

METRO NORTH – PUBLIC INQUIRY

Proof of Evidence of

Mr. Timothy Brick, Executive Manager (Engineering)

Dublin City Council

In respect of

- **An Bord Pleanála's Letter of 14th March 2009 to DCC**
- **Noise, Vibrations & Settlement Issues**
- **Monitoring & Enforceability of Conditions**

November 2009

Rev. 01

1.0 Introduction

- 1.1.** My name is Timothy Brick. I hold a degree in Civil Engineering and am a Chartered Engineer, a Member of the Institution of Engineers (UK) and a Member of the Institution of Engineers of Ireland. I currently hold the position of Executive Manager (Engineering) with Dublin City Council. Prior to 2008 I held the position of Deputy City Engineer, since 1996. I have over 40 years experience in the design, supervision, construction and project management of large, complex, Civil Engineering Works in Ireland, Africa and the Middle-East. I was responsible for the direction of the Dublin Port Tunnel Scheme, from its initial planning phase (1996) through to its completion and opening in late 2006. During that time I held the position of the Employer's Representative for its design and construction contract. I still retain that role, pending the completion of the contract's Final Account.
- 1.2.** In 2008 the City Manager designated me to lead the Dublin City Council's Transport 21 Project Office. I have been charged with responsibility for the City Council's involvement with all aspects of the Transport 21 Programme's component schemes planned for the metropolitan area. The Metro North Scheme forms a major element of the Programme. In my current role I have co-ordinated and participated in the Dublin City Council multi-discipline and multi-agency liaisons and engagements with the RPA, which preceded Dublin City Council's submission of 24th Nov 2008 to An Bord Pleanála. That liaison and engagement will continue through the delivery phase and on to the start of the operations phase for the Metro North scheme.

2.0 Noise Issue

2.1. Dublin City Council's (DCC) submission to An Bord Pleanála, dated 24th November 2008, deals with this issue at Section 12.2 and in the attached Requested Conditions No. 17 through 24 (which also deal with vibrations and settlements). DCC's submission's comments arose mainly from our experience with the construction of the Dublin Port Tunnel scheme. There, although the Tunnel Boring Machines deployed were much larger than those being proposed for the Metro North scheme, the ground conditions were in many places similar and likewise for the proposed, large open cuttings for the station boxes. DCC's comments were mainly directed at the appropriateness of the standards and monitoring systems to be deployed and the avoidance of the probability of adverse comments arising.

2.2. DCC engaged with the RPA's expert in this field, Mr. Rupert Taylor, on 5th February 2009. We are now satisfied that the RPA's approach for the derivation of external noise limits takes cognisance of acceptable internal noise limits, with due recognition of the attenuation provided by the building structure. Likewise DCC are satisfied that the adoption of the DIN 4150 standard will achieve results similar to those proposed by DCC.

2.3. An Bord Pleanála's letter of 14th March 2009 specifically invites comment on two items, namely: -

- (i) *Adequacy of baseline noise data provided in the application to determine noise impacts for sensitive receptor; and*
- (ii) *Considerations on mitigation measures proposed to be employed.*

2.3.1. The baseline noise data is provided in the E.I.S. Volume 3, Book 1 & 2 (Annex B). In these the RPA state that the baseline noise survey for Metro North was carried out giving due regard to the methodologies laid out in the following guidance documents:-

- ISO 1996-1 Acoustic Description (Part 1);
- EPA, Survey Guidance Doc. 2003;
- EPA, Guidance in Relation to Scheduled Activities (2nd Edition, 2006);
- BS414 : 1997 – Rating Noise

A total of 31 monitoring locations have been listed in the E.I.S., Vol. 3, Book 2, Section 1.2.7. On Plan No. MN-EIS Vol. 3, Book 1 of 2, for Areas MN 106-107 no monitoring points are shown between NML 27 (set back from Drumcondra Road) and NML 28 (St. Stephen's Green North). However it is noted that the EIS, Vol.1, Book 1, Section 12.2.3 and in Table 12.2 (Baseline data) reference the Dublin City Council 'Noise Maps' 2007. It states that the noise values shown in these maps have been used "to obtain an initial view of the range of noise levels that occur within the Dublin City parts of the study area. This information has been considered when selecting appropriate Noise Monitoring Locations (NML)". [Note: (i) Under EU Directive 2002/49/EC, it is recommended that noise maps should be developed by computer modelling rather than measurement; (ii) DCC only in January 2009 established a total of 10No. Noise Monitoring Stations throughout the City.]. While it may be argued that a greater density of monitoring locations in some areas (e.g. near hospitals) and longer durations for monitoring may have bolstered the robustness of the baseline study,

DCC are satisfied that the RPA's overall approach to the establishment of a baseline may be deemed to be reasonable.

- 2.3.2.** The mitigation measures proposed are standard practices in the construction industry, in urban areas, for this type of project. DCC's and the RPA's agreed position on these matters are set out in the RPA's Response to DCC's submission document which has previously been lodged with the Inquiry.

3.0 Vibrations & Settlements

- 3.1.** DCC's submission to An Bord Pleanála dated 24th November 2008 deals with this issue at Sections 12.3 & 12.4 and attached Requested Conditions No. 17 through 24. Again DCC's comments arose from experiences on the Dublin Port Tunnel scheme.
- 3.2.** DCC engaged with the RPA's expert in these fields, Prof. John Burland, on 12th February 2009. We are now satisfied that the agreed approaches, as set out in the RPA's Responses to DCC's submission document, previously lodged with Inquiry, address the concerns DCC had in these matters. We would reference in particular those undertakings entered into, in the RPA's response, in respect of the Requested Conditions 18 to 24.
- 3.3.** The An Bord Pleanála letter of 14th March 2009 specifically invites DCC to comment on two items, namely: -
- (i) *Adequacy of information within the application to determine settlement and vibration for sensitive receptors; and*

- (ii) *Consideration on mitigation measures to be employed.*

DCC consider the information available to the RPA in respect of the soils, geology and hydrogeology is adequate to determine the settlement and vibration predictions posited at sensitive receptors. The sources of information are clearly set out in the EIS, Vol.1, Book 1 of 1, Sections 17 and 18 and the investigation reports referenced therein, copies of which are being provided to the Inquiry. It is further agreed that the mitigation measures being proposed at this juncture are satisfactory, when read in conjunction with the RPA's and DCC's agreed positions as set out in the RPA's response to DCC's submission (Requested Conditions 17 to 24), which document has previously been lodged with the Inquiry. Of particular note is the undertaking in their Construction & Maintenance Requirements for the Infraco to undertake a Stage 3 Assessment in respect of sensitive buildings, with the methodologies and monitoring results being available to the Local Authority. Similarly in respect of any protection and repair methodologies and works as may be proposed by the RPA's Infraco.

4.0 Monitoring & Enforceability of Conditions

- 4.1.** In so far as DCC are not now requesting the attachment of conditions, An Bord Pleanála's (ABP) query of 14th March 2009 is pertinent to any conditions they may see fit to attach to any Railway Order, as may or may not issue, together with the RPA and their Infraco adhering to commitments given to Dublin City Council (DCC) in the Agreed Position documents lodged at this hearing. Obviously the RPA have the primary responsibility to ensure they and their Infraco comply with any conditions attaching to a Railway Order. In the event of a dispute arising on this matter between

DCC and the RPA, which the parties cannot mutually resolve, any such dispute must be referred to ABP for adjudication as the Planning Authority on this subject matter. This was the direction given to DCC at the pre-application meeting held with ABP. (Ref: Mr. David Dunne at ABP Meeting on 24th July 2008)

4.2. The RPA have given evidence to the Inquiry that they propose a multi-disciplinary works management team. This is welcomed and is seen as a necessary control on the Infraco's works activities. It is however recognised by both the RPA and DCC that a supervisory regime will be required which ensures that DCC as a major stakeholder has a participatory role in ensuring the safe delivery of a quality scheme in the urban environment, for which DCC have a duty of care, and that provides for the monitoring and enforceability of conditions. Unfortunately no appropriate precedent exists within Ireland for such a regime in the context of a PPP contract of this scale and complexity.

4.3. Accordingly the RPA and DCC have agreed to the following approach, to establish an appropriate supervisory regime for the Metro North Scheme: -

- (i) A technical working group has been established within the RPA to formulate the strategy. The group consists of senior managers from a range of technical and project management disciplines and the group has been tasked with preparing a recommendation for the RPA executive and the RPA Board in April next year. A Peer Review group has also been established to carry out gateway reviews prior to any recommendation being made.

- (ii) There are two distinct milestones for the working group. The first is the Oral Hearing which is due to recommence in early December and the second is the release of the Best and Final Offer (BAFO) documentation to the short listed tenderers in mid 2010. RPA has already made certain commitments in its proof of evidence at the oral hearing in relation to monitoring and supervision. The intention now is to augment this evidence, if requested, when the oral hearing recommences with the examples of how clients in other jurisdictions manage PPP projects. The RPA intend expanding on the evidence if required by referring to the points raised with DCC in June 2009 regarding the role of the RPA in overseeing the safe and correct execution of the works. Appended is the list of points discussed for information (Appendix 1).
- (iii) Representatives of the group will be visiting the Docklands Light Rail in London during November in preparation for the hearing to discuss the Woolwich Extension which was a rail PPP bored tunnel. Other non-rail PPP schemes may also be utilised in preparing for the hearing.
- (iv) Prior to BAFO the working group will formulate a detailed strategy setting out recommendations regarding RPA's approach to design review, site supervision and monitoring.
- (v) Stage 1 will be to agree the aims and objectives of the strategy with Stage 2 involving more detailed research into the National Roads Authority and Dublin Port Tunnel project procedures and comparable international projects (PPP & non-PPP). The idea is to build on lessons learned from other projects both good and bad. The group will also need to agree the detailed scope of the various roles already envisaged on the project including the role of the

Independent Certifier, Independent Assessor (Railway Safety Commission), Independent Design Checkers (Cat 3 check), RPA Expert Panel, Independent Monitoring Engineer, and InfraCo's design consultants.

(vi) Stage 3 will provide a strategy report setting out the following:

- Background
- Aims & Objectives
- Lessons Learned from other projects
- Definition of roles in Metro North design review, site supervision and monitoring including process maps including the role of 3rd party stakeholders
- Quality Management System Requirements for BAFO
- Recommended compliance matrix for contractor's approval process (prior to commencing any individual part of the works) with recommendations on the level of audit by RPA and input from Infraco.
- Recommended Reviewable Data which will form a schedule to the Review Procedure in the PPP contract
- Recommended RPA organisational arrangements including recommendations for site based staff during PPP works for:
 - Health and Safety
 - Environment
 - Traffic
 - Quality
 - Public Relations
 - Engineering design (split by discipline)

- Engineering site supervision (split by discipline)
 - Testing, Commissioning and Trial Running.
 - Recommendation for members of the RPA Expert Panel for Metro; Noise & Vibration and Tunnelling construction methodology. (The Ground Movement specialist has already been identified).
- (vii) The timescale for the above exercise is to have this work completed by May 2010, but there will of course be a number of iterations between each gateway which will provide an opportunity for discussion with major stakeholders.

4.4. DCC will participate in the research into other international precedents and contribute thereto from their own experiences of similar large public projects delivered in the recent past. DCC will also participate in the Peer Review Group and be represented by personnel of wide international and national experience in the delivery and supervision of large scale infrastructure projects in the urban environment.

4.5. While it would have been preferable to have an agreement on an appropriate supervisory regime in place prior to the Inquiry, it must be appreciated that this scheme is a pioneer in its scale, procurement process and contractual complexity. What DCC and the RPA are endeavouring to put in place as a supervisory regime, with participation of major external stakeholders, is unprecedented and will, we have no doubt, form the template for future large scale public infrastructure schemes in Ireland. This joint endeavour is commended to ABP, who will be kept informed of its progression and eventual outcome.