Cycle Access to Trinity College and Surrounding Area

September 2018

AECOM Imagine it. Delivered.

Prepared for:

National Transport Authority

Prepared by:

AECOM Ireland Limited
4th Floor
Adelphi Plaza
Georges Street Upper
Dun Laoghaire
Co. Dublin A96 T927
Ireland

T: +353 1 238 3100
aecom.com

Prepared by	Checked by	Verified by	Approved by
Joe Seymour	Dimitris Karakaxas	Eoin O'Mahony	Eoin O'Mahony
Director	Associate Director	Regional Director	Regional Director

Index

1. Introduction
2. Background
3. High Level Routing Information
4. Opportunities and Constraints
5. Alternative Cycle Access to TCD from Nassau Street
6. High Level Design Options
7. Conclusion & Recommendation

Introduction

AECOM Consulting Engineers Ireland Ltd (AECOM), as part of its Blanchardstown to UCD Bus Rapid Transit (BRT) Study for the National Transport Authority (NTA), was requested to review options available to improve cycle connectivity from Kildare Street to Trinity College and Grafton Street as part of the Review of the previously prepared Feasibility Design. A particular focus is removal of the conflict between cycles and buses at the bus stops.

The report is a high level study to identify if any feasible options were available to improve the cycle connectivity on this route which must facilitate a high level of bus stopping and movement, on one of the most strategically important sections of the future BusConnects Programme.

The options, if any, that emerge from this study will need further work to bring them to Feasibility Design Stage.

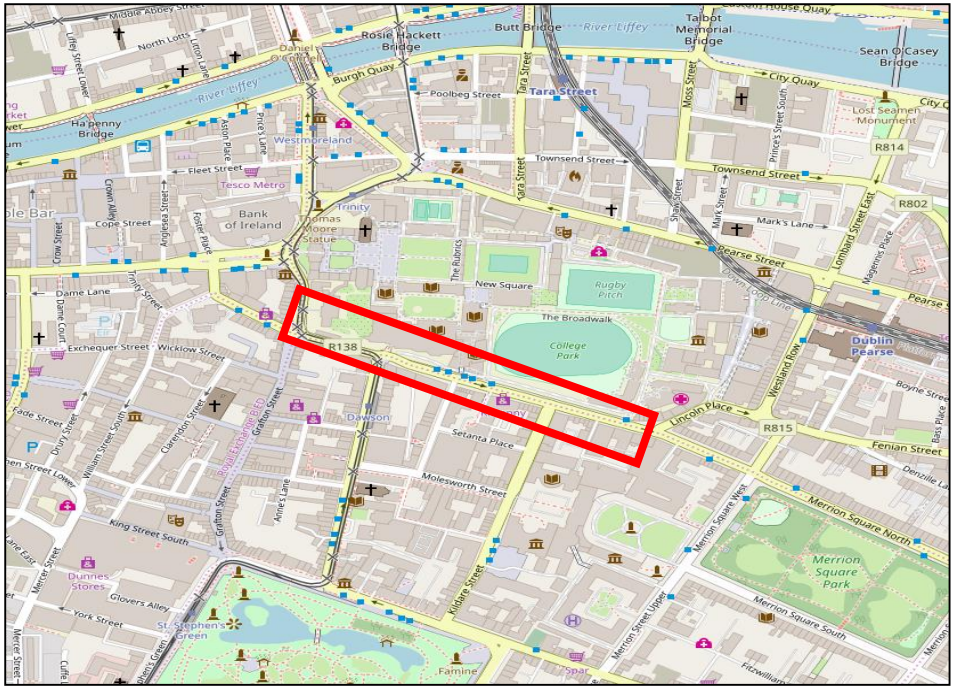
Methodology

The following tasks were undertaken in the preparation of this report:

- Liaison with NTA to understand fully the purpose of this high level study;
- Review of available concept design drawings;
- Site Visit at numerous times of the day to gain a full understanding of the study area, including photographic survey of relevant items;
- Development of initial design options;
- Workshop with NTA Staff to review options and consider any further alternatives; and
- Revise options and prepare report.

Background

Existing Conditions



Nassau Street and Clare Street, and the surrounding streets have little or no facilities for cyclists, with one-way streets and high concentration of public transport routing (both Bus and LRT) making it a relatively hostile environment for cyclists, although speeds are low as a result there are few reported incidence.

Trinity College Dublin (TCD) is a significant destination for cyclists in this area with upwards of 14% of students/staff traveling to the campus by bike, over the twice the rate of cycling in comparison to the rest of the City, and substantially higher then any other University in Ireland.

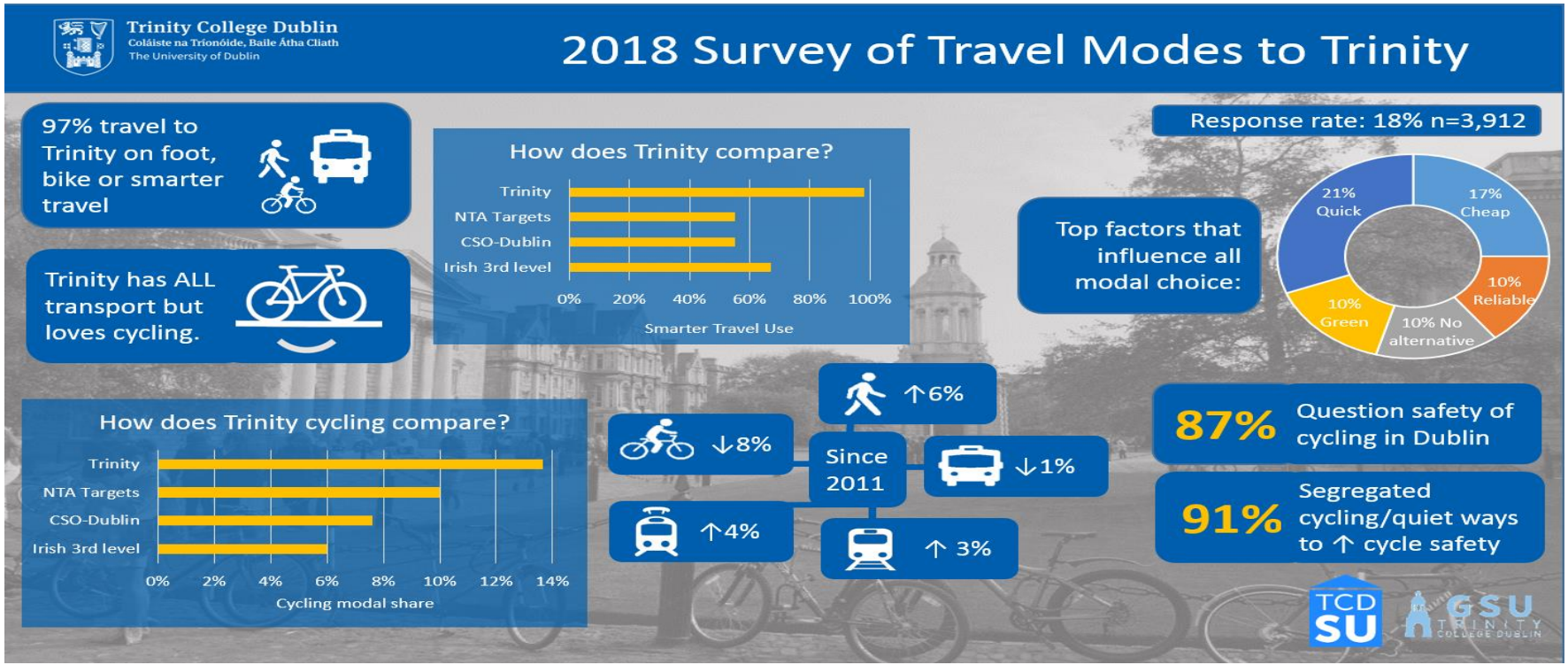
Bicycles are parked throughout the campus but are focused around the Library and New Square. New cycle parking facilities have recently been provided to meet the increasing demand.

There is currently no dedicated cycle access facilities to the campus, with cyclists having to share with either pedestrians (must dismount due to configuration) or vehicle.

There is no obvious north/south corridor for cyclists to use through the area at present, most appear to follow the Westland Row corridor.

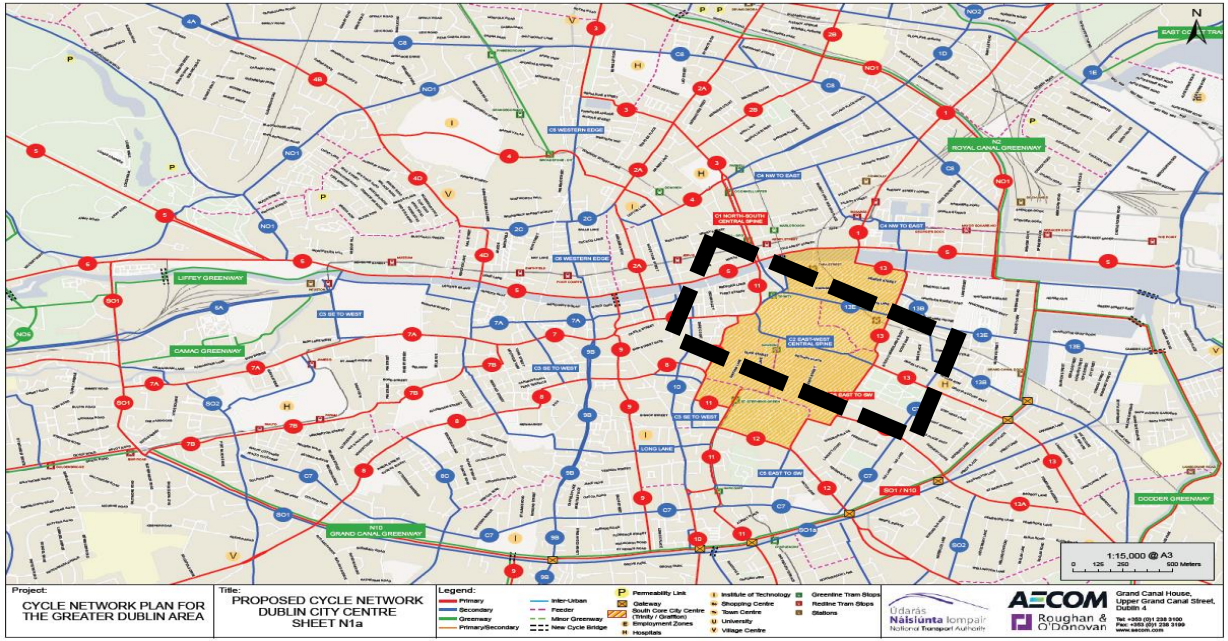
AECOM

Trinity College Modal Split



AECOM

GDA Cycle Network Plan



The NTA Greater Dublin Area Cycle Network Plan identified Nassau Street and Clare Street as Secondary Cycle routes in the city centre plan.

A Secondary Cycle route is defined as a Link between the principal cycle routes. In this case linking the Primary Cycle Routes at Westland Row (North South) to Dame Street (to the West and Southwest).

However, it is an important final link to key destinations such as Grafton Street, Trinity College, Various Government Buildings and the many businesses in the area, therefore it is strategically important route.

AECOM

Existing Cycle Routing

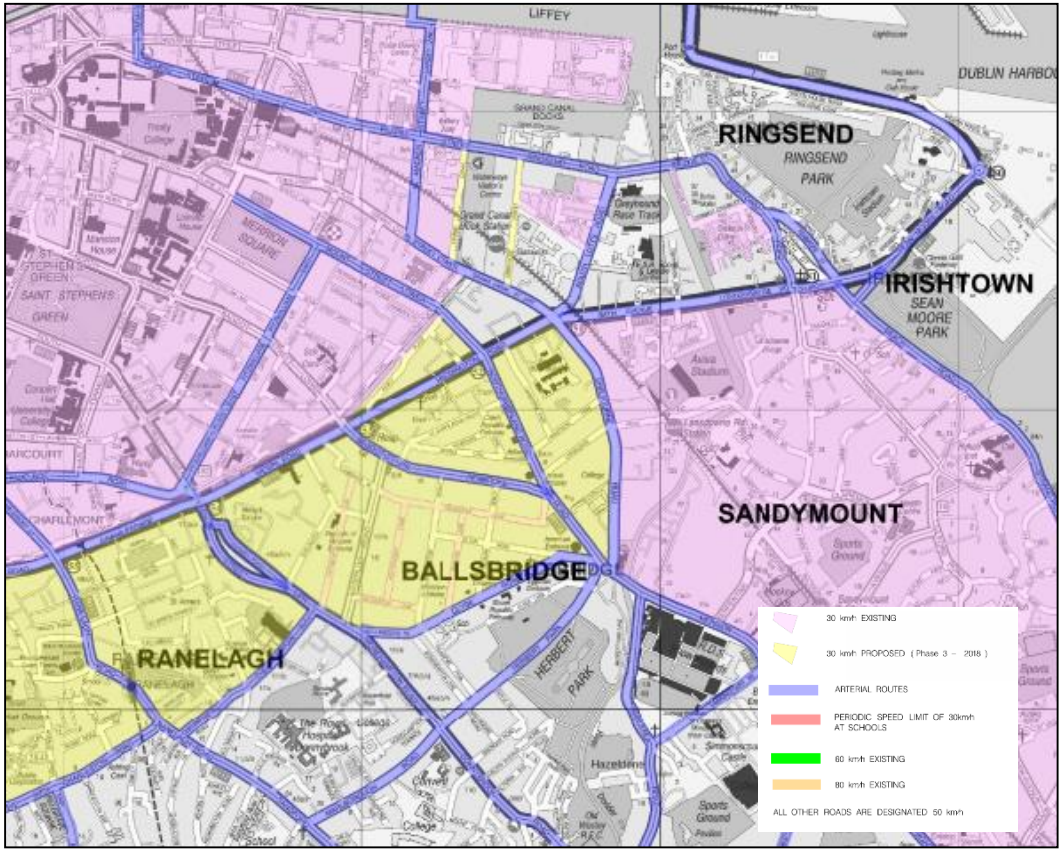
As part of the Dublin City Councils Smart Dublin programme a company called See.Sense gathered data from 500 cyclists using a light attached to their bicycle. These lights were distributed to a typical sample of Dublin cyclists (statistically significant).

Using the data gathered as part of this programme over a 3 month period, from October to December 2017, it would appear that all roads surrounding Trinity College are busy cycle corridors, however Nassau Street/ Clare Street is least busy, although this may be influenced by the one-way street configuration.

The primary East-West Route appears to the Dame Street/ Pearse Street, with the primary North-South routing on Westland Row.

AECOM

Speed Limits in Study Area



The Speed limit of these streets and the area around it is 30kph, and has been so for a few years. While no surveys were undertaken it would appear that most vehicles were travelling at an appropriate speed for this location, mainly due to the stop-start nature of traffic due to public transport movements and close spacing of junctions.

It is noted that some vehicles were observed to be passing through red signals at some of the key junctions particularly the right turn onto Kildare Street from Nassau Street, conflicting with pedestrians at the crossing(this included Bicycles, Cars and Buses), most were passing the stop line late and the sharp right turn impacts on their speed thus are still passing through the pedestrian crossing when it has turned green. The inter-green for this movement should be reviewed in line with actual operation of the junction.

AECOM

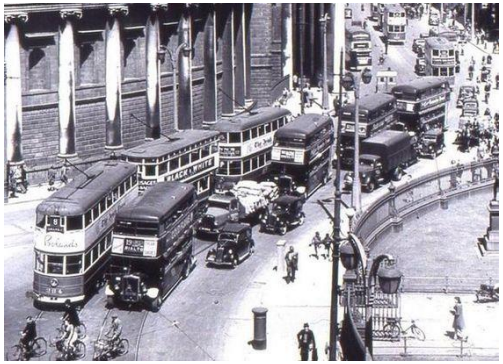
High Level Routing Information

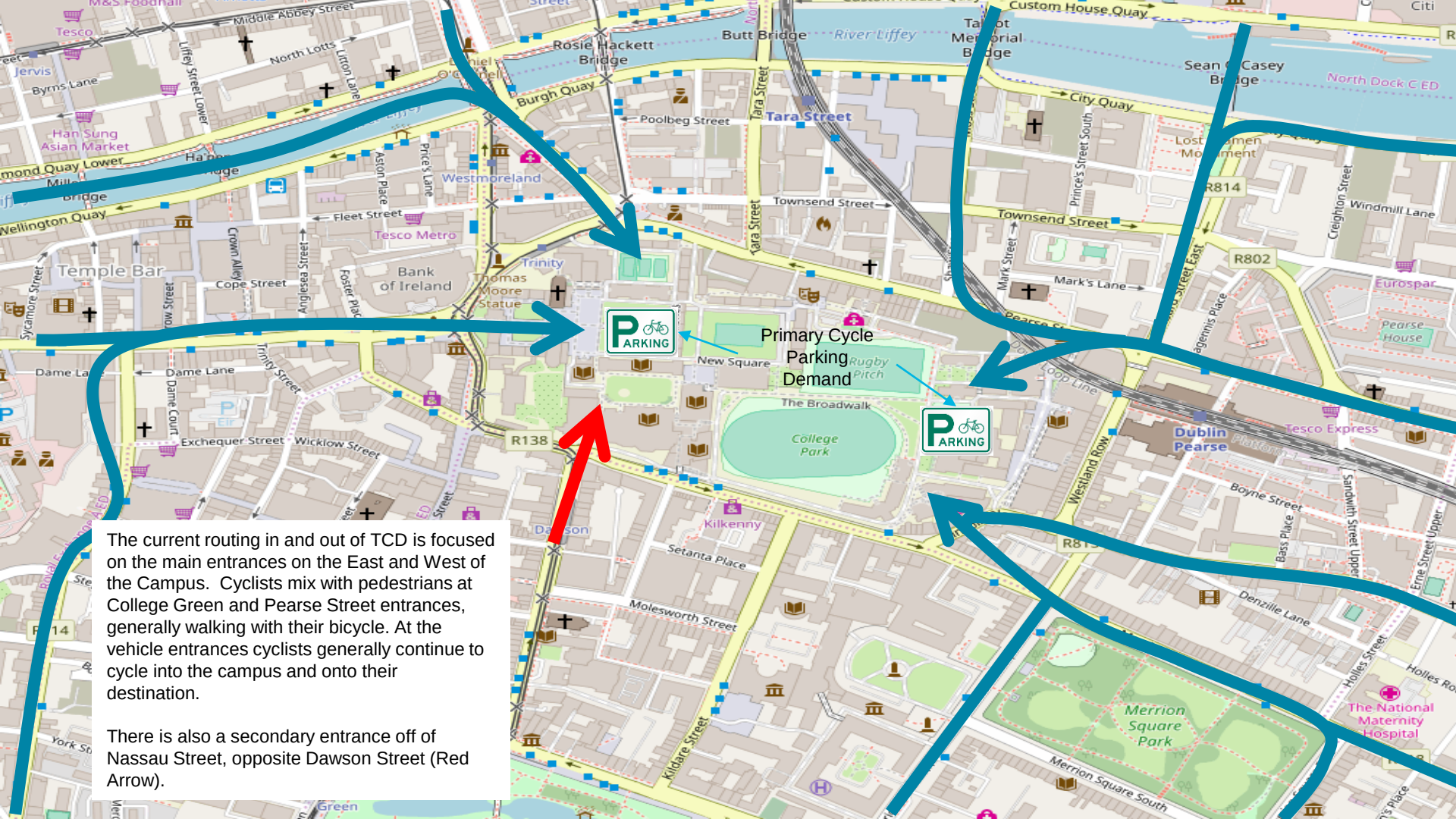
Routing in Study Area

This area is a key link in the city's transport network and as the photos indicate it always has been with both public transport (bus and trams) and vulnerable road users (pedestrians and cyclists) in close proximity to one another.

While cars and hgv movements through this area have reduced substantially in recent years the number of cyclists and public transport users has increased, and will continue to increase, for the foreseeable future. While it is easier to manage the conflicting movements between these users there still remains a significant risk of serious injury to vulnerable road users should an accident occur.

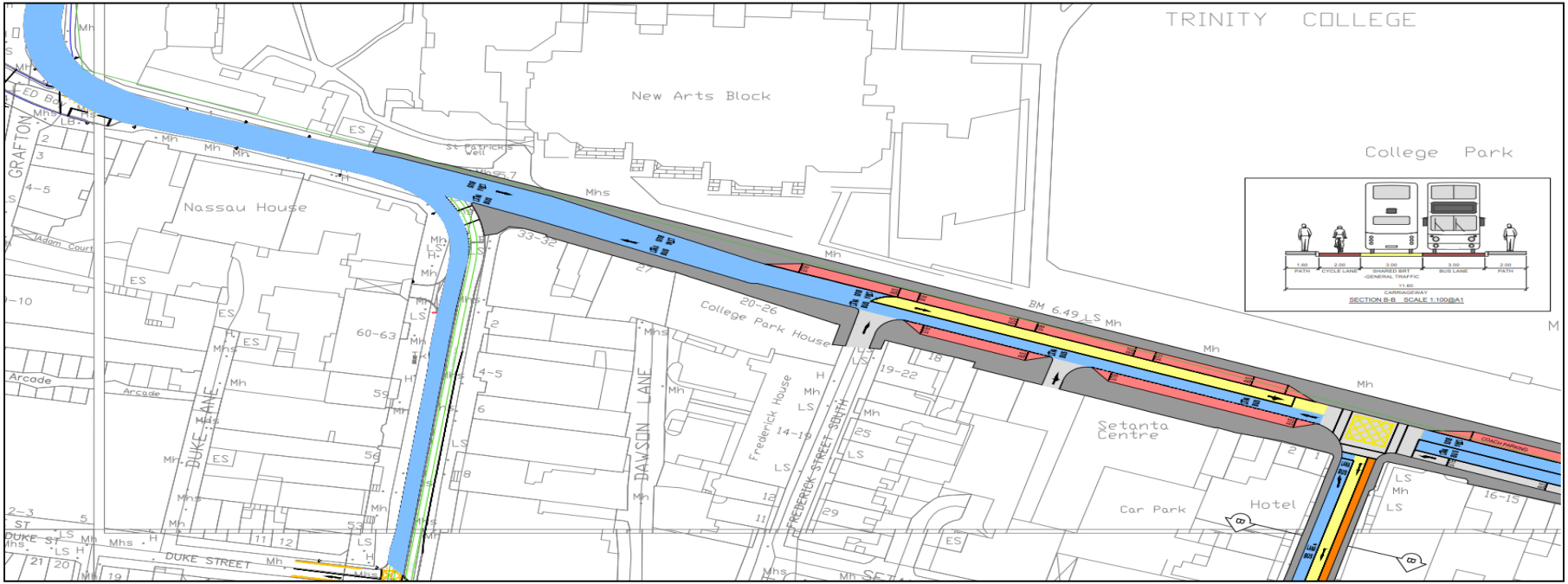
The following section outlines the current routing into TCD and also across the city within the study area.




Primary Cycle Parking Demand
PARKING
PARKING
New Square
The current routing in and out of TCD is focused on the main entrances on the East and West of the Campus. Cyclists mix with pedestrians at College Green and Pearse Street entrances, generally walking with their bicycle. At the vehicle entrances cyclists generally continue to cycle into the campus and onto their destination.
There is also a secondary entrance off of Nassau Street, opposite Dawson Street (Red Arrow).


Key (based on Observed Demand)
Primary Route
Secondary Route
Both sides of the River have high demand
As one of the primary destinations in Dublin City cyclists flows are high on all routes in the area and there is a relatively arbitrary difference between primary and secondary corridors, however it is clear that Nassau Street and Clare Street are less busy.
This is likely to be impacted by the one-way systems, and the introduction of the Luas on Grafton Street/ Dawson Street, making it more difficult to access these streets.

BusConnects DRAFT Proposals



The DRAFT proposals for BusConnects currently have no dedicated facilities for Cyclists on Nassau Street or Clare Street, with cyclists expected to share with other vehicles, which will mainly be PSV vehicles. In the context of the volumes and low speeds this will create an acceptable environment for cyclists, however the Luas tracks between Dawson Street and Grafton Street have created a hazard where cyclists have been reported to fall from their bikes when their wheel gets trapped in the tram rail.

AECOM

Opportunities and Constraints

Opportunities and Constraints

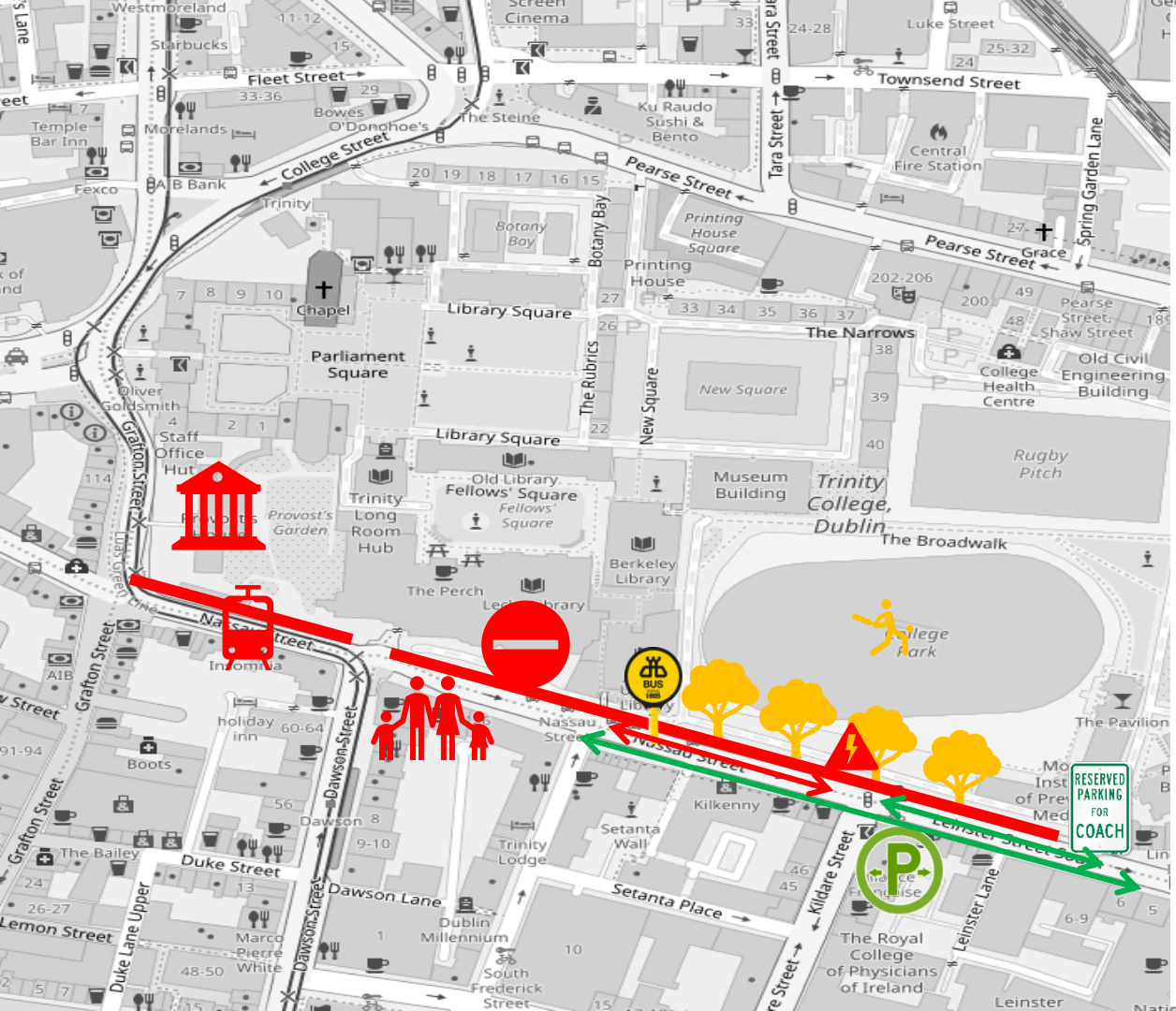
The study area was visited on a number of occasions in September 2018, to gain an understanding of the street layout and how all modes use the streets.

The streets are bounded to the north by the walls and railings of Trinity College, with trees located behind the wall for some of its length. To the south there is a line of parking outside a footpath, however at its narrowest point, approaching Dawson Street, there is no parking and the footpath is relatively narrow in the context of the current pedestrian demand.

Since the introduction of the LUAS traffic volumes are relatively light during the day, but at peak times there is a significant movement of buses in and out of the bus stops along the northern footpath.

Pedestrians would appear to make up the largest proportion of the “traffic” over the full length of these streets.

The following section looks at the opportunities and constraints and how they could be modified to improve the facilities for cyclists along the length of this scheme.



Notes:

Opportunity.

On-streets Car Parking could be removed.

On-street Coach Parking could be removed.

Possible Constraint.

Large trees behind the Trinity Boundary. Tree report would be required but it might be possible to remove some of these.

Cricket Green may restrict road widening in this area.

Constraint.

Service yard to rear of buildings with a narrow entrance road.

Historic Building immediately adjacent boundary wall.

Tram Tracks, no potential to relocate.

Footpaths that cannot be reduced in width due to very high pedestrian demand.

Busy bus stops that will need to remain in this location.

Historic walls and railings and level difference.

Large utility relocations required

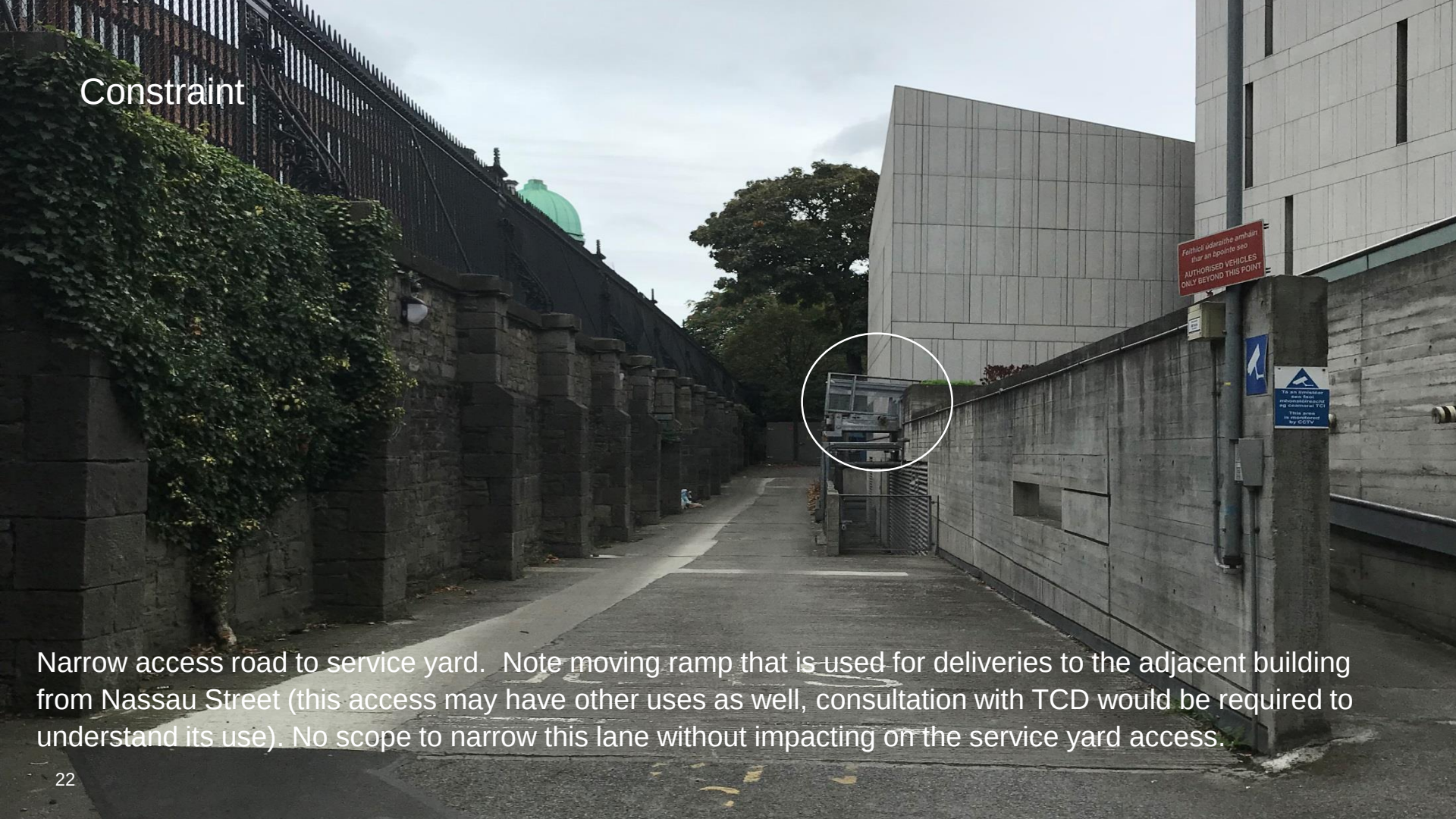
Opportunities

The parking for both cars and coaches, and the relatively lightly used bus stops, could be removed in this section to provide more space for pedestrians and cyclists.

Possible Constraint

The parking and trees along the rear of the Trinity Boundary wall may be removed, although this would be subject to detailed review and liaison with TCD. Note the level difference between the external road and the internal ground level (approx. 2m)

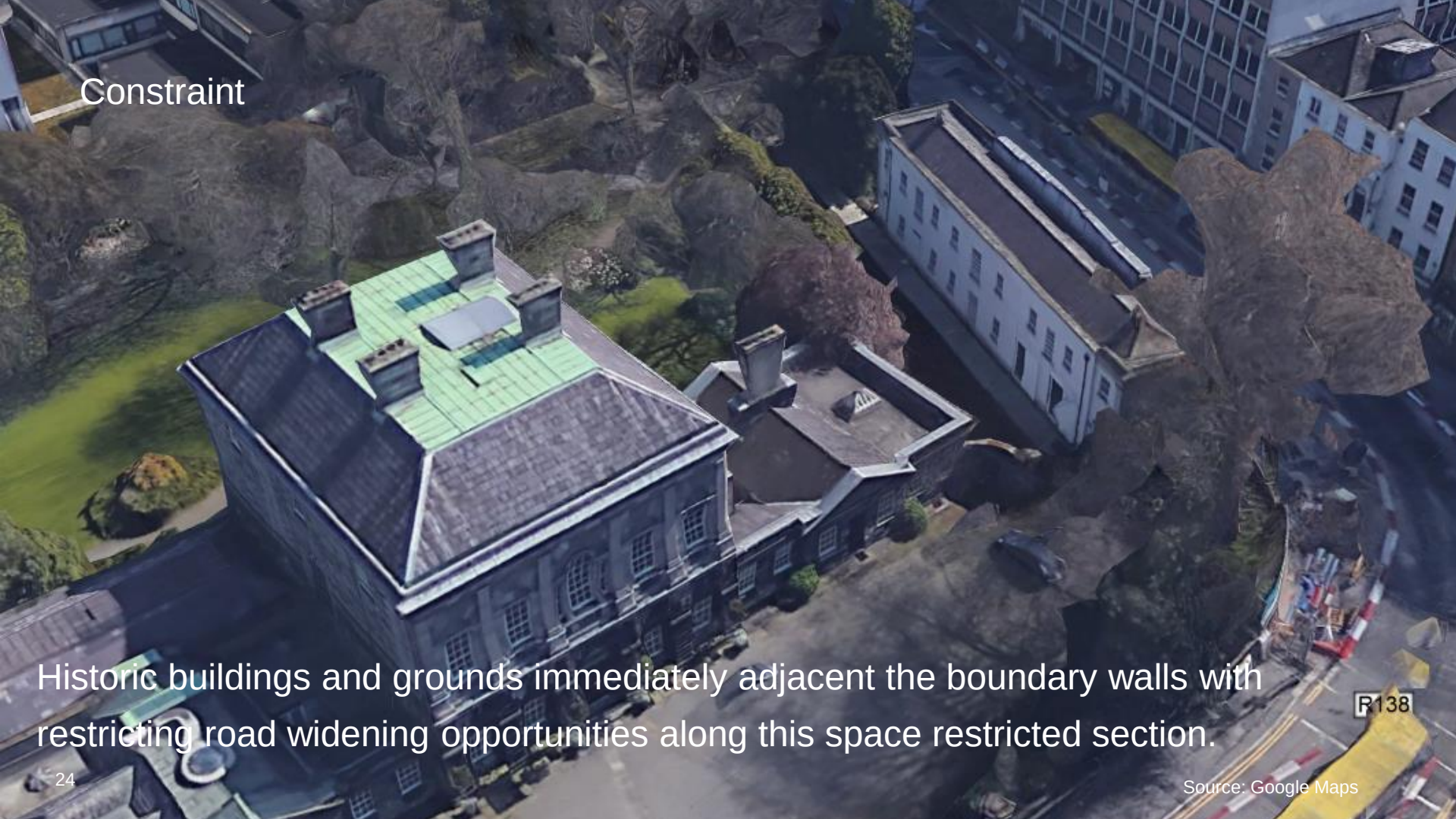
Constraint



Narrow access road to service yard. Note moving ramp that is used for deliveries to the adjacent building from Nassau Street (this access may have other uses as well, consultation with TCD would be required to understand its use). No scope to narrow this lane without impacting on the service yard access.

Constraint

The service yard is actively used for refuse collection and various major utilities serving the TCD Campus. Little or no scope to reconfigure as it is already a constrained area for vehicle movements.



Constraint

Historic buildings and grounds immediately adjacent the boundary walls with restricting road widening opportunities along this space restricted section.

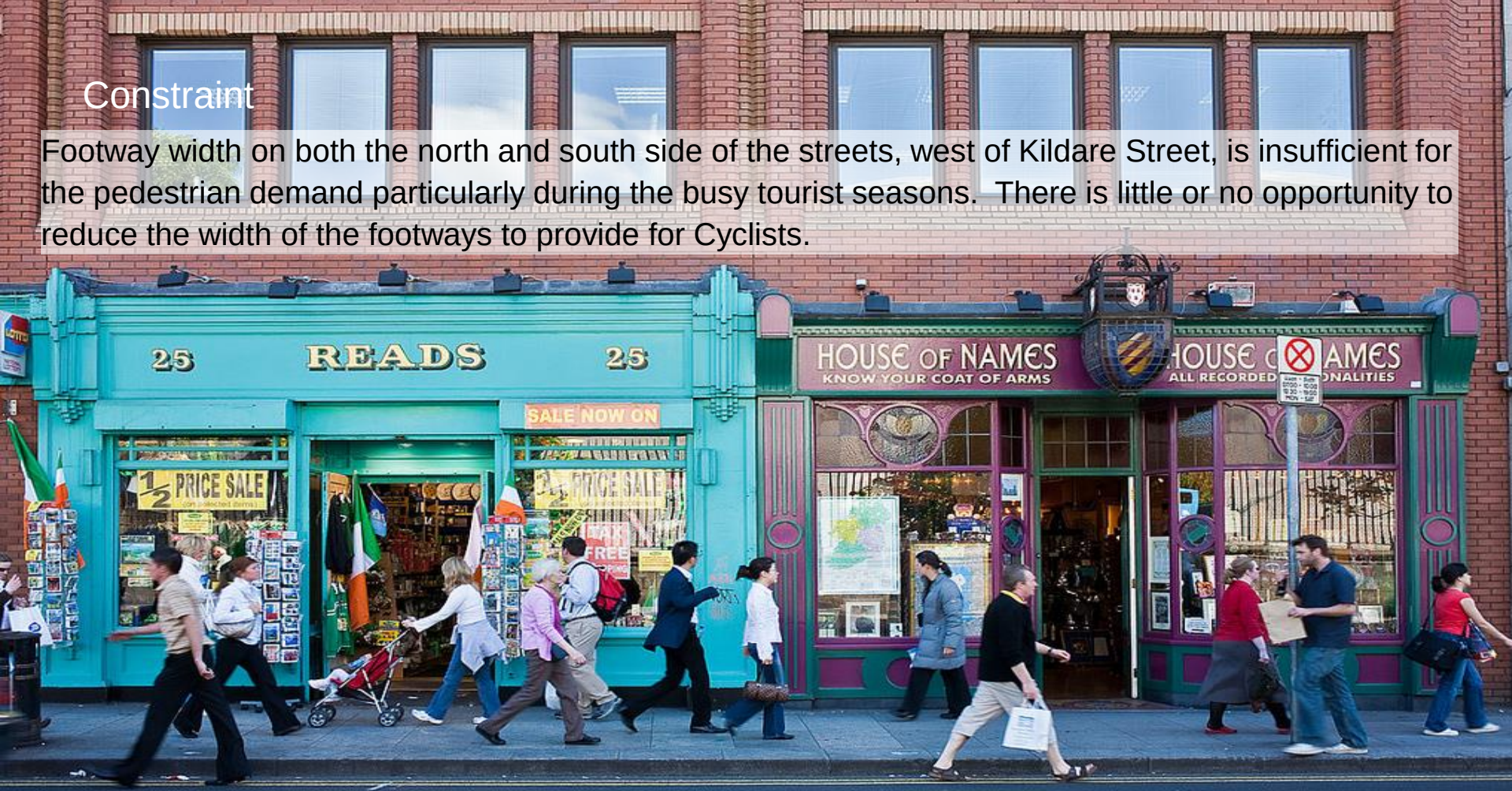
Source: Google Maps

Constraint

The tracks and the Dynamic Kinetic Envelope (DKE) is a significant limitation to the provision of dedicated cycle facilities between Dawson Street and Grafton Street.

Constraint

Footway width on both the north and south side of the streets, west of Kildare Street, is insufficient for the pedestrian demand particularly during the busy tourist seasons. There is little or no opportunity to reduce the width of the footways to provide for Cyclists.



Constraint

The bus stops between Dawson Street and Kildare Street along the north side of the road are some of the busiest in the City with significant numbers boarding/alighting and waiting for buses. There is no scope to narrow this area. It is noted that the footway was widened previously to accommodate the passengers and pedestrians as hazardous conditions had arisen with conflicts between pedestrians and buses entering and leaving the stops.

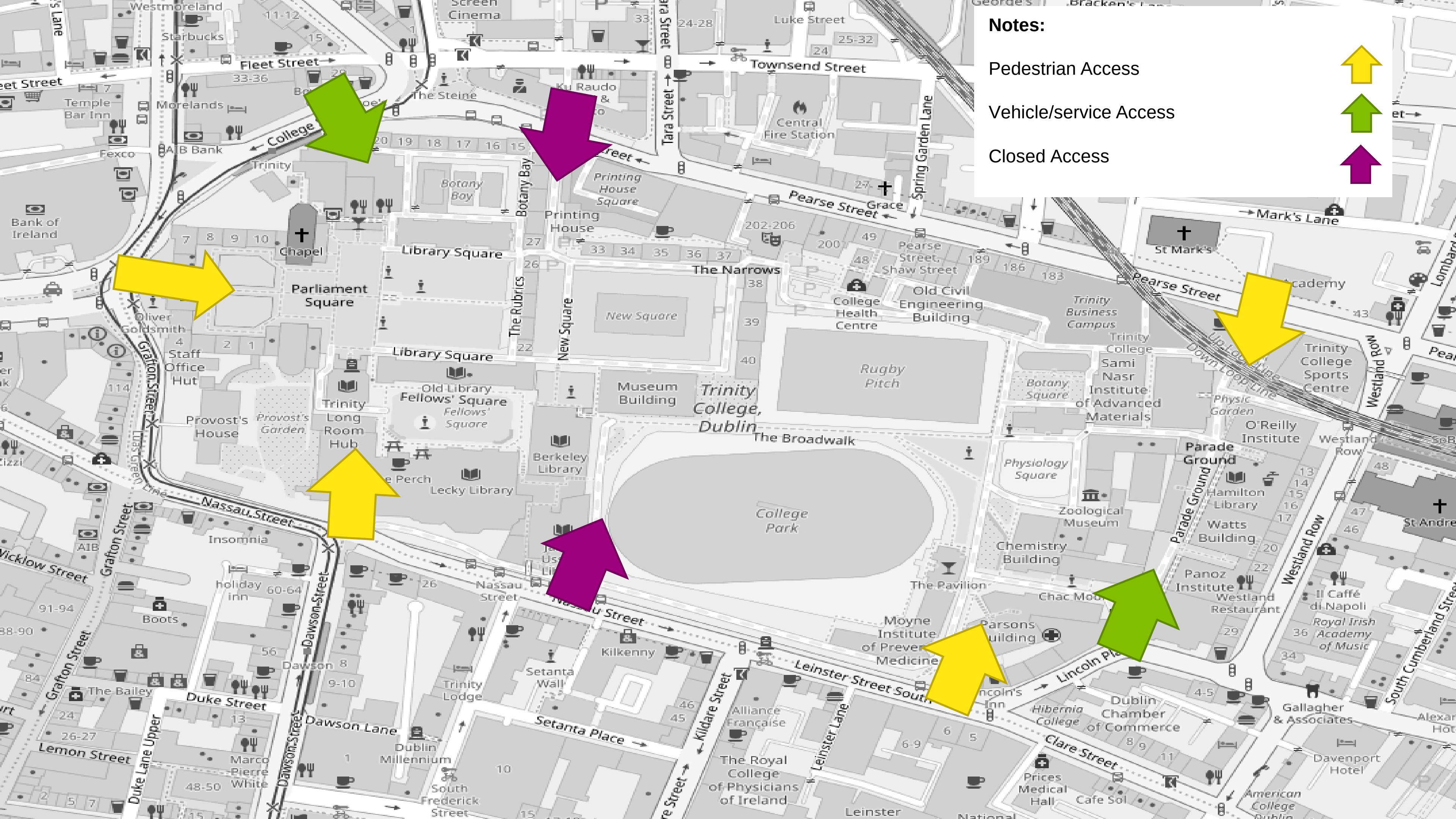
Constraint

The removal or relocation of the walls and railings of TCD would be a significant challenge, due to their historic significance. In addition Nassau Street is approximately 2.0m above the ground level within TCD, thus this wall is also a retaining wall.

Constraint

Immediately in behind the TCD wall at Kildare Street a number of significant utility connections are provided, including Gas and Electricity. While these could be relocated this will be at a significant expense.

Alternative Cycle Access to TCD from Nassau Street

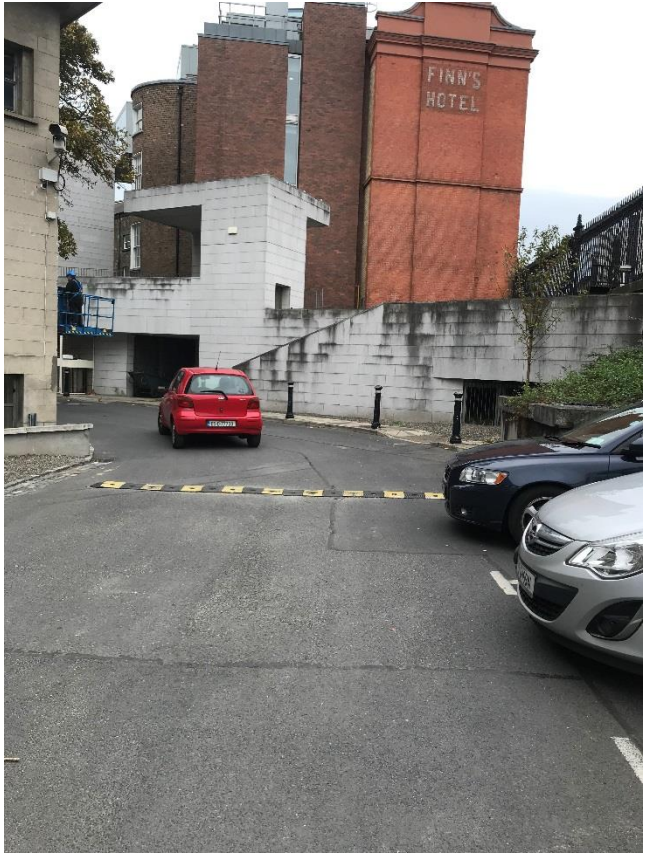

Notes:
Pedestrian Access
Vehicle/service Access
Closed Access
Trinity College, Dublin
Parliament Square
Library Square
New Square
Fellows' Square
Old Library
Trinity Long Room Hub
Berkeley Library
Lecky Library
Museum Building
Printing House
Printing House Square
Botany Bay
Rugby Pitch
College Park
The Pavilion
Chemistry Building
Zoological Museum
Physiology Square
Botany Square
Parade Ground
Hamilton Library
Watts Building
Panoz Institute
Parsons Building
Moyne Institute of Preventive Medicine
O'Reilly Institute
Physic Garden
Trinity College Sports Centre
Trinity Business Campus
Old Civil Engineering Building
College Health Centre
Trinity College Sami Nasr Institute of Advanced Materials
Chapel
Provost's House
Provost's Garden
Staff Office Hut
The Broadwalk
The Narrows
The Rubrics
Pearse Street
Nassau Street
Leinster Street South
Lincoln Place
Westland Row
College Street
Grafton Street
Dawson Street
Townsend Street
Tara Street
Fleet Street
Central Fire Station
Bank of Ireland
St Mark's
Clare Street
Kildare Street

Pedestrian Entrance at the Clare Street end. Steps and a lift are available inside this gate, however some small modifications would be required to facilitate high quality cycle access.

There is a closed pedestrian access to the west of Kildare Street, adjacent to the busy bus stops. This has an old set of steps inside it which is awkwardly shaped for cycle users and would require extensive modifications to facilitate safe usage. In addition as it is a public gate to TCD it would also have to consider “Accessibility for All” if it were to be opened.

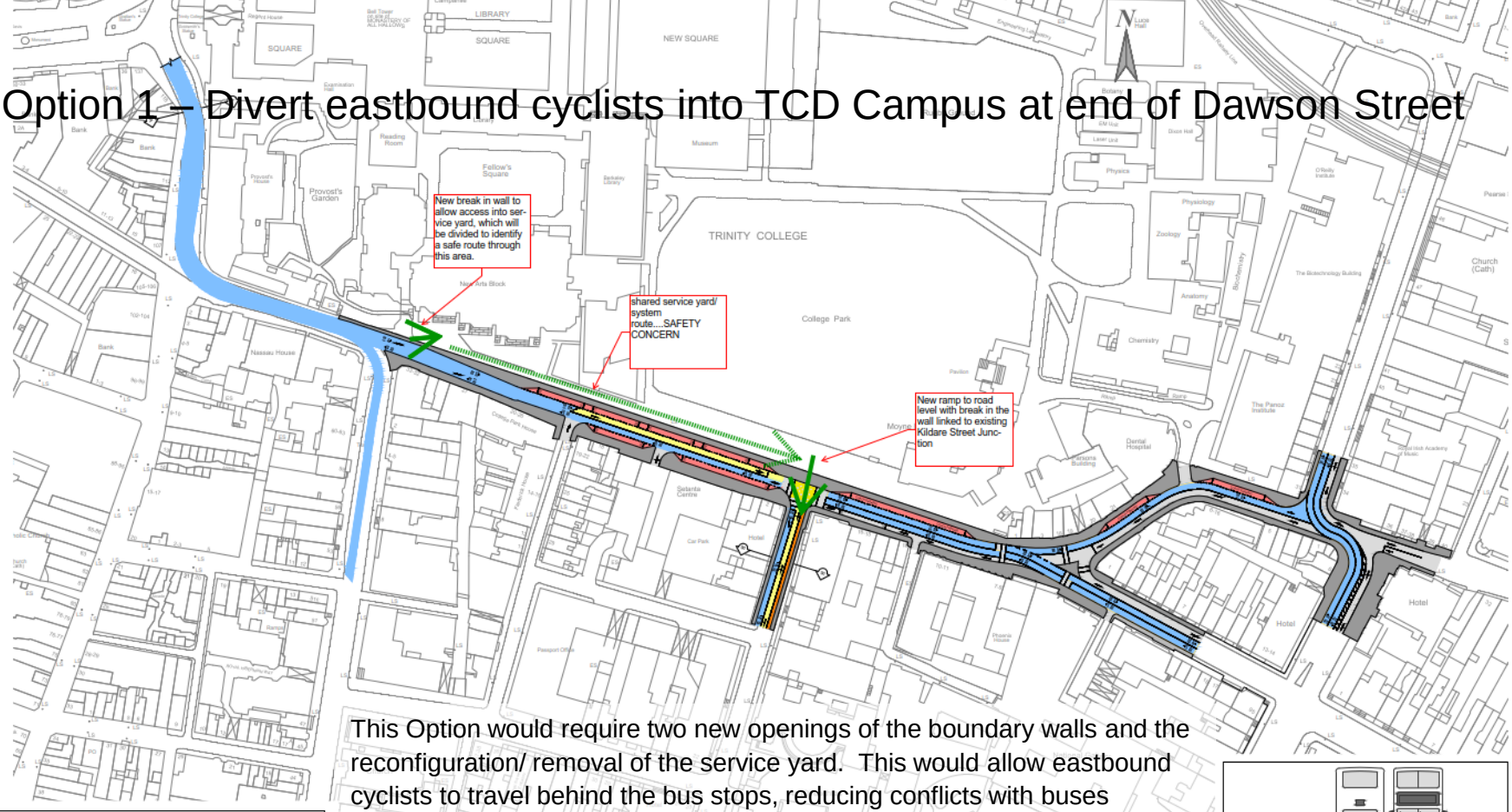
Alternative Cycle Access to TCD from Nassau Street

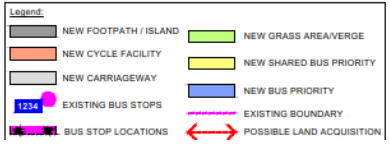
The optimum location for a new cycle access to TCD is via the existing steps at the Clare Street end. The addition of a Wheeling Channel will be sufficient to make it safe for use for cyclists entering and leaving the Campus.



High Level Design Options

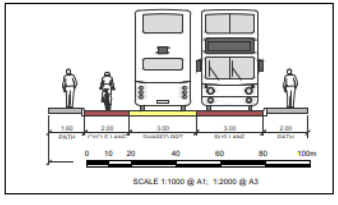
Option 1 – Divert eastbound cyclists into TCD Campus at end of Dawson Street



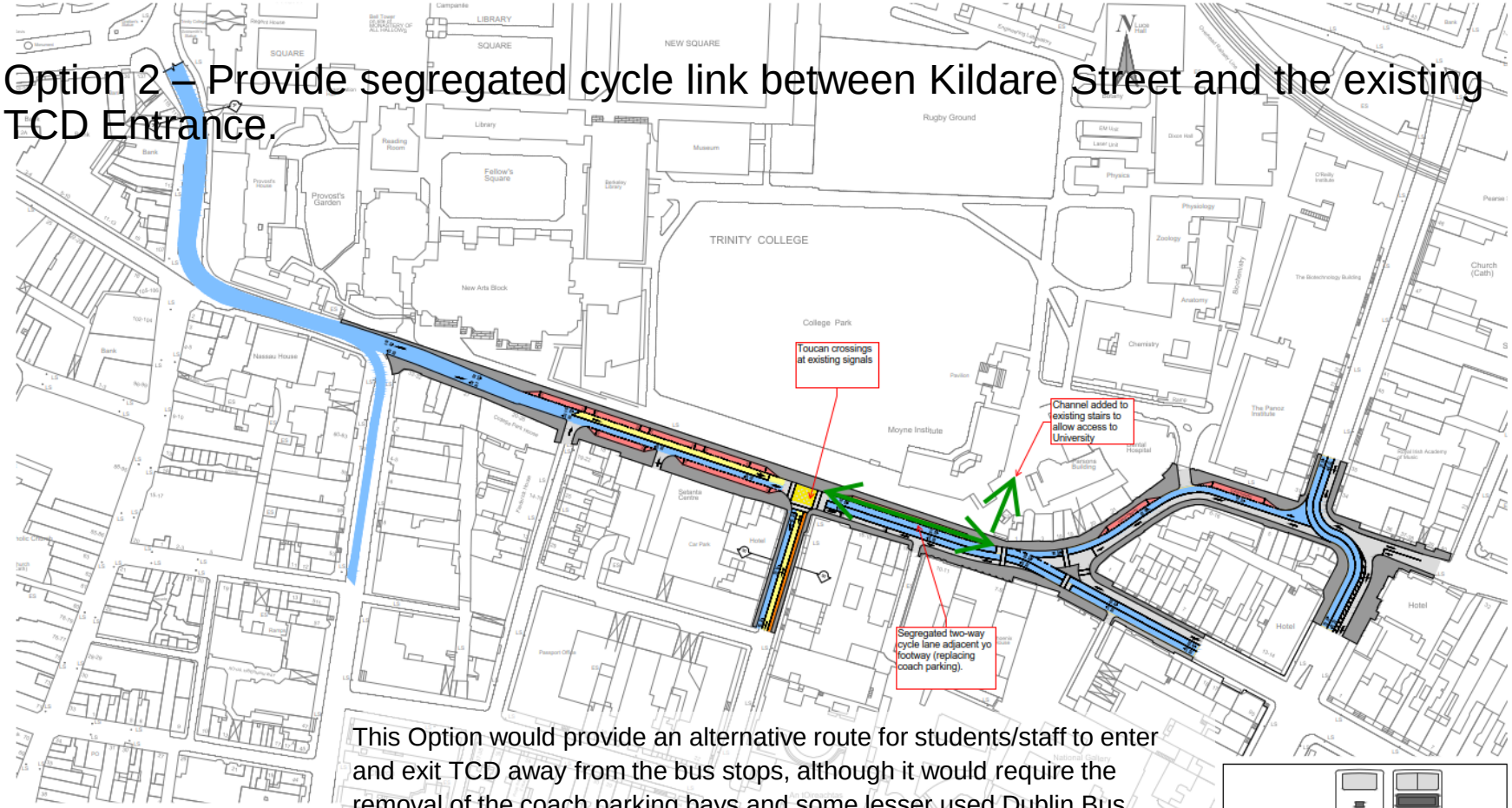


This Option would require two new openings of the boundary walls and the reconfiguration/ removal of the service yard. This would allow eastbound cyclists to travel behind the bus stops, reducing conflicts with buses substantially, however at a relatively high costs for just 100m diversion.

An option with a boardwalk inside the wall was also assessed but ruled out to the negative impacts on the service yard.



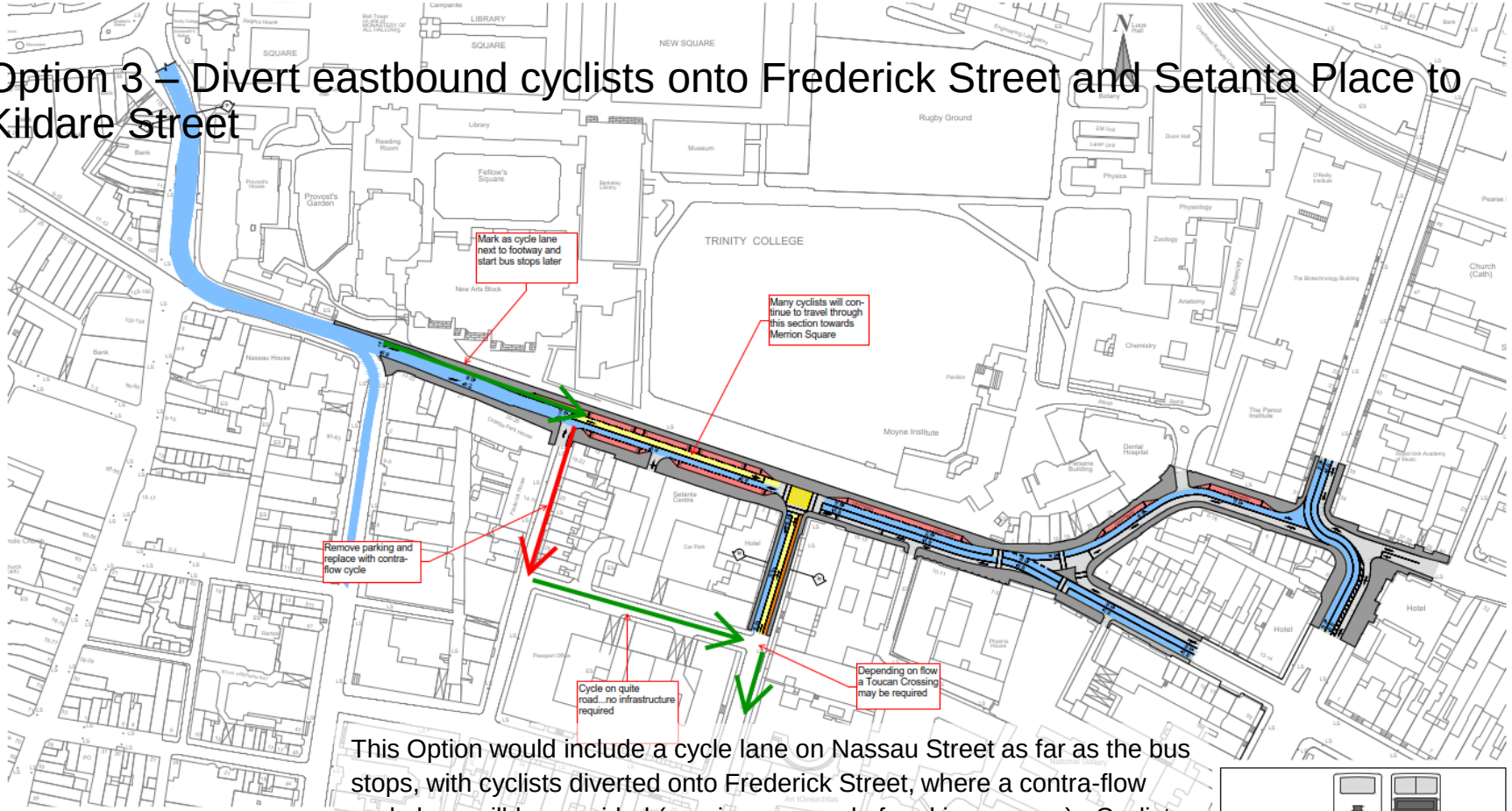
Option 2 – Provide segregated cycle link between Kildare Street and the existing TCD Entrance.

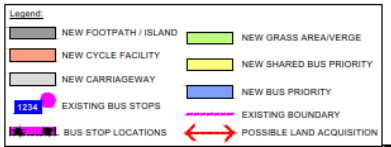


This Option would provide an alternative route for students/staff to enter and exit TCD away from the bus stops, although it would require the removal of the coach parking bays and some lesser used Dublin Bus stops.

Relatively low cost option, with few negative impacts.

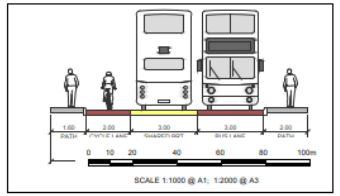
Option 3 – Divert eastbound cyclists onto Frederick Street and Setanta Place to Kildare Street





This Option would include a cycle lane on Nassau Street as far as the bus stops, with cyclists diverted onto Frederick Street, where a contra-flow cycle lane will be provided (requires removal of parking spaces). Cyclists would share with general traffic Setanta Place, which is very lightly trafficked.

Relatively low cost option, with few negative impacts.



Conclusion & Recommendation

Conclusion and Recommendation

The Nassau and Clare Street corridor is a constrained location with limited options to provide optimum facilities for all modes. Radical changes to the roads layout will have limited impact on cycle movements/ safety, but will have very high costs and wider negative impacts.

Based on this high level study it would appear that there are no options available to provide a high quality cycle link from Dawson Street to Dame Street due to the restricted space availability. However it appears that there are a couple of options to improve access into the TCD Campus from Kildare Street and also to reduce the conflict for eastbound cyclists on Nassau Street.

For this reason it is recommended that feasibility stage design is developed for the following 2 options:

- Option 2 – Provide segregated cycle link between Kildare Street and the existing TCD Entrance; and
- Option 3 – Divert eastbound cyclists onto Frederick Street and Setanta Place to Kildare Street.

It is noted that the final layout will most likely include both of these options as they have different outcomes, with Option 2 providing access to TCD, while Option 3 reduces conflict with the busy bus stops.

AECOM

AECOM

Imagine it.
Delivered.