the railways around the edge of the City Centre. Building technology clusters will enhance the land value in these areas and lower the vacancy rates, all while cutting down development costs.
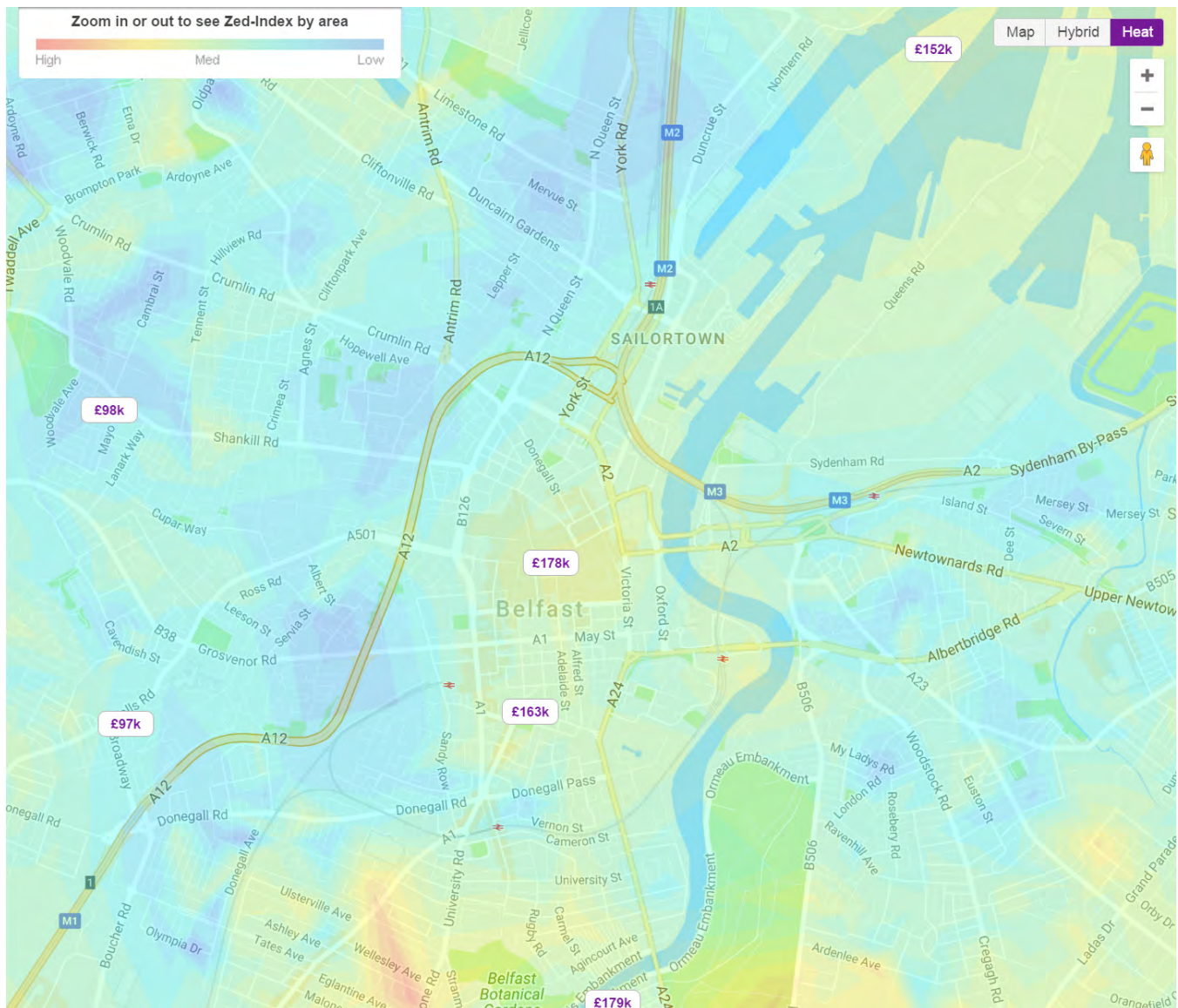
REAL ESTATE PROPERTY PRICE HEAT MAP

Figure 7.5 shows the real estate property rent in Belfast City Centre. The average property values estimated by Zoopla in the City Centre ranges from £163k to £177k. Over the last 12 months, the value increased by 0.99%.

In comparing the Belfast City Centre to its surrounding districts, the highest price can be found south of the City Centre. This fact in a way promises the growth potential of real estate value in the City Centre. Generally speaking, the City Hall area and the south of City Centre are more valuable, whereas the price in west, north and east area is relatively low.

Figure 7.5
Real Estate Property Rent Heat Map.
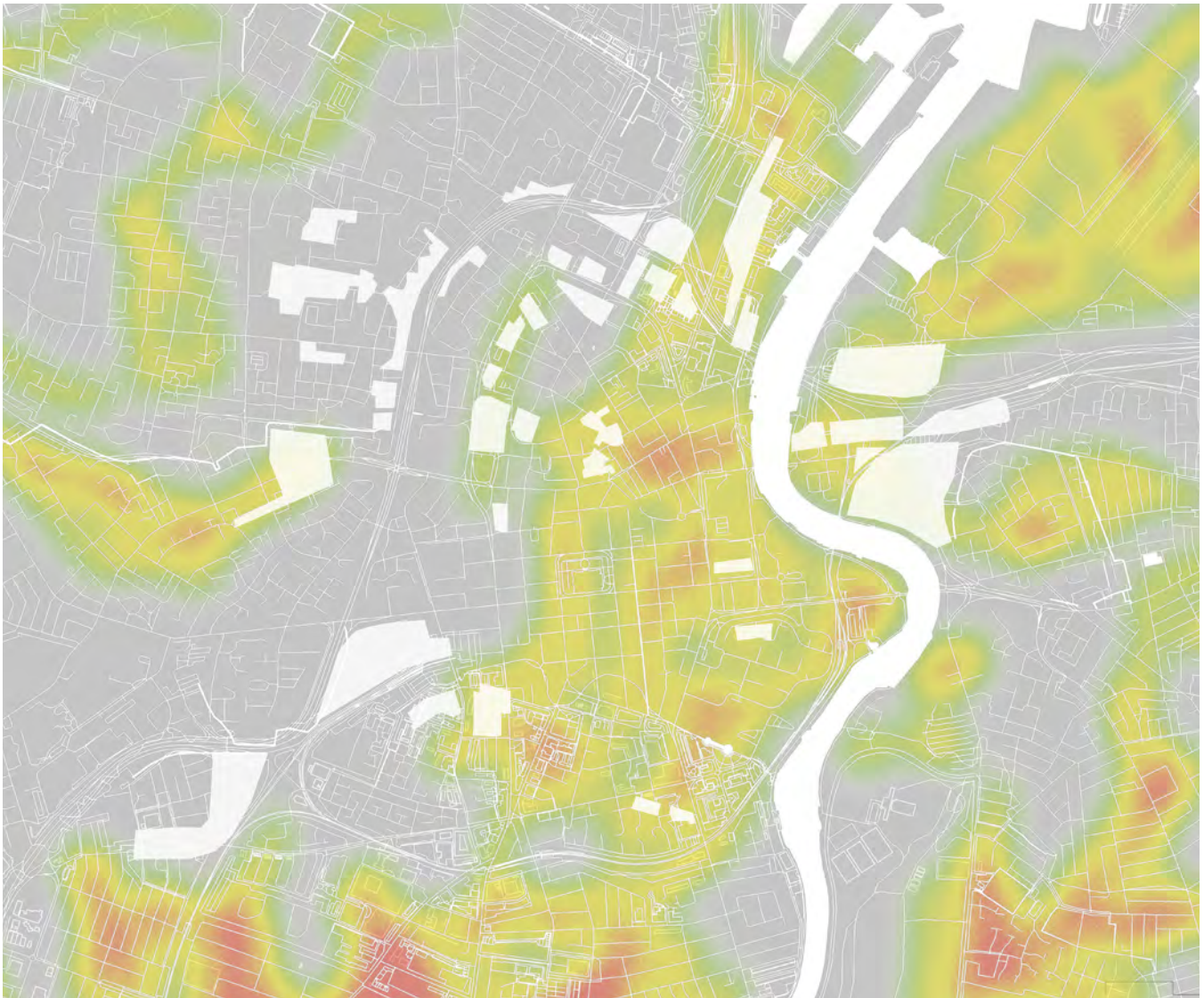
Figure 7.6
Vacant Sites Overlayed on Property Rent Heat Map.

VACANT SITES PROPERTY PRICE

Based on vacancy and property price, we combined these two factors and conducted analysis in terms of seeking development potential in the Belfast City Centre.

Through the vacancy-property price map, we can see that in the City Centre, the vacant sites located in the northern area have relatively lower prices, which indicates the potential for a trigger development opportunity.
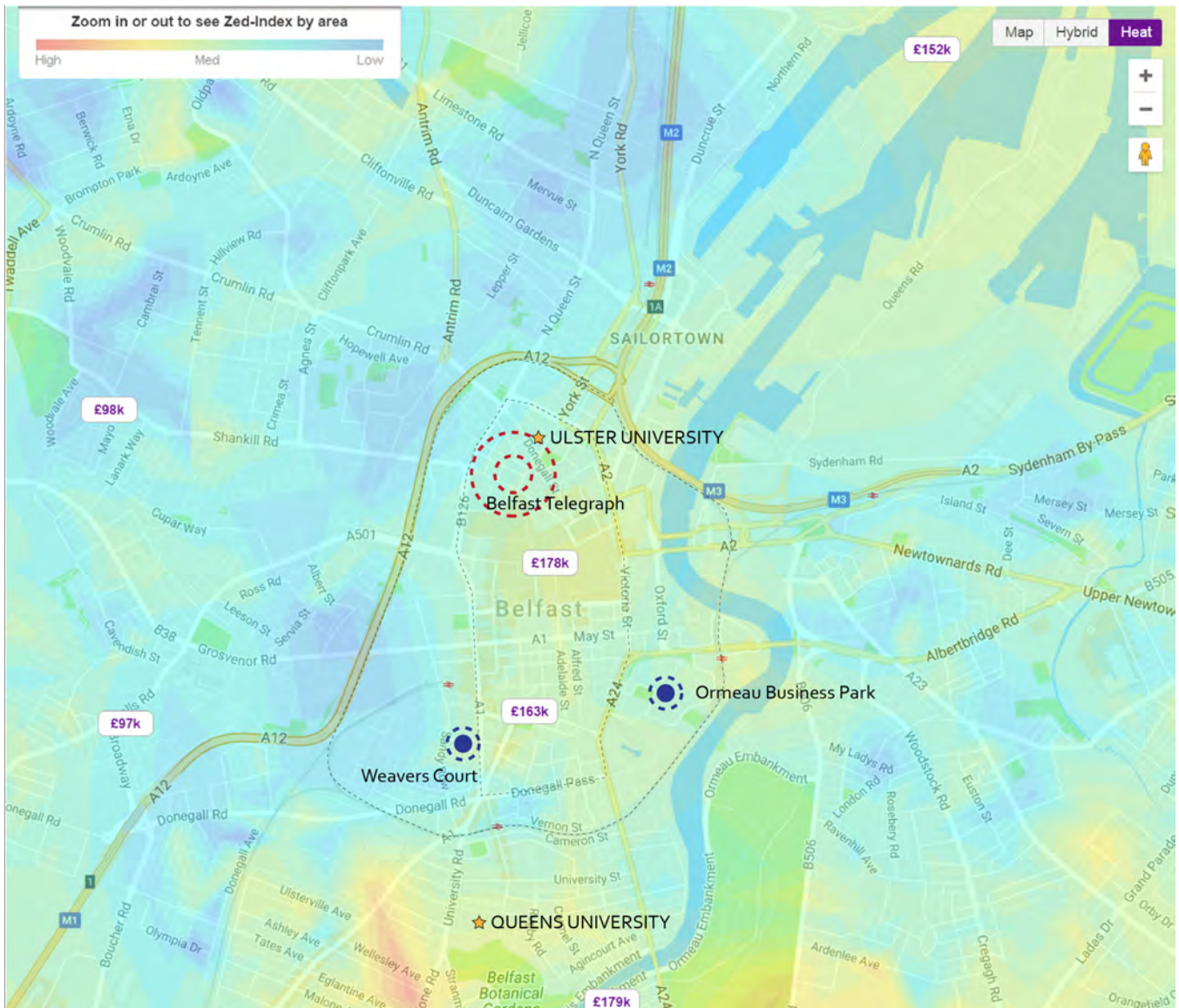
"CLUSTERING AROUND TECH" STRATEGY IN BELFAST CITY CENTRE

Currently, the technology firms in Belfast have already began to form into clusters, one of which is located in the Ormeau Business Park on the southeast and across in Weavers Court on the southwest.

In order to form a system of tech firm clusters and urban renewal within the City Centre we selected a site close to Ulster University as a proposed development site. The Ulster site has a high level of vacancy rate and a great potential for real estate price growth. The area around this site also offers an attractive street life and a number of great amenities and services. This will be expanded upon in the details to follow.

Figure 7.7
Proposed Technology Industry Clusters.

Proposed trigger development
Pre-existing development

Figure 7.8
Opportunities of the Focused Site.

Institution
Education
Residential
Religious
Media Anchor Tenant

Cafe
Pub
Restaurant

TECHNOLOGY SITE PLAN PROPOSAL

The focused site is bounded by Donegall Street, Carrick Hill, North Street and Royal Ave, with an area of about 634,100 sq ft. Located in the northeastern corner of the City Centre, there are shopping malls, parks, university buildings nearby which provide this site with good development potential. Moreover, a vibrant dining culture already exists on the site, which plays a vital part introducing the tech industry to this area.

CURRENT SITUATION

As shown in **Figure 7.9,** these buildings and amenities are located in close proximity to each other. The distances between these buildings are within a two-minute walking radius. Their attractive facades and architecture, make the area an attractive space to be in. Several of these buildings also have shops, cafeterias and pubs located on the first floor, which activate the street life of the area. Vacant floors above commercial and retail spaces will be incorporated into the live/work typology. Other vacant lots, such as parking spaces and vacant warehouses are to be developed into social condenser spaces and gathering spaces.

Figure 7.9
Notable Buildings of the Focused Site.

Little Donegall Street

Donegall Street

Library Street

Kent Street

North Street

Royal Ave
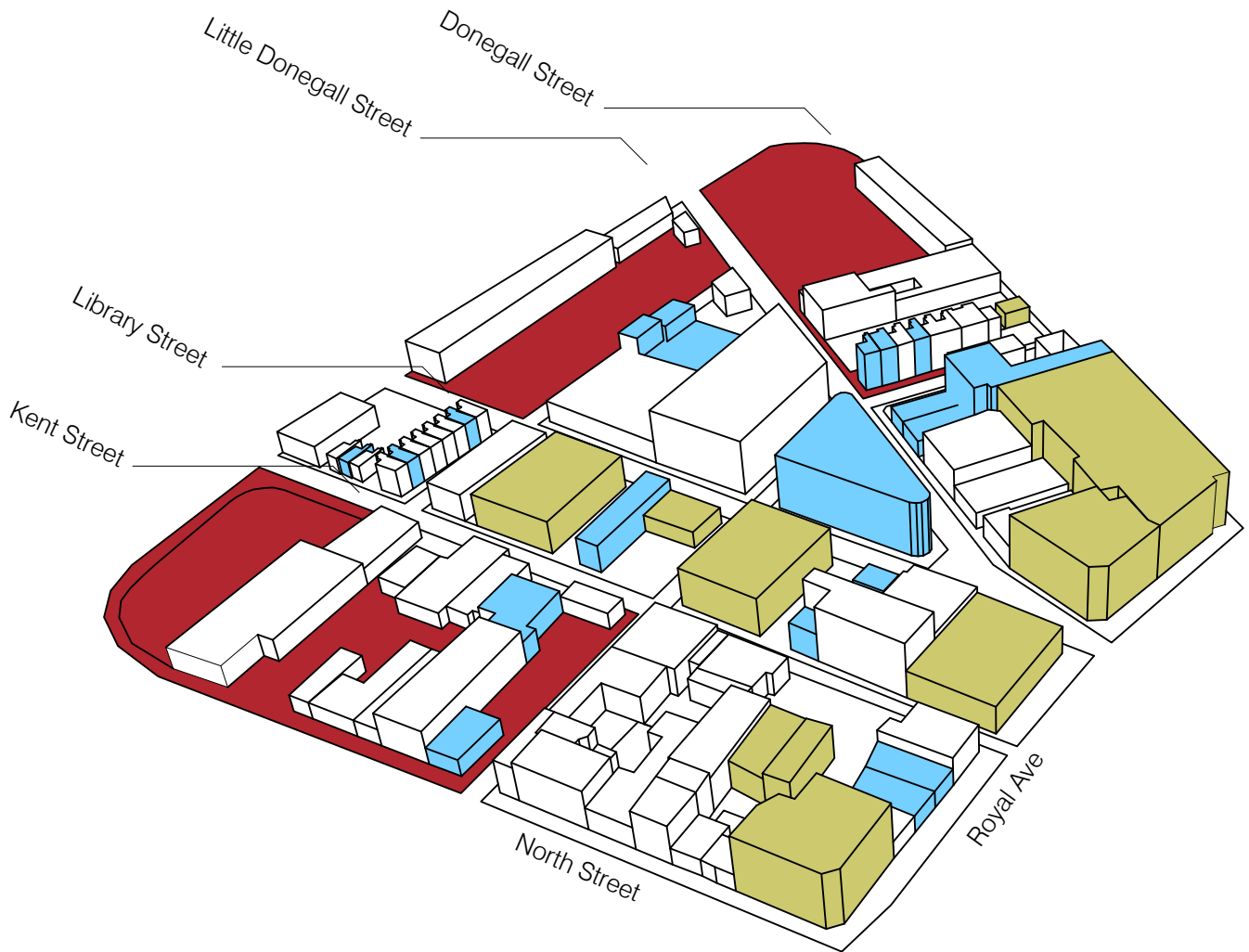
Figure 7.10
Development Opportunities in the Focused Site.

Full vacancy opportunity
Upper level vacancies
Parking-related

DEVELOPMENT OPPORTUNITIES

The different colors in the opportunity diagram Figure 7.10 indicate different types of developments. In full vacancy opportunities, we recommend retaining the original facade and retrofitting the interior for tech-related functions. Buildings with large floor office areas will be partitioned to provide flexible uses according to the firm's needs.

For buildings with commercial or retail occupying the ground floor, the upper levels will be programmed into work space for small to medium scale firms. These buildings will adopt a live/work typology strategy. This is ideal because it is cost-efficient to live above ones workplace, and residents can benefit from the adjacency to retail spaces below.

Parking related areas offer more social development opportunities. Parking lots can be designed into parks that accommodate leisure and informal meet-ups in a relaxed atmosphere.

Figure 7.11
Renderings for Full Vacancy, Upper Vacancy and Parking Lot Redevelopment.

Live/Work above Retail

Improved Outdoor Gathering Space

Social Condenser

Fiber Optic Infrastructure
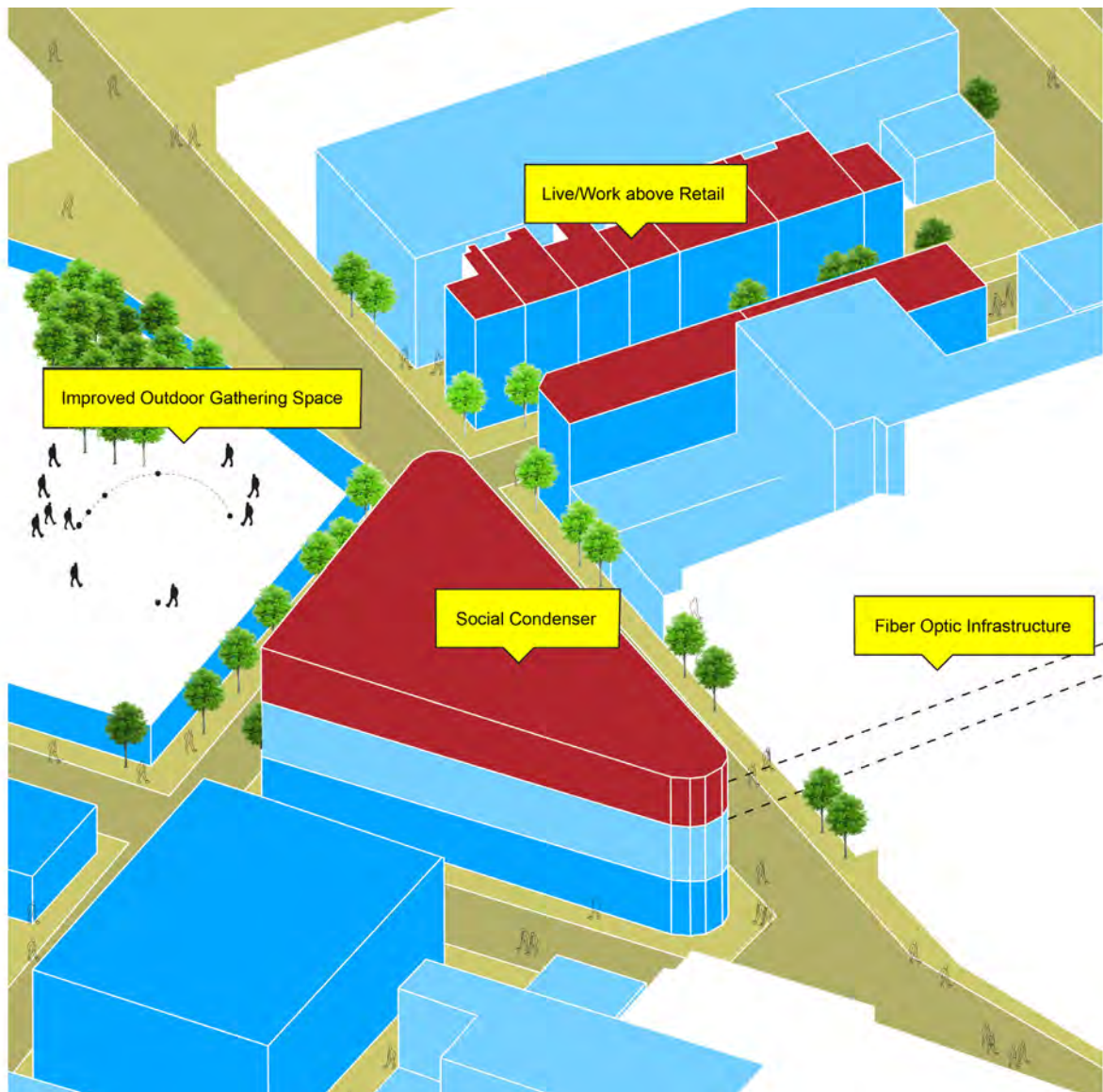
Figure 7.12
Function Distribution and Live/Work Typology.

■ *Commercial/retail space*
■ *Start-up space*
■ *Live-work opportunity*

STRATEGY I: LIVE/WORK TYPOLOGY

The first floor of the building will be developed or retained as retail space while the second floor and above will be developed into live/work space. One potential further program division will be designating the middle floor as work space, and the top floor as private living space.

Furthermore, the adjacency to Ulster University provides opportunities for recent graduates to carry out entrepreneurial ventures in a collaborative environment.

Figure 7.13
Proposed Interior Design of Social Condenser space.

As depicted in **Figure 7.13**, people will be able to enjoy an inspirational and collaborative working environment. Different building functions can be accommodated such as meeting rooms, breakout spaces and exhibition spaces. People are free to communicate their ideas in informal gathering spaces, whiles private meeting rooms can offer quiet work rooms.

The spirit and culture of Belfast can be introduced into the site through the careful design and curation of the interior. We imagine the walls being graced by murals from local artists and screens with headlines from the tech industry as a way to begin to promote and integrate these two vibrant sectors of Belfast.

Figure 7.14
Signage; Triggered Development Over Time.

STRATEGY II: SIGNAGE

The aggregation of tech clusters within the inner ring road can be identified by their unique branding and signage - the "tech donut". **Figure 7.14.** The signage can operate in a variety of scales and media to serve the purpose of branding, marketing and communication.

STRATEGY III: INTEGRATION OF ART AND TECH

On North Street, there are cases where artists have taken over abandoned

How the Halo effect has brought some spectacular vision to a range of companies

buildings and turned them into gallery spaces. We see the potential for collaboration between artists and tech firms through the creative re-appropriation of buildings, as well as productive exchange of ideas.

IMPLEMENTATION

Vacant buildings with affordable rent will serve as the foundation for developing the tech industry. Next will be human capital - diverse talent can be consistently drawn from the pool of educational institutions. Physical infrastructure such as fiber optic access and teleconferencing facilities will also be required on site.

Figure 7.15
Implementation Phases:
1. Foundation
2. Financing & Advertising
3. Growth & Maintenance

Figure 7.16
Proposed Social Condenser space.

Marketing campaigns that share news about the industry and the work being produced will help spur on growth and attract potential investors.

During the growth phase of development, firms will require financial capital for expansion. Access to venture capitalists will help fund ideas and help them grow into viable products. Growth brings more advertisement and a potential for anchor institutions like Google or IBM to set up locations in the tech spots proposed.

During this phase, programs and spaces that encourage network formation, will be needed in expanding the clusters. The tech cluster will expand upon its presence within the local community by hosting a variety of workshops and social events. **Figure 7.15.**

TIME SEQUENCE

We expect the timeline for the development as follows.

Firstly, the site will be inspected by administrators, stakeholders, firms' managers in the next two months after they have been presented with this proposal. At the same time, investment will be sourced to sufficiently finance future construction. Secondly, the targeted buildings will be developed according to the three typologies mentioned above. This period is expected to take up to two years. During this phase, advertisement campaigns will be carried out to attract firms. After that, the leasing process begins. This lease-up period is expected to take about one year and a half. During the holding period, which can take approximately two years, the site will further develop infrastructure and social amenities. When the site is maturely developed, it will begin to generate benefits for the Belfast City Centre.

POTENTIAL BENEFITS AND LIMITATIONS

The potential benefits of this project proposal are listed as follows.

1.The promotion of tech industry in Belfast will stimulate economy growth. This will contribute to retaining the younger generations.

2.This newly added tech cluster will act as an important addition to the existing tech industry. The donuts shaped cluster system enables the distribution of the tech firms to be more organized.

3.As a result of reusing existing buildings, the project sets an example for preservation efforts in the city. More buildings with historic value can be properly redeveloped as the city experiences its upcoming boom.

As far as the limitations of this proposal is concerned, the biggest challenge is getting enough funding to implement the design. More field research will be required to fully pinpoint the exact buildings for redevelopment. The logistics of incorporating residential uses into the site will be critical as well. Finally, the timeline needs to be adjusted accordingly.

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8 AFTERWORD
Tim Cunningham, Transitional Justice Institute, Ulster University

Almost two decades ago, the people of Northern Ireland voted in favor of the Belfast Peace Agreement which aimed to bring to end the violence and division that had been a feature of life in the region for the previous thirty years. Perhaps one of the least understood legacies of the Northern Ireland conflict was that the major urban centers themselves became casualties of the violence, and nowhere more so was this the case than in the city of Belfast. Three decades of low-intensity guerrilla warfare, a conflict management strategy predicated on manipulating the urban environment to contain and minimize violence, ethno-national tensions, population decline, and de-industrialisation, all combined to create the Belfast of the early 21st century. One of the explicit objectives of the 1998 Peace Agreement was to tackle the problems of a divided society, promote social cohesion in urban areas, develop new approaches to transport, and work towards rejuvenating major urban centers. And yet, two decades later, Belfast remains scarred by the legacy of domestic conflict, historic division, and the forces of globalization all of which serve to frustrate efforts to create a more integrated and cohesive city.

Like many post-industrial cities across the globe, Belfast is currently seeking to reinvent itself and embrace 21st Century concepts like sustainability through planning for a more compact form that efficiently optimizes use of brownfield land. The difficulty in Belfast, however, is that much brownfield land is in or near Protestant areas while new housing supply on many of these sites would likely face Catholic occupancy, given the differential Catholic need for housing. The former head of the Northern Ireland Housing Executive, Sir Charles Brett, likens the Catholic Falls and Protestant Shankill areas to two adjacent mill-dams, "the first full to the very brim with water and in danger of bursting its banks, the second at a far lower level." Currently, these metaphorical mill-dams are held in place by euphemistically named 'peace-walls' which enshrine, in concrete and steel the most obvious manifestation of conflict and sectarian division within the urban landscape in the city. In fact, recent years has seen the erection of several new 'peace walls' as population changes across the city have given arise to new sectarian flashpoints.

Belfast is currently more 'Catholic' than at any other time in its history and the proportion of Catholics in the city continues to grow. Meanwhile, territorial boundaries between the two communities have remained in place. As each decade passes, the pressure on the mill-dams increase. Beyond the stark landscapes of the peace-walls there are other more insidious examples of the way in which planning and design practices that were adopted in the early 1970s to deliver security objectives have been mainstreamed into the built environment of Belfast. The most obvious case in point is the "Westlink" motorway, originally designed to provide a "cordon sanitaire" around areas of conflict to the north and west of the city in early 1970s. It's divisive effect was heightened with widening in 2001 to accommodate increased traffic flows. Similarly, notions of "defensible space" was incorporated into housing development and street design in the early 1970s to limit bombings and shootings, continue to create and shape sectarian enclaves while the 'shatter zones' that doughnut the city provide parking for commuters by day, and no-go spaces by night.

Following the establishment of a devolved Assembly at Stormont, the ultimate authority for urban planning and development in the region now lies with the

Northern Ireland Executive that operates a con-sociational power-sharing arrangement that includes representatives of both protestant and catholic communities with some powers now transferred to the Belfast City Council which is finely balanced in terms of its political representation of Unionists and Nationalists. The difficulty is that the power-sharing framework at the governmental level also provides a mutual veto which allows either community to block developments seen as unfavorable to their own political grouping. One cannot underestimate the link between ethnic identity and adherence to territory in the context of attempts to regenerate and redevelop Belfast. The renowned historian A.T.Q. Stewart astutely observed that conflict in Northern Ireland was fought out on a narrower ground than even the most impatient observer might imagine, "a ground every inch of which has its own associations and special meanings" where "locality and history are welded together." Writing over four decades ago, Stewart's conclusions are worth repeating given that they retain their salience today:

The Ulsterman… knows which villages, which roads and streets, are Catholic, or Protestant, or 'mixed'. It not only tells him where he can, or cannot, wave an Irish tricolor or wear his Orange sash, but imposes on him a complex behavior pattern and a special way of looking at political problems. The nuance is all-important…To understand the full significance of any episode of sectarian conflict, you need to know the precise relationship of the locality in which it occurred to the rest of the mosaic of settlement. But the checkerboard on which the game is played has a third dimension. What happens in each square derives a part of its significance, and perhaps all of it, from what happened there at some time in the past. Locality and history are welded together. The perduring quality of local patterns of reaction almost defies a rational explanation, and is certainly underestimated to a remarkable degree.

It may be that attempts to reshape the city for the 21st century can steer a new path for the urban environment within Belfast that is predicated on inclusion rather than segregation or containment, and that a new deliberative and inclusive framework for post-conflict planning is able to provide outcomes that are not predicated on zero-sum sectarian politics. In addition to the ethno-national divisions within Belfast there is also, however, the challenge of addressing socio-spatial segregation, with many recent developments running the risk of generating a 'twin-speed' city, in which new projects bypass North and West Belfast, which has long lacked a vibrant economic base and remains scarred by 'peace walls' in favor of the City Centre and the Titanic Quarter to the east. As Gaffikin has rightly pointed out, a sustained strategic approach to the creation of a new development axis for this area is intrinsic to any serious objective to a shared city while alongside this there is a difficult discussion about how the spatial concentration of multiple deprivation can give way to more socially mixed communities without the negative externalities associated with gentrification.

Another significant challenge is the way in which the role of the state has changed since the large redevelopment program of the 1980s when Belfast underwent an unprecedented level of development. Northern Ireland became one of the most 'state dependent' economies in the world while elsewhere in the UK over the same period the level of state support for the economy shrunk. This disparity is accounted for by the fact that the number one domestic policy priority for government in Britain during the 1980s was cutting public spending while in Northern Ireland the number one priority was defeating terrorism.

Significantly, during this period the bulk of the Westminster subvention to Northern Ireland was spent on transforming the region's public housing that provided a vital stimulus to the Northern Ireland economy and delivered quality housing stock. At the same time however, this redevelopment took place in a way that entrenched and exacerbated socio-spatial segregation of the two communities with the security objectives trumping all others. Since then, the role of the state has shrunk and the challenge of providing an integrated urban agenda for Belfast is likely to prove more difficult in a context of fiscal austerity where the economic imperative is attracting private sector investment, a scenario which is further complicated by the UK vote to withdraw from the European Union. At the same time, one must remain cognizant of the huge progress that has been made in Northern Ireland in the past two decades. Long-standing political adversaries, have accepted the need to share power and work together in government, while the decommissioning of IRA weapons, the withdrawal of the British Army, and the dismantling and removal of British military bases are all tangible examples of how peace has come to Northern Ireland, albeit at a pace that has been per William Butler Yeats, 'dropping slow'.

It is in this context that 'Reconnecting Belfast', the Urban Planning and Architecture Joint Studio at Columbia GSAPP ought to be seen. Over the course of several months, the students and faculty of Columbia GSAPP have directed their considerable intellectual and creative firepower towards the challenges of 'reconnecting Belfast'. What is contained in this report is the outcome of those efforts and is required reading for those who wish to believe, like the Nobel Prize-winning poet, Seamus Heaney, that 'a further shore is reachable from here'. The GSAPP studio involved a semester of desk work in New York in addition to a field trip to Belfast in order to study the urban landscape there first hand and speak to those living and working in the city. The outcome is a series of practical and sensible approaches for 'reconnecting Belfast'. The late Inez McCormack, a prominent Belfast trade unionist and human rights activist, always claimed that the acid test for any proposals designed to achieve positive social change was 'are they doable?'. The findings of the GSAPP studio pass that test. Belfast people remain notoriously suspicious, indeed dismissive of outside templates that seek to impose 'best international practice' on their city. In a context in which many of the problems facing Belfast today can be traced back to the mismanagement of grandiose modernist development plans in the early 1960s, the citizens of Belfast have good reasons to be skeptical. Proposals which are predicated on the notion that what works in Beijing, or Baltimore, or Bangkok, must also work in Belfast have little hope of gaining traction in a city that likes to do its own thing. This studio has not fallen into that trap. At the same time, it is important to note that the ideas presented in this studio are not parochial, but rather, draw on international practices and ideas in a way that "cuts with the grain" with respect to what Belfast City Council, political leaders, and indeed many residents of the city, envisage as a way forward for addressing the legacy of several decades of violence and de-industrialisation.

Among the issues considered in this study is how best to ensure that the urban fabric of the shatter zones around the Westlink motorway might be stitched back together. This road, like many others, is traditionally viewed by architects, engineers, planners and politicians in Northern Ireland from the perspective of vehicle users. This study has rightly sought to begin redressing that imbalance by casting a cold eye on the road from the perspective of the communities living around it in order to map out a way of mitigating the impact of the severance that the road gave arise to almost five decades ago. Similarly, with

'Reclaiming Voids', the study aims to address the shatter zones created by the M2/M3 and the York Street Interchange and reconnect the Harbour to the City Centre by creating pedestrian friendly linkages and allowing the current vacant lots between the City Centre and the Harbour to be redeveloped. The ideas presented in these two studies start an important conversation with regard to how the "new development axis," alluded to by Gaffikin, might be established in order to help redress the social-spatial segregation that has left the north and west sections of the City Centre largely impervious to new inward investment.

The perspective of non-car users is also a theme of 'Walking the Centre' which aims to provide a framework for enhancing the pedestrian experience from Queen's University Belfast at the southern end of the city to the new Ulster University campus at the north. Given the impact that several decades of violence and a defensive planning strategy had on destroying connectivity for pedestrians outside the City Centre these proposals are especially welcome, particularly in light of the new Ulster University campus development at York Street. These ideas dovetail nicely with those contained within the "Enhancing Transportation" section of the report which contains three strands: an expansion of existing bus lanes, connecting existing transit systems through multi-functional mini-transit hubs, and the introduction of a ferry system connecting the city via the River Lagan. Crucially these proposals aim to not only create a more integrated and cohesive public transport system within the city, of which there is a pressing need, but also to enhance the experience of those using the system and help alleviate some of the desolation around transport venues through a place-making strategy that turns bus depots into vibrant multi-functional spaces that increase the liveliness of the city. The proposals for a ferry system on the River Lagan, along with the ideas presented in the "Reclaiming Voids" section to reconnect Belfast Harbour to the City Centre ought to be given special consideration not least given that they seek to build on other highly successful efforts to capitalize on Belfast's rich maritime history, notably the Titanic Quarter and the Tall Ships Festival. The recommendations for developing land around the M2/M3 also links nicely with those contained within "Enhancing Tech" which aims to establish technology clusters across the City Centre that will work to spur on a culture of entrepreneurship and breathe new life into the vacant buildings dotted around the city, while at the same time doing so in a way that recognizes and retains the built heritage of Belfast. Unfortunately, in recent years developers have been much more successful in turning the built heritage of the city into rubble than the car bombers of the early 1970s. This section provides an important reminder that economic growth and built heritage preservation are not mutually exclusive, and for that reason alone, this part of the report ought to be required reading for decision makers and public officials. Moreover, the suggestions here regarding the future for "Enhancing Tech" offer one way of addressing the much needed capital investment that is required to provide a stimulus to the Northern Ireland economy at a time of fiscal constraint.

Unlike many development plans that Belfast has seen to date, this study has sought to identify a framework for maximizing connectivity and allowing those people who live, work, and visit Belfast to move around more freely through a series of imaginative proposals that recognize citizens are entities with diverse interests and needs. Given that those who worked on this report are themselves a diverse group of individuals from across the globe, with planners and architects working together to develop integrated solutions there is also a lesson here. Bus depots need not be dumps! If more people are to walk and

use public transport, then it is imperative that the urban environment allows them to do that. In a context in which segregation and exclusion have been woven into the urban fabric of the city, and pedestrians and public transport users have traditionally been regarded by planners and officials as the poor relations of Belfast, this studio offers a useful starting point with respect to how things might begin to be done differently, beginning by recognizing that different professions and different people carry their own professional baggage and limitations. The present-day city of Belfast was largely shaped by car-driving white male urban planners between the ages of 30 and 60 and living outside the city, and as such reflects the needs and interests of that group. The ideas presented in this studio were developed by a group of men and women of different ethnicities and nationalities with a wide variety of life experiences, who are familiar with public and private transport. Perhaps one of the most problematic misconceptions about urban planning and architecture is the belief that technical knowledge exists independently of life experience and personal background. This studio shows that if you ask a diverse group how to reconnect a city you get a range of imaginative solutions. If you ask a middle-aged male car driver, you get a new road.

It is also important to note however that there are many issues that this report does not address, not least the continued existence of the peace walls that scar the north and west of the city and the question of disproportionate levels of housing need within the Catholic community which continues to pressure the 'mill-dam' interface barriers that segregate the two communities. It is entirely appropriate that the studio should leave these issues to others. The sensitivities surrounding the construction and continuation of many of the peace walls for example means that only a locally agreed compromise around such issues has any hope of success. The perduring quality of local patterns of reaction that Stewart alluded to, defying a rational explanation, and underestimated by many to a remarkable degree, mean that attempts to solve these problems from a desk in New York city are doomed to fail, even with the benefits of a field visit. Those at Columbia University who worked on this report are to be commended for their wisdom in recognizing what is 'doable' and not falling victim to the hubris that has befallen others who seek to map their own version of what they think Belfast ought to look like. This report provides a useful lesson in how far one ought to set one's sights when it comes to seeking to reconnect a city, or indeed, undertake field work generally. It is clear, that in the course of this study, the participants actually listened to what they heard on their field trip to Belfast and took on board the advice that they received regarding the art of the possible. Would that others, particularly public officials, would follow suit during the course of public planning consultations and hearings.

The net outcome presented here is a series of recommendations that are eminently practical and sensible as well as imaginative and innovative and which ought to appeal to politicians across the two communities in Northern Ireland, citizens of all parts of the city, and policy makers and technical experts whose job it is to take forward the ideas presented here. In short, these proposals put forward a framework that if implemented would allow the people of Belfast, in the words of one of the cities most celebrated sons, Van Morison, to begin to move, both literally and figuratively, 'from the dark end of the street, to the bright side of the road'.

Tim Cunningham
July 2017

9 APPENDIX

BELFAST FIELD STUDY ITINERARY

MONDAY, MARCH 6
Morning:
Arrivals at Travel Lodge, Belfast City Centre,15 Brunswick Street.

Afternoon:
13:45pm - Meet Laura Leonard at City Hall reception.
14.00-17.30pm, BCC Briefing Sessions at Boardroom, 2nd Floor, City Hall.
Donal Durkan, overview of Belfast development issues.
Nuala Gallagher, City Centre development plans and commentary on visit objectives.
Ruth Morrow, Architecture and Planning perspective on planning futures.
Ciaran Mackel, Planning and Architecture perspective on planning futures.
16:30pm - General Discussion

Evening:
Free

TUESDAY, MARCH 7
Morning:
10:00-10.30am – Discussion and tea with Lord Mayor Brian Kingston and Deputy Mayor Mary Ellen Campbell at City Hall
10.30-11.30am - Guided tour of City Hall
11.30-12.30pm - Free time in City Centre
12.30pm - Meet in City Hall courtyard for Belfast Bus transfer to Ulster University, Belfast Campus.

Afternoon:
13.00-17.00pm - Briefing Session at Ulster University:
Roisin Mc Evoy, Perspectives on Ulster University in new global context.
Philip Doherty and Paul Clarke, Perspectives on Ulster University campus expansion in local North Belfast context.
15:30pm - Ulster Belfast Campus tour with Philip Doherty.
17:00-19:30pm - Review of GSAPP student presentation of five proposed project focus topics with Cianan Mackel and Ulster University students.

Evening:
Free

WEDNESDAY, MARCH 8
Morning:
9.00am - Meeting with Annette Hallam for pick up at Travelodge hotel by Belfast Bus Company to go to Intercomm (Inter-Community Development Project), 393 Antrim Road, Belfast.
10:00-13:00am - Briefing sessions at Intercomm:
10-11:30am - Connor Maskey and Winston Irvine on objectives and techniques in peace-building process in North Belfast.

11:30-13:00am - tour of North Belfast "peace walls" with Connor Maskey, Winston Irvine and Gordon Walker, Brendan Hacker
13:00pm - Belfast Bus Company drop off at City Hall.

Afternoon:
13.45pm - Group to be collected at City Hall courtyard by Naomi Doak and James Edgar to walk to Ulster Heritage Association, 7 College Square North (Old Museum Building) in City Centre
14.00-15:30pm - Nikki McVeigh, Perspectives on preservation of historic building in Belfast City Centre; and tour of Old Museum Building.
15:30pm-16:30pm - walk to Ulster University for further discussion with Cianan Mackel and particular reference to housing issues.
16:30pm - student site documentation at five GSAPP proposed project areas.

Evening:
Free

THURSDAY, MARCH 9
Morning:
8.30 am- walk from Travelodge hotel to Belfast City Council headquarters, 9 Adelaide Street (behind City Hall), coordinated by Geraldine Boyd.
9.00-11.00am - presentations by "Young Influencers:"
Sean Cullen, Perspectives on innovative housing initiatives
Kain Craigs, Perspectives on developing information economy and the importance of the "Global Forum" initiative.
11:00-12:00pm organization by Annette Hallan for Belfast Bus visit to Belfast Castle

Afternoon:
1.15pm - organization by Frances Murray at City Hall Courtyard to travel by Belfast Bus to US Consulate at "Dansefort," Malone Road, Belfast
14.00-15:30pm - meetings at US Consulate
Consul Dan Lawton on situation of Belfast in post-industrial context.
Peter McKittrick and Frances Murray on the legacy of "The Troubles" in planning the future of Belfast.
15.30pm - Belfast Bus drop-off at Queens University Belfast Design Centre, Stranmillis Road
16:00-18:45pm - GSAPP group work on further development of presentation of five proposed project focus topics.

Evening:
19:00pm - travel by foot to PS2 Project Studios / Project Space, 11 North Street, Belfast.
19:30-22:30pm - GSAPP group presentation and discussion of five proposed project focus topics and sites, with Nuala Gallagher, Ruth Morrow, and Martin Craigs.

FRIDAY, MARCH 10
Morning:
Further GSAPP students documentation of five proposed project focus topics and sites.

Afternoon:
Departures

READING MATERIAL

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RELEVANT WIKIPEDIA LINKS

The Troubles:
<https://en.wikipedia.org/wiki/The_Troubles>
Provisional Irish Republican Army:
<https://en.wikipedia.org/wiki/Provisional_Irish_Republican_Army>
The Good Friday Agreement / Belfast Agreement:
<https://en.wikipedia.org/wiki/Good_Friday_Agreement>
Ulster Volunteer Force:
<https://en.wikipedia.org/wiki/Ulster_Volunteer_Force>
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Irish National Liberation Association:
<https://en.wikipedia.org/wiki/Irish_National_Liberation_Army>
Peep o'Day Boys:
<https://en.wikipedia.org/wiki/Peep_o%27_Day_Boys>
Battle of the Bogside:
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No-go area:
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Reconnecting Belfast

Beginning in 1969 as a consequence of the sectarian conflicts in Belfast, Northern Ireland, strategies were implemented for partitioning the city, including a "ring of steel" around the City Centre. Accessibility was drastically reduced during daytime with complete closure to the public at night. The City Centre was deliberately maintained as a "neutral" (i.e. uninhabited) zone. While the "ring of steel" no longer functions, the cumulative negative effects of this long period of isolation is evident.

This report explores scenarios for reintegration and redevelopment of the City Centre. It documents the results of joint architecture and urban planning studies at Columbia University. The client and sponsor was the Belfast City Council and its Office of City Centre Development. Considerations include heightened pedestrian linkages; investment in renewed transportation networks; rebuilding of de-populated "shatter zones;" and options for next generation cultural production. Both spatial and economic redevelopment of the City Centre is considered in the context of future economic potentials for Northern Ireland and with particular reference to new global investment options in a post-Brexit era.