

## **5.5 Material Assets - Transportation**

### **5.5.1 Introduction**

This Chapter presents the traffic and transportation assessment for the Demolition, Construction and Operational phases of the proposed new City Library and Public Realm Works.

Full details in relation to the proposed new City Library and the proposed Public Realm Works on Parnell Square North can be found in Chapter 3: Description of Proposed Development, of this EIAR.

### **5.5.2 Methodology**

This Chapter of the Environmental Impact Assessment Report (EIAR) was prepared by Waterman Moylan using the following methodology:-

1. Desktop review of the planning stage documentation provided by the project design team.
2. Visits to Parnell Square including check surveys of traffic volumes particularly bus services, survey of existing transportation facilities and observation of traffic movements.
3. Review of public transport routes and timetables.
4. Review of proposals for transportation improvements by Transport Infrastructure Ireland, National Transport Authority and Dublin City Council Roads and Traffic Section.
5. Review of future trips to and from the proposed development.
6. Review of public transport capacity, existing and proposed.
7. Assessment of the transportation impacts of the proposed development.

The assessment has been carried out generally in accordance with Traffic and Transport Assessment Guidelines, Transport Infrastructure Ireland, May 2014.



**Figure 5.5.1:** Parnell Square North, looking west at location for new public realm



**Figure 5.5.2:** Parnell Square North, looking east with Scoil Mhuire on Left

## **5.5.3 Receiving Environment (Baseline Situation)**

### **5.5.3.1 Location and Description**

#### **5.5.3.1.1 Inner Orbital Route**

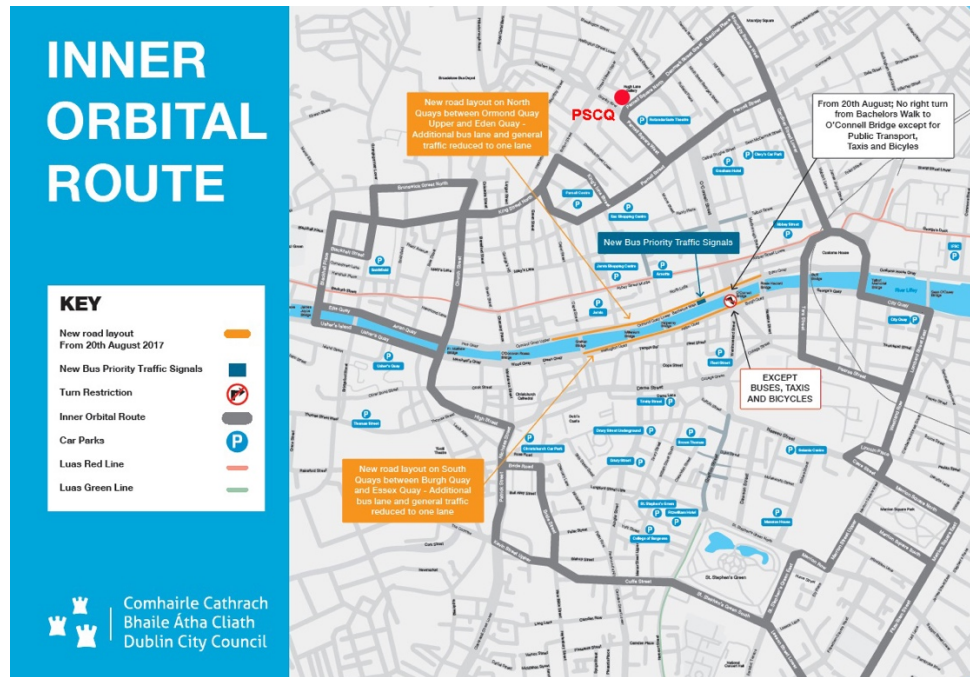
The proposed development is located at the north side of Parnell Square in Dublin 1. This is positioned at the northern end of O'Connell Street on the Inner Orbital Route.

The purpose of the Inner Orbital Route which roughly encircles the core of Dublin city centre, is to provide a way from one side of the city centre to another which avoids the busiest traffic in the core of the city. It is also an access route to the car parks in the City Centre.

The north-central section of the Inner Orbital Route as shown in Figure 5.5.3 includes Parnell Street, Parnell Square West and Parnell Square North.

Three of the junctions on the Inner Orbital Route are located in Parnell Square. These three junctions are:

- Junction 34: Parnell Square West / Parnell Street.
- Junction 35: Parnell Square West / Granby Row / Parnell Square North.
- Junction 36: Parnell Square North / North Frederick Street / Gardiner Row / Parnell Square East.



**Figure 5.5.3:** Map of Inner Orbital Route (Subject site marked in red)



**Figure 5.5.4:** Traffic Sign at Junction 35 on Inner Orbital Route



**Figure 5.5.5:** Traffic Sign at Junction 36 on Inner Orbital Route

### 5.5.3.1.2 Parnell Square

Parnell Square is located in the city centre within the 30 km/h speed limit zone.

Traffic circulates around Parnell Square in a clockwise direction with signalised traffic controls located at three of the four corners, the exception being the junction of Parnell Square West with Parnell Square North which is a free flowing diverge with a large inner radius.

A bus lane for southbound traffic is provided on Parnell Square East. Southbound access to Parnell Square East is restricted to public service vehicles, motorcycles and cycles at the following junctions:-

- Dorset Street to North Frederick Street.
- Parnell Square East to O'Connell Street Upper.

There are no cycle lanes on Parnell Square.

The Luas Green Line is located on Parnell Street to the south.



**Figure 5.5.6: Existing Street Layout of Parnell Square**

### 5.5.3.2 Existing Transportation Facilities

The existing transportation facilities located around Parnell Square include:-

- Luas Green Line on Parnell Street. The nearest stops to the PSCQ are at Parnell Street (400 metres) and O'Connell Street Upper (400 metres)
- Bus stops with a total length of 323 metres located on Parnell Square West (175 metres) and Parnell Square East (148 metres).
- 18 metre long bus stop on Parnell Square North.
- Ambulance bay for the Rotunda Hospital on Parnell Square West.
- Access to the car parks in the grounds of the Rotunda Hospital from Parnell Square South and Parnell Square West.
- 79 number standard Pay and Display car parking spaces located on Parnell Square West (16 spaces), Parnell Square North (29 + 16 spaces) and Parnell Square East (18 spaces).
- 2 number electric car parking spaces on Parnell Square West.
- 12 number disabled car parking spaces located on Parnell Square West (7 number), Parnell Square North (3 number) and Parnell Square East (2 number).
- 1 number DublinBike Station (Station number 30) with 20 bicycle stands on Parnell Square North.
- 29 number cycle parking stands located on Parnell Square West (4 + 4), Parnell Square North (4 + 4) and Parnell Square East (13).
- There are no loading bays for deliveries on Parnell Square.
- There are no parking facilities for motorcycles on Parnell Square.

### 5.5.3.3 Existing Public Transport

The existing public transport in the area of Parnell Square comprises LUAS Green Line and a series of bus services including scheduled stage services, tourist sightseeing services, interurban coach services and touring coach services.

#### 5.5.3.3.1 Luas

Luas Green Line stops are located in Dominick Street to the west, Parnell Street to the east (southbound only) and O'Connell Street Upper to the south (northbound only).

Green Line services are provided between Cherrywood and Broombridge through the City Centre at a 3 – 7 minute frequency during peak periods and a 7 – 21 minute frequency during off-peak periods.

### 5.5.3.3.2 Bus

Parnell Square is a hub for scheduled bus services serving the Greater Dublin area. Details of the operators, services and frequency of services are presented in Table 5.5.1, Figure 5.5.2 and Figure 5.5.3.

In the future, these services are expected to be replaced by Bus Connects and Swiftway Bus Rapid Transit (Parnell Square East).

The locations of the existing Dublin Bus stops in the Parnell Square area are shown on Figure 5.5.7.

Bus stop signs at the existing stop at 20 - 21 Parnell Square North are shown on Figure 5.5.8.



Figure 5.5.7: Dublin Bus Stops at Parnell Square



**Table 5.5.1:** Scheduled Bus Services – Parnell Square West

<b>Operator</b>	<b>Number of Services</b>	<b>Number of Buses per hour</b>
Dublin Bus	22	57
Bus Eireann	5	12
Aircoach	1	4
McConnors (Monaghan)	1	0.5
John McGinley	1	0.5
Do Dublin (Green)	2	8
CityScape (Yellow)	1	6
City Sightseeing (Red)	2	7
<b>Total</b>	<b>35</b>	<b>95</b>

**Table 5.5.2:** Scheduled Bus Services – Parnell Square North

<b>Operator</b>	<b>Number of Services</b>	<b>Number of Buses per hour</b>
Dublin Bus	6	12
McConnors (Monaghan)	1	0.5
John McGinley (Donegal)	1	0.5
Do Dublin (Green)	2	8
CityScape (Yellow)	1	4
City Sightseeing (Red)	2	7
<b>Total</b>	<b>13</b>	<b>32</b>



**Figure 5.5.8:** Bus Stop Signs at Parnell Square North

**Table 5.5.3:** Scheduled Bus Services – Parnell Square East

Operator	Number of Services	Number of Buses per hour
Dublin Bus	20	55
Bus Eireann	5	12
Aircoach	1	4
McConnors (Monaghan)	1	0.5
John McGinley (Donegal)	1	0.5
Do Dublin (Green)	2	8
CityScape (Yellow)	1	4
City Sightseeing (Red)	2	7
<b>Total</b>	<b>33</b>	<b>91</b>

### 5.5.3.4 Existing Off-Peak Traffic

The existing off-peak hourly traffic movements around Parnell Square are illustrated on Figure 5.5.1 and presented in Table 5.5.4.

**Table 5.5.4:** Summary of Hourly Off-peak Traffic Movements

Location	Bus Coach	Car Taxi Van	Heavy Goods Vehicles Truck	Total
Parnell Square West	96	377	8	481
Parnell Square North	32	260	6	298
Parnell Square East	91	308	6	405

It will be noted that buses provide a very significant proportion of the traffic movements (18%) while Heavy Goods Vehicles and truck movements are insignificant due to the location of Parnell Square and the city centre ban on Heavy Goods Vehicle from 7 o'clock in the morning until 7 o'clock in the evening.

### 5.5.3.5 Car Parking

Car parking on Parnell Square is short term Pay & Display based on a charge of €2.90 per hour during the period 7 o'clock in the morning until 7 o'clock in the evening, Monday to Saturday and 2 o'clock in the afternoon until 7 o'clock on Sundays.

The total parking capacity is 93 spaces including electric car and disabled.

There is a high level of parking occupancy from 7 o'clock in the morning until 7 o'clock in the evening and during the evening.

Off-street car parking at Parnell Square is located within the grounds of the Rotunda Hospital.

### 5.5.3.6 Motorcycle Parking

There are no parking facilities for motorcycles are provided in Parnell Square.

### 5.5.3.7 Bicycle Parking

Bicycle parking is provided at the following locations:-

- Parnell Square North : 8 stands
- Parnell Square West (northeast) : 8 stands
- Parnell Square East (southwest) : 13 stands

However, there are no cycle lanes on Parnell Square.

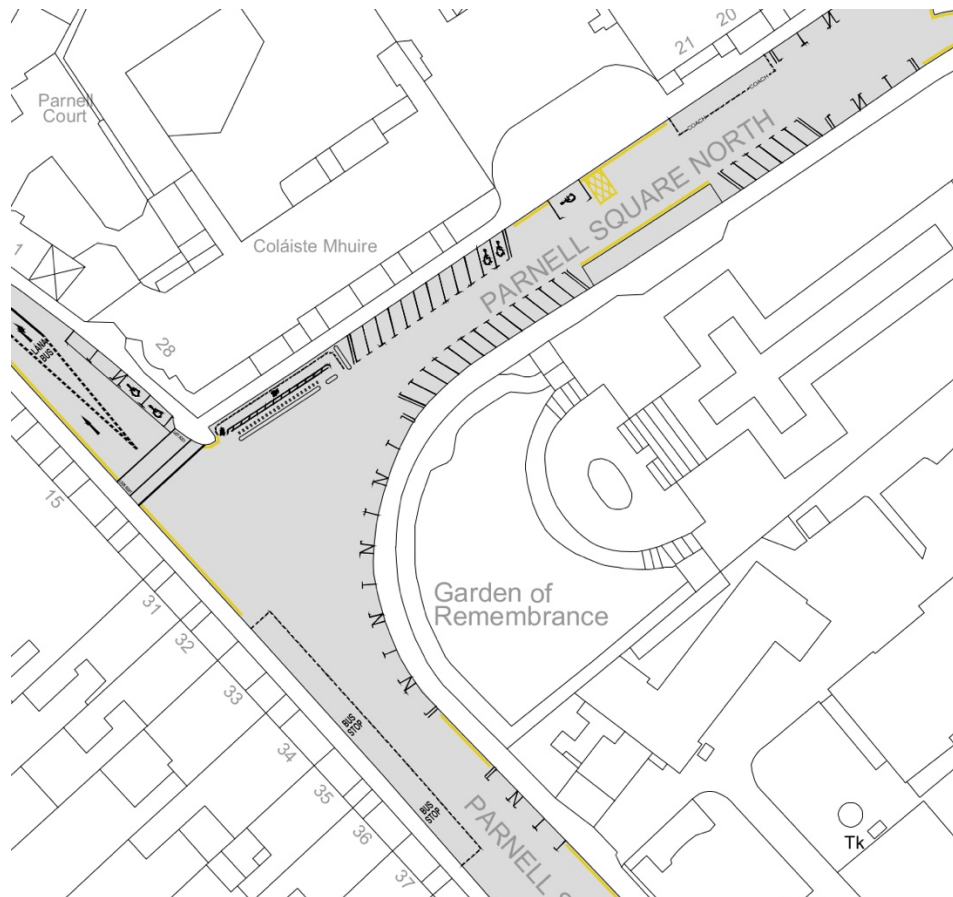
### 5.5.3.8 Traffic Conditions

Operating conditions for traffic around Parnell Square are generally good.

There are, however, no traffic lane markings on Parnell Square West or on Parnell Square North.

The large radius on the sweep of the road as it rounds from Parnell Square West to Parnell Square North facilitates higher traffic speeds at this location.

The absence of pedestrian crossing facilities between the Garden of Remembrance and the location of the PSCQ coupled with the presence of kerbside car parking and lack of forward visibility can lead to safety issues for pedestrians and cyclists in this area. See Figure 5.5.9.



**Figure 5.5.9:** Corner of Parnell Square East and Parnell Square North

### 5.5.3.9 Pedestrian Facilities

Pedestrian footpaths are provided on all three sides of Parnell Square. However, these are generally narrow in width and of variable condition.

The footpaths on the west and east sides are congested on a regular basis due to the number of passengers, waiting, boarding and alighting at the bus stops.

Signalised pedestrian crossings with drop kerbs and tactile paving are provided at all four corners except for pedestrians wishing to cross from the area of the former Colaiste Mhuire at 23 – 28 Parnell Square North to the Garden of Remembrance at a location where traffic speeds at this large radius corner are generally well in excess of the posted speed limit of 30 km/h. See Figure 5.5.9.

### 5.5.3.10 Deliveries to Adjoining Premises

The Traffic and Transport Assessment for the proposed development recorded a low level of four deliveries per day to the adjoining premises including the Hugh Lane Gallery. Figure 5.5.10 illustrates a typical service deliver along Parnell Square North.



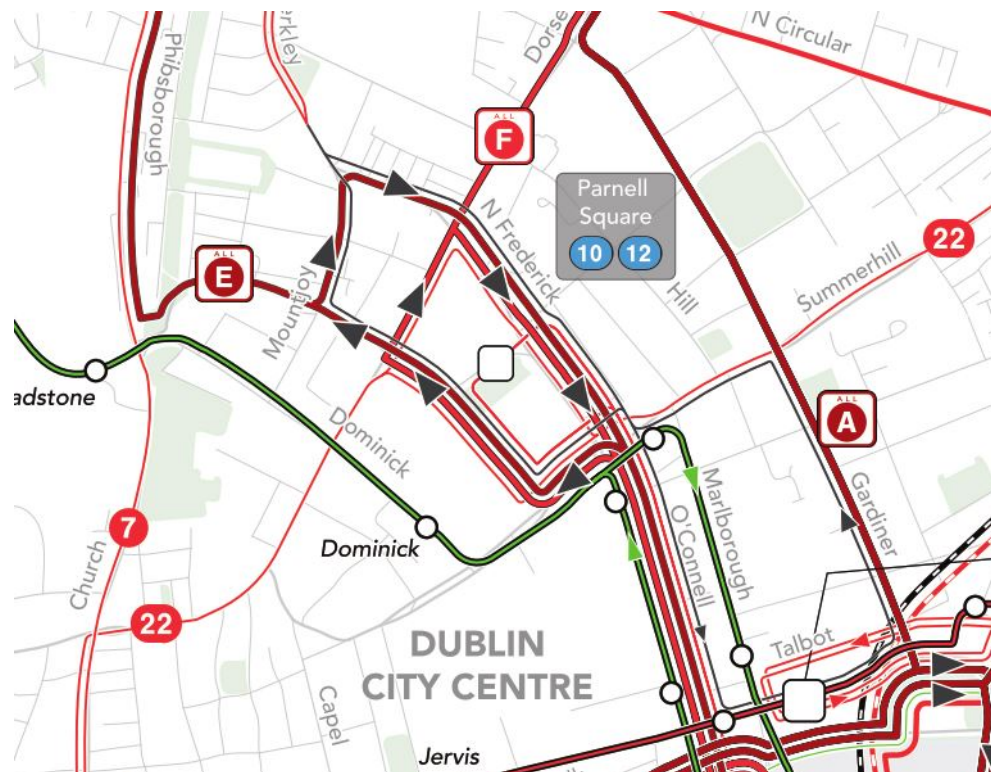
**Figure 5.5.10:** Food Delivery from the opposite side of Parnell Square North

### 5.5.3.11 Proposed Transportation Improvements

Proposals for future transportation improvements in the area of Parnell Square are illustrated under Figure 5.5.11 and Figure 5.5.12, they include:

- New Metro Link from Estuary to Cherrywood with an underground stop on O’Connell Street North.
- Dublin City Council Strategic Green Route along Parnell Square East as an extended part of the Civic Spine.
- GDA Cycle Network Route No 3 along Parnell Square East.
- Dublin City Council Strategic Pedestrian Route on Parnell Square.

More recently, plans for a complete redesign of the Dublin Bus network were published by the NTA for public consultation in July 2018. On the basis of the information available for the Bus Connects project at the time of writing in July 2018, it would appear that at least two of the seven cross-city super frequent spine services routes (Routes E and F) together with three of the secondary radials (Routes 10, 12 and 22) will pass through Parnell Square – see Figure 5.5.11 and Figure 5.5.12.



**Figure 5.5.11:** Redesign of Dublin Bus Network

In addition, Parnell Square North is shown as the terminus for Routes 10 and 12.

During the preparation of the EIAR, no final routings or timetable(s) were available for the completion of the proposed improvements to the transportation environment in the area of Parnell Square.



**Figure 5.5.12:** Proposed Swiftway BRT at Parnell Square East - Route



## **5.5.4 Characteristics of the Proposed Development**

### **5.5.4.1 Proposed Development – New City Library**

The proposed development comprises the redevelopment of 20 – 21 Parnell Square and the former Colaiste Mhuire premises at 23 – 28 Parnell Square North into the New Dublin City Library including Public Realm Works.

The facilities of the new Library will extend to some 11,198 sqm and provide facilities for:

- Lending and Reference Library
- Storey House Literature Centre.
- Conference and Exhibition facilities.
- Learning Suite.
- Music and Innovation Hubs.

The new buildings will have a staff of 70 persons and cater for up to 3,000 visitors per day.

Access for visitors will be a street level.

Secure cycle parking with 4 stands for 8 cycles will be provided for staff within the PSCQ and 100 spaces for visitors in three locations on Parnell Square North.

Facilities for service deliveries and waste collection will be provided at the rear of the PSCQ.

No provision for off-street car parking is being provided at the PSCQ. The project includes improvements to the public realm on Parnell Square North between Parnell Square West and Parnell Square East to facilitate the development of an enhanced public realm.

Alterations to the public realm are described in Section 5.5.4.2 below.

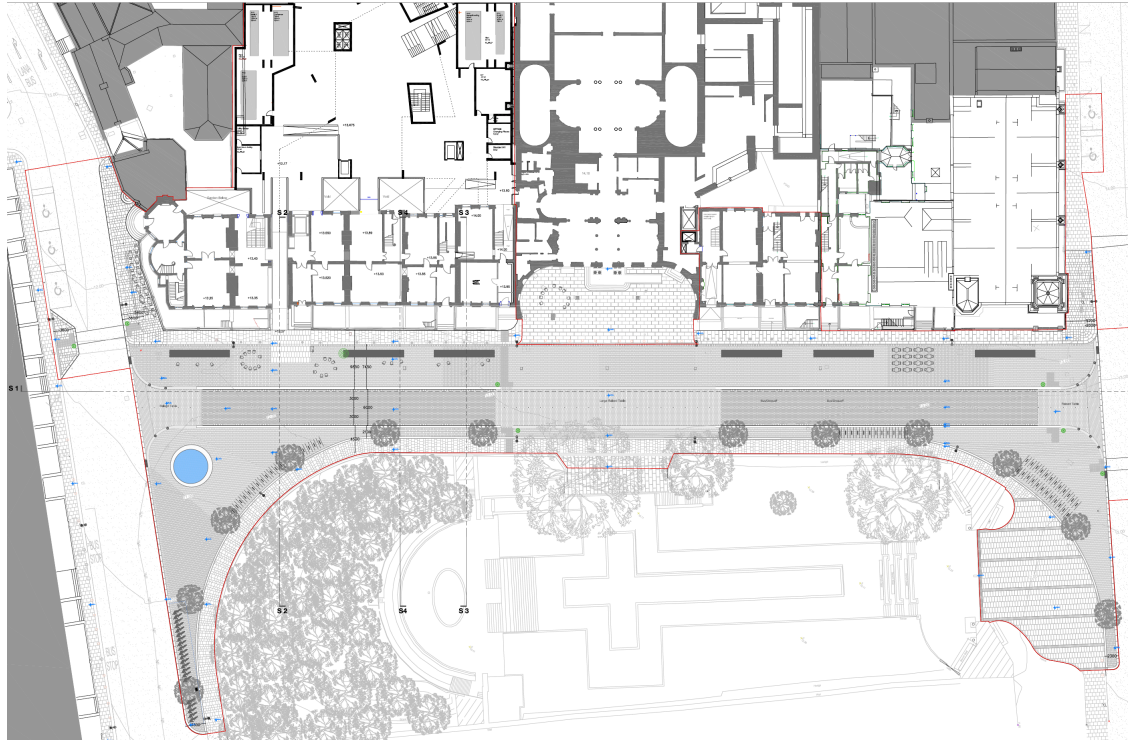
### **5.5.4.2 Proposed Development – Public Realm**

The subject development includes the reordering of Parnell Square North between Parnell Square West and Parnell Square East. See Figure 5.5.13. The redevelopment will comprise:-

- Removal of all of the existing car parking (47 spaces) from Parnell Square North.

- Relocation the disabled car parking (3 spaces) from Parnell Square North to Granby Row.
- Upgrading of existing controlled pedestrian crossing at Granby Row including a buildout to the west footpath.
- Provision of a new controlled pedestrian crossing across Parnell Square North
- Provision of a new controlled pedestrian crossing between Parnell Square North and Parnell Square East including a buildout to the east footpath.
- Reordering of the road carriageway on Parnell Square North to two lanes each 3.0 metres wide between Parnell Square West and Parnell Square East.
- Reconfiguration of the junctions at Parnell Square West and Parnell Square East.
- Creation of a Public Realm Area on Parnell Square North with enhanced pedestrian facilities including widened footpaths and pedestrian crossings.
- Provision of a combined bus stop, set down and loading bay in the northern traffic lane in the area of the existing bus stop.
- Relocation of 1 DublinBike Station 30 from Parnell Square North to Parnell Square West.
- Provision of a new surface water drainage system.
- Bicycle parking for 100 bicycles at three locations on Parnell Square North.

No provision is included in the proposed development for cycle lanes, loading facilities, set down facilities or widening of existing narrow footpaths on Parnell Square West or on Parnell Square East.



**Figure 5.5.13:** Proposed Street Layout – Parnell Square North

#### 5.5.4.3 Deliveries to the Proposed Development

Deliveries to the PSCQ will comprise daily book deliveries and regular service deliveries. There will also be infrequent deliveries of larger items such as exhibitions, displays and music related items.

These deliveries from rigid trucks and light vans will be accommodated by a loading area to the rear of the PSCQ with a one way arrival from North Frederick Street via North Frederick Lane and one way exit via Bethesda Place to Dorset Street Upper.

Waste collection will also take place using the same facilities and access.

Deliveries for the café / restaurant area at the front of Nos 23 – 28 Parnell Square North will take place along Parnell Square North.

#### 5.5.4.4 Trip Generation – Demolition and Construction Phase

Traffic predictions for the demolition and construction phase are presented in Table 5.5.5 which is a reproduction of Table 2.1 from the 'Construction Traffic Management Plan' for the Proposed Development.

The peak number of movements of 40 inbound and 40 outbound trips per day is expected during the excavation stage of the development

**Table 5.5.5:** Predicted Construction Heavy Goods Vehicle Trip Generation

Activity	Duration	Expected Loads off site / day	Comments Total
Demolition	3 months	3-4 per day over 12 weeks	Average - Some days will peak at 8 – 10 loads per day
Excavation	6 weeks	20 – 30 per day	Peak of 40/day for 1 week approx.
Concrete Frame Works	12 months	3-4 per day over (30 for slab pours)	Average (peak on slab pours)
General Building Materials*	12 months	4-5 deliveries per day (average)	Early morning, delivery where possible. Off road unloading to be established.
General Waste	24 months	2-3 skips per week (including recycling)	Early morning, drop off and pick up. No standing on site.
*General building materials would include façade / roofing / secondary steel / fit out / landscaping materials etc. and will be spread across the project duration following the concrete frame works.			

#### 5.5.4.5 Trip Generation – Operational Stage

The projected modal splits for staff and visitors is presented in Table 5.5.6.

Based on a staff of 70 persons and anticipated visitors of 3,000 persons per day, the 6,140 trips that will be generated by the PSCQ are also presented in Table 5.5.7.

The proportions of these trips that will take place during the AM Peak and PM Peak are presented.

**Table 5.5.6:** Daily Trips – Arrivals and Departures

Mode of Travel	Staff persons			Visitors persons per day		
	Modal Split	Arrive	Depart	Modal Split	Arrive	Depart
On Foot	22%	15	15	51%	1,530	1,530
Bus	34%	24	24	31%	930	930
Bicycle	12%	8	8	6%	180	180
Train	10%	7	7	5%	150	150
Luas	7%	5	5	4%	120	120
Car	15%	11	11	3%	90	90
Total	100%	70	70	100%	3,000	3,000

**Table 5.5.7:** Total Trips During Peak Period (Tables 4.2 and 4.3 from TTA)

Mode of travel	Weekday AM		Weekday PM	
	Arrivals	Departures	Arrivals	Departures
On Foot	45	15	98	143
Bus	44	9	59	103
Bicycle	12	2	11	23
Train	10	1	10	20
Luas	9	1	8	16
Car	9	1	6	15
Total	129	29	192	320

## **5.5.5 Potential Impacts of the Proposed Development**

### **5.5.5.1 Demolition and Construction Phase**

The potential demolition construction phase impacts arising from the proposed redevelopment of 20 – 21 Parnell Square North and the former Colaiste Mhuire premises at 23 – 28 Parnell Square North are set out below.

1. Non-compliance with the Construction Traffic Management Plan and / or the Construction Management & Waste Management Plan including adherence to the Heavy Goods Vehicle routes designated by Dublin City Council for the City Centre and illustrated on Figure 5.5.14 could lead to traffic delays / congestion and endanger vehicle, cycle and pedestrian safety.
2. Reducing the width of the road carriageway on Parnell Square North to facilitate the site compound could lead to vehicular delays and congestion particularly at the bus stop and set-down area in front of 20 – 21 Parnell Square North. Any impact is likely to be a slight negative and short term.
3. The use of improperly designed access and egress points to the site for the development could endanger vehicle, cycle and pedestrian safety.
4. Heavy Goods Vehicles waiting on public roads outside the site could lead to traffic delays and congestion.
5. No check(s) on each departing vehicle at the exit from site onto the public road could lead to the deposition of demolition material, mud and/or debris onto the public roads.
6. Non-compliance with Dublin City Council regulations for Heavy Goods Vehicles could endanger vehicle, cycle and pedestrian safety.
7. Unless properly managed, the works required to create a Public Realm Area on Parnell Square North could lead to traffic delays and congestion.
8. The installation of underground services including drainage and watermains on Parnell Square North could lead to vehicular delays, congestion or diversion.
9. The installation of overground drainage on Parnell Square North could lead to vehicular delays, congestion or diversion.



**Figure 5.5.14:** Designated Heavy Goods Vehicle Routes in the City Centre

### 5.5.5.2 Operational Phase

The potential operational phase impacts arising from the proposed redevelopment of 20 – 21 Parnell Square North and the former Colaiste Mhuire premises at 23 – 28 Parnell Square North are set out below.

1. Removing the existing car parking on Parnell Square North could lead to an increased demand for car parking in the surrounding area. Any impact is likely to be a long-term moderate.
2. The existing passenger demand and the future combined provision of Bus Connects, Swiftway BRT, Strategic Green Route, GDA Cycle Network, Strategic Pedestrian Route etc. on Parnell Square East when taken together could cause the combined operation of these facilities to exceed the environmental and transportation capacity of Parnell Square East. Unless the intensification of future public transport services is on Parnell Square East is limited to its environmental and transportation capacity, any impact is likely to be cumulative negative long term.

The proposed mitigation measures and the predicted impact of these potential impacts are addressed below.

### 5.5.5.3 Do-Nothing Impact

In the event that the proposed development does not proceed, the transportation environment in the surrounding area will remain as existing. See Figure 5.5.6.

In this scenario, there will be no traffic lane markings on Parnell Square West or on Parnell Square North and the large inner kerb radius at the junction of Parnell Square West with Parnell Square North will continue to accommodate excessively fast traffic speeds. See Figure 5.5.9.

The ongoing absence of pedestrian crossing facilities between the Garden of Remembrance and the location of the PSCQ coupled with the presence of kerbside car parking and lack of forward visibility is likely to lead to safety issues for pedestrians and cyclists in this area.

The narrow footpaths on Parnell Square West and on Parnell Square East will continue to be inadequate for pedestrians and bus passengers.

There will not be any cycle facilities other than limited bicycle parking on the three sides of Parnell Square.

Finally, public transport services including Dublin Bus and the Luas Green Line should continue to operate as at present.

Overall, the 'do-nothing impact' will be to retain the existing poor environment for cyclists and pedestrians.



## **5.5.6 Mitigation Measures**

### **5.5.6.1 Demolition and Construction Phase**

The primary mitigation measure during the construction phase will be the implementation of the Construction Traffic Management Plan and the Construction Management & Waste Management Plan.

This will require all deliveries to and collection from the subject site to comply with the Dublin City Council requirements for Heavy Goods Vehicle movements including the use of the Designated Heavy Goods Vehicle movements routes illustrated in Figure 5.5.15.

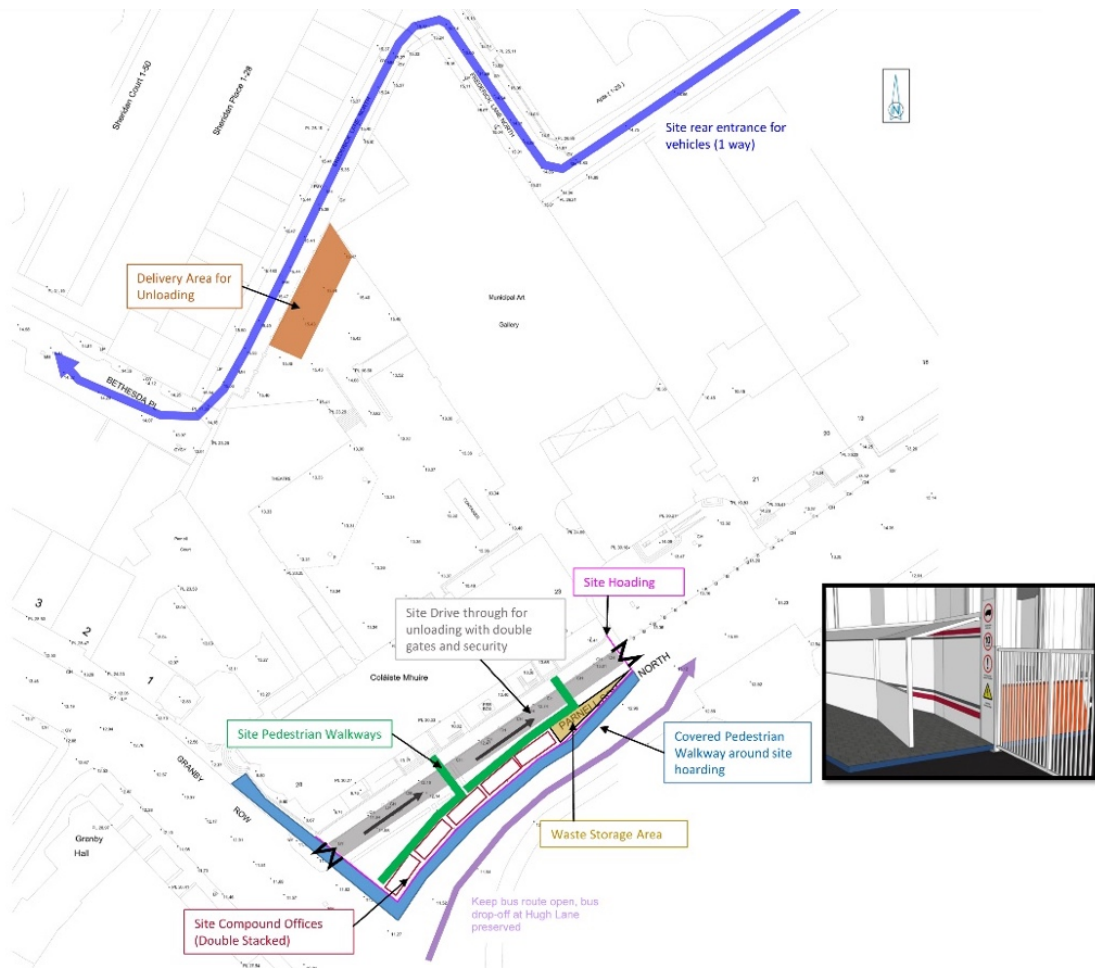
Two construction routes to the site have been identified. One will be to Parnell Square North from Parnell Square West and the second from Frederick Street North along Frederick Lane and Bethesda Place to Dorset Street Upper.

A site compound with offices, material storage areas and drive through route for construction related vehicles will be provided on Parnell Square North in front of Nos 23- 28. The southeast corner of the compound has been splayed to provide a minimum of two traffic lanes at this location during the construction stage of the buildings.

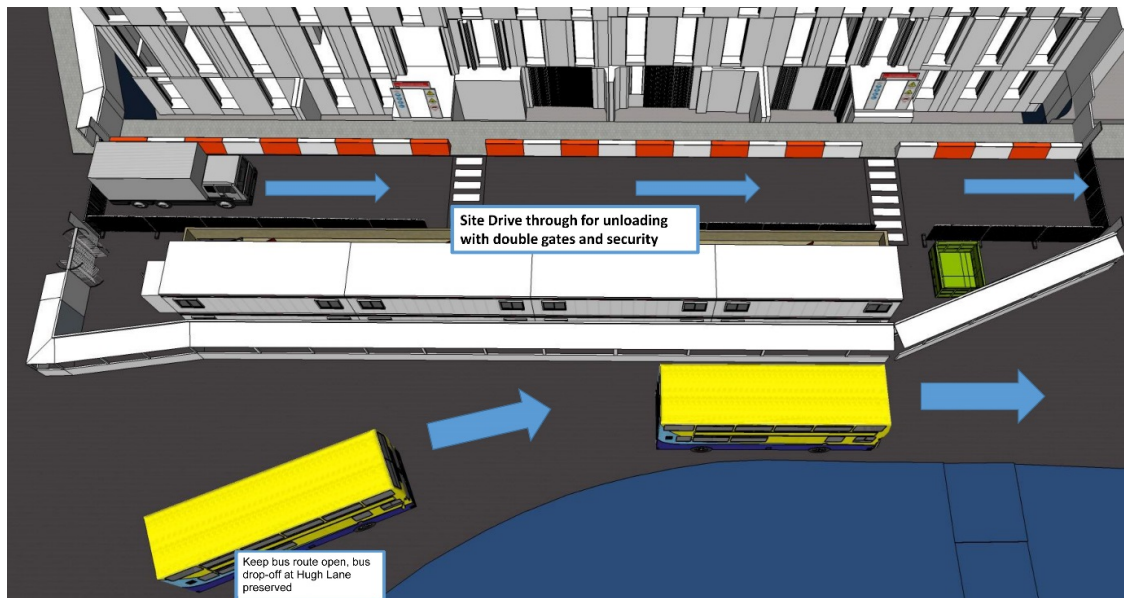
Ramp works to connect Frederick Lane to Bethesda Place will be carried out at the commencement of the construction phase so as to facilitate construction related deliveries to the rear of the proposed development.

Traffic and other movements on Parnell Square North during the construction phase of the public realm will be managed by carrying out the works in a number of stages to a sequence to be prepared in conjunction with Dublin City Council and implemented by the main contractor.

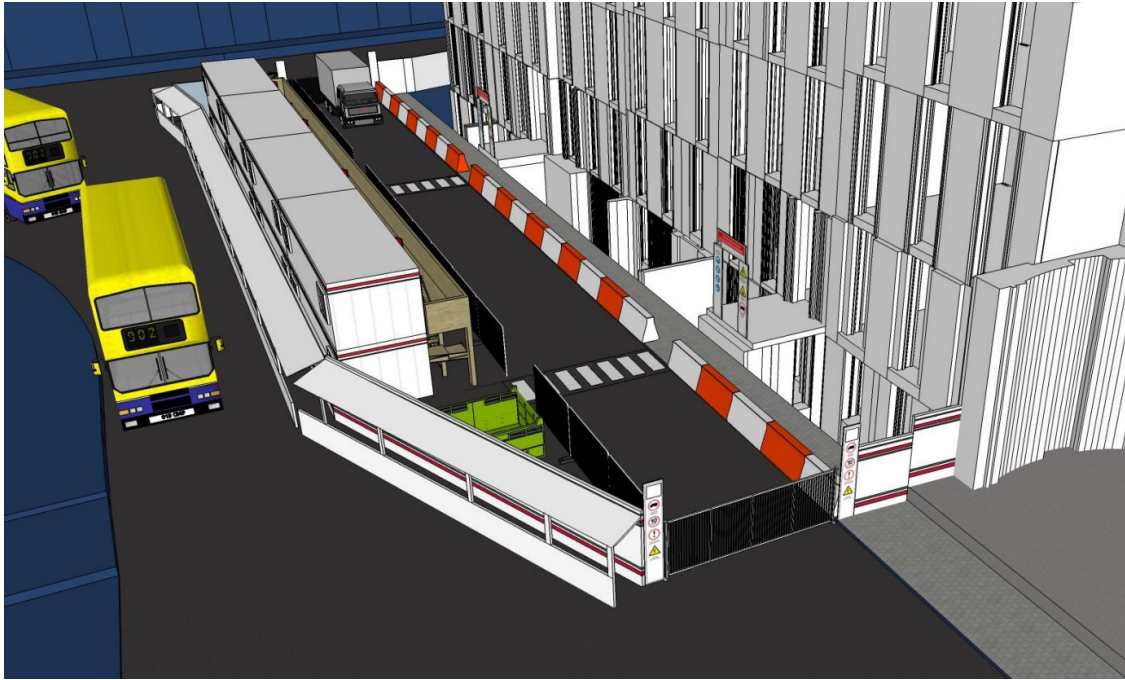
In order to mitigate the impact on the physically challenged, it is proposed to provide the new disabled car parking spaces on Granby Row and Frederick Street North before the existing disabled spaces on Parnell Square North are occupied by the site compound.



**Figure 5.5.15:** Proposed Construction and Demolition Delivery Routes to the Site



**Figure 5.5.16:** Proposed Compound Storage Area along Parnell Square North – View 1



**Figure 5.5.17:** Proposed Compound Storage Area along Parnell Square North – View 2

#### 5.5.6.2 Operational Phase

The primary mitigation measure during the operational phase will be the implementation of the Travel Plan for the proposed development and in particular the Action Plan section of the Travel Plan which will implement the management of travel demand.

Should the transportation demand require additional facilities or alterations to existing facilities, consideration will be given to:-

1. The provision of disabled spaces on Parnell Square North close to the location of the three existing disabled spaces.
2. The provision of additional secure cycle parking within the PSCQ for staff who choose to cycle to work (8 spaces currently proposed for 8 staff).

Mitigation measures to limit the impact of the future intensification of public transport services, cycle facilities and pedestrian facilities on the transportation and environmental capacity of Parnell Square East are outside the control of the proposed development.

## **5.5.7 Predicted Impact of the Proposed Development**

### **5.5.7.1 Demolition and Construction Phase**

#### **5.5.7.1.1 Car Parking**

Continuing on from the demolition and construction phase, there will be a permanent loss of 47 on-street car parking spaces on Parnell Square North which will result in the permanent loss of car parking revenue to Dublin City Council together with an increased demand for car parking in the surrounding area, primarily on-street.

Parking surveys undertaken during the preparation of the Traffic and Transport Assessment for the proposed development concluded that parking demand could exceed capacity in the surrounding area between 11 o'clock in the morning and 3 o'clock in the afternoon.

The shortage of car parking is likely to be a long term moderate impact which will be ameliorated by the high provision of public transport in the surrounding area.

#### **5.5.7.1.2 Disabled Car Parking**

If the replacement spaces for disabled car parking on Granby Row and on North Frederick Street are not provided until late in the construction phase, no car parking for the physically challenged will be available in the area of the proposed development as the existing spaces will be occupied by the site compound.

This is likely to be a slight negative, short term impact during the construction phase.

#### **5.5.7.1.3 Traffic Speed /Flow**

The reduction of the carriageway width on Parnell Square North due to the presence of the site compound during the construction phase is not expected to lead to significant delays to vehicular traffic including public transport.

This is likely to be a slight negative, short term impact during the construction phase.

#### **5.5.7.1.4 Diversion of Bus Routes**

Any temporary diversions to bus services during the installation of the improvement works to the public realm on Parnell Square North, particularly paving and services, are likely to cause slight delays to these bus services.

This is likely to be a slight negative, short term impact during the construction phase.

#### **5.5.7.1.5 Capacity of Public Transport Services**

No significant impact on the capacity of public transport services is expected during the construction phase.

#### **5.5.7.1.6 Luas Green Line**

The site for the proposed development is located some 250 metres from the Luas Green Line on Parnell Street. However, the only vehicular access to the proposed contractor's compound on Parnell Square North is via Parnell Street which in addition to hosting the Luas Green Line is a Dublin City Council Designated heavy goods vehicle Route.

Some delays may occur to Luas services and general traffic on Parnell Street due to construction traffic for the proposed development using this route to access the delivery and storage area on Parnell Square North.

This is likely to be a slight negative, short term impact during the construction phase.

#### **5.5.7.1.7 Cycle**

The existing DublinBike Station No 30 on Parnell Square North is located within the footprint of the proposed construction hoarding for the PSCQ.

As a result, there is likely to be a time gap between decommissioning of the existing facility and commissioning of the new facility. During this period, no cycles will be available from Dublin Bike at Parnell Square North. In addition, there will be a temporary loss of cycle hire revenue to Dublin City Council.

This is likely to be a slight negative, short term impact during the construction phase.

#### **5.5.7.1.8 Pedestrians**

During reconstruction of the public realm, temporary facilities will be required to be provided by the main contractor to maintain pedestrian access and connectivity on Parnell Square North.

These facilities will be provided in accordance with the Construction Management & Waste Management Plan and the Construction Traffic Management Plan.

This is likely to be a slight negative, short term impact during the construction phase.

#### **5.5.7.1.9 Demolition and Construction Phase - Overall**

The overall impact of the proposal on the transportation environment during the demolition and construction phase is expected to be slight negative and short term.

### **5.5.7.2 Operational Phase**

#### **5.5.7.2.1 Car Parking**

The loss of 47 car parking spaces on Parnell Square North will result in the permanent loss of car parking revenue to Dublin City Council together with an increased demand on other car parking in the surrounding area, primarily on-street.

Parking surveys undertaken during the preparation of the Traffic and Transport Assessment demonstrates that car parking demand could exceed capacity in the surrounding area between 11 o'clock in the morning and 3 o'clock in the afternoon.

The shortage of car parking is likely to be a long term moderate impact which will be ameliorated by the high provision of public transport in the surrounding area.

#### **5.5.7.2.2 Traffic Speed /Flow**

The current proposals provide for a reordering of the road carriageway on Parnell Square North to two lanes each 3.0 metres wide between Parnell Square West and Parnell Square East. Reordering of the junctions at Parnell Square West and Parnell Square East is also proposed.

The results of the traffic modelling undertaken during the preparation of the Traffic and Transport Assessment demonstrates that the reordered junctions will operate without any material or significant impact on the road infrastructure.

Local traffic calming will result at the junction of Parnell Square West with Parnell Square North but otherwise traffic speeds are not likely to be affected.

These proposals are likely to result in a positive long term moderate impact on traffic flows and speeds on Parnell Square West and Parnell Square North.

#### **5.5.7.2.3 Diversion of Bus Routes**

No diversions of bus routes are proposed during the operational phase.

#### **5.5.7.2.4 Capacity of Public Transport Services**

##### **Dublin Bus Services**

The peak passenger demand for bus services from the proposed development will be 103 passengers in the PM Peak.

The capacity of the southbound Dublin Bus Services on Parnell Square East during the same period will be some 4,240 passengers per direction per hour. This capacity is based on 53 double deck buses with a capacity of 80 passengers per bus.

The capacity of the northbound Dublin Bus Services on Parnell Square West during the same period will be some 4,160 passengers per direction per hour. This capacity is based on 52 double deck buses with a capacity of 80 passengers per bus.

As the capacity provided will greatly exceed the predicted demand, the predicted impact of the proposed development on the Dublin Bus Services is likely to be imperceptible.

##### **Luas Green Line**

The peak passenger demand for tram services from the PSCQ will be 16 passengers in the PM Peak.

The capacity of the Luas Green Line during the same period will be some 1,240 – 3,720 passengers per direction per hour. This capacity is based on 40 metre long trams with a capacity of 310 passengers per tram operating at a frequency of 4 - 12 trams per hour.

As the capacity provided will greatly exceed the predicted demand, the predicted impact of the PSCQ on the Luas Green Line is likely to be imperceptible.

#### **5.5.7.2.5 Cyclists**

Following the completion of the proposed development, the cycle facilities will include 1 Dublin Bike Station No 30 with 40 spaces on

Parnell Square West and 100 cycle parking spaces for visitors in three locations on Parnell Square North.

No cycle facilities are being provided on the proposed two lane carriageway across Parnell Square North. As a result, there will be no provision for westbound contra flow cyclists who will share the spaces with pedestrians.

The introduction of a shared surface on Parnell Square North is likely to be a long term moderate impact which could lead to conflicts between pedestrians and cyclists.

#### **5.5.7.2.6 Pedestrians**

In the absence of any provision for westbound contra flow cyclists, pedestrians in the new space on Parnell Square North will be required to share space with cyclists.

The introduction of a shared surface on Parnell Square North is likely to be a long term moderate impact which could lead to conflicts between pedestrians and cyclists.

#### **5.5.7.2.7 Operational Phase - Overall**

Notwithstanding the provision of a shared surface for cyclists and pedestrians on Parnell Square North, the proposal is likely to have to be a positive long term significant impact on the transportation environment during the operational phase.

#### **5.5.7.3 Worse Case Impact**

Where the various mitigation measures described in Section 5.5.6 are not implemented correctly or fail, the proposal is likely to have to be a negative long term significant impact on the transportation environment during the operational phase.



## **5.5.8 Monitoring**

### **5.5.8.1 Demolition and Construction Phase**

The project team for the proposed development should monitor the operation of the Construction Traffic Management Plan and address any issues arising.

In particular, any local congestion and / or delays to public transport services on Parnell Square North should be monitored and the cause(s) of any congestion / delays addressed.

### **5.5.8.2 Operational Phase**

The management team at the proposed development should monitor the operation of Parnell Square North and advise Dublin City Council Roads and Traffic Section in relation to any operational or safety issues noted.

Particular attention should be paid to contraflow cycling through the shared surface of the Public Realm Works.

Public transport demand from the proposed development should also be monitored and the public transport operators advised if demand exceeds capacity.

## **5.5.9 Interactions**

Chapter 8: Interactions & Cumulative Impacts, of this EIAR examines the interactions between all the environmental topics within this EIAR.

The Interactions between Material Assets: Transportation and the other Chapters of this EIAR are set out below.

### **5.5.9.1 Population & Human Health**

Traffic diversions during the construction phase are likely to result in a temporary slight negative impact on population and human health.

Reordering of the roadway on Parnell Square North during the operational phase is likely to result in result in a positive long term moderate impact on population and human health.

The introduction of a shared surface on Parnell Square North is likely to result North is likely to result in a long term moderate impact which could lead to conflicts between pedestrians and cyclists.

### **5.5.9.2 Material Assets – Soil & Geology (including 'Land')**

Excess material excavated during the construction of the groundworks within and at the rear of 23 – 28 Parnell Square North and during the repaving of the public realm will be transported by road for disposal in approved locations as provided for in Chapter 5.8: Soil & Geology (including 'Land') of this EIAR.

### **5.5.9.3 Air – Noise & Vibration**

The generated by traffic during the construction of the groundworks within and at the rear of 23 – 28 Parnell Square North and during the repaving of the public realm has the potential to impact on noise and vibration. Both will be controlled and monitored as set out in Chapter 5.10: Air – Noise & Vibration of this EIAR.

### **5.5.9.4 Climate & Climate Change – Air Quality**

The generation of traffic during the construction phase and the reordering of the roadway on Parnell Square North both have the potential to impact on Air Quality. Both will be controlled and monitored as set out in Chapter 5.11: Climate & Climate Change – Air Quality of this EIAR.

### **5.5.9.5 Material Assets: Waste Management**

Excess material removed during demolition and construction works for the proposed development will be transported by road for disposal in approved locations as provided for in Chapter 5.14: Material Assets - Waste Management, of this EIAR.

## **5.5.10 Cumulative Impacts**

The proposed development is located in the city centre where development is continually occurring.

No other significant construction projects have been identified in the area of the PSCQ which would result in a significant cumulative impact on Material Assets Transportation either during the construction or operational phases.

However, measures currently being considered by National Transport Authority, Transport Infrastructure Ireland and Dublin City Council for the intensification of public transport services, cycle

facilities and pedestrian facilities on Parnell Square East are likely to have a cumulative long term significant impact.

### **5.5.11 Difficulties encountered**

The proposed concentration of public transport of public transport services, cycle facilities and pedestrian facilities on the transportation and environmental capacity of Parnell Square East.

In the absence of detailed proposals for the various transportation initiatives and management measures to be applied to Parnell Square East in the future, such as Bus Connects, Swiftway BRT, Strategic Green Route, GDA Cycle Network, Strategic Pedestrian Route etc. which are outside the control of the PSCQ project, it has not been possible to determine their cumulative effect on the operation of the public transport services in the Parnell Square area.

### **5.5.12 Consultation**

#### **5.5.12.1 Design Team**

Pre-planning consultation meetings were held by the project design team with Dublin City Council between July 2015 and March 2016. The feedback from Dublin City Council primarily in March 2016 related to four issues:

- the need to maintain access to off-street car parks.
- confirmation that Dublin City Council Roads and Traffic Section would not be increasing traffic capacity along Dorset Street which is the primary vehicular route.
- Confirmation that the project team were to assume that the BRT Project would be happening unless advised otherwise.
- Advice that the future carriageway on Parnell Square North should incorporate provision for contra flow cyclists.

### **5.5.13 Bibliography**

The following documents were consulted during the preparation of Chapter 5.5 Material Assets – Transportation:-

- Traffic and Transport Assessment, Parnell Square Cultural Quarter, Aecom, 22<sup>nd</sup> June 2018.
- Travel Plan, Parnell Square Cultural Quarter, Aecom, 25<sup>th</sup> June 2018.
- Construction Traffic Management Plan, Rev 3, Aecom, 29 August 2018.

- Proposals for Compound Storage Area on Parnell Square North.
- Outline Construction Management & Waste Management Plan, Issue 1, Arup, 4<sup>th</sup> Sept 2018.
- Traffic and Transport Assessment Guidelines, Transport Infrastructure Ireland, May 2014.
- Drg No 010001 Rev P1 Site Location Plan, Grafton Architects, 22<sup>nd</sup> June 2018.
- Drg No 020001 Rev P1 Site Layout Plan - Proposed, Grafton Architects, Undated.
- Drg No SK009 Rev A General Arrangement, Aecom, July 2018.