Content:
attachment has details

Submission to NSW Planning and Environment

Sydney Metro – Blue Point Temporary Retrieval Site

Tuesday 21st June 2016

Blues Point Rd, McMahons Point, NSW, 2060

2. Application to mitigate impact Blues Point

3. **SS1 15_7400**

4. Brief Statement of Objection:

I object to the proposal to excavate Blues Point Reserve for a Metro Retrieval Site for following reasons:

a. It will forever ruin the reserve; Even once the hole has been refilled, the underlying layers of soil being removed will have historical artifacts that will be lost. The parkland and views during the work will be severely impacted which will affect both residents and tourists. Does this site have to be destroyed? Surely there must be other options for locations to access the tunnel! Barangaroo is non residential at the moment, why does it have to be in our side of the harbor? The impact of the proposal on this narrow and small peninsular will be catastrophic for residents.

b. Trucks and machinery ; The number of trucks and movements of machinery will significantly affect residents in many ways. Most importantly safety of pedestrians all along Blues Point Road, followed by noise, dust and vibrations caused by many truck movements per day. The impact on the ability to access local shops and the loss of customers for them will be significant. My request to this is that could you please investigate and then implement barges be used rather than trucks to remove the spoil and also to deliver the concrete and tunnel machinery.

c. Vibration damage to historical homes: This will be inevitable in this area and will be caused by the underground tunneling process and the unimaginable numbers of trucks thundering up and down the road. Our home is pre 1900 and as such was built out of soft lime and morter and internally we have Lath and Plaster ceilings which crumble when even touched. What will happen to us if the ceilings fall in on us? Do you have a plan to assess our homes before tunneling commences? What will the future impact implications be if the foundations shift from the vibrations and our row of terraces actually falls down?

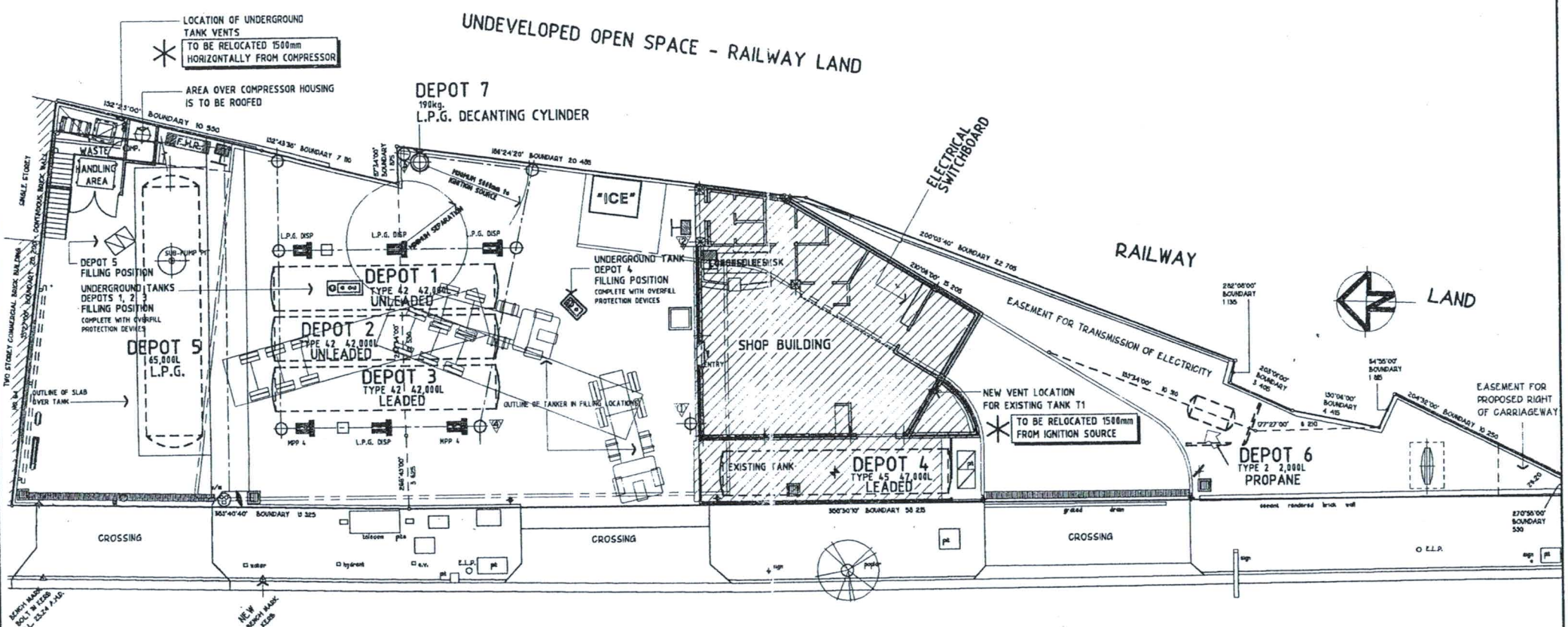
d. Parking on Blues point Road and surrounding streets. As we have no garage (like most residents on our road) we rely on street parking. We have been told that at times this will be unavailable to residents. Where are we supposed to park? How will we be able to manage our lives with getting to work, school, shops, hospitals etc?

I declare that I have made no reportable political donations in the previous 2 years, or ever.

Content:
With the removal of the bridge and block off of Nelson Street, there will be more vehicles traveling on Orchard Road (between Nelson and Mowbray) to get onto south bound of Pacific Highway via Mowbray Road. With the current traffic flow, we are already experiencing difficulties accessing our property. The change will put further pressure, please consider traffic arrangement for residence on this section of Orchard Road.

Confidentiality Requested: yes

Content:
We have concerns about how the proposed works may impact our site at 66-70 Regent Street, Chippendale. Our site operates as a petrol & LPG service station. All tanks, LPG pumps and associated equipment are located underground and adjacent to the proposed works. The tanks, pumps and associated equipment are susceptible to vibration damage. Any damage due to vibration from the proposed works will need to be rectified immediately and any contamination that results from the damage will be the responsibility of the entity conducting the proposed works, and the entity will be liable for any damages that result from contamination to our site and any adjacent site. Current ground water contamination testing at our site reveals no contamination. The safety and integrity of our site must be ensured throughout the duration of the proposed works.
We also have concerns that the proposed works may directly impact the business by obstructing traffic entering and exiting the site.



DEPOT	TYPE	CLASS	PACKAGE	MAX. CAPACITY
1	UNDERGROUND TANK	3	II	42kL
2	UNDERGROUND TANK	3	II	42kL
3	UNDERGROUND TANK	3	II	42kL
4 *	-			
5	UNDERGROUND TANK	2.1	-	65kL
6	ABOVE GROUND TANK	2.1	-	2kL
7	DECANTING CYLINDER	2.1	-	190kg

As shown in this plan conforms with the DANGEROUS GOODS ACT 1975 and Australian Standards AS 1940 - 1993
AS 1596 - 1997

Signature : . . . . . Date : . . / . . / . .

Name (Printed) : . . . . . .

* DEPOT 4 NOT INCLUDED AS PART OF THIS STAMPED PLAN (pending exemption)

LEGEND

numbered 1 to 4 — denotes 4.5 kg DRY POWDER FIRE EXTINGUISHER TYPE 4A:40B:E) ITEMS 3 and 4 CABINET MOUNTED

F.H.R. — FIRE HOSE REEL MOUNTED IN CABINET

denotes EMERGENCY STOP BUTTON

NO.	DATE	BY	AMENDMENT	APPROVED
B	23.03.98	GWS	NOTES AND SCHEDULE ADDED. REISSUE FOR CERTIFICATION	
A	10.02.98	GWS	ISSUE FOR CERTIFICATION	

ARMSTRONG BOYD and associates pty. ltd.
suite 2/253 OLD NORTHERN ROAD CASTLE HILL 2154
telephone: (02) 899 4633 A.C.N. 003 347 819 fax: (02) 899 1838

DATE CREATED 08.02.98
DRAWN BY ABCaD
CHECKED BY GWS
APPROVAL FOR ISSUE .....
SCALE 1 : 100
DATE PLOTTED 17.03.98

PROJECT
REBUILD SERVICE STATION
70 REGENT STREET
CHIPPENDALE
for MONSGROVE DEVELOPERS PTY LTD

TITLE
LAYOUT for D.G.B. APPROVAL

DRAWING PREPARED BY	SHEET SIZE	DRAWING No.	REVISION NO.
ABCaD	A1	3408-DGB	B

REF. 3408DGBLOWG

Content:
I take this opportunity to OPPOSE the southwest section of the Sydney Metro line from Sydenham to Bankstown and the proposed privatisation of our rail services.

The glossy brochures and hype don't provide the real details on costs and impacts along this section of the proposed route. Nor do they begin to take into consideration the displacement of 1000s of existing families or loss of 1000s of federation homes that represent our recent history. These unique communities and homes will be lost forever if the southern section goes ahead along with the disgraceful proposed up zoning adjacent to stations.

The lack of detail and transparency on this southwest section of the route is disgraceful. Why should we pay billions of dollars towards a metro system that is unlikely to actually provide a better service than already exists along that route and merely provides developers with the opportunity to make billions of dollars through the up zoning of land close to the stations.

The existing train route is under-utilised most of the time except for a relatively short peak in the morning and afternoon rush hour. Clever peak shifting, optimisation of the current railway system and considering how people will actually work in the future (i.e. many more in hubs in close proximity to their homes - rather than commuting to the city centre) has not been adequately considered. Such measures are far cheaper than the build build build attitude of the current government.

If you want to provide a metro service and to fit such a ridiculous population projection into NSW then don't wreck and existing rail route. Provide a new rail route to ADD to the system or better still provide such levels of investment to fast trains to regional hubs around the city.

Name: John Brown

Millers Poinr, NSW
2000

Content:
The apartment I own is in the Towns Place building at 25A Hickson Road, MillerPoint.I understand the CHATSWOOD-SYDENHAM METRO: SS15 7400 will travel under the building and its adjacent car parking areas.
I have a number of objections to the implementation of the Proposal, the most serious relating to noise and vibration issues adversely impacting residents and businesses, and to the due process available to objectors which impacts on the nature and detail of those objections.

I have not made any political donations in the last two years.

Substantive Objections
Position of Tunnels
1 It appears from the current plans/ diagrams that the eastern tunnel may pass beneath, or very close to, the north western corner of the Dalgety Road building of the Owners Corporation at a (stated) depth of 35 metres. Given that the EIS Summary notes that the current plans / diagrams are indicative only (as well as containing a 30 metre tolerance for the tunnels' final position), this objection is based on the assumption that it is intended that the tunnel is in fact due to be located in the position described.
2 The tunnel described continues south below Dalgety Road and continues to the new proposed metro station at Barangaroo. The tunnel also passes below Dalgety Road and, in part, passes beneath terraces on Dalgety Road. Those terraces sit on a sandstone cliff situated approximately 10 metres above the Dalgety Road surface. That adds an additional 10 metres to the (claimed) 35 metre buffer between the tunnel and the surface for those properties. In contrast, the Towns Place residential tower not only lacks this 10 metre buffer, but also has a private and public car park down to a depth of approximately 20 metres below ground level, significantly reducing the buffer shown on the plan, and exacerbating noise and vibrations.
3 I understand the technicians present at the explanatory meeting in respect of this part of the tunnel on 25 May 2016 were not aware that the Owners Corporation building had a 6 level carpark below ground to a depth of approximately 20 metres and that, if the tunnel depths were maintained at 35 metres, as indicated on the current plans / diagrams, the buffer between the eastern tunnel and the bottom level of the carpark would, at most, be only about 10 metres.
4 If, as appears to be the case, the actual depth of the top of the tunnel is less than the publicly disclosed 35 metres (due to rail gradient limits coming up to the Barangaroo metro station), then the buffer under Towns Place will be materially less than 10 metres.
5 This issue could simply be resolved by relocating the eastern side of the tunnel approximately 10 metres to the west of Dalgety Road so that no part of it runs close to or below the Towns Place building on Dalgety Road.
6 Moving the tunnel west is clearly within the 30 metre tolerance allowed for in the Proposal and places the tunnel below a much higher cliff face where noise and vibration will not impact on any surface building.
7 This solution / amendment to the Proposal would move the western tunnel slightly to the west. However, this would in no way adversely impact on the Dalgety Road terraces, as they have an existing tunnel below them and they sit on an additional 10 metres of sandstone above the 35 metre deep tunnel.
Noise / vibration abatement measures
8 Attenuation is proposed for other parts of the line but not between the harbour and Barangaroo metro station. All of this track should have high quality attenuation measures installed. Particularly that part from the harbour to Barangaroo metro station.
Removal of spoil
9 The Proposal indicates a suggested intention of removing spoil from the tunnel to a temporary site under the overhead bridges on Hickson Road, and then for re-removal to a final unidentified site elsewhere. The indicated timing of construction (and removal) is on a 24/7 basis, which seems unreasonable. The spoil should just simply be removed from the area directly to its final

destination, and this should not occur at night.
10 The EIS represented at the explanatory meeting on 25 May 2016 that the spoil may be removed from the area by barge. If that was to happen, it must only do so from the harbour side of the central Barangaroo site. To do so from any other local harbour location would again involve double handling, unwarranted and unreasonable noise and increase the number of truck movements in the area.
Due Process Objections
11 Objections to the Proposal were invited on 11 May 2016. We understand that there has been only limited public advertisement of the Proposal and only one 'information' public meeting for Barangaroo in relation to it. Given the complexity of the Proposal and the vast detail of it, it is unreasonable to allow such a short objection period1. The time period allowed for objections is simply not feasible for objectors such as Owners Corporations who need considerable time to consider the implications of the Proposal, obtain legal and expert advice, and subsequently time to call meetings to consider that advice and the impacts of the Proposal. That cannot reasonably be achieved within 6 weeks.
12 Although the proposal is detailed in part, it is imprecise and simply inaccurate in crucial areas (for example, the exact position of the tunnels). A number of the plans and diagrams contained in the Proposal are internally inconsistent. Consequently, this impacts on the nature and precision of objections.
13 The Owners Corporation reserves its rights in respect of the lack of due process afforded to the Owners Corporation in implementing the Proposal. It also reserves its rights to supplement this submission with expert(s)' report(s) as received.
Conclusion
14 The Owners Corporation has made practical and reasonable suggestions to the implementation of the Proposal in the hope that their adoption will lead to the Proposal satisfying Sydney's transport needs without adversely impacting on those who live and work near the proposed metro line.

Yours faithfully
John Brown
CEO | Design Director

John Brown

11 / 25A Hickson Road

Millers Point NSW 2000

Email: johnb@designresource.com.au

CHATSWOOD-SYDENHAM METRO: SS15 7400 (the Proposal)

Attention: Director, Transport Assessment
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

The apartment I own is in the Towns Place building at 25A Hickson Road, MillerPoint.I understand the CHATSWOOD-SYDENHAM METRO: SS15 7400 will travel under the building and its adjacent car parking areas.

I have a number of objections to the implementation of the Proposal, the most serious relating to noise and vibration issues adversely impacting residents and businesses, and to the due process available to objectors which impacts on the nature and detail of those objections.

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Yours faithfully

John Brown

CEO | Design Director

TDI TRANSPORT DESIGN INTERNATIONAL

Name: Anne Picot

St Peters, NSW
2044

Content:
EIS FOR NEW SYDNEY METRO SSI-15-7400
Submission
Director, infrastructure Planning
New Sydney Metro - objection from St Peters resident
My name is Anne Picot
My address is 57 Hutchinson St, St Peters NSW 2044

I am writing to express the following objections and comments about the proposed new Sydney Metro which, as far as I can tell from the sketch maps provided, will pass under my neighbourhood to emerge somewhere near Sydenham Station.

1) I object to the down grading of St Peters Station services which I have used for the 30 years I have lived in the neighbourhood, and continue to use regularly even in retirement.
The St Peters train service is extensively used by local commuters to the CBD to the point that the area has been targeted for residential development by the former Marrickville and the existing City of Sydney Councils. This has increased the local population substantially on the premise that public transport is well provided.
The existing number of services in the mornings is barely adequate especially for Erskineville station users. Reducing them because there will be a metro service quite a distance away seems a ploy to favour private providers over the public transport at the expense of the actual users. This is a familiar ploy to anyone observing the practice of successive NSW governments to protect the profits of private providers despite the inconvenience of the users. It doesn't usually work and simply leads to the mounting irritation of both sides and the tax payers end up subsidising the private providers.
We need our train services, and access to a station at Waterloo is no substitute for the far more convenient access we currently enjoy to St Peters Station.

2) No mention I could see refers to the the massive Westconnex project and the impact of its construction on the area around St Peters station during the time apparently our train services at St Peters are replaced by buses while the metro construction work is happening. Maybe the two projects will not overlap in time, but even if they do not, if the M5 interchange is completed before the metro work begins, it will add to road traffic in the St Peters neighbourhood which will put pressure on public transport to avoid the inevitable local congestion. This will occur at the same time as a number of large residential developments add to the local population but no where near Waterloo, so what will happen to commuters to the city? On your plans, overcrowded buses will be competing with private vehicle traffic and the trucks removing the "spoil" from the tunnels. This is horrendous. Where's the planning to cope with these successive construction impacts and then the subsequent transport needs?
The additional metro line is designed for the increased residential development around Waterloo not taking into account the developments on the books and already being built in the St Peters, Enmore, Marrickville and Alexandria neighbourhoods.
I object to the apparent failure to take into account all the local development, commuting patterns, increased traffic from the Westconnex construction phase and subsequent operations on both the route, the construction phase and operations of the new Sydney Metro.

3) I object in principle to the major development of private mass transit instead of public transport the aim of which is the public good of reliable cheap transport for workers and residents. The fact that this metro line has chosen to put a station in Waterloo, instead of going near the University of Sydney where 10-15 thousand people travel to daily, is evidence that this project is not conceived as a transport development but as yet another Baird government gift to property development. This will have the additional adverse impact of removing public housing and decreasing the amount of social housing in the inner city. The down grading of services in the public transport Bankstown line (T3) is further evidence that it is all about private profit, not provision of

services actually based on the existing needs.
I hereby submit my objections to this project in the St Peters neighbourhood.
I request that my submission be published, with my name and address if the latter is needed for identification.
Anne Picot
27 June 2016

Name: Peter Egan

Artarmon, NSW
2064

Content:
See attached submission

Sydney Metro Chatswood to Sydenham
Environmental Impact Statement June 2016
Application Number SSI 15_7400

Attention: Director, Infrastructure Projects
Posted at: http://majorprojects.planning.nsw.gov.au/page/development-categories/transport--communications--energy---water/rail---related-facilities/?action=view_job&job_id=7400

Comment by:

Peter Egan
14/26 Hampden Rd
Artarmon 2064
04 1450 9700
Peteregan2001@hotmail.com

27 June 2016

The Metro project conditions of approval

I support the project as it will deliver much needed additional public transport capacity.

I support the measures proposed by Willoughby City Council (WCC) and the Artarmon Progress Association (APA) to improve the utility of the infrastructure, ensure the environmental impact of the project is minimised and heritage items are protected.

Additional context for support the WCC and APA is given in the following chapters.

In particular, I support the APA requests for the following conditions of approval.

1. Enhancing the utility of Sydney Metro by making provision for a station in the Artarmon Industrial Area

The APA requests a condition of approval to require infrastructure to enable a Metro station in the Artarmon Industrial Area, with the station either constructed with the project, or at a later date.

2. Locating the Artarmon substation in an area with compatible land use zoning

The APA requests a condition of approval to require the Artarmon Substation to be built in the industrial area.

3. Protection and enhancement of Mowbray House within the Mowbray Road heritage precinct

The APA requests a condition of approval to require site access and construction activities, as distinct from management activities, not infringe the 10 metre curtilage of Mowbray House to protect it and its palm tree garden from damage.

The APA requests a condition of approval to require an urban design treatment for the precinct in accordance with its heritage.

4. Upgrade of the Pacific Hwy-Mowbray Road intersection

The APA requests a condition of approval to require upgrade of the Pacific Hwy-Mowbray Rd intersection to provide a dedicated right turn lane for eastbound traffic on Mowbray Road West to turn southbound on to the Pacific Highway.

The APA requests a condition of approval to require provision for short- and long-term improved access to Chatswood from the Pacific Hwy via Mowbray Road, and vice versa, due to the loss of access via Nelson St. The opportunity should be taken to make long term real improvements to the traffic flows through the Pacific Hwy-Mowbray Road intersection and Artarmon/Chatswood generally. The changes proposed by Sydney Metro will only make traffic flows through the area worse.

The APA requests a condition of approval to require analysis of the level of service improvement to be obtained at the Pacific Hwy-Mowbray Road intersection with it possessing: two dedicated right turn lanes for Pacific Hwy northbound and southbound;

Mowbray Road West with dedicated left and right turn lanes; Mowbray Road East with two dedicated right turn lanes and a dedicated left turn lane; and a 100 metre long right turn bay for Mowbray Road eastbound traffic to turn right into Hampden Road.

The APA requests a condition of approval to require the signalisation of the Nelson St/Pacific Hwy intersection, for the life of the metro project, to enable light and heavy vehicles to access and egress the site via the current Ausgrid site entrance 40 metres east of the Pacific Hwy.

The APA requests a condition of approval to require the 300 car spaces needed for site workers be provided on-site even if it requires a multi-storey parking structure.

The APA requests a condition of approval to require the return to the footpath, on the south-east corner of the Pacific Hwy-Mowbray Road intersection, of the $5,000 plaque commemorating the heritage of Reservoirs 1 & 2 built in the centennial year of 1888 (the plaque was not replaced following the recent pinch point works).

5. Chatswood site access

The APA requests a condition of approval to require a site access regime as follows:
--- left-in/left-out at the western Ausgrid entrance on Mowbray Rd;
--- right-in/left out at the western Ausgrid entrance on Nelson St with two-phase traffic lights at Nelson St/Pac Hwy;
--- left-in/left-out for light vehicles at Bryson St.

The APA requests a condition of approval to require contractors to encourage workers to access work sites via public transport.

6. Frank Channon Walk extension

The APA requests a condition of approval to require provision for an extension of Frank Channon Walk from nelson St to Mowbray Road post construction.

7. Height of noise barriers and consultation with neighbours

The APA requests a condition of approval to require Sydney Metro to agree barrier heights and materials with the immediate neighbours who could lose sunlight and views.

8. Brand St site access

The APA requests a condition of approval to require the replacement of the steel bridge with a low-noise (concrete) bridge that spans the full width of Brand St.

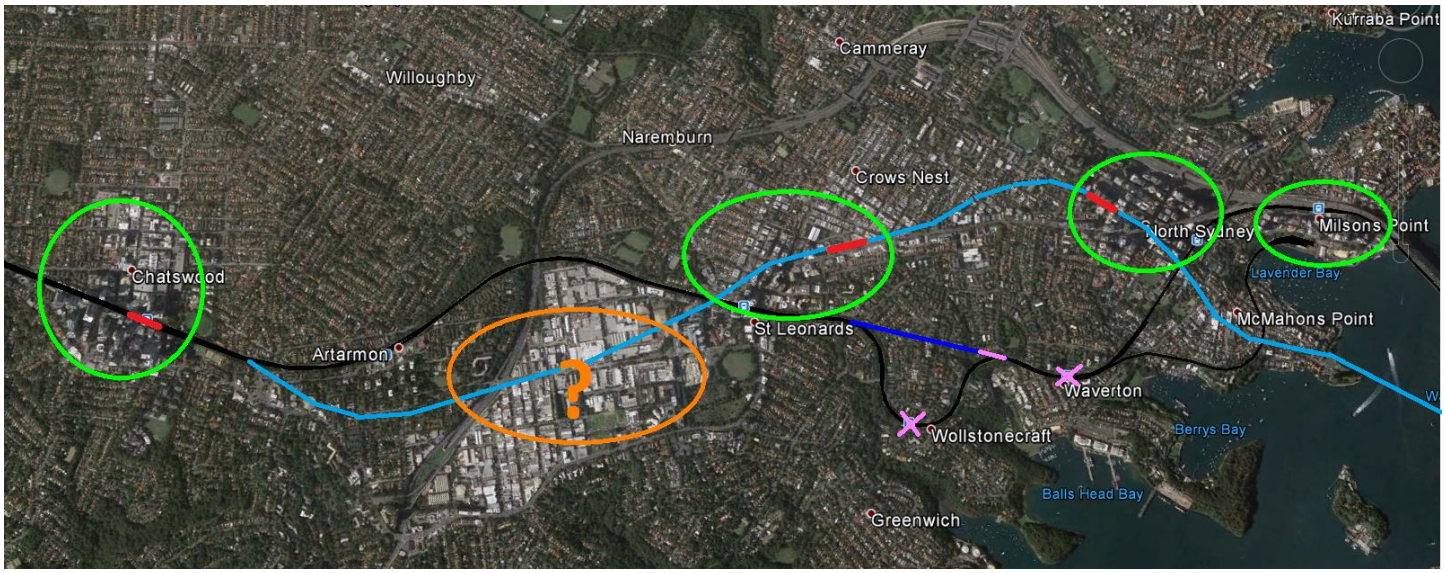
The APA requests a condition of approval to require heavy vehicle access to the Brand St rail corridor path via Hampden Road and not via Elizabeth/Brand.

9. Community Consultative Committee

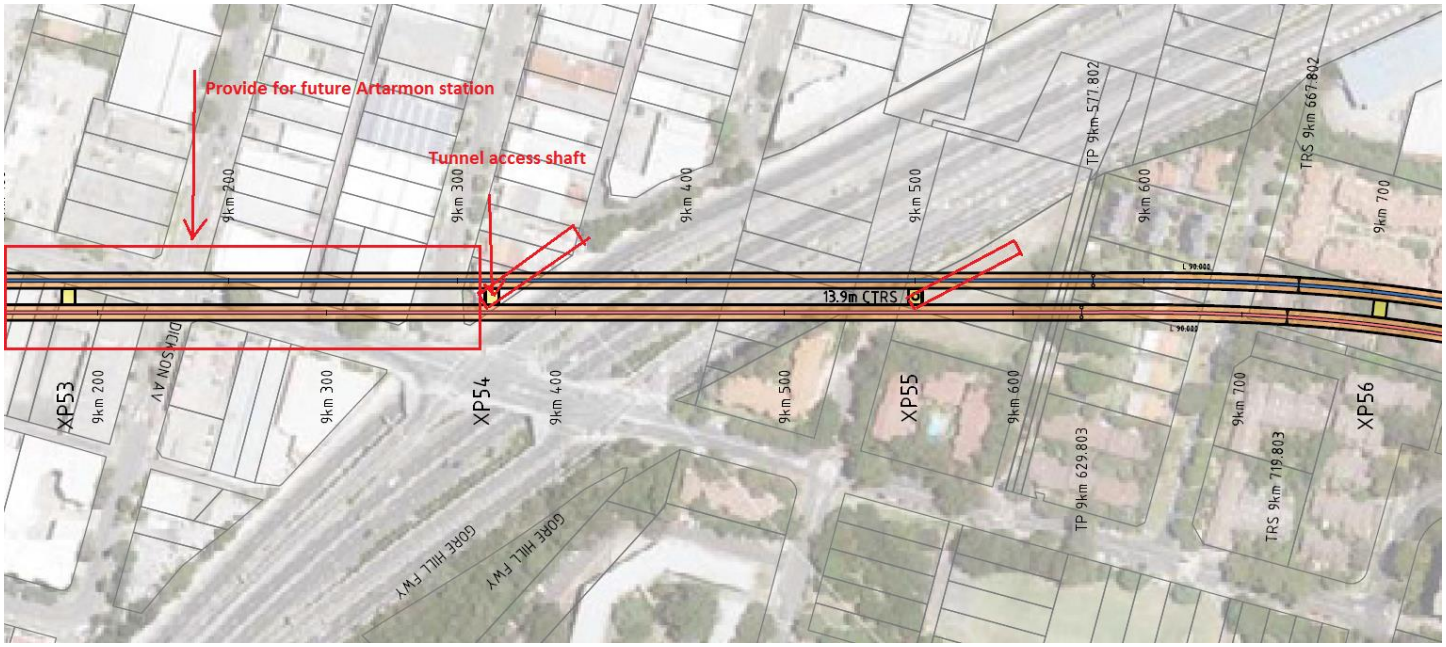
The APA requests a condition of approval require a Community Consultative Committee be formed for the works in the Chatswood-Artarmon area.

Additional context to support for submissions made by Willoughby City Council and Artarmon Progress Association.

1. Metro station in the Artarmon Industrial Area



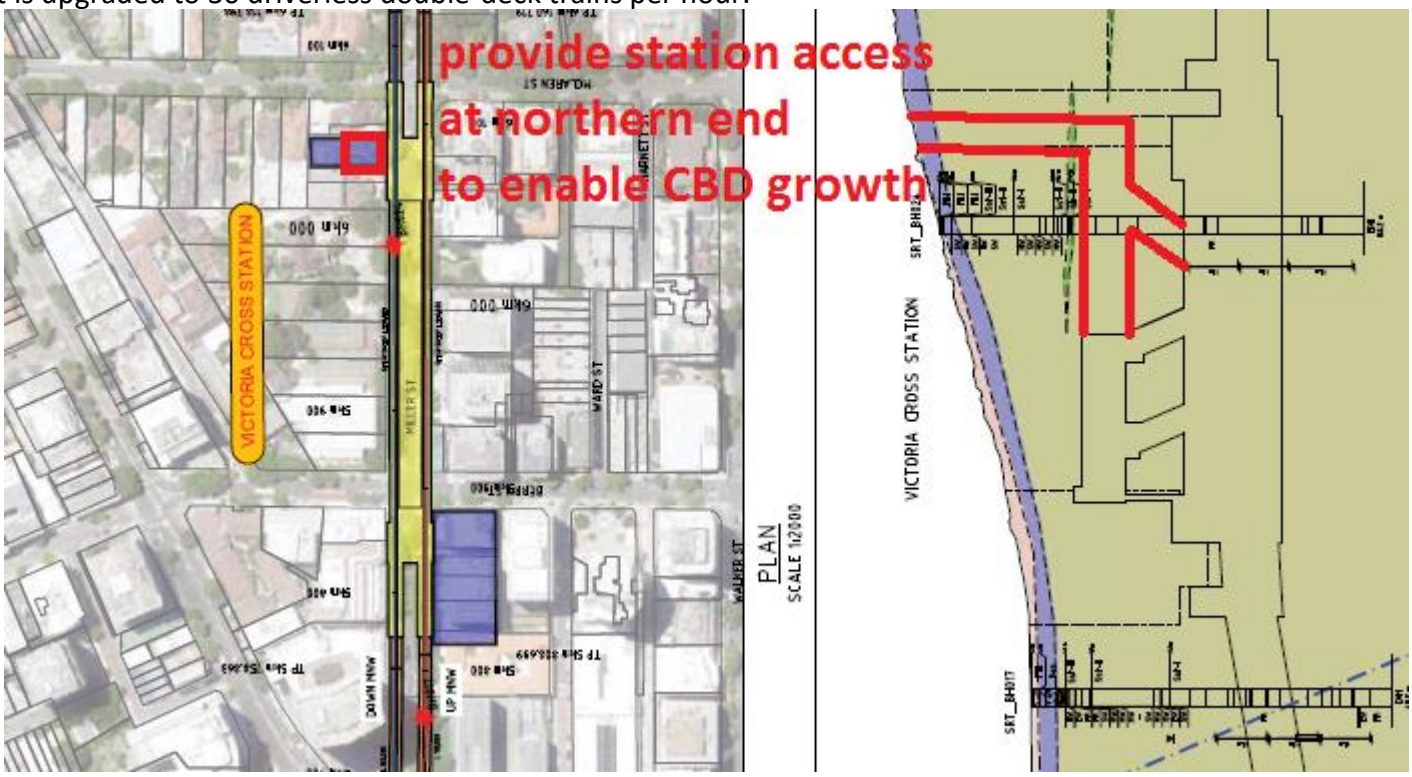
The largest commercial area in the north shore will be without a station unless provision is made for one. The Artarmon Industrial Area is large enough to support a variety of development and sufficient development to demand a station. A future upgrade of the North Shore line should bypass the tight and noise Waverton-Wollstonecraft curves and include a new Waverton-Wollstonecraft station (pink)



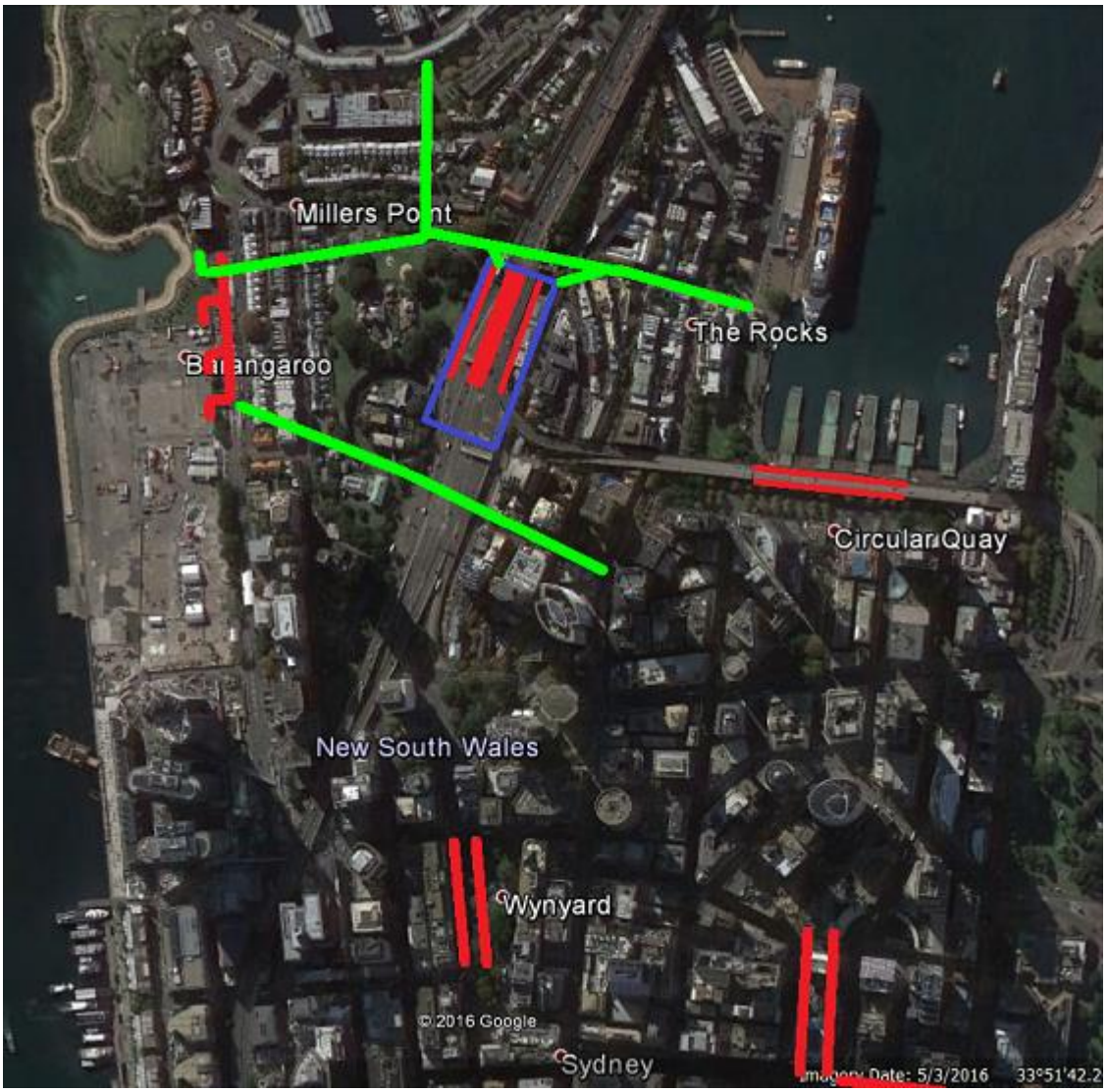
Artarmon electrical substation should be relocated from the residential area to the industrial area. An Artarmon metro station could be co-located with the electrical substation

2. Improving the utility of Metro stations described in the EIS and network integration

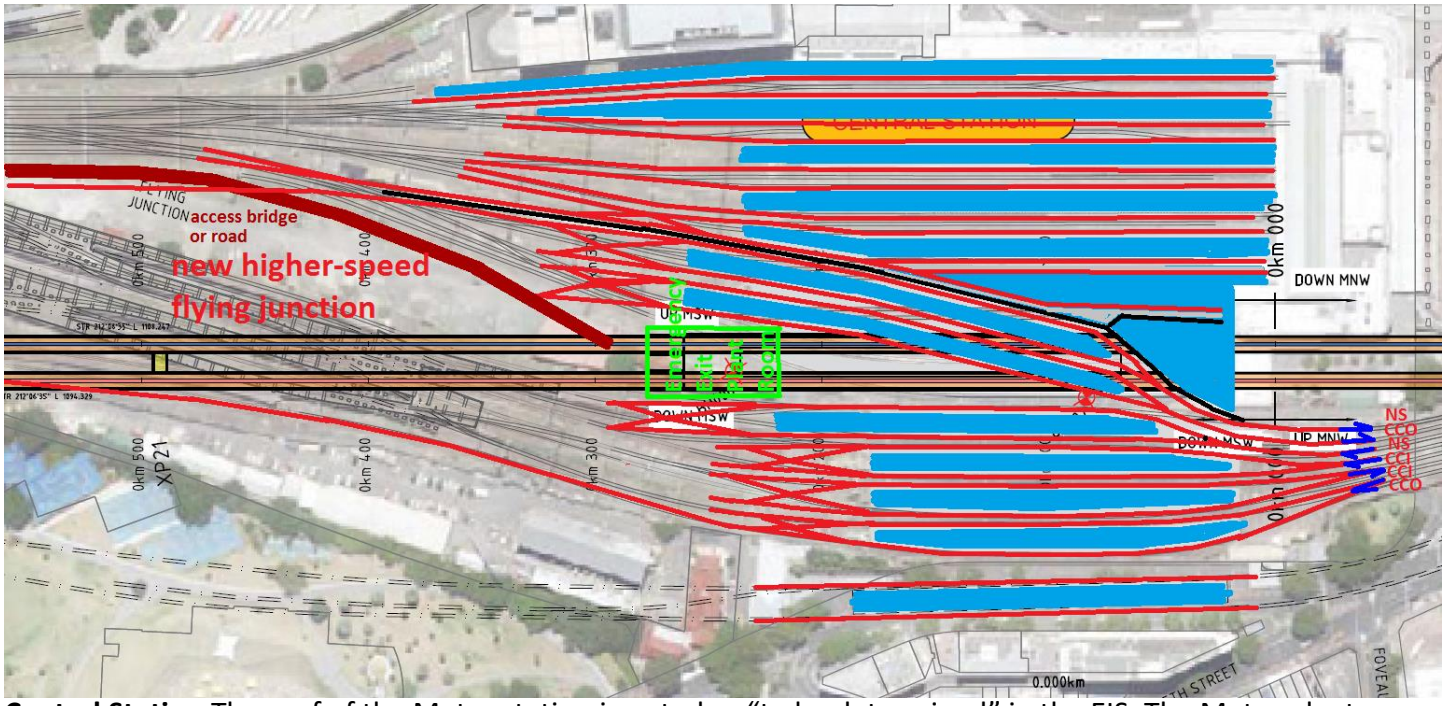
The Metro project needs to plan for long term growth of CBDs and for integration with the current network as it is upgraded to 30 driverless double-deck trains per hour.



North Sydney station needs an entrance at its northern end to support future growth of the CBD



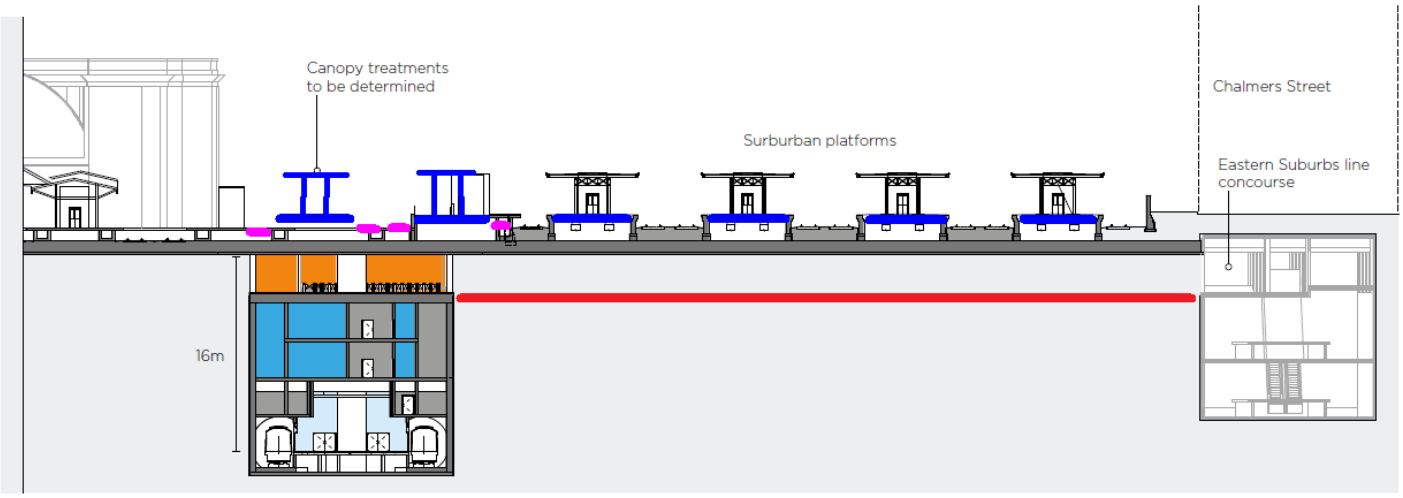
Barangaroo station has poor patronage forecasts due to its remoteness in the CBD. Access tunnels are needed to The Rocks, Walsh Bay, Essex St, Headland Park and a future North Shore line station under the Bradfield Hwy.



Central Station The roof of the Metro station is noted as “to be determined” in the EIS. The Metro plant room and emergency egress (green) is a significant intrusion into the Sydney railyard at surface level. Provision needs to be made for a rebuilding of the CBD Platforms to create a common concourse for Metro, Eastern Suburbs and aboveground platforms.

The CBD platforms and Flying Junction are 90 years old. They will be a century old by time of completion of this project. It’s time to plan for a new CBD Platforms station with 6 island platforms to serve the 6 lines in to the CBD, and to build a new flying junction to reduce the time for trains to pass through it. We need to plan for the existing network to have 30 driverless trains per hour each way capability.

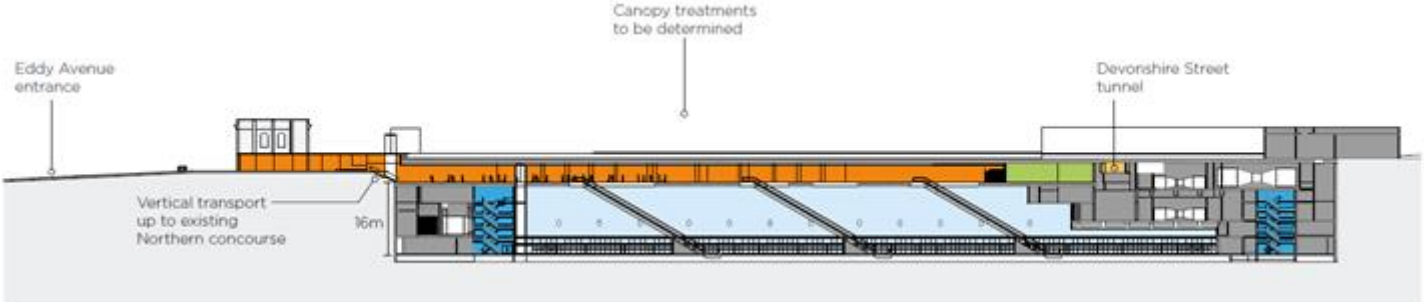
CENTRAL STATION CROSS SECTION

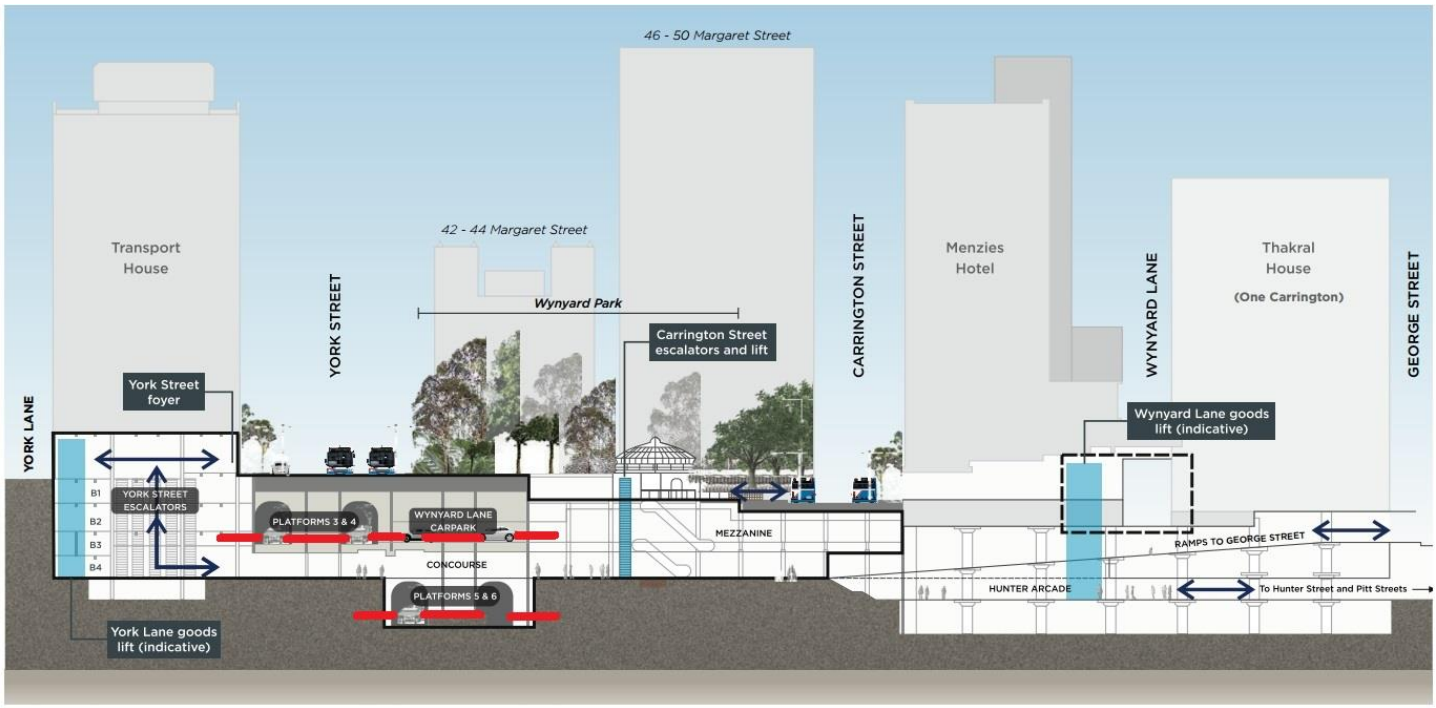


KEY

Emergency egress stairs | Unpaid concourse | Paid concourse | Station service | Station facilities | Platform

Cross-section of proposed new concourse for CBD platforms, Metro and Eastern Suburbs lines

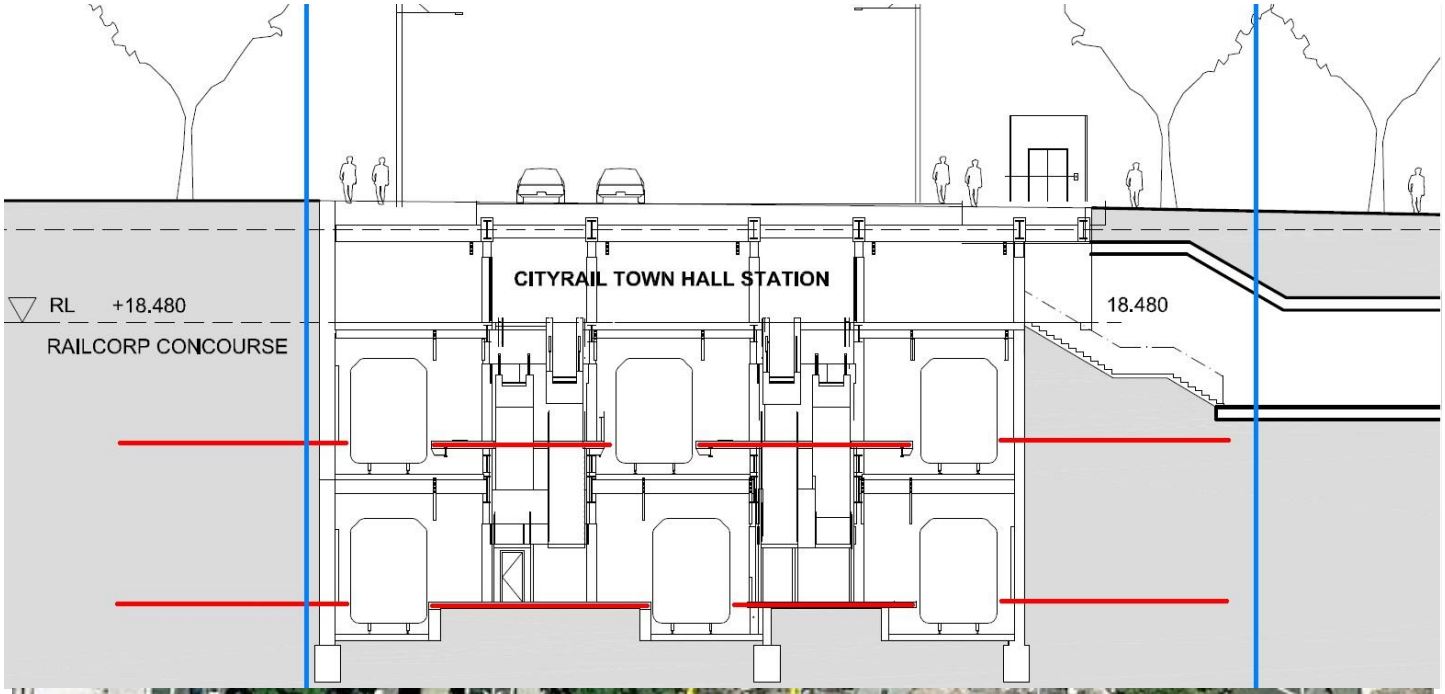




Indicative cross section of Wynyard Station

Peak hour board and alight from different platforms like Olympic Park

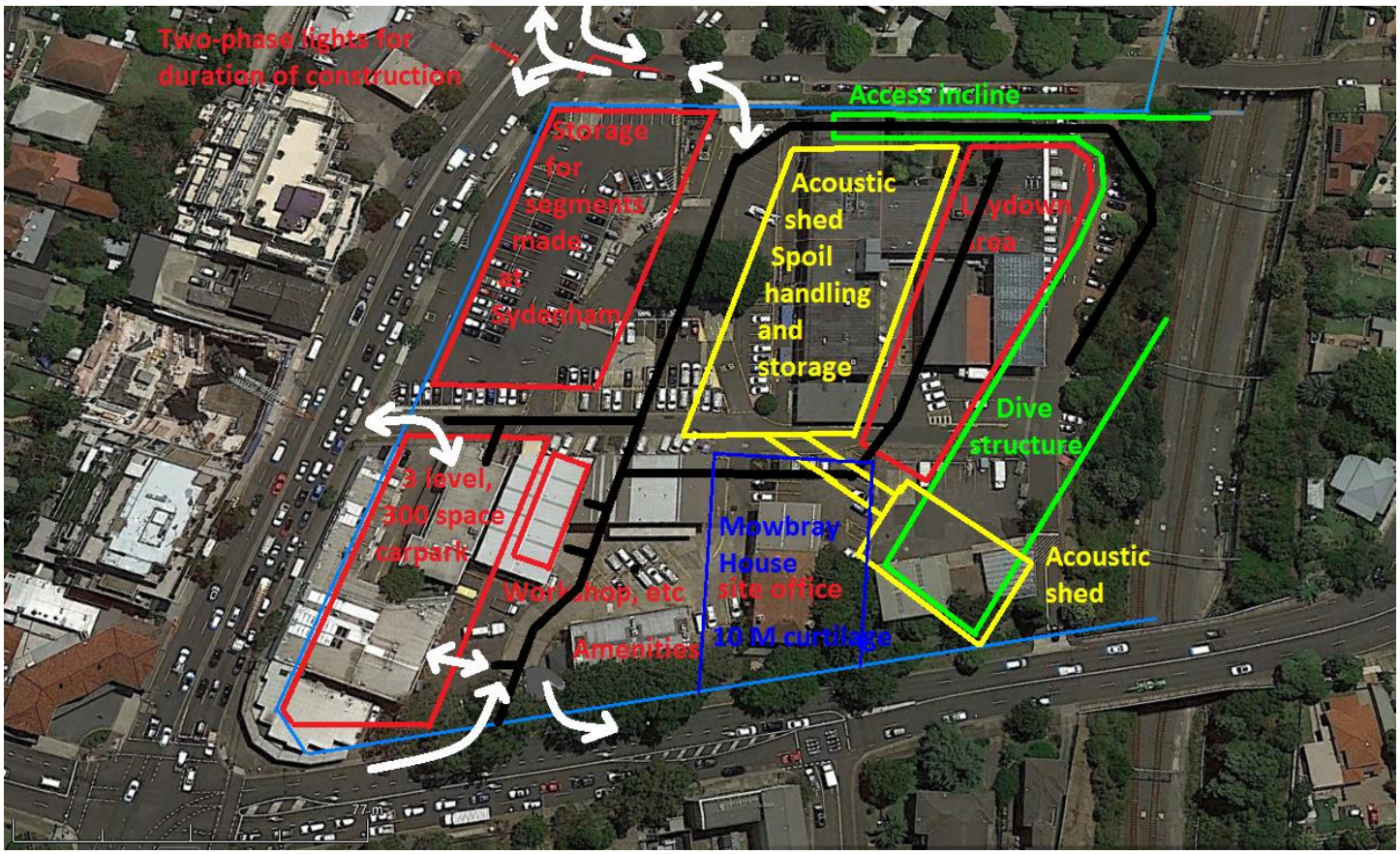
Network integration - additional platforms at Wynyard to support 30 trains per hour existing network



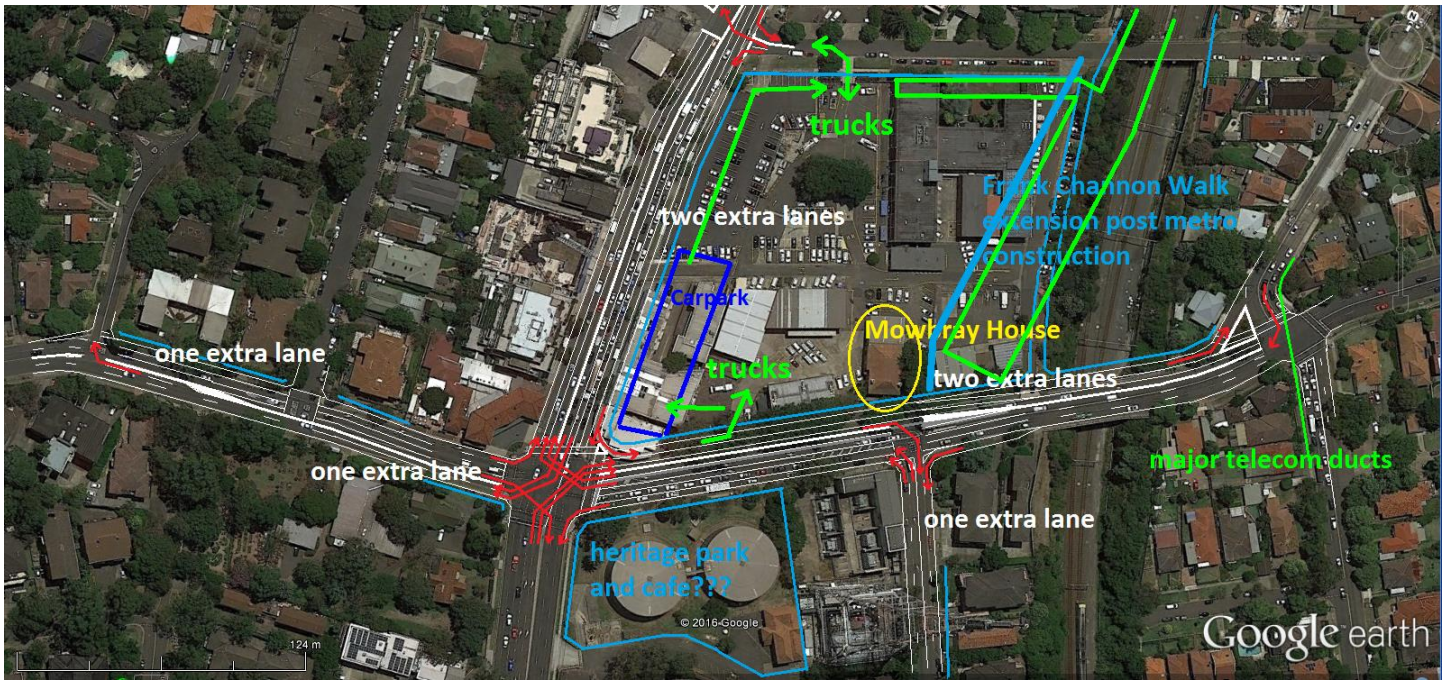
Peak hour board and alight from different platforms like Olympic Park

Network integration - additional platforms at Town Hall to support 30 trains per hour existing network

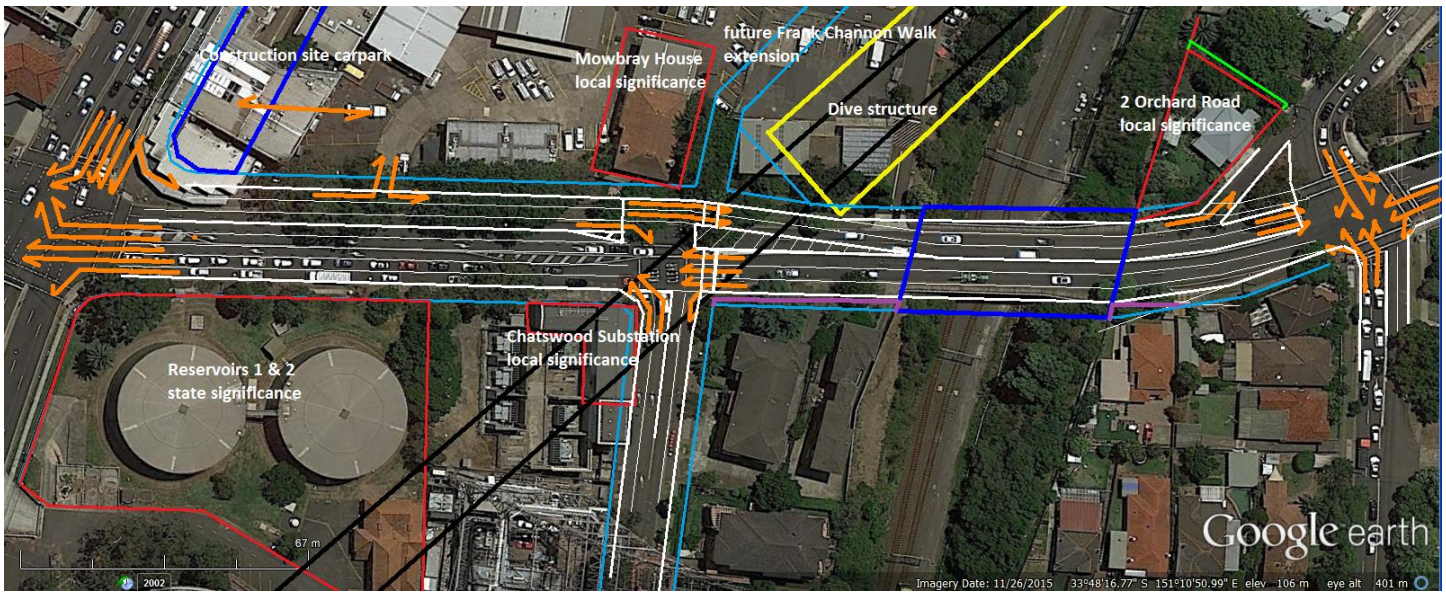
3. Pacific Hwy-Mowbray Road intersection upgrade and site access



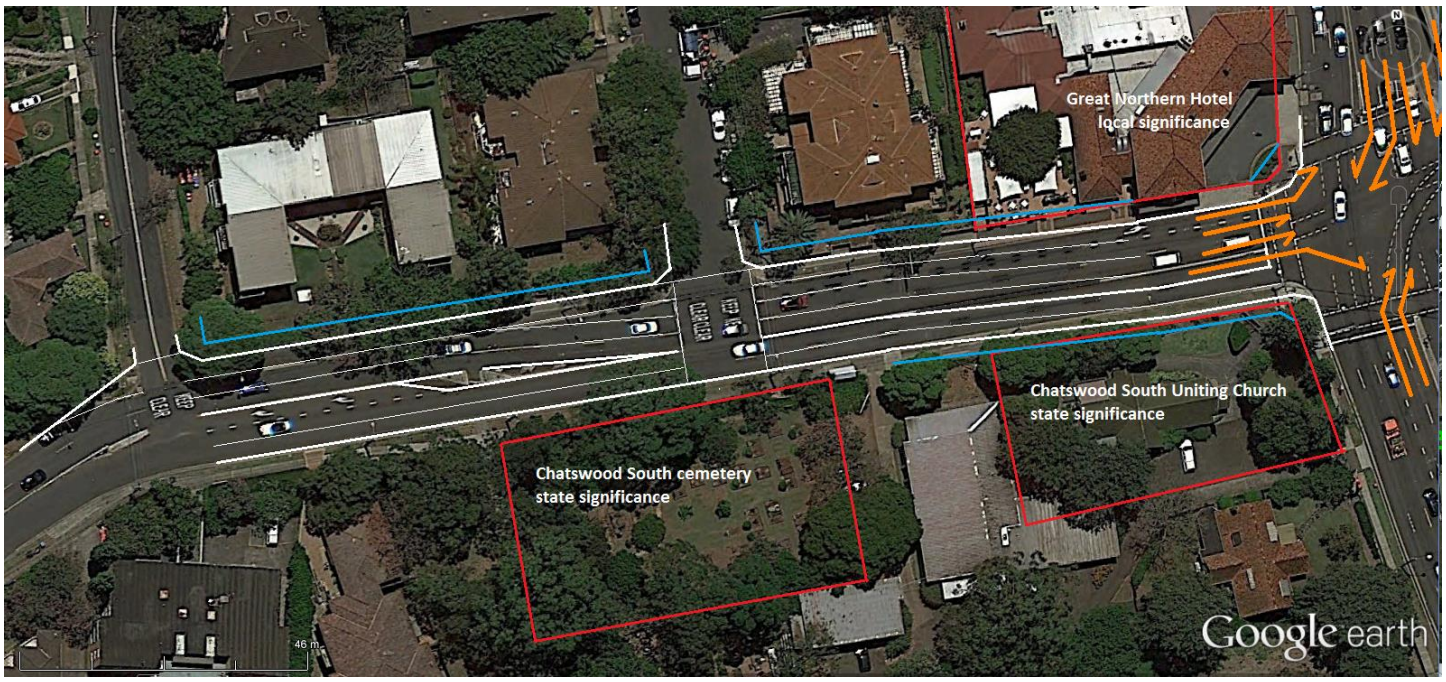
The Chatswood Metro construction site is in a very busy location. A 'to scale' layout of the site shows the demand for access points is at the western end. The heritage listed Mowbray House sits across the proposed site entrance at the Mowbray Road-Hampden Road intersection.



A possible Pacific Hwy – Mowbray Road intersection upgrade arrangement

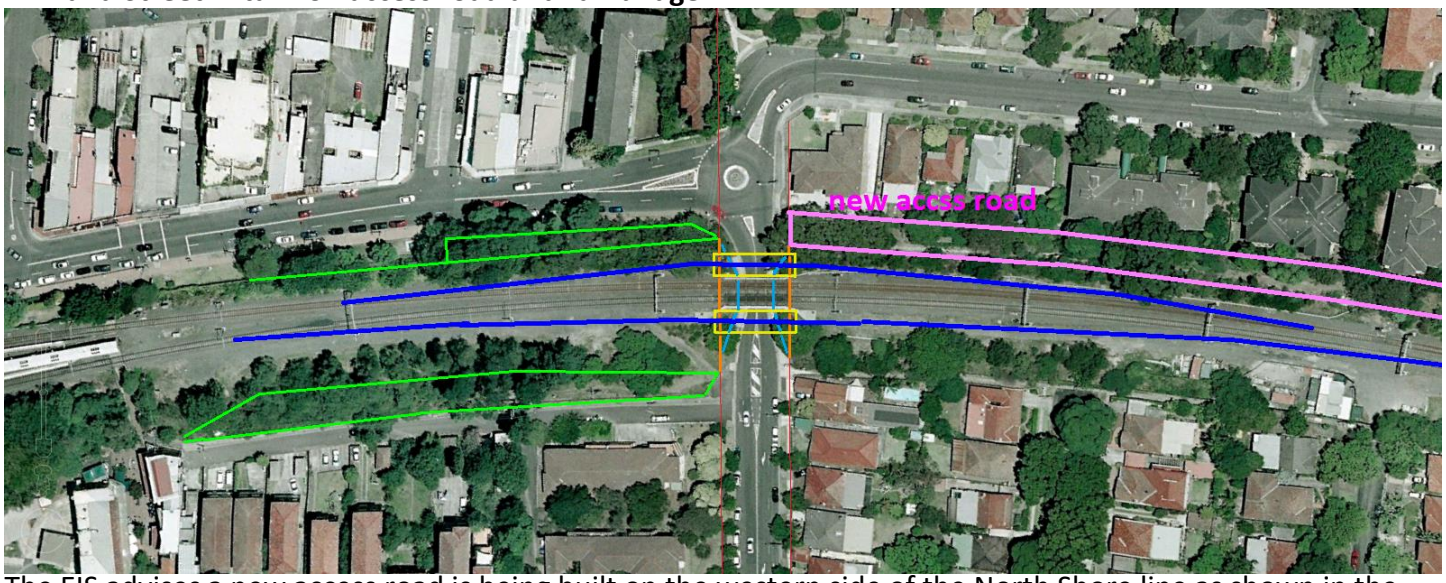


An intersection arrangement with greater focus on protection of heritage buildings – Mowbray Road East



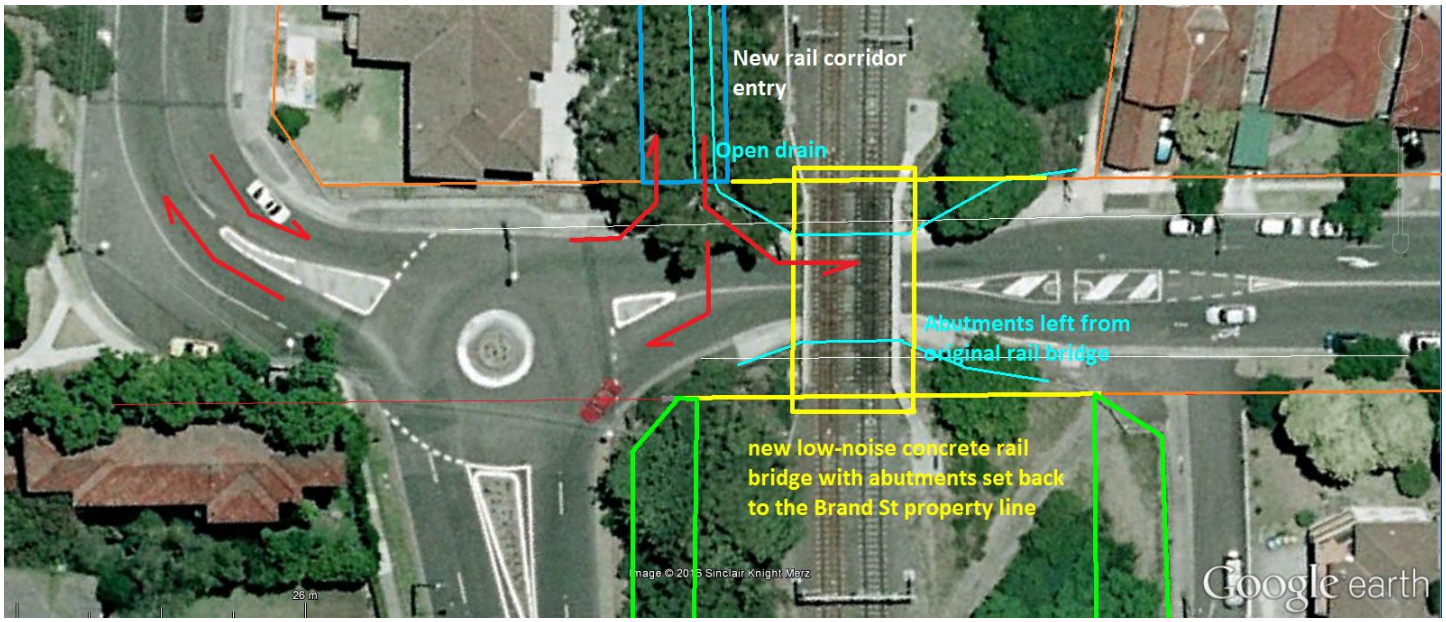
An intersection arrangement with greater focus on protection of heritage buildings – Mowbray Road West

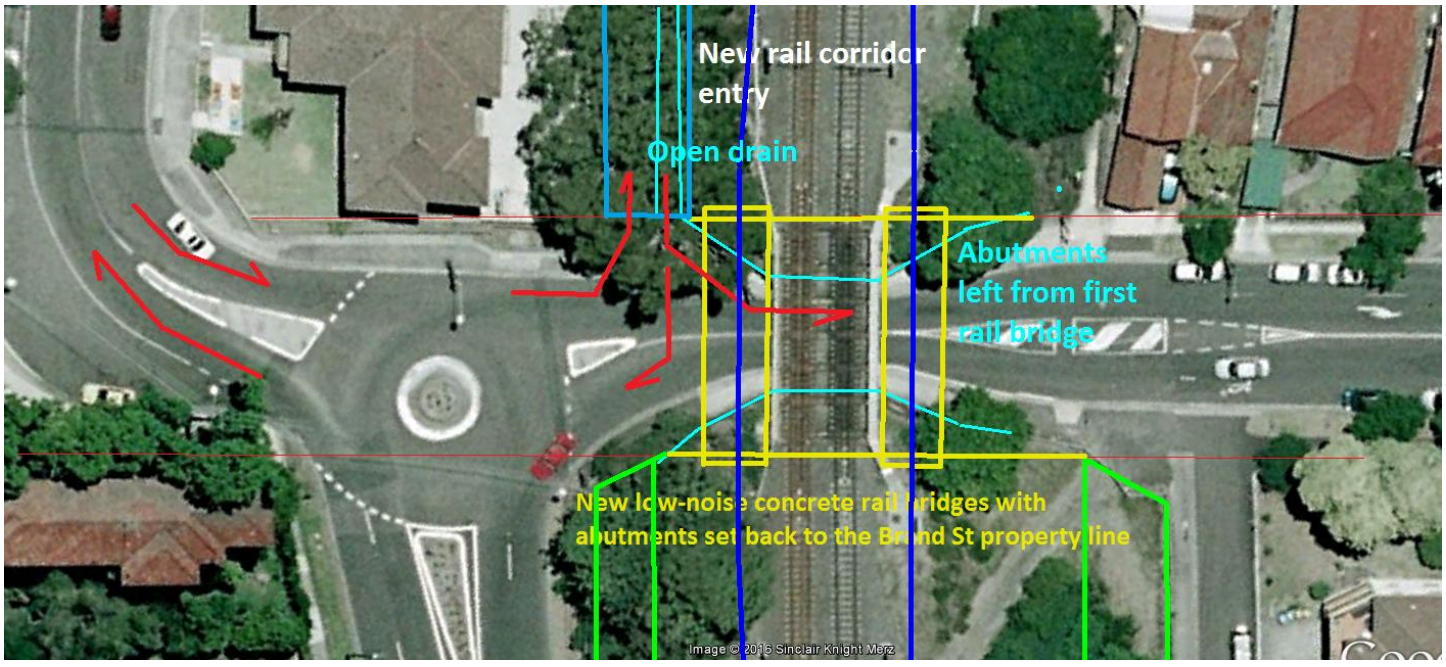
4. Brand Street Artarmon access road and rail bridge



The EIS advises a new access road is being built on the western side of the North Shore line as shown in the above image. The new alignment and grade of the North Shore line reduces the speed of trains between Chatswood and Artarmon. The current steel rail bridge generates very loud train noise. The abutments of the original rail bridge intrude into Brand St and reduce visibility of the new corridor entry for passing traffic.

The corridor works should include a new low-noise (concrete) rail bridge spaning the full width of Brand St, improved track alignment and open space (green). Two better corridor/bridge layouts are given below.





Name: Cam Balzer
Organisation: CKB Consult Pty Ltd (Director)

chatswood, NSW
2067

Content:
Our company submission is attached in PDF format, with referenced and marked up EIS extracts.

Sydney Metro City & Southwest
Chatswood to Sydenham section
State Significant Infrastructure Application SSI 15_7400

1 APPLICATION NAME

Sydney Metro City & Southwest - Chatswood to Sydenham

2 APPLICATION NUMBER

SSI 15_7400

3 SUBMISSION BY;

CKB Consult Pty Ltd

Cam Balzer (Director)

Address: Unit 9 / 1-3 Gordon Avenue Chatswood.

4 OBJECTION SUMMARY

We object to Sydney Metro Project specifically in respect of construction of the Chatswood Metro tunnel dive site and heavy rail works immediately adjacent to our registered office at 1-3 Gordon Avenue, due to the lengthy excessive noise and vibration during construction and also excessive noise and vibration at our workplace during operation of the rail networks on completion.

The EIS plans for dealing with construction noise have significant “opt out “clauses which permit major breaches without any penalty to the Contractor on the grounds of “unavoidable events or work” and “impractical to mitigate or avoid”. Our review of the complaints reports for the Norwest Metro project reveal this excuse is used in almost every instance of breach, and that the mitigations are trivial or too late. The frequent response has been an offer of ear plugs or noise cancelling headphones, which is a disgusting affront to the affected residents. The offers of noise monitoring come AFTER the event and far too late to be of any benefit.

Similarly, the entire operational noise performance and criteria is referenced to the “Rail Infrastructure Noise Guideline (EPA, 2013)” which is a VOLUNTARY GUIDELINE, not mandatory. It also contains multiple exclusions / excuses to exceed noise and vibration levels without action or

penalty. This was quoted to us, the residents, by the operators and project management after the Chatswood to Epping project which caused frequent and intolerable excessive operational noise and vibration at 1-3 Gordon Avenue.

Our preferred and recommended outcome is an immediate acquisition of the properties at 1-3 Gordon Avenue.

The alternatives are equally expensive, equally painful for everyone and very time consuming.

5 SPECIFIC REASONS FOR OBJECTION

5.1 EXCESSIVE RAIL OPERATIONAL NOISE AND VIBRATION - EXISTING

High levels of Train Noise of can be heard and vibration felt at 1-3 Gordon Avenue from the current railway, and is frequently intrusive and interrupts sleep of the residents. The noise is both direct and also regenerated ground borne noise.

The northbound rail line was already moved 3m closer to the unit block during the Chatswood to Epping rail project. At various times since that work many complaints have been lodged, but with little or no useful action by the operators. It is only in the last twelve months that there has been some improvement in the noise and vibration, for reasons unknown, and unpredictably. We cannot rely on this improvement based upon bitter past experience.

The existing high levels also create an excuse for the operators to base the new operational noise limits higher than otherwise defined as acceptable, based upon on the already intolerable high levels being pre-existing.

The proponent has not even bothered to carry out site specific measurements at 1-3 Gordon Avenue during the EIS, despite specific issues raised in their own report, and strong objections from the residents in correspondence and at site meetings during the EIS phase.

5.2 EXCESSIVE RAIL OPERATIONAL NOISE AND VIBRATION - POST COMPLETION

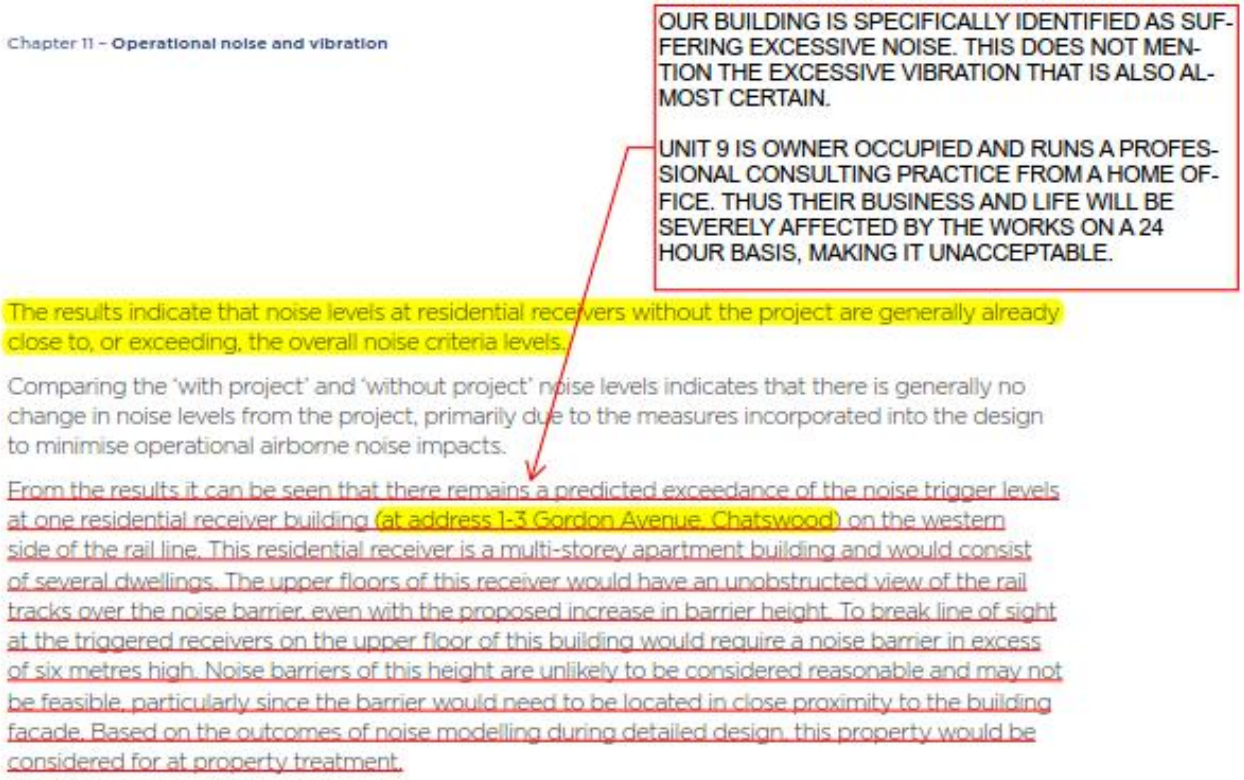
It is proposed to move the northbound heavy rail line closer to 1-3 Gordon Avenue by another three meters, and elevate it by 2m on a bridge structure which will make the noise at our units much worse. This is on top of the existing 3m closer relocation carried out under the Chatswood to Epping project in 2006.

1-3 Gordon Avenue is specifically mentioned in the EIS as an address that will remain affected excessively by operational noise after completion of the work. It further states that it is impractical to create an adequate noise barrier.
The is an inadequate and incomplete reference to “at site mitigation”, which implies someone may attempt to make some token sound proofing at the building, but not until after operation commences, and on an “ad hoc” basis. It is unclear who will be responsible, and police the process. As stated earlier, the EPA Railway Noise document is only a non-compulsory and unenforceable “guideline”. The operators may deem the situation is satisfactory or beyond their own definition of “reasonable” control.

1. The very close proximity of the works, the ground structure and our building basement and stairwell arrangement will result in vibration being amplified within our premises to excessive levels.
2. The realignment of the existing T1 northbound rail line to the temporary route requires heavy machinery and excavation work after hours with multiple rail corridor closure events that will cause severe disruption and noise fatigue effect to the life of all residents.
3. T1 northbound track is closer to Gordon Avenue unit block increasing the noise and vibration impact.
4. New Metro tracks will carry more traffic than the existing T1 tracks did. This volume is in addition to the T1 track traffic which will remain.
5. The T1 northbound track is raised in height due to being routed over the dive structure. However, in addition to this the dive structure itself finishes at Nelson Street which requires the T1 northbound track to be supported by a concrete bridge structure. This structure will generate significantly more noise than a closed structure and will also allow rail noise from the Metro tracks to pass through to the Gordon Avenue unit block.
6. For upper level units, the elevated T1 northbound trains and additional Metro trains will be noisier.
7. Ground vibration is a major concern with the increased volume of rail traffic on the T1 plus Metro lines. This vibration can potentially be amplified through the basement area of 1-3 Gordon Avenue.
8. All units feature large outdoor areas of open balcony or patio, making up typically ~25% of the nett liveable / rental space. The increase in train operational noise will make these areas useless and worthless as the sound levels will be far above tolerable levels for even casual use.

In the first instance we insist that our unit is resumed by the Government under a negotiated acquisition. The whole property and some 40-50 residents will be removed from the project objectors, and the project may proceed without interruption.

The specific reference to our properties is shown below;



Chapter 11 – **Operational noise and vibration**

OUR BUILDING IS SPECIFICALLY IDENTIFIED AS SUFFERING EXCESSIVE NOISE. THIS DOES NOT MENTION THE EXCESSIVE VIBRATION THAT IS ALSO ALMOST CERTAIN.

UNIT 9 IS OWNER OCCUPIED AND RUNS A PROFESSIONAL CONSULTING PRACTICE FROM A HOME OFFICE. THUS THEIR BUSINESS AND LIFE WILL BE SEVERELY AFFECTED BY THE WORKS ON A 24 HOUR BASIS, MAKING IT UNACCEPTABLE.

The results indicate that noise levels at residential receivers without the project are generally already close to, or exceeding, the overall noise criteria levels.

Comparing the 'with project' and 'without project' noise levels indicates that there is generally no change in noise levels from the project, primarily due to the measures incorporated into the design to minimise operational airborne noise impacts.

From the results it can be seen that there remains a predicted exceedance of the noise trigger levels at one residential receiver building (at address 1-3 Gordon Avenue, Chatswood) on the western side of the rail line. This residential receiver is a multi-storey apartment building and would consist of several dwellings. The upper floors of this receiver would have an unobstructed view of the rail tracks over the noise barrier, even with the proposed increase in barrier height. To break line of sight at the triggered receivers on the upper floor of this building would require a noise barrier in excess of six metres high. Noise barriers of this height are unlikely to be considered reasonable and may not be feasible, particularly since the barrier would need to be located in close proximity to the building facade. Based on the outcomes of noise modelling during detailed design, this property would be considered for at property treatment.

5.3 EXCESSIVE CONSTRUCTION NOISE AND VIBRATION AT 1-3 GORDON AVENUE

The extensive and heavy construction the works associated with the tunnel dive site and existing rail realignment will generate excessive noise, vibration and dust at 1-3 Gordon Avenue that cannot be mitigated adequately because the rail line is too close to the block, and the upper floor units immediately overlook the works and cannot be screened visually or acoustically;

1. The very close proximity of the works, the ground structure and our building basement and stairwell arrangement will result in vibration being amplified within our premises to excessive levels.
2. The realignment of the existing T1 northbound rail line to the temporary route requires heavy machinery and excavation work after hours with multiple rail corridor closure events that will cause severe disruption and noise fatigue effect to the life of all residents.
3. The construction of the bridge to accommodate the new T1 northbound track over the new dive structure requires major rock excavation and piling works immediately adjacent to 1-3 Gordon Avenue, with probable excessive noise and even structural damage.
4. Construction vehicles and material will continuously be moving in the track area adjacent to the 1-3 Gordon Avenue unit block. This construction traffic will occur when preparing the site for the new dive structure, bridge and track foundations for the new t1 northbound location.

5. There is the potential for noise and vibration from existing rail traffic to increase due to the temporary nature of the relocated main northern line.
6. While a noise barrier is planned for the Nelson St construction site, no such noise barrier is proposed between the Gordon Avenue unit block and the excavation area during the excavation work required for the T1 northbound bridge, dive structure and tunnel. This noise barrier is required during the construction of the bridge over the dive structure for T1 northbound. In addition, a noise barrier is required during the building of new Metro tracks.
7. Potential 24x7 work during the construction phase of this project will severely adversely impact residence during and after work hours. There are significant afters hours large earth works, demolition, piling and track work proposed in the proximity of 1-3 Gordon Avenue unit block.

5.4 BUSINESS INTERRUPTION DUE TO CONSTRUCTION & OPERATIONAL NOISE

I own and operate a business in a home office during the hours of 7am – 10 pm, seven days a week. The project will result in having a disruptive and high impact noise level unacceptably high for a workplace on a frequent basis for a long period of time (~12 – 18 months). We will be forced to relocate my business at great personal expense and inconvenience, through no fault of our own.
This is compounded by the night time works that will also be frequently required for the rail corridor.
The adverse effects on my business must be mitigated for this imposition by the project, by temporary or permanent relocation.

5.5 TRAFFIC PROBLEMS FOR GORDON AVENUE RESIDENTS

The loss of the Nelson Street direct access to Chatswood is a major transport problem for the residents of Gordon Avenue, and hundreds of all other residents between Albert Avenue and Nelson St. We currently have direct easy road access to our local Chatswood retail, business, schools and community without traffic lights, without having to further congest the Pacific Highway and Mowbray Road, or Orchard Road intersections.

The Mowbray Road - southbound Pacific Highway intersection is already extremely congested at all times of the day, and particularly in morning and afternoon times. The location of the construction site entrances in Nelson Road and Mowbray Road mean that there will be continuous major truck “movements” through this intersection aggravating the situation to an unacceptable

level. Trucks will invariably block this lane and make it nearly impossible for us to enter the Pacific Highway.

Residents in Gordon Avenue will experience increased difficulty when joining onto Pacific Highway. Already there is major gridlock caused by cars blocking the exit from Gordon Avenue. Once truck start using the left lane to enter the Nelson Street site, causing increased congestion this problem will become much worse.

On completion the traffic problems will remain with increased travel time and pollution.

As a minimum mitigation we require that a DEDICATED LEFT TURN ONLY lane is established at the southbound Pacific Highway / Mowbray road intersection, without traffic light control and at the beginning of the project. There is plenty of space on the southwest corner in the large construction site to allow this to be built immediately at the project start.
We also require that the intersection of Gordon Avenue and Pacific Highway is line marked and signposted with “Do not Block this Intersection” and that this is policed.

5.6 TRAFFIC NOISE DURING CONSTRUCTION FOR GORDON AVENUE

Trucks will use exhaust brakes to slow down to enter the Nelson St Site entry, particularly at night from high speed. This noise will affect ALL the residents including 1-3 Gordon Avenue because we have line of sight and reflectance of the Payless Tyres building façade.

Additionally the large volume of northbound truck traffic will be generating excessive noise accelerating and gear changing at the same point of road which affects our property directly.

A strict “no exhaust brakes” law, signage and enforcement is required, or alternatively ban construction traffic between 8pm and 7am.

Also we require that 24/7 noise & video recording monitoring is installed in both directions at the intersection of Gordon Avenue and Pacific Highway to identify and assist in prosecuting offending vehicles.

6 ACCEPTABLE MITIGATIONS

6.1 ACQUISITION

To be clear, the residents of 1-3 Gordon Avenue will object and seek a Court Injunction in the Land and Environment Court and / or Local Court if their objections are not answered clearly and completely to their satisfaction.

Our preferred and primary objective which we will fight for is that the Government shall acquire our property at 1-3 Gordon Avenue under the Hardship considerations of the NSW laws, at fair value and with all costs considered. We agree that the overall project is essential and benefits a large number of people in Sydney, but the severe imposts and losses on us very few families at this address are NOT ACCEPTABLE to us, and we will fight for our rights.

With an acquisition of the properties the Government would be free to carry out the proposed development without hindrance or objection, and may choose to spend time and money making the residential property adequately resistant to the ill effects of the operational noise without hindrance of owners / occupants, then potentially selling the properties on completion for a nett minimal cost, or even profit.

The loss of value on our properties due to the degradation imposed by this project and hardship on our lives is not reconcilable or acceptable under any circumstances.

6.2 TEMPORARY RELOCATION DURING CONSTRUCTION

Failing our preferred option of acquisition, the second minimum acceptable solution is relocation us for the duration of the construction project. This is a complex and expensive solution as it involves a large volume of “stuff” for a three bedroom family with a full double garage and an operating business.
We would expect that a total acquisition would be cheaper, more expedient and satisfactory.

6.3 AT BUILDING NOISE MITIGATION

Failing our preferred option of acquisition, the third minimum acceptable solution is an immediate complete noise and vibration treatment of ALL units prior to commencement of construction. This will require extensive investigation and detailed design to approval by qualified acoustic engineers and architects, and include as minimum;

1 Underpinning of the building structure to mitigate noise and vibration.
2 Full acoustic double glazing of all unit and common area windows, including the common entry doorway and surrounds.
3 Sound rated sealed fire doors on all common areas including unit entrances.
4 Roof acoustic treatments, including lifting roof tiles and laying a full acoustic barrier and insulation. Note the existing roof structure contains glass fibre and aluminised sheet thermal insulation.
5 Replacement of the top two floors unit bathroom ventilation systems with acoustically treated systems.
6 Replacement of existing vertical cement sheeting roof parapet elements with fully acoustically treated cladding.
7 Redesign and reconstruction of the existing common area light well / natural ventilation skylight and stairway with acoustically treated structure and ventilation to eliminate resonance and reverberation of noise. It is currently open to the atmosphere at the top and directly overlooking the railway.
8 Acoustic absorption panels shall be installed in the skylight well itself and the stairwell recesses to minimise reverberation and regenerated noise.
9 Complete acoustic sealing of the basement car park area, and associated forced ventilation system with acoustic treatment.
10 Full acoustic enclosure of all balcony and patio spaces in all units to make them suitable for normal use with the increased train noise levels.
11 If electrically powered forced ventilation is required for units or common areas then the operational cost of this shall be compensated to the body corporate or unit owners as an immediate lump sum calculated over a 20 year lifespan with escalation of energy and maintenance costs.
12 Continuous recording of noise and vibration at the premises during the works and on commencement of operation, with a live breach reporting structure in place to trigger immediate remedial action.

The extent, noise and duration of these works will require that the occupants are temporarily relocated for the duration to completion.
We again stress that it would be easier if the Government simply purchased the block so the whole project could proceed without our interference, then on sell it on completion of the upgrade.

6.4 TRAIN SPEED RESTRICTION

An enforced speed limit with dead man stop points of maximum 40kph for all rail traffic within 100m of 1-3 Gordon Avenue.

6.5 ATTACHMENTS

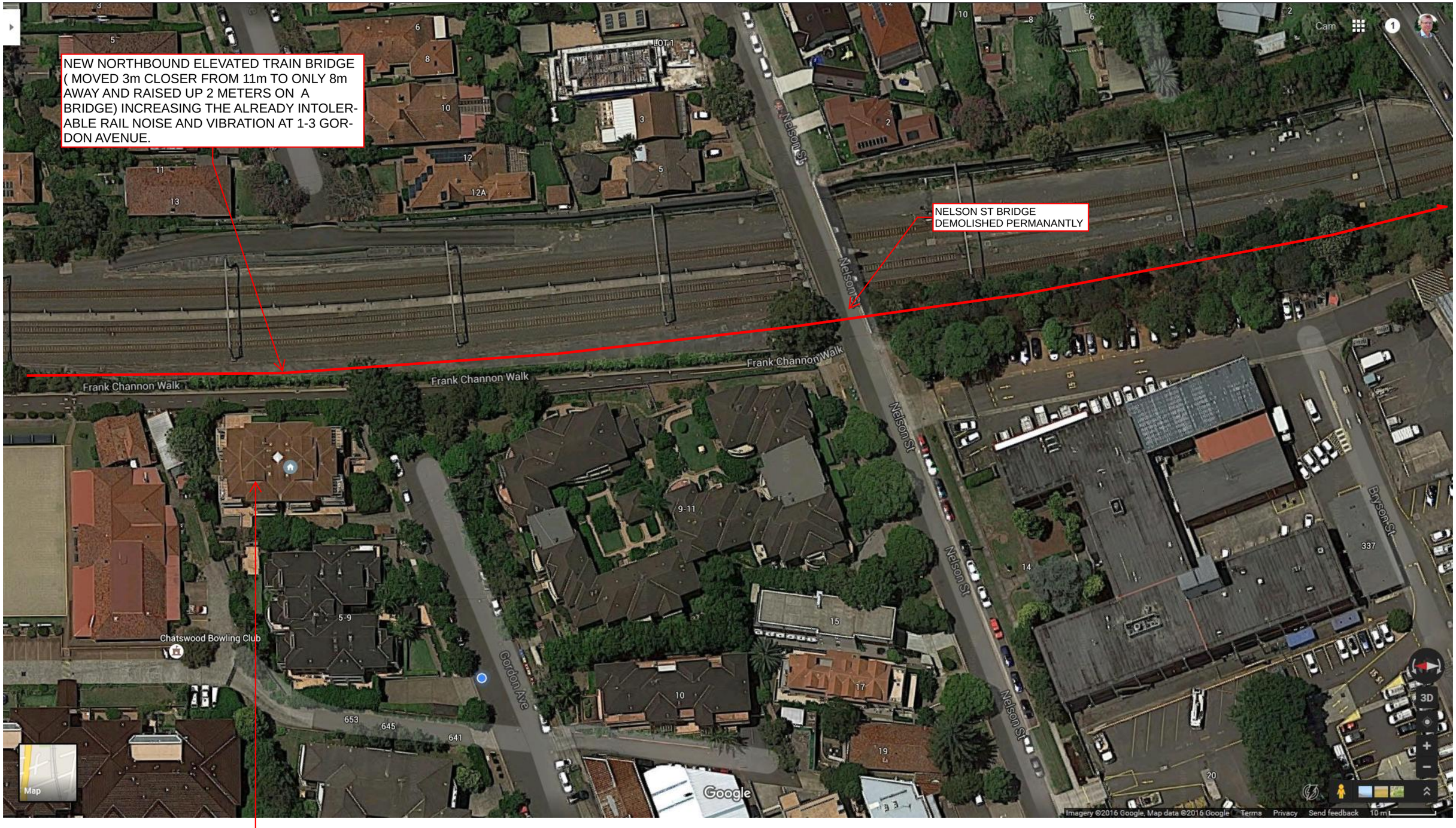
Multiple extracts from the EIS are attached to this submission upload. They are annotated with comments of relevance of the adverse impacts to 1-3 Gordon Avenue and residents.

1- Metro Chatswood SSIAR_NOV 2015 comments & Aerial view of 1-3 GORDON AVE.pdf

2- Metro EIS - Visual Impacts - comments by C Balzer 1 Gordon Avenue 16.06.20.pdf

3- Metro EIS Technical Paper 2 - Noise and Vibration_DP&E Adequacy_23022016 - Severe affects at 1-3 Gordon Avenue .pdf

4- Metro EIS_Ch 11 Operational noise and vibration_DP&E_23022016 - 1-3 GORDON AVE EXTRACT.pdf


NEW NORTHBOUND ELEVATED TRAIN BRIDGE (MOVED 3m CLOSER FROM 11m TO ONLY 8m AWAY AND RAISED UP 2 METERS ON A BRIDGE) INCREASING THE ALREADY INTOLERABLE RAIL NOISE AND VIBRATION AT 1-3 GORDON AVENUE.
NELSON ST BRIDGE DEMOLISHED PERMANANTLY
1-3 GORDON AVENUE CHATSWOOD
Frank Channon Walk
Frank Channon Walk
Frank Channon Walk
Nelson St
Nelson St
Nelson St
Nelson St
Gordon Ave
Chatswood Bowling Club
Bryson St
Google
Map
3D
Cam
Imagery ©2016 Google, Map data ©2016 Google
Terms
Privacy
Send feedback
10 m

this is where we live, and is unacceptable to us

Suburban rail tracks

Adjustment to the T1 North Shore Line tracks and rail systems would be required between the southern end of Chatswood Station and in the vicinity of Brand Street, Artarmon to accommodate the metro surface tracks and northern dive structure.

Between Chatswood Station and the northern dive structure and tunnel portal (near Mowbray Road), the existing T1 North Shore Line tracks would be re-located to the outside of the metro tracks in a widened rail corridor, within existing rail corridor zoned land.

To accommodate the new metro tracks, the dive structure and tunnel portal, the existing T1 North Shore Line 'Down' (northbound) track would be relocated to the west and would pass over the dive structure on a bridge.

The operation of the T1 North Shore Line would continue to be managed by Sydney Trains.

5.4 Stations

New underground metro stations would be located at Crows Nest, Victoria Cross, Barangaroo, Martin Place, and Pitt Street, with new underground metro platforms at Central Station. The potential for an additional station between Central and Sydenham at either The University of Sydney or Waterloo is currently being investigated.

these people do not care or comply with operational noise limits

5.4.1 Preliminary design principles for metro stations

The preliminary design principles to guide the design of the stations are in Table 5.1. The design principles would be further developed and identified in the environmental impact statement.

Table 5.1 Preliminary station design principles

Station aspect	Design principles
 **Functionality and access**	Quick and efficient transfer between metro and other transport modes is critical to station design. Station design would be guided by an 'access for all' philosophy. Stations would be designed using 'priority of access' principles, with pedestrians and cyclists first, followed by buses, taxis and 'kiss and ride' customers. Station design includes emergency exit and access facilities, such as lifts, escalators and fire stairs to allow for customer evacuation and emergency services access. The Sydney Metro network would be integrated into the Opal electronic ticketing system.
 **Customer information and wayfinding**	Customer information and wayfinding using the following guiding principles: ○ Customers would be provided with accurate, comprehensive, consistent and real-time multimodal information during multiple phases of their trip (ie before their trip, at the station and aboard the train) ○ Real-time information would be delivered to customers through multiple media to make transit journeys as seamless and convenient as possible ○ The NSW Government would work with councils to develop an easy, intuitive and consistent wayfinding system that facilitates efficient customer movements to, from and through stations.

Erskineville and St Peters Stations

Erskineville and St Peters stations will continue to be served by Sydney Trains services when the Project opens in 2024. Customer demand levels at these stations are always being monitored and will be taken into account when new train timetables are being designed over coming years.

Possible Liverpool extension

The Bankstown end of the project will be safeguarded for a possible extension to Liverpool, which will now be further investigated by Transport for NSW. Subject to further analysis, this could cut travel times from Liverpool to the CBD by up to 15 minutes and reduce crowding on the existing T1 Western Line and T2 South Line.

Further investigations and public consultation will be undertaken in 2016.

Stations beyond Bankstown

The Sydney Metro City & Southwest Project will deliver turn up and go services between Bankstown and the city with a train every four minutes during peak periods.

Customers will be able to transfer between metro and suburban trains services at an upgraded Bankstown Station.

Suburban train services will continue to operate beyond Bankstown.

Sydney's new Metro train

PROPERTY ACQUISITION

In designing major infrastructure projects, Transport for NSW makes every possible effort to avoid the need to acquire private property. However, in some cases property acquisition is required to allow construction of a major project.

The Project team will make direct contact with any owner or tenant whose property is directly affected by the Project. Following this contact a formal letter will also be sent confirming that a property is required, including details of the proposed property acquisition process.

1-3 GORDON AVENUE IS DIRECTLY AND SEVERELY AFFECTED AND MUST BE ACQUIRED AS PART OF THE PROJECT

Aerial view over Sydney CBD

Approach to landscape and visual assessment

This assessment considers the expected impacts of the project on each surface works site in terms of:

- Landscape quality, and
- Visual amenity

The assessment identifies the landscape and visual impacts during construction and operation, and during the day and at night.

The scope of the surface works at the eight station sites is limited to the construction and operation of the ground floor level entry and structural elements to provision for future above station development. Any above station development would not be undertaken as part of this project and has not been considered in this assessment.

Overview of potential impacts

The following section summarises the potential landscape and visual impacts which are expected to be experienced at the eleven surface works sites.

Chatswood dive site (northern) & Northern surface works

Landscape impacts

Construction of the project would result in a **moderate adverse landscape impact** on the Frank Channon Walk. This would be primarily due to the direct impacts of construction upon the path, and its closure during some stages of construction. Although the Frank Channon Walk would be reopened during project operation, the loss of trees, scale of adjacent retaining structure, and overshadowing impacts would result in a **minor adverse landscape impact**.

There would be indirect impacts on Chatswood Park during the construction and operation of the project, however, this would result in a **negligible landscape impact**.

Visual impacts

There would be **minor** and **moderate adverse visual impacts** created by the project during construction. These impacts are primarily due to the scale and extent of the works, including the removal of vegetation along the rail corridor between Nelson Street and Mowbray Road, and the scale of works occurring at the dive site. These impacts are experienced in particular from Nelson Street, Gilham Street, Mowbray Road and the residential properties to the east of the existing rail corridor.

There would also be **minor adverse visual impacts** experienced from elevated residences to the west of the Frank Channon Walk. In these views, the removal of vegetation within the rail corridor would open up views to the existing corridor as well as the new Metro line.

THEIR DEFINITION OF "MINOR" IS UNACCEPTABLE. 1-3 GORDON AVENUE WILL BE STUCK WITH A CONCRETE EYESORE VIEW OF THE TRACKS AND NO VEGETATION ON THE FRANK CHANNON WALK.

During operation, there would be **minor** to **moderate adverse visual impacts** experienced in views to the site from residential properties to the west of Frank Channon Walk, residential properties and streets between Nelson Street and Mowbray Road, and residential properties between Mowbray and Hawkins Street. The removal of vegetation within the rail corridor would result in unfiltered views of the corridor works and dive structure.

At night there would be a **moderate adverse visual impact** during construction due to the requirement for vehicle deliveries and haulage after hours. During operation, however, there would be a **negligible visual impact** as the works would be visually absorbed into the existing character of the rail corridor and surrounding area of E3: Medium district brightness.

Artarmon substation

Landscape impacts

The landscape impacts of the project both during construction and operation are expected to be **negligible** at the Artarmon substation site. This is due to the

Table 11-10 Ground-borne vibration predictions for receivers containing highly sensitive equipment

Receiver	Location	Maximum 1/3 Octave Band Vibration Level (dB ref 1 nm/s)	
		Design objective	Predicted
Royal North Shore Hospital	Near the tunnel alignment between Artarmon substation and Crows Nest Station	82	74
Health Care Imaging Services	Near the tunnel alignment between Pitt Street Station and Central Station	82	75

The human comfort objectives for ground-borne vibration are more stringent than other possible design limits related to building damage risk or the potential effects on building contents.

Compliance with the ground-borne vibration design objectives (and the human comfort vibration criteria from *Assessing Vibration: a technical guideline* – DEC, 2006) is predicted for all receivers located above or near to the proposed tunnel alignment.

Surface track ground-borne vibration

Some residential buildings located immediately adjacent to the surface rail track between Chatswood Station and Chatswood dive may experience an increase in train passby vibration levels. Residential receivers located on the western side of the rail corridor between Mowbray Road and Gordon Avenue, Chatswood are currently around 11 metres from the closest rail track. As a result of the realignment of the T1 North Shore Line, the surface track would be located around eight metres from these receivers (three metres closer). Based on previous investigations of vibration propagation from rail lines undertaken by the US Federal Transit Administration (2006), this change would equate to a potential increase in vibration level of around 2 dB. This increase is expected to be barely noticeable to the receivers.

Ground-borne noise predictions

Predictions of ground-borne noise levels are provided in Figure 11-3 for residential receivers and Figure 11-4 for commercial and other sensitive receivers. The predictions are based on a 'best estimate' plus a 5 dB safety factor. On average, the predicted ground-borne noise levels (for the highest 1 in 20 trains) at the nearest receivers would be around 30 dB which is well below the ground-borne noise design objectives. At most locations the noise levels would be much lower.

The proposed ground-borne noise levels are predicted to comply with the ground-borne noise objectives at all residential, commercial and other sensitive receiver locations.

THIS AFFECTS 1-3 GORDON AVENUE AND IS NOT ACCEPTABLE TO US. THE EXISTING VIBRATION AND NOISE IS EXCESSIVE AND WE WILL NOT TOLERATE ANY INCREASE, IN FACT WE DEMAND ACTION BE TAKEN TO IMPROVE THE EXISTING PROBLEMS BEFORE ANY NEW WORK IS APPROVED

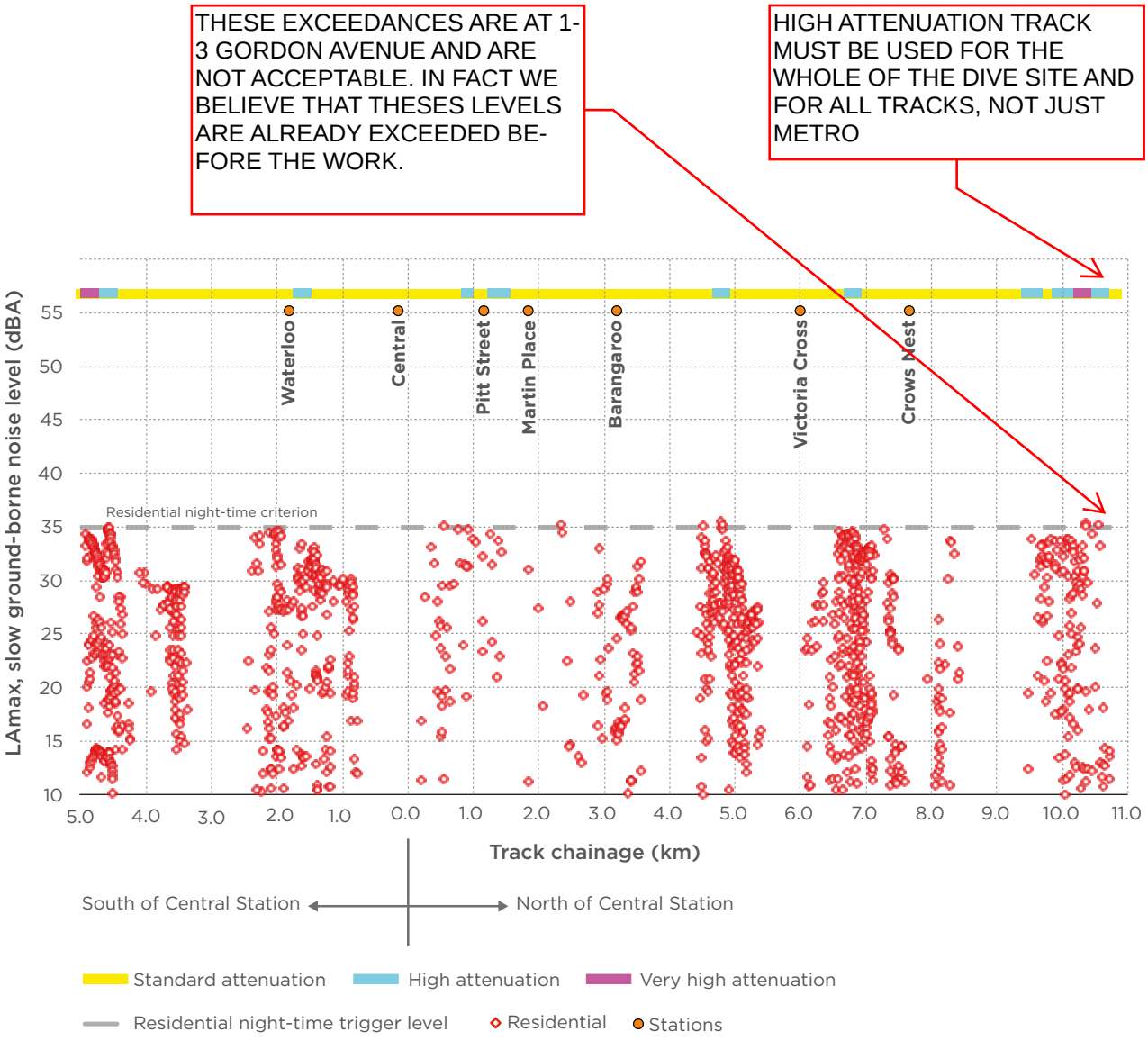


Figure 11-3 Predicted ground-borne noise levels – residential receivers

THIS INCREASE OPPOSITE 1 GORDON ACTUALLY WILL CREATE GREATER REFLECTED NOISE TO THE UPPER FLOOR OF OUR BUILDING.

THIS HIGHER WALL DOES NOT INCLUDE 1-3 GORDON AVENUE AS STATED ELSEWHERE BE-CAUSE IT WONT HELP

THIS TREATMENT MUST INCLUDE THE HEAVY RAIL SYSTEM AND NORTH BOUND OVER BRIDGE AS WELL AS THE METRO, AND EX-TEND TO THE FULL LENGTH OF THE DIVE SITE AS IT HAS GREATER IMPACT ON 1-3 GOR-DON AVENUE

Northern surface works

In order to mitigate potential airborne noise impacts at the northern end of the project, the design has incorporated the following measures:

- An increase in the height (to four metres) of the noise barrier between Chapman Avenue and Nelson Street on the eastern side of the rail line
- An increase in the height (to four metres) of the noise barrier between the Frank Channon Walk pedestrian underpass and Albert Avenue on the western side the rail line
- An increase in the height (to four metres) of the noise barrier between Nelson Street and Gordon Avenue on the western side the rail line
- A two metre high noise barrier to the south of the Mowbray Road on the western side of the rail line
- Rail dampers and deck absorption within the Chatswood dive structure.

The exact height and extent of the noise barriers in these locations would be further refined during detailed design.

A summary of the predicted worst-case noise levels for residential receivers for the 2034 (future year) scenario are presented in Table 11-11. The future year 2034 scenario has been presented as it results in the highest noise level predictions. Results for the at opening 2024 scenario are provided in *Technical paper 2 – Noise and vibration*.

Table 11-11 Predicted 2034 airborne noise levels – residential receivers Chatswood dive

NCA	Side	Worst-case predicted noise level (dBA)								
		Without project			With project			Increase		RING triggers
		$L_{Aeq(15h)}$	$L_{Aeq(9h)}$	L_{Amax}	$L_{Aeq(15h)}$	$L_{Aeq(9h)}$	L_{Amax}	L_{Aeq}	L_{Amax}	
01	Up	50	46	68	52	47	68	1.6	-0.1	0
	Down	61	58	80	63	58	81	1.2	0.5	0
02	Up	**68**	**64**	**86**	**70**	**65**	**86**	1.9	-0.3	0
	Down	64	60	84	**67**	**62**	**85**	0	1.3	1
03	Up	**69**	**65**	**88**	**68**	**64**	**87**	0.7	0.8	0
	Down	63	59	81	65	60	81	1.8	0.7	0
04	Up	**69**	**65**	**87**	**69**	**65**	**87**	0.3	0	0
	Down	**68**	**64**	**85**	**68**	**64**	**85**	0.1	0	0

1 *Red bold indicates an exceedance of criteria*

2 *For reference the trigger levels are:*
development increases existing $L_{Aeq(period)}$ rail noise levels by 2 dB or more, or existing L_{Amax} rail noise levels by 3 dB or more and predicted rail noise levels exceed: daytime: 65 $L_{Aeq(15hour)}$ or 85 L_{Amax}, night-time: 60 $L_{Aeq(9hour)}$ or 85 L_{Amax}.

UNIT 9 IS OWNER OCCUPIED AND RUNS A PROFESSIONAL CONSULTING PRACTICE FROM A HOME OFFICE. THUS THEIR BUSINESS AND LIFE WILL BE SEVERELY AFFECTED BY THE WORKS ON A 24 HOUR BASIS, MAKING IT UNACCEPTABLE.

THE REPORT ACKNOWLEDGES THAT THEY CANT PROVIDE ADEQUATE SOUND BARRIERS FOR 1-3 GORDON AVENUE.

1-3 GORDON AVENUE IS SPECIFICALLY SEVERELY AFFECTED AND MUST BE ACQUIRED AS PART OF THE PROJECT. IT IS NOT ACCEPTABLE THAT WE MUST SUFFER THROUGH EXCESSIVE CONSTRUCTION NOISE AND THEN BE LEFT WITH A PAINFUL PROCESS OF ARGUING THAT THE OPERATIONAL NOISE LEVELS ARE TOO HIGH, AND THEN WAITING FOR SOME HAPHAZARD ACTION BY A CONTRACTOR AND TEAM WHO HAVE "FINISHED" AND LEFT.

The results indicate that noise levels at residential receivers without the project are generally already close to, or exceeding, the overall noise criteria levels.

Comparing the 'with project' and 'without project' noise levels indicates that there is generally no change in noise levels from the project, primarily due to the measures incorporated into the design to minimise operational airborne noise impacts.

From the results it can be seen that there remains a predicted exceedance of the noise trigger levels at one residential receiver building (at address 1-3 Gordon Avenue, Chatswood) on the western side of the rail line. This residential receiver is a multi-storey apartment building and would consist of several dwellings. The upper floors of this receiver would have an unobstructed view of the rail tracks over the noise barrier, even with the proposed increase in barrier height. To break line of sight at the triggered receivers on the upper floor of this building would require a noise barrier in excess of six metres high. Noise barriers of this height are unlikely to be considered reasonable and may not be feasible, particularly since the barrier would need to be located in close proximity to the building facade. Based on the outcomes of noise modelling during detailed design, this property would be considered for at property treatment.

A summary of the predicted worst-case noise levels for other sensitive receivers for the 2034 (future year) scenario are presented in Table 11-12. The future year 2034 scenario has been presented as it results in the highest noise level predictions. Results for the at opening 2024 scenario are provided in *Technical paper 2 – Noise and vibration*.

Table 11-12 Predicted 2034 airborne noise levels – other sensitive receivers Chatswood dive

NCA	Side	Worst-case predicted noise level (dBA)					
		Without project		With project		Increase	RING triggers
		$L_{Aeq(1h)}$ Day	$L_{Aeq(1h)}$ Night	$L_{Aeq(1h)}$ Day	$L_{Aeq(1h)}$ Night	$L_{Aeq(1h)}$	
01	Up	59	55	61	56	2.2	0
	Down	61	58	62	58	1.2	0
02	Up	N/A	N/A	N/A	N/A	N/A	0
	Down	66	62	69	63	3.2	0
03	Up	N/A	N/A	N/A	N/A	N/A	0
	Down	63	59	64	60	1.8	0
04	Up	N/A	N/A	N/A	N/A	N/A	0
	Down	68	64	68	64	0.1	0

THE AT PROPERTY TREATMENT TO REDUCE RAILWAY NOISE TO ACCEPTABLE LEVELS FOR THE RESIDENTS WOULD BE EXPENSIVE AND EXTENSIVE CREATING EVEN GREATER DISRUPTION TO THE OWNERS AND RESIDENTS.
IT WOULD BE BETTER TO BUY THEM OUT AND FIX UP THE SOUNDPROOFING WITH THEM OUT OF THE WAY.

Table 2: Noise at Residences Using Quantitative[1]

Time of Day	Management Level LAeq(15minute)[2]	How to Apply
Recommended standard hours: Monday to Friday 7.00 am to 6.00 pm Saturday 8.00 am to 1.00 pm	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured LAeq(15minute) is greater than the noise affected level, the proponent would apply all feasible and reasonable work practices to minimise noise. The proponent would also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
No work on Sundays or public holidays	Highly noise affected 75 dB	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the proponent would consider very carefully if there is any other feasible and reasonable way to reduce noise to below this level. If no quieter work method is feasible and reasonable, and the works proceed, the proponent would communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided.
Outside recommended standard hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent would apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dBA above the noise affected level, the proponent would negotiate with the community. For guidance on negotiating agreements see Section 7.2.2 of the ICNG.

Note 1: Adopted from the ICNG.

Note 2: Noise levels apply at the property boundary that is most exposed to construction noise. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence.

THIS BASICALLY MEANS THEY DON'T HAVE TO DO ANYTHING TO REDUCE NOISE IF THEY DON'T WANT TO, RESPITE IS OPTIONAL, AND THERE IS NO PENALTY.
THIS IS UNNACEPTABLE

WHAT DOES "NEGOTIATE" MEAN?

Table 3 presents management levels for noise at other sensitive land uses based on the principle that the characteristic activities for each of these land uses would not be unduly disturbed. The noise management levels apply only to when the property is being used, for example classrooms during school hours. Internal noise levels are to be assessed at the centre of the occupied room. External noise levels are to be assessed at the most-affected point within 50 m of the area boundary.

5.3.2. Commercial and Industrial Premises

Due to the broad range of sensitivities that commercial or industrial land can have to noise from construction, the process of defining management levels is separated into three categories. The external noise levels would be assessed at the most-affected occupied point of the premises:

- Industrial premises (external): 75 dB $L_{Aeq(15minute)}$
- Offices, retail outlets (external): 70 dB $L_{Aeq(15minute)}$
- Other businesses that may be very sensitive to noise, where the noise level is project specific as discussed below

Examples of other noise-sensitive businesses are theatres, studios and child care centres. The proponent would undertake a special investigation to determine suitable noise levels on a project-by-project basis; the recommended internal noise levels presented in Table 1 of AS 2107 "*Acoustics - Recommended design sound levels and reverberation times for building interiors*" (Standards Australia 2000) may assist in determining relevant noise levels; however, an acoustical consultant would be engaged in order to determine corresponding external noise levels based on the published internal noise levels. The proponent would assess construction noise levels for the project, and consult with occupants of commercial and industrial premises prior to lodging an application where required. During construction, the proponent would regularly update the occupants of the commercial and industrial premises regarding noise levels and hours of work.

THIS CRITERIA APPLIES TO 9/1-3 GORDON AVENUE AS OFFICE SPACE

5.4. Ground-Borne Vibration

The effects of vibration in buildings can be divided into three main categories; those in which the occupants or users of the building are inconvenienced or possibly disturbed, those where the building contents may be affected and those in which the integrity of the building or the structure itself may be prejudiced.

5.4.1. Human Comfort Vibration

The DECCW's "Assessing Vibration: a technical guideline" dated February 2006 (DEC, 2006) recommends the use of BS 6472-1992 for the purpose of assessing vibration in relation to human comfort.

British Standard 6472-1992 "*Guide to evaluation of human exposure to vibration in building*" nominates guideline values for various categories of disturbance, the most stringent of which are the levels of building vibration associated with a "low probability of adverse comment" from occupants.

BS 6472-1992 provides guideline values for continuous, transient and intermittent events that are based on a Vibration Dose Value (VDV), rather than a continuous vibration level. The vibration dose value is dependant upon the level and duration of the short term vibration event, as well as the number of events occurring during the daytime or night-time period.

The vibration dose values recommended in BS 6472-1992 for which various levels of adverse comment from occupants may be expected are presented in **Table 5**.

- High Impact

The classifications are to be determined on a case-by-case basis with consideration of the following points. These are guidelines for classifications only and subjective due to the number of variances within any construction scenario. An objective evaluation is to be applied to all construction scenarios.

- The location of the works in relation to NSRs with consideration of noise attenuation features such as noise barriers including topographical features (earth-mounds), buildings, dividing fences etc (distance of works from sensitive receiver(s)).
- The type and sensitivity of the NSRs:
  - Lower Impact: eg Commercial buildings/ Scattered Residential (low density)
  - Moderate Impact: eg Standard residential (typical density)
  - High Impact: eg Residential home for the elderly/high density unit blocks/persistent complainers/residents deemed to have "construction noise fatigue".

WE WILL HAVE CONSTRUCTION NOISE FATIGUE AT 1-3 GORDON AVENUE

- The extent of noise exceedance above Noise Management Level.
- The likelihood for potential sleep disturbance RBL + 15 dB.
- The type of and intensity of noise emitted from works (ie tonal or impulsive):
  - Lower Impact: No high noise and/or vibration intensive activities
  - Moderate Impact: Short/intermittent high noise and/or vibration intensive activities
  - High Impact: Prolonged high noise and/or vibration intensive activities.
- The duration of any OOHW required.
- The time frames for any OOHW:
  - Lower Impact: 6.00 pm till 10.00 pm weekdays 1.00 pm till 10.00pm Saturdays

    8.00 am till 6.00 pm Sundays or Public Holidays
  - Moderate Impact: 10.00 pm to 7.00 am Weekday Nights 10.00 pm to 8.00 am Saturdays
  - High Impact: 6.00 pm to 7.00 am Sundays and Public Holidays.
- As a result of noise classification and/or the noise level exceedances at sensitive receivers provided by the CNIS reports, appropriate reasonable and feasible noise mitigation is to be adopted and implemented. For sites where works are predicted to significantly exceed noise goals and impact on receivers for a significant period of time, additional reasonable and feasible noise mitigation measures such as those outlined in Section 7 would be considered if practical to reduce the noise levels and impact on sensitive receivers.

FOR EVEN GROSS EXCEEDANCES OF NOISE LIMITS, "REASONABLE MEASURES" "WOULD BE CONSIDERED", BUT THE EVIDENCE OF NORWEST METRO REPORTS IS THAT EVERYTHING IS DEFINED AS UNREASONABLE OR IMPOSSIBLE.
THE MEASURES REMAIN OPTIONAL TO THE CONTRACTOR.

6.5. Ground-Borne (Regenerated) Noise

Ground-borne noise as a result of construction activities is usually associated with tunnelling projects where equipment such as tunnel boring machines, road headers, rock hammers and drilling rigs are operated underground. It is therefore anticipated that ground-borne noise may be an issue during the construction of Sydney Metro projects.

SPECIFIC ADDITIONAL MEASURES MAY BE SPECIFIED IN THE APPROVAL. IN VIEW OF THE MANY SERIOUS PROBLEMS CREATED AT 1-3 GORDON AVENUE WE DEMAND SPECIAL MEASURES BE SPECIFIED IN RELATION TO THAT SITE.

Table 9: Standard Mitigation Measures to Reduce Construction Noise and Vibration

Action required	Applies to	Details
Management Measures		
Implementation of any project specific mitigation measures required	Airborne noise Ground-borne noise and vibration	In addition to the measures set out in this table, any *project specific* mitigation measures identified in the environmental assessment documentation (eg EA, REF, submissions or representations report) or approval or licence conditions must be implemented.
Implement community consultation measures	Airborne noise Ground-borne noise and vibration	Periodic Notification (monthly letterbox drop)[1] Website Project information and construction response telephone line Email distribution list Place Managers
Register of Noise Sensitive Receivers	Airborne noise Ground-borne noise and vibration	A register of all noise and vibration sensitive receivers (NSRs) would be kept on site. The register would include the following details for each NSR: • Address of receiver • Category of receiver (eg Residential, Commercial etc.) • Contact name and phone number
Site inductions	Airborne noise Ground-borne noise and vibration	All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include: • All relevant project specific and standard noise and vibration mitigation measures • Relevant licence and approval conditions • Permissible hours of work • Any limitations on high noise generating activities • Location of nearest sensitive receivers • Construction employee parking areas • Designated loading/unloading areas and procedures • Site opening/closing times (including deliveries) • Environmental incident procedures
Behavioural practices	Airborne noise	No swearing or unnecessary shouting or loud stereos/radios; on site. No dropping of materials from height; throwing of metal items; and slamming of doors. No excessive revving of plant and vehicle engines Controlled release of compressed air.
Monitoring	Airborne noise Ground-borne noise and vibration	A noise monitoring program is to be carried out for the duration of the works in accordance with the Construction Noise and Vibration Management Plan and any approval and licence conditions.

[1] Detailing all upcoming construction activities at least 14 days prior to commencement of relevant works

3 HOURS NOISE - 1 HOUR RESPITE IS NOT ACCEPTABLE FOR A HOME OFFICE OPERATION

Action required	Applies to	Details
Attended vibration measurements	Ground-borne vibration	Attended vibration measurements are required at the commencement of vibration generating activities to confirm that vibration levels satisfy the criteria for that vibration generating activity. Where there is potential for exceedances of the criteria further vibration site law investigations would be undertaken to determine the site-specific safe working distances for that vibration generating activity. Continuous vibration monitoring with audible and visible alarms would be conducted at the nearest sensitive receivers whenever vibration generating activities need to take place inside the applicable safe-working distances.
Source Controls		
Construction hours and scheduling	Airborne noise Ground-borne noise and vibration	Where feasible and reasonable, construction would be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels would be scheduled during less sensitive time periods.
Construction respite period	Ground-borne noise and vibration Airborne noise	High noise and vibration generating activities[2] may only be carried out in continuous blocks, not exceeding 3 hours each, with a minimum respite period of one hour between each block[3].
Equipment selection	Airborne noise Ground-borne noise and vibration	Use quieter and less vibration emitting construction methods where feasible and reasonable. For example, when piling is required, bored piles rather than impact-driven piles will minimise noise and vibration impacts. Similarly, diaphragm wall construction techniques, in lieu of sheet piling, will have significant noise and vibration benefits.
Maximum noise levels	Airborne-noise	The noise levels of plant and equipment must have operating Sound Power Levels compliant with the criteria in **Table 11**.
Rental plant and equipment	Airborne-noise	The noise levels of plant and equipment items are to be considered in rental decisions and in any case cannot be used on site unless compliant with the criteria in **Table 11**.
Plan worksites and activities to minimise noise and vibration	Airborne noise Ground-borne vibration	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.
Non-tonal reversing alarms	Airborne noise	Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.

[2] Includes jack and rock hammering, sheet and pile driving, rock breaking and vibratory rolling.

[3] "Continuous" includes any period during which there is less than a 60 minutes respite between ceasing and recommencing any of the work.

7.3. Maximum Allowable Plant Sound Power Levels

Plant or equipment operating on Sydney Metro project construction sites shall have an operating sound power level (SWL) which is no higher than the corresponding SWL presented in **Table 11**. The SWLs presented in **Table 11** have been compiled from a selection of field measurements conducted between 2004 and 2008 of plant and equipment operating on large construction projects throughout NSW and are therefore considered to representative of plant and equipment SWLs which are readily achieved by current plant and equipment normally used in the construction industry.

THESE LEVELS INSTANTLY EXCEED THE ALLOWABLE OR REASONABLE LEVELS AT 1-3 GORDON AVENUE GIVEN THE RAIL PROPERTY IS LESS THAN 7m FROM OUR BOUNDARY.

Plant and equipment with SWLs higher than those presented in **Table 11** would be deemed to be emitting an excessive level of noise and would not be permitted to operate Sydney Metro project construction sites.

Table 11: Maximum Allowable Sound Power Levels for Construction Equipment

Equipment	Maximum Allowable Sound Power Level (dB) LAmax	Maximum Allowable Sound Pressure Level (dB) LAmax at 7 m
Excavator Hammer	118	93
Excavator (approx. 3 tonne)	90	65
Excavator (approx. 6 tonne)	95	70
Excavator (approx. 10 tonne)	100	75
Excavator (approx. 20 tonne)	105	80
Excavator (approx. 30 tonne)	110	85
Excavator (approx. 40 tonne)	115	90
Skidsteer Loaders (approx. 1/2 tonne)	107	82
Skidsteer Loaders (approx. 1 tonne)	110	85
Dozer (tracking) - equiv. CAT D8	118	93
Dozer (tracking) - equiv. CAT D9	120	95
Dozer (tracking) - equiv. CAT D10	121	96
Backhoe/FE Loader	111	86
Dump Truck (approx. 15 tonne)	108	83
Concrete Truck	112	87
Concrete Pump	109	84
Concrete Vibrator	105	80
Bored Piling Rig	110	85
Scraper	110	85
Grader	110	85
Vibratory Roller (approx. 10 tonne)	114	89
Vibratory Pile Driver	121	96
Impact Piling Rig	134	109
Compressor (approx. 600 CFM)	100	75
Compressor (approx. 1500 CFM)	105	80
Concrete Saw	118	93
Jackhammer	113	88

8.2. Applying Additional Mitigation Measures

In circumstances where - after application of the standard mitigation measures - the $L_{Aeq(15minute)}$ construction noise and vibration levels are still predicted to exceed the noise or vibration objectives, the relevant Additional Mitigation Measures Matrix (AMMM) (see **Table 14** to **Table 16**) is to be used to determine the additional measures to be implemented. This requirement is supplemental to the basic requirements in the ICNG.

Using the relevant AMMM, the following steps need to be carried out to determine the additional mitigation measures to be implemented:

- Determine the duration (time period) when the work is to be undertaken.
- Determine the level of exceedance.
- From the relevant AMMM table, identify the additional mitigation measures to be implemented (using the abbreviation codes - expanded in **Table 13**).

THIS CRITERIA IS UNNACCEPTABLE - ALLOWS UP TO 20dB OVER AMBIENT ALL DAY!!

Table 14: Additional Mitigation Measures Matrix (AMMM) - Airborne Construction Noise

Time Period		Mitigation Measures			
		Predicted $L_{Aeq(15minute)}$ Noise Level Above Background (RBL)			
		0 to 10 dB	10 to 20 dB	20 to 30 dB	> 30 dB
Standard	Mon-Fri (7.00 am - 6.00 pm)	-	-	M, LB,	M, LB
	Sat (8.00 am - 1.00 pm)				
	Sun/Pub Hol (Nil)				
OOHW	Mon-Fri (6.00 pm - 10.00 pm)	-	LB	M, LB	M, IB, LB, PC, RO,SN
	Sat (1.00 pm - 10.00 pm)				
	Sun/Pub Hol (8.00 am - 6.00 pm)				
OOHW	Mon-Fri (10.00 pm - 7.00 am)	-	M, LB,	M, IB, LB, PC, RO, SN	AA, M, IB, LB, PC, RO, SN
	Sat (10.00 pm - 8.00 am)				
	Sun/Pub Hol (6.00 pm - 7.00 am)				

Table 15: AMMM - Ground-borne Construction Noise

Time Period		Mitigation Measures		
		Predicted $L_{Aeq(15minute)}$ Noise Level Exceedance		
		0 to 10 dB	10 to 20 dB	> 20 dB
Standard	Mon-Fri (7.00 am - 6.00 pm)	LB	LB	M, LB, SN,
	Sat (8.00 am - 1.00 pm)			
	Sun/Pub Hol (Nil)			
OOHW	Mon-Fri (6.00 pm - 10.00 pm)	LB	M, LB, SN,	M, IB, LB, PC, RO, SN
	Sat (1.00 pm - 10.00 pm)			
	Sun/Pub Hol (8.00 am - 6.00 pm)			
OOHW	Mon-Fri (10.00 pm - 7.00 am)	M, LB, SN,	AA, M, IB, LB, PC, RO, SN	AA, M, IB, LB, PC, RO, SN
	Sat (10.00 pm - 8.00 am)			
	Sun/Pub Hol (6.00 pm - 7.00 am)			

Name: Cam Balzer
Organisation: Executive Committee of Strata Plan SP56520 of 1-3 Gordon Avenue Chatswood (CHAIRMAN)

chatswood, NSW
2067

Content:
Our submission is uploaded as a PDF, with attachments.
NOTE - This is an updated submission to the one made earlier today as the original EIS document files supplied to us by Metro Rail were incomplete and out of date.

Sydney Metro City & Southwest
Chatswood to Sydenham section
State Significant Infrastructure Application SSI 15_7400

1 APPLICATION NAME

Sydney Metro City & Southwest - Chatswood to Sydenham

2 APPLICATION NUMBER

SSI 15_7400

3 SUBMISSION BY;

Campbell Balzer as Chairman and as instructed to act on behalf of the Executive Committee of Strata Plan SP56520 of 1-3 Gordon Avenue Chatswood, consisting of 12 units.

Chairman's Address: Unit 9 / 1-3 Gordon Avenue Chatswood.

4 OBJECTION SUMMARY

We object to Sydney Metro Project specifically in respect of construction of the Chatswood Metro tunnel dive site and heavy rail works immediately adjacent to our block of 12 units at 1-3 Gordon Avenue, due to the lengthy excessive noise and vibration during construction and also excessive noise and vibration at our homes during operation of the rail networks on completion.

The EIS plans for dealing with construction noise have significant "opt out "clauses which permit major breaches without any penalty to the Contractor on the grounds of "unavoidable events or work" and "impractical to mitigate or avoid". Our review of the complaints reports for the Norwest Metro project reveal this excuse is used in almost every instance of breach, and that the mitigations are trivial or too late. The frequent response has been an offer of ear plugs or noise cancelling headphones, which is a disgusting affront to the affected residents. The offers of noise monitoring come AFTER the event and far too late to be of any benefit.

Similarly, the entire operational noise performance and criteria is referenced to the "Rail Infrastructure Noise Guideline (EPA, 2013)" which is a VOLUNTARY GUIDELINE, not mandatory. It

also contains multiple exclusions / excuses to exceed noise and vibration levels without action or penalty. This was quoted to us, the residents, by the operators and project management after the Chatswood to Epping project which caused frequent and intolerable excessive operational noise and vibration at 1-3 Gordon Avenue.

Our preferred and recommended outcome is an immediate acquisition of the properties at 1-3 Gordon Avenue.

The alternatives are equally expensive, equally painful for everyone and very time consuming.

5 SPECIFIC REASONS FOR OBJECTION

5.1 EXCESSIVE RAIL OPERATIONAL NOISE AND VIBRATION - EXISTING

High levels of Train Noise of can be heard and vibration felt at 1-3 Gordon Avenue from the current railway, and is frequently intrusive and interrupts sleep of the residents. The noise is both direct and also regenerated ground borne noise.

The northbound rail line was already moved 3m closer to the unit block during the Chatswood to Epping rail project. At various times since that work many complaints have been lodged, but with little or no useful action by the operators. It is only in the last twelve months that there has been some improvement in the noise and vibration, for reasons unknown, and unpredictably. We cannot rely on this improvement based upon bitter past experience.

The existing high levels also create an excuse for the operators to base the new operational noise limits higher than otherwise defined as acceptable, based upon on the already intolerable high levels being pre-existing.

The proponent has not even bothered to carry out site specific measurements at 1-3 Gordon Avenue during the EIS, despite specific issues raised in their own report, and strong objections from the residents in correspondence and at site meetings during the EIS phase.

5.2 EXCESSIVE RAIL OPERATIONAL NOISE AND VIBRATION - POST COMPLETION

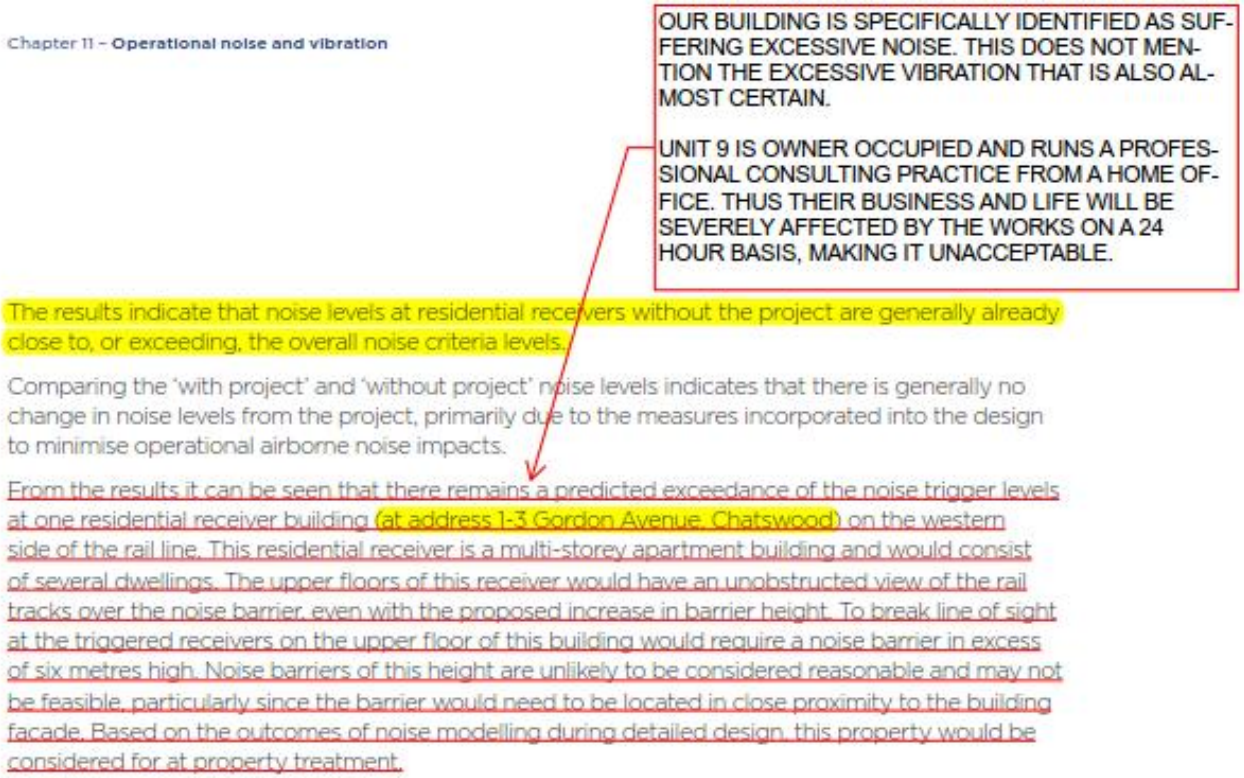
It is proposed to move the northbound heavy rail line closer to 1-3 Gordon Avenue by another three meters, and elevate it by 2m on a bridge structure which will make the noise at our units much worse. This is on top of the existing 3m closer relocation carried out under the Chatswood to Epping project in 2006.

1-3 Gordon Avenue is specifically mentioned in the EIS as an address that will remain affected excessively by operational noise after completion of the work. It further states that it is impractical to create an adequate noise barrier.
The is an inadequate and incomplete reference to “at site mitigation”, which implies someone may attempt to make some token sound proofing at the building, but not until after operation commences, and on an “ad hoc” basis. It is unclear who will be responsible, and police the process. As stated earlier, the EPA Railway Noise document is only a non-compulsory and unenforceable “guideline”. The operators may deem the situation is satisfactory or beyond their own definition of “reasonable” control.

1. The very close proximity of the works, the ground structure and our building basement and stairwell arrangement will result in vibration being amplified within our premises to excessive levels.
2. The realignment of the existing T1 northbound rail line to the temporary route requires heavy machinery and excavation work after hours with multiple rail corridor closure events that will cause severe disruption and noise fatigue effect to the life of all residents.
3. T1 northbound track is closer to Gordon Avenue unit block increasing the noise and vibration impact.
4. New Metro tracks will carry more traffic than the existing T1 tracks did. This volume is in addition to the T1 track traffic which will remain.
5. The T1 northbound track is raised in height due to being routed over the dive structure. However, in addition to this the dive structure itself finishes at Nelson Street which requires the T1 northbound track to be supported by a concrete bridge structure. This structure will generate significantly more noise than a closed structure and will also allow rail noise from the Metro tracks to pass through to the Gordon Avenue unit block.
6. For upper level units, the elevated T1 northbound trains and additional Metro trains will be noisier.
7. Ground vibration is a major concern with the increased volume of rail traffic on the T1 plus Metro lines. This vibration can potentially be amplified through the basement area of 1-3 Gordon Avenue.
8. All units feature large outdoor areas of open balcony or patio, making up typically ~25% of the nett liveable / rental space. The increase in train operational noise will make these areas useless and worthless as the sound levels will be far above tolerable levels for even casual use.

In the first instance we insist that our block of units is resumed by the Government under a negotiated acquisition. The whole property and some 40-50 residents will be removed from the project objectors, and the project may proceed without interruption.

The specific reference to our properties is shown below;



Chapter 11 – **Operational noise and vibration**

OUR BUILDING IS SPECIFICALLY IDENTIFIED AS SUFFERING EXCESSIVE NOISE. THIS DOES NOT MENTION THE EXCESSIVE VIBRATION THAT IS ALSO ALMOST CERTAIN.

UNIT 9 IS OWNER OCCUPIED AND RUNS A PROFESSIONAL CONSULTING PRACTICE FROM A HOME OFFICE. THUS THEIR BUSINESS AND LIFE WILL BE SEVERELY AFFECTED BY THE WORKS ON A 24 HOUR BASIS, MAKING IT UNACCEPTABLE.

The results indicate that noise levels at residential receivers without the project are generally already close to, or exceeding, the overall noise criteria levels.

Comparing the 'with project' and 'without project' noise levels indicates that there is generally no change in noise levels from the project, primarily due to the measures incorporated into the design to minimise operational airborne noise impacts.

From the results it can be seen that there remains a predicted exceedance of the noise trigger levels at one residential receiver building (at address 1-3 Gordon Avenue, Chatswood) on the western side of the rail line. This residential receiver is a multi-storey apartment building and would consist of several dwellings. The upper floors of this receiver would have an unobstructed view of the rail tracks over the noise barrier, even with the proposed increase in barrier height. To break line of sight at the triggered receivers on the upper floor of this building would require a noise barrier in excess of six metres high. Noise barriers of this height are unlikely to be considered reasonable and may not be feasible, particularly since the barrier would need to be located in close proximity to the building facade. Based on the outcomes of noise modelling during detailed design, this property would be considered for at property treatment.

5.3 EXCESSIVE CONSTRUCTION NOISE AND VIBRATION AT 1-3 GORDON AVENUE

The extensive and heavy construction the works associated with the tunnel dive site and existing rail realignment will generate excessive noise, vibration and dust at 1-3 Gordon Avenue that cannot be mitigated adequately because the rail line is too close to the block, and the upper floor units immediately overlook the works and cannot be screened visually or acoustically;

1. The very close proximity of the works, the ground structure and our building basement and stairwell arrangement will result in vibration being amplified within our premises to excessive levels.
2. The realignment of the existing T1 northbound rail line to the temporary route requires heavy machinery and excavation work after hours with multiple rail corridor closure events that will cause severe disruption and noise fatigue effect to the life of all residents.
3. The construction of the bridge to accommodate the new T1 northbound track over the new dive structure requires major rock excavation and piling works immediately adjacent to 1-3 Gordon Avenue, with probable excessive noise and even structural damage.
4. Construction vehicles and material will continuously be moving in the track area adjacent to the 1-3 Gordon Avenue unit block. This construction traffic will occur when preparing the site for the new dive structure, bridge and track foundations for the new t1 northbound location.

5. There is the potential for noise and vibration from existing rail traffic to increase due to the temporary nature of the relocated main northern line.
6. While a noise barrier is planned for the Nelson St construction site, no such noise barrier is proposed between the Gordon Avenue unit block and the excavation area during the excavation work required for the T1 northbound bridge, dive structure and tunnel. This noise barrier is required during the construction of the bridge over the dive structure for T1 northbound. In addition, a noise barrier is required during the building of new Metro tracks.
7. Potential 24x7 work during the construction phase of this project will severely adversely impact residence during and after work hours. There are significant afters hours large earth works, demolition, piling and track work proposed in the proximity of 1-3 Gordon Avenue unit block.

5.4 BUSINESS INTERRUPTION DUE TO CONSTRUCTION & OPERATIONAL NOISE

Some residence of 1-3 Gordon Avenue operate home business or work night shift work, requiring sleep, during the hours of 7am – 8 pm, the project will result in having a disruptive and high impact noise level unacceptably high for a work or daytime sleep environment. They will be forced to relocate at great personal expense. The adverse effects on these residents must be mitigated for this imposition by the project, by temporary or permanent relocation. Loss of income and rent must also be compensated for.

5.5 TRAFFIC PROBLEMS FOR GORDON AVENUE RESIDENTS

The loss of the Nelson Street direct access to Chatswood is a major transport problem for the residents of Gordon Avenue, and hundreds of all other residents between Albert Avenue and Nelson St. We currently have direct easy road access to our local Chatswood retail, business, schools and community without traffic lights, without having to further congest the Pacific Highway and Mowbray Road, or Orchard Road intersections.

The Mowbray Road - southbound Pacific Highway intersection is already extremely congested at all times of the day, and particularly in morning and afternoon times. The location of the construction site entrances in Nelson Road and Mowbray Road mean that there will be continuous major truck “movements” through this intersection aggravating the situation to an unacceptable level. Trucks will invariably block this lane an make it nearly impossible for us to enter the Pacific Highway.

Residents in Gordon Avenue will experience increased difficulty when joining onto Pacific Highway. Already there is major gridlock caused by cars blocking the exit from Gordon Avenue. Once truck start using the left lane to enter the Nelson Street site, causing increased congestion this problem will become much worse.

On completion the traffic problems will remain with increased travel time and pollution.

As a minimum mitigation we require that a DEDICATED LEFT TURN ONLY lane is established at the southbound Pacific Highway / Mowbray road intersection, without traffic light control and at the beginning of the project. There is plenty of space on the southwest corner in the large construction site to allow this to be built immediately at the project start.
We also require that the intersection of Gordon Avenue and Pacific Highway is line marked and signposted with “Do not Block this Intersection” and that this is policed.

5.6 TRAFFIC NOISE DURING CONSTRUCTION FOR GORDON AVENUE

Trucks will use exhaust brakes to slow down to enter the Nelson St Site entry, particularly at night from high speed. This noise will affect ALL the residents including 1-3 Gordon Avenue because we have line of sight and reflectance of the Payless Tyres building façade.

Additionally the large volume of northbound truck traffic will be generating excessive noise accelerating and gear changing at the same point of road which affects our property directly.

A strict “no exhaust brakes” law, signage and enforcement is required, or alternatively ban construction traffic between 8pm and 7am.

Also we require that 24/7 noise & video recording monitoring is installed in both directions at the intersection of Gordon Avenue and Pacific Highway to identify and assist in prosecuting offending vehicles.

6 ACCEPTABLE MITIGATIONS

6.1 ACQUISITION

To be clear, the residents of 1-3 Gordon Avenue will object and seek a Court Injunction in the Land and Environment Court and / or Local Court if their objections are not answered clearly and completely to their satisfaction.

Our preferred and primary objective which we will fight for is that the Government shall acquire the properties at 1-3 Gordon Avenue under the Hardship considerations of the NSW laws, at fair value and with all costs considered. We agree that the overall project is essential and benefits a large number of people in Sydney, but the severe imposts and losses on us very few families at this address are NOT ACCEPTABLE to us, and we will fight for our rights.

With an acquisition of the properties the Government would be free to carry out the proposed development without hindrance or objection, and may choose to spend time and money making the residential property adequately resistant to the ill effects of the operational noise without hindrance of owners / occupants, then potentially selling the properties on completion for a nett minimal cost, or even profit.

The loss of value on our properties due to the degradation imposed by this project and hardship on our lives is not reconcilable or acceptable under any circumstances.

6.2 TEMPORARY RELOCATION DURING CONSTRUCTION

Failing our preferred option of acquisition, the second minimum acceptable solution is relocation of all occupants of 1-3 Gordon Avenue for the duration of the construction project. This is an extremely complex solution and involves multiple tenancies as well as owner occupiers.
We would expect that a total acquisition would be cheaper, more expedient and satisfactory.

6.3 AT BUILDING NOISE MITIGATION

Failing our preferred option of acquisition, the third minimum acceptable solution is an immediate complete noise and vibration treatment of ALL units prior to commencement of construction. This will require extensive investigation and detailed design to approval by qualified acoustic engineers and architects, and include as minimum;

1 Underpinning of the building structure to mitigate noise and vibration.
2 Full acoustic double glazing of all unit and common area windows, including the common entry doorway and surrounds.
3 Sound rated sealed fire doors on all common areas including unit entrances.
4 Roof acoustic treatments, including lifting roof tiles and laying a full acoustic barrier and insulation. Note the existing roof structure contains glass fibre and aluminised sheet thermal insulation.

5 Replacement of the top two floors unit bathroom ventilation systems with acoustically treated systems.
6 Replacement of existing vertical cement sheeting roof parapet elements with fully acoustically treated cladding.
7 Redesign and reconstruction of the existing common area light well / natural ventilation skylight and stairway with acoustically treated structure and ventilation to eliminate resonance and reverberation of noise. It is currently open to the atmosphere at the top and directly overlooking the railway.
8 Acoustic absorption panels shall be installed in the skylight well itself and the stairwell recesses to minimise reverberation and regenerated noise.
9 Complete acoustic sealing of the basement car park area, and associated forced ventilation system with acoustic treatment.
10 Full acoustic enclosure of all balcony and patio spaces in all units to make them suitable for normal use with the increased train noise levels.
11 If electrically powered forced ventilation is required for units or common areas then the operational cost of this shall be compensated to the body corporate or unit owners as an immediate lump sum calculated over a 20 year lifespan with escalation of energy and maintenance costs.
12 Continuous recording of noise and vibration at the premises during the works and on commencement of operation, with a live breach reporting structure in place to trigger immediate remedial action.

The extent, noise and duration of these works will require that the occupants are temporarily relocated for the duration to completion.
We again stress that it would be easier if the Government simply purchased the block so the whole project could proceed without our interference, then on sell it on completion of the upgrade.

6.4 TRAIN SPEED RESTRICTION

An enforced speed limit with dead man stop points of maximum 40kph for all rail traffic within 100m of 1-3 Gordon Avenue.

6.5 ATTACHMENTS

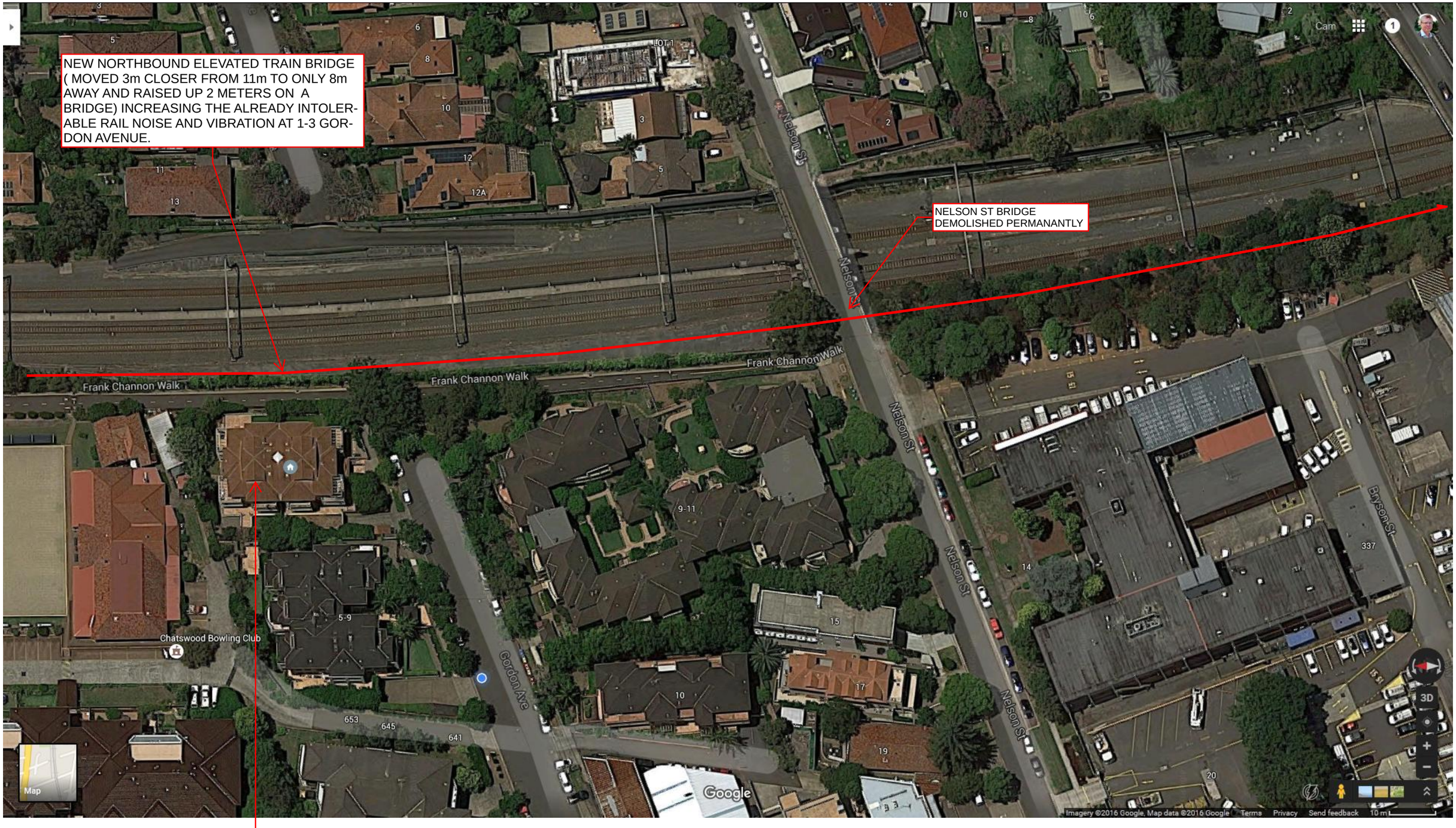
Multiple extracts from the EIS are attached to this submission upload. They are annotated with comments of relevance of the adverse impacts to 1-3 Gordon Avenue and residents.

1- Metro Chatswood SSIAR_NOV 2015 comments & Aerial view of 1-3 GORDON AVE.pdf

2- Metro EIS - Visual Impacts - comments by C Balzer 1 Gordon Avenue 16.06.20.pdf

3- Metro EIS Technical Paper 2 - Noise and Vibration_DP&E Adequacy_23022016 - Severe affects at 1-3 Gordon Avenue .pdf

4- Metro EIS_Ch 11 Operational noise and vibration_DP&E_23022016 - 1-3 GORDON AVE EXTRACT.pdf


NEW NORTHBOUND ELEVATED TRAIN BRIDGE (MOVED 3m CLOSER FROM 11m TO ONLY 8m AWAY AND RAISED UP 2 METERS ON A BRIDGE) INCREASING THE ALREADY INTOLERABLE RAIL NOISE AND VIBRATION AT 1-3 GORDON AVENUE.
NELSON ST BRIDGE DEMOLISHED PERMANANTLY
1-3 GORDON AVENUE CHATSWOOD
Frank Channon Walk
Frank Channon Walk
Frank Channon Walk
Nelson St
Nelson St
Nelson St
Nelson St
Gordon Ave
Chatswood Bowling Club
Bryson St
Google
Map
3D
Cam
Imagery ©2016 Google, Map data ©2016 Google
Terms
Privacy
Send feedback
10 m

this is where we live, and is unacceptable to us

Suburban rail tracks

Adjustment to the T1 North Shore Line tracks and rail systems would be required between the southern end of Chatswood Station and in the vicinity of Brand Street, Artarmon to accommodate the metro surface tracks and northern dive structure.

Between Chatswood Station and the northern dive structure and tunnel portal (near Mowbray Road), the existing T1 North Shore Line tracks would be re-located to the outside of the metro tracks in a widened rail corridor, within existing rail corridor zoned land.

To accommodate the new metro tracks, the dive structure and tunnel portal, the existing T1 North Shore Line 'Down' (northbound) track would be relocated to the west and would pass over the dive structure on a bridge.

The operation of the T1 North Shore Line would continue to be managed by Sydney Trains.

5.4 Stations

New underground metro stations would be located at Crows Nest, Victoria Cross, Barangaroo, Martin Place, and Pitt Street, with new underground metro platforms at Central Station. The potential for an additional station between Central and Sydenham at either The University of Sydney or Waterloo is currently being investigated.

these people do not care or comply with operational noise limits

5.4.1 Preliminary design principles for metro stations

The preliminary design principles to guide the design of the stations are in Table 5.1. The design principles would be further developed and identified in the environmental impact statement.

Table 5.1 Preliminary station design principles

Station aspect	Design principles
 **Functionality and access**	Quick and efficient transfer between metro and other transport modes is critical to station design. Station design would be guided by an 'access for all' philosophy. Stations would be designed using 'priority of access' principles, with pedestrians and cyclists first, followed by buses, taxis and 'kiss and ride' customers. Station design includes emergency exit and access facilities, such as lifts, escalators and fire stairs to allow for customer evacuation and emergency services access. The Sydney Metro network would be integrated into the Opal electronic ticketing system.
 **Customer information and wayfinding**	Customer information and wayfinding using the following guiding principles: ○ Customers would be provided with accurate, comprehensive, consistent and real-time multimodal information during multiple phases of their trip (ie before their trip, at the station and aboard the train) ○ Real-time information would be delivered to customers through multiple media to make transit journeys as seamless and convenient as possible ○ The NSW Government would work with councils to develop an easy, intuitive and consistent wayfinding system that facilitates efficient customer movements to, from and through stations.

Erskineville and St Peters Stations

Erskineville and St Peters stations will continue to be served by Sydney Trains services when the Project opens in 2024. Customer demand levels at these stations are always being monitored and will be taken into account when new train timetables are being designed over coming years.

Possible Liverpool extension

The Bankstown end of the project will be safeguarded for a possible extension to Liverpool, which will now be further investigated by Transport for NSW. Subject to further analysis, this could cut travel times from Liverpool to the CBD by up to 15 minutes and reduce crowding on the existing T1 Western Line and T2 South Line.

Further investigations and public consultation will be undertaken in 2016.

Stations beyond Bankstown

The Sydney Metro City & Southwest Project will deliver turn up and go services between Bankstown and the city with a train every four minutes during peak periods.

Customers will be able to transfer between metro and suburban trains services at an upgraded Bankstown Station.

Suburban train services will continue to operate beyond Bankstown.

Sydney's new Metro train

PROPERTY ACQUISITION

In designing major infrastructure projects, Transport for NSW makes every possible effort to avoid the need to acquire private property. However, in some cases property acquisition is required to allow construction of a major project.

The Project team will make direct contact with any owner or tenant whose property is directly affected by the Project. Following this contact a formal letter will also be sent confirming that a property is required, including details of the proposed property acquisition process.

1-3 GORDON AVENUE IS DIRECTLY AND SEVERELY AFFECTED AND MUST BE ACQUIRED AS PART OF THE PROJECT

Aerial view over Sydney CBD

1 Gordon Avenue is close to the track and will suffer excessive vibration as well as noise. We strongly disagree with the assessment that the effect will not be adverse!

From the measurement results taken within the Sydney Metro project area it is evident that the vibration levels at locations V1 and V2 are typically consistent with that predicted by the FTA base curve with some measurements higher on average and others lower on average. The variation in measured vibration levels from the FTA base curve is likely to be due to the local ground conditions at the measurement locations and the propagation path from the tracks into the ground.

Section B2.3 of the DECC vibration guideline indicates that the threshold of perception for most people is approximately 103 dB RMS (0.14 mm/s). From the measurement results presented in **Figure 35**, it is anticipated that for some train passbys, vibration levels may be perceptible at times where buildings are located within approximately 20 m from the nearest track. It is noted that the observed average train speeds for Sydney Trains operations on the T1 North Shore Line in the vicinity of the Chatswood dive are approximately 20 km/h lower than the 80 km/h line speeds for this region. Therefore the average vibration impacts are likely to be approximately 2.5 dB lower than the FTA base curve displayed in **Figure 35**.

Some residential buildings located immediately adjacent the surface rail track in the vicinity of the Chatswood dive may experience an increase in train passby vibration levels. Residential receivers located on the eastern side of the surface rail corridor in between Mowbray Road and Gordon Avenue, Chatswood are located approximately 11 m (horizontally) from the nearest existing rail track (T1 North Shore Line Up track). As a result of the track realignment associated with the project, the nearest track would be located approximately 8 m (horizontally) from the nearest residential receiver. According to the FTA base curve displayed in **Figure 35**, this change in track to receiver distance equates to a change in vibration level of approximately 2 dB. This level of change in vibration level is expected to be barely perceptible to most people.

Train passby vibration levels may exceed the night-time 103 dB_V vibration criteria at residential receivers located within 10 m of the design alignment. This includes four residential receivers located on the Up side of the surface rail corridor between Mowbray Road and Gordon Avenue, Chatswood.

However, the maximum predicted VDV value is 0.1 $m/s^{1.75}$ during the day and 0.07 $m/s^{1.75}$ during the night, which is well below the VDV criterion of 0.2 $m/s^{1.75}$ during the day and 0.1 $m/s^{1.75}$ during the night in accordance with BS 6472.

When taking into account the above levels and the duration and frequency of train passbys adjacent to the realigned T1 North Shore Line Up track, no adverse vibration impacts are anticipated adjacent to the project surface rail sections.

4.1.7 Summary of Ground-borne Vibration Assessment

As discussed in **Section 4.1.2**, the human comfort (perception) objectives for ground-borne vibration are more stringent than other possible design limits relating to building damage risk or the potential effects on building contents.

On the basis of the input data and modelling assumptions described in the previous sections, compliance with the ground-borne vibration objectives (the human comfort vibration criteria from *Assessing Vibration: A Technical Guideline*) is predicted for all residential receivers and other sensitive receiver locations above or near to the proposed project alignments.

There are no anticipated vibration impacts adjacent to project related surface rail tracks.

Table 11-10 Ground-borne vibration predictions for receivers containing highly sensitive equipment

Receiver	Location	Maximum 1/3 Octave Band Vibration Level (dB ref 1 nm/s)	
		Design objective	Predicted
Royal North Shore Hospital	Near the tunnel alignment between Artarmon substation and Crows Nest Station	82	74
Health Care Imaging Services	Near the tunnel alignment between Pitt Street Station and Central Station	82	75

The human comfort objectives for ground-borne vibration are more stringent than other possible design limits related to building damage risk or the potential effects on building contents.

Compliance with the ground-borne vibration design objectives (and the human comfort vibration criteria from *Assessing Vibration: a technical guideline* – DEC, 2006) is predicted for all receivers located above or near to the proposed tunnel alignment.

Surface track ground-borne vibration

Some residential buildings located immediately adjacent to the surface rail track between Chatswood Station and Chatswood dive may experience an increase in train passby vibration levels. Residential receivers located on the western side of the rail corridor between Mowbray Road and Gordon Avenue, Chatswood are currently around 11 metres from the closest rail track. As a result of the realignment of the T1 North Shore Line, the surface track would be located around eight metres from these receivers (three metres closer). Based on previous investigations of vibration propagation from rail lines undertaken by the US Federal Transit Administration (2006), this change would equate to a potential increase in vibration level of around 2 dB. This increase is expected to be barely noticeable to the receivers.

Ground-borne noise predictions

Predictions of ground-borne noise levels are provided in Figure 11-3 for residential receivers and Figure 11-4 for commercial and other sensitive receivers. The predictions are based on a 'best estimate' plus a 5 dB safety factor. On average, the predicted ground-borne noise levels (for the highest 1 in 20 trains) at the nearest receivers would be around 30 dB which is well below the ground-borne noise design objectives. At most locations the noise levels would be much lower.

The proposed ground-borne noise levels are predicted to comply with the ground-borne noise objectives at all residential, commercial and other sensitive receiver locations.

THIS SEVERELY AFFECTS 1-3 GORDON AVENUE. A "BARELY NOTICEABLE" INCREASE ON AN ALREADY UNACCEPTABLE LEVEL IS NOT ACCEPTABLE

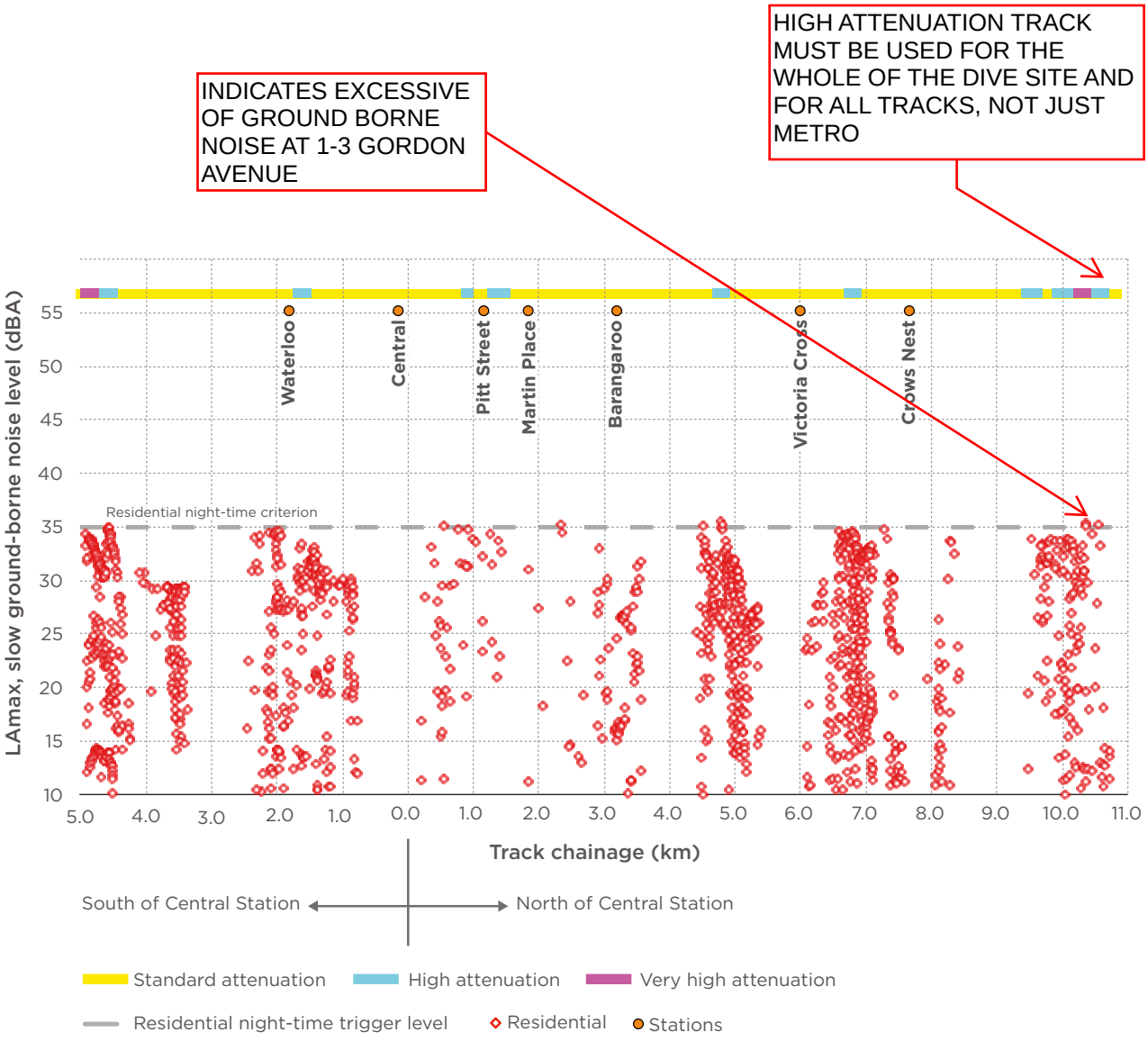


Figure 11-3 Predicted ground-borne noise levels – residential receivers

THIS INCREASE OPPOSITE 1 GORDON ACTUALLY WILL CREATE GREATER REFLECTED NOISE TO THE UPPER FLOOR OF OUR BUILDING.

THIS HIGHER WALL DOES NOT INCLUDE 1-3 GORDON AVENUE AS STATED ELSEWHERE BE-CAUSE IT WONT HELP

THIS TREATMENT MUST INCLUDE THE HEAVY RAIL SYSTEM AND NORTH BOUND OVER BRIDGE AS WELL AS THE METRO, AND EX-TEND TO THE FULL LENGTH OF THE DIVE SITE AS IT HAS GREATER IMPACT ON 1-3 GOR-DON AVENUE

Northern surface works

In order to mitigate potential airborne noise impacts at the northern end of the project, the design has incorporated the following measures:

- An increase in the height (to four metres) of the noise barrier between Chapman Avenue and Nelson Street on the eastern side of the rail line
- An increase in the height (to four metres) of the noise barrier between the Frank Channon Walk pedestrian underpass and Albert Avenue on the western side the rail line
- An increase in the height (to four metres) of the noise barrier between Nelson Street and Gordon Avenue on the western side the rail line
- A two metre high noise barrier to the south of the Mowbray Road on the western side of the rail line
- Rail dampers and deck absorption within the Chatswood dive structure.

The exact height and extent of the noise barriers in these locations would be further refined during detailed design.

A summary of the predicted worst-case noise levels for residential receivers for the 2034 (future year) scenario are presented in Table 11-11. The future year 2034 scenario has been presented as it results in the highest noise level predictions. Results for the at opening 2024 scenario are provided in *Technical paper 2 – Noise and vibration*.

Table 11-11 Predicted 2034 airborne noise levels – residential receivers Chatswood dive

NCA	Side	Worst-case predicted noise level (dBA)								
		Without project			With project			Increase		RING triggers
		$L_{Aeq(15h)}$	$L_{Aeq(9h)}$	L_{Amax}	$L_{Aeq(15h)}$	$L_{Aeq(9h)}$	L_{Amax}	L_{Aeq}	L_{Amax}	
01	Up	50	46	68	52	47	68	1.6	-0.1	0
	Down	61	58	80	63	58	81	1.2	0.5	0
02	Up	**68**	**64**	**86**	**70**	**65**	**86**	1.9	-0.3	0
	Down	64	60	84	**67**	**62**	**85**	0	1.3	1
03	Up	**69**	**65**	**88**	**68**	**64**	**87**	0.7	0.8	0
	Down	63	59	81	65	60	81	1.8	0.7	0
04	Up	**69**	**65**	**87**	**69**	**65**	**87**	0.3	0	0
	Down	**68**	**64**	**85**	**68**	**64**	**85**	0.1	0	0

1 *Red bold indicates an exceedance of criteria*

2 *For reference the trigger levels are:*
development increases existing $L_{Aeq(period)}$ rail noise levels by 2 dB or more, or existing L_{Amax} rail noise levels by 3 dB or more and predicted rail noise levels exceed: daytime: 65 $L_{Aeq(15hour)}$ or 85 L_{Amax}, night-time: 60 $L_{Aeq(9hour)}$ or 85 L_{Amax}.

OUR BUILDING IS SPECIFICALLY IDENTIFIED AS SUFFERING EXCESSIVE NOISE. THIS DOES NOT MENTION THE EXCESSIVE VIBRATION THAT IS ALSO ALMOST CERTAIN.

UNIT 9 IS OWNER OCCUPIED AND RUNS A PROFESSIONAL CONSULTING PRACTICE FROM A HOME OFFICE. THUS THEIR BUSINESS AND LIFE WILL BE SEVERELY AFFECTED BY THE WORKS ON A 24 HOUR BASIS, MAKING IT UNACCEPTABLE.

The results indicate that noise levels at residential receivers without the project are generally already close to, or exceeding, the overall noise criteria levels.

Comparing the 'with project' and 'without project' noise levels indicates that there is generally no change in noise levels from the project, primarily due to the measures incorporated into the design to minimise operational airborne noise impacts.

From the results it can be seen that there remains a predicted exceedance of the noise trigger levels at one residential receiver building (at address 1-3 Gordon Avenue, Chatswood) on the western side of the rail line. This residential receiver is a multi-storey apartment building and would consist of several dwellings. The upper floors of this receiver would have an unobstructed view of the rail tracks over the noise barrier, even with the proposed increase in barrier height. To break line of sight at the triggered receivers on the upper floor of this building would require a noise barrier in excess of six metres high. Noise barriers of this height are unlikely to be considered reasonable and may not be feasible, particularly since the barrier would need to be located in close proximity to the building facade. Based on the outcomes of noise modelling during detailed design, this property would be considered for at property treatment.

A summary of the predicted worst-case noise levels for other sensitive receivers for the 2034 (future year) scenario are presented in Table 11-12. The future year 2034 scenario has been presented as it results in the highest noise level predictions. Results for the at opening 2024 scenario are provided in *Technical paper 2 – Noise and vibration*.

Table 11-12 Predicted 2034 airborne noise levels – other sensitive receivers Chatswood dive

NCA	Side	Worst-case predicted noise level (dBA)					
		Without project		With project		Increase	RING triggers
		$L_{Aeq(1h)}$ Day	$L_{Aeq(1h)}$ Night	$L_{Aeq(1h)}$ Day	$L_{Aeq(1h)}$ Night	$L_{Aeq(1h)}$	
01	Up	59	55	61	56	2.2	0
	Down	61	58	62	58	1.2	0
02	Up	N/A	N/A	N/A	N/A	N/A	0
	Down	66	62	69	63	3.2	0
03	Up	N/A	N/A	N/A	N/A	N/A	0
	Down	63	59	64	60	1.8	0
04	Up	N/A	N/A	N/A	N/A	N/A	0
	Down	68	64	68	64	0.1	0

1 GORDON AVENUE WILL BE SEVERELY AFFECTED

Compliance with the ground-borne vibration design objectives (and the human comfort vibration criteria from *Assessing Vibration: a technical guideline* – DEC, 2006) is predicted for all receivers located above or near to the proposed tunnel alignment.

Surface track ground-borne vibration

Some residential buildings located immediately adjacent to the surface rail track between Chatswood Station and Chatswood dive may experience an increase in train passby vibration levels. Residential receivers located on the western side of the rail corridor between Mowbray Road and Gordon Avenue, Chatswood are currently around 11 metres from the closest rail track. As a result of the realignment of the T1 North Shore Line, the surface track would be located around eight metres from these receivers (three metres closer). Based on previous investigations of vibration propagation from rail lines undertaken by the US Federal Transit Administration (2006), this change would equate to a potential increase in vibration level of around 2 dB. This increase is expected to be barely noticeable to the receivers.

Ground-borne noise predictions

Predictions of ground-borne noise levels are provided in Figure 11-3 for residential receivers and Figure 11-4 for commercial and other sensitive receivers. The predictions are based on a 'best estimate' plus a 5 dB safety factor. On average, the predicted ground-borne noise levels (for the highest 1 in 20 trains) at the nearest receivers would be around 30 dB which is well below the ground-borne noise design objectives. At most locations the noise levels would be much lower.

The proposed ground-borne noise levels are predicted to comply with the ground-borne noise objectives at all residential, commercial and other sensitive receiver locations.

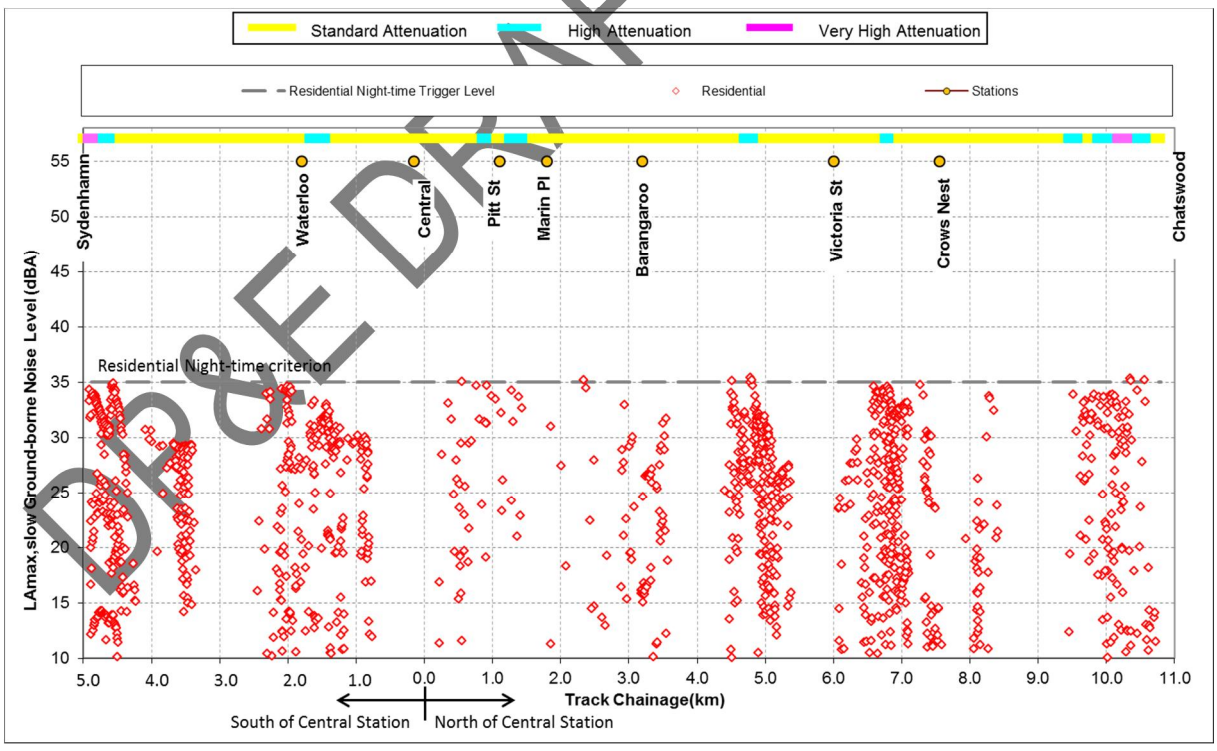


Figure 11-3 Predicted ground-borne noise levels – residential receivers

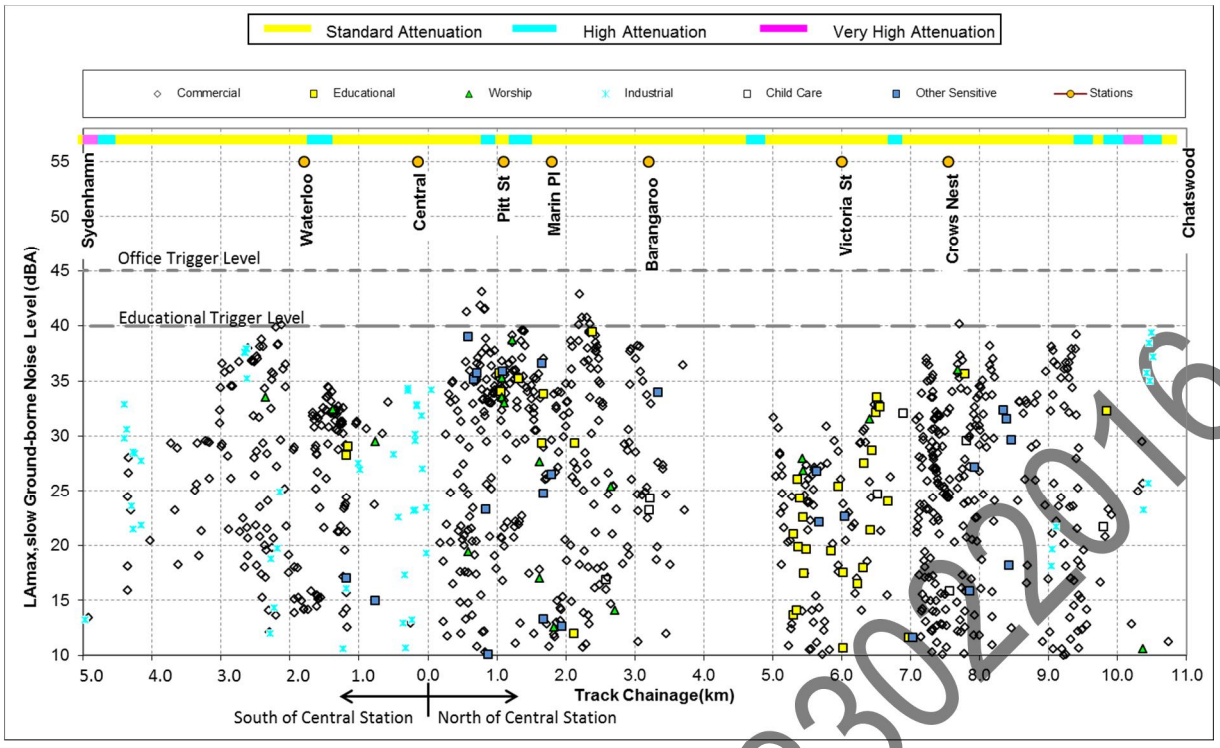


Figure 11-4 Predicted ground-borne noise levels – commercial and other sensitive receivers

11.4.2 Airborne noise

An operational airborne noise assessment has been carried out for the surface track sections at either end of the project, being:

- At the northern end of the project – metro trains operating between Chatswood Station and the Chatswood tunnel portal, and Sydney Trains trains operating on the realigned T1 North Shore Line between Chatswood Station and Brand Street, Artarmon
- At the southern end of the project – metro trains operating in the Marrickville dive structure.

For the purposes of assessment, receivers are broken into a number of noise catchment areas (NCAs). NCAs are determined to reflect the changing land uses and ambient noise environments adjacent to the project.

Northern surface works

In order to mitigate potential airborne noise impacts at the northern end of the project, the design has incorporated the following measures:

- An increase in the height (to four metres) of the noise barrier between Chapman Avenue and Nelson Street on the eastern side of the rail line
- An increase in the height (to four metres) of the noise barrier between the Frank Channon Walk pedestrian underpass and Albert Avenue on the western side the rail line
- An increase in the height (to four metres) of the noise barrier between Nelson Street and Gordon Avenue on the western side the rail line
- A two metre high noise barrier to the south of the Mowbray Road on the western side of the rail line

- Rail dampers and deck absorption within the Chatswood dive structure.

The exact height and extent of the noise walls in these locations would be further refined during detailed design.

A summary of the predicted worst-case noise levels for residential receivers for the 2034 (future year) scenario are presented in Table 11-11. The future year 2034 scenario has been presented as it results in the highest noise level predictions. Results for the at opening 2024 scenario are provided in *Technical paper 2 – Nosie and vibration.*

Table 11-11 Predicted 2034 airborne noise levels – residential receivers Chatswood dive

NCA	Side	Worst-case predicted noise level (dBA)								
		Without project			With project			Increase		RING triggers
		$L_{Aeq(15h)}$	$L_{Aeq(9h)}$	L_{Amax}	$L_{Aeq(15h)}$	$L_{Aeq(9h)}$	L_{Amax}	L_{Aeq}	L_{Amax}	
01	Up	50	46	68	52	47	68	1.6	-0.1	0
	Down	61	58	80	63	58	81	1.2	0.5	0
02	Up	**68**	**64**	**86**	**70**	**65**	**86**	1.9	-0.3	0
	Down	64	60	84	**67**	**62**	**85**	0	1.3	1
03	Up	**69**	**65**	**88**	**68**	**64**	**87**	0.7	0.8	0
	Down	63	59	81	65	60	81	1.8	0.7	0
04	Up	**69**	**65**	**87**	**69**	**65**	**87**	0.3	0	0
	Down	**68**	**64**	**85**	**68**	**64**	**85**	0.1	0	0

Note 1: Red bold indicates an exceedance of criteria

Note 2: For reference the trigger levels are:
development increases existing $L_{Aeq(period)}$ rail noise levels by 2 dB or more, or existing L_{Amax} rail noise levels by 3 dB or more and
predicted rail noise levels exceed: daytime: 65 $L_{Aeq(15hour)}$ or 85 L_{Amax}, night-time: 60 $L_{Aeq(9hour)}$ or 85 L_{Amax}.

The results indicate that noise levels at residential receivers without the project are generally already close to, or exceeding, the overall noise criteria levels.

1-3 GORDON AVENUE WILL BE PENALISED

Comparing the 'with project' and 'without project' noise levels indicates that there is generally no change in noise levels from the project, primarily due to the measures incorporated into the design to minimise operational airborne noise impacts.

From the results it can be seen that there remains a predicted exceedance of the noise trigger levels at one residential receiver building (at address 1-3 Gordon Avenue, Chatswood) on the western side of the rail line. This residential receiver is a multi-storey apartment building and would consist of several dwellings. The upper floors of this receiver would have an unobstructed view of the rail tracks over the noise barrier, even with the proposed increase in barrier height. To break line of sight at the triggered receivers on the upper floor of this building would require a noise barrier in excess of six metres high. Noise barriers of this height are unlikely to be considered reasonable and may not be feasible, particularly since the barrier would need to be located in close proximity to the building facade. Based on the outcomes of noise modelling during detailed design, this property would be considered for at property treatment.

A summary of the predicted worst-case noise levels for other sensitive receivers for the 2034 (future year) scenario are presented in Table 11-12. The future year 2034 scenario has been presented as it results in the highest noise level predictions. Results for the at opening 2024 scenario are provided in *Technical paper 2 – Nosie and vibration.*

THE REPORT ACKNOWLEDGES THAT THEY CANT PROVIDE ADEQUATE SOUND BARRIERS FOR 1-3 GORDON AVENUE.

1 GORDON AVENUE WILL BE SEVERELY AFFECTED

Compliance with the ground-borne vibration design objectives (and the human comfort vibration criteria from *Assessing Vibration: a technical guideline* – DEC, 2006) is predicted for all receivers located above or near to the proposed tunnel alignment.

Surface track ground-borne vibration

Some residential buildings located immediately adjacent to the surface rail track between Chatswood Station and Chatswood dive may experience an increase in train passby vibration levels. Residential receivers located on the western side of the rail corridor between Mowbray Road and Gordon Avenue, Chatswood are currently around 11 metres from the closest rail track. As a result of the realignment of the T1 North Shore Line, the surface track would be located around eight metres from these receivers (three metres closer). Based on previous investigations of vibration propagation from rail lines undertaken by the US Federal Transit Administration (2006), this change would equate to a potential increase in vibration level of around 2 dB. This increase is expected to be barely noticeable to the receivers.

Ground-borne noise predictions

Predictions of ground-borne noise levels are provided in Figure 11-3 for residential receivers and Figure 11-4 for commercial and other sensitive receivers. The predictions are based on a 'best estimate' plus a 5 dB safety factor. On average, the predicted ground-borne noise levels (for the highest 1 in 20 trains) at the nearest receivers would be around 30 dB which is well below the ground-borne noise design objectives. At most locations the noise levels would be much lower.

The proposed ground-borne noise levels are predicted to comply with the ground-borne noise objectives at all residential, commercial and other sensitive receiver locations.

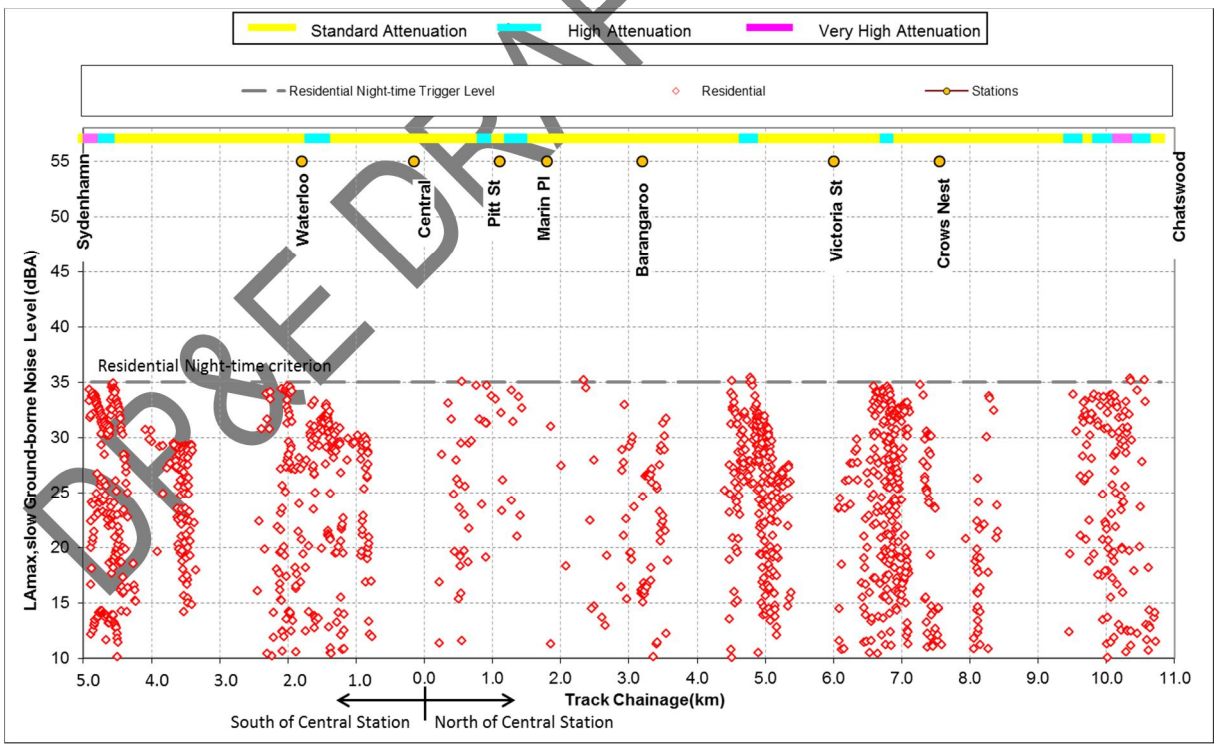


Figure 11-3 Predicted ground-borne noise levels – residential receivers

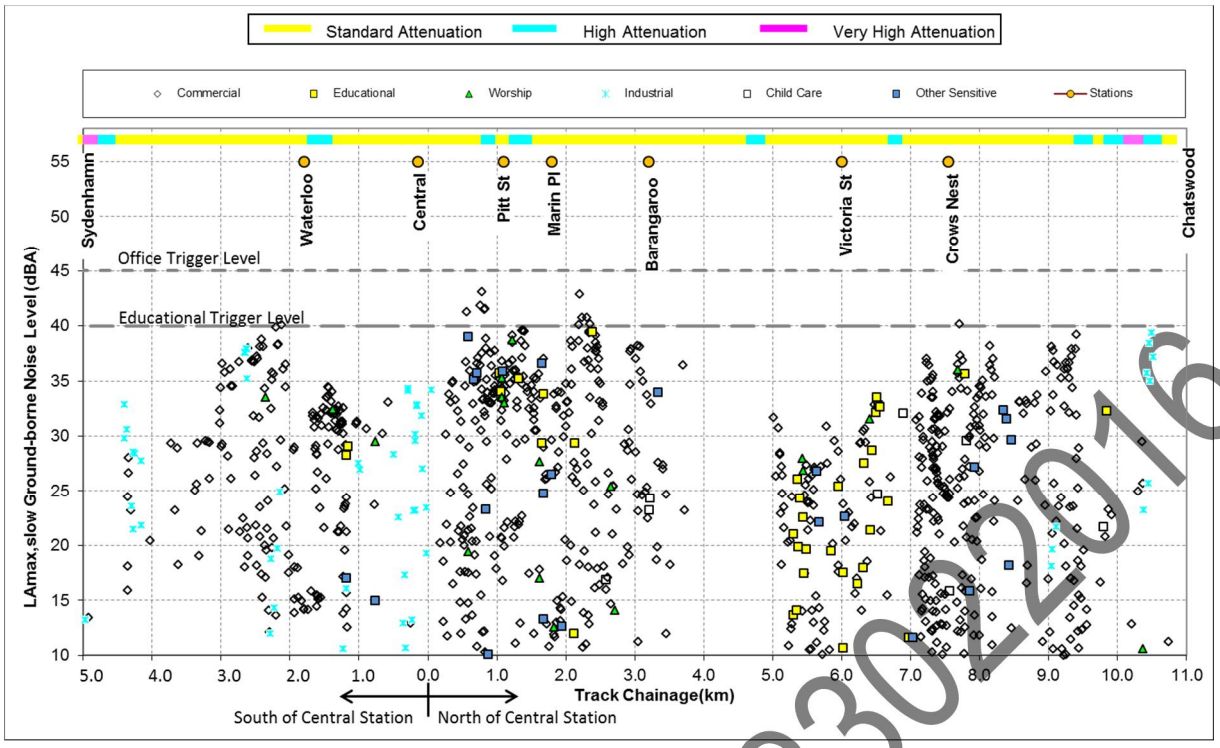


Figure 11-4 Predicted ground-borne noise levels – commercial and other sensitive receivers

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- An increase in the height (to four metres) of the noise barrier between Chapman Avenue and Nelson Street on the eastern side of the rail line
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From the results it can be seen that there remains a predicted exceedance of the noise trigger levels at one residential receiver building (at address 1-3 Gordon Avenue, Chatswood) on the western side of the rail line. This residential receiver is a multi-storey apartment building and would consist of several dwellings. The upper floors of this receiver would have an unobstructed view of the rail tracks over the noise barrier, even with the proposed increase in barrier height. To break line of sight at the triggered receivers on the upper floor of this building would require a noise barrier in excess of six metres high. Noise barriers of this height are unlikely to be considered reasonable and may not be feasible, particularly since the barrier would need to be located in close proximity to the building facade. Based on the outcomes of noise modelling during detailed design, this property would be considered for at property treatment.

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THE REPORT ACKNOWLEDGES THAT THEY CANT PROVIDE ADEQUATE SOUND BARRIERS FOR 1-3 GORDON AVENUE.

Name: Anaimattam Santhanam
Organisation: A& V santhanam for Davkol Unit Trust (Director)

Whitebridge, NSW
2290

Content:
see attached

Sydney Metro City & Southwest
Chatswood to Sydenham section
State Significant Infrastructure Application SSI 15_7400

1 APPLICATION NAME

Sydney Metro City & Southwest - Chatswood to Sydenham

2 APPLICATION NUMBER

SSI 15_7400

3 OBJECTION SUMMARY

We object to Sydney Metro Project specifically in respect of construction of the Chatswood Metro tunnel dive site and heavy rail works immediately adjacent to our block of 12 units at 1-3 Gordon Avenue, due to the lengthy excessive noise and vibration during construction and also excessive noise and vibration at our homes during operation of the rail networks on completion.

The EIS plans for dealing with construction noise have significant “opt out “clauses which permit major breaches without any penalty to the Contractor on the grounds of “unavoidable events or work” and “impractical to mitigate or avoid”. Our review of the complaints reports for the Norwest Metro project reveal this excuse is used in almost every instance of breach, and that the mitigations are trivial or too late. The frequent response has been an offer of ear plugs or noise cancelling headphones, which is a disgusting affront to the affected residents. The offers of noise monitoring come AFTER the event and far too late to be of any benefit.

Similarly, the entire operational noise performance and criteria is referenced to the “Rail Infrastructure Noise Guideline (EPA, 2013)” which is a VOLUNTARY GUIDELINE, not mandatory. It also contains multiple exclusions / excuses to exceed noise and vibration levels without action or penalty. This was quoted to us, the residents, by the operators and project management after the Chatswood to Epping project which caused frequent and intolerable excessive operational noise and vibration at 1-3 Gordon Avenue.

Our preferred and recommended outcome is an immediate acquisition of the properties at 1-3 Gordon Avenue.

The alternatives are equally expensive, equally painful for everyone and very time consuming.

4 SPECIFIC REASONS FOR OBJECTION

4.1 EXCESSIVE RAIL OPERATIONAL NOISE AND VIBRATION - EXISTING

High levels of Train Noise of can be heard and vibration felt at 1-3 Gordon Avenue from the current railway, and is frequently intrusive and interrupts sleep of the residents. The noise is both direct and also regenerated ground borne noise.

The northbound rail line was already moved 3m closer to the unit block during the Chatswood to Epping rail project. At various times since that work many complaints have been lodged, but with little or no useful action by the operators. It is only in the last twelve months that there has been some improvement in the noise and vibration, for reasons unknown, and unpredictably. We cannot rely on this improvement based upon bitter past experience.

The existing high levels also create an excuse for the operators to base the new operational noise limits higher than otherwise defined as acceptable, based upon on the already intolerable high levels being pre-existing.

The proponent has not even bothered to carry out site specific measurements at 1-3 Gordon Avenue during the EIS, despite specific issues raised in their own report, and strong objections from the residents in correspondence and at site meetings during the EIS phase.

4.2 EXCESSIVE RAIL OPERATIONAL NOISE AND VIBRATION - POST COMPLETION

It is proposed to move the northbound heavy rail line closer to 1-3 Gordon Avenue by another three meters, and elevate it by 2m on a bridge structure which will make the noise at our units much worse. This is on top of the existing 3m closer relocation carried out under the Chatswood to Epping project in 2006.

1-3 Gordon Avenue is specifically mentioned in the EIS as an address that will remain affected excessively by operational noise after completion of the work. It further states that it is impractical to create an adequate noise barrier.
The is an inadequate and incomplete reference to “at site mitigation”, which implies someone may attempt to make some token sound proofing at the building, but not until after operation commences, and on an “ad hoc” basis. It is unclear who will be responsible, and police the process. As stated earlier, the EPA Railway Noise document is only a non-compulsory and unenforceable “guideline”. The operators may deem the situation is satisfactory or beyond their own definition of “reasonable” control.

1. The very close proximity of the works, the ground structure and our building basement and stairwell arrangement will result in vibration being amplified within our premises to excessive levels.
2. The realignment of the existing T1 northbound rail line to the temporary route requires heavy machinery and excavation work after hours with multiple rail corridor closure events that will cause severe disruption and noise fatigue effect to the life of all residents.
3. T1 northbound track is closer to Gordon Avenue unit block increasing the noise and vibration impact.
4. New Metro tracks will carry more traffic than the existing T1 tracks did. This volume is in addition to the T1 track traffic which will remain.
5. The T1 northbound track is raised in height due to being routed over the dive structure. However, in addition to this the dive structure itself finishes at Nelson Street which requires the T1 northbound track to be supported by a concrete bridge structure. This structure will generate significantly more noise than a closed structure and will also allow rail noise from the Metro tracks to pass through to the Gordon Avenue unit block.
6. For upper level units, the elevated T1 northbound trains and additional Metro trains will be noisier.
7. Ground vibration is a major concern with the increased volume of rail traffic on the T1 plus Metro lines. This vibration can potentially be amplified through the basement area of 1-3 Gordon Avenue.

In the first instance we insist that our block of units is resumed by the Government under a negotiated acquisition. The whole property and some 40-50 residents will be removed from the project objectors, and the project may proceed without interruption.

4.3 EXCESSIVE CONSTRUCTION NOISE AND VIBRATION AT 1-3 GORDON AVENUE

The extensive and heavy construction the works associated with the tunnel dive site and existing rail realignment will generate excessive noise, vibration and dust at 1-3 Gordon Avenue that cannot be mitigated adequately because the rail line is too close to the block, and the upper floor units immediately overlook the works and cannot be screened visually or acoustically;

1. The very close proximity of the works, the ground structure and our building basement and stairwell arrangement will result in vibration being amplified within our premises to excessive levels.
2. The realignment of the existing T1 northbound rail line to the temporary route requires heavy machinery and excavation work after hours with multiple rail corridor closure events that will cause severe disruption and noise fatigue effect to the life of all residents.

3. The construction of the bridge to accommodate the new T1 northbound track over the new dive structure requires major rock excavation and piling works immediately adjacent to 1-3 Gordon Avenue, with probable excessive noise and even structural damage.
4. Construction vehicles and material will continuously be moving in the track area adjacent to the 1-3 Gordon Avenue unit block. This construction traffic will occur when preparing the site for the new dive structure, bridge and track foundations for the new t1 northbound location.
5. There is the potential for noise and vibration from existing rail traffic to increase due to the temporary nature of the relocated main northern line.
6. While a noise barrier is planned for the Nelson St construction site, no such noise barrier is proposed between the Gordon Avenue unit block and the excavation area during the excavation work required for the T1 northbound bridge, dive structure and tunnel. This noise barrier is required during the construction of the bridge over the dive structure for T1 northbound. In addition, a noise barrier is required during the building of new Metro tracks.
7. Potential 24x7 work during the construction phase of this project will severely adversely impact residence during and after work hours. There are significant afters hours large earth works, demolition, piling and track work proposed in the proximity of 1-3 Gordon Avenue unit block.

4.4 BUSINESS INTERRUPTION DUE TO CONSTRUCTION & OPERATIONAL NOISE

Some residence of 1-3 Gordon Avenue operate home business or work night shift work, requiring sleep, during the hours of 7am – 8 pm, the project will result in having a disruptive and high impact noise level unacceptably high for a work or daytime sleep environment. They will be forced to relocate at great personal expense. The adverse effects on these residents must be mitigated for this imposition by the project, by temporary or permanent relocation. Loss of income and rent must also be compensated for.

4.5 TRAFFIC PROBLEMS FOR GORDON AVENUE RESIDENTS

The loss of the Nelson Street direct access to Chatswood is a major transport problem for the residents of Gordon Avenue, and hundreds of all other residents between Albert Avenue and Nelson St. We currently have direct easy road access to our local Chatswood retail, business, schools and community without traffic lights, without having to further congest the Pacific Highway and Mowbray Road, or Orchard Road intersections.

The Mowbray Road - southbound Pacific Highway intersection is already extremely congested at all times of the day, and particularly in morning and afternoon times. The location of the construction site entrances in Nelson Road and Mowbray Road mean that there will be continuous major truck “movements” through this intersection aggravating the situation to an unacceptable level. Trucks will invariably block this lane an make it nearly impossible for us to enter the Pacific Highway.

Residents in Gordon Avenue will experience increased difficulty when joining onto Pacific Highway. Already there is major gridlock caused by cars blocking the exit from Gordon Avenue. Once truck start using the left lane to enter the Nelson Street site, causing increased congestion this problem will become much worse.

On completion the traffic problems will remain with increased travel time and pollution.

As a minimum mitigation we require that a DEDICATED LEFT TURN ONLY lane is established at the southbound Pacific Highway / Mowbray road intersection, without traffic light control and at the beginning of the project. There is plenty of space on the southwest corner in the large construction site to allow this to be built immediately at the project start.
We also require that the intersection of Gordon Avenue and Pacific Highway is line marked and signposted with “Do not Block this Intersection” and that this is policed.

4.6 TRAFFIC NOISE DURING CONSTRUCTION FOR GORDON AVENUE

Trucks will use exhaust brakes to slow down to enter the Nelson St Site entry, particularly at night from high speed. This noise will affect ALL the residents including 1-3 Gordon Avenue because we have line of sight and reflectance of the Payless Tyres building façade.

Additionally the large volume of northbound truck traffic will be generating excessive noise accelerating and gear changing at the same point of road which affects our property directly.

A strict “no exhaust brakes” law, signage and enforcement is required, or alternatively ban construction traffic between 8pm and 7am.

Also we require that 24/7 noise & video recording monitoring is installed in both directions at the intersection of Gordon Avenue and Pacific Highway to identify and assist in prosecuting offending vehicles.

5 ACCEPTABLE MITIGATIONS

5.1 ACQUISITION

To be clear, the residents of 1-3 Gordon Avenue will object and seek a Court Injunction in the Land and Environment Court and / or Local Court if their objections are not answered clearly and completely to their satisfaction.

Our preferred and primary objective which we will fight for is that the Government shall acquire the properties at 1-3 Gordon Avenue under the Hardship considerations of the NSW laws, at fair value and with all costs considered. We agree that the overall project is essential and benefits a large number of people in Sydney, but the severe imposts and losses on us very few families at this address are NOT ACCEPTABLE to us, and we will fight for our rights.

With an acquisition of the properties the Government would be free to carry out the proposed development without hindrance or objection, and may choose to spend time and money making the residential property adequately resistant to the ill effects of the operational noise without hindrance of owners / occupants, then potentially selling the properties on completion for a nett minimal cost, or even profit.

The loss of value on our properties due to the degradation imposed by this project and hardship on our lives is not reconcilable or acceptable under any circumstances.

5.2 TEMPORARY RELOCATION DURING CONSTRUCTION

Failing our preferred option of acquisition, the second minimum acceptable solution is relocation of all occupants of 1-3 Gordon Avenue for the duration of the construction project. This is an extremely complex solution and involves multiple tenancies as well as owner occupiers.
We would expect that a total acquisition would be cheaper, more expedient and satisfactory.

5.3 AT BUILDING NOISE MITIGATION

Failing our preferred option of acquisition, the third minimum acceptable solution is an immediate complete noise and vibration treatment of ALL units prior to commencement of construction. This will include as minimum;

1 Underpinning of the building structure to mitigate noise and vibration.
2 Full acoustic double glazing of all unit and common area windows, including the entry doorways.
3 Sound rated sealed fire doors on all common areas including unit entrances.
4 Roof acoustic treatments, including lifting roof tiles and laying a full acoustic barrier and insulation. Note the existing roof structure contains glass fibre and aluminised sheet thermal insulation.
5 Replacement of the top two floors unit bathroom ventilation systems with acoustically treated systems.
6 Replacement of existing vertical cement sheeting roof elements with fully acoustically treated cladding.
7 Redesign and reconstruction of the existing common area light well / natural ventilation skylight and stairway with acoustically treated structure and ventilation to eliminate resonance and reverberation noise.
8 Acoustic absorption panels shall be installed in the skylight well and the stairwell recesses to minimise reverberation and regenerated noise.
9 Complete acoustic sealing of the basement car park area, and associated forced ventilation system.
10 If electrically powered forced ventilation is required for units or common areas then the operational cost of this shall be compensated to the body corporate or unit owners as an immediate lump sum calculated over a 20 year lifespan with escalation of energy and maintenance costs.
11 Continuous recording of noise and vibration at the premises during the works and on commencement of operation, with a live breach reporting structure in place to trigger immediate remedial action.

5.4 TRAIN SPEED RESTRICTION

An enforced speed limit with dead man stop points of maximum 40kph for all rail traffic within 100m of 1-3 Gordon Avenue.

Organisation: Cromwell Property Group (Project Manager)

Sydney, NSW
2000

Content:
Structural Engineering Advice on behalf of Cromwell Property Group As Trustee For Cromwell Northpoint Trust.

21/06/2016

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Fax: +61 2 8904 1555
www.enstruct.com.au
Level 4, 2 Glen Street,
Milsons Point,
NSW, 2061,
Australia

For the attention of : - Chris Hansen

Dear Chris,

Northpoint Tower
Structural Engineering Consultant Advice Note 007
Sydney Metro

Further to your recent request, we have reviewed the proposed Sydney Metro plans and provide a section showing the approximate level of the new bored tunnels relative to the Northpoint basement level. The tunnel alignment appears to be at least 12m beneath the lowest basement level at Northpoint.

The commercial tower at Northpoint sits on a rock pedestal at level 6 with the basement carpark being excavated around this pedestal. Based on discussions with Jim Forrest of our office who worked on the original Northpoint project in the early 1970's, we understand that a number of issue were encountered during the excavation works to expose this pedestal. These issues related to stress relief of the pedestal during excavation and the presence of seams and soft layers running through the pedestal. As a result of these seams and soft layers, a significant underpinning exercise was undertaken to enhance the vertical capacity of the pedestal. A concrete buttress (some 11m x 8m in section) was also constructed in the south east corner of the pedestal to bridge the seam. These works are shown on the existing Ove Arup structural drawings for the project. I attach a marked up set of extracts from the available existing structural drawings showing the principles of these works. We can provide a full set of all available relevant drawings if required.

Given that the Northpoint tower foundations lie within the TfNSW typical zone of influence, we believe that it would be prudent to make a formal submission alerting the tunnel designers to the remedial works that were undertaken on the site.

We have also had brief discussions on the matter with Paul Hewitt and Dr. David Och of Parsons Brinkerhoff and they both support the position that a formal submission should be made.

I trust this satisfies your requirements at this point.

Should you have any comments or queries on the above, please don't hesitate to contact me.

Yours Sincerely,

for
enstruct group pty ltd

Brian Healy BE CPEng MIE Aust NER
Senior Associate

attach

12

Level 12
81790

Level 11
78390

Level 10 Existing
75438

Level 9
71590

Level 8 - Pacific Hwy
67150

Level 7 - Miller St
63370

Level 6 Basement
59450

Level 5 Basement
56940

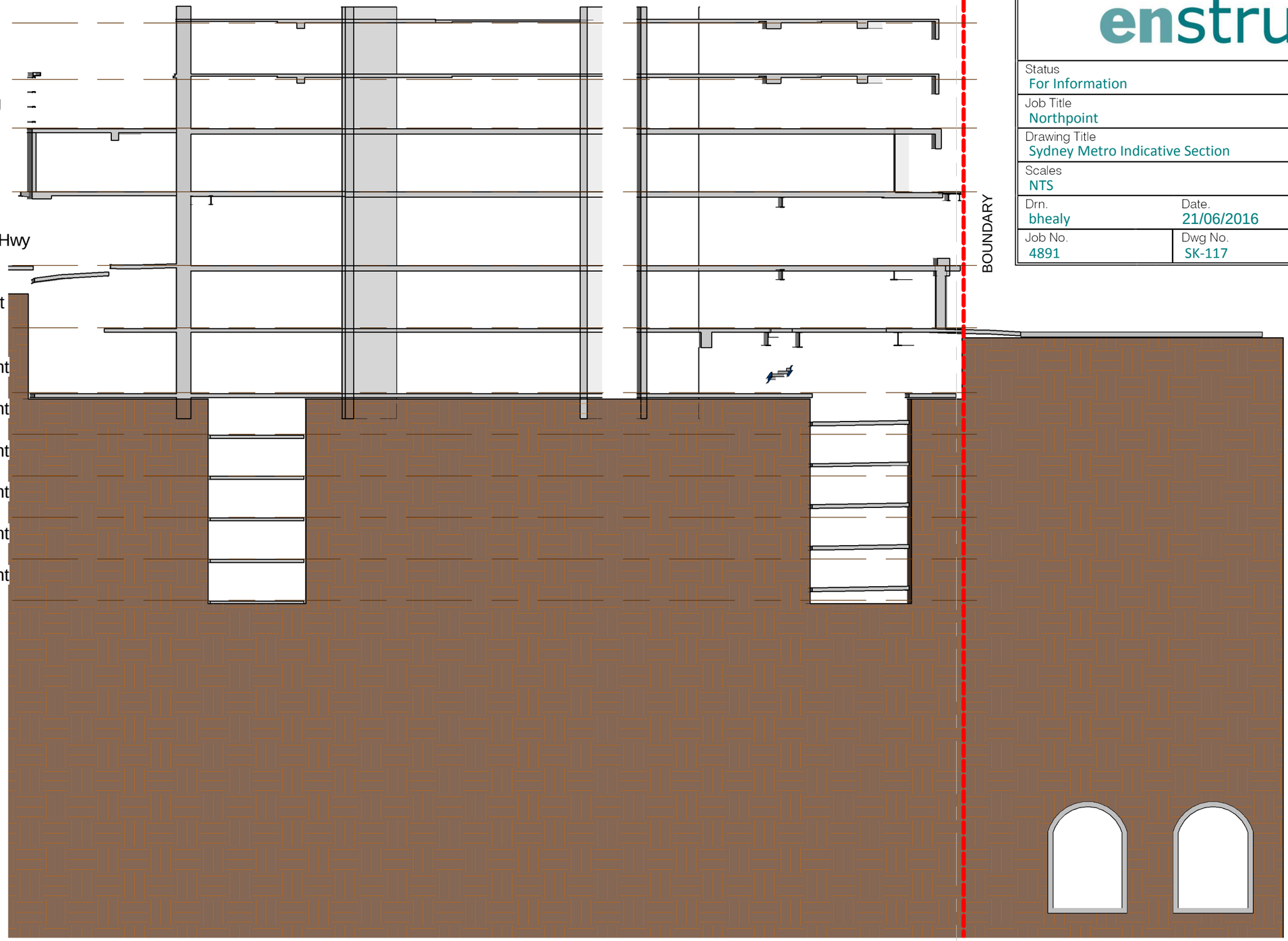
Level 4 Basement
54430

Level 3 Basement
51920

Level 2 Basement
49410

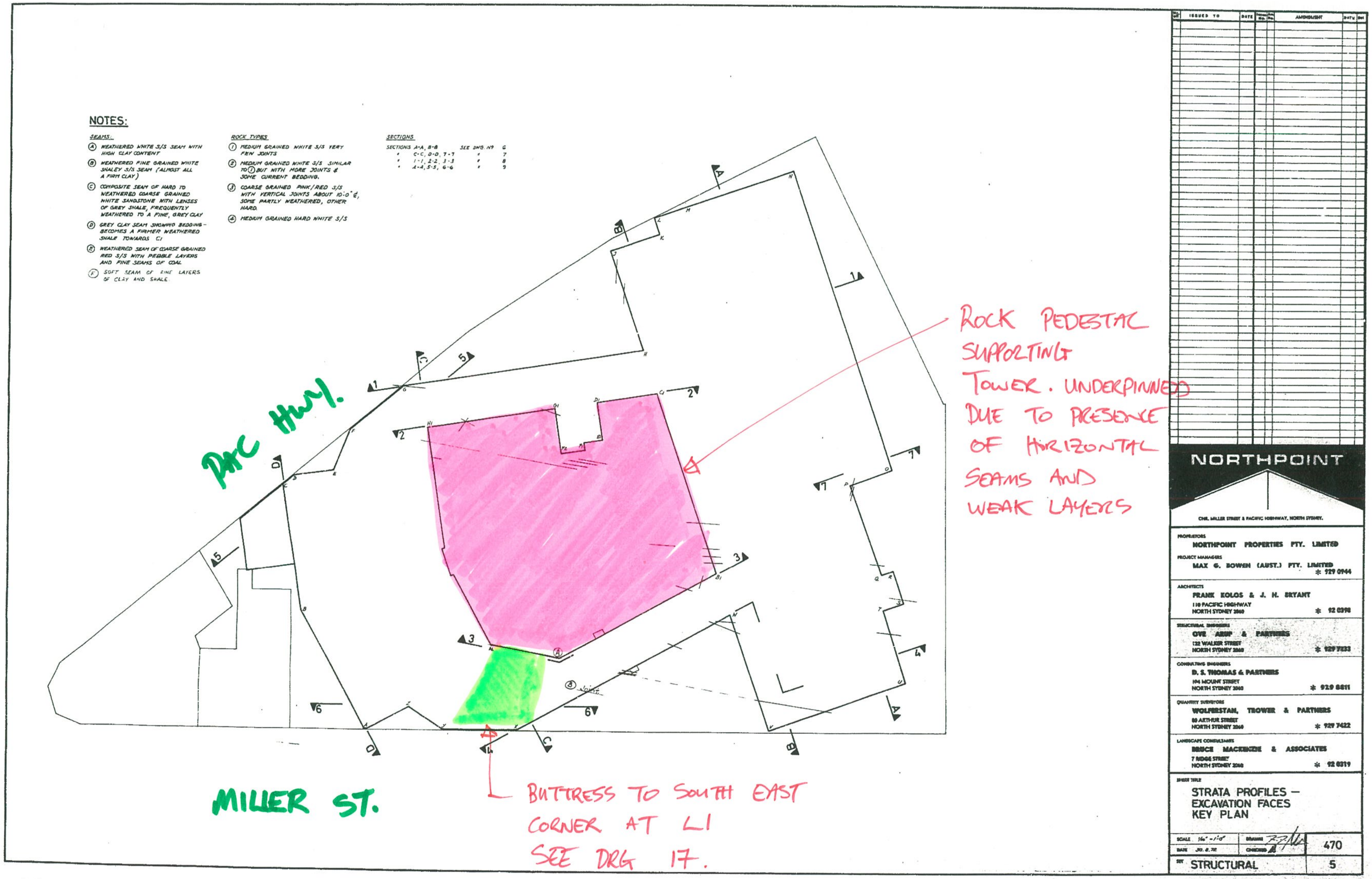
Level 1 Basement
46900

BOUNDARY



enstruct

Status: For Information		
Job Title: Northpoint		
Drawing Title: Sydney Metro Indicative Section		
Scales: NTS		File Ref.
Drn.: bhealy	Date.: 21/06/2016	Chd.: BH
Job No.: 4891	Dwg No.: SK-117	Rev: 1

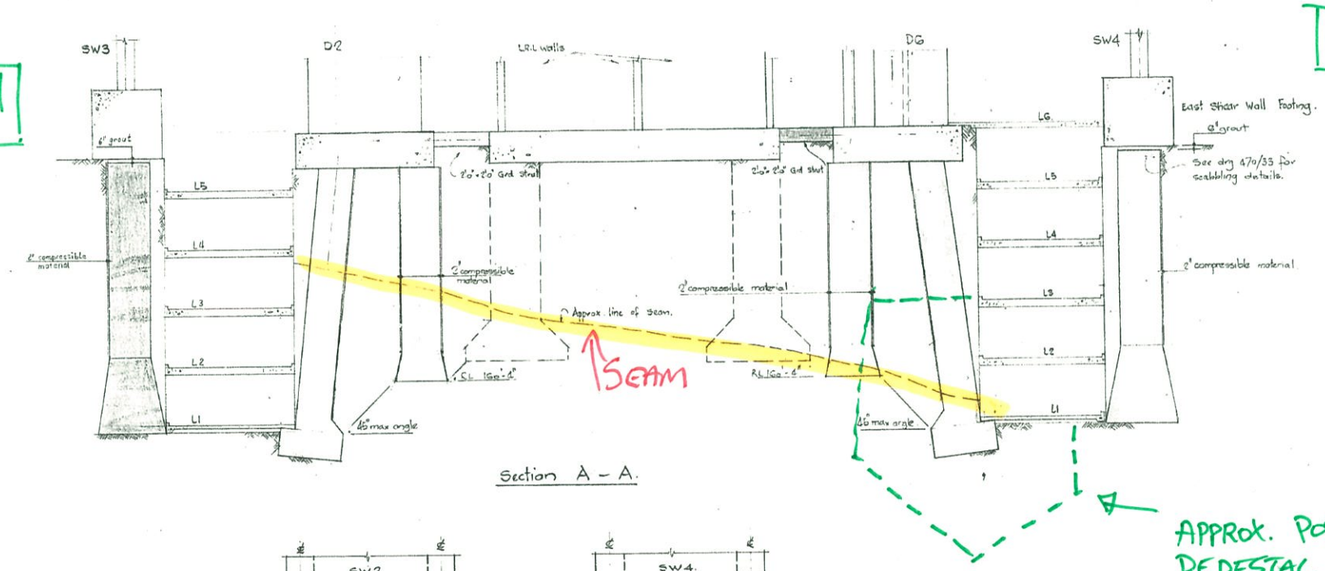

NOTES:
SEAMS:
(A) WEATHERED WHITE S/S SEAM WITH HIGH CLAY CONTENT
(B) WEATHERED FINE GRAINED WHITE SHALEY S/S SEAM (ALMOST ALL A FIRM CLAY)
(C) COMPOSITE SEAM OF HARD TO WEATHERED COARSE GRAINED WHITE SANDSTONE WITH LENSES OF GREY SHALE, FREQUENTLY WEATHERED TO A FINE, GREY CLAY
(D) GREY CLAY SEAM SHOWING BEDDING - BECOMES A FIRMER WEATHERED SHALE TOWARDS C1
(E) WEATHERED SEAM OF COARSE GRAINED RED S/S WITH PEBBLE LAYERS AND FINE SEAMS OF COAL
(F) SOFT SEAM OF FINE LAYERS OF CLAY AND SHALE
ROCK TYPES
(1) MEDIUM GRAINED WHITE S/S VERY FEW JOINTS
(2) MEDIUM GRAINED WHITE S/S SIMILAR TO (1) BUT WITH MORE JOINTS & SOME CURRENT BEDDING.
(3) COARSE GRAINED PINK/RED S/S WITH VERTICAL JOINTS ABOUT 10'-0" ¢, SOME PARTLY WEATHERED, OTHER HARD.
(4) MEDIUM GRAINED HARD WHITE S/S
SECTIONS
SECTIONS A-A, B-B SEE DWG. Nº 6
" C-C, D-D, 7-7 " 7
" 1-1, 2-2, 3-3 " 8
" 4-4, 5-5, 6-6 " 9
PAC HWY.
MILLER ST.
ROCK PEDESTAL SUPPORTING TOWER. UNDERPINNED DUE TO PRESENCE OF HORIZONTAL SEAMS AND WEAK LAYERS
BUTTRESS TO SOUTH EAST CORNER AT L1 SEE DRG 17.
NORTHPOINT
CNR. MILLER STREET & PACIFIC HIGHWAY, NORTH SYDNEY.
PROPRIETORS
NORTHPOINT PROPERTIES PTY. LIMITED
PROJECT MANAGERS
MAX G. BOWEN (AUST.) PTY. LIMITED
ARCHITECTS
FRANK KOLOS & J. H. BRYANT
110 PACIFIC HIGHWAY
NORTH SYDNEY 2060
STRUCTURAL ENGINEERS
OVE ARUP & PARTNERS
122 WALKER STREET
NORTH SYDNEY 2060
CONSULTING ENGINEERS
D. S. THOMAS & PARTNERS
104 MOUNT STREET
NORTH SYDNEY 2060
QUANTITY SURVEYORS
WOLFERSTAN, TROWER & PARTNERS
80 ARTHUR STREET
NORTH SYDNEY 2060
LANDSCAPE CONSULTANTS
BRUCE MACKENZIE & ASSOCIATES
7 RIDGE STREET
NORTH SYDNEY 2060
SHEET TITLE
STRATA PROFILES — EXCAVATION FACES KEY PLAN
470
STRUCTURAL
5

Dwg renumbered from 470/33-4

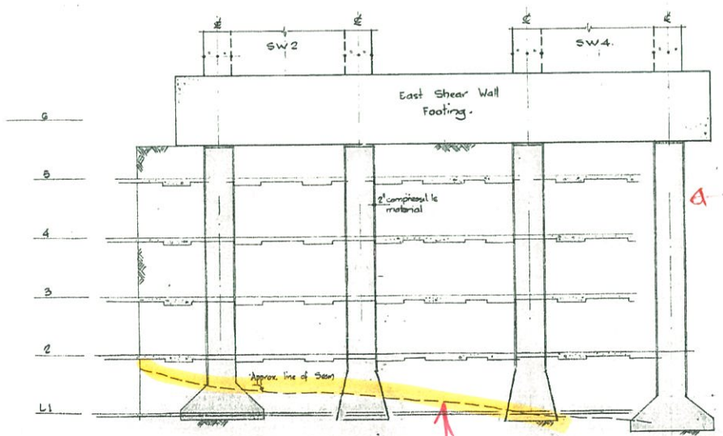
Rev.	By	Date	Amendment.
A	JF	24-8-73	Pier bases 4L's established Note 3 added

PAC HWY

MILLER ST



Section A - A.



Section B - B.

Note: Refer to drg 470/31. for location of Sections.

UNDERPINNING NEW PIERS

East Shear Wall Ftg. Notes.—

1. Required Pier Foundation Bearing Capacity: 30 T/ft²
2. Concrete strength f'c = 6000 p.s.i.
3. Level of footing determined by lower of 45° max line shown or shale seam and is subject to detail inspection and bearing area for bearing capacity.

WORKING DRAWING

NORTHPOINT

CNR. MILLER STREET & PACIFIC HIGHWAY, NORTH SYDNEY.

PROPRIETORS
NORTHPOINT PROPERTIES PTY. LIMITED

PROJECT MANAGERS
MAX O. BOWEN (AUST.) PTY. LIMITED
929 0944

ARCHITECTS
FRANK KOLOS & J. H. BRYANT
110 PACIFIC HIGHWAY
NORTH SYDNEY 2060
92 0398

STRUCTURAL ENGINEERS
DYE, ARMI & PARTNERS
122 WALKER STREET
NORTH SYDNEY 2060
929 7233

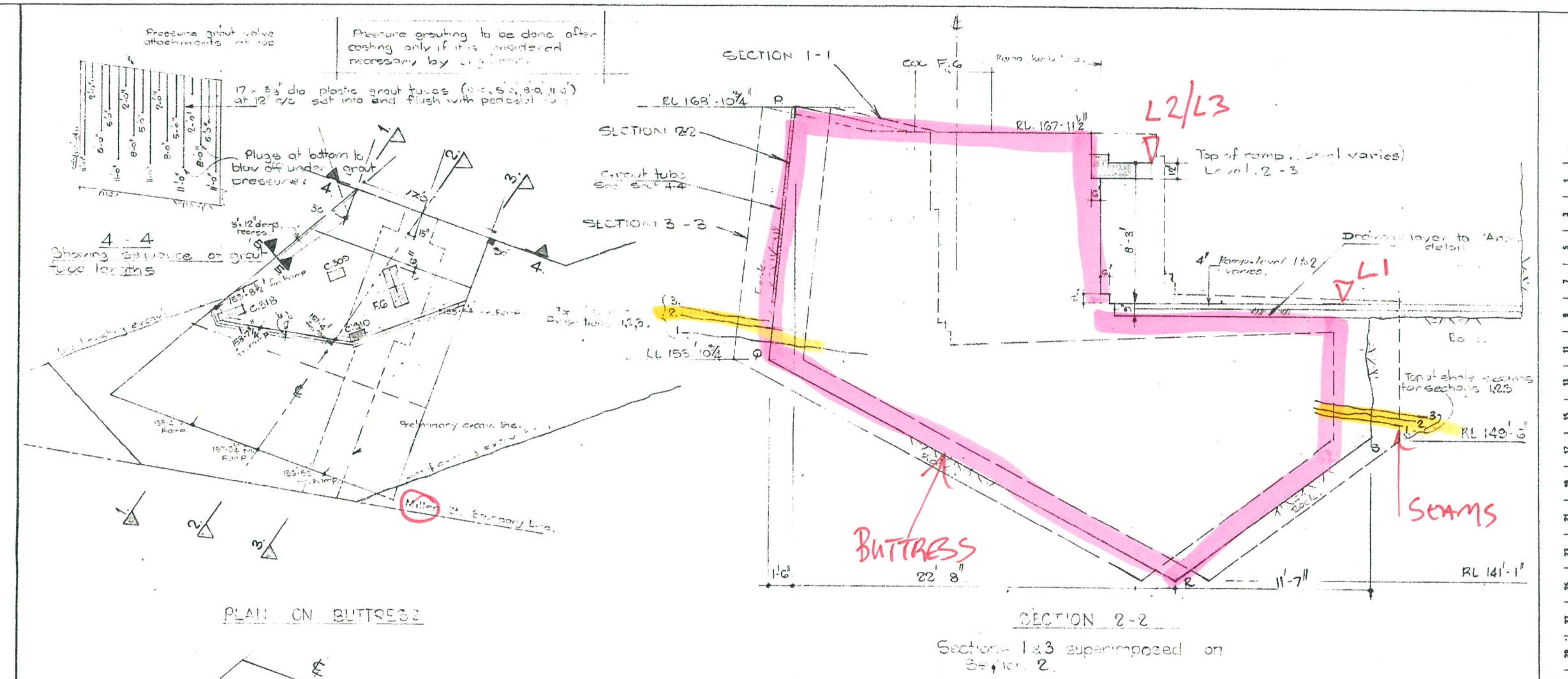
CONSULTING ENGINEERS
D. S. THOMAS & PARTNERS
104 MOUNT STREET
NORTH SYDNEY 2060
929 8811

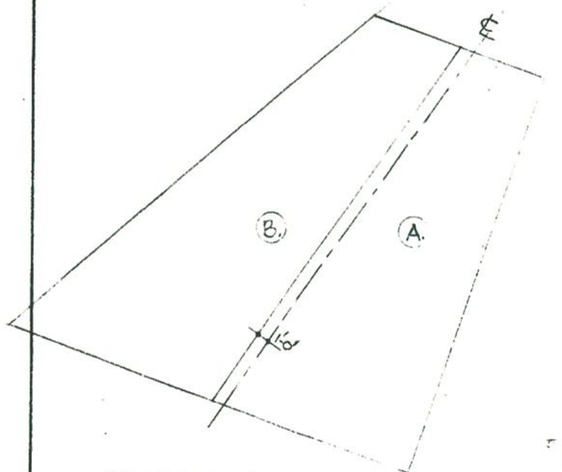
QUANTITY SURVEYORS
WOLFERSTAN, TROWER & PARTNERS
80 ARTHUR STREET
NORTH SYDNEY 2060
929 7422

LANDSCAPE CONSULTANTS
BRUCE MACKENZIE & ASSOCIATES
7 RIDGE STREET
NORTH SYDNEY 2060
92 0319

SHEET TITLE
FOUNDATION MODIFICATION SCHEME SECTIONS A-A & B-B

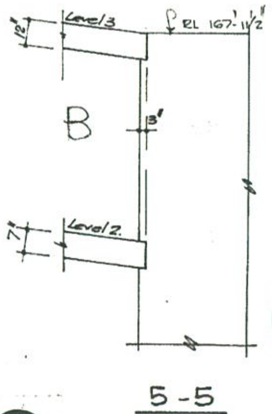
SCALE 1/8" = 1'0"	DRAWN RJC	Job No 470
DATE 11-8-73	CHECKED	Dwg No 32
SET STRUCTURAL		





CONSTRUCTION PROCEDURE

1. Excavate area - A and fix Steel.
2. Cast area A and wait 3 days.
3. Excavate area - B and fix Steel.
4. Cast area B.
5. Inspections by O.A.P. to be called for at 1 month, 3 mths, 6 mths, 1 year to determine pressure grouting requirements, if any.



Concrete

1. Conc. Strength F'c = 3000 p.s.i. at 28 days.
2. Wetting agent, low shrinkage cement & aggregate & low W/c ratio to be used.
3. Mix design to be submitted to O.A.P. for approval.

ROCK BEARING CAPACITIES REQUIRED

Faces : PQ (above seam) and RS – 30 T/Ft²

QR – 8 T/Ft².

All rock faces to be scabbled, cleaned of all loose matter and hosed before conc. pour.

WORKING DRAWING

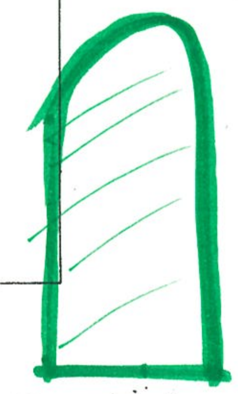
Mark.	Date.	Made by.	Revision.
D.	4.4.73	BR.	Rock Bearing Cap. at Face QR amended.
C	28.3.73	DC.	Alteration to conc. shape, roadend.
B	16.2.73	D.C	Section 5-5 added. Kerbs added, Key revised.
B.	16.2.73	D.C.	Recess for L2 Slab revised.
A	9.2.73	D.C	Buttress ends splayed, RLs fixed.

NORTHPOINT – CONCRETE BUTTRESS TO SE. CORNER OF PEDESTAL

OVE ARUP & PARTNERS
CONSULTING ENGINEERS

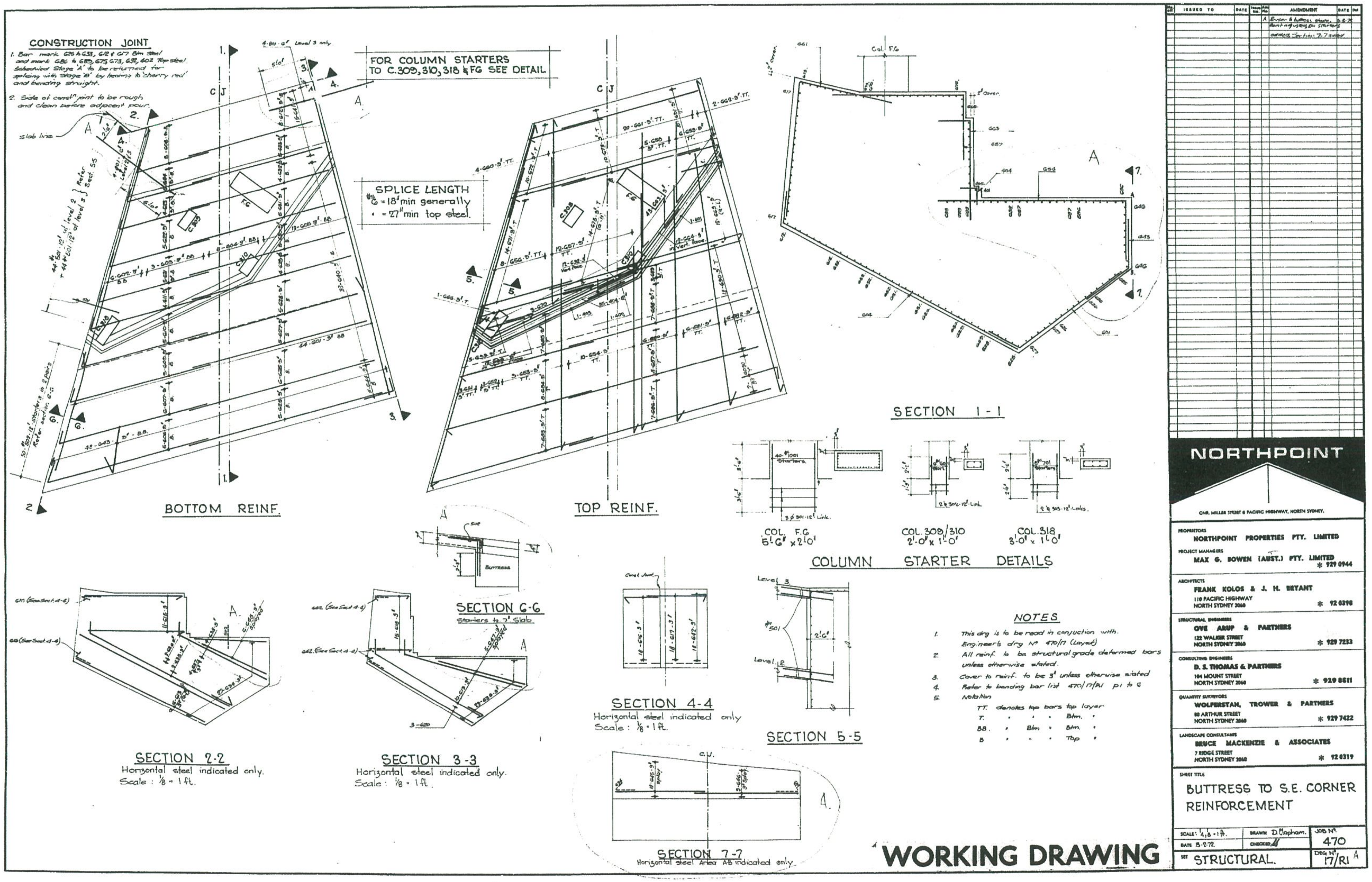
Drawn.	Checked.	Approved.
D Clapham.		M
Scale. 8·4 = 1 ft.	Date. 5-2-73	

Job No. 470 — Drawing No. 17 — Revision. D



RELATIVE LOCATION OF TUNNEL (NOT TO SCALE)

GAF MICRO REPROGRAPHICS PTY. LTD.



CONSTRUCTION JOINT
FOR COLUMN STARTERS TO C.309, 310, 318 & FG SEE DETAIL
SPLICE LENGTH
= 18" min generally
= 27" min top steel.
BOTTOM REINF.
TOP REINF.
SECTION 1-1
COL. F.G 5'-6" x 2'-0"
COL. 309/310 2'-0" x 1'-0"
COL. 318 3'-0" x 1'-0"
COLUMN STARTER DETAILS
SECTION 6-6
Starters to 7" Slab
SECTION 2-2
Horizontal steel indicated only.
Scale : 1/8 = 1 ft.
SECTION 3-3
Horizontal steel indicated only.
Scale : 1/8 = 1 ft.
SECTION 4-4
Horizontal steel indicated only
Scale : 1/8 = 1 ft.
SECTION 5-5
SECTION 7-7
Horizontal steel Area A6 indicated only
NOTES
1. This drg is to be read in conjuction with Engineer's drg No 470/17 (Layout)
2. All reinf. to be structural grade deformed bars unless otherwise stated.
3. Cover to reinf. to be 3" unless otherwise stated
4. Refer to bending bar list 470/17/R1 p1 to 6
5. Notation
TT. denotes top bars top layer
T. " " " Btm. "
BB. " Btm " Btm. "
B " " " Top "
WORKING DRAWING
NORTHPOINT
CNR. MILLER STREET & PACIFIC HIGHWAY, NORTH SYDNEY.
PROPRIETORS NORTHPOINT PROPERTIES PTY. LIMITED
PROJECT MANAGERS MAX G. BOWEN (AUST.) PTY. LIMITED 929 0944
ARCHITECTS FRANK KOLOS & J. H. BRYANT 110 PACIFIC HIGHWAY NORTH SYDNEY 2060 92 0398
STRUCTURAL ENGINEERS OVE ARUP & PARTNERS 122 WALKER STREET NORTH SYDNEY 2060 929 7233
CONSULTING ENGINEERS D. S. THOMAS & PARTNERS 104 MOUNT STREET NORTH SYDNEY 2060 929 8811
QUANTITY SURVEYORS WOLFERSTAN, TROWER & PARTNERS 80 ARTHUR STREET NORTH SYDNEY 2060 929 7422
LANDSCAPE CONSULTANTS BRUCE MACKENZIE & ASSOCIATES 7 RIDGE STREET NORTH SYDNEY 2060 92 0319
BUTTRESS TO S.E. CORNER REINFORCEMENT
DRAWN D. Clapham.
JOB No 470
STRUCTURAL.
DRG No 17/R1 A

Name: Darren Chan
Organisation: Body Corporate (Executive Committee)

Chatswood, NSW
2067

Content:
Please refer to attached PDF

Submission for the proposed "Sydney Metro – Chatswood Dive Site"
Application Number: SSI5 7400

Name: Darren Chor Sze Chan
(on behalf of the Body Corporate of 15 Nelson Street, Chatswood NSW 2067)
Address: Unit 1 / 15 Nelson Street, Chatswood NSW 2067
E-mail: darrencs88@gmail.com
Mobile: 0412 679 538

Attention: Director, Transport Assessments
Department of Planning and Environment GPO Box 39, SYDNEY, NSW 2001

Introduction

Location of our property, vehicle & pedestrian entry of our building is directly opposite to the proposed Chatswood Dive Site on the south side of Nelson Street, Chatswood. Please refer to the site plan below;

After attended the information session that was held on 21 May, 2016 at Dougherty Community Centre and reviewed the Environmental Impact Statement (EIS) published by Transport for NSW. We would like to make our submission below in relation to the Proposed Dive Site at Chatswood.

Proposed permanent closure of Nelson Street Bridge:

Proposed permanent closure of the existing bridge at Nelson Street over the railway line will have a significant impact to all existing residents on Nelson Street. Especially for those who live on the west side of the existing bridge. Not to mention other residents in Chatswood/ visitors to the area who use Nelson Street in order to by-pass the congested Albert Ave, Orchard Road & Mowbray Road intersections at peak hours during both weekdays & weekends.

There are total 58 residential lots on Nelson Street West comprises "2 lots at No.19, DP137155", "5 lots at No.17, SP76342", "6 lots at No.15, SP89243" and "45 lots at No.9-11, DP65120" Nelson Street, hundreds of local residents will be affected by the proposed closure of Nelson Street bridge.

Currently, all residents on Nelson Street West can access Orchard Road for eastbound traffic & Pacific Highway for westbound traffic on Nelson Street.

Once the bridge closed over railway line on Nelson Street for construction of the Metro Tunnel Portal at Chatswood, residents will be forced to use Pacific Highway, Mowbray Road, Orchard Road and Albert Avenue for outgoing & incoming traffic to/ from Nelson Street West.

Please refer to the 'Traffic Impact Diagram 1' below clearly demonstrates additional traffic added to the already congested local roads network.

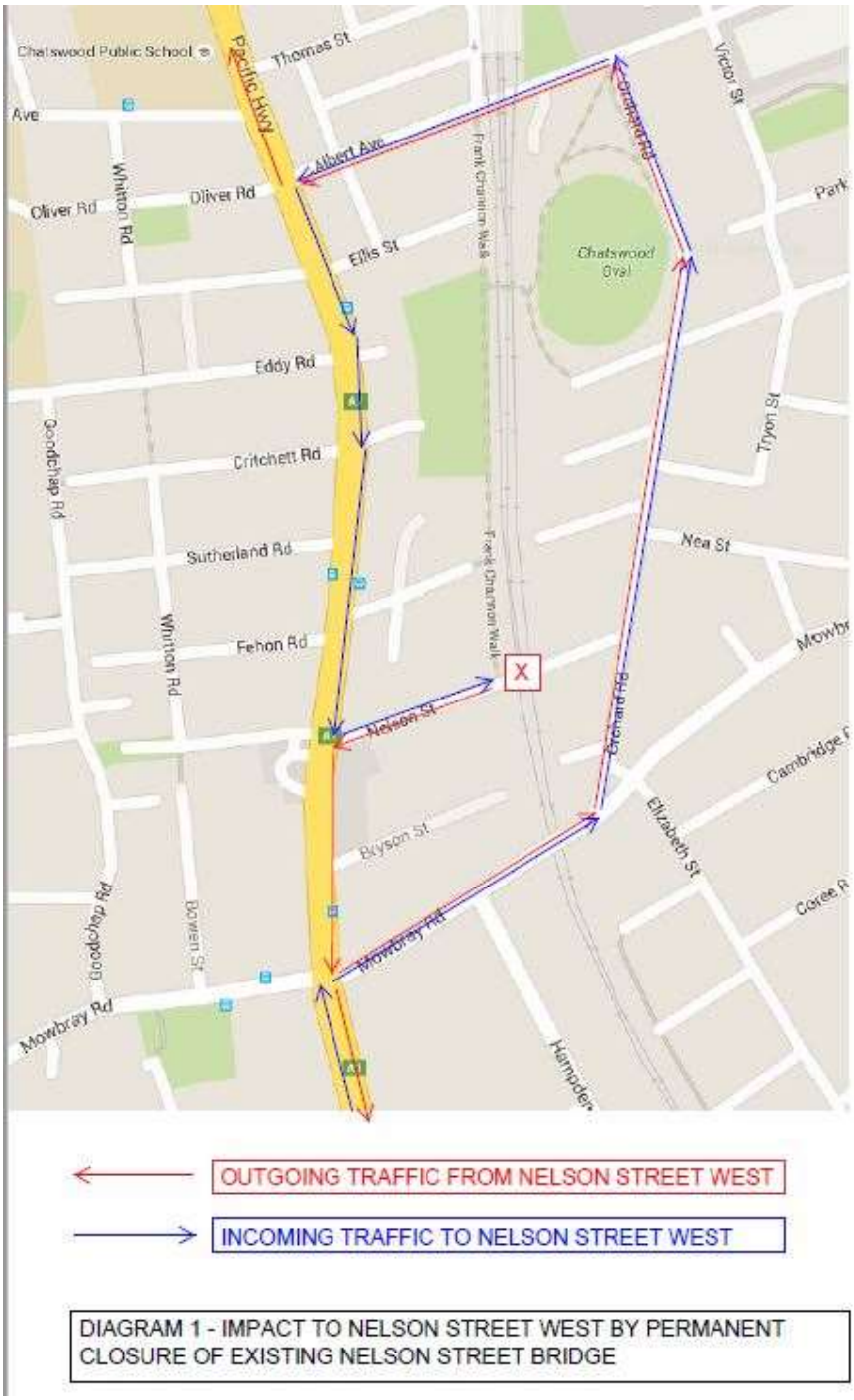


DIAGRAM 1 - IMPACT TO NELSON STREET WEST BY PERMANENT CLOSURE OF EXISTING NELSON STREET BRIDGE

Please also note that all Mowbray Road, Orchard Road & Albert Avenue are heavily congested during peak hours on both weekdays & weekend.

Extracts from Willoughby City Council's Traffic Committee Meeting No.:410 dated Wednesday 17 February 2016 below highlighted Albert Avenue already experienced extensive queuing without additional traffic from the proposed closure of Nelson Street Bridge.

4.2 ALBERT AVENUE, CHATSWOOD

REFERENCE:	**23 G10**
WARD:	**WEST WARD**
AUTHOR:	**MICHAEL FOSKETT**
MEETING DATE:	**17 FEBRUARY 2016**

Council has received several complaints about traffic congestion along Albert Avenue during afternoon peak periods and Saturdays. To address this issue, it is proposed to restrict the times when parking is permitted on the southern side of Albert Avenue between Orchard Road and the Railway Bridge.

At present there are 2P ticket parking restrictions in place between 8.30 am and 3.30 pm on weekdays, and between 8.30 am and 4.30 pm on weekends. 'No Parking' restrictions apply between 3.30 pm and 6.30 pm on weekdays. Observations have shown that at times when the 'No Parking' restrictions apply, some drivers continue to park in the zone to wait for passengers from Chatswood Station. This reduces Albert Avenue to one westbound lane, leading to increased congestion during the afternoon peak period. It is therefore proposed to replace the 'No Parking 3.30 pm-6.30 pm Mon-Fri' restrictions with 'No Stopping 3.30 pm-6.30 pm Mon-Fri'.

It was found that on Saturdays there was extensive queuing along Albert Avenue after 11am. This could be somewhat alleviated if 'No Stopping' restrictions were introduced between 11am and 6 pm on Saturdays. It was not considered necessary to prevent parking on Sundays at this stage. However traffic conditions will continue to be monitored.

OFFICER'S RECOMMENDATION

That:

1. **The existing "No Parking 3.30 pm-6.30 pm Mon-Fri" restrictions on the southern side of Albert Avenue between Orchard Road and the Railway Bridge be replaced by "No Stopping 3.30 pm-6.30 pm Mon-Fri, 11 am-6 pm Sat".**
2. **The existing "2P Ticket 8.30 am-3.30 pm Mon-Fri, 8.30 am-4.30 pm Sat-Sun" restrictions be replaced by "2P Ticket 8.30 am-3.30 pm Mon-Fri, 8.30 am-11 am Sat, 8.30 am-4.30 pm Sun" restrictions.**

Therefore, the proposed permanent closure of existing bridge on Nelson Street without other alternative option for existing residents on Nelson Street West is NOT SUPPORTED.

Request for 'Condition(s) of Approval' regarding Nelson Street bridge permanent closure as follow;

Condition of Approval 1 - We fully support the proposed "Signalised" intersection by CWWPA at Nelson Street /Pacific Highway as an interim solution to address impact to local residents on Nelson Street West, to provide alternative vehicle access to/ from Nelson Street, west of the railway line.

Such "Signalised" intersection shall allow a 'Right Turn' phase control for northbound traffic on Pacific Highway to Nelson Street west, also allow traffic from westbound traffic on Nelson Street onto Pacific Highway northbound & southbound lanes. Diagram 2 below illustrates such interim traffic arrangement during construction of the Metro project & closure of Nelson Street Bridge for Nelson Street west residents without adding extra traffic to congested local roads network.

OUTGOING TRAFFIC FROM NELSON STREET WEST

INCOMING TRAFFIC TO NELSON STREET WEST

DIAGRAM 2 - PROPOSED 'SINGALISED' NELSON STREET / PACIFIC HIGHWAY INTERSECTION PRIOR TO PERMANENT CLOSURE OF EXISTING NELSON STREET BRIDGE

Condition of Approval 2 - Consideration shall be given for the construction of a new road after completion of the Metro Tunnel Portal in Chatswood, over the 'Dive' structure at location similar to existing private road within the existing Ausgrid site. Please refer to Diagram 3 below;

DIAGRAM 3 - PROPOSED 'SINGALISED' MOWBRAY ROAD / FRANK CHANNON WALK EXTENSION FOR VEHICLES, PEDESTRIANS & CYCLISTS

We understand that Frank Channon Walk would be extended from Nelson Street to Mowbray Road on the western side of the rail line according the EIS document, Section 6.9.1 on page 174. Such will enhance facility / amenity for both pedestrians & cyclists that is FULLY SUPPORTED.

However, a new two ways local road that run parallel to the proposed Frank Channon Walk extension shall be considered for light vehicles, such will allow vehicles on Nelson Street to access Chatswood East, shopping precinct and other areas via Mowbray Road rather rely on Pacific Highway only. A 'Signalised' intersection at the New Road / Mowbray Road intersection to be implemented for safety moment of vehicles, pedestrians & cyclists. The proposed new road shall be restricted to light vehicles only.

Condition of Approval 3 - All existing 'on street parking' provision currently on Nelson Street to be retained, residents on Nelson Street shall be given parking permit with unrestricted time limit for such 'on street parking'.

The proposed Metro Dive Site at Chatswood IS NOT SUPPORTED unless the above 'Conditions of Approval' being incorporated as part of the Determination / Approval by the Minister for Planning NSW.

Organisation: Executive Commitee of Owners corporation 17 Nelson St Chatswood (Chairman)

Chatswood, NSW
2067

Content:
Dear Sir/Madam,

I am writing to you to express my extreme concern about the proposed track realignment and activity planned at Nelson Street, CHATSWOOD.

As Chairman of Executive Committee Owners Corporation 17 Nelson St and as a resident of 17 Nelson Street, a block of strata apartments that is opposing the area that Energy Australia owns, I am frustrated to learn that you have the intention of making this a construction and drilling site for several years.

This tunnel and his construction will significantly intrude into the peace of our area - added noise and vibration.
Our properties have instantly become unsaleable.

Furthermore, I am extremely concerned about permanent closure of railway bridge on the Nelson St. This closure seriously affects us we use it several times a day and it's the only way to get home from City.

It all will significantly devalue our properties.

I have attached our submissions for your consideration.

Regards,
Nataliya Sukhova,
Chairman of EC Owners Corporation
17 Nelson St, Chatswood

Re: Sydney Metro EIS submissions & recommendations due June 27th

Recommendations/solutions & concerns in response to the Environmental Impact Statement (EIS) addressed to the Department of Planning before June 27 via:

Attention: Director, Transport Assessments ("DTA")
Website: www.majorprojects.planning.nsw.gov.au

Or post to: Director, Transport Assessments
Department of Planning and Environment
GPO Box 39 SYDNEY NSW 2001

PROPERTIES AFFECTED:

Nelson Street & Gordon Avenue

ISSUES AND RECOMMENDATIONS PROPOSED BY LOCAL RESIDENTS:

1/ ISSUE: Increased noise pollution from rail-corridor:

Issue is noise during Metro construction & operational noise when Metro is running: current noise levels are excessive and noise will increase due to:

*EIS proposal for Metro tracks to be on concrete slabs between Albert Ave & Ausgrid site opposite 9-17 Nelson Street (EIS Ch.6, p135).[1]

*2 additional tracks (Metro) between Albert Ave & Ausgrid site for "high frequency trains" providing fast high capacity services.

*Tracks will be moved west by 3m @ Gordon Ave/Nelson St.

SOLUTION: Using dampers is recommended instead of concrete slabs under tracks.

2/ ISSUE: Increased noise pollution from truck movements in Nelson St & Ausgrid dive site.

Truck movements during "dive" construction are expected to be:

Demolition: 96 per day plus 78 light vehicles
Excavation: 234 per day plus 248 light vehicles
Tunnel excavation: 286 per day and 248 light vehicles
Tunnel fit out: 254 per day and 248 light vehicles...

SOLUTION: Metro should not be allowed to use Nelson Street: Metro truck & vehicle access only from Mowbray Road, and not via Nelson Street.

3/ ISSUE: Traffic congestion & increased travelling time:

Due to EIS proposal for Nelson St Bridge to be closed permanently.

SOLUTIONS:

*Nelson Street Bridge should be retained: not demolished permanently.

*Signalization (traffic lights) at junction of Nelson St & Pacific Hwy. Otherwise, residents/tradesmen travelling north along Pacific Hwy would need to travel a circular loop through Chatswood CBD (Albert Ave), along narrow congested Orchard Road, to get to Nelson Street: no right-hand turns along Albert Avenue past Orchard Road.

*To recommend "keep clear" signs to allow exit of Nelson St residents into Pacific Hwy: this exit is usually blocked when lights at Pacific Hwy are either red or green.

4/ ISSUE: Increased visual pollution.

1.5m trains will be visible above "noise wall".

The maximum height of the proposed rail-bridge (for northbound track T1) will be at Nelson Street, with 100-300 meters long grade ether side.

SOLUTIONS:

*Rail-bridge should not be built over Nelson Street.

*Nelson Street Bridge should not be permanently closed.

---

[1] See EIS website, esp. ch.6-7: http://sydneymetro.info/chatswood-to-sydenham

Name: Faiza Ahmad
Organisation: Blues Point Tower Executive Committee, Owners Corporation (Chairperson)

Content:
To Whom It May Concern,

I am writing on behalf of the Blues Point Tower Executive Committee representing the owners of Blues Point Tower to express our objection to the proposed Blues Point Temporary Retrieval site at Blues Point Reserve.

We object to the establishment of a temporary site at Blues Point Reserve for the retrieval of the cutting heads for the tunnel boring machines on the basis that this will have a devastating impact on Blues Point Reserve which is a heritage listed site, and will significantly impact on the residents living conditions in the local area, particularly those residing in Blues Point Tower, which is located just 72 metres from the proposed construction site.

We object to the removal of the Blues Point Reserve and park area from public access for a period of two years and the accompanying construction noise, traffic and transport impacts on residents over this prolonged period of time that will occur as a result of the excavation activity and the removal of the waste material from the site.

The construction site will have a prolonged noise and vibration impact on the residents during the first 12 month excavation work period to establish the shaft to the tunnel. Many of the residents in Blues Point Tower are elderly and occupy their units during business hours, when the works are proposed to take place and they will be particularly impacted by the ongoing noise from the construction work.

The construction site will also remove residents parking for a period of two years and result in the relocation of the current bus stop located on Henry Lawson Drive, which is regularly used by residents, particularly the elderly and those with young children to transport them to the train station.

The proposed construction site will also result in the removal of public access to the Blues Point Reserve and park areas which are frequently used and enjoyed not only by local residents but by tourists and others visiting the area.

We object to the proposed removal of waste material from the excavation site and delivery of concrete using heavy trucks along Blues Point Road, which will result in frequent and persistent heavy truck movement 11 hours per day during this period. We also express our concern about the impact of the heavy truck traffic on pedestrian safety, especially for children and the elderly in the community.

We believe that there has not been adequate consideration of alternative sites to retrieve the boring machine heads and no analysis in the EIS of the possibility of the tunnel boring machine cutters being removed at Barangaroo or Victoria Cross station.

There also has not been any analysis on the use of barges to remove the waste from the harbour site instead of trucks.

Regards,
Faiza Ahmad

Faiza Ahmad, Chairperson, Blues Point Tower Executive Committee, 14-28 Blues Point Road, McMahons Point 2060

Re: Application number SSI 15_7400

To Whom It May Concern,

I am writing on behalf of the Blues Point Tower Executive Committee representing the owners of Blues Point Tower to express our objection to the proposed Blues Point Temporary Retrieval site at Blues Point Reserve.

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We believe that there has not been adequate consideration of alternative sites to retrieve the boring machine heads and no analysis in the EIS of the possibility of the tunnel boring machine cutters being removed at Barangaroo or Victoria Cross station.

There also has not been any analysis on the use of barges to remove the waste from the harbour site instead of trucks.

Regards,

Faiza Ahmad

Organisation: Mirvac (Consultant Town Planner)

Content:
Please find attached submission

24 June 2016

Lisa Mitchell
Department of Planning and Environment
23-33 Bridge Street
SYDNEY NSW 2000

Dear Lisa,

Response to Public Exhibition of the State Significant Infrastructure Application for the Sydney Metro City & Southwest - Chatswood to Sydenham
8 Chifley, Sydney

This submission has been prepared on behalf of Mirvac Real Estate Pty Ltd and K-REIT Asia (Keppel Land Limited), the co-owners of 8 Chifley, Sydney. The following sections of our correspondence provide:

- An overview of 8 Chifley, focussing on the specific land use activities which may be affected by the demolition, excavation and construction phases of the Sydney Metro.
- A brief description of the locational context of the proposed Martin Place Station (and associated construction site) having regard to 8 Chifley.
- Identification of key areas of concern arising from the review of the Environmental Impact Statement (EIS), including recommended actions and/or conditions of development consent should the project be approved by the Minister for Planning.

We would welcome the opportunity to discuss our submission with the Department and/or Transport for NSW in further detail, having particular regard to the importance of ongoing consultation prior to the commencement of the project and throughout the demolition, earthworks and construction phases.

1 8 Chifley

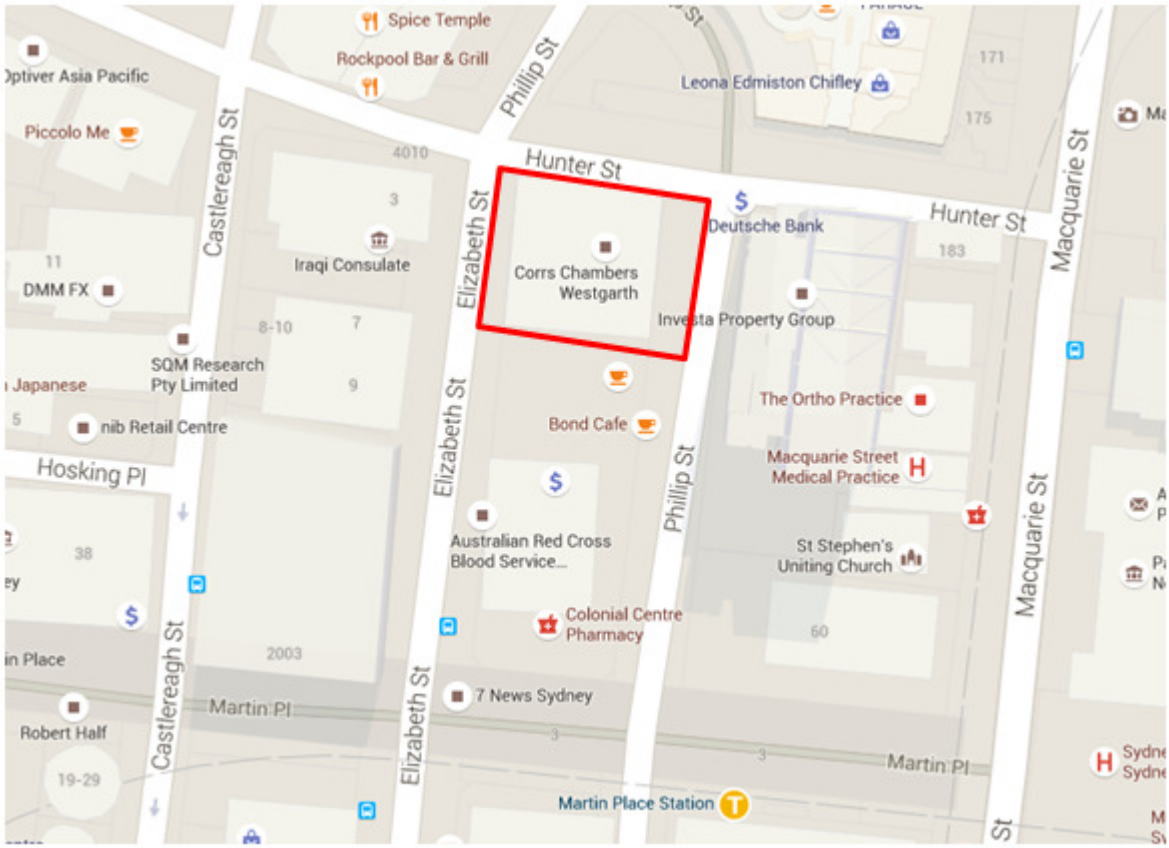
8 Chifley is located on the corner of Elizabeth, Hunter and Philip Streets in the Sydney Central Business District (CBD). A location map is provided as **Figure 1** on the following page. The site is approximately 100 metres walking distance to the nearest existing entry and exit staircase to Martin Place Railway Station and immediately opposite the proposed northern entry to the proposed Martin Place Station associated with the Sydney Metro proposal.

8 Chifley comprises a boutique premium grade landmark building which was designed by internationally renowned Richard Rogers of Rogers Stirk Harbour & Partners with the Lippmann Partnership. The building design was developed by way of an international design competition and has been awarded with a 6 Star Green Star Rating, representing 'World Leadership' in environmental sustainability practice.

GOLD COAST
45 Nerang Street
Southport QLD 4215 Australia

t 07 5606 7359 f 07 3007 3811 e info@urbis.com.au w Urbis.com.au Urbis Pty Ltd ABN 50 105 256 228

FIGURE 1 – LOCATION MAP (SOURCE: GOOGLE MAPS, 2016)



The building includes a number of significant features which are of specific relevance with regard to the potential impacts arising from the future construction of the Sydney Metro. These include:

A five storey public space is located at the ground level of the building, facing north towards Hunter Street. The upper space includes access to the commercial offices, food-related premises and associated outdoor dining, informal public seating and bicycle facilities. A lower space oriented towards Elizabeth Street and the proposed Martin Place Station accommodates an additional tenancy and outdoor dining area.

- The commercial office building comprises 23 levels of flexible workspaces, including seven vertical villages (ranging in size from 1,800 to 2,880sqm) and single commercial floors. The building benefits from excellent access to natural daylight with a transparent façade wrapping around the three street frontages and an internal atrium on the upper levels of the building. The building design comprises unique detailing and exposed structure which provides a high quality appearance and contribution to the streetscape.

- Two landscaped terrace areas are located within the commercial office building. A large three storey space is located on the 18th floor, providing external amenity for the vertical village located immediately below. A second open-air space is located on the upper most level, again, providing outdoor amenity for the village located immediately below.

- A range of environmentally sustainable features are included throughout the building, including active and passive sun shading, active chilled beam air conditioning and natural ventilation.

- The basement level includes 32 car parking spaces, four courier bays and a service vehicle bay. It also provides 129 secure bicycle spaces and lockers for tenants, male and female changing rooms with 13 showers and 28 visitor bicycle spaces.

A plan showing the western elevation of the building (immediately opposite the proposed Martin Place Station) is provided as **Figure 2** below. Floor plans for the low and high rise components of the building are provided as **Figure 3** and **Figure 4** on the following page. Each of these plans show the key building features likely to be affected by the delivery of the Sydney Metro, including the ground level public space, vertical villages, internal atriums and landscaped terraces.

FIGURE 2 – WESTERN ELEVATION OF 8 CHIFLEY (SOURCE: WWW.8CHIFLEY.COM.AU, 2016)

FIGURE 3 – LOW RISE FLOOR PLATE OF 8 CHIFLEY (SOURCE: WWW.8CHIFLEY.COM.AU, 2016)

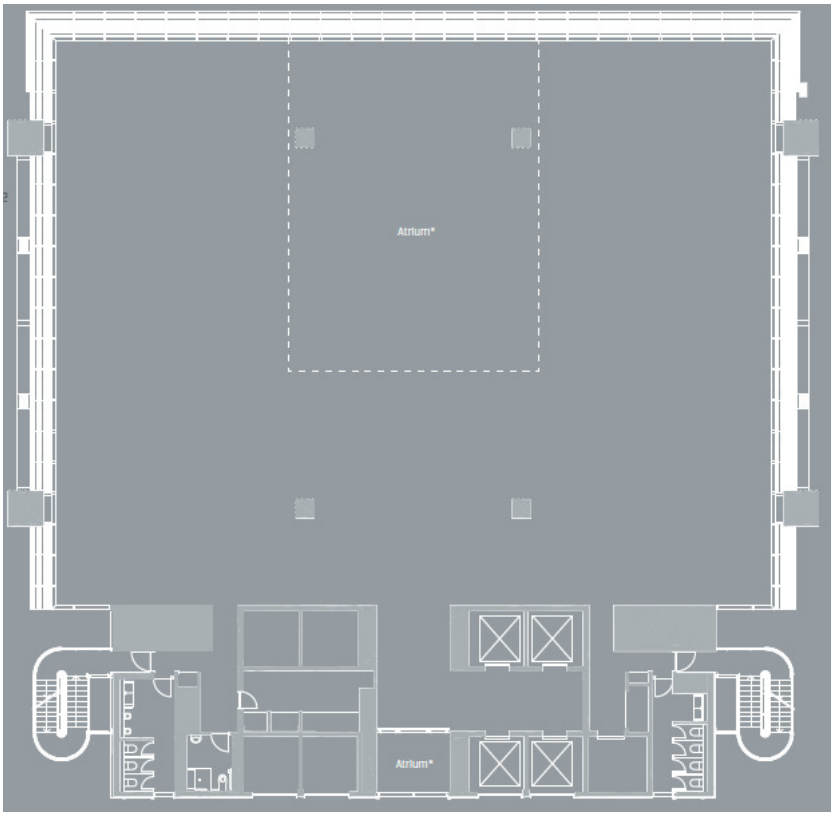
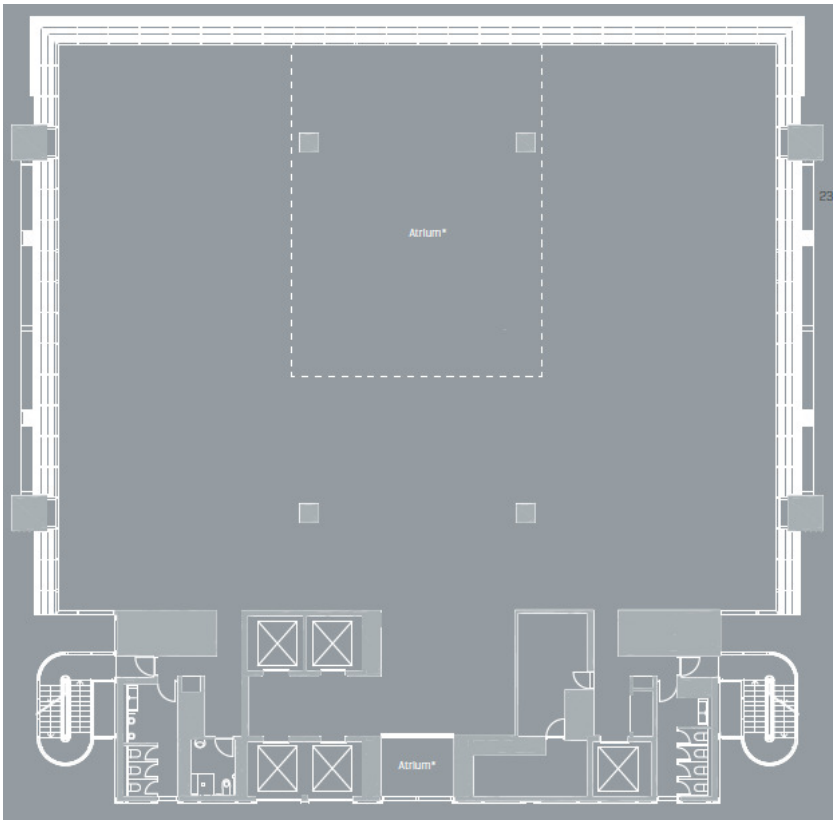


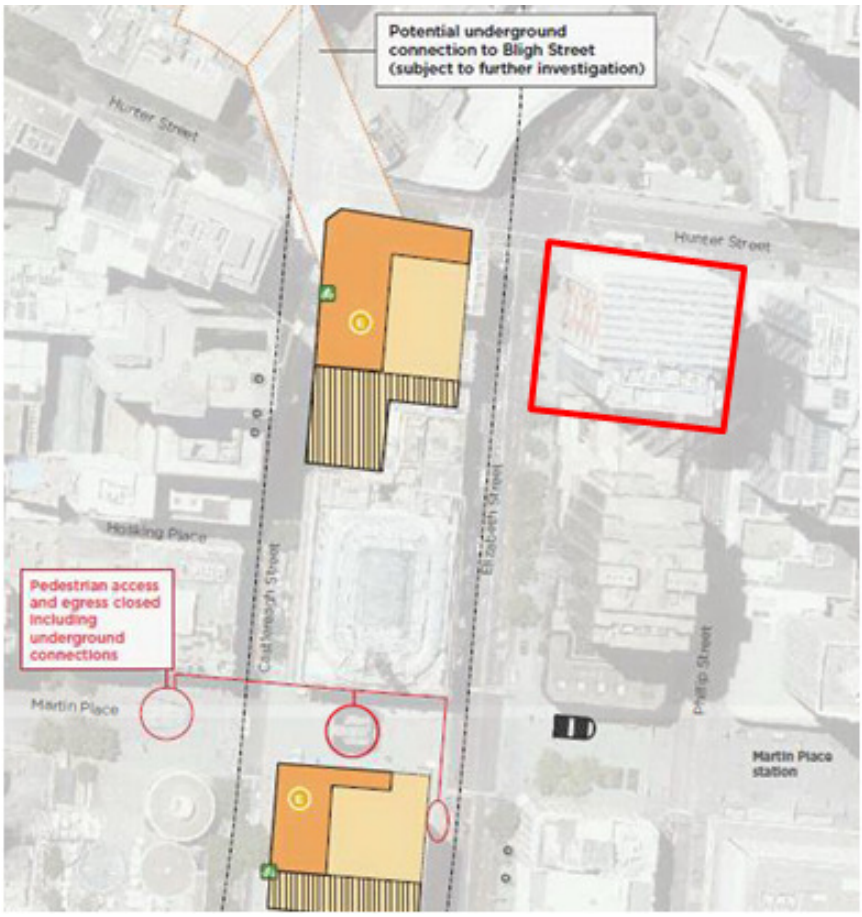
FIGURE 4 – HIGH RISE FLOOR PLATE OF 8 CHIFLEY (SOURCE: WWW.8CHIFLEY.COM.AU, 2016)



2 Project Context

The Martin Place Station is to be located to the south of Hunter Street between Castlereagh Street and Elizabeth Street. The northern entry to the station is proposed to be via a pedestrian plaza (shaded dark orange in the map extract below) which is located immediately to the west of 8 Chifley (as outlined in red).

FIGURE 5 – LOCATION OF MARTIN PLACE STATION AND 8 CHIFLEY (SOURCE: TRANSPORT FOR NSW, 2016)



The proximity of the proposed Metro Station to 8 Chifley is of particular concern for the co-owners of the building having specific regard to the following matters:

- Demolition, earthworks and construction phases of the development, particularly having regard to the duration of the proposed works and their impacts on the tenants and visitors to 8 Chifley.
- Built form and scale of the potential future above-station development at the northern entry to Martin Place Station.

It is acknowledged that the future above-station development does not form part of the EIS and will be subject to further development consent. The following section of this submission provides detailed discussion regarding the particular area of concern with regard to the demolition, earthworks and construction phases of the Sydney Metro project.

3 Key Issues and Recommended Actions

The co-owners of 8 Chifley recognise the strategic importance of the Sydney Metro City & Southwest for the Sydney metropolitan rail network and the potential benefits arising from the delivery of increased public transport services to the Sydney CBD.

However, it is critical that the key environmental issues associated with the proposed demolition, earthworks, construction and operation of the proposed Sydney Metro are carefully assessed to avoid significant adverse impacts on the adjoining land owners and tenants. This must include comprehensive details on the proposed mitigation and management measures that are to be implemented during the various stages of the project.

Particular concern is raised with regard to the duration of the proposed site establishment and station excavation works and the proximity of the construction site to 8 Chifley as shown below.

FIGURE 6 – MARTIN PLACE CONSTRUCTION SITE AND 8 CHIFLEY (SOURCE: TRANSPORT FOR NSW, 2016)

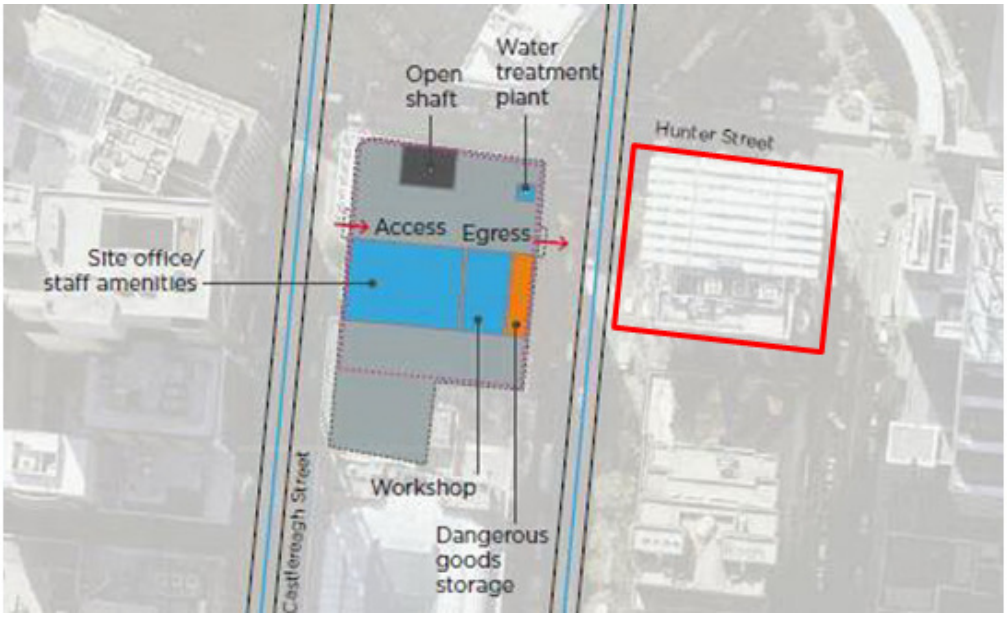
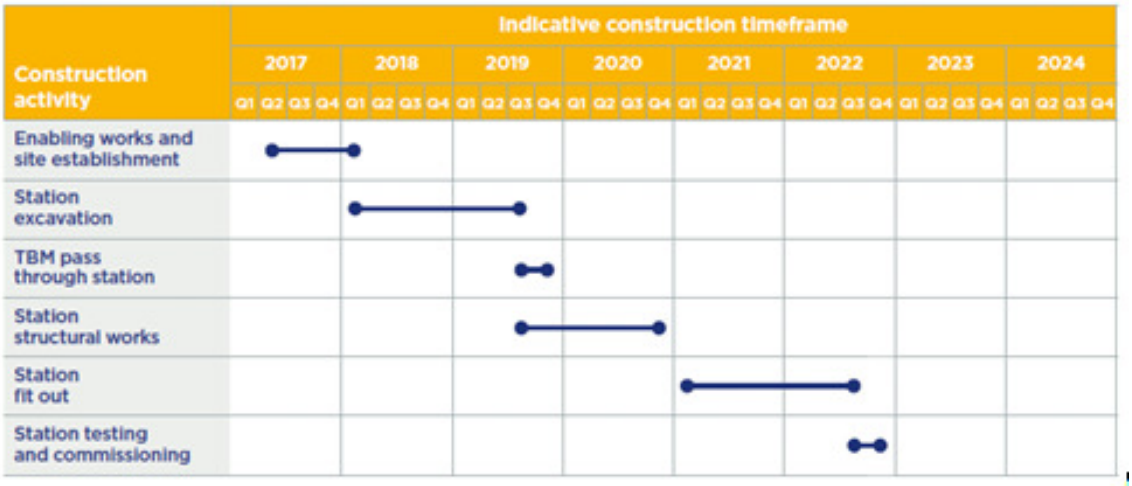


FIGURE 7 – MARTIN PLACE INDICATIVE CONSTRUCTION PROGRAMME (SOURCE: TRANSPORT FOR NSW, 2016)



The following sections of our submission identify the key issues that are of the greatest concern to the co-owners of 8 Chifley, including:

- Noise and vibration
- Air quality
- Transport and traffic

This section also provides recommended actions and/or conditions of consent to avoid, mitigate or manage the potential impacts of the development on 8 Chifley and its occupants and visitors.

3.1 NOISE AND VIBRATION

Mirvac is concerned regarding the lack of clarity provided within the EIS with regard to the potential noise and vibration impacts associated with the demolition, excavation and construction phases of the project. The EIS indicates that the future operation of the Sydney Metro is expected to comply with relevant noise and vibration criteria at Martin Place Station, however, insufficient information is provided to understand the significance of the impacts during the six year construction programme.

The EIS does not provide sufficient information for Mirvac to understand the way in which the potential noise and vibration impacts would affect the tenants of 8 Chifley on a day-to-day basis. There is also a lack of information regarding the mitigation measures that will be implemented at the Martin Place construction site and the level of effectiveness of these measures to provide adequate levels of internal and external amenity for the occupants and visitors to 8 Chifley.

Wilkinson Murray Pty Limited was engaged by Mirvac to conduct a technical review of the EIS, including the main report and *Technical Paper 2: Noise and Vibration* prepared by SLR Consulting. A copy of Wilkinson Murray's report is attached to this submission. An extract listing the key issues identified within their report is provided below:

- *The EIS fails to identify the specific uses of the Building occupants that occupy the premises at 8 Chifley Place.*
- *Construction Noise from early works (enabling and earthworks) will significantly impact on the outdoor café and Sushi Restaurant which faces the construction site. These receivers has not been identified or assessed. It is likely that these operations will be seriously affected for several months.*
- *Airborne Noise from the early works will exceed external commercial receivers noise management levels by between 10 and 20 dBA where internal noise levels of 60 to 70 dBA can be expected.*
- *Ground borne noise is predicted to be up to 60 dBA within occupied tenancies when rock breaking occurs. This noise levels will be clearly audible within office areas and will be of a level that will compromise on effective communication and confidentiality in some of these areas.*
- *The EIS does not provide the commitments that noise from construction can be adequately managed to all the receivers 8 Chifley Place. Consideration of other construction techniques and respite periods should be considered.*

It is clearly evident from the Wilkinson Murray report that further detailed consideration needs to be given to the potential acoustic and vibration impacts on the building occupants and visitors to 8 Chifley.

The EIS needs to provide further detailed assessment which considers the specific range of land use activities within 8 Chifley, including the location of these uses and their operating hours. Additional consideration also needs to be given to the mitigation measures that will need to be implemented at the Martin Place Station construction site to reduce these impacts and avoid any significant adverse impacts that would impact on the operations of the business located within 8 Chifley.

The Wilkinson Murray report indicates that the potential air-borne construction noise is likely to have a significant impact on the building occupants having regard to both the level of noise and the duration of the enabling and earthworks stages of the Sydney Metro project. These include:

- Sushi restaurant in Elizabeth Street and the outdoor café and public space facing Hunter Street - these outdoor facilities could be subjected to noise levels which would result in a major disruption on their day-to-day activities and human comfort levels. The predicted noise levels could have a significant effect on these businesses unless adequate noise mitigation measures are implemented at the construction site.

- Entrance foyer and the western side of the lower commercial office levels – these areas would also be subjected to noise levels which would have a major impact on communication levels and internal amenity impacts. Further detailed information is required to understand the likely effect of any mitigation measures that will be employed over the excavation works.

The Wilkinson Murray report also notes that the ground-borne noise associated with the rock breakers is likely to have a noticeable impact on the internal amity of the commercial offices, having particular regard to the disturbing nature of this impulsive noise.

Overall, the Wilkinson Murray report indicates that the noise impacts likely to be experienced by the occupants and visitors to 8 Chifley are significant. These impacts would be experienced for several months and are likely to have a significant effect on 8 Chifley, including the sushi restaurant, outdoor café and the lower levels of the commercial office building. Accordingly, it is requested that alternative construction techniques should be assessed under the category of 'reasonable and feasible' consistent with the EPA's guidelines. Appropriate measures such as respite and rock saws should be considered.

Based on the findings of the Wilkinson Murray report, it is requested that the EIS (and the accompanying Technical Paper) is updated to provide a more comprehensive noise and vibration impact assessment that considers the range of land use activities within 8 Chifley and the acoustic sensitivity and hours of operation associated with these uses.

The *Construction Noise and Vibration Management Strategy* should also be updated to include additional information regarding the site-specific mitigation measures to be implemented at the Martin Place Station construction site to:

- Effectively reduce noise and vibration impacts on 8 Chifley; and

- Avoid significant adverse effects on the day-to-day operations of the existing land use activities in the surrounding locality.

Further detailed assessment needs to be provided regarding the proposed method of excavation for the station works, including the opportunities to reduce the duration of the construction programme through the use of alternative methods and/or the provision of respite periods to minimise the impacts on the surrounding land use activities.

3.2 AIR QUALITY

It is understood that the Sydney Metro would have a positive regional impact with regard to air quality having regard to the opportunities to increase the use of public transport use. While this is of benefit to the broader Sydney metropolitan area, more detailed consideration needs to be given to the local air quality impacts, particularly during the demolition, earthworks and construction phases.

The EIS identifies the potential air quality issues that could arise, however, insufficient detail is provided with regard to the predicted level of impact and/or the mitigation measures to be implemented during the various phases of the project. The EIS simply states that the potential impacts are expected to be "*comparable to other similar infrastructure projects*" and that "*standard mitigation measures*" would manage these impacts, potentially including wetting stockpiles and exposed surface and minimising dust-generating works during adverse weather conditions. This is considered insufficient having regard to the scale of the project, the significant amount of spoil to be removed from the Martin Place Station construction site (175,000m^3) and the proximity of the site to high density commercial development, including 8 Chifley.

More detailed information should be provided within the EIS with regard to the extent of the potential air quality impacts associated with Martin Place Station. This should include additional information regarding the actual mitigation measures to be implemented during the demolition, earthworks and construction phases and their level of effectiveness in reducing impacts on air quality. Particular consideration needs to be given to 8 Chifley and its specific building features that could be affected by air-borne dust emissions. These include:

- **Air intakes**: 8 Chifley was designed to deliver exceptional environmental performance and sustainability. The development was awarded a 6 Star Green Star Rating – Office Design v2 rating, demonstrating 'World Leadership' in environmental sustainability practice. One of the key features associated with this achievement was the provision of active chilled beam air conditioning and natural ventilation.

  Significant concern is raised that the potential dust emissions arising from the works associated with the construction of Martin Place Station will have an adverse impact on the operation and function of the air intakes for 8 Chifley. This could have a major impact on the level of indoor quality associated with the natural ventilation of the building. Further, it could place significant additional pressure on the air filtration system, potentially requiring more regular maintenance and/or replacement of filters.

  In addition to the above, the glass lobby for 8 Chifley has louvers which provide for natural cross ventilation and contribute to the overall environmental performance of the building. Any dust emissions arising from the demolition, earthworks and construction of the building could penetrate the lobby and have an adverse effect on its internal amenity, as well as requiring extensive additional cleaning and costs for the building owners. It is critical that dust emissions are appropriately mitigated to avoid such impacts on the locality and adjoining property owners.

- **Façade**: the building façade of 8 Chifley was designed so that the commercial office tenants would benefit from excellent access to natural daylight and solar access. The transparent façade along the Elizabeth, Hunter and Philip Street frontages provides 45% more perimeter space compared to a traditional office floorplate. The internal atrium on the upper levels of the building also provides additional natural light along the southern part of the site. The ground level lobby area at 8 Chifley also comprises significant glazed areas in order to achieve the large four-storey public open space on the northern side of the building. Specialised cleaning methods are required to maintain the glass façade, having regard to the location and design and scale of the ground floor lobby area.

  Similar to the above point, concerns are raised with regard to the potential dust emissions arising from the construction site for Martin Place Station and the impacts on the maintenance

requirements for 8 Chifley, including the potential for increased cleaning and associated increased costs which should not be borne by the co-owners of the building.

- **External amenity**: 8 Chifley includes a large publicly accessible space on the northern side of the building which currently accommodates a café with ancillary outdoor dining and informal public seating. The development takes advantage of the sloping topography by providing an additional retail tenancy below the public space along the Elizabeth Street frontage which is currently accommodated by a sushi shop with ancillary outdoor dining.

  Similar to the above points, concern is raised that the potential dust emissions from the construction site for the Martin Place Station will have a significant impact on the external amenity and useability of these spaces the demolition, excavation and construction of the proposed station. Particular consideration will need to be given to the sushi shop which is located at the footpath level on Elizabeth Street, immediately opposite the construction site. The proposed mitigation measures will need to ensure that the Sydney Metro will not have any adverse impacts with regard to the relevant food safety requirements and internal amenity within the food premises, as well as the external amenity of the outdoor dining area.

A Construction Environmental Management Plan should be prepared which provides detailed specialist information regarding the way in which the environmental issues will be managed. This should include the preparation of an Air Quality Management Plan which clearly details the specific mitigation measures to be implemented during the demolition, excavation and construction phases. This should include:

- A detailed layout plan for the construction site that includes the location of plant and equipment, stockpiles and mitigation measures to be implemented to reduce dust emissions and other air quality impacts.

- A detailed list of procedures and mitigation measures to control and/or manage dust emissions arising from the individual construction sites, including contingency measures where the standard recommended measures are not effective.

- A defined list of roles, responsibilities and reporting requirements to avoid, minimise and mitigate potential dust emissions.

A draft version of the Air Quality Management Plan should be provided for review by the affected landowners to understand the mitigation measures that are likely to be implemented on the site. A final version of the Air Quality Management Plan should form part of the Construction Environmental Management Plan and incorporate feedback from the affected landowners regarding the specific air quality issues for each of the station precincts.

3.3 TRANSPORT AND TRAFFIC

The EIS indicates that the demolition, excavation and construction phases of the Sydney Metro would result in a number of disruptions to the existing transport and traffic infrastructure within the immediate locality of 8 Chifley. These include:

- Full or partial temporary road closures during the night-time period.

- Construction vehicle movements impacting on the operation of the surrounding local road network and pedestrian movements.

- Temporary narrowing of footpaths along Elizabeth and Castlereagh Streets by approximately 600mm for an approximate distance of 200 metres.

- Temporary partial closure of Martin Place and underground connections between Castlereagh and Elizabeth Streets for approximately six months to allow for cut-and-cover work.

- Permanent closure of the existing entry and exit points to Martin Place Station to the west of Castlereagh Street.

- Temporary relocation of bus stops on Castlereagh or Elizabeth Streets, if required.

- Temporary rail track possessions for possible service relocations and strengthening works to existing rail tunnels and modifications to existing underground pedestrian facilities.

The night-time operations are considered less likely to have a significant impact compared to the works that are proposed during the day-time period. Significant concern is raised regarding the potential impacts of the construction vehicles on the local road network, including the tipper trucks that will be required to remove the estimated 175,000 cubic metres of spoil. These trucks are proposed to enter the Martin Place Station construction site via a left-in movement from Castlereagh Street and exit via a left-turn movement into Elizabeth Street. Approximately 25-26 heavy vehicle movements and 10 light vehicle movements are proposed every hour during the peak day-time operations, equating to approximately one vehicle movement every 1-2 minutes.

The indicative construction site layout (provided as **Figure 6** within this submission) shows that the proposed left-out exit driveway is to be located immediately opposite the access driveway to the basement level of 8 Chifley. Concern is raised that the heavy and light construction vehicles exiting this driveway could have an adverse effect on the accessibility and operational safety of the 8 Chifley driveway which provides access to 32 car parking spaces, four courier bays, a service vehicle bay, 129 tenant bicycle spaces and 28 visitor bicycle spaces.

The EIS also indicates that pedestrian movements are likely to be significantly affected by the six month closure of the existing station entrances to the south of Elizabeth Street. This will place additional pressure on the remaining entrances and reduce their level of performance. In particular, the staircase adjacent to the Reserve Bank and the staircase between Elizabeth and Phillip Streets are predicted to operate at Level of Service F. This represents a potential major inconvenience to commuters due to the impact on pedestrian flows, as well as a potential safety issue during an emergency scenario.

Concerns are raised regarding both the temporary and permanent changes arising from the construction of Martin Place Station and the potential impacts on the tenants and visitors to 8 Chifley. Further detailed consideration also needs to be given to the proposed closure of the Martin Place railway station entrances, particularly during peak periods and special events (eg Vivid Festival).

The proposed Road Safety Audit (Reference T2) should include further assessment of the proposed siting and design of the construction vehicle exit driveway from the Martin Place Station construction site to avoid operational and safety impacts on the existing access driveway to 8 Chifley.

Further, the Construction Environmental Management Plan should also incorporate a detailed Construction Traffic Management Plan which clearly details the specific mitigation and management measures to be implemented during the demolition, excavation and construction phases. This should include:

- A detailed layout plan for the construction site that incorporates a revised location for the proposed left-out exit driveway.

- A detailed list of procedures and mitigation/management measures to maintain adequate safety for pedestrians, cyclists and vehicle drivers.

- A defined list of roles, responsibilities and reporting requirements to avoid, minimise and mitigate potential dust emissions.

A draft version of the Construction Traffic Management Plan should be provided to the affected landowners for comment. A final version of the Construction Traffic Management Plan should form part of the Construction Environmental Management Plan and incorporate feedback from the affected landowners regarding the site-specific transport and traffic related issues.

4 Summary

Overall, the co-owners of 8 Chifley are generally supportive of the Sydney Metro City & Southwest - Chatswood to Sydenham Project. However, concern is raised regarding the level of detail provided within the EIS regarding a number of significant environmental issues, including noise and vibration, air quality and transport and traffic impacts.

Our submission includes requests for additional information within the EIS to provide greater clarity regarding the scope of works and the potential impacts of the proposal on 8 Chifley. This includes:

- Additional information regarding the expected duration of the project, having particular regard to the potential use of blasting to reduce the length of time associated with the excavation of Martin Place Station.

- Additional site-specific assessment of the potential noise and vibration impacts on 8 Chifley having regard to the existing land use activities, their locations and operating hours.

- Further clarification of the mitigation measures proposed to be implemented at the Martin Place Station construction site and the likely effectiveness of these measures to reduce and/or manage noise and vibration impacts and avoid significant adverse effects on the existing land use activities within the clarity.

- Further detailed information should be provided regarding the potential air quality impacts and the mitigation measures to be implemented at each of the construction sites (including Martin Place Station) during the various phases of the project.

- The proposed left-out exit driveway from the Martin Place Station construction site to Philip Street needs to be relocated to avoid causing conflicts with the access driveway to 8 Chifley.

- Further detailed consideration needs to be given to the potential impacts of the construction process on pedestrian movements and safety, particularly during the temporary closure of the existing entrances to Martin Place railway station.

The submission also includes a number of recommendations to be incorporated within a Construction Environmental Management Plan to avoid, minimise, mitigate and/or manage the potential impacts of the demolition, excavation and construction of the Martin Place Station. These include preparation of a number of supporting technical documents, including:

- Updated Construction Noise and Vibration Management Strategy

- Air Quality Impact Management Plan

- Construction Traffic Management Plan

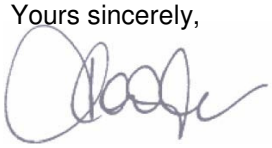
In addition to the above technical matters, it is strongly recommended that an Owners Group is established to provide for effective two-way communication during the various phases of the development. This group would meet on a regular basis and be provided with ongoing information

regarding imminent works, road closures, pedestrian impacts and general updates on the progress of the project.

Mirvac has been directly involved with the Owners Group associated with the George Street Light Rail Project, having regard to the potential implications for a number of their assets including the Metcentre at 60 Margaret Street and their new commercial office building at 200 George Street. Mirvac considers that this process has been very successful in developing an effective communications plan, particularly with regard to the existing building occupants at 60 Margaret Street. Accordingly, it is Mirvac's strong view that a similar approach should be adopted with regard to the Sydney Metro Project.

We would welcome the opportunity to discuss our submission with the Department of Planning and Environment and/or Transport for NSW in further detail. Please do not hesitate to contact me on 8233 9931 to discuss.

Yours sincerely,



Jennifer Cooper
Director

ACOUSTICS AND AIR

8 CHIFLEY SQUARE SYDNEY

SYDNEY METRO EIS IMPACT REVIEW

REPORT NO. 16224
VERSION A

JUNE 2016

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DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Final	24 June 2016	Brian Clarke	--

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EXECTUTIVE SUMMARY

A review of the Sydney Metro EIS with respect to noise and vibration impact on the Multi level Premium grade Commercial property and associated Tenancies indicates that there will be a significant impact associated with airborne and ground borne noise on operations. The following issues have been identified:

- The EIS fails to identify the specific uses of the Building occupants that occupy the premises at 8 Chifley Square.
- Construction Noise from early works (enabling and earthworks) will significantly impact on the outdoor café and Sushi Restaurant which faces the construction site. These receivers have not been identified or assessed. It is likely that these operations will be seriously affected for several months.
- Airborne Noise from the early works will exceed external commercial receivers noise management levels by between 10 and 20 dBA where internal noise levels of 60 to 70 dBA can be expected.
- Ground borne noise is predicted to be up to 60 dBA within occupied tenancies when rock breaking occurs. This noise levels will be clearly audible within office areas and will be of a level that will compromise on effective communication and confidentiality in some of these areas.
- The EIS does not provide the commitments that noise from construction can be adequately managed to all the receivers at 8 Chifley Square. Consideration of other construction techniques and respite periods should be considered.

.

1 INTRODUCTION

Wilkinson Murray has been engaged by Mirvac Real Estate Pty Ltd to conduct a technical review of the Sydney Metro Chatswood to Sydenham Environmental Impact Statement dated 3 May 2016 on 8 Chifley Place, Sydney.

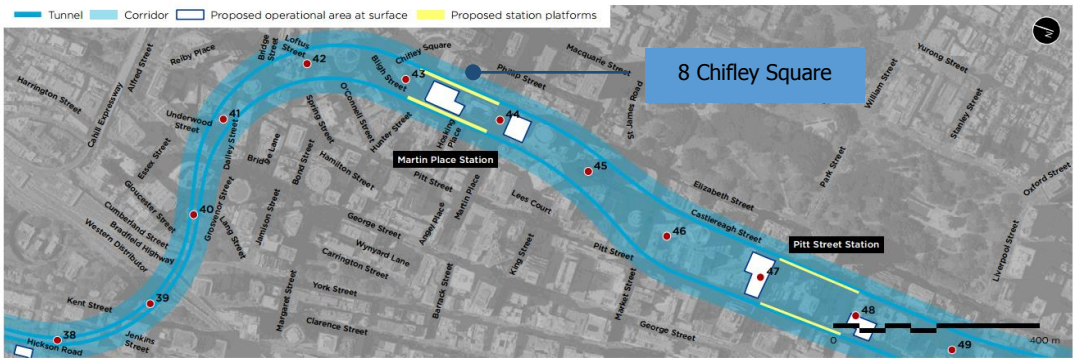
The purpose of the review is to determine the adequacy of the assessment with respect to construction and vibration impacts on the building, its operations and associated internal and external tenancies. The review has relied on information presented in the main report of the EIS and the Technical Paper 2: Noise and Vibration prepared by SLR Consulting.

It is noted that operational impacts comply with appropriate noise criteria. Therefore this issue is not dealt with further in this review.

2 DESCRIPTION OF 8 CHIFLEY SQUARE WITH RESPECT TO THE PROPOSED METRO

Figure 2-1, extracted from the EIS, shows the alignment of the proposed Sydney Metro and associated infrastructure which is near 8 Chifley Place.

Figure 2-1 Metro Alignment and Proposed Martin Place Station

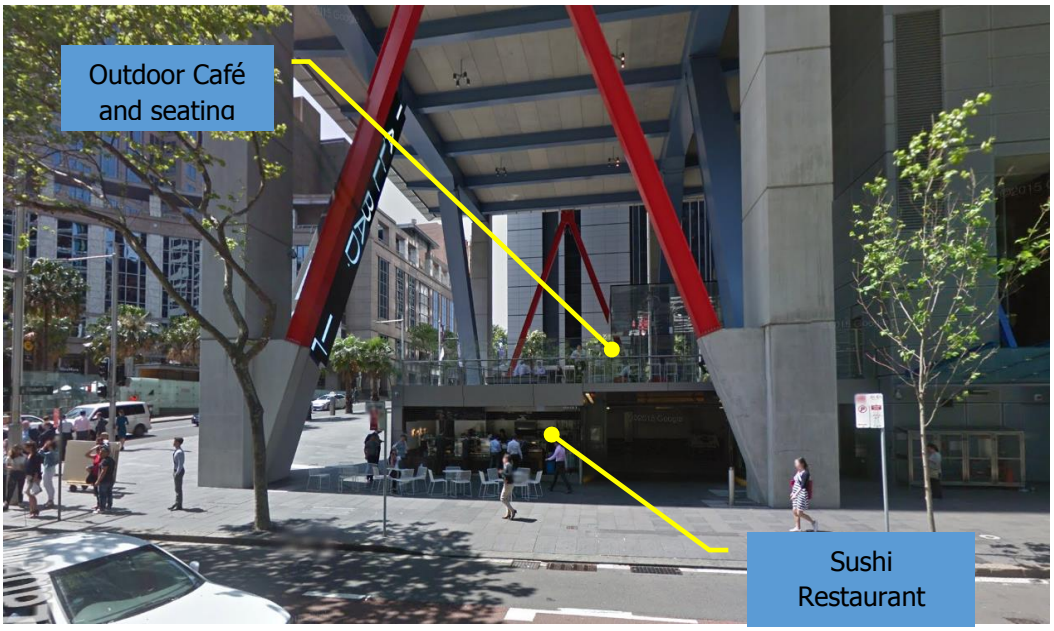


8 Chifley Square is a recently completed premium grade commercial building in the legal / financial precinct of Sydney, which consists of 32, levels that include:

- **2 Levels of basement** which includes a Sushi Restaurant on Level B1 (facing Elizabeth Street Level) which operates from 9 am to 3 pm.
- **Ground Level** which includes an internal entrance Foyer, an outdoor café which operates between 7 am and 4 pm and outdoor seating.

Figure 2-1 shows these areas.

Figure 2-1 8 Chifley Square looking from Proposed Northern Access Site



- **Commercial Tenancies** from Level 1 to Level 30.

  In the case of these tenancies it is noted the tenants consist of Legal and Financial companies that operate beyond the "normal" day periods. These include:

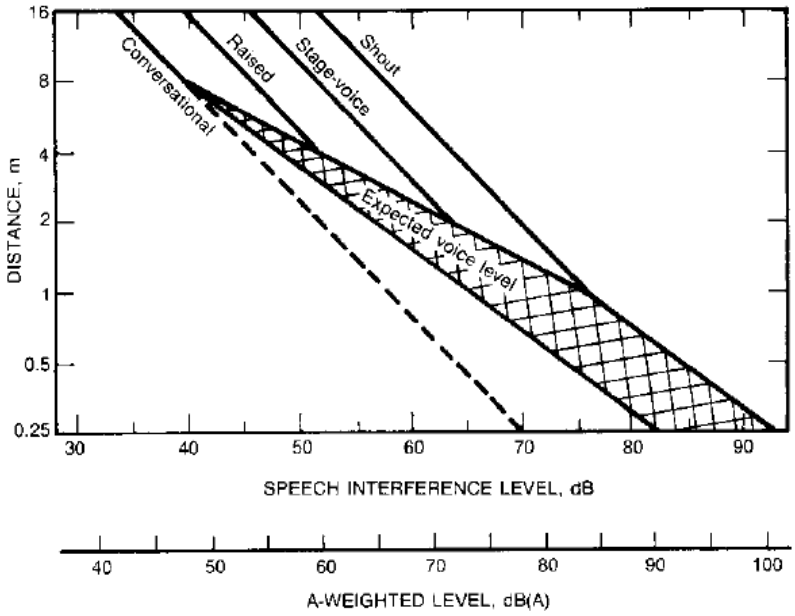
  - ❖ Corrs Chambers Westgarth Lawyers which have standard operational hours of 7 am to 7 pm with occupants regularly in the office beyond these hours.
  - ❖ QBE Insurance which as standard operational hours of 7:30 am to 7 pm with occupants regularly in the office beyond these hours.
  - ❖ Quantium – Data Analytics – the occupants of this tenancy deal with overseas and as such can be in the office outside normal office hours.

It is noted that the EIS classifies all of the building as general commercial receivers and fails to identify the above uses and therefore recognise the acoustic sensitivity and hours of operation of occupants these areas that occupy these tenancies.

3 EFFECTIVE COMMUNCIATION AND NOISE MANAGEMENT LEVELS

Apart for annoyance, construction noise can reduce effective communication. Australian Standard AS 2822 – 1985 Acoustics – Methods of Assessing and Predicting Speech Privacy and Speech Intelligibility provides guidance on the relationship between distance, speech interference and required speech effort for effectively communication.

The figure below, from the standard, shows the relationship where the higher the ambient noise level the closer persons need to be to effectively communicate. The hatched area in the figure shows the expected voice effort that is required.



NOTES:
1. The auxiliary abscissa scale, of A-weighted sound pressure level, is for the purpose of Clause 6.3.2.
2. The shaded area shows the range of expected voice levels due to the normal raising of a talker's voice in high ambient sound levels.
3. This figure has been adapted form ANSI S3.14-1977 (Ref. 2).

Fig. 1. TALKER-TO-LISTENER DISTANCES FOR JUST RELIABLE COMMUNICATION

For example, when ambient noise levels are around 60 dBA a person can effective communicate at distances up to 4 metres. However the level of voice effort would increase to a raised effort to achieve this outcome.

3.1 Construction Airborne Noise Objectives

Construction airborne noise objectives for the uses at commercial receivers have been stated as 70 dBA for the day and OOH hours which is consistent with the NSW EPA's Interim Construction Noise Guideline. However the EIS fails to recognise that the commercial building operates outside the normal daytime construction hours, as such the 70 dBA noise management level (NML) should be applied at this building for the evening and night periods.

The EIS fails to identify either the café or Sushi Restaurant which are located on the site. As

such a lower noise management level of 60 dBA is applicable at these receivers.

3.2 Ground borne Noise Management Levels

Ground borne noise management levels of 50 dBA have been applied to the project to identify potential impact at receivers. These objectives are considered reasonable for application at internal areas of the building.

In the case of outdoor areas it is noted that airborne noise will be higher and therefore assessment of this issue at these receivers is not considered appropriate.

3.3 Vibration Criteria

The vibration criteria of the EIS are considered appropriate.

4 CONTRUCTION NOISE IMPACTS

Noise impacts from construction will consist of airborne and regenerated noise from shaft and station excavation along with noise from tunnel excavation.

It would appear from the EIS that all works will be conducted on a 24 hours / 7 day a week basis and will include:

- Rock breakers,
- Blasting,
- Road headers, and;
- Tunnel Boring Machines

Of these sources it is the use of rock breakers and blasting of shafts at the northern station site that will have the greatest impact on 8 Chifley Square and its users. Whilst tunnel boring activities may be audible it is noted that the duration of this activity with be of a relatively short duration and therefore the impact from tunnel boring is likely to be acceptable.

The following conclusions can be drawn from the EIS.

4.1 Airborne Construction Noise

Airborne noise from construction works is predicted to be greater between 80 to 90 dBA at the ground level of the Building for up to 14 months during the enabling and earthworks stages of the project.

This will result in an exceedance of noise management levels at the café and Sushi Restaurant of between 20 and 30 dBA. In lower office areas of the building this translates to an internal noise level at the Northern and Western Facade of approximately 60 to 70 dBA. This will:

- Limit effective communication in the outdoor café area and Sushi Restaurant to 0.25 metres and require a shouting voice effort.
- Impact on communication on in the Foyer.
- Impact on communication in the lower levels of office areas on the western side of the building where effective communication would require raised voice efforts at distances of 1 metre.
- Impact on the internal acoustic amenity of office workers on lower levels.

It is noted that these impacts are predicted before an acoustic shed is installed over the site.

4.2 Ground borne Construction Noise and Vibration

Ground borne construction noise is presented in Appendix F of the report.

Noise from ground borne noise (due to rock breakers) is predicted to be up to 60 dBA in the office areas of the building. These noise levels will be quite noticeable and likely to affect a larger part of the building than airborne noise. In particular the impulsive nature of rock breakers makes this noise more disturbing than other more continuous sources.

Vibration from these activities is also likely to be perceptible at times at lower levels.

4.3 Construction Noise and Vibration Management Strategy.

It is noted that the significant exceedances detailed in the EIS are based on noise controls being implemented. In addition a project Construction Noise and Vibration Management Strategy is included in the EIS which proposes to address noise and vibration from construction. It is stated that General and Location Specific Construction Noise and Vibration Impact Statements (CNIS) are to be prepared for work components. However, apart from offering using blasting, there is little clarity on how the proponent is going to manage the identified impacts.

Much of the strategy is aimed at assessment, prediction, notification and monitoring which in themselves will do nothing to reduce noise and vibration impacts.

We would expect that the areas café and restaurant areas at 8 Chifley would be significantly affected. In the case of office area a lower impact can be expected, however the resultant noise levels have the potential to affect communication and normal operations of these areas for several months.

The EIS indicates that sensitive area would be the subject to a Location Specific Construction Noise and Vibration Impact Statements however given the magnitude of reported exceedances there is no confidence in the strategy that noise and vibration can be adequately managed in this area.

4.4 Discussion of Construction Noise and Vibration Impacts

Based on a review of the EIS and technical paper it is clear that there will be significant noise impacts associated with the construction of the Martin Place Station and Northern Access shaft to Martin Place Station on the subject premises. The impacts on the café and restaurant, around the northern shaft will be significant and will likely render these areas not fit for use during early stages of the project until the Acoustic shed is installed.

Based on these facts and findings it is considered that the EIS does not provide commitments that these noise impacts can be adequately managed. All that is presented is the option of blasting whilst other techniques have been dismissed due to program schedules.

Alternative excavation techniques, such as rock sawing should also be considered as a reasonable and feasible method of excavation. In addition periods of respite should also be considered.

5 CONCLUSION

A review of the Sydney Metro EIS with respect to noise and vibration impact on the 8 Chifley Place indicates that there will be significant impact on café and restaurant operations associated with construction airborne noise. The impact to these receivers has not been assessed in the EIS.

The EIS fails to identify specific uses in the commercial tower which require a higher sensitivity to intelligibility and confidentiality due to the nature and hours of the tenants operations. As a result the potential impacts to these areas have not been fully considered. Given these findings, it is likely that the commercial operation in the building will be adversely affected for several months at the beginning of the project.

It is considered that alternative construction techniques should be assessed under the category of "reasonable and feasible" consistent with the EPA's guidelines. Appropriate measures such as respite and rock saws should be considered.

24 June 2016

Lisa Mitchell
Department of Planning and Environment
23-33 Bridge Street
SYDNEY NSW 2000

Dear Lisa,

Response to Public Exhibition of the State Significant Infrastructure Application for the Sydney Metro City & Southwest - Chatswood to Sydenham
Greenwood Plaza and 101-103 Miller Street, North Sydney

This submission has been prepared on behalf of Mirvac Real Estate Pty Ltd, the manager of Greenwood Plaza and 101-103 Miller Street, North Sydney. The following sections of our correspondence provide:

- An overview of Greenwood Plaza and 101-103 Miller Street focussing on the existing pedestrian links to and from North Sydney railway station.
- A brief description of the locational context of the proposed Victoria Cross Station having particular regard to its relationship with Greenwood Plaza (and the existing underground link to North Sydney railway station).
- Proposed pedestrian links and opportunity to provide an underground link between the proposed Victoria Cross Station and North Sydney railway station via Greenwood Plaza.
- General commentary regarding the proposed construction impacts and mitigation measures to avoid unreasonable adverse effects on the amenity of the locality.

We would welcome the opportunity to discuss our submission with the Department and/or Transport for NSW in further detail.

1 Greenwood Plaza

Greenwood Plaza is a three level shopping centre located at 36 Blue Street, North Sydney. It is generally bound by Pacific Highway, Miller Street and Blue Street. The shopping centre has pedestrian entrances on both sides of the Pacific Highway (including a pedestrian overbridge and a pedestrian underpass), Miller Street, Blue Street and from North Sydney railway station. It provides a significant through-site pedestrian link from the station, with approximately 18 million visitations per annum.

The shopping centre is located at the base of the landmark commercial officer tower located at 101-103 Miller Street (the 'Genworth' tower). This building is the only premium grade office tower in North Sydney, providing over 37,550sqm of floorspace over 35 floors. The primary entrance to the office building is via Miller Street, however, direct access is also provided from Greenwood Plaza, enabling underground access to and from the station.

The proximity of the site to North Sydney railway station means that it also benefits from immediate access to bus services in Blue Street, Miller Street and the Pacific Highway. These bus services provide a transport interchange for commuters arriving or departing North Sydney railway station, as well as for direct access to the North Sydney Central Business District (CBD).

FIGURE 1 – LOCATION MAP (SOURCE: MAPS.SIX.NSW.GOV.AU, 2016)

FIGURE 2 – TRANSPORT CONTEXT (SOURCE: WWW.101MILLERSTREET.COM.AU, 2016)

2 Project Context

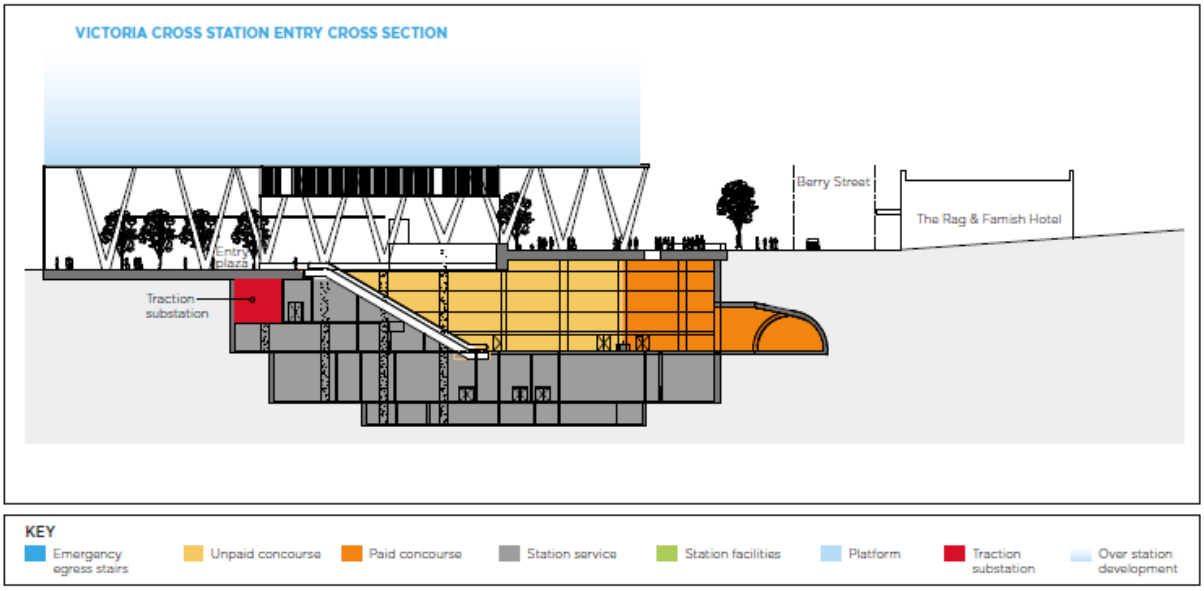
The Victoria Cross Station is to be located beneath Miller Street between McLaren Street and Berry Street. The station strategy for Victoria Cross includes:

- *Create a new transport focus in the North Sydney CBD*
- *Contribute to the attractiveness of the North Sydney CBD by adding to and integrating with the public domain*
- *Improve the permeability of the immediate station context.*

The proposed entry to the station is proposed via a pedestrian plaza opening to Miller, Denison and Berry Streets as shown in **Figure 3** and **Figure 4** below. No detailed information is currently available regarding the detailed design or built form of the above station development, which will be subject to a separate development consent process.

FIGURE 3 – LOCATION OF VICTORIA CROSS STATION (SOURCE: TRANSPORT FOR NSW, 2016)

FIGURE 4 – VICTORIA CROSS STATION ENTRY (SOURCE: TRANSPORT FOR NSW, 2016)



3 Proposed Underground Pedestrian Link to Greenwood Plaza

Chapter 9 of the EIS indicates that the station would primarily be an arrival point during the morning peak period. The 2036 forecasts provide for approximately 12,550 people exiting the station, while around 2,550 people would enter the station. The forecast arrival modes are listed as follows:

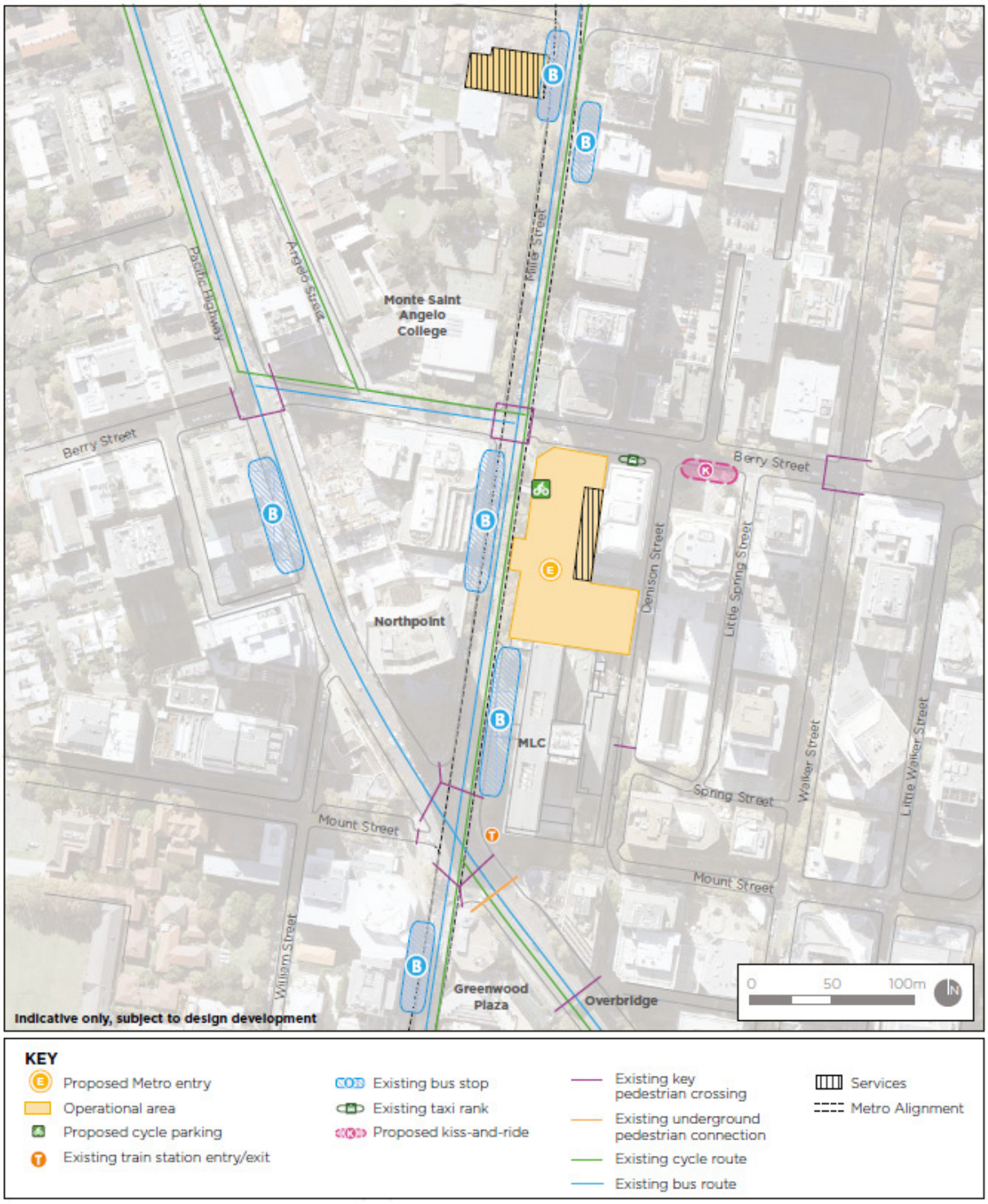
- *Walking – 67 per cent*
- *Cycling – 1 per cent*
- *Bus – 26 per cent*
- *Kiss-and-ride – 6 per cent.*

Approximately two-thirds of the morning exits are expected to travel south towards the commercial core. The balance of arrivals is expected to exit north to commercial and educational land uses (12%), east (10%) and west (12%). Based on these figures, it is expected that approximately 8,300 people will exit the proposed Victoria Cross Station to the south during the morning peak period in 2036.

The EIS states that the pedestrian movement and access to the site has been considered as a priority as part of the station design. However, it does not appear that any detailed consideration has been given to the extension of the existing underground pedestrian links to provide for a more efficient and weather-protected link to North Sydney railway station via Greenwood Plaza. This is considered to be particularly relevant considering the high proportion of pedestrian movements that are expected to be towards the south of the proposed station.

The pedestrian modelling of the station and streetscape indicates that the majority of the footpaths in the locality would operate at Level of Service B or better. However, the intersection of Miller and Berry Streets and Denison Street could pose safety risks or impacts for pedestrians and/or traffic. It is unclear as to whether this assessment has given detailed consideration to the potential impacts of the bus interchange on Miller Street, particularly during the morning and evening peaks. Further, the EIS does not provide any contingency measures in the event that Denison Street cannot be fully pedestrianised due to the existing loading arrangements.

FIGURE 5 – VICTORIA CROSS STATION TRANSPORT INTEGRATION (SOURCE: TRANSPORT FOR NSW, 2016)



The EIS also states that the existing pedestrian islands between the Pacific Highway and Miller Street to the north and south of the intersection are already experiencing high levels of pedestrian use. However, no assessment has been provided with regard to the capacity of the pedestrian intersections to accommodate the anticipated increased demand. The EIS simply states that this matter would be

investigated further during the detailed design and mitigation options would be developed in consultation with the Roads and Maritime Services and North Sydney Council.

It is unclear from the EIS as to whether or not there would be any major benefits arising from a potential rail interchange between Victoria Cross Station and the existing North Sydney railway station. The assessment of the proposed integration with the public transport network considers only the relationship with the existing bus services. No consideration has been given as to whether there would be any opportunity or benefit for customers travelling from the Central Coast to the Inner West to change railway lines at North Sydney, instead of the Sydney CBD.

Overall, it is considered that the potential extension of the existing underground link from Greenwood Plaza to Victoria Cross Station should be further investigated. The provision of an underground pedestrian link could provide for more efficient and safer pedestrian movements, having particular regard to the existing capacity issues at the intersection of the Pacific Highway and Miller Street. It could also potentially relieve the pressure on the south-bound movements along Denison Street which are expected to operate at Level of Service E. It would appear that there is no existing certainty that the road can be pedestrianised to mitigate the potential safety issues and as such, it is considered appropriate to consider alternative options, such as an underground connection.

4 Construction Impacts and Mitigation Measures

Greenwood Plaza and 101-103 Miller Street are located approximately 150 metres from the Victoria Cross Station construction site and approximately 435 metres from the northern construction site. Accordingly, it is less likely that these assets would be directly affected by the potential environmental issues arising from the proposed demolition, excavation and construction phases of the Sydney Metro Project.

However, Mirvac requests that all efforts are sought to minimise the potential disruption to the North Sydney CBD whilst the works are underway. In particular, it is requested that detailed consideration is given to the potential impacts on pedestrian movements along Miller Street, including the existing bus interchange and the underground pedestrian link to North Sydney railway station via Greenwood Plaza.

It is also requested that comprehensive staging plans be made available to Mirvac in advance of the project works. This could be actioned by way of an Owners Group for the Victoria Cross Station. The Owners Group would provide for effective two-way communication during the various phases of the development. The group would meet on a regular basis and be provided with ongoing information regarding imminent works, road closures, pedestrian impacts and general updates on the progress of the project.

Mirvac has been directly involved with the Owners Group associated with the George Street Light Rail Project having regard to the potential implications for the Metcentre at 60 Margaret Street and their new commercial office building at 200 George Street. This process has been very successful in developing an effective communications plan, particularly with regard to the existing building occupants at 60 Margaret Street. Accordingly, it is Mirvac's strong view that a similar approach should be adopted with regard to the Sydney Metro Project.

5 Summary

Overall, Mirvac is generally supportive of the Sydney Metro City & Southwest, however, further detailed consideration should be given to the provision of the extension of the existing underground pedestrian link from Greenwood Plaza to Victoria Cross Station.

The proposed underground pedestrian link would provide for more efficient pedestrian movements and increased pedestrian safety. It could address the potential exacerbation of existing capacity issues at

the intersection of the Pacific Highway and Miller Street, as well as the predicted safety issues on Dension Street in the event that it cannot be fully pedestrianised. It could also improve the connection with the existing North Sydney railway station, offering a non-CBD rail interchange for customers travelling from the Central Coast to the Inner West.

Further, Mirvac wishes to be kept informed regarding the progress of the Sydney Metro Project throughout the approvals process and the construction programme, in the event that the project is approved. It is strongly recommended that an Owners Group be established to provide for effective two-way communication throughout the life of the project, similar to the Owners Group for the George Street Light Rail Project.

We would welcome the opportunity to discuss our submission with the Department of Planning and Environment and/or Transport for NSW in further detail. Please do not hesitate to contact me on 8233 9931 to discuss.

Yours sincerely,

Jennifer Cooper
Director

Name: Ian Curdie
Organisation: Lavender Bay Precinct (Secretary)

Lavender Bay, NSW
2060

Content:
Lavender Bay Precinct wishes to lodge a submission to the EIS. Please see attached.
thank you, Ian Curdie
Secretary.

Artwork by renowned local artist Peter Kingston AM

North Sydney Local Government Area

Lavender Bay Precinct

Chair: Robert Stitt
7 Warung St, McMahons Point. 2060
stittqc@sevenwentworth.com.au

Secretary: Ian Curdie
12/32 Lavender St, North Sydney. 2060
icurdie@bigpond.com.au

Submission to Sydney Metro EIS 25 June, 2016
SSI 15_7400

I am writing on behalf of the Lavender Bay Precinct, a group of interested stakeholders who meet under the auspices of North Sydney Council.

Precinct supports improvements to public transport. However, we have a number of concerns relating to the Sydney Metro Environmental Impact Statement to which we wish to respond.

Precinct's main concerns are about the effects we will experience with the excavation and re-filling of the access pit in Blues Point Reserve.

1. The EIS shows no remedies to contain the noise and dust created. The access pit, if needed, should be contained in an "acoustic shed" which should contain dust created and protect residents from noise.
2. The EIS refers to removal of spoil from McMahons Point by road. This is unacceptable. Removal (and replacement) of spoil as well as any other heavy vehicle movement now proposed should be substituted with the movement achieved by barge, should an excavation pit be needed.
3. Alternatives to an access pit have not been addressed. These might include underground assembly of the tunnel cutting head and discarding the cutting head underground when finished. Such alternatives would mean no surface disruption, preservation of residential amenity and retention of access to public reserves, especially during harbour events.

Precinct is also concerned about Loss of Parking. How this loss is to be borne is not mentioned. Parking should be provided on site. An adjoining property at 1 Henry Lawson Avenue, currently zoned Open Space, should be acquired for parking purposes and returned to the public domain when works in Blues Point Reserve are complete.

There are presently a number of significant trees in Miller and Berry Streets in the vicinity of the proposed Victoria Cross station site. The EIS says trees will be removed without saying which ones or how many. We wish all trees be retained and protected and that they are included in the rebuilt streetscape.

At the conclusion of the works, Sydney Metro should work with North Sydney Council (or whatever local authority is then in existence) to reinstate Blues Point Reserve, reinstate heritage style bus

shelter and reconfigure the intersection of Henry Lawson Ave and Blues Point Road to provide safer pedestrian crossings.

Thank you for the opportunity to comment.

Yours faithfully,

Ian Curdie
Secretary, Lavender Bay Precinct

Name: Jim Donovan
Organisation: Action for Public Transport (NSW) Inc. (Secretary)

Haymarket, NSW
1240

Content:
See attachment

Action for Public Transport (N.S.W.) Inc.

APT NSW

P O Box K606
Haymarket NSW 1240
27 June 2016

NSW Department of Planning and Environment
23-33 Bridge Street
SYDNEY
email: plan_comment@planning.nsw.gov.au

Submission on SSI 15_7400 EIS

Sydney Metro Chatswood-Sydenham

Action for Public Transport (NSW) is a transport advocacy group which has been active in Sydney since 1974. We promote the interests of beneficiaries of public transport; both passengers, and the wider community. We make the following submissions on the EIS. We **oppose** aspects of the proposal.

1. The proposal is called Sydney Metro but that is a misnomer.

   Metro systems are supposed to facilitate shorter trips around the CBD and inner suburbs. They use trains with limited seating, correspondingly generous standing room and multiple doors in every carriage. Metro trains travel quite short distances between stops. A typical average inter-stop spacing would be about 1 kilometre although many systems have closer stations (Paris Metro averages 700 metres). Metro systems have multiple lines, with interchange stations designed to make line changing an efficient process for large numbers of passengers.

   Sydney badly needs a metro system; the new line should be designed to address that need. A good start would be a plan showing this first metro line among other lines, with interchanges, and adequate stations for the huge unserviced gaps in our inner railways. This need not degrade the service planned for Waterloo.

   Inner areas of Sydney that need underground rail service:

   - Neutral Bay
   - Haymarket
   - Woolloomooloo
   - Taylor Square and Darlinghurst
   - Paddington
   - University of Technology and Broadway
   - Ultimo
   - The Bays
   - Balmain
   - Forest Lodge and most of Glebe
   - Sydney University around Eastern Avenue
   - RPAH
   - Annandale

   Middle-ring areas of Sydney that need underground rail service:

   - Lane Cove
   - Gore Hill medical, educational and media facilities
   - Northbridge and Willougby
   - Cremorne
   - Mosman
   - Woollahra
   - Bellevue Hill
   - Charing Cross
   - the region east of Sydenham [unless the Eastern Suburbs railway is completed at least as far as Kingsford]
   - Maroubra
   - Rosebery
   - Marrickville Metro shopping centre and Enmore
   - North Marrickville
   - Leichhardt
   - Drummoyne
   - Fivedock
   - Haberfield
   - Ashbury
   - Croydon Park

- South Strathfield and Belfield
- Putney
- Gladesville
- most of Ryde

The EIS hints at future metro expansion in just two ways. One is a possible later extension from Bankstown to Liverpool. The other, on page 122, is a mention of stub tunnels to be built south of Waterloo and north of Victoria Cross. We are not told whether these stubs are to point east or west so perhaps the EIS's authors don't think they matter. And the stubs are not shown on any maps in the EIS.

2. Neither the Rouse Hill leg nor the Bankstown leg will require as many trains as the Harbour crossing is capable of carrying. The capacity is claimed to be 30 eight-car trains per hour whereas only 20 six-car trains are to run. Harbour crossings are expensive and should be fully utilised. The EIS should show how this surplus capacity is to be used.

   We understand that the worst capacity shortage on Sydney's suburban railway will be the western lines, and in particular the lines between Strathfield and Central. Easing that shortage is an obvious possible use for a branch of this railway or perhaps a second Metro line. The EIS however gives no consideration to the matter.

3. The Macquarie line is to be shut down for seven months' conversion in 2018-2019. Rail services will be replaced by buses in peak-hour traffic which will be much slower than trains and less comfortable. The passengers won't be happy. The resentment generated could well make shutting down the Bankstown line politically impossible, especially as the platform straightening required at most stations will amount to additional disruption. Also, travellers might realise that the proposed Bankstown conversion would result in permanent disadvantage from the extra changing required by passengers travelling through Bankstown on trips such as Liverpool-Central or Yagoona-Punchbowl. Therefore, planning of this stage of Sydney Metro should not assume the line will necessarily continue west of Sydenham.

   It is noteworthy that the EIS recognises, in the paragraph about stub tunnels on page 122, that construction disruption should be minimised.

4. The Metro should also be built in a way that does not degrade rail services to Erskineville and St Peters or anywhere else. This objective should be spelled out in the EIS. Sydney Metro should enhance the Sydney Trains network, not break it up.

5. Because the area south of the CBD is so far from the Cudgegong Road depot, there should be a facility for stabling metro trains within closer reach of the southern terminus. Otherwise, overnight shutdowns and morning startups will be lengthy procedures that constrain the overnight maintenance window.

6. We are well aware of the plan to double the population around most of the Bankstown line stations. We think the best application of Sydney Metro to cater for the resultant additional demand for travel would be a completely new south-west line from the CBD, possibly extending as far as Liverpool.

7. No business case for the proposed Metro has been published. It should be - billions of public dollars are to be spent. The project should not proceed unless and until there is a business case.

8. No seating plan or carriage dimensions have been released for the carriages to be used in the railway. The EIS is incomplete without an assessment of passenger comfort.

9. There are no plans showing how the huge numbers of passengers which the Metro claims to be able to carry can get into and out of the stations.

For the reasons given above, we submit that the proposal should be rejected and redesigned to better suit Sydney's needs. Public participation should be a core part of the process.

Jim Donovan
Secretary
Action for Public Transport (NSW) Inc.

Name: Graham Quint
Organisation: Director - Advocacy (2001)

Sydney, NSW
2001

Content:
27 June 2016
Major Project Assessments
NSW Planning & Environment
23-33 Bridge St
SYDNEY NSW 2000

Major Projects Assessment,
State Significant Infrastructure - Sydney Metro City & Southwest - Chatswood to Sydenham
The National Trust of Australia (NSW) lodges its strong objections to the proposal within the Sydney Metro City & Southwest - Chatswood to Sydenham State Significant Infrastructure Project to demolish the building at 7 Elizabeth Street, Sydney for the construction of the proposed Martin Place Station.

The Apartment Building at 7 Elizabeth Street, Sydney was listed on the National Trust Register in February, 2004 for its historic significance as the only residential flat building constructed in the City of Sydney during the 1930s to have survived, still fulfilling its function as a residential building.

The building is aesthetically significant because of its associations with two prominent and influential designers, architect Emil Sodersten and interior designer Marion Hall Best. Emil Sodersten was one of the most important architects to have practiced in New South Wales during the 1920s and 1930s. Famous for the residential flat buildings that were designed in his office, this is the only one known to have been constructed in the City of Sydney and shows the influence of modernist European architecture on his work. Its interiors were an early and well publicized example of the work of Marion Hall Best, who went on to exercise a great influence on interior design in this state during the three decades after World War II.

Although it has had some modifications the building has retained a relatively large amount of original building fabric. Original furniture is also known to exist within the building and it is also understood that some of the furnishing fabrics still survive.

In the Trust's view, this building should be retained for its heritage significance to the City of Sydney.

Yours sincerely

Graham Quint
Director, Advocacy

Name: John Bignucolo
Organisation: EcoTransit Sydney (Secretary)

Milsons Point, NSW
1565

Content:
Please see the attached submission.

EcoTransit Sydney
PO Box 630 Milsons Point
NSW 1565
ecotransit.org.au

A submission in response to

EIS-Application Number: SSI 15_7400

Sydney Metro & Southwest – Chatswood to Sydenham

Prepared by EcoTransit Sydney
24 June 2016
Authorised by the Executive Committee of EcoTransit Sydney

The submission consists of 7 pages.

Contact person for this submission:

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Contact details for EcoTransit Sydney:

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Disclosure reportable political donations

EcoTransit Sydney has **not** made a reportable political donation.

We have read the Department's Privacy Statement and agree to the Department using our submission in the ways it describes. We understand this includes full publication on the Department's website of my submission, any attachments, and any of the personal information in those documents, and possible supply to third parties such as state agencies, local government and the proponent.

John Bignucolo

Secretary
EcoTransit Sydney
E: contact@ecotransit.org.au

Sydney Metro City & Southwest-Chatswood to Sydenham

A Submission on EIS-Application Number: SSI 15_7400

EcoTransit Sydney objects to the building of the City & Southwest metro on the following grounds:

- It is clear from reading the EIS for the City and Southwest Metro that the line is not primarily being built to increase the capacity and coverage of Sydney's rail network.
- It will serve no new suburbs with the exception of Crows Nest and Waterloo and these two suburbs are within walking distance of major stations.

The question then has to be asked: "What is the real reason to build a metro line along the chosen route?" The answer is that the New South Wales Government is building the metro to justify the redevelopment of large tracts of the CBD and the suburbs.

If the Sydney Metro is completed as proposed, the only new suburbs to receive a rail service will those from the terminus at Cudgegong Road to Cherrybrook. This is an extremely poor return on the expenditure of billions of dollars of public funds.

Destruction of Communities

The decision to build a station at Waterloo, instead of at Sydney University, for the purpose of facilitating the redevelopment of public housing into expensive private apartments will destroy the local community.

The station at Waterloo can only be justified if the population density is dramatically increased by redevelopment (progressing rapidly to overdevelopment) of the Waterloo area. Sydney University is one of the largest "trip generators" in Sydney and was a more logical choice for the location of a station.

The Government maintains that current residents of Waterloo will be offered new accommodation in the area after redevelopment. This will not restore the existing community and will require tenants to move to areas well away from their friends and services that they rely on. Many of these residents are vulnerable and it is difficult to envisage that after suffering one major upheaval in their lives, that they will want to undergo another one after three years and move back to Waterloo.

EcoTransit Sydney is concerned that the overdevelopment of Waterloo with high-rise apartment blocks is only a foretaste of what can be expected if the Bankstown Line is converted for the Metro.

An Alternate Heavy Rail Metro Route

When major public transport projects are being planned in countries that use a rational planning process the intended outcome is to supplement and improve existing transport infrastructure. Unlike the Sydney Metro they do not seek to replace it with a lesser service nor unnecessarily duplicate it.

In the case of the Sydney Metro, and contrary to sound planning practice, this is what is being proposed. The expensive outcome will be the cannibalisation of existing rail services and the misplaced duplication of others.

The only section of the route that is completely new is the section from Cudgegong Road to Epping. EcoTransit Sydney has already been critical of the decision to build a station at Waterloo instead of the Sydney University, however, the entire proposed route from Epping to Bankstown via the CBD does nothing to provide rail services to suburbs that currently don't have one.

EcoTransit Sydney has identified an alternate route, which would not only provide a rail service to suburbs that don't currently have adequate public transport, but would also have interchanges with all of the radial heavy rail lines that extend from the CBD. This route would be a valuable addition to Sydney's rail network and provide a "cross city line," enabling commuters to cross Sydney, by-passing the CBD.

The route identified by EcoTransit Sydney diverts the Metro south from Epping, through Ryde, Gladesville, Abbotsford, Ashfield, Campsie, Kingsgrove, Hurstville and terminating at Blakehurst. The full list of proposed stations is:

Epping*
Balaclava Road
Eastwood Light Rail (interchange with another EcoTransit proposal)
Denistone East
Top Ryde
Victoria Road
Gladesville
Gladesville Hospital
Abbotsford Bay
Five Dock
Ashfield*
Ashbury
Campsie*
Clemton Park
Kingsgrove*
Bexley
Hurstville*
Blakehurst

* Indicates interchange with existing heavy rail lines.

Please see the attached map for the route in relation to the suburbs through which it passes.

There is the possibility of further extension of the line to Miranda, where there would an interchange with the Cronulla Line. Stations would be located at Sylvania, Port Hacking Road and Miranda.

The tunnels for this route are not significantly longer than the proposed route, via the CBD to Bankstown, but it does avoid a deep harbour tunnel to access the CBD. The diameter of the tunnels south of Epping should be constructed to 6.5 metre diameter, to allow for future upgrading to double deck trains when demand warrants it.

To make the trains more comfortable for the travelling public, the single deck trains on order for the Metro could be fitted or retro-fitted with transverse seating, increasing the seating capacity by at least fifty per cent.

Increasing Capacity Across the Network

The following quote is taken from Sydney Metro's "Have Your Say" brochure:

"Sydney Metro, together with signalling and infrastructure upgrades across the existing Sydney rail network Metro, will increase the capacity of train services entering the CBD- from about 120 an hour to 200 services beyond 2024. That's an increase of up to 60 per cent capacity across the network to meet demand."

This wording seems to be deliberately written to mask the actual impact of the proposed metro on the networks capacity. It does not detail what projected capacity increase can be attributed to the Metro and what increase can be attributed to the upgrades of the existing network.

In questioning Michael Lloyd, a representative of Sydney Metro, he informed us that the maximum number of trains per hour would be 30 or one train every two minutes, in the peak period. The same frequencies can be achieved with double deck trains, offering a higher standard of comfort and carrying more passengers.

Double deck trains have more than twice the seating capacity of metro trains and will run with 70% of passengers seated when fully loaded, where as the metro will run with 70% of the passengers standing, when fully loaded.

At 30 trains per hour (one every two minutes), the metro can carry 36,000 passengers per hour. If the line were to be built and operated with double deck trains, the capacity would be 45,000 passengers per hour, with the same frequency. The frequency of one train every two minutes is possible with double deck trains and as is being done in Paris, on the RER network.

Building a second harbour crossing, fully integrated with the existing network, combined with the planned upgrades, would increase the capacity across the network by more than 60 per cent.

A Cheaper Alternative

The projected cost of the "City & Southwest" metro of almost $13 billion is a high price to pay for a sub-standard rail line. The Government has not yet explained how the project will be funded, saying only that $7 billion will be allocated from the sale of the "poles and wires" i.e. the electricity grid. The remaining $6 billion can only come from massive high-rise apartment development around the stations at Crows Nest, Victoria Cross, Martin Place, Waterloo and from Sydenham to Bankstown.

Instead of investing this large sum of money into a project that won't achieve the capacity increase that its proponents claim, the money would be better spent on expanding the "heavy rail" network and upgrading the signalling.

There does need to be a second rail crossing of Sydney Harbour to increase capacity across the network but this can best be achieved by building two more tracks from Chatswood to Sydenham and Stanmore, via Central, utilising the Harbour Bridge. The Bridge was designed to take four tracks and taking back the Cahill Expressway lanes for rail and utilising other infrastructure that is currently unused, the "heavy rail" alternative could be built for less than $4 billion. This would be less than one third of the cost of the proposed City & Southwest metro.

This combined with upgrade to the signalling on the Bankstown Line, frequencies of one train every two minutes would be possible, with double deck trains. The capacity of this alternative line would 25% higher than that of the metro.

A video[1], "Two more tracks: How to boost Sydney's commuter rail capacity," provides an overview of this alternate proposal.

Emergency evacuation

There are severe safety concerns in the tunnels from Chatswood to Crows Nest, Victoria Cross to Barangaroo and Waterloo to Sydenham. The proposed evacuation procedure, through the end doors to track level does not cater for people in wheel chairs or those with mobility problems. In addition, evacuation via this method will be very slow and with no on-board staff, it could lead to serious stress to passengers and to loss of life in extreme events.

1 https://www.youtube.com/watch?v=Mu6JuXYPVXY

Conclusion

The City & Southwest metro is an inferior and sub-standard rail line when compared to the current Sydney Rail Network and the modern double deck carriages that are used to provide the service.

It is not only inferior, it is also much more expensive than the alternate outlined above. The cost differential is on the order of $8.5 billion, money that could be far better utilised in expanding and improving the existing network and also rapidly expanding the budding light rail network.

Safety is also a concern, as the small tunnel size does not permit vestibule height walkways throughout the length of the tunnels. This could lead to injury and even loss of life in an extreme event such as an on board fire. This combined with no on board staff to provide direction and assistance in the event of an emergency could be catastrophic.

Based on the information that has been presented to the public, one can reasonably conclude that the Sydney Metro, including the City & Southwest section, is not really about providing improved public transport. It is about providing development opportunities to developers, including MTR Corporation, and turning large tracts of Sydney into MTR's version of Hong Kong.

EcoTransit Sydney opposes the construction of the City & Southwest metro and urges the Government to build rail transport infrastructure that:

- Is compatible with, and configured for the existing Sydney rail network;
- Uses the existing comfortable and reliable double deck carriages that are currently used by Sydney's rail commuters
- Passes through suburbs that currently do not have a service, instead of cannibalising two existing rail lines for the sake of providing windfall profits for developers.


To Central Coast & Newcastle Line
North Shore, Northern & Western Line T1
Richmond
East Richmond
Clarendon
Windsor
Mulgrave
Vineyard
Riverstone
North Shore, Northern & Western Line T1
Berowra
Mount Kuring-gai
Mount Colah
Asquith
Hornsby
Normanhurst
Thornleigh
Pennant Hills
Beecroft
Cheltenham
Waitara
Wahroonga
Warrawee
Turramurra
Pymble
Gordon
Killara
Lindfield
Roseville
Chatswood
Artarmon
Naremburn
St Leonards
North Sydney
Wollstonecraft
Waverton
Milsons Point
Balmain
Circular Quay
Palm Beach
Narrabeen
Warringah Mall
Manly
Seaforth
North West Line T6
Cudgegong Road
Rouse Hill
Kellyville
Bella Vista
Norwest
Showground
Castle Hill
Cherrybrook
North West Line T6
Cumberland Line T5
Schofields
Quakers Hill
Marayong
Epping
Epping West
Macquarie University
Macquarie Park
North Ryde
Carlingford
Telopea
Dundas
Eastwood
Denistone
West Ryde
Ryde
Gladesville
Gladesville Hospital
Rydalmere
Meadowbank
North Parramatta
Rhodes
Concord West
North Strathfield
Abbotsford
Olympic Park
Pippita
Lidcombe
Ashfield
Five Dock
University
Central
Redfern
Wynyard
Martin Place
Town Hall
St James
Museum
North Shore, Northern & Western Line T1
To Blue Mountains Line
Emu Plains
Penrith
Kingswood
Werrington
St Marys
Mount Druitt
Rooty Hill
Doonside
Blacktown
Seven Hills
Toongabbie
Pendle Hill
Wentworthville
Westmead
Parramatta
Harris Park
Granville
Auburn
Merrylands
Guildford
Yennora
Fairfield
Canley Vale
Berala
Flemington
Homebush
Strathfield
Burwood
Croydon
Summer Hill
Lewisham
Petersham
Stanmore
Newtown
Macdonaldtown
Erskineville
St Peters
Sydenham
Stadiums
Waterloo
Green Square
Alexandria
Mascot
Domestic Airport
International Airport
Tempe
Wolli Creek
Arncliffe
Banksia
Rockdale
Bardwell Park
Bexley North
Kogarah
Carlton
Allawah
Hurstville
Penshurst
Mortdale
Oatley
Como
Jannali
Sutherland
Loftus
Engadine
Heathcote
Waterfall
Cross City Line T7
Bonnyrigg
Badgerys Creek
Cabramatta
Warwick Farm
Liverpool
M5 Park & Ride
Casula
Glenfield
Leppington
Edmondson Park
Macquarie Fields
Ingleburn
Minto
Leumeah
Campbelltown
Cumberland Line T5
Airport, Inner West & South Line T2
Macarthur
Carramar
Villawood
Leightonfield
Chester Hill
Sefton
Yagoona
Birrong
Regents Park
Berala
Enfield
Mount Lewis
Belmore
Punchbowl
Wiley Park
Lakemba
Bankstown
Bankstown Airport
Clemton Park
Hurlstone Park
Canterbury
Campsie
Ashbury
Dulwich Hill
Marrickville
Sydenham
Turrella
Kingsgrove
Beverly Hills
Narwee
Bexley
Holsworthy
East Hills
Panania
Revesby
Padstow
Riverwood
T3 City Circle Line
Cross City Line T7
Eastern Suburbs & Illawarra Line T4
Kirrawee
Gymea
Miranda
Sutherland Hospital
Caringbah
Woolooware
Cronulla
Eastern Suburbs & Illawarra Line T4
Wollstonecraft
Kings Cross
Edgecliff
Woollahra
Bondi Junction
Bellevue Hill
Bondi Beach
Bronte
Waverley
Randwick North
Randwick
Coogee Beach
UNSW
Kingsford
Maroubra Beach
La Perouse
T1 North Shore, Northern & Western Line
T2 Airport, Inner West & South Line
T3 Airport, Inner West Bankstown Line
T4 Eastern Suburbs & Illawarra Line
T5 Cumberland Line
T6 North West Line
T7 Olympic Park Line
Stop
Interchange
Interchange
End of line
To Southern Highlands Line
To South Coast Line

Name: karen tilker
Organisation: Ambient Psychology (Director)

Crows Nest, NSW
2065

Content:
To Robin Beard or which councillor represents tenants regarding the above issue

My name is Dr. Karen Tilker and I am one of 4 directors of Ambient Psychology services housed at 35 Hume Street. We have been tenants there for 3 years. Two of our clinical rooms (with balconies) face Beaurepairs located on Clarke and Hume streets. I ,only by chance, heard from my dentist,(who has his office on Clarke Street)that he was concerned about the Crows Nest redevelopment project slated to begin next year inclusive of a train station and tunnel. His nderstanding was that the actual train station was to be housed on the corner of Hume and Clarke Street. I then called North Sydney Council and spoke to a representative from the Council (I believe her name was Robin Beard) who indicated that the Dept of Transport planned to acquire Bearepairs, and, should the plan go forward, demolition would start during the first quarter of 2017 at the Beaurepairs current site. It is my thought that we, as tenants, should have been informed by the owners of the discussions around this project as it will directly effect our business. The owners, neither past nor present, have notified us that this proposal was in train or that there were meetings at which we could have input. Several months ago we acqiured new owners and our lease is coming up for renewal at the conclusion of the year. Perhaps this fact may have something to do with this level of non disclosure.

We are a group of clinical psychologists which includes at least 7 people. We need a quiet environment from which to work as we conduct both assessments and therapy. The offices are occupied on a full time basis. Some of our interventions include hypnotherapy and mindfulness to say nothing of the need for ongoing quiet environment in which to discuss painful issues to these clients. Many of us work with clients that have post traumatic stress disorder, a symptom of which is reactivity to loud noise (particularly DVA clients who may associate loud noise with being deployed to war zones).

Given that your proposed plan is new information to us, we would like to understand the enviornmental impact that this demolition and construction will have upon us and those we support. The noise level may not be nmanageable and will affect the desireability of the site to clinicians that are casual renters.

I had a discussion with Robin last thursday and she indicated that we needed to write a letter by 27June. I would like some representative from the Council to come to our rooms and describe the construction project, impact and stages, and how the noise level will be managed. I would also like to understand if there is a mandate for landlords requiring tenants to be informed of an action which will directly affect our business.

I can be reached on my mobile 0404074041. It is sometimes turned off but please leave a message and I will return the call.

Sincerely,

Karen Tilker

Name: Kate Smith
Organisation: 10-12 Clarke St, Crows Nest SP62905 Executive Committee (Secretary)

Crows Nest, NSW
2065

Content:
Submission attached

SUBMISSION TO THE NSW DEPARTMENT OF PLANNING AND ENVIRONMENT RE THE ENVIRONMENTAL IMPACT STATEMENT IN RESPECT OF METRO CITY

By

10-12 CLARKE ST, CROWS NEST SP62905 OWNERS CORPORATION

BACKGROUND

Lawson House, 10-12 Clarke St, Crows Nest, is situated on the corner of Clarke and Hume Streets in Crows Nest. It is directly across the road from the proposed Southern entrance to the Crows Nest Metro Station.

Lawson House is a six storey strata building with five retail shops on the ground floor fronting Hume and Clarke Streets and 22 commercial suites in the five stories above. In all, there are 23 lot owners in the strata scheme, comprising the Owners Corporation (OC).

SUPPORT

The OC supports the development of the Metro City line and, in particular, the creation of a Metro Station at Crows Nest, and agrees with the benefits of the project outlined in Chapter 3 of the Environmental Impact Statement (EIS).

The OC, however, has a number of concerns about the construction phase of the project and the anticipated impact on Lawson House, its owners and tenants. These concerns are outlined below.

Please also note that one of the owners, Labsonics Australia Pty Ltd, has lodged has lodged its own separate submission outlining its special sensitivity to noise and vibration and its specific concerns.

CONCERNS

Features of Lawson House

The location of Lawson House so close to the Metro Station means that it will be "sensitive receiver" – ie the impact of the disruption, airborne noise, ground-borne noise and vibration associated with construction phase will be at the highest level.

Although a commercial building, the nature of some of the businesses operating in the building will require mitigation strategies equivalent to or greater than those of a residential building. Of particular note:

- Two of the businesses are sound recording / post production studios which require a silent, vibration-free environment in which to operate. Each business has invested very substantial sums in modifying their business spaces to achieve that environment. The noise and vibration associated with tunnel-boring machines, blasting, roadheaders, rock breakers, pile drivers, vibratory rollers, excavators and heavy vehicles will have an adverse impact on these businesses – as recognised in section 10.2.2 of the EIS.
- The EIS assumption for assessing impacts of the project on commercial buildings is that they operate only during the daytime (7am – 6pm), whereas for residential buildings, the impacts are assessed for day (7am – 6pm), evening (6pm – 10pm), night (10pm- 7am) and daytime out of hours (i.e Saturdays 1pm to 6pm and Sundays 7am to 6pm). However, a survey of

Lawson House businesses has shown that a number of them typically operate from 8am until as late as 11pm Monday to Friday, and from 8am to 8pm Saturdays and Sundays. These include a dance instruction studio and a professional training business. Some businesses, because of their project-related work, require access to the building at all hours. Accordingly, mitigation measures will be required to protect those businesses during those extended hours.

Our comments on specific sections of the EIS follow:

Chapter 8: Construction Traffic & Transport

8.4.8: Crows Nest Station Vehicle movement forecasts and routes

We understand that the temporary closure of Hume St for six months will affect the section between the Pacific Highway and Clarke Lane. Lawson House has two carparks – a lower (ground level) carpark with entry and exit on Hume St between Clarke Lane and Clarke St; and an upper (first floor) carpark with entry and exit from Clarke Lane. ***Please confirm*** that the use of these carparks will not be impeded by the road closure.

For the period when Hume St is *not* closed, ***please provide details*** of the traffic control measures that will be in place (eg Stop / Slow signage etc).

Noise & Dust mitigation: Three Lawson House retail business front Hume St. We understand that that part of Hume St will not be closed at any point of the construction phase. However, these businesses will be directly exposed to noise from the demolition, construction and heavy vehicle movements and to the risk of dust from the site. Similarly, the lower and upper carparks (the latter with partially open brick walls), and the cars within them, will be exposed to the risk of dust from the site. ***Please provide details*** of proposed sound mitigation at ground level and dust mitigation at ground and first floor levels.

Chapter 10 Construction Noise & Vibration

10.2.1 Construction noise metrics

This section describes the approach for assessing the Rating Background Level (RBL) and Noise Management Level (NML), but only for *residential* receivers. Given the presence of two sound recording / post production studios in the building, and the fact that two other businesses, (the dance instruction studio and the professional training business), have clients on premises until 11pm weeknights and over the weekend, we consider that similar RBL and NML assessments should be conducted for Lawson House. ***Please confirm*** that this will occur.

10.2.2 Sensitive receivers

We note that the EIS confirms that "recording studios are *more sensitive to vibration and ground-borne noise than residential premises*" and that recording studios are in the "special sensitive" category. This confirms the need for RBL and NML assessments as requested above.

10.2.3 Construction noise management levels

Airborne construction noise

We note that the EIS provides:

"The Interim Construction Noise Guideline (ICNG) (Department of Environment and Climate Change, 2009a) sets out ways to deal with the impacts of construction noise on residential receivers *and other sensitive land uses* by presenting assessment approaches that are tailored to the scale of construction projects. The ICNG sets out a quantitative assessment method involving predicting noise levels at sensitive receivers and comparing them with the proposal specific NMLs established for noise affected receivers. *In the event that construction noise levels are predicted to be above the NMLs, all feasible and reasonable mitigation and work practices are required to be investigated to minimise noise emissions.*"

"Other noise-sensitive businesses require separate project specific noise goals. The Interim Construction Noise Guidelines recommends that the internal construction noise levels at these premises are determined based on the 'maximum' internal levels presented in AS 2107. These recommended 'maximum' internal noise levels are provided in Table 10-4."

Table 10-4 provides that the Recommended 'Maximum' Internal LAeq for recording studios when in use is 25dBA.

Please confirm that this assessment will be made in respect of the two sound recording / post production studios in Lawson House.

Ground-borne construction noise

This discussion in the EIS deals only with residential receivers. ***Please provide details*** of the assessment and mitigation processes for commercial sensitive receivers, particularly those with operating hours extending into the evening and night periods, and with businesses (such as recording studios) that are more sensitive that residential receivers – in particular, Lawson House.

10.2.4 Construction ground-borne vibration

Please confirm how the "conservative vibration damage screening level" is assessed for Lawson House, what mitigation measures will be in place to guarantee that level is not exceeded and what the consequences will be if it transpires that, during construction, the level is exceeded, viz. will an assessment of Lawson House's existing structural elements be implemented to determine the vibration criteria ('g' force - m/sec^2), above which irreversible/catastrophic damage will occur to the existing Lawson House structural elements?

10.2.5 Blasting

We note that the EIS sets upper limits of vibration and overpressure states that these limits "are intended to target the protection of building structures from cosmetic damage rather than human comfort criteria as construction works are considered short-term." This suggests that there is no particular attention given to the effect of blasting on businesses operations (whether retail, commercial office or particularly sensitive businesses such as sound studios). ***Please confirm*** that that is the case. ***Please confirm*** whether there is an option to schedule blasting (perhaps by reference to particular hours or days) to avoid or minimise the impact on these businesses.

10.4 Potential impacts

We note that the EIS proposes:

- Standard attenuation acoustic sheds at the Crows Nest Station site and noise barriers (indicatively three metres high) around all construction sites

- The same noise outcome may be achieved through alternative measures, such as acoustic panels over the station excavations.
- The specific noise mitigation measures would be determined during detailed construction planning taking into account construction program, construction working hours and construction traffic management in accordance with the Construction Noise and Vibration Strategy
- The predicted noise level exceedances at the nearest sensitive receivers (ie area D including Lawson House) of:
    - Demolition & site establishment - Day: NML exceedance of > 20dB (ie highest exceedance rating)
    - Earthworks – Day: NML exceedance of > 20dB (ie highest exceedance rating)
    - Acoustic shed construction – Day: NML exceedance of < 10dB (ie minor exceedances)
    - Excavation & structural works Day: NML compliance

      DOOH: NML compliance

      Evening: NML compliance

      Night: NML compliance

      Sleep: NML compliance
    - Building Construction – Day: NML exceedance of between 10 & 20 dB (ie moderate exceedances)

The two sound recording / post production studios are on the fifth floor of Lawson House. One faces Clarke St but the other faces Clarke Lane, immediately adjacent to site stretching South along the Pacific Highway from Hume St. This exposes the studio to otherwise unimpeded noise from that site. Given the high expected exceedances, ***please confirm*** that acoustic sheds will be erected over that site and also along all of the site on Hume St from the Pacific Highway to Clarke St.

Ground-borne noise

- During the daytime period seven buildings (four commercial buildings located to the east of the site, one residential building located to the east of the site and two residential buildings located to the south of the site) are predicted to have ground-borne noise levels potentially higher than 75 dBA for several floors in each building. ***Please confirm*** that this includes Lawson House and, if so, the mediation measures to be put in place.

Blasting

We note the proposal to use blasting with a medium rock breaker reduces the number of days above the NML to eight (compared to 67 using only blasting or 27 using blasting with a large rock breaker). We assume that this implies that the overall number of days for the construction would be larger (because of the use of less intrusive / noisy equipment) but, on balance, we prefer this to a shorter overall construction time but with a much higher number of days above the NML (ie 27 or 67).

Ground-borne vibration

- During excavation, vibration levels are anticipated to exceed the cosmetic damage vibration screening criteria at three buildings adjacent to the site (one building

located to the east on Clarke Street and two building located to the south of the Pacific Highway). A more detailed assessment of the structure and attended vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for those structures.

Please confirm that this includes Lawson House***.*** Refer also to vibration criteria comments in clause 10.2.4.

Please confirm that the Vibration Control Strategies set out at 7.1.6 of Appendix E to the EIS will be applied to Lawson House – specifically, attended vibration measurements at the commencement of vibration generating activities to confirm that the generated vibration levels are below the vibration damage criteria for Lawson House and that continuous vibration monitoring with audible and visible alarms (to effect cessation of vibration generation) whenever vibration generating activities need to take place inside the calculated safe-working distances.

Construction traffic noise

We note that the EIS states that "No sensitive receivers are located on the sections of … Hume Street proposed to be used as haul routes." If, however, the haul route were to change to include the section of Hume St between Clarke Lane and Clarke St, businesses in Lawson House will be adversely affected, particularly the three retail businesses fronting Hume St at ground level.

10.4.13 Tunnel excavation

Ground-borne noise

We note that the EIS states that "Ground-borne noise from tunnel excavation during the daytime is expected to be well below background noise levels. As such, the assessment considers the evening and night-time periods." ***Please confirm*** that this assertion applies equally to sound recording / post production studios in Lawson House.

The EIS also states that "it is anticipated that this worst-case ground-borne noise impact would only be apparent for a relatively short period of time (ie a few days for each tunnel burning machine) whilst the tunnelling works are directly beneath a particular receiver." ***Please confirm*** the amount of advance notice that will be given to Lawson House owners of the commencement of tunnel boring in the vicinity of the building. (Advance notice may provide the opportunity for businesses to schedule work around the period of worst disruption.)

Ground-borne vibration

The EIS states that "During main tunnelling works, it is anticipated that ground-borne vibration would be lower than the 7.5 mm/s screening level (the threshold at which cosmetic damage may occur) at all locations. Vibration levels may, however be noticeable within surface buildings located close to the main tunnel alignment. The impact at these locations would only be apparent for a relatively short period of time (one or two days) as the tunnel boring machines pass by a particular location."

This implies that Lawson House will be adversely affected by ground-borne vibration. ***Please confirm*** the amount of advance notice that will be given to Lawson House owners of the commencement of tunnel boring in the vicinity of the building. Refer also to vibration criteria comments in clauses 10.2.4 + 10.4.

Asbestos

One final concern relates to the potential for asbestos contamination during the demolition of existing buildings, particularly the current Post Office which is the closest building to Lawson House. ***Please advise*** us of the strategies to assess and mitigate this potential risk.

Name: Kevin Eadie
Organisation: Eagle Partners (Partner)

Drummoyne, NSW
2047

Content:
EAGLE PARTNERS
TRANSPORT CONSULTANTS
21 ST. GEORGES CRESCENT, DRUMMOYNE, NSW, 2047

NSW Department of Planning and Environment
GPO Box 39, SYDNEY, NSW, 2001.

Attention: Director - Transport Assessments,

Dear Sir,

SUBMISSION, RE -

SYDNEY METRO CITY & SOUTHWEST
ENVIRONMENTAL IMPACT STATEMENT - CHATSWOOD TO SYDENHAM

APPLICATION NO SSI 15_7400

On 12 May 2016, the Department of Planning and Environment placed advertisements in the Sydney press inviting public submissions in response to an Environmental Impact Statement (EIS) for the construction and operation of the Chatswood to Sydenham section of the Sydney Metro.

This submission is in response to that EIS. It is primarily concerned about how the finished project might improve the lives of public transport passengers. They, presumably, are intended to be among the primary beneficiaries. We support the project, with reservations.

The project, as planned, fails to integrate with Sydney's existing train network to the extent required to maximise public convenience and benefit. In fact, it goes out of its way to disassociate itself from the current operator - Sydney Trains. This is epitomised by the use of the branding logo - a capital "M", instead of Sydney Trains' "T", but unfortunately the deliberate differences go much deeper than that. It took decades to rid Sydney of the confusion and inconveniences for public transport passengers resulting from separate ownership by private companies and the public agencies. The design of Metro seems determined to again cause passenger confusion for no worthwhile purpose. Persistence with the "Metro" branding will complicate train departure information boards and way-finding signage, and may cause passenger confusion at interchange stations, where the smooth flow of passengers between platforms is of essence. Train service information, on websites and in printed form, will also necessarily be more complex and difficult to understand than it need be.

A recent government decision sensibly renamed this project from "rapid transit" to "Metro". If the current government's mantra of "the customer is at the centre of everything we do" has any worth, a similar decision will be made to abandon the "Metro" brand, and incorporate the new line as a simple expansion of Sydney's train network. Millions of future train passengers would benefit from such simplification.

The EIS provides much information about the project's impacts during construction. It also assesses various impacts caused by the

operation of the Metro, but only insofar as the operation of the Metro impacts on the current external environment. It does not adequately forecast its impacts on any predicted future external environment. The precincts surrounding the stations will be vastly different in the future to what they are now. There are also glaring omissions, making it difficult to draw informed conclusions about the project's impacts.

1 - INFERIOR "FUTURE-PROOFING"

The project fails to make adequate provision for the future development of Sydney. None of the new stations is designed to provide time-saving cross-platform interchange with an inevitable second, separate, Metro line, or other rail-based mode. This could have been arranged at negligible additional cost.

2 - INCONVENIENT STATIONS.

Most of the new stations appear to have poorly located entrances, resulting in excessive walk-up times for passengers. Station access locations should be reviewed, to minimise walking distances and thus overall travel times for existing passengers, and to encourage new patronage.

The EIS only assesses the impact of the Metro users on current external pedestrian movements and densities, finding it acceptable.

The CENTRAL Metro platforms need improved access at the southern end, and in particular, to Railway Square. Presumably the Metro north-south concourse will connect at its southern end to the existing below-platform passageways. (We note that the southern ends of the Metro platforms are almost directly below the Devonshire Street Pedestrian Tunnel). But a more direct connection to Railway Square is, we believe, warranted. There are already three universities to the south, with their existing high public transport patronage, let alone the patronage growth which will occur around Central Station as a result of future developments.
For simplicity, and passenger convenience, the Metro platforms should be numbered 14 and 15, even if that means re-numbering the existing platforms 1 to 15.
There is no explanation for the "Spanish" (double-sided) platforms shown serving the track through the existing Platform 16.

WATERLOO station is to be built adjacent to Botany Road, a highly trafficked arterial road. The station should be provided with an entrance connecting directly with the Botany Road bus stops, including a pedestrian underpass under Botany Road, to minimise walk-up times for passengers, and hence their total travel times.

PITT STREET station should be designed with underground connections to the future pedestrian passages and retail outlets below City Council's planned George / Park / Pitt plaza.

TRACK DESIGN.

We acknowledge that the design of Sydenham Station does not fall within this EIS, but the design of the Marrickville Dive should be such that the "Up" Metro track can be placed at a low level through Sydenham Station. This, combined with a lowering of the Up Illawarra Local line, would provide cross-platform interchange between Metro and Sydney Trains in both directions by enabling Up passengers to pass below the Down Metro track and platform. "Down" passengers would then also have cross-platform interchange, between Platforms 2 and 4.

Kevin Eadie
Partner
Eagle Partners.
kevin_eadie@hotmail.com
f - MetroSubChatsSydham1.doc
27 June 2016.

Disclosable Political Donation: yes

Name: Macquarie Bank Limited Company
Organisation: Macquarie Bank Limited (Division Director)

Sydney, NSW
2000

Content:
Organisation making comments

Macquarie Bank Limited
ABN 46 008 583 542

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Facsimile (61 2) 8232 8341
Internet http://www.macquarie.com.au
SWIFT MACQAU2S

Monday, 27 June 2016

MACQUARIE

To Whom It May Concern:

SUBJECT: Chatswood to Sydenham Sydney Metro project.

We refer to the proposed Chatswood to Sydenham Sydney Metro project (**Project**) and as a tenant and owner of 50 Martin Place; we have a number of comments.

Based on the Environmental Impact Statement (**EIS**) and following limited consultation with our business and tenant, our comments are:

1. **Building heritage fabric**

   Construction activity may affect the heritage listed fabric. We would like to understand what modelling has been done to assess potential effects and how the current condition will be assessed and documented.

2. **Construction Noise**

   The EIS noise impact modelling finds high to moderate exceedances above the set noise management levels (NML) at various stages of the construction. We would like to understand how these exceedances will be managed.

3. **Access to loading dock and car park**

   Access to the loading dock and car park is via Castlereagh Street. We would like to understand access restrictions to Castlereagh Street.

4. **Martin Place access to Banking Chamber**

   The main entrance to the banking chamber is from Martin Place. We would like to understand details of pedestrian flow and particularly during the temporary closure of Martin Place between Elizabeth and Castlereagh Streets.

5. **Evacuation stair discharge point**

   The main evacuation stair discharges onto Castlereagh Street. We would like understand hoarding arrangements around the discharge point to ensure that staff safety is not compromised in the event of building evacuation.

6. **Adjustments to Utility services (electricity, water, gas, telecommunications, sewer/drainage)**

   Adjustments to Utility services may adversely affect business operations. We would like to understand how building owners and tenants will be consulted ahead of time so suitable arrangements can be made.

7. **Access to Brigade booster valve assembly**

   Booster valve assembly is located at the corner of Castlereagh and Martin Place. We would like to understand if there will be any impacts to fire fighting ability

The above comments are based on the limited information within the EIS and we will require further information to determine to what extent our comments are valid.

Yours sincerely

Harry Papandony
Division Director

Environmental, Social and Governance Report
continued

Macquarie endeavours to promote the personal health and wellbeing of its staff. The wellbeing program, Macquarie Plus, provides a range of initiatives designed to encourage staff to own their health and wellbeing at home and at work, including:

- health screenings and assessments
- educational seminars focusing on diet and nutrition, positive psychology and family health
- targeted sessions for graduates focusing on psychological wellbeing
- flu vaccinations
- dietician consultations
- confidential counselling services (Employee Assistance Program).

Engaging stakeholders

Clear dialogue with stakeholders is important to building strong relationships, maintaining trust, enhancing business performance and evolving our ESG approach. Macquarie regularly engages with a broad range of stakeholders including shareholders, investors, clients, analysts, industry groups, governments, staff and the wider community. More detailed information about Macquarie's approach to stakeholder engagement is provided on the Macquarie website at macquarie.com/ESG

Political contributions and engagement

Macquarie supports strong and vibrant democracies and believes it is critical to understand the regulatory and political environments in the jurisdictions in which it has a presence and does business. Macquarie also makes submissions, both verbally and in writing, on a range of policy related topics.

Macquarie has a longstanding and consistent policy regarding political contributions provided to Australia's main political parties. Any requests for financial assistance are assessed with the aim of ensuring that multi-party systems deliver both good government and good opposition. In Australia, Macquarie achieves this objective by providing financial assistance to major political parties at the state and federal level.

Macquarie has a full disclosure policy and declares all political contributions to the Australian Electoral Commission (AEC) including attendance at political events, memberships of political business forums, sponsorship and attendance at political party conferences, as well as any cash donations.

Macquarie declares its political contributions to the AEC regardless of any thresholds or other provisions that may otherwise limit the need to disclose. In the year ended 30 June 2015, Macquarie's political contributions in Australia totalled $A325,500: Liberal Party $A190,300; Australian Labor Party $A102,600; and National Party $A32,600.

Cash contributions accounted for 6% of total contributions in the year ended 30 June 2015. The remainder of the contributions were memberships of political party business forums, attendance at events, sponsorships and attendance at party conferences. No contributions were made by the Group outside of Australia in FY2016.

About these disclosures

Macquarie is seeking to transition to G4 and has used the GRI G4 reporting principles to guide its ESG disclosures. The content of the disclosures is based on Macquarie's ESG focus areas as confirmed through an external review, the interests of stakeholders, including investors and analysts, and the applicable GRI indicators.

This year Macquarie's ESG disclosures comprise the ESG report, relevant sections of the Annual Report and the Macquarie website. A GRI index is available on Macquarie's website at macquarie.com/ESG

This is the end of the Environmental, Social and Governance Report.

Knight Frank
TOWN PLANNING

24 June 2016

Director Transport Assessments
Department of Planning and Environment
Application number SSI 15_7400
GPO Box 39
Sydney NSW 2001

Dear Sir/Madam

RE: SSI 15_7400 – Sydney Metro City and Southwest – Chatswood to Sydenham – Environmental Impact Statement

We refer to the Sydney Metro City and Southwest – Chatswood to Sydenham Environmental Impact Statement (EIS) that is currently on exhibition. On behalf of Harvey Norman, owner of 30-32 Bowden Street, Alexandria (Lot 100, DP 876407), thank you for the opportunity to make a submission.

We note our client's property will be affected by the project via the proposed underground alignment of the tunnel between Waterloo Station and Sydenham Station. The location of our client's property in relation to the underground tunnel alignment is illustrated in Figure 1.

We note that our client was not notified of the proposed underground tunnel alignment and associated corridor underneath their property, despite the extent to which our client's property will be potentially adversely affected.

We understand that there would be a future statutory corridor for the project established under the *State Environmental Planning Policy (Infrastructure) 2007* and any future development in this corridor would require referral to Transport for NSW for concurrence. The EIS indicates that the project corridor would extend 30 metres either side of the tunnel alignment. We also note that the EIS indicates that the current proposed alignment is subject to change. To that extent, we are concerned that any such change has the potential to further adversely impact on our client's property. Accordingly, we seek an assurance that any such change will be subject to further consultations with affected landowners.

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Level 12, 221 London Circuit
Canberra ACT 2600

T +61 2 9036 6666
GPO Box 187, Sydney NSW 2001
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Sydney NSW 2000

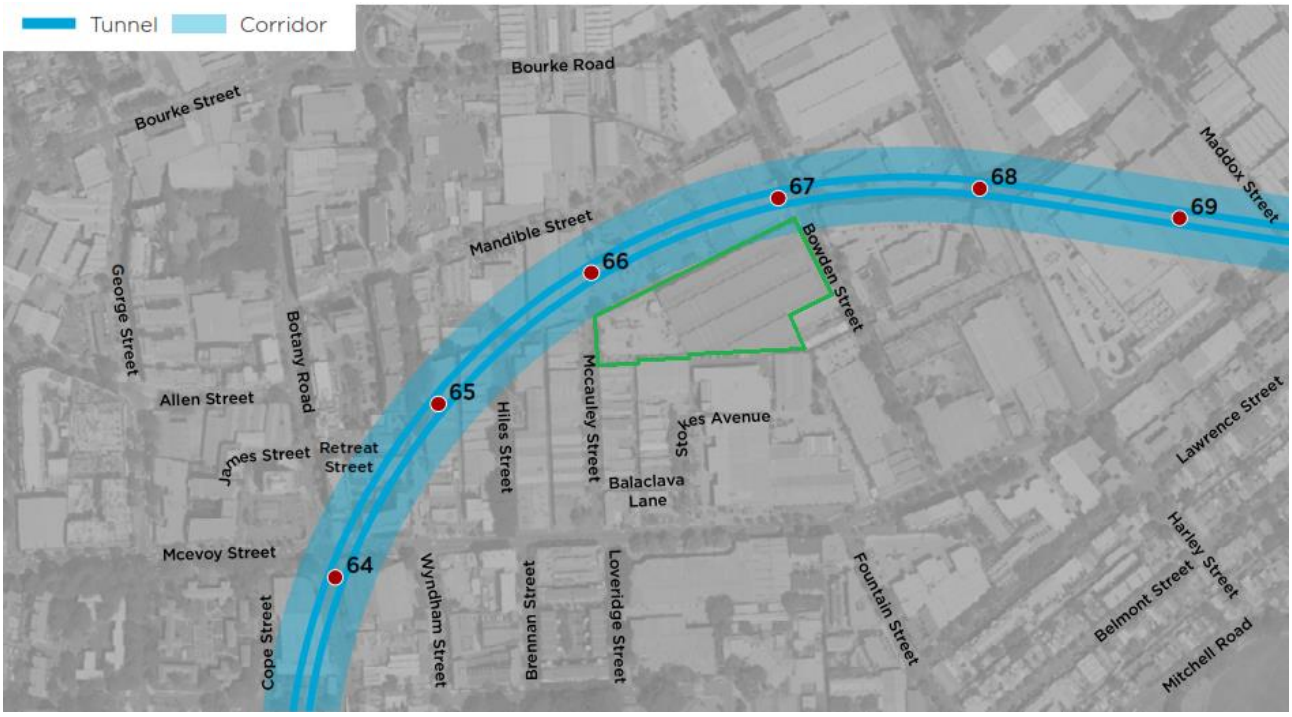

Figure 1. The location of the Harvey Norman owned site outlined in green in relation to the tunnel alignment and corridor

According to the EIS, we understand that where tunnel will be constructed, it will be necessary to acquire stratum below the surface of the properties for the construction of the project. The EIS indicates the subsurface stratum would be a stratum acquisition envelope around the tunnel, including any tunnel anchors required and has the potential to limit development above the alignment. There appears to be no discussion with regards to the impact upon future excavation, foundations, piering depths and density of development that could be supported above the tunnel alignment/corridor. The extent to which the development potential of our client's property will be limited is therefore not clear. Accordingly, we request that this be clarified as it has the potential to have a direct and material impact on the value of our client's property. Our client reserves the right to make further submissions subject to these matters being clarified.

We note that the EIS suggests that for the purposes of acquiring stratum below the surface properties for the construction of the project including where required for the development of underground infrastructure, compensation is not payable under the Transport Administration Act 1988. To the extent to which our client's property is affected by the proposed alignment and corridor, we note our strong concern in relation to the potential financial implications on the value of their property.

Our client's property is located within the southern employment lands in the City of Sydney (the City) Local Government Area (LGA). Their property is also in an area the City has identified as "investigation areas" as illustrated under Figure 2. These "investigation areas" are not currently zoned for market housing however the City has indicated (by way of site specific planning guidelines) that they will consider planning proposal requests to rezone sites and allow mixed used (residential) development in these areas at significantly increased densities. In short, our client's property is considered to have significant residential redevelopment potential.

The future urban renewal of the precinct generally bounded by Bowden, McEvoy, Mandible and Wyndham Streets' is of significant strategic value to the wider transformation of Green Square. It is therefore important to ensure that any alignment of the tunnel and corridor does not directly and adversely impact on the development potential of this precinct. It is not in the public interest or that of the City to have this area compromised to the extent likely as a result of the proposed underground tunnel alignment.

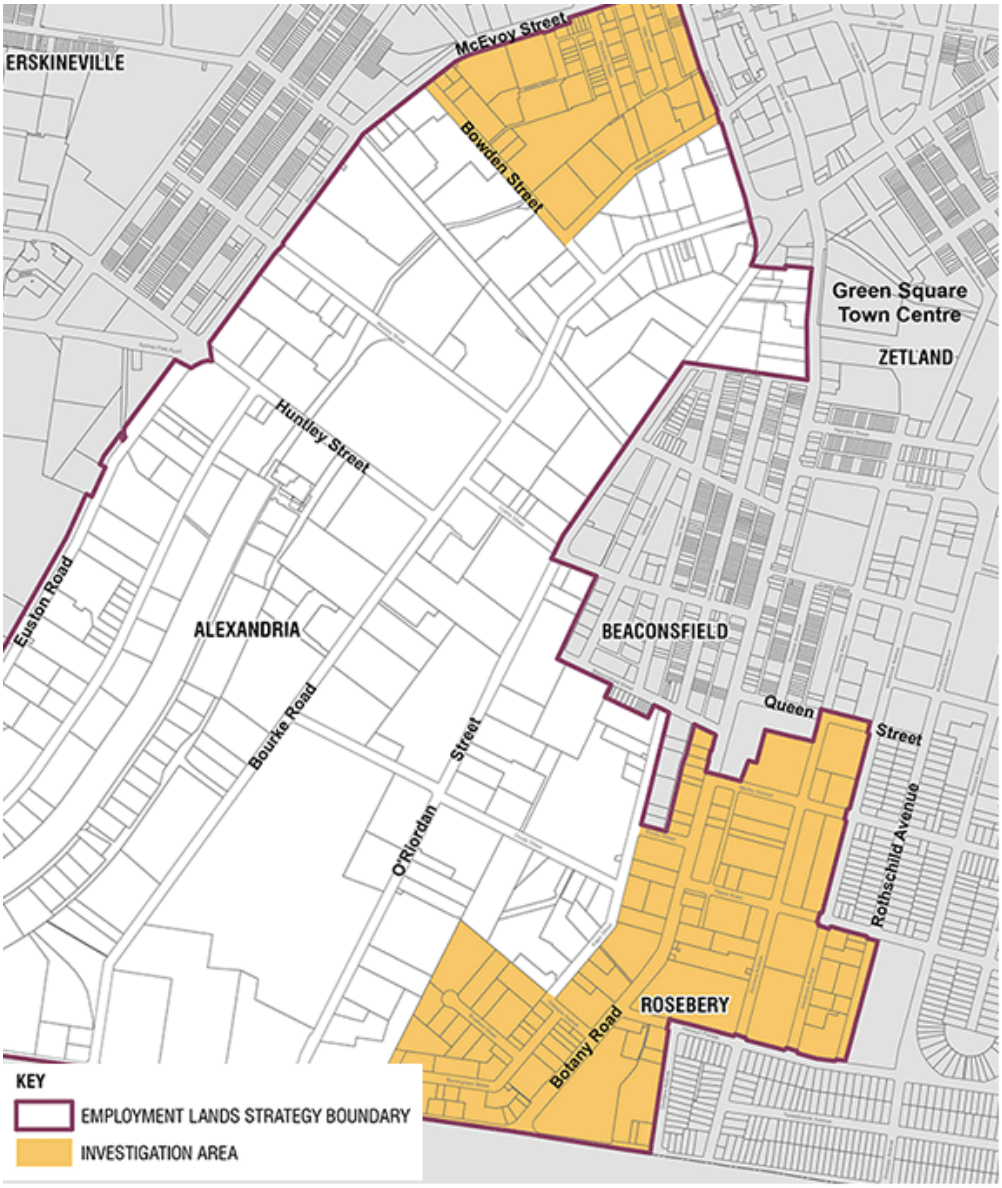

Figure 2. Extract from City of Sydney's *Guideline to Preparing Site Specific Planning Proposal Requests in the City of Sydney Employment Lands Investigation Areas 2015*

On behalf of our client, we request the proponent realign the tunnel and associated corridor between Waterloo Station and Sydenham Station away from the "investigation areas" and our client's property to ensure the future development potential of their site is not unreasonably impacted.

In summary, we note our client's strong objection to the proposed tunnel alignment to the extent to which it will impact on the development potential of their property and its value. The lack of adequate information provided in the EIS on the impact and limitations to future development on our client's property is of significant concern and should be clarified prior to any decision being made on the alignment of the tunnel. On behalf of our client, we seek an assurance that further details on the tunnel alignment will be provided and an opportunity to make further submissions where necessary.

Thank you again for the opportunity to comment and we trust that careful consideration will be given to the comments we have made.

Please note we have not made any reportable political donations in the previous two years.

Should you have any queries or require any additional information regarding this submission please do not hesitate to contact me on 0400 413 701.

Yours sincerely,

Mark Grayson
Director

Name: Margaret Fasan
Organisation: Hurlstone Park Association (Vice President)

Hurlstone Park, NSW
2193

Content:
Submission is attached. The HPA objects to the replacement of the heavy rail with a metro system between Sydenham and Bankstown.

Director Urban Renewal
NSW Planning and Environment
GPO Box 39
Sydney NSW 2001

30 January 2016

Dear Sir/Madam

Objection to Urban Renewal Strategy for the Sydenham to Bankstown Metro Corridor

The Hurlstone Park Association (HPA) was formed in 2014 in response to growing community concerns about overdevelopment impacting residential areas of our small quiet suburb. We represent a diverse and growing cross section of our local community with a reach of well over 500 residents through e-mail and social media channels.

On behalf of the HPA, I am writing to object to the draft Urban Renewal Strategy for the Sydenham to Bankstown Metro Corridor, in particular as it relates to the suburb of Hurlstone Park and the area of Hurlstone Park currently excised to the Canterbury Precinct on the Strategy drawings.

Key issues of concern are provided below.

1 - Community consultation
The Urban Renewal Strategy proposes an additional 36,000 new dwellings along the corridor. The Strategy will almost double the population in the corridor over the next 20 years.

This quantum of urban consolidation will have significant and far reaching impacts on the diverse existing communities located along the corridor. The consultation undertaken to date appears ad hoc and is completely inadequate considering the size of population and the level of potential impact on the communities affected.

The HPA organised a community meeting in Hurlstone Park on 24 October 2015. The purpose of the meeting was to make the local community aware of the Strategy. Despite short notice, the meeting was extremely well attended with well over 250 participants. This attendance rate demonstrates the high level of interest in the Strategy. For many at the meeting, it was the first they had heard of the proposed rezoning and there was considerable shock and anxiety expressed at the shear scale of potential development and lack of consultation. It is unacceptable that the Department has left it to local community groups to increase the awareness of such a significant Strategy.

The additional information session provided by the Department in Hurlstone Park is acknowledged as is the extension of the public exhibition of the Strategy until 31 January 2016. However, a considerable portion of the extension of the exhibition period has been over the Christmas/New Year summer holiday when many people are away. Most Council senior staff take annual leave and Council meetings are not held.

Numerous formal requests have been provided to the Department from State Members of Parliament, the HPA, Canterbury and Marrickville Councils and the public to extend the exhibition period until well after 31st January 2016 and to engage the community in genuine consultation. These requests have been unheeded. Again this is unacceptable. Notification of the Strategy advising individual households and businesses along the corridor plus a series of genuine consultation workshops held with the three main Councils affected, local interest groups and the community prior to the close of exhibition should have been the bare minimum provided as a consultation process.

A particular issue that the Department needs to address is that there is a very high proportion of the community living along the corridor that are either non English speaking or have English as a second language. A consultation Strategy that both informs and engages these people is required. Providing a translation of summary documents in a few languages well after the exhibition period started is not remotely adequate.

Another issue that the Department has failed to address is consultation with older citizens that are technically challenged by the large number of online documents and the submission process. This issue needs to be addressed as many of our older residents are very anxious about the proposed development and feel disenfranchised and powerless to voice their concerns.

2 - **Proposed redevelopment strategy**

Hurlstone Park is a green suburb characterised by consistent streetscapes comprising attractive and well built homes with generous front setbacks and landscaped gardens. These homes, which date from the Federation period onwards, provide a quality environment for the diverse families that live in our suburb.

With the exception of the shopping centre, the suburb is almost entirely single storey dwellings. A small proportion of the land is low rise two storey multi-residential dwelling housing with most of these complexes tucked away and so do not detract from the predominant landscape of family homes.

The Urban Renewal Strategy proposes the rezoning of residential streets around Hurlstone Park station to allow for residential apartments of up to 7 storeys in height and up to 8 storeys in the south eastern quadrant of Hurlstone Park near Canterbury station. In determining the extent of the upzoning, the constraints mapping that was undertaken to inform the Strategy has largely been ignored and the only factor that appears to have been considered is the distance from the station. This blunt and simplistic approach would result in the demolition of hundreds of fine homes, destruction of quality streetscapes and displacement of families, many of whom have lived in the area for decades and cared for and indeed restored the period buildings in the suburb.

It would also mean that single storey homes will be immediately adjacent to 5, 6, 7 and 8 storey buildings. The level of disruption during construction, disproportionate size of the new buildings and potential overshadowing will negatively impact on any single storey houses left in such rezoned areas. Existing residents will be forced to leave.

The HPA is not anti-development. However, an urban renewal strategy that identifies development opportunities on redundant land rather than one that anticipates the destruction of quality homes should be prepared. Within the suburb of Hurlstone Park and its environs, the proposed increase in dwelling numbers could readily be achieved if the Strategy took into account the development potential of the following areas:

- Hurlstone Park retail precinct centred on Crinan Street. The HPA would welcome revitalisation of this precinct.

- Canterbury and New Canterbury Road corridors where significant redevelopment is already oc-

curring. It is noted that under the Canterbury LEP 2012 the development potential along these roads is greater than proposed in the Strategy.

Over the past five years, 2,500 dwellings have been approved and are currently being built in the Hurlstone Park and Canterbury suburbs. These dwellings need to be included in the Strategy dwelling forecasts.

The Marrickville Council side of New Canterbury Road is not included in the Strategy, despite the fact that it is less than 700m from Hurlstone Park Station and is zoned for high density mixed use. There is currently significant redevelopment occurring along this stretch of road, which should be acknowledged within the Strategy and the figures included in the dwelling forecasts.

Canterbury Race Course, which is privately owned and has the potential for a large number of additional dwellings (various sources have indicated in the order of 2,000 dwellings). This site is very large (38 hectares) and is close to Canterbury Station. It is inevitable that this site will be redeveloped for housing, similar to other areas like Harold Park. Given that the Strategy is a long term vision for the corridor, the site's development potential should be included in the dwelling forecasts.

- Sydenham Station precinct. It is noted that there is very little upzoning proposed within this precinct. Whilst it is acknowledged that this area is subjected to aircraft noise, other similar areas in Mascot have been recently upzoned. Hence Sydenham and its environs should be investigated further due to the significant quantity of brownfield sites that could be converted to residential apartments as well as commercial premises providing employment.

- The use of airspace above stations for commercial and residential development has been indicated as a possibility in media articles discussing the current State Governments policies. However, this has not been included as a scenario in the current Strategy. If such development were to occur, it would need to take into consideration the heritage constraints at some stations such as Dulwich Hill, Hurlstone Park and Canterbury.

3 - Heritage value

Hurlstone Park represents a bygone era of suburban residential charm. Most of the land is occupied by single dwelling houses (about 60% separate and 8% semi-detached; units comprise about 25%).

Most of the houses in the suburb were built around Federation or post World War I. Many of these period homes have retained original features and have been well maintained over the years.

The HPA is currently advocating for the suburb of Hurlstone Park to be made a Heritage Conservation Area.

Canterbury Council has previously expressed an interest in the heritage value of Hurlstone Park. On 25 October 2012, Council resolved to include in a Heritage Study, the options of amending Canterbury LEP 2012 in order to zone Hurlstone Park to an equivalent of a 2(a) Residential zone and where appropriate to zone some areas of Hurlstone Park to a Heritage Conservation Area similar to that of Ashbury.

Whilst the outcomes of the Heritage Study referred to in the Council resolution have not been released, it would appear that the Strategy's proposed demolition of large areas of Hurlstone Park contradict the intent of the resolution.

The Strategy fails to acknowledge and protect heritage items such as Canterbury Post Office,

Beulah Vista, St Paul's Church and the Sugar Mill[1] in both Canterbury and Hurlstone Park. These items have been included under rezoned areas such as main street shop top housing, low rise (2-4 storey) housing and even medium (8 storey) housing. The Strategy must be rectified.

One of our members has undertaken a study on the potential heritage value of Hurlstone Park. The study includes a pictorial survey of all of the period homes in the suburb. The report is available at http://heritagehurlstonepark.org/

4 - Precinct mapping

Approximately one quarter of the suburb of Hurlstone Park has been excised from the Hurlstone Park Precinct Plan and included in the Canterbury Precinct Plan.

The HPA has two main issues with this aspect of the precinct mapping:

- The Strategy proposes upzoning a large portion of this excised area with medium and high rise housing (up to 8 storeys). It is assumed that the rationale for the upzoning is proximity to Canterbury Station, rather than any other factor. This results in an increased impact on our small suburb as it is affected by proximity to two train stations and not just one.
- It makes it impossible to understand the demographics and economy section and the growth forecasts contained in the Strategy for the Canterbury and Hurlstone Park precincts. For example, do the growth forecasts for the suburb of Hurlstone Park include the section within the Canterbury precinct?

  The population and dwellings number within the document for Hurlstone Park and Canterbury suburbs are significantly different from the ABS 2011 census upon which they are supposed to be based and use different boundaries of analysis. This gives us little faith in the demographic figures used and associated forecasts.

5 - Dwelling forecasts

The population of Hurlstone Park is already increasing due to demographic changes and the large quantum of redevelopment along the Canterbury and New Canterbury Road corridors.

The projected growth forecasts in the Strategy rely on population and housing data from the ABS 2011 census, which is now out of date. For example over the past 5 years significant changes to the demographics of our suburb have occurred. Most of the recent sales of single homes have been either deceased estates or empty nesters. Families with children are buying into the suburb, taking advantage of the attractive homes and gardens and lower house prices for family homes compared to other more expensive areas closer to the city such as Dulwich Hill and Summer Hill.

An example of the level of growth in families in the area can be seen at the public primary school for the Hurlstone Park catchment, which is located on Church St within the Canterbury Station Precinct – Canterbury Public School. Five years ago the school only had one kindergarten class – approximately 20 children. This year it will have 3 kindergarten classes – approximately 60 children.

A significant level of mixed use development is currently being constructed along the Canterbury and New Canterbury Road corridors.

The growth forecasts in the Strategy for Hurlstone Park under estimate this growth. For example, on the Canterbury Council side of New Canterbury Road alone, we calculate that 286 new dwellings have been approved, are under construction or are in the pipeline. It is noted that this number does not include the new dwellings on the Marrickville Council side of New Canterbury Road.

[1] http://www.canterbury.nsw.gov.au/Building/Heritage-in-Canterbury/Heritage-List

286 new dwellings represent 97% of the Strategy's predicted growth rate for Hurlstone Park by 2026.

Given the exponential growth that is already occurring in Hurlstone Park, surely the existing high quality homes do not need to be demolished to provide more housing.

6 - Infrastructure needs

The Strategy identifies that new infrastructure in the form of hospitals, schools, public transport, roads, walking and cycling upgrades, community facilities, open spaces and services utilities (sewer, water, electricity and gas) will be required to support the projected growth within the rail corridor. However, the Strategy fails to satisfactorily identify appropriate mechanisms for the delivery of this infrastructure.

In many cases the current infrastructure isn't coping with existing community needs, let alone the development that is about to come online or the growth projections. For example, Canterbury Road is virtually at a standstill now during peak traffic periods. The existing road network will reach gridlock with the growth forecasts.

The existing stormwater system is frequently overloaded in Hurlstone Park and many residents have noted sewage contamination during severe storms.

The existing Council run childcare centre in Hurlstone Park currently has a waiting period of over two years and there is no indication of extension or duplication of this facility.

Also, the Metro line upon which the need for the rezoning is partially based (in terms of increased patronage to make a new private rail line economically viable) will only be ready by 2024 according to the Strategy documents. Before being completed nearly half of the 36,000 additional homes along the corridor are expected to be constructed. With the original rail network being closed and the new Metro network being constructed for a number of years there will be an unspecified period when the rail network will not be accessible to a large number of commuters along the corridor. The logistics of this need to be considered in the Strategy.

If the level of development proposed along the corridor goes ahead the community needs iron-clad guarantees from the State government that the necessary infrastructure can be delivered for a population that is expected to almost double over the next 20 years. Much of this infrastructure needs to be put in place now to cope with the significant level of development that is about to come on line due to the explosion of development in the last 5 years.

7 - Next steps

From a meeting with the Department's urban renewal team on 12 January 2016, the HPA understand that community workshops will be held in mid to end February 2016 on 'specific issues'. The Hurlstone Park and Canterbury workshops will likely be combined due to overlapping issues, We request that the HPA be invited to attend these workshops and at a minimum our concerned residents who have made submissions. Please note that many of the residents that have made submissions have English as a second language and this will need to be taken into consideration in a workshop environment.

Further, it is also understood that it is likely that the Strategy will be amended following the public exhibition of the draft Strategy and the workshops. The HPA requests that the amended Strategy be placed on public exhibition prior to its finalization. This will allow the large proportion of the population directly affected by the Strategy to view and comment on the revised plans. This re-exhibition should also be combined with a comprehensive consultation process that both informs and allows engagement of the diverse population affected, including those of non English speaking background, have English as a second language or have technology barriers.

We look forward to working with the Department and community to develop an urban renewal Strategy that will identify development opportunities rather than one that will negatively impact on our small suburb.

Yours sincerely

Margaret Fasan
Vice President
Hurlstone Park Association
0428433253

Name: Mark Brandis

Crows Nest, NSW
2065

Content:
ISM Studios operates two sound recording studios. One located at 20 Clarke St, and one at 8 Clarke St. We have concerns regarding the noise and vibrations that will be caused by this development. Of particular concern is the transmission noise through the building from large equipment and blasting/mining.