



**METRO NORTH
ORAL HEARING**

PROOF OF EVIDENCE

David O ' Connor

Archaeology, Architectural and Cultural Heritage

Wednesday 15th April 2009



Metro North Oral Hearing

Proof of Evidence

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David. J. O'Connor

1.0 NAME, QUALIFICATIONS AND ROLE IN PROJECT

My Name is David O'Connor and I am a management director with CRDS Ltd. CRDS Ltd. are Archaeological and Historical Consultants and have over 10 years professional experience working on a wide range of projects in Ireland.

My evidence today concerns impacts on Archaeology, Architectural Heritage and Cultural Heritage. This proof will present a summary of the major impacts identified along the scheme.

I was the CRDS project manager for the Archaeological, Architectural Heritage and Cultural Heritage component of the EIS. The CRDS team involved in the project consisted of:

- David J O'Connor MA MIAI;
- Aislinn Collins MA PGDip (Architectural Inventory & Recording) Dip EIAMgt MIAI;
- Clíodhna Tynan MA

I was involved in the overall study with inputs on Archaeology, Architectural Heritage and Cultural Heritage. Aislinn Collins was involved with Architectural Heritage and Cultural Heritage inputs. Clíodhna Tynan was involved with the Archaeology and Cultural Heritage inputs. The work was peer reviewed by EurGeol Dr Stephen Mandal MIAI PGeo, Managing director of CRDS Ltd.

1.1. David J O'Connor MA MIAI

I hold a BA degree in Archaeology and Greek & Roman Civilization (UCD 1996) as well as an MA in Archaeology (UCD 1997), for which I received first class honours. I am currently a senior archaeologist with CRDS Ltd. and I am eligible to hold a directors excavation license issued by the National Monuments Service of the Department of Environment Heritage & Local Government.

Before I joined CRDS I worked on a wide variety of projects such as the *Archaeological Features at Risk Project* commissioned by The Heritage Council and the *North Munster Project* with The Discovery Programme. I

have also worked as assistant director of the *Achill Island Archaeological Summer School* and was a Tutor in the School of Archaeology, UCD, for two years.

I have a wide range of excavation experience and have directed archaeological excavations in Ireland for over 7 years. I have worked on a number of excavations within Dublin City including the Essex Street West / Fishamble Street Viking excavations and sites in St Augustine Street and Thomas Street. I have project managed the archaeology of major public infrastructure projects for both the National Roads Authority (NRA) and the Railway Procurement Authority (RPA) including the N6 Kilbeggan to Tyrellspass and the N4 Dromod Roosky Bypass road schemes as well as the LUAS Line B1 light rail extension scheme in south county Dublin.

I have managed the Archaeological, Architectural Heritage and Cultural Heritage components of several significant projects at pre-planning / EIS stage including the New Ross Bypass, Lansdowne Road Stadium, LUAS A-B City Centre Link and the Calf Field Integrated Waste Management Facility, a project which was awarded a Grade A (*Excellent, no task left incomplete*) for a large scale EIS by Meath County Council, the first time the cultural heritage component of an EIS has achieved this grade.

1.2. Aislinn Collins MA PGDip DipEIAMgt MIAI

Aislinn is a project manager with CRDS and specialises in built heritage recording. Aislinn holds a BA degree in Archaeology and Geography (UCD), an MA in Geography (UCD), a Graduate Diploma in Architectural Inventory and Recording (DIT, Bolton Street), and a Diploma in EIA Management (UCD) and a certificate in the Archaeology of Standing Buildings (University of Leicester).

Aislinn specialises in Built Heritage. Prior to taking up employment with CRDS Ltd. she was employed on the Historic Heart of Dublin Project, a joint initiative between Dublin Civic Trust and Dublin Corporation. While there she was part of a team of architectural recorders who compiled an inventory of over 3000 building interiors, exteriors and streetscapes in Dublin City.

Since joining CRDS Ltd., Aislinn has amassed considerable experience in undertaking the archaeological, architectural and cultural heritage aspects of EIAs. She has also project managed a number of key projects, including the cultural heritage component of the Tara Management Plan and the

archaeological, historical and architectural components of the three Waterways Corridor Studies. She also carried out, in partnership with Architectural Recording and Research, the Interim County Survey of Co. Meath on behalf of National Inventory of Architectural Heritage.

1.3. Clíodhna Tynan BA

Clíodhna Tynan holds a BA degree in Archaeology and Early Irish History (UCD) and an MA degree in Landscape Archaeology (UCD). She was awarded the National University of Ireland Mansion House Prize in Irish History (2001) and in the same year received the T.D. Williams Medal from the UCD Department of History for achieving first place in her BA exams.

While employed at CRDS Ltd., she has been responsible for the compilation of the desk-based historical and archaeological components of a number of large scale assessments, including the constraints studies for the N61 Boyle Town Bypass and the constraints study for the Roscommon Town Bypass. She has also gained experience on a number of field-based projects and archaeological excavations. Clíodhna was the author of the early historical study of Durrow Abbey entitled *An Introduction to the Early Irish History of Durrow Abbey, Co. Offaly* which formed an appendix to the Durrow Conservation Plan.

2.0 ASSESSMENT METHODOLOGY

A desk based assessment was carried out to establish a baseline of the Archaeological, Architectural Heritage and Cultural Heritage within a defined study area for the Metro North project. The scheme was analysed relative to its effects on these. The assessment followed on from work undertaken for the route selection process, and comprised:

- The establishment of a defined study area
- An intensive desk-based assessment of the study area.
- Aerial Photograph examination
- Field examination
- Consultation

Firstly a study area was established for the assessment. This was achieved by creating study area boundaries relative to the proposed construction technique. For example, sections of the scheme that were proposed to be constructed underground using tunnel boring machines (and thus would have a very limited impact close to and above the surface) were given 50m boundaries either side of the proposed tunnel alignments. Sections to be constructed using cut-and-cover techniques were given 100m boundaries, while areas of green-field surface construction were given 250m boundaries. The study area was then divided up into seven distinct areas, MN101-MN107.

Once the study area was defined the desk study assessment commenced. This utilised and considered historical, modern, cartographic and photographic sources for the study area. The desk study was supplemented by a field inspection where a number of potential sites were identified and added to the assessment. The Fieldwork was carried out by myself and Aislinn Collins of CRDS on various dates from 2006 to 2008.

The desk-based assessment allowed a baseline to be established for the study area where individual 'Heritage Constraints' were identified and numbered. Subsequently the impact of the scheme on these individual heritage constraints was assessed.

The potential for impacts on Archaeology, Architectural Heritage and Cultural Heritage has been assessed in consideration of the Environmental Protection Agency (EPA) Guidelines on the preparation and content of EISs (EPA 2002 & 2003) as well as in consideration of the National Roads Authority (NRA) Guidelines for the assessment of Archaeological Heritage Impacts of National Road Schemes (NRA, 2005) and Guidelines for the Assessment of Architectural Heritage and National Road Schemes (NRA, 2005).

3.0 ESTABLISHING A BASELINE

Following the methodology outlined above, the assessment established a baseline for the project. The baseline consisted of identified heritage

constraints within the study area. The assessment found that there are **419** Heritage Constraints (HC) within the study area, which includes **three** National Monuments (St. Stephen's Green, William Smith O'Brien Monument & Daniel O'Connell Monument), **333** Protected Structures for Dublin City and **five** protected structures for Fingal, **Three** Architectural Conservation Areas (O'Connell Street, Grafton Street & South City Retail Quarter), **three** Conservation Areas (Parnell Square, Grafton Street & The River Liffey) and **35** Recorded Archaeological Monuments including parts of the historic city of Dublin.

3.1 Assessment of Effects

Once the baseline assessment was completed, the impact assessment commenced. The methodology for this was set out in a number of steps:

- The different types of potential Impacts were identified;
- An assessment of these potential impacts (pre-mitigation) on the heritage constraints identified in the baseline;
- The compilation of appropriate mitigation measures and the application of these measures to the potential impacts on the heritage constraints;
- An assessment of residual impacts following the application of mitigation measures.

3.1.1 Archaeology

Direct Impacts on the archaeological heritage can be defined as follows:

- A change that will detract from or permanently remove an archaeological monument or site from the landscape;

Indirect Impacts on the archaeological heritage can be defined as follows:

- A change that does not affect the archaeological heritage;
- A change that improves or enhances the setting of an archaeological monument.

3.1.2 Architectural Heritage

Direct Impacts on the architectural heritage can be defined as follows:

- Total loss of structure or grounds - demolition of buildings or features or removal of demesne land;

- Partial loss of structure or grounds - part removal of buildings or feature or part removal of demesne land;
- Severance - interruption of linked features such as gardens, outbuildings or lodges;
- Reunification of structures – removal of severance caused by existing development;

Indirect Impacts on the architectural heritage can be defined as follows:

- Visual Intrusion - development encroaching on established views of buildings, structures or landscapes, the disruption or destruction of designed vistas, light intrusion (dealt elsewhere);
- Degradation of setting - Changes in the original landscape, townscape or garden setting of a building or structure;
- Degradation of amenity - loss of amenity, especially where an historic house is open to the public;
- Enhancement of setting – changes in the original landscape, townscape or garden setting of a building or structure; or
- Enhancement of amenity – improvement of amenity, especially where the historic house opens to the public.

4.0 PREDICTED IMPACTS – NATIONAL MONUMENTS.

A total of **three** National Monuments will be directly impacted by construction of the proposed scheme – Daniel O’Connell Monument (erected in 1882), William Smith O’Brien Monument (erected in 1870 on O’Connell Bridge but moved to its current position in 1929) and St Stephen’s Green Park (laid out and enclosed in 1664). Ministerial Consent is required for works in or around National Monuments.

Construction will necessitate the short-term relocation of the Daniel O’Connell Monument and William Smith O’Brien Monument from Lower O’Connell Street. At St Stephen’s Green Park construction will necessitate the removal of a significant area of the park.

4.1 Construction Impacts

It will be necessary to remove the Daniel O’Connell and William Smith O’Brien monuments from Lower O’Connell Street to allow for the construction of the O’Connell Bridge Stop Box. The monuments will be removed in their entirety and relocated on a short term basis to the National Museum of Ireland, Clarke Square, Collins Barracks, where public access will be restored for the duration of construction works.

Significant works will be required at St Stephen’s Green in order to construct the St Stephen’s Green Stop Box. Construction work will necessitate, among other things, the short term relocation of the Statues of Lord Ardilaun, Robert Emmet, O’Donovan Rossa memorial, African Rose bowl, foot rails, perimeter railings, perimeter granite footpath, granite bollards, metal bollards, public toilets Lady Grattan Fountain & two horse troughs and associated Victorian landscaping. Access to the Park from the north-western corner will be restricted for the duration of the construction period. Surrounding water levels may be reduced during construction. The construction of the stop box and the construction compound will have a negative visual impact on the National Monument.

4.2 Proposed Mitigation for Construction Impacts

There is ongoing consultation between the OPW, DoEHLG and DCC in relation to mitigation measures for St Stephen’s Green Park with regard to Archaeology, Architectural and Cultural heritage. Any proposed works in or around a National Monument will require Ministerial Consent.

Conservation Architect, David Slattery has advised on all architectural heritage matters associated with the Metro North project. RPA, through the Conservation Architect, has developed methodologies through consultation and approval with the relevant stakeholders for a series of heritage enabling works as part of the EIA process and his evidence will be given later.

The OPW, DoEHLG, DCC, and the RPA in association with David Slattery Conservation Architects & Barrett Mahoney Engineers) have considered the exact specification and methodology for the dismantling, removal and storage of the Daniel O’Connell and William Smith O’Brien monuments. Again it

should be noted that any proposed works in or around a National Monument will require Ministerial Consent.

An Archaeological Strategy has been developed in consultation with DoEHLG and DCC for the Metro North Project. This document provides a base from which to plan the execution of the works. The overall approach to archaeological mitigation as detailed in the Archaeological Strategy has been agreed with DoEHLG and DCC. This strategy document is live and will continue to evolve with the project through the detailed design and construction phase of the project.

O’Connell Street National Monuments

The Daniel O’Connell Monument is located at the southern end of O’Connell Street and consists of a large bronze statue atop a tall stone pedestal, surrounded by four bronze winged angels. The monument marks the entrance to the street. The William Smith O’Brien monument is located in the central reservation of O’Connell Street Lower. It is a much smaller monument than O’Connell, and consists of a stone statue atop a small stone pedestal.

A full measured, drawn and photographic survey of the Daniel O’Connell and William Smith O’Brien Monuments has been completed.

Post completion of the EIS the RPA has liaised with the National Museum of Ireland, Collins Barracks. In agreement with the National Museum the Daniel O’Connell and William Smith O’Brien monuments will be relocated to Clarke Square, Collins Barracks, the National Museum of Ireland. Thus allowing continued public access to the National Monuments during the construction phase. A detailed specification and methodology for the temporary display of the monuments is being prepared.

It is proposed to reinstate the Daniel O’Connell and William Smith O’Brien monuments to their present site using original materials once construction is complete.

RPA will appoint a Heritage works contractor to carry out this work. The tender evaluation team for the appointment of the Heritage works contractor will include representatives from DCC, DoEHLG and OPW.

Detailed method statements are being prepared by David Slattery Conservation Architects for the removal and transport of the O'Connell and Smith O'Brien monuments, temporary relocation for display and storage and finally removal, transport and final reinstatement.

The following process will be implemented for both the Daniel O'Connell and William Smith O'Brien monuments.

The monuments will initially be inspected and assessed prior to the start of works. This will inform a more detailed method statement which will then be produced by the Heritage works Contractor for approval in line with Ministerial Consent.

Following approval of the method statements, a detailed inspection of the monuments will take place to confirm or otherwise the accuracy and effectiveness of the approved Method Statement.

Detailed records of stonework and bronzework will be made prior to and during the dismantling process.

All items will be fully recorded by photograph and the precise location of stonework will be recorded and coded so each item can be precisely located.

The structural integrity of all bronze items of the Monuments will be assessed by ultrasonic scanning. All bronze features will be protected from accidental impact and damage using the application of flexible layers of foam based material to all surfaces and in particular to projecting items.

The figure of William Smith O'Brien will be secured with canvas slings ensuring that the location of the slings do not impact on any projecting elements. The slings will be connected to a lifting crane and will be vertically lifted. The stone figure will be transferred to an appropriate transporter for delivery to Collins Barracks.

The removal of Stonework will require all pointing joints to be carefully opened and existing pointing removed.

The raking out of the joints shall be carried out by manual means using appropriate instruments such as chisels, hacksaw blades etc.

Dowels or other fixings shall be carefully removed without damage.

Separating joints between individual stones shall be undertaken by gently and carefully prised apart using timber wedges where necessary. Individual stones shall be lifted clear by crane following the removal of all pointing and bedding material on canvas slings.

The joints between the base of William Smith O'Brien and the stonework will be wedged up until they are free.

Items will be transported away from the site in a manner ensuring that no items fall, rub against adjoining items or the sides of the vehicle or move during transport. Once the above ground elements of the monument have been removed, excavations under archaeological supervision will commence to expose and remove the Ceremonial Foundation Stone.

A second Method Statement for the display and storage of the monument will be prepared in consultation with the National Museum.

The four Bronze Winged Victories, the Bronze Frieze, the Statue of O'Connell and the Ceremonial Foundation Stone shall all be delivered for temporary display at Collins Barracks.

The statue of O'Brien will be delivered for temporary display at Collins Barracks.

The bronze items will require evaluation and assessment following their careful positioning and fixing on the temporary bases.

Ongoing maintenance to the bronzes will include three inspections each year and reports on their condition during temporary display at Collins Barracks as well as the removal of dirt build-up and the careful removal of any graffiti or other stains. All other items of the monument will be stored in the Heritage Contractors storage facility, which will be inspected regularly.

A third method statement will be required for the second removal and final reinstatement of the monument. The bronzes and Ceremonial Foundation Stone will be carefully removed from their temporary display locations in Collins Barracks for reinstatement on O'Connell Street.

The procedures followed in the original transfer of the statues and their temporary erection shall generally be repeated in reverse. T

The bronze figures and features shall be carefully secured and protected to obviate any damage during transport from Collins Barracks to O'Connell Street.

The procedures for reconstruction will generally follow the reverse order of the demounting procedures, and will comply with the revised method statement.

All stonework shall be repointed as per the required specification. This shall include for the taping of all joints prior to repointing in order to minimise on spillage and runoff of mortar.

The base of the monument shall be reconstructed ensuring that bed heights and coursing match the original and that all stones are relocated to their original position.

The stonework shall be reconstructed to the main cylinder in its original location.

Following full reinstatement of stonework of the Monument the Contractor shall be required to reinstate by crane all bronze figures. All stonework will be cleaned down using water or steam where necessary. The bronze figures and features will then be cleaned and rewaxed.

St Stephen's Green Park

There is currently no evidence of any known archaeological features in the Park. However, It is proposed that site specific archaeological test excavation take place at St Stephen's Green Park. Should archaeological material be shown to be present, then archaeological excavation will be required. Should significant material be discovered, then *preservation in-situ* or *preservation by record* will be considered, as outlined in the Archaeological Strategy.

It is proposed that archaeological monitoring of construction works will take place where approved by the appointed RPA Project Archaeologist, in consultation with the DoEHLG & DCC as outlined in the Archaeological Strategy.

Fusiliers Arch

A detailed method statement has been prepared by David Slattery Conservation Architects for the Removal of the Stone Piers and Gates of the monument and their transport to a temporary storage facility and finally removal, transport and final reinstatement.

The Arch itself will be retained In-situ for the duration of the works.

The Stone Piers and Gates of the Fusiliers Arch Monument will initially be inspected and assessed prior to the start of works to determine the precise methods of assembly.

A detailed method statement will then be produced for approval, based upon the RPA's Conservation Architects Method Statement but further developing it, all fully consistent with the Heritage Works Requirements.

Following approval of the method statements, a detailed inspection of the Piers and Gates will take place to confirm or otherwise the accuracy and effectiveness of the approved Method Statement.

The precise location of items of stonework shall be recorded as per drawings supplied by RPA and coded so each item or dismantled part of each item can be precisely located.

Full protection will be provided to all features from accidental impact and damage. This will require the careful application of flexible layers of foam based material to all surfaces and in particular to projecting items in advance of any physical Works commencing.

The fixings of stonework, railings and gates and detail shall be fully determined and released prior to removal of statuary.

All fixings shall be salvaged and labelled.

The joints between the stonework will be wedged up until free.

The stonework, railings and gates will be secured with canvas slings as necessary ensuring that the location of the slings does not impact on any

projecting elements. The slings will be connected to a lifting crane and vertically lifted.

Stonework, railings and gates will be transported to an appropriate transporter for delivery to temporary storage.

Dowels or other fixings shall be carefully removed without damage. Individual stones depending on their size shall be lifted clear by crane on carefully positioned canvas slings.

Parts of the Works includes for excavation below ground level in order to remove the existing foundations of the Monument. These excavations shall be overseen by the Contractor's archaeologist as set out in the Archaeological Strategy.

A second Method Statement for the storage of the piers and gates will be prepared once they have been successfully removed.

All items will be stored in the Heritage Contractors storage facility, which will be inspected regularly.

A third method statement will be required for the second removal and final reinstatement of the piers and gates. The procedures followed in the original transfer of the piers and gates shall generally be repeated in reverse.

The procedures for reconstruction will generally follow the reverse order of the demounting procedures, and will comply with the revised method statement.

All stonework shall be repointed as per the required specification. This shall include for the taping of all joints prior to repointing in order to minimise on spillage and runoff of mortar.

The base of the piers and gates shall be reconstructed ensuring that bed heights and coursing match the original and that all stones are relocated to their original position.

The stonework shall be reconstructed in its original location. All stonework in will be cleaned down using water or steam where necessary.

The Pulham Rock

The Pulham Rock in St Stephen's Green Park are landscape structures erected to appear as natural rock outcrops. They were designed by James Pulham (1820-1898) as part of the landscaping of the park. Stephens Green site was opened to the public in 1880. The most impressive part of the park landscape is the ornamental lake with its associated cliffs, island and other features. It is suspected that St Stephens Green is one of only four sites of Pulham Rockwork in Ireland.

The Pulham Rock Island will be removed carefully to storage and rebuilt according to plan.

A detailed method statement has been prepared by David Slattery Conservation Architects for the Removal of the Pulham Rock and their transport to a temporary storage facility and finally removal, transport and final reinstatement.

The structure will initially be inspected and assessed prior to the start of works to determine the precise methods of assembly.

A detailed method statement will then be produced by the Heritage Contractor for approval, based upon the RPA's Conservation Architects Method Statement but further developing it, all fully consistent with the Heritage Works Requirements.

Following approval of the method statements, a detailed inspection of the monument will take place to confirm or otherwise the accuracy and effectiveness of the approved Method Statement.

The precise location of items of stonework shall be recorded as per drawings supplied by RPA and coded so each item or dismantled part of each item can be precisely located.

Full protection will be provided to all features from accidental impact and damage.

The fixings of stonework and detail shall be fully determined and released prior to removal.

The joints between the stonework will be wedged up until free.

The stonework will be secured with canvas slings. The slings will be connected to a lifting crane and vertically lifted.

Stonework will be transported to an appropriate transporter for delivery to temporary storage.

Dowels or other fixings shall be carefully removed without damage.

Individual stones depending on their size shall be lifted clear by crane on carefully positioned canvas slings.

Parts of the works includes for excavation below ground level in order to remove the existing foundations of the Monument. These excavations shall be overseen by the Contractor's archaeologist.

A second Method Statement for the storage of the monument will be prepared once the structure has been successfully removed.

All items of the structure will be stored in the Heritage Contractors storage facility, which will be inspected regularly.

A third method statement will be required for the second removal and final reinstatement of the structure. The procedures followed in the original transfer of the structure and its temporary erection shall generally be repeated in reverse.

The procedures for reconstruction will generally follow the reverse order of the demounting procedures, and will comply with the revised method statement.

All stonework shall be repointed as per the required specification. This shall include for the taping of all joints prior to repointing in order to minimise on spillage and runoff of mortar.

The base of the structure shall be reconstructed ensuring that bed heights and coursing match the original and that all stones are relocated to their original position.

The stonework shall be reconstructed in its original location.

All stonework in will be cleaned down using water or steam where necessary.

Other Memorials

The Lord Ardilaun, Robert Emmet, O'Donovan Rossa monuments will be relocated within the park for the duration of the construction works. These works will be done in an identical manner to the Daniel O'Connell and William Smith O'Brien Monuments, as outlined above.

The African Rose Bowl will be removed by RPA and reinstated elsewhere permanently.

Historic items such as railings, kerbstones, gates and all other features at St Stephen's Green will be removed and stored by RPA.

4.3 Residual Impacts

There will be no residual impacts on the Daniel O'Connell and William Smith O'Brien Monuments.

The overall residual impact after mitigation on St Stephen Green Park is Low.

5.0 PREDICTED IMPACTS - PROTECTED STRUCTURES

A total of **26** protected structures will be directly impacted by construction of the proposed scheme.

The bridges at Balheary Demense and Lissenhall Great will be directly impacted.

The basements from 22 protected structures at O'Connell Street Lower and Westmoreland Street, will be directly impacted.

The curtilage of Lissen Hall will be directly impacted

The Sir John Gray monument on O'Connell Street Lower will be directly impacted.

5.1 Construction Impacts

It will be necessary to remove a significant part of the curtilage of Lissen Hall. The construction of the alignment and Construction Compound #2 (Option 1) will sever the avenue to Lissen Hall, directly impacting on the curtilage of the house and affect its setting..

The demolition (infilling and partial removal) of basements from 22 protected structures at O'Connell Street Lower and Westmoreland Street, will be necessary for the diversion of utilities around the stop boxes. Nos. 1-8, 10-11, 45-46 & 56 Lower O'Connell Street, Nos. 8-16, 26-29 & 32 Westmoreland Street will be directly impacted which will result in the partial loss of the basements of the structures.

The utilisation of the bridges at Balheary Demense and Lissenhall Great (also a Recorded Archaeological Monument) to carry the metro vehicles will necessitate partial demolition, strengthening works and additions to the structures. Ground works will impact on the western buttressed embankment, the walls of which will be removed. An arch of unknown date will also be removed. The 5-arched bridge spanning the Broadmeadow River will be impacted upon by structural works to enable it to carry the metro vehicles. These works will impact on the original fabric of the structure.

Construction will necessitate the relocation of the Sir John Gray Monument from O'Connell Street Lower for the duration of the works.

A significant number of protected structures will be subject to construction vibration but this vibration will not have an impact on the structures. This evidence has been presented by Rupert Thornley Taylor

Stage 1 and 2 settlement assessments have identified a number of protected structures that may be at risk to damage from settlement due to construction. These structures have been selected for a further Stage 3 Detailed Assessment. This evidence has been presented already by Prof. John Burland.

5.2 Proposed Mitigation for Construction Impacts

Conservation Architect, David Slattery has advised on all architectural heritage matters associated with the Metro North project. RPA, through the Conservation Architect, has developed methodologies through consultation and approval with the relevant stakeholders for a series of heritage enabling works as part of the EIA process and his evidence will be given later.

The OPW, DoEHLG, DCC, and the RPA in association with David Slattery (Conservation Architects & Barrett Mahoney Engineers) have considered the exact specification and methodology for the dismantling, removal and storage of the Sir John Gray monument.

It is proposed to carry out a full measured, drawn and photographic survey of basements from all protected structures prior to any construction works commencing.

Sir John Gray Monument

A detailed method statement has been prepared by David Slattery (Conservation Architects for the Removal and transport of the Sir John Gray monument, temporary relocation for display and storage and finally removal, transport and final reinstatement.

The monument will initially be inspected and assessed prior to the start of works.

A detailed method statement will be produced for approval, based upon the RPA's Conservation Architects Method Statement but further developing it, all fully consistent with the Heritage Works Requirements.

Following approval of the method statements, a detailed inspection of the monument will take place to confirm or otherwise the accuracy and effectiveness of the approved Method Statement.

Detailed records of stonework will be made prior to and during the dismantling process.

All items will be fully recorded by photograph and the precise location of stonework will be recorded and coded so each item can be precisely located.

The joints between the base of Sir John Gray and the stonework will be wedged up until they are free.

The figure of Sir John Gray will be secured with canvas slings ensuring that the location of the slings do not impact on any projecting elements. The slings will be connected to a lifting crane and will be vertically lifted.

The stone figure will be transferred to an appropriate transporter for delivery to Collins Barracks.

The removal of Stonework will require all pointing joints to be carefully opened and existing pointing removed. The raking out shall be carried out by manual means using chisels, hacksaw blades or other appropriate instruments.

Dowels or other fixings shall be carefully removed without damage.

Separating joints between individual stones shall be undertaken by gently and carefully prising apart using timber wedges where necessary.

Individual stones shall be lifted clear by crane following the removal of all pointing and bedding material on canvas slings.

Items will be transported away from the site in a manner ensuring that no items fall, rub against adjoining items or the sides of the vehicle or move during transport.

A second Method Statement for the display and storage of the monument will be prepared once the monument has been successfully removed.

The statue of Sir John Grey will be delivered for temporary display at Collins Barracks. All other items of the monument will be stored in the Heritage Contractors storage facility, which will be inspected regularly.

A third method statement will be required for the second removal and final reinstatement of the monument.

The Statue of Sir John Gray will be carefully removed from its temporary display locations in Collins Barracks for reinstatement on O'Connell Street.

The procedures followed in the original transfer of the statue and its temporary erection shall generally be repeated in reverse. The procedures

for reconstruction will generally follow the reverse order of the demounting procedures, and will comply with the revised method statement.

All stonework shall be repointed as per the required specification. This shall include for the taping of all joints prior to repointing in order to minimise on spillage and runoff of mortar.

The base of the monument shall be reconstructed ensuring that bed heights and coursing match the original and that all stones are relocated to their original position.

The stonework shall be reconstructed in its original location. Following full reinstatement of stonework of the Monument the Contractor shall be required to reinstate by crane the statue. All stonework in will be cleaned down using water or steam where necessary.

5.3 Residual Impacts

The overall residual impacts after mitigation on the historic structure of the bridge at Balheary Demesne / Lissenhall Great are Very High, as there will be a partial loss of the structure. The re-use of the Bridge, however, will have a positive residual impact on the structure.

The overall residual impact after mitigation on the protected structures which will have their basements removed is High as there will be a partial loss of the structure.

The overall residual impact after mitigation on the protected structure at Lissen Hall is Medium.

There will be no residual impact on the Sir John Gray Monument

6.0 STRUCTURES OF ARCHITECTURAL MERIT

Construction of the proposed scheme will necessitate the demolition of 17 structures of varying Architectural Merit.

The curtilage of Santry Lodge will be directly impacted as will a house at Ballymun Road.

6.1 Construction Impacts

Structures of varying Architectural Merit at Ballymun Road (Westfield House), Nos. 12, 14, 16, 18 & 20 St Alphonsus Road, Nos. 2-6 St Alphonsus Avenue, Nos. 24-26 Leo Street, Nos. 398 & 400 North Circular Road and No. 40 Drumcondra Road Lower will be removed in their entirety for the construction of the Stop Boxes at Ballymun, Drumcondra and Mater.

Construction of the alignment at Santry Lodge will directly impact on the curtilage of the Gate Lodge for the Charter School and result in the loss of the avenue from the gate to the house and have a negative visual impact on the structure.

Construction of the alignment at Santry Lodge will directly impact on the curtilage of the former Charter School and result in the loss of the avenue from the gate to the house and have a negative visual impact on the structure.

Construction of the alignment at Ballymun Road will directly impact on the curtilage of the structure and will result in the loss of the garden to the house and have a negative visual impact on the structure.

6.2 Proposed Mitigation for Construction Impacts

The RPA has appointed a Conservation Architect, David Slattery, to advise on all architectural heritage matters associated with the Metro North project. RPA, through the Conservation Architect, has developed methodologies through consultation and approval with the relevant stakeholders for a series of heritage enabling works as part of the EIA process.

It is proposed to carry out a full measured, drawn and photographic survey of all structures of Architectural Merit prior to any construction works commencing. A photographic survey of the lands will be submitted to the Irish Architectural Archive prior to construction.

6.3 Operational Impacts

There will be operational impacts on **Three** structures of Architectural Merit

Operation of the metro vehicles at Ballymun Road and former Charter School/Santry Lodge will have a negative visual impact on the structures.

At Ballymun road the vehicles will pass on an elevated embankment very close to the structure and will overlook the structure and detract from its setting.

At the Charter School, Santry Lodge, vehicles will pass on a slightly elevated embankment, operation of which will sever the avenue and the connection between the Gate Lodge, and detract from its setting. This is the same for the Gate Lodge.

6.4 **Proposed Mitigation for Operational Impacts**

Sensitive landscaping specifically designed to minimise the impact of the severance of the house from its avenue and surrounding demesne at Santry Lodge and Ballymun Road. This evidence has been presented by John Flannery.

6.5 **Residual Impacts**

The loss of the structures of architectural merit gives an overall residual impacts after mitigation ranging between High and Low, depending on the structure.

At Ballymun road and Santry Lodge there will be a residual visual impact on the structure of Architectural Merit. The overall residual impacts after mitigation for the House at Ballymun road and the Gate Lodge is Medium, and for the Charter School, Low.

7.0 **ARCHITECTURAL CONSERVATION AREA**

Metro North traverses **one** Architectural Conservation area where construction will have both short term and permanent impacts.

7.1 **Construction Impacts**

The erection of Construction Compound #18 at O'Connell Street at various locations along the street will impact on the historic streetscape, in particular

any street furniture and paving. Short term construction compounds will have a negative visual impact on the area.

The construction of the above ground structures associated with the O'Connell Bridge Stop Box, at various locations along O'Connell Street and Westmoreland Street will have a neutral visual impact on the historic streetscape.

7.2 Proposed Mitigation for Construction Impacts

Conservation Architect, David Slattery has advised on all architectural heritage matters associated with the Metro North project. RPA, through the Conservation Architect, has developed methodologies through consultation and approval with the relevant stakeholders for a series of heritage enabling works as part of the EIA process and his evidence will be given later.

It is proposed to restore the O'Connell Street / Westmoreland Street areas to their original state using original materials.

7.3 Residual Impacts

The overall residual impacts after mitigation on the Architectural Conservation Area is Low.

8.0 CONSERVATION AREAS

Metro North traverses **two** conservation areas where it will have both short term and permanent impacts.

8.1 Construction Impacts

The erection of Construction Compound #17 at Parnell Square will impact on the historic streetscape, in particular any street furniture and paving. Short term construction compounds will have a negative visual impact on the area.

The construction of the short term bridge and above ground structures at Aston Quay and Burgh Quay will impact on the historic riverscape of the Liffey. It will have a negative visual impact on the area.

The construction of the Parnell stop box will impact on the historic streetscape, in particular any street furniture and paving, and will have a neutral visual impact on the historic streetscape.

The construction of above ground structures at Aston Quay and Burgh Quay will have a neutral visual impact on the historic riverscape of the Liffey.

8.2 Proposed Mitigation for Construction Impacts

The RPA has appointed a Conservation Architect, David Slattery, to advise on all architectural heritage matters associated with the Metro North project. RPA, through the Conservation Architect, has developed methodologies through consultation and approval with the relevant stakeholders for a series of heritage enabling works as part of the EIA process.

It is proposed to restore the Parnell Square and Liffey areas to their original state using original materials.

8.3 Residual Impacts

Above ground structures at Parnell Square will have a neutral visual impact on the conservation area.

The construction of above ground structures and a bridge at Aston Quay, Burgh Quay & Eden Quay will have an overall residual impact of Medium.

9.0 RECORDED ARCHAEOLOGICAL MONUMENTS

A total of **10** Recorded Archaeological Monuments will all be directly impacted upon. Construction of the Metro North Depot at Belinstown will impact on **Seven** Recorded Archaeological Monuments at Belinstown.

The construction of a temporary bridge from Eden Quay to Burgh Quay will directly impact on an old Ferry site.

The construction of a temporary bridge from Eden Quay to Burgh Quay will directly impact on the historic quay walls.

The bridges at Balheary Demense and Lissenhall Great will be directly impacted upon.

9.1 Construction Impacts

The construction of the depot and associated facilities will necessitate the removal of seven recorded archaeological monuments at Belinstown. These recorded monuments are listed as enclosures, archaeological complexes and a castle site. Test excavation of some of these recorded monuments in 1999 failed to uncover archaeological material.

The erection of a short term bridge at Eden Quay & Burgh Quay will necessitate partial demolition, strengthening works and piled foundations to the Liffey quay walls and river bed.

Piled foundations for the construction of a temporary bridge from Eden Quay to Burgh Quay will directly impact on an old Ferry site. An underwater archaeological survey has failed to uncover any evidence of the ferry site.

The utilisation of the bridges at Balheary Demense and Lissenhall Great to carry the metro vehicles will necessitate partial demolition, strengthening works and additions to the structures.

9.2 Proposed Mitigation for Construction Impacts

An Archaeological Strategy has been developed for the Metro North Project. The document was prepared by RPA and provides a base from which to plan the execution of the works. The overall approach to archaeological mitigation as detailed in the Archaeological Strategy has been agreed with DoEHLG and DCC. This strategy document is live and will continue to evolve with the project through the detailed design and construction phase of the project.

Geophysical investigations at Belinstown and Balheary Demesne/Lissenhall Great, as recommended in the EIS, have taken place.

It is proposed that site specific archaeological test excavation take place at Belinstown. Should archaeological material be shown to be present, than archaeological excavation will be required. Should significant material be discovered, then *preservation in-situ* or *preservation by record* will be considered, as outlined in the Archaeological Strategy.

It is proposed that archaeological monitoring of construction works will take place where approved by the appointed RPA Project Archaeologist, in consultation with the DoEHLG & DCC as outlined in the Archaeological Strategy.

Archaeological underwater surveys have taken place at Balheary Demesne/Lissenhall Great and the River Liffey as recommended in the EIS.

Conservation Architect, David Slattery has advised on all architectural heritage matters associated with the Metro North project. RPA, through the Conservation Architect, has developed methodologies through consultation and approval with the relevant stakeholders for a series of heritage enabling works as part of the EIA process.

9.3 Residual Impacts

The overall residual impacts after mitigation on the recorded archaeological monuments at Belinstown is Very Low.

The construction of a new bridge from Eden Quay to Burgh Quay will have a Very Low residual impact on an old Ferry site, if any remains exist. Preservation by record of any archaeology will provide a positive impact in increasing our knowledge of the past.

The overall residual impacts after mitigation on the historic quay walls at Eden Quay to Burgh Quay is low as the wall will be reinstated once the temporary bridge is removed.

The overall residual impacts after mitigation on the recorded archaeological monument at Balheary Demense and Lissenhall Great are Very High, as part of the monument will be lost.

10.0 SITES OF ARCHAEOLOGICAL POTENTIAL

A total of **Eight** sites of archaeological potential will be directly impacted by construction.

10.1 Construction Impacts

The construction of the stop boxes in Dublin city centre at Mater, Parnell Square and O'Connell Bridge (including the relocated substation) will remove any surviving archaeological deposits at these locations.

The construction of the alignment at Fosterstown North & South, Ballystruan and Ballymun will remove any surviving archaeological deposits at these locations.

10.2 Proposed Mitigation for Construction Impacts

An Archaeological Strategy has been developed for the Metro North Project. The document was prepared by RPA and provides a base from which to plan the execution of the works. The overall approach to archaeological mitigation as detailed in the Archaeological Strategy has been agreed with DoEHLG and DCC. This strategy document is live and will continue to evolve with the project through the detailed design and construction phase of the project.

Geophysical investigations at Fosterstown North, Fosterstown South, Ballystruan and Ballymun, as proposed in the EIS, have been undertaken.

It is proposed that site specific archaeological test excavation take place at Fosterstown North, Fosterstown South, Ballystruan, Ballymun,, Mater Hospital, Parnell Square, O'Connell Street Lower & Westmoreland Street and Dublin city centre. Should archaeological material be shown to be present, then archaeological excavation will be required. Should significant material be discovered, then *preservation in-situ* or *preservation by record* will be considered, as outlined in the Archaeological Strategy.

It is proposed that archaeological monitoring of construction works will take place where approved by the appointed RPA Project Archaeologist, in consultation with the DoEHLG & DCC as outlined in the Archaeological Strategy.

10.3 Residual Impacts

The overall residual impact on the sites of unknown archaeological potential is Very Low. Preservation by record of any archaeology will provide a positive impact in increasing our knowledge of the past.

11.0 TOWNLAND BOUNDARIES

In total **Eight** upstanding townland boundaries will be removed.

11.1 Construction Impacts

The construction of the alignment at Ballymun, Belinstown, Lissenhall Little, Balheary Demesne, Miltonsfields, Nevinstown West, Fosterstown South and Ballystruan will remove the boundaries at these locations.

11.2 Proposed Mitigation for Construction Impacts

The proposed mitigation measures detailed in this EIS for archaeological impacts have been further developed and detailed in an Archaeology Strategy document for Metro North. This provides a base from which to plan the execution of the works. The overall approach to archaeological mitigation as detailed in the Archaeological Strategy has been agreed with DoEHLG and DCC. This strategy document is live and will continue to evolve with the project through the detailed design and construction phase of the project.

It is proposed that a survey of all townland boundaries impacted by the proposed development takes place prior to works. This survey will include a photographic survey and drawn sections.

11.3 Residual Impacts

The overall residual impact of the removal of the townland boundaries is Very Low.

12.0 AREAS OF UNKNOWN ARCHAEOLOGICAL POTENTIAL

A number of areas of unknown archaeological potential were identified, and will be impacted by construction works. It should be noted that there is currently no evidence of any archaeological features at these locations.

12.1 Construction Impacts

Construction of the permanent way will impact on any surviving archaeology in the following areas - Belinstown to Lissenhall Bridge, Lissenhall Bridge to Seatown Roundabout, Boroimhe to Fosterstown South, Perimeter Road (Dublin Airport) to M50, M50 to Ballymun Road, Albert College Park to Tunnel Portal and the Tunnel Vent at Griffith Avenue Stop).

12.2 Proposed Mitigation for Construction Impacts

An Archaeological Strategy has been developed for the Metro North Project. The document was prepared by RPA and provides a base from which to plan the execution of the works. The overall approach to archaeological mitigation as detailed in the Archaeological Strategy has been agreed with DoEHLG and DCC. This strategy document is live and will continue to evolve with the project through the detailed design and construction phase of the project.

It is proposed that site specific archaeological test excavation take place along the scheme. Should archaeological material be shown to be present, then archaeological excavation will be required. Should significant material be discovered, then *preservation in-situ* or *preservation by record* will be considered, as outlined in the Archaeological Strategy.

It is proposed that archaeological monitoring of construction works will take place where approved by the appointed RPA Project Archaeologist, in consultation with the DoEHLG & DCC as outlined in the Archaeological Strategy.

12.3 Residual Impacts

Any residual impacts will be Very Low.

Preservation by record of any archaeology will provide a positive impact in increasing our knowledge of the past.

13.0 SUMMARY OF MAJOR IMPACTS MN101 – MN107

The following is a summary of the major impacts from each area of the metro north scheme.

MN101

- Seven Recorded Archaeological monuments at Belinstown
- One Recorded Monument at Balheary Demesne / Lissenhall Great
- Three protected Structures – Lissen Hall, and bridge at Balheary Demesne / Lissenhall Great

MN102

- Two Sites of Archaeological Potential at Fosterstown North & South

MN103

- There are no major impacts in this section

MN104

- Three Sites of Archaeological Potential at Ballystruan and Ballymun
- Three Structures of Architectural Merit at Santry Lodge and Ballymun road

MN105

- One Structure of Architectural Merit – Westfield House

MN106

- One site of Archaeological Potential at the Mater Hospital
- Sixteen Structures of Architectural Merit at Leo Street, North Circular Road, Drumcondra Road, St Alphonsus Avenue & St Alphonsus Road

MN107

- Three National Monuments - St Stephen Green Park, Daniel O'Connell Monument & William Smith O'Brien Monument
- Twenty-three protected structures at O'Connell Street Lower and Westmoreland Street (including Sir John Gray Statue)
- Two Sites of Archaeological Potential at O'Connell Street and Parnell Square
- Two Recorded Archaeological Monuments – River Liffey Quays and a Ferry Site

14.0 RAILWAY ORDER CHANGES .

The changes to the railway order at the Malahide Footbridge, the relocation of the Swords Stop Sub-Station, the lengthening of the Northwood overbridge, the extension of existing farm access track along the east and south side side of the Belinstown depot and the set back entrance pavilion to match the building line of adjoining Hospital Block at Leo Street were considered, assessed and they result in no change to the impact as predicted in the EIS

15.0 SPECIFIC EIS RELATED SUBMISSIONS

The following submissions have been received by An Bord Pleanala in relation to the Archaeological, Architectural and Cultural Heritage

15.1 Submissions 1 & 86

St Stephen's green is a National Monument. It will be reinstated as close as possible to its original condition, in accordance with directions from OPW, following construction works. It will not be destroyed. National Monument status also applies to the areas immediately surrounding the national monument (i.e the road). There are no protective views in the DCC development plan.

15.2 Submissions 14, 56, 78, 81, 176

These submissions relate to concerns with regard to structural damage caused by construction vibration. These submissions will be dealt with by others.

15.3 Submission 177

Removal of part or whole of the basement represents demolition of part of a protected structure. As such mitigation will not lessen the significance of this impact. It is unclear at this time as to how much of the basement will be required for the station.

15.4 Submission 185 – Fingal County Council

This will be addressed by others

15.5 Submission 190 – Dublin City Council

Requested Condition 2, 3 c (iv), 20 & 22

This has been done as part of the Heritage works programme

Requested Condition 3 d (ii), 3 e (iii) & 22

These will be addressed by others.

Requested Condition 4–12, 14-16

These will be addressed by others.

Requested Condition 13

Geophysical survey not possible (see Geophysics report)

15.6 Submission 130 – Department of Environment, Heritage & Local Government

The proposed mitigation measures detailed in this EIS for archaeological impacts have been further developed and detailed in an Archaeology Strategy document for Metro North. This provides a base from which to plan the execution of the works. The overall approach to archaeological mitigation as detailed in the Archaeological Strategy has been agreed with DoEHLG and DCC. This strategy document is live and will continue to evolve with the project through the detailed design and construction phase of the project. It is part of the EIA process.

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