

Our ref: BSW:5508/11 Your ref:

21 March 2012

Ms Natasha Harras Planner Department of Planning GPO Box 39 SYDNEY NSW 2001 By email: natasha.harras@planning.nsw.gov.au

Dear Ms Harras

RYDE MEDICAL CENTRE SUBMISSION TO DEPARTMENT OF PLANNING GRAYTHWAITE PROJECT PART 3A ENVIRONMENTAL ASSESSMENT APPLICATION NO. MP10_0179

I refer to the submission made on 15 February 2012 on behalf of Ryde Medical Centre together with enclosed reports dated 13 January 2012 from Renzo Tonin & Associates and report dated 20 January 2012 from Douglas Partners. I also refer to the City Plan Services Response to Submissions and Preferred Project Report together with responses to the Submissions by Acoustic Logic and Jeffrey and Katauskas.

We have referred the PPR and response to submissions to Renzo Tonin & Associates (NSW) Pty Ltd, Douglas Partners and Brian Farmer. Mr Farmer is a project manager, highly experienced in projects including major health infrastructure projects.

I enclose a set of conditions which embody the consultants' advice and recommendations on the proposed conditions.

In addition to the above we have referred the Jeffrey & Katauskas report to Douglas Partners in relation to the matters in paragraphs 4(a) and (b) of my letter of 15 February 2012 which relate to technical issues addressed in the letter of 28 February 2012 from Jeffrey & Katauskas Pty Ltd to Aurora Projects Pty Ltd which is an attachment to the PPR. However, rather than our client seeking to address the appropriate pressure we have included a condition addressing the result namely that the works would not cause damage, etc. This should be an acceptable resolution.

A significant issue is the recommendation by Renzo Tonin & Associates for the erection of a noise barrier on the west side of the construction site to shield the Ryde Medical

> 10TH FLOOR, 82 EL1ZABETH STREET • SYDNEY NSW • 2000 PHONE: (02) 9221 8522 • FAX: (02) 9223 3530 DX 1556 SYDNEY BRUCE WOOLF BA LLB DIP URP MRAPI PRINCIPAL Liability limited by a scheme approved under Professional Standards Legislation

Centre. The proposal is a large project adjacent to a sensitive land use with sensitive medical equipment (radiology, heart monitoring and similar). It is submitted that it is insufficient in relation to the project that this aspect be postponed until a contractor program has been developed as suggested by Acoustic Logic given the above factors and that Renzo Tonin & Associates have recommended the noise barrier, among other things, as a minimum requirement. Renzo Tonin & Associates have had regard to the potential construction noise levels of 55 - 65 dBA within the hospital and that expected similar noise levels inside the Ryde Medical Centre may be expected when excavators, rock hammers and piling works are being undertaken. To quote from Renzo Tonin & Associates:

"An internal noise level of 65dBA significantly exceeds the 45 dBA internal noise goal stated in the report. 65dBA inside the Ryde Medical Centre would also significantly compromise the quiet nature of medical consulting rooms and likely interfere with doctor to patient conversations. ..."

Mr Michael Gange, senior engineer, Renzo Tonin & Associates Pty Ltd has commented as follows on the Acoustic Logic assertion that it is premature to require the barrier on the western side of the development:

"With regard to the proposed noise barrier/hoarding on the western side of the site, while I agree that the final height and material selection for the barrier may be best selected at the CC stage of the project, there are a few practical alternatives to a noise barrier that could provide a significant reduction in noise. I therefore suggest that the requirement for noise barrier should remain, with the height, extent and material to be decided at the CC stage. I have amended the draft conditions accordingly."

We request the Department condition the project approval so that the recommended barrier be required as it is clear otherwise that there will be significant noise disturbance to RMC.

I enclose:

- 1. Proposed conditions relevant to RMC;
- 2. Copy letter 19 March 2012 from Renzo Tonin & Associates together with the enclosure;
- 3. Email dated 16 March 2012 from Brian Farmer;
- 4. Letter dated 21 March 2012 from Douglas Partners to RMC.

Accordingly we request conditions as enclosed be included in any Project approval. We are yet to receive responses from NSW Health Infrastructure to matters relating to the rock anchors and so Ryde Medical Centre has not at this stage granted approval to the rock anchors.

Yours faithfully



Consultants in Acoustics, Vibration & Structural Dynamics email: sydney@renzotonin.com.au website: www.renzotonin.com.au

TF605-01F03 (Rev 0) Review of Draft Conditions

19 March 2012

Woolf Acssociates Bruce Woolf

RE: RYDE MEDICAL CENTRE & GRAYTHWAITE REHABILITATION PROJECT – REVIEW OF DRAFT CONDITIONS

I refer to your letter of 15 March 2012 which requests that Renzo Tonin & Associates review recent corresponded relating to the project and provide appropriate comments on the proposed conditions.

I enclose the proposed conditions with my suggested amendments, including references to specific noise goals and appropriate NSW noise policy documents.

With regard to the proposed noise barrier/hoarding on the west side of the site, while I agree that the final height and material selection for the barrier may be best selected at the CC Stage of the project, there are few practical alternatives to a noise barrier that could provide a significant reduction in noise. I therefore suggest that the requirement for a noise barrier should remain, with the height, extent and material to be decided at the CC stage. I have amended the draft conditions accordingly.

I also note that Acoustic Logic makes reference to two documents which I have not reviewed, being an acoustic specification that nominates treatment for the control of mechanical noise, and a report which nominates treatment for the proposed generator. While I can review these if required, the amendments I have made to the conditions will enforce the appropriate criteria in any case.

Yours faithfully,



RENZO TONIN & ASSOCIATES (NSW) PTY LTD

Michael Gange Senior Engineer

88

Sydney (Head Office) **Renzo Tonin & Associates (NSW) Pty Ltd** ABN 29 117 462 861 1/418A Elizabeth St., SURRY HILLS, NSW 2010 PO Box 877 STRAWBERRY HILLS, NSW 2012 Ph (02) 8218 0500 Fax (02) 8218 0501 Melbourne Brisbane Gold Coast Kuwait

See later revised version submitted by applicant which incorporates these and other experts amendments.

DRAFT CONDITIONS FOR GRAYTHWAITE PROJECT

Acoustic

Construction Phase:

- 1. Prepare a detailed construction noise and vibration management plan (CNVMP) prior to commencement of construction to be approved by the Department and to be fully implemented by the construction contractor. The CNVMP must include the following requirements:
 - (a) Describe the mitigation and management measures that will be implemented to achieve the 45dBA internal noise criteria for the Ryde Medical Centre.
 - (b) Describe details of the noise barrier/hoarding that will be erected on the western side of the construction site to shield the Ryde Medical Centre. The height and length of the barrier shall be determined as part of the CNVMP once the specific construction equipment and processes to be used are known.
 - (c) Residential grade mufflers fitted to all diesel engine powered equipment.
 - (d) Provide a work program showing durations of the various phases of work and give prior notification to the Medical Centre of the days when particularly noisy activities such as rock hammering or piling are to occur.
 - (e) Provide a mobile phone number of the project manager on site so that if noise levels become an issue at any time, the Medical Centre can contact the project manager and request a change to the activities.
 - (f) Locate static plant such as generators, concrete pumps and cranes away from the western site boundary and/or provide acoustic screens or enclosures around them.
- 2. The recommendations in paragraph 4.3.2 of the Acoustic Logic report inclusive of the following must be adopted:
 - (a) Replacing high vibration activity such as rock hammering and pile driving with rock saws and bored piling where required.
 - (b) Carry out a detailed vibration study prior to construction commencement which recommends suitable buffer distances or identifies equipment that should not be used also a copy of the study to be provided to Ryde Medical Centre.
 - (c) Carry out a dilapidation study of Ryde Medical Centre prior to and post construction works at the cost of and by NSW Health Infrastructure with copy of each to be provided to Ryde Medical Centre.

(d) Vibration monitoring to be conducted at commencement of excavation to ensure that vibration levels are below the required limits (the required limits to be specified). Results of vibration monitoring to be provided to Ryde Medical Centre.

Operational phase of Graythwaite Rehabilitation Centre:

4.

3.

- (a) Generator room located adjacent to Ryde Medical Centre boundary (ground floor plan between gridlines A-B and 1-2 to be designed with appropriate wall constructions, acoustic doors and seals so that noise emissions do not exceed the set noise goals at the boundary, as defined by the NSW Industrial Noise Policy.
- (b) Noise mitigation to be installed to the mechanical plant on the rooftop to achieve the noise goals set out in the NSW Industrial Noise Policy.
- (c) Conduct a detailed review of mechanical plant noise emissions once plant selections on locations are finalised including in determination as to the height and extent of the proposed screens around the rooftop plant to ensure satisfactory acoustic control and to determine whether some of the louvred sections of the enclosure should be changed to screens.
- (d) Plant noise to be attenuated to meet satisfactory standards using standard acoustic treatment.
- (e) Clarification of the recommended earth pressure distribution for the design of the anchored shoring wall along the western boundary of the proposed GRC development. Douglas recommends this be based on a trapezoidal earth pressure distribution and a lateral earth pressure of 8H(kPa) for the soil and weathered shale, where H is the retained height in metres.
- (f) Clarification of the redirection of the drain on the northern side of the RMC building and the relocated sewer currently outside the eastern boundary of RMC.

Geotechnical

- 5. If Ryde Medical Centre provides advice to NSW Health Infrastructure as to acceptable limits for medical equipment used by Ryde Medical Centre, NSW Health Infrastructure to ensure works will be carried out so that the medical equipment will continue to function properly taking into account the vibrations generated by excavation works, pile augering and percussion drilling. At present the standard of 5mm/s for continuous vibration to be complied with.
- 6. Continuous quantitive ground vibration monitoring to be carried out during the construction works and in particular for the duration of the demolition, excavation and shoring works. The contractor to be responsible for keeping within these limits (limits to be specified) and should they be exceeded the methodology or equipment used should change accordingly.

- 7. The project approval is subject to payment of RMC reasonable geotechnical engineer consultant fees and to RMC granting permission to install anchors beneath its property and the following conditions to apply in relation to rock anchors:
 - Following completion of the permanent works evidence be provided to RMC confirming that all installed anchors have been de-stressed and all physical connection between the anchor and shoring wall have been removed.
 - (ii) NSW Health Infrastructure provide a warranty confirming that all redundant anchors left in the ground will not adversely impact RMC or any future development RMC may wish to undertake or impact NSW Health Infrastructure, other structures or services should the anchors be excavated from within or outside of RMC's property boundary in the future.
 - (iii) Dilapidation survey to be undertaken prior to commencement of the construction works and to be provided to RMC. Second dilapidation survey to be carried out 2 months after all construction works are completed and to be provided to RMC.
 - (iv) NSW Health Infrastructure to provide RMC a financial bond against any damage that may result from the construction works or any other activity by the proponent on either its site or on the RMC site. That NSW Health Infrastructure indemnifies and keeps indemnified RMC from and against any damage or injury or liability that arises from the installation of the rock anchors and any other activity by the proponent on either its site or on the RMC site.

Admin - Woolf Associates

From: Brian	Farmer	[tgag@bigpond.com]
-------------	--------	--------------------

- Sent: Friday, 16 March 2012 9:26 AM
- To: 'Admin Woolf Associates'
- Cc: rdeloughery1@bigpond.com

Subject: RE: Ryde Medical Centre - Graythwaite Project

Bruce

I respond to your email and attachments yesterday and respond to your letter to me dated 15 March as follows.

Third para:

The vibration requirements advised by Toshiba for imaging equipment was addressed in the attached email dated 21 February. In summary, Toshiba's requirements for maximum vibration levels of 0.98 m/sec2 (a measure of particle acceleration) equates to 2.5 mm/s (a measure of particle velocity) for all practical frequencies. See David Flemings advice of 21 February at 2.27 pm. The original advised Douglas Partners vibration limit of 5mm/s for excavation, et al., gives acceleration levels greater than 0.98 m/sec2 for frequencies over 30 Hz. See David Flemings advice of 21 February at 3.02 pm. In other words (and not surprisingly), the equipment limits are more critical.

Fourth para:

Acoustic Logic letter dated 22 February (second page in particular) focuses on prescriptive measures and why they can't yet be defined as a contractor is not yet on board. I strongly suggest that you continue to define performance requirements. The contractor, in time, will then have to propose how it intends to comply with those requirements.

Jeffrey and Katauskas letter dated 28 February. I note the discussion/disagreement about the Douglas Partners advice. Getting involved in a dispute between experts on technical matters is usually not beneficial. Again, the end result that RMC wants is no adverse outcomes (eg, deflections, etc). How Health Infrastructure handles that is a matter for its own risk assessment. Again, focus on the outcomes and the consequences on RMC if HI does not deliver its obligations.

Your draft letter to DoP dated 15 March. Keep pushing to getting to get the noise barrier (a prescriptive outcome) but continue to insist that no matter what the Contractor does, the acceptable internal noise level (of 45 dBA) **must** be achieved no matter what else is done. Again, the Contractor (in time) must evidence how it will attenuate site noise to this level. RMC must consider the consequences if HI does not deliver its obligations – including the ability and commitment by RMC/HI to stop adverse non-compliant site activity and to have RMCs costs paid.

Draft conditions for Graythwaite Project. The 2.5mm/sec (and not 5mm/sec) and or 0.98 m/sec2 vibration requirements for imaging equipment **must** also be included in the conditions **plus** the requirement for RMC operations to be uninterrupted throughout. Again RMC must consider the consequences if HI does not deliver its obligations – including the ability and commitment by RMC/HI to stop adverse non-compliant site activity and to have RMCs costs paid.

Happy to discuss.

Regards

Brian Farmer 0419 299 751/02 4996 3017

From: Admin - Woolf Associates [mailto:woolf@zipworld.com.au] Sent: Thursday, 15 March 2012 5:16 PM **To:** 'Brian Farmer' **Subject:** Ryde Medical Centre - Graythwaite Project

Dear Brian

I enclose letter 15 March 2012 Woolf Associates to you together with the enclosures referred to in the letter.

Regards Bruce Stephen Woolf

WOOLF ASSOCIATES Solicitors Level 10 82 Elizabeth Street SYDNEY NSW 2000 DX 1556 SYDNEY Tel: (02) 9221 8522 Fax: (02) 9223 3530

Liability limited by a scheme approved under Professional Standards Legislation

Admin - Woolf Associates

From: Brian Farmer [tgag@bigpond.com]

Sent: Tuesday, 21 February 2012 4:27 PM

To: 'David Fleming'

Subject: RE: Ryde Medical Centre - Vibration Query

David

Thank you

Brian Farmer

From: David Fleming [mailto:David.Fleming@douglaspartners.com.au]
Sent: Tuesday, 21 February 2012 3:02 PM
To: Brian Farmer
Cc: Admin - Woolf Associates; rdeloughery1@bigpond.com
Subject: RE: Ryde Medical Centre - Vibration Query

Brian,

At 5 m/s would be approximately two times the acceleration than for a velocity of 2.5m/s. i.e. At a velocity of 5mm/s: @ 10 Hz = 0.31 m/s/s acceleration @ 30 Hz = 0.94 m/s/s acceleration @ 60 Hz = 1.8 m/s/s acceleration

Kind Regards

David

From: Brian Farmer [mailto:tqaq@bigpond.com] Sent: Tuesday, 21 February 2012 2:42 PM To: David Fleming Cc: Admin - Woolf Associates; <u>rdeloughery1@bigpond.com</u> Subject: RE: Ryde Medical Centre - Vibration Query

David

Thank you.

What if the peak particle velocity is not to exceed 5mm/s? Is the acceleration increase directly proportional?

Regards

Brian Farmer

From: David Fleming [mailto:David.Fleming@douglaspartners.com.au]
Sent: Tuesday, 21 February 2012 2:27 PM
To: Brian Farmer
Cc: rdeloughery1@bigpond.com
Subject: Ryde Medical Centre - Vibration Query

Brian,

Unfortunately it is not a straight forward relationship between acceleration and peak sum particle velocity as it is dependent on a number of factors including the frequency (Hz).

Using the conversion application at <u>http://cbmapps.com/apps/34</u> the acceleration based on a peak particle velocity of 2.5mm/s for different frequencies are as follows,

The acceleration at a Peak Particle Velocity of 2.5 mm/s pk at:

10 Hz = 0.15 m/s/s 20 Hz = 0.31 m/s/s 30 Hz = 0.47 m/s/s 40 Hz = 0.62 m/s/s 50 Hz = 0.78 m/s/s 60 Hz = 0.94 m/s/s 65 Hz = 1.02 m/s/s

Based on the above, for the Maximum vibration (acceleration) of 0.98 m/s/s to be exceeded, the operating machinery would need to generate a Peak Particle Velocity of 2.5 m/s at a frequency >60 Hz. The exact ground frequencies will vary depending on the plant used and the ground conditions, hence this can only be established on site. We would anticipate that the likely frequencies generated from percussion drilling and pile augering would typically be between 20 Hz and 50 Hz.

If during vibration monitoring velocities are recorded the corresponding acceleration can also be calculated and vice versa. The reporting of both velocity and acceleration may be something you may wish to request as part of the vibration monitoring.

I hope this helps.

Kind Regards

David Fleming | Senior Associate / Geotechnical Engineer
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 8878 0603 | F: 02 9809 4095 | E: David.Fleming@douglaspartners.com.au

This email is confidential. If you are not the intended recipient, please notify us immediately and be aware that any disclosure, copying, distribution or use of the contents of this information is prohibited. Please note that the company does not make any commitment through emails not confirmed by fax or letter.

From: Brian Farmer [mailto:tgag@bigpond.com] Sent: Tuesday, 21 February 2012 11:20 AM To: David Fleming Subject: Ryde Medical Centre

David

I am retained by Ryde Medical Centre to provide project advice concerning Health Infrastructure's proposed adjacent Graythwaite Rehabilitation Centre at Dennistone.

21/03/2012

I spoke to you briefly several weeks ago about acceptable vibration levels from adjoining excavation/construction activity.

Your 20 January report to Robyn Deloughery referenced at Page 5 vibration levels of 5 mm/sec but suggested that equipment suppliers might provide advice as to acceptable limits for their equipment.

l attach information from Toshiba and which references a maximum vibration of 0.98 m/s².

Your and Toshiba's maximum vibration level are expressed in different units.

Can you please comment on their equivalency or otherwise?

Happy to discuss.

Regards

Brian Farmer 0419 299 751

Click here to report this email as spam.



Douglas Partners Pty Ltd ABN 75 053 980 117 www.douglaspartners.com.au 96 Hermitage Road West Ryde NSW 2114 PO Box 472 West Ryde NSW 1685 Phone (02) 9809 0666 Fax (02) 9809 4095

> Project 72801.00 Date 21/03/2012 DF

Ryde Medicał Centre Suite 13, 247 Ryedale Road Eastwood NSW 2122

Attention: Mrs. Robyn Deloughery

Email: rdeloughery1@bigpond.com

Dear Sirs

Amended Response to matters addressed by Jeffery & Katauskas, Ref: 24595ZA2let (28/02/2012)

Ryde Medical Centre, Eastwood and Graythwaite Rehabilitation Centre, Denistone

Douglas Partners (DP) were provided on the 15/03/2012 with the following letters for review:

- Jeffery and Katauskas Pty Ltd (J&K) Geotechnical Review of Supplied Reports Proposed Graythwaite Rehabilitation Centre Ryde Hospital, Fourth Avenue Denistone NSW; and
- Ryde Medical Centre Submission To Department of Planning Graythwaite Project part 3A Environmental Assessment, Application NO.MP10_0179.
- 5510811 Ryde Medical Centre Draft Conditions for Graythwaite Project

The letter prepared by J&K addresses concerns previously raised by DP (20/01/2012) in relation to the proposed shoring wall (SW6) along the eastern boundary of Ryde Medical Centre. J&K have provided comments on the deflections predicted by Taylor Thomas Whitting (TTW) along SW6 for the contiguous pile wall section and the cantilevered portion of the soldier pile wall. TTW indicate a maximum deflection of 16 mm for the anchored contiguous wall and 20 mm for the cantilevered portion of the soldier pile wall.

On the basis that the deflections of the wall can be controlled to less than 10 mm, DP concur with J&K that the shoring wall (SW6) can be designed for a lateral earth pressure of 6H (kPa). However, as indicated by J&K, the following measures are required to reduce deflections to less than 10 mm,

- 1. The installation level of the temporary anchors through the southern contiguous piled length of SW6 should be appropriately positioned so that the maximum deflection is no more than 10 mm; and
- 2. Temporary anchors should be installed and appropriately positioned through the soldier pile wall section of SW6 so that the maximum deflection is no more than 10 mm.

J&K "recommend that a CCTV inspection be undertaken of the retained length of the sewer line prior to the commencement of construction. If it is found that the sewer pipe is damaged, it may be prudent

Brisbane • Cairns • Campbelltown • Canberra • Darwin • Gold Coast • Melbourne • Newcastle • Perth • Sunshine Coast • Sydney • Townsville • Wollongong • Wyong



Page 2 of 2

to replace the damaged portions of the pipe once SW6 has been restrained by the permanent structure". DP agree with this recommendation and suggest the CCTV inspection should be undertaken as part of the dilapidation surveys.

In relation to the draft conditions, item 4 (e), should now be removed and substituted with points 1 and 2 above. The recommendation to carry out a CCTV inspection of the sewer pipe should be included under item 7 (iii) as part of the dilapidation surveys.

We trust that these comments are sufficient for your present requirements. If further assistance is required, please do not hesitate to contact the undersigned.

Please contact either of the undersigned for clarification of the above as necessary.

Yours faithfully Douglas Partners Pty Ltd

David Fleming Senior Associate

Reviewed by

Un charle ()

Michael J Thom Principal

cc: Woolf Associates (Solicitors) – Attention: Mr Bruce Woolf Email: woolf@zipworld.com.au

CONDITIONS FOR GRAYTHWAITE PROJECT

Acoustic

Construction Phase:

- 1. Prepare a detailed construction noise and vibration management plan (CNVMP) prior to commencement of construction to be approved by the Department and to be fully implemented by the construction contractor. The CNVMP must include the following requirements:
 - (a) Describe the mitigation and management measures that will be implemented to achieve at all times a 45dBA internal noise criteria for the Ryde Medical Centre.
 - (b) Describe details of the noise barrier/hoarding that will be erected on the western side of the construction site to shield the Ryde Medical Centre. The height and length of the barrier shall be determined as part of the CNVMP once the specific construction equipment and processes to be used are known.
 - (c) Residential grade mufflers fitted to all diesel engine powered equipment.
 - (d) Provide a work program showing durations of the various phases of work and give prior notification to the Medical Centre of the days when particularly noisy activities such as rock hammering or piling are to occur.
 - (e) Provide a mobile phone number of the project manager on site so that if noise levels become an issue at any time, the Medical Centre can contact the project manager and request a change to the activities.
 - (f) Locate static plant such as generators, concrete pumps and cranes away from the western site boundary and/or provide acoustic screens or enclosures around them.
- 2. The recommendations in paragraph 4.3.2 of the Acoustic Logic report inclusive of the following must be adopted:
 - (a) Replacing high vibration activity such as rock hammering and pile driving with rock saws and bored piling where required.
 - (b) Carry out a detailed vibration study prior to construction commencement which recommends suitable buffer distances or identifies equipment that should not be used also a copy of the study to be provided to Ryde Medical Centre.
 - (c) Carry out a dilapidation study of Ryde Medical Centre prior to and post construction works at the cost of and by NSW Health Infrastructure with copy of each to be provided to Ryde Medical Centre.

(d) Vibration monitoring to be conducted at commencement of excavation to ensure that vibration levels are below the required limits (the required limits to be specified). Results of vibration monitoring to be provided to Ryde Medical Centre.

Operational phase of Graythwaite Rehabilitation Centre:

- 3.
- (a) Generator room located adjacent to Ryde Medical Centre boundary (ground floor plan between gridlines A-B and 1-2 to be designed with appropriate wall constructions, acoustic doors and seals so that noise emissions do not exceed the set noise goals at the boundary, as defined by the NSW Industrial Noise Policy.
- (b) Noise mitigation to be installed to the mechanical plant on the rooftop to achieve the noise goals set out in the NSW Industrial Noise Policy.
- (c) Conduct a detailed review of mechanical plant noise emissions once plant selections on locations are finalised including in determination as to the height and extent of the proposed screens around the rooftop plant to ensure satisfactory acoustic control and to determine whether some of the louvred sections of the enclosure should be changed to screens.

Geotechnical

- 4. The works are to be carried out so as to comply with the standard of 2.5mm/s for continuous vibration so that the medical equipment used by the Ryde Medical Centre will continue to function properly taking into account the vibrations generated by excavation works, pile augering and percussion drilling.
- 5. Continuous quantitive ground vibration monitoring to be carried out during the construction works and in particular for the duration of the demolition, excavation and shoring works. The contractor to be responsible for keeping within these limits (limits to be specified) and should they be exceeded the methodology or equipment used should change accordingly.
- 6. The western boundary shoring wall (SW6) is to be designed to ensure that no damage or disturbance is caused or will arise to the RMC property.
- 7. The project approval is subject to payment of RMC reasonable geotechnical engineer consultant fees and to RMC granting permission to install anchors beneath its property and the following conditions to apply in relation to rock anchors:
 - (i) Following completion of the permanent works evidence be provided to RMC confirming that all installed anchors have been de-stressed and all physical connection between the anchor and shoring wall have been removed.

- (ii) NSW Health Infrastructure provide a warranty confirming that all redundant anchors left in the ground will not adversely impact RMC or any future development RMC may wish to undertake or impact NSW Health Infrastructure, other structures or services should the anchors be excavated from within or outside of RMC's property boundary in the future.
- (iii) Dilapidation survey to be undertaken prior to commencement of the construction works and to be provided to RMC. Second dilapidation survey to be carried out 2 months after all construction works are completed and to be provided to RMC. The dilapidation survey is to incorporate a CCTV inspection of the sewer pipe which runs between the subject land and RMC.
- (iv) NSW Health Infrastructure to provide RMC a financial bond against any damage that may result from the construction works or any other activity by the proponent on either its site or on the RMC site. That NSW Health Infrastructure indemnifies and keeps indemnified RMC from and against any damage or injury or liability that arises from the installation of the rock anchors and any other activity by the proponent on either its site or on the RMC site.