

**MELBOURNE METRO RAIL PROJECT ENVIRONMENT EFFECTS STATEMENT**  
**INQUIRY AND ADVISORY COMMITTEE**

**MMRA TECHNICAL NOTE**

**TECHNICAL NOTE NUMBER:** 060  
**DATE:** 26 September 2016  
**PRECINCT:** CBD North and Western Portal  
**EES/MAP BOOK REFERENCE:** N/A

**SUBJECT:** Response to the 'Matters for further consideration and/or clarification' request dated 12 September 2016  
  
(v) Early works

**NOTE:**

1. This Technical Note has been prepared with the assistance of AJM to respond to issues raised by the Inquiry and Advisory Committee ("IAC") in the 'Matters for further consideration and/or clarification' request dated 12 September 2016.
2. For ease of reference, this Technical Note sets out each relevant request made by the IAC followed by a response from MMRA.

**Request:**

3. The IAC has requested:  
  
*Advice on proposed measures to monitor and manage potential effects of the proposed early works of shaft excavation and adit construction on the City Baths structures, and in and around Franklin Street.*

**Response:**

4. The scope of the early works at Franklin Street includes the construction of the shaft, but the adit would be part of the main station PPP contract. Both the Early Works and PPP Contractors will have to comply with the EPR requirements to develop and implement geological and groundwater models (GM1) and a ground movement plan (GM3). The contractors will

propose measures to monitor and manage the potential effects of these works to satisfy the EPRs therefore, at this stage, there are no specific measures identified.

5. Nevertheless, there are a number of measures that a contractor could consider for the purpose of monitoring and managing the potential ground movement effects of constructing the adit and shaft. The following list is not definitive, but typical of the types of measures that could be developed by a contractor:
  - a. Reviewing prediction of ground movement effects from the excavations on surrounding buildings, including the City Baths, as part of the detailed design
  - b. Conducting condition surveys of potentially affected structures within the zone of influence and providing the report to the owners. Based on the Concept Design, the City Baths are within the zone of influence of the early works
  - c. Installing monitoring points on the ground and, where required, on structures
  - d. Developing trigger levels and action plans based upon the predictions of movements and their impacts, and
  - e. Conducting regular monitoring and checking against trigger levels.

**Request:**

6. The IAC has requested:

*Whether the conduct of early works will be used to cross-check current model predictions.*

**Response:**

7. The early works contractor would develop a ground movement monitoring program under EPR GM3 that would include trigger levels and associated actions. The trigger levels would be based upon the predictions of the models used to develop the detailed design (EPR GM1) and also to assess the impacts of the Project works on the surrounding buildings and infrastructure. Therefore, the monitoring would provide confirmation that the ground and the structures are not moving more than expected, and thus that the assumptions and modelling are appropriate. Should a trigger level be reached, response actions would include an engineering review, as well as other responses appropriate to the trigger level and the situation.
8. The results of the monitoring conducted during the early works would be provided to the PPP contractor for the main works.

**CORRESPONDENCE:**

No correspondence.

**ATTACHMENTS:**

No attachments.