



**METRO NORTH  
ORAL HEARING  
PROOF OF EVIDENCE**

**ENABLING WORKS**

**Doug Thomson**

**Tuesday 7th April 2009**



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Proof of Evidence  
Enabling Works  
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## 1.0 INTRODUCTION

My name is Doug Thomson.

I joined the Metro North team in January 2008 as Enabling Works Contracts Manager. I have spent 40 years in the management and control of construction projects with the last 15 years in senior management positions on major complex projects including the pre-planning and start of construction for the Terminal 5 Project, Heathrow, UK. My responsibilities on Metro North include the pre-planning, design management, procurement and, subject to Enforceable railway Order, the delivery of all Enabling Works.

This section of evidence will cover three main elements of construction for Metro North.

Firstly, the scope of the Enabling Works, which I will present.

Secondly, the construction methodology which Richard Tucker will present.

Thirdly, the construction schedule and sequencing for both the enabling and main contract works which John McLoughlin will present.

In the various submissions to the Railway Order application, concerns have been raised on the perceived impact of Enabling works on traffic, pedestrians and the business community. I will indicate some key mitigation measures in my evidence relevant to these concerns.

## 2.0 OBJECTIVES OF ENABLING WORKS

The Metro North works are planned to be delivered by a PPP route, with construction commencing in 2010. The successful Main Contractor will be seeking to commence construction in an environment as free from complex interfaces as possible in order to reach commissioning and hence revenue generation in timescales that will minimise the finance costs incurred within the construction period.

Prior to the appointment of the Main Contractor, there will be a period of approximately one year from the Enforceable Railway Order during which certain works will be undertaken directly by RPA to ensure a smooth start of the Main Contract.

In developing the scope of such enabling works, several key objectives have been considered. The objectives may not all be met by a single works package but each enabling works package proposed should contribute significantly to the achievement of these objectives. The objectives identified can be summarised as follows:

- Reducing timescale risk thereby providing greater certainty to the achievement of critical milestones;
- Reducing cost risk and offering better value for money by RPA carrying out works in advance of the main works, drawing on experience from city centre utilities and other works for Luas.
- Reducing interface issues on Affected Parties, in particular public sector stakeholders such as Local and National Authorities, Hospitals and Utility providers by carrying out sensitive works outside the Main Contract.
- Ensure the current scope of the project can be delivered.
- Foster an integrated approach to the delivery of transport infrastructure

It will be seen that the key packages of Enabling Works are focussed on specific locations of the Metro North alignment (in the main from the M50 south to St Stephen's Green) and where most of the key criteria can be met by carrying out these works in advance of the Main Contract. The exceptions to this are the Environmental and Archaeological surveys and monitoring where these are covering the whole alignment as that information is required to support both the Main Contract and Enabling Contracts works. This will be described in more detail in later evidence.

### 3.0 SCOPE OF ENABLING WORKS

The main elements of the enabling works are summarised as follows:

#### 3.1 Mater Stop Box

The sequencing of the development of the New Adult Hospital at Mater as planned currently conflicts with that of the construction of the Mater Metro North Stop if the stop were to remain in the Main Contract. The New Adult Hospital would so heavily constrain the proposed site as to make it very difficult to construct the Mater stop. The stop box must, therefore, be developed in advance of the New Adult Hospital as an Enabling Works package to take place within the construction window afforded by MMCUH. The solution adopted has been chosen as it minimises programme and interface risk. The Mater Stop Box shall be delivered as follows;

- The Stop Box design has been procured by RPA based on the reference design presented earlier.
- Site preparation and associated works prior to the construction of the Stop Box will be carried out by MMCUH and funded by RPA.
- The Stop Box civils construction package will be procured by RPA and will commence upon an enforceable Railway Order for Metro North.
- The Stop Box construction contract will be novated to the successful Main Contractor at their appointment.

#### 3.2 Ballymun / DCU

Utilities must be relocated from within the area of construction of the cut and cover tunnel for the proposed metro alignment from Santry Avenue south to DCU as described in Geoff Featherstone's evidence. The utilities are to be relocated mainly within the footpath and verges of the dual carriageways. This will be done in short sections to minimise disruption to traffic and pedestrians. Two lanes of traffic in each direction shall be maintained during utilities diversion works. The traffic management arrangements will be covered in later evidence on the Scheme Traffic Management Plan. Junctions will also require temporary traffic management and reconfiguration to allow the construction of transverse utilities crossings and manholes. Access to all properties, bus stops and pedestrian crossings will be maintained. Some short sections of the median will be used to facilitate this traffic flow and at these areas the median trees will be removed and replanted for the duration of the work.

In order to minimise deep excavation in Ballymun Main Street, particularly adjacent to the Metro North stop-box, two large diameter water and drainage services will be diverted through the proposed BRL development to the west. These will follow the route of the existing and proposed development roads.

From Collins Avenue south to DCU, the utilities diversion work includes the diversion of a large diameter surface water sewer. This will be diverted to the west side of Ballymun Road. Other utilities will be diverted in short sections to minimise disruption to pedestrians and traffic. Local traffic management arrangements have been planned to maintain two lanes of traffic in each direction.

The areas affected by the diversion works will be reinstated to the current level of finishes.

#### 3.3 St Patrick's College

As described in Geoff Featherstone's evidence, alterations will be made to the playing fields and playground at St Patrick's college to accommodate the ventilation shaft structure. This work has been agreed with the college and will be carried out as an Enabling Works package in advance of the Main Contract work.

### 3.4 St Stephen's Green

St Stephen's Green is a National Monument and all works within the Green and within the immediate area of St Stephen's Green North and West will require Ministerial consent prior to any work. RPA have engaged a Conservation Architect, Arboriculturist and Ecologist to coordinate with OPW and DoEHLG and prepare method statements for the relocation or protection of statues, trees, flora and fauna. An application has been made to the Minister for the Environment, Heritage and Local Government for these works including method statements developed by the Conservation Architect and Archaeology method statements in accordance with the MN Archaeological Strategy. The Utilities and Civils Works Contractor shall engage an Archaeological consultant who will have a watching brief to identify archaeological evidence on all open excavations for the utility relocations, demounting of statues and removal of the Pulham Rock.

Utility diversions are required to St Stephen's Green North and West. These works will be carried out in short sections and in sequences to maintain access at all times to the adjacent premises. Construction methods will minimise any impacts on adjacent basements. The operation of the Luas line will not be affected.

The traffic management required to allow the utility diversion works to be undertaken includes the suspension of car parking and relocation of taxi ranks for the short periods required for each of the sections of work. The areas affected will be reinstated to the current levels of finishes. During periods of peak pedestrian flow (Thursday evenings and Saturday mornings) Enabling works will be restricted. Further details of the traffic management arrangements will be given in later evidence under Scheme Traffic Management Plan.

The Fusiliers Arch main structure, which was noted in the Railway Order submission as to be removed and stored, will now be retained in situ with suitable protection during the Stop Box construction process in order to minimise risk of damage. The method of support during Main Contract works and protection details have been developed in conjunction with the Conservation Architect.

A Heritage contractor will be appointed to carry out the removal or relocation of all heritage items. The contractor will engage and manage specialist sub-contractors including stonework and bronze work. The contractor will arrange dedicated, secure storage for all items which are not relocated, together with appropriate maintenance for the duration of the main Contract works. The heritage contractor will be novated to the Main Contractor on appointment and will reinstate all heritage items in conjunction with the Main contract programme.

Pulham Rock landscape features at the west pond within the Green affected by the Stop Box construction (principally to the island and adjacent promontory) will be dismantled and stored for the duration of the works. These will be reinstated following completion of the Main Contract works. The remainder of the Pulham Rock features will be protected from construction activities.

St Stephen's Green statues affected by construction will be relocated for display elsewhere in St Stephen's Green. These comprise Lord Ardilaun and Robert Emmet statues; the African Rose Bowl and O'Donnovan Rossa memorial. They will be resited in their original position following completion of the Main Contract works.

Street furniture; ornamental paving, railings and walls to the perimeter of the Green at the North- West corner; gates and side pillars at the Fusiliers Arch; the Blind Garden, Lady Grattan fountain and troughs; edging and railings within the Green will be removed and stored for the duration of the works and reinstated following completion of the Main Contract works.

### 3.5 College Green

At the time of Railway Order application, extensive works to the traffic island at College Green were planned, including the removal of the Thomas Moore statue, to facilitate the traffic management scheme. Further development of the traffic management plan has shown that this work is no longer required and the traffic island will not be impacted by Metro North works.

### 3.6 O'Connell Bridge (North and South)

The Enabling works at the O'Connell Bridge Stop Box comprise the careful removal to storage of National Monuments and statues; diversion of utilities from the existing carriageways to the pavements on each side of O'Connell Street Lower and Westmoreland Street; ESB cable diversion in D'Olier Street; the construction of an underground sub-station for ESB and LUAS; traffic management and reconfiguration work to facilitate traffic and pedestrian flows. The O'Connell Bridge Utilities and Civils works contractor shall engage an Archaeological consultant who will have a watching brief to identify archaeological evidence on all open excavations for the utility relocations, Statue and Monument removal and Substation excavation.

Four statues in O'Connell Street are required to be removed for the Enabling and Main Contract work. The Daniel O'Connell and William Smith O'Brien statues are National Monuments and all work to these will require Ministerial consent. The Sir John Gray and Jim Larkin statues require to be removed to facilitate the sub-station work and facilitate pedestrian flows. All four statues will be demounted and displayed at the National Museum of Ireland, Collins Barracks for the duration of the works and subsequently re-erected in their current positions.

Construction of an underground sub-station box is required to accommodate the relocation of an ESB/Luas substation in the median of O'Connell Street, immediately to the north of Abbey Street. Construction methods and sequences have been carefully planned to minimise disruption. Two lanes of traffic will be maintained by creating temporary lanes in the adjacent pavements on the east and west sides. All pavements and road surfaces will be reinstated to the approval of DCC.

Utility infrastructure diversions are required to facilitate the construction of the sub-station and also for services to and from the new sub-station.

South of Abbey Street to the Quays, existing utilities in the carriageways will be diverted into the pavements to the east and west sides of O'Connell Street Lower. This is to facilitate the construction of the OCB North stop box. The zones defined for these diversions are heavily trafficked by pedestrians and also have basement structures projecting into the pavements for most of the properties. It is proposed to seal the projecting parts of these basements from the remainder of the property. These basement voids will be utilised to create utility "tunnels" to accommodate the majority of the diverted services. The construction techniques to be used will allow continuous access to premises at street level by carrying out any open-cut excavation outwith main business times and utilising prefabricated covers at pavement level.

In Westmoreland Street, from the Quays to Fleet Street, existing utilities in the street will be diverted into the pavements to the east and west sides. This is to facilitate the construction of the OCB South stop-box. As for O'Connell Street, Westmoreland Street is heavily trafficked and also has projecting basement structures for the full length of both sides. Utility tunnels, as described above, will be constructed here with open-cut excavations outwith main business times and the remainder of the works carried out under prefabricated covers to allow full access to all premises during the day.

In D'Olier Street, cable ducts for ESB supply will be installed at the edge of the carriageway.

Localised traffic management arrangements have been developed to prioritise bus and pedestrian movements in O'Connell Street, Westmoreland Street, D'Olier Street, the Quays and O'Connell Bridge. These are coordinated with the Scheme Traffic Management plan which will be described in later evidence.

### 3.7 Parnell Square

The memorial tree and plaque in Parnell Square east will be removed to storage for the duration of the works. The Parnell Square Utilities and Civils works contractor will be required to engage an archaeological consultant who will be charged with monitoring all open excavations for the utility diversions.

Existing utility services in Parnell Square East will be diverted into the east pavement, above the coal cellars, with the exception of the large diameter drainage pipe which will be relocated into the strip of carriageway between the proposed Metro stop box wall and the front wall of the coal cellars. Construction methods here will minimise any impacts on the coal cellars to the Georgian Terrace and the nearby hospital facilities. Traffic and pedestrian flows will be maintained during these works by the suspension of parking bays in Parnell Square East. In addition, telecoms ducts will be diverted along Parnell Square North and West. This work will be done in sections to minimise disruption to traffic and the main entrance operations of the Rotunda Hospital.

At the junction of Parnell Square North and East, the traffic island will be reconfigured to facilitate the revised traffic flows for the enabling works and for the eventual construction of the stop box.

#### **4.0 TRAFFIC JUNCTION RECONFIGURATION**

The Scheme Traffic Management Plan, which will be explained in later evidence, has been developed to facilitate the construction of the Metro North works and to minimise the impact on all road users. This shows the need to reconfigure several junctions in the city centre which will include re-aligning kerbs and traffic islands with associated utilities and traffic signals. This work will be packaged under Metro North enabling works and carried out in advance of the Main Contract works.

As part of the above plan, a temporary bridge is required to be installed over the river Liffey, between Eden and Burgh Quays. This is to facilitate public transport flows during main construction works and until the permanent DCC bridge is complete. The temporary bridge will be manufactured and installed on temporary river pilings with minimal impact on the Quay walls and will be fully removed on completion of the permanent bridge. Foreshore and Section 50 licence applications have been made to the relevant authorities for this work.

#### **5.0 ARCHAEOLOGICAL, ENVIRONMENTAL AND STRUCTURAL SURVEYS AND MONITORING**

A range of Archaeological and Environmental surveys and monitoring has been carried out as defined in the Archaeological Strategy and the EIS. These will be detailed in later evidence. These have been carried out as enabling works contracts and are continuing to support the detailed design for Enabling packages and to inform the Main Contract works.

Various structural surveys have been carried out including Property Condition surveys, Basement surveys, Movement monitoring, bridge condition surveys, etc. and these have informed the reference design for the Main Contract works and the detail design of the Enabling works packages.

#### **6.0 ENABLING WORKS MANAGEMENT AND PROCESSES**

All of the works described here will be carried out in accordance with the principles contained in the EIS and managed directly by RPA. A dedicated team has been established for the pre-planning and eventual delivery of the packages. As far as practicable, the design for the civils and utilities works will be done by in-house RPA teams with experience of similar work from Luas projects. The construction packages will mainly be let under existing framework arrangements using contractors familiar with these works in the city centre. RPA have and will continue to carry out detailed consultation with the relevant authorities and key stakeholders such as utility suppliers and the design will be fully approved by them before work commences.

RPA will utilise the New Public Works Contract (GCCC) for all the main packages. These will be managed and supervised by RPA contract managers and site staff.

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