

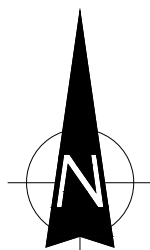


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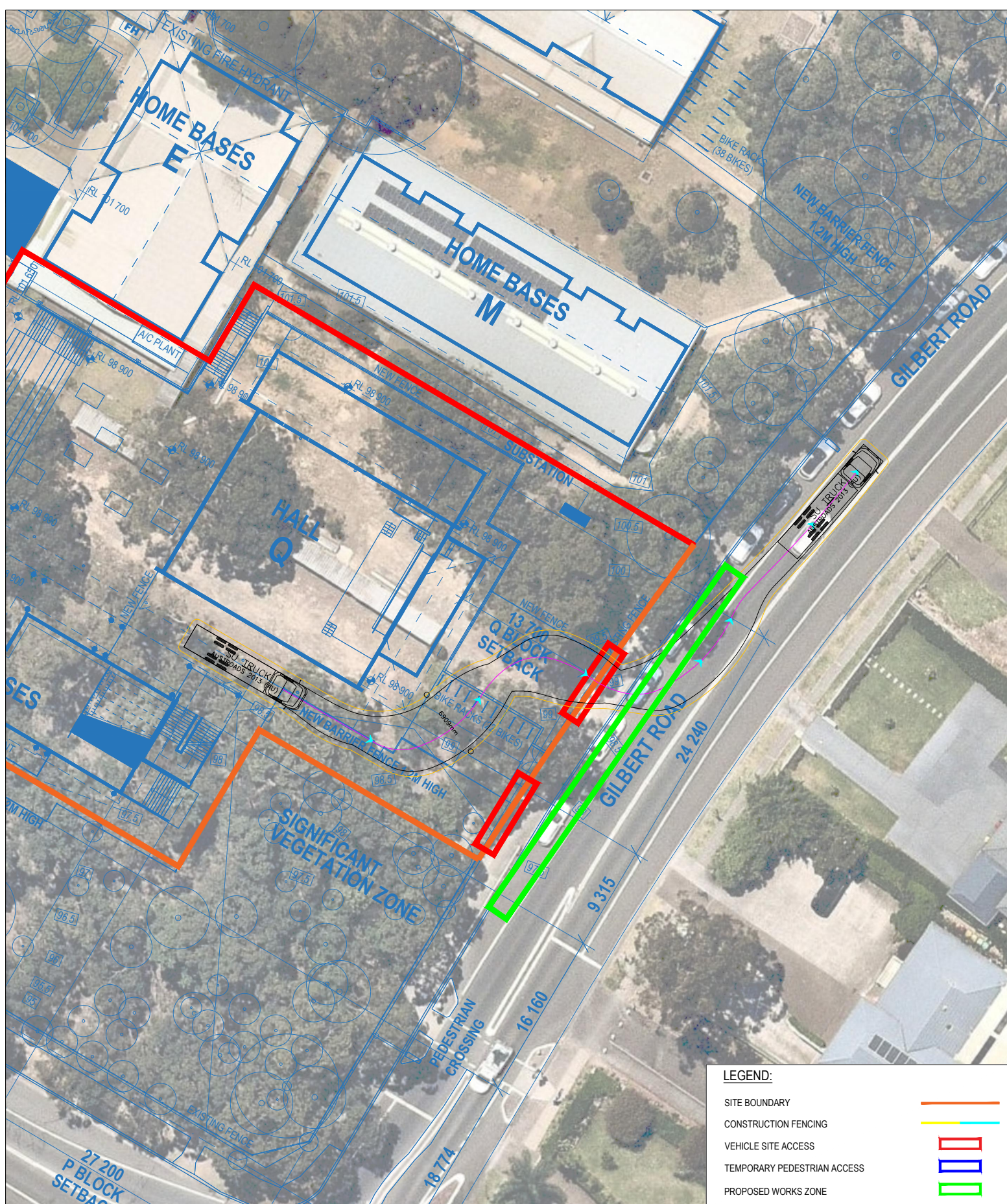
- SITE BOUNDARY
- CONSTRUCTION FENCING
- VEHICLE SITE ACCESS
- TEMPORARY PEDESTRIAN ACCESS
- PROPOSED WORKS ZONE

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This drawing has been prepared using vehicle modelling computer software AutoTURN PRO10 in conjunction with AutoCAD 2018. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

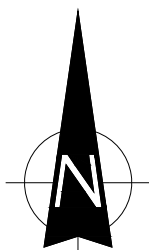


SWEPT PATH ANALYSIS OF A 12.5m HEAVY RIGID VEHICLE ENTERING THE SITE VIA GILBERT ROAD



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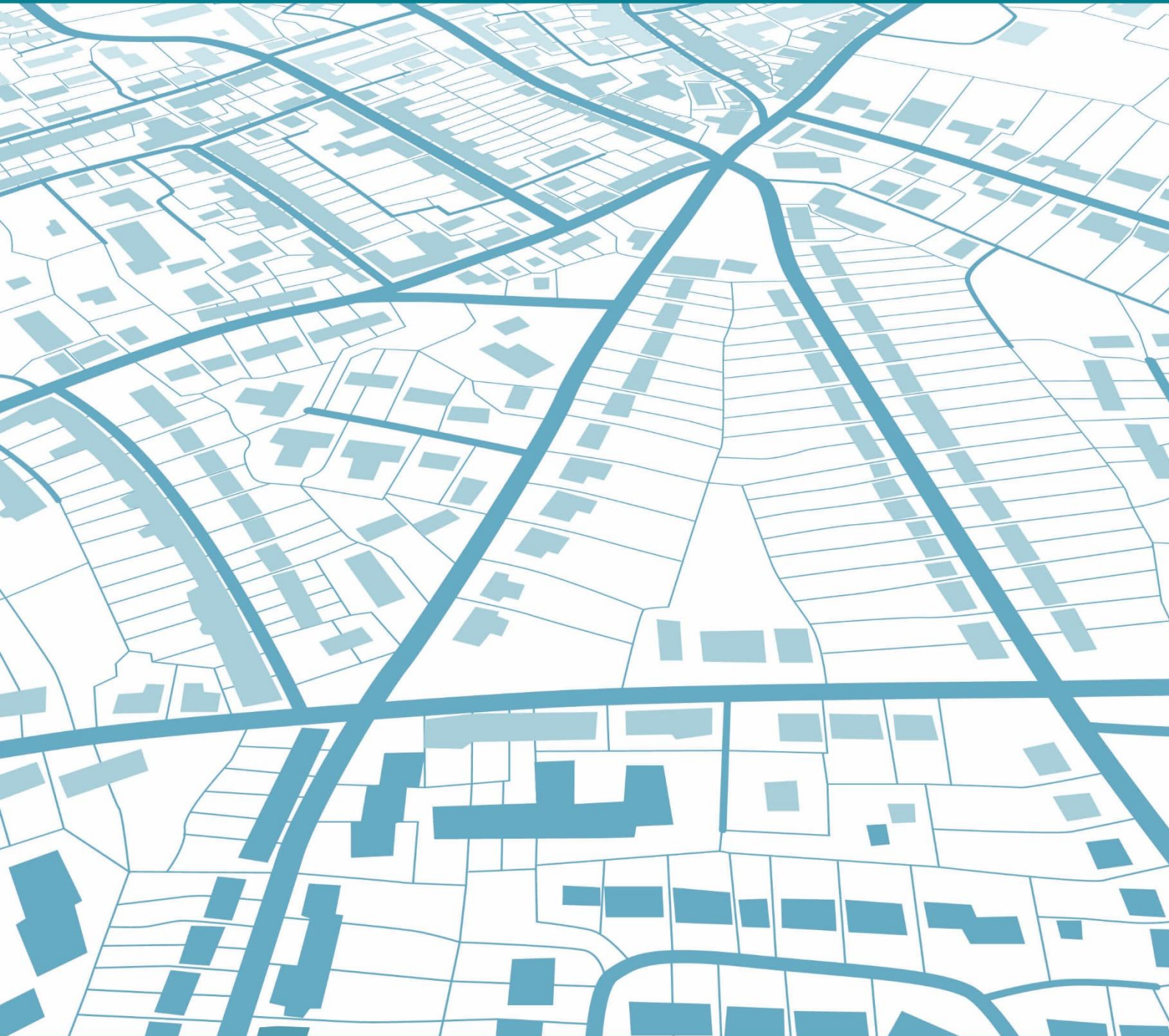
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SWEPT PATH ANALYSIS OF A 12.5m HEAVY RIGID VEHICLE EXITING THE SITE VIA GILBERT ROAD

Appendix D

Truck Driver's Code of Conduct



Samuel Gilbert Public School

20 Gilbert Road, Castle Hill

Proposed Alterations and Additions

Driver Code of Conduct for Truck & Heavy Vehicle Operators

Ref: 280/2019
Date: October 2019
Issue: Draft

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Appendix A Truck Routes

1.0 Introduction

1.1 General

This driver code of conduct applies to all Hutchinson Builders personnel and any other person conducting business for the Hutchinson Builders works, or on any project associated with the Hutchinson Builders works, whether a direct employee of the Hutchinson Builders ('Company') or employed by some other organisation providing a service or product to the Company.

We are all members of the general community, so you are expected to comply with all the relevant legal requirements and accepted community standards whilst conducting your business. Your behaviour on the road reflects upon the community and in this regard your full compliance with this Driver Code of Conduct is required.

1.2 Penalties and Disciplinary Action

Failure to comply with this Driver Code of Conduct will lead to either the issue of a "warning notice" or "disciplinary action" if the offender is an employee of the Company. If the offending party represents another company then "disciplinary action" may be treated as suspension or cancellation of a service contract or arrangement with that company.

A warning notice may be issued for a number of reasons, which may include if, you:

- Drive at excessive speed;
- Abuse other road users;
- Do not carry out instructions as advised;
- Do not observe the site speed restrictions;
- Do not report incidents/accidents

Examples of behaviour that may result in disciplinary action are if you:

- Consume or are under the influence of alcohol or drugs whilst on duty;
- Fight or commit acts of violence towards any person whatsoever, whether employee of the Company or otherwise;
- Are charged and found guilty of a serious offence causing an accident.

1.3 Motor Traffic Act

As a driver you are required to know and comply with all road rules pertaining to your vehicle (whether standard passenger car, utility or heavy transport vehicle).

1.4 Driving License

You must hold a current and valid driving licence for the class of vehicle that you operate. Additionally, you must always carry your current driver's licence with you while you are on duty.

If your licence is cancelled or suspended, you must let your supervisor know immediately.

1.5 Vehicle Minimum Maintenance and Operating Condition

All vehicles must be maintained and operated in accordance with the vehicle manufacturers recommended standards (refer to vehicle manufacturer's handbook).

1.6 Occupational Health and Safety

The health and safety of all people employed by (or working for) the Company, and those visiting our sites, is of the utmost importance.

As an employee of the Company, or supplier or contractor to the Company, you are required to follow occupational health and safety legislation.

This means that you must:

- Carry out your duties in a way which does not adversely affect your own health and safety or that of others;

Transport and Traffic Planning Associates

- Cooperate with measures introduced in the interest of workplace health and safety;
- Perform any OH&S training provided;
- Immediately report all matters which may affect workplace health & safety to your supervisor;
- Correctly use any information, training, personal protective equipment and safety devices provided;
- Not intentionally misuse or recklessly interfere with anything that has been provided for health and safety reasons;
- Only do tasks for which you have authorisation and/or the necessary training, and for which all necessary safety arrangements are in place.

1.7 Environment

The Company is committed to protecting the environment and preventing air, water and noise pollution. As the operator of your vehicle, you are subject to environmental regulations relating to vehicle emission and product spill and to minimise the impacts of earthworks and construction on the local and regional road network.

You must understand and appreciate the seriousness of polluting the environment and the consequences of this. If you are careless or neglect your responsibilities, you can cause personal injury, loss of life, property damage, substantial fines, and adverse publicity for the company.

1.8 Noise Control

Generating excessive noise is governed by legislation and is an offence. Heavy trucks generate a higher level of noise than light vehicles. The amenity of surrounding road users/residents is to be maintained as far as practical during the construction process.

You are required to adhere to the following during the course of your duty:

- If possible, you should minimise road traffic noise by not using engine brakes near residences and built up areas.
- All vehicles must be fitted with audible reversing alarms. These are essential

for the safety of all personnel. Reversing alarms are however the source of potential noise complaints from neighbouring residents so all drivers should be aware of this and try to minimise reversing when possible.

- Avoid loading and unloading of materials / deliveries outside of daytime hours.
- Compounds and work areas should be designed to as one-way to minimise the need for vehicles to reverse.
- Trucks should not idle near to residential receivers.
- Stationary sources of noise, such as generators, should be located away from sensitive receivers.
- Project personnel, including relevant sub-contractors, to acquaint themselves on noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks.
- Delivery vehicles should be fitted with straps rather than chains for unloading, wherever possible.
- Truck drivers should avoid compression braking as far as practicable.
- Where night-time works are required, trucks should use broadband reversing alarms.
- Use the minimum sized equipment necessary to complete the work and where possible, use alternative, low-impact construction techniques.
- Power tools should use mains power where possible rather than generators.
- Shut down machinery, including generators, when not in operation.
- Avoid dropping materials from a height and dampen or line metal trays, as necessary.
- Ensure equipment is operated in the correct manner.
- All equipment should be appropriately maintained and fitted with noise control

devices, where practicable, including acoustic lining of engine bays and air intake / discharge silencers, etc.

- Where possible, use dampened 'city' bits on jackhammers and rock breakers.

2.0 Safe Driving Practices

2.1 Highway Courtesy

The on-going reputation of the company depends very much on the way you drive your vehicle and courtesy that you extend to the community.

The road is there to share and therefore, it is a company requirement that you display courtesy and restraint towards other road users to minimise conflicts with other road users.

2.2 Speed Restriction

As a professional and competent driver, you must always adjust your driving to the existing conditions.

Studies have shown that many truck accidents are directly caused by excessive speed and/or poor road conditions such as surface condition, corner camber, "tightness" etc. Always follow posted signs as they provide vital clues to road conditions and characteristics. You should always apply the following rules:

- ✓ Always reduce your speed in wet conditions;
- ✓ Drive cautiously in fog or heavy rain;
- ✓ Descend hills at sign-posted truck speeds, or in the lowest gear to suit the conditions;
- ✓ Always observe the special limits that apply for road works etc;
- × **DO NOT** exceed the posted maximum speed;
- × **DO NOT** drive at speed past schools, school buses, parks, shopping areas etc.

2.3 Speed Restrictions

The site has a general speed limit of 10 km/h limit. This limit is to ensure the interaction between personnel and vehicles are managed to minimise the risk of injury to all personnel.

Drivers are required to observe the posted speed limits and other traffic signage at all times. All incidents where drivers do not observe speed limits and other traffic instructions will be logged and investigated and, where appropriate, disciplinary action will be taken.

2.4 Defensive Driving

You should always drive in a manner that will help you to avoid an accident, despite incorrect/inappropriate actions of others or poor driving conditions. Defensive driving requires a high degree of anticipation.

2.5 Preferred Routes

All trucks must enter and exit the works via the site gates or use the works zone.

The preferred routes for access to and from the site are listed below (refer to Route Map in Appendix A):

- Gilbert Road
- Showground Road
- Old Northern Road.

Where possible you should always:

- Use main roads;
- Use bypasses;
- Avoid communal areas, schools e.g. (particularly during school start and finish times), parks etc.

You must stick to the defined routes laid down unless there are exceptional circumstances. Such exceptional circumstances may be:

- Normal route blocked e.g. flooded;
- A revised route agreed in writing.

Trucks and heavy vehicles must not use local residential streets.

2.6 Vehicle Braking

One of the most important skills that a professional and competent driver possesses is bringing a loaded vehicle to a controlled stop in city and open road conditions.

You may need to brake heavily but you must also be aware of the possible consequences.

As a rule, you should always be aware of traffic conditions 1 to 2 km in front of you. In doing so, you are adjusting your own driving conditions to avoid the need for heavy braking.

Always brake with care, remembering that the truck will react differently according to the weight of the load, weight distribution of the load and road surface condition.

You should never, under any conditions, drive a vehicle with faulty or suspect brakes. You must always immediately report the fault to your supervisor to be fixed.

Engine brakes are auxiliary to the main service brakes. In general, the following should be observed regarding engine brakes:

- × **DO NOT** use the engine brake on slippery or wet surfaces, as a jack-knife may occur;
- × **DO NOT** use engine brakes in or near residences and built up areas, as this causes excessive noise and is a public disturbance.

2.7 Tailgating

By law you are required to maintain a gap between yourself and the vehicle directly in front of you, so that heavy braking will not be required. The gap is based on several factors including speed, vehicle weight, traffic congestion and road condition. During wet weather or other adverse conditions, the gap distance should be doubled.

The legal distance for heavy vehicles in areas without streetlights is 60 metres.

A gap of 60 metres is approximately the same as:

- The length of four (4) semi-trailer combinations;
- Twelve (12) car lengths;
- Four (4) seconds.

Always remember, appropriate gap distance between other road users is a key defensive driving tool.

2.8 Overtaking/Passing

You should always avoid overtaking in awkward, inappropriate situations or where there is unclear vision.

In general, you should **not** overtake/pass in the following situations:

- × Over continuous lane separation lines;
- × On narrow roads;
- × Near or on a curve or crest;
- × Near or on a bridge;
- × Near or on a railway crossing or tunnel;
- × When clear vision is restricted;
- × Through road work areas.

Do not indicate or signal to encourage other road users to overtake or pass. This action is against the law and may cause you to be responsible should an incident occur.

2.9 Road Hazards

During most journeys that you take, there will be hazards on and near roadways. Always be alert for these hazards and make your adjustments as necessary.

Examples of hazards are:

- × Rough/slippery surfaces;
- × Narrow or winding roads;
- × Low wires or awnings;

- × Low bridges, tunnels etc;
- × Crossings, rail/people;
- × Animals;
- × Underpasses and trees.

Be aware that your vehicle itself may become a road hazard when it is parked on a roadway, broken down or otherwise. In this circumstance, use portable warning signals, placing them 50-150 metres in front of and behind the vehicle, as well as at the side.

2.10 Parking

Construction Vehicles should always remain within the construction site. You must avoid parking on or within one metre of the roadway. If this is not possible, make sure that you use the portable warning signs referred to above.

Always park your vehicle in a safe position. Make sure it can be seen and that it is as far away from the moving traffic as possible. If in doubt leave your hazard lights on!

If you are transporting dangerous goods there are additional restrictions that affect you. Refer to the "Parking with Dangerous Goods" section of your manual.

2.11 Reversing

Try to avoid reversing whenever possible. If you cannot avoid it, use extreme caution.

If you need to reverse:

- ✓ Get out of your vehicle and check the rear surrounding area;
- ✓ Check clearances at sides, top and bottom;
- ✓ Constantly monitor mirrors for pedestrians or other traffic when reversing.

3.0 Materials Haulage

Drivers are responsible for ensuring that all tailgates are properly closed and that there is no excessive leakage of water from the vehicle to the road surface.

Drivers of trucks hauling raw materials to and from the works will ensure adequate separation between vehicles. No tailgating or formation of rolling convoys shall be permitted.

Drivers are responsible for ensuring that all loads are properly covered and that there is no spillage or leakage of the load from the vehicle to the road surface.

4.0 Time of Operation

This Driver Code of Conduct is applicable throughout the construction process.

5.0 Residents' Complaint Hotline

Drivers should be aware that a complaints telephone number is available to the public to lodge complaints against any driver contravening these guidelines. The contact details are displayed on the signs at the entrance to the site.

All complaints will be logged and investigated and, where appropriate, disciplinary action will be taken.

6.0 Public Notification

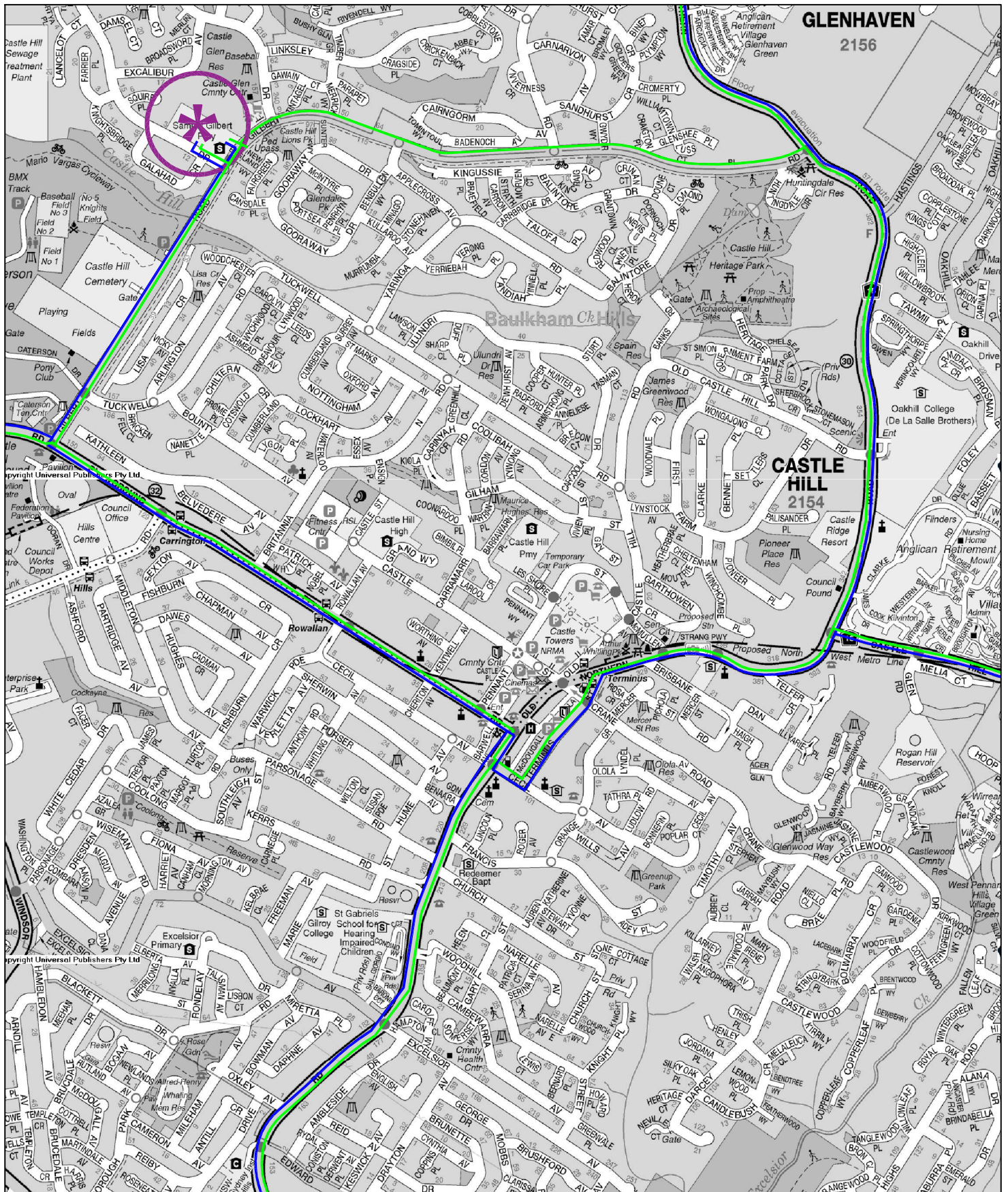
Hutchinson Builders would prepare notification letters, under the approval of Council, that would be delivered to nearby properties, to advise residents and the community (including local schools) of the construction works and timing thereof as well as of any potential disruptions to routes.

7.0 Monitoring Measures

Hutchinson Builders management will undertake formal observations / review of compliance at three monthly intervals and will document and undertake any remedial actions with employees or sub-contractors that may be necessary as a result of these observations. These formal observations / reviews maybe undertaken as part of an overall review of the safety management.

Appendix A

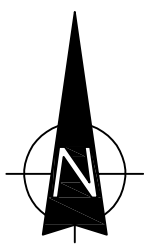
Route Map



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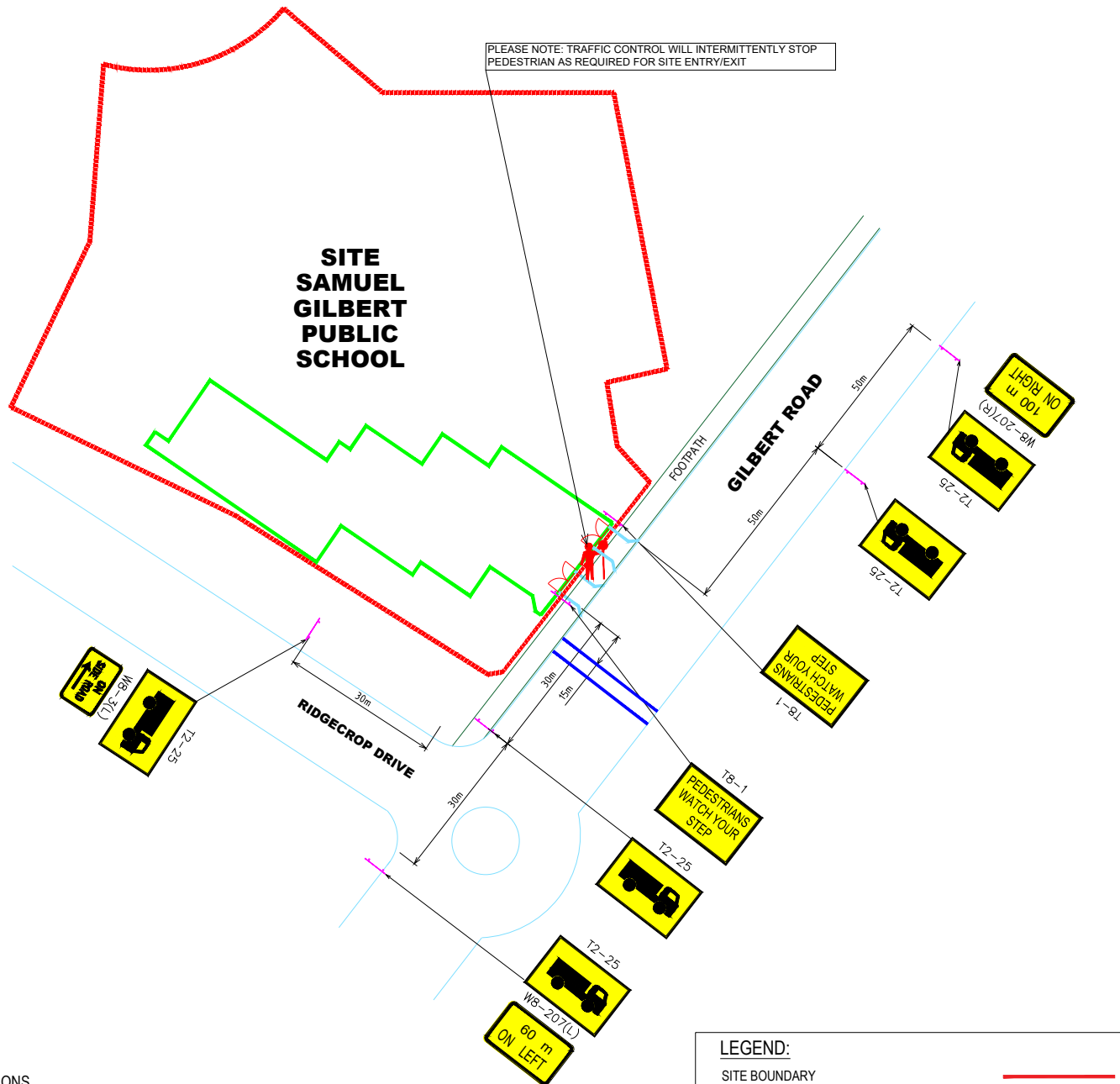
Appendix E

Traffic Guidance Scheme

NOTES

- NOT ALL DIMENSIONS SHOWN ARE TO SCALE.
- LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
- ALL SIGNS TO BE MINIMUM SIZE A.
- ALL SIGNS TO BE CLASS 1 REFLECTIVE OR DIAMOND GRADE.
ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE ROADS AND MARITIME SERVICES TRAFFIC CONTROL AT WORK SITES TECHNICAL MANUAL VERSION 5.0 DATED 27 JULY 2018 AND AUSTRALIAN STANDARDS AS1742.3:2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
- THIS TRAFFIC CONTROL PLAN MUST BE SETUP BY A PERSON HOLDING AN "IMPLEMENT TRAFFIC CONTROL PLANS" (YELLOW) TICKET AND THE RMS TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
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- ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH SECTION 2.5.2 OF AS1742.3:2009. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS.



CERTIFICATIONS

THE UNDERSIGNED HAS COMPLETED AND OBTAINED "PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN"

CERTIFICATE NO: 0052125163 (EXPIRY DATE: 28/08/2022)
PREPARE A WORK ZONE TMP CARD
LACHLAN ELLSON

SAMUEL GILBERT PUBLIC SCHOOL TRAFFIC GUIDANCE SCHEME

SITE ACCESS ON GILBERT ROAD (STAGES 2 AND 3)

DRAWING REF NO. 280/2019-01-01 ISSUE B ISSUE DATE 23 JANUARY 2020

DESIGNED BY
L. ELLSON

APPROVED BY
M.KONG

SCALE
A3

FINAL PLAN

ANY CHANGES TO THE PLAN
SHALL BE DONE WITHIN
ALLOWANCES PROVIDED IN THE
ROADS AND MARITIME SERVICES
TRAFFIC CONTROL AT WORK
SITES TECHNICAL MANUAL
VERSION 5.0 DATED 27 JULY 2018



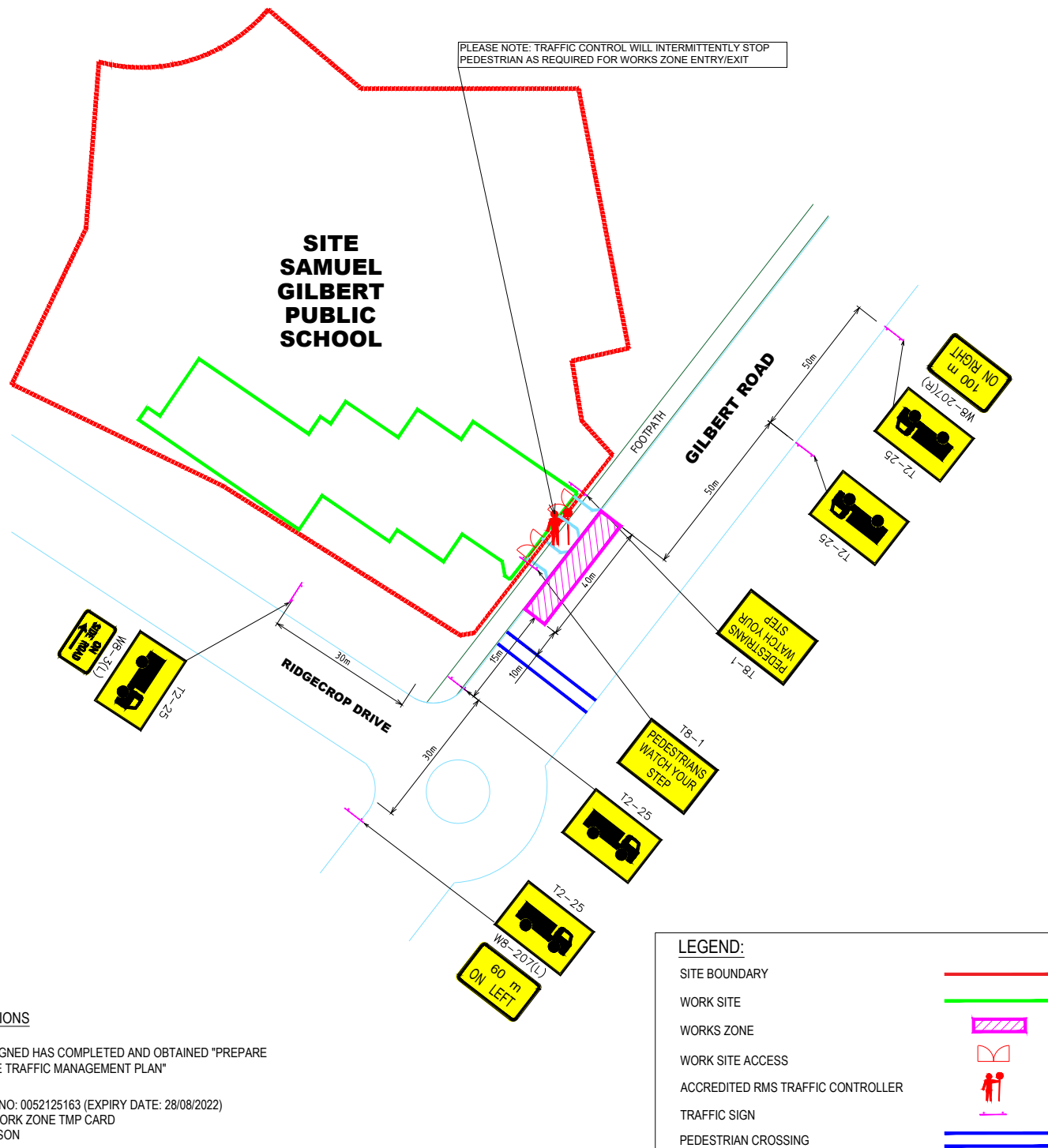
ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

Address: Suite 502, Level 5, 282 Victoria Avenue, Chatswood NSW 2067
P: (02) 9411 5660 F: (02) 9904 6622 W: www.ttpa.com.au

NOTES

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DRAWING REF NO. 280/2019-01-01 ISSUE B ISSUE DATE 23 JANUARY 2020

DESIGNED BY
L. ELLSON

APPROVED BY
M.KONG

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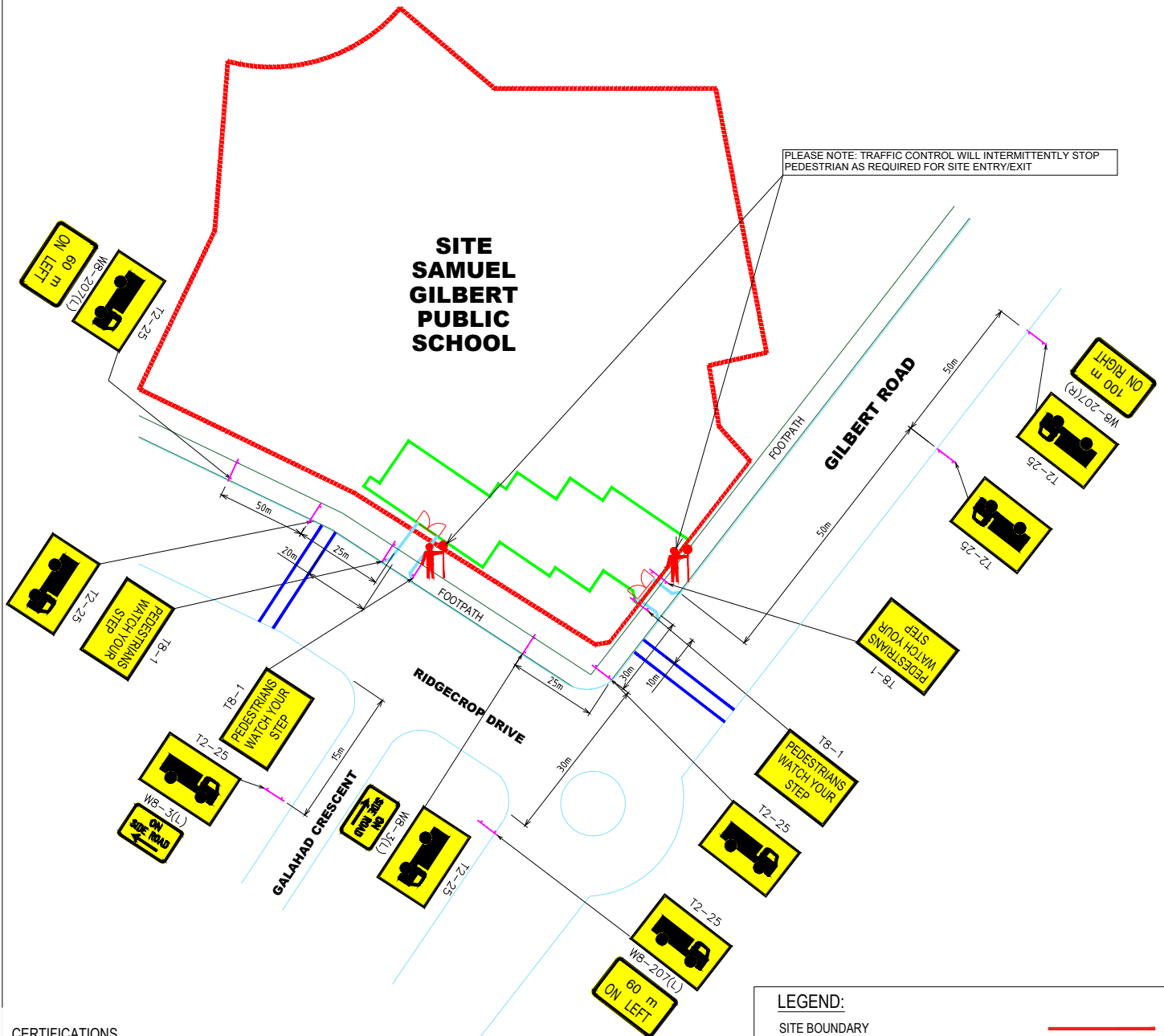
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- VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES.
- AT ALL TIMES AN UP-TO-DATE COPY OF 'TRAFFIC CONTROL AT WORK SITES' SHOULD BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE.
- ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN. IF THE WORKSITE IS LEFT UNATTENDED IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS. TRAFFIC CONTROLLERS ARE TO BE REQUIRED AT THE ACCESS FULL TIME AND THEY ARE TO BE SUITABLY ACCREDITED TO AUSTRALIAN STANDARDS AND RMS ACCREDITATION AS REQUIRED. WHEN REQUIRED T1-34 AND T1-10 SIGNS ARE TO BE SET UP IN ACCORDANCE TO AUSTRALIAN STANDARDS AND RMS REQUIREMENTS.
- ALL SIGNAGE IS TO BE CLEAN, CLEARLY VISIBLE AND NOT OBSCURED.
- ALL SIGNS TO BE COVERED OR REMOVED WHEN WORKERS ARE NOT ON SITE.
- ALL NIGHT WORK OR DAY/NIGHT MUST USE RMS STANDARD NIGHT SIGNS AND DEVICES UNLESS OTHERWISE STATED.
- ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2009.
- ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH SECTION 2.5.2 OF AS1742.3:2009. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS.



CERTIFICATIONS

THE UNDERSIGNED HAS COMPLETED AND OBTAINED "PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN"

CERTIFICATE NO: 0052125163 (EXPIRY DATE: 28/08/2022)
PREPARE A WORK ZONE TMP CARD
LACHLAN ELLSON

SAMUEL GILBERT PUBLIC SCHOOL TRAFFIC GUIDANCE SCHEME

SITE ACCESSES ON RIDGECROP DRIVE & GILBERT ROAD (PRELIMINARY STAGE)

DRAWING REF NO. 280/2019-01-01 ISSUE B ISSUE DATE 23 JANUARY 2020

DESIGNED BY
L. ELLSON

APPROVED BY
M.KONG

SCALE
A3
0 4 0 4 0
NOT TO SCALE

FINAL PLAN

ANY CHANGES TO THE PLAN
SHALL BE DONE WITHIN
ALLOWANCES PROVIDED IN THE
ROADS AND MARITIME SERVICES
TRAFFIC CONTROL AT WORK
SITES TECHNICAL MANUAL
VERSION 5.0 DATED 27 JULY 2018



ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

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Appendix F

Consultation with Council and TfNSW

Meg Kong

From: Meg Kong
Sent: Monday, 23 March 2020 1:11 PM
To: 'Angela Vernicos'
Cc: 'Rodney Pavitt'; 'Craig Hopfe'; 'Vitaly Kaakoush (Vitaly.Kaakoush@hutchinsonbuilders.com.au)'; 'Andy Smith (Hutchinson Builders (Sydney))'
Subject: RE: CTMP response

Hi Angela

Thank you for your comments. I have updated the CPTMP noting your comments below:

<https://www.dropbox.com/s/2gyo7xg2r3nvh29/SAMUEL%20GILBERT%20PUBLIC%20SCHOOL%2C%20RIDGE%20CROP%20DRIVE%2C%20CASTLE%20HILL%20MARCH%202020%20CTPMP%20REV%20D.pdf?dl=0>

Kind regards
Meg Kong

From: Angela Vernicos <AVERNICOS@thehills.nsw.gov.au>
Sent: Friday, 13 March 2020 10:53 AM
To: Meg Kong <meg@ttpa.com.au>
Cc: Rodney Pavitt <rpavitt@thehills.nsw.gov.au>; Craig Hopfe <chopfe@thehills.nsw.gov.au>
Subject: CTMP response

Good morning Meg,

In regards to our discussion this morning regarding the CTMP for Samuel Gilbert PS I can provide the following response:

As per Condition B14 Council are not required to approve the CTMP, the requirement is to consult. It is expected that the CTMP has been developed by an authorised person as outlined in this condition.

I have provided some points below for you based on our review of the CTMP:

- The request regarding a proposed 10m Works Zone on Ridgescrop Drive has not been raised with Council or the removal of the Kiss and Drop zone on Ridgescrop Dr as outlined below on P33 of the CTMP. (The current LTC report is only for a Works Zone on Gilbert Rd)
This would require consultation with the school and plans to be submitted to us for consideration prior to recommending any changes to the Local Traffic Committee and Council, with adequate time for this factored in.
- It is hoped that all the contractors associated with this project will adhere to what is outlined in the CTMP by not adding excessively to the traffic congestion during peak hour and school pick up and drop off times, not having large truck deliveries or trucks laying over nearby on Gilbert Rd to wait for access to site at these times.
- It would also be helpful to request contractors to park their vehicles further away from the school rather than on the immediate school frontage on Ridgescrop Drive and Gilbert Rd, noting the removal of some parking on Gilbert Rd for the Works Zone and construction driveways. This will allow better access for parent parking closer to the school entrances.
- Pedestrian safety is paramount at this location on Gilbert Rd with the school, childcare ctr, shops, bus stops and pedestrian signals in this location to be carefully managed by traffic controllers.

- Separate applications to Council will also be required for any construction driveways, additional Works Zones, changes to any parking restrictions, temporary road occupancies or temporary road closures throughout the construction period.
- Consultation with the school and any affected residents regarding any proposed changes to parking or access around the school is ongoing as required.

Works Zone on Ridgecrop Drive

The 10m works zone would require the temporary removal of up to 2 set-down and pick-up on-street spaces. While only 10m works zone is required for the truck entering and exiting the site, it is proposed to provide convert the remaining 20m set-down and pick-up zone to a “No Stopping” between 7.00 am – 6.00 pm during the school day. This is to minimise pedestrian movements along the footpath to the south of the site frontage on Ridgecrop Drive. In combination, the 10m works zone and the 20m set-down and pick-up zone will result in the temporary loss of 5 on-street spaces.

Proposed Set-Down and Pick-Up Zone

It is proposed that the 30m set-down and pick-up zone be relocated 50m further to the north-west (See the following figure).



If you have any questions please let me know.

Kind regards



Angela Vernicos

Road Safety Officer

9843 0145 | 0402 109 334 | avernicos@thehills.nsw.gov.au

Administration Centre, 3 Columbia Court Norwest NSW 2153

PO Box 7064, NORWEST NSW 2153 | DX 9966 Norwest

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Meg Kong

From: Meg Kong
Sent: Monday, 16 March 2020 11:20 AM
To: Cameron McIntyre
Cc: Dina Hanna; Vitaly Kaakoush (Vitaly.Kaakoush@hutchinsonbuilders.com.au); 'Andy Smith (Hutchinson Builders (Sydney))'
Subject: RE: SSD 9274: Samuel Gilbert Public School - Construction Traffic Management Plan

Hi Cameron

Thanks for your response. The requirements below have been stated in the CTMP and we will comply to them.

Kind regards
Meg Kong

From: Cameron McIntyre <Cameron.MCINTYRE@transport.nsw.gov.au>
Sent: Monday, 16 March 2020 11:16 AM
To: Meg Kong <meg@tpa.com.au>
Cc: Dina Hanna <Dina.HANNA@transport.nsw.gov.au>
Subject: FW: SSD 9274: Samuel Gilbert Public School - Construction Traffic Management Plan

Hi Meg,

I have reviewed the attached CTMP. The proposed construction is on a local road therefore for the care and responsibility of The Hills Shire Council. Transport advise that the proposed construction should have minimal Impact on the State Road network.

The submission from **Transport and Traffic Planning Associates** has satisfactorily addressed the necessary requirements of the CTMP and is **Recommended for Concurrence** subject to the following:

- Any Traffic Control Plans (TCP) prepared are to comply with A51742.3 and RMS's "Traffic Control at Worksites" manual (2018) and be signed by a person with RMS certification to prepare TCP's. A copy of the TCP is to be held on site at all times by the responsible traffic controllers.
- No construction vehicle movements are to occur during school drop-off (8.00am to 9.30am) and pick up (2.30pm to 4.00pm) times on school days.
- Barricades and signs to be provided in accordance with Australian Standards;
- Appropriate advanced signage to warn drivers about changes in road conditions;
- Access be maintained for emergency vehicles at all times;
- Access be maintained for all pedestrians at all time;
- Any additional conditions that Council may require.

Please let me know if you have any further questions regarding the above information.

Kind Regards,

Cameron McIntyre
A/Network & Safety Officer
Sydney Roads
Greater Sydney
Transport for NSW

T (02) 8849 2787
Level 5 – 27 Argyle Street Parramatta NSW 2150

From: Meg Kong [<mailto:meg@tpa.com.au>]
Sent: Friday, 13 March 2020 10:10 AM
To: Dina Hanna
Cc: Cameron McIntyre; Kshitij Shah; Vitaly Kaakoush; Andy Smith
Subject: RE: SSD 9274: Samuel Gilbert Public School - Construction Traffic Management Plan

Hi Dina

Just following up on TfNSW's comments on the CTMP as we need to start work on-site as soon as possible.

Kind regards
Meg Kong

From: Meg Kong
Sent: Tuesday, 10 March 2020 4:33 PM
To: Dina Hanna <Dina.HANNA@transport.nsw.gov.au>
Cc: Cameron McIntyre <Cameron.MCINTYRE@transport.nsw.gov.au>; Kshitij Shah <Kshitij.SHAH@transport.nsw.gov.au>; Vitaly Kaakoush <Vitaly.Kaakoush@hutchinsonbuilders.com.au>; Andy Smith <Andy.Smith@hutchinsonbuilders.com.au>
Subject: RE: SSD 9274: Samuel Gilbert Public School - Construction Traffic Management Plan

Thanks, Dina for your response.

Kind regards
Meg Kong

From: Dina Hanna <Dina.HANNA@transport.nsw.gov.au>
Sent: Tuesday, 10 March 2020 4:32 PM
To: Meg Kong <meg@tpa.com.au>
Cc: Cameron McIntyre <Cameron.MCINTYRE@transport.nsw.gov.au>; Kshitij Shah <Kshitij.SHAH@transport.nsw.gov.au>
Subject: FW: SSD 9274: Samuel Gilbert Public School - Construction Traffic Management Plan

Hi Meg

We apologise for the delay in responding to this, we are currently reviewing the CTMP and we will be in contact with you shortly.

Kind Regards
Dina Hanna
Senior Network & Safety Officer West
North West Precinct
Greater Sydney Division
Transport for NSW

T 0288492934
Level 5, 27 Argyle Street, Parramatta NSW 2150
www.Transport.nsw.gov.au

From: Kshitij Shah
Sent: Tuesday, 25 February 2020 3:45 PM
To: Dina Hanna
Subject: FW: SSD 9274: Samuel Gilbert Public School - Construction Traffic Management Plan

Hi Dina,

Can you please look into this one?

Regards
Shah

Shah Kshitij
Network and Safety Services Manager - South
Network and Safety Services – South East Precinct
Greater Sydney
Transport for NSW

T 02 88492599 |
Level-5, 27 Argyle Street, Parramatta NSW-2150

From: Meg Kong [<mailto:meg@tpa.com.au>]
Sent: Tuesday, 25 February 2020 2:52 PM
To: Kshitij Shah; Kshitij Shah
Cc: Vitaly Kaakoush; Andy Smith
Subject: SSD 9274: Samuel Gilbert Public School - Construction Traffic Management Plan

Hi Kshitij

As part of the condition B14, we are required to consult with TfNSW in relation to the CTPMSP for Samuel Gilbert Public School.

Please download the plan from the link below:

<https://www.dropbox.com/s/y2tp1oluwww239/SAMUEL%20GILBERT%20PUBLIC%20SCHOOL%2C%20RIDGE%20CROP%20DRIVE%2C%20CASTLE%20HILL%20JAN%202020%20CTPMP%20REV%20B.pdf?dl=0>

Appreciate your review and comments, if any. Feel free to contact me if you have any questions.

Kind regards

Meg Kong | Associate

Suite 502, Level 5, 282 Victoria Avenue, Chatswood NSW 2067

P (02) 9411 5660 F (02) 9904 6622 W ttpa.com.au



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Post Approval – Consultation

Consultation needs to be meaningful, done with courtesy and respect and be well documented. These are people/ organisations that we need to be building meaningful relationships with.

Conditions of all consent can require consultation with a range of stakeholders. Consultation in the post approval world needs to be well documented to satisfy the condition requirements.

Examples include Council, service providers (eg. Electricity gas etc.), consult with local bus provider and TfNSW.

Read each condition carefully, any reference to consult triggers consultation.

Typically on State Significant Development, there will be a specific consultation condition as to how this piece can be appropriately addressed.

Consultation is not:

- A token gesture
- Done at the end of the piece of work,
- An email to the relevant stakeholder with no response;
- A meeting with the stakeholder with no meeting minutes.

Consultation is:

- Meaningful
- Done prior to the requirement,
- Captures an outcome,
- Identifies matters resolved,
- Identifies matters unresolved,
- Any disagreements are disclosed; and
- How we are going to address unresolved matters?

How to capture all the relevant details on consultation requirements? Any consultation requirement in a condition is required to be accompanied with the following table:

Post Approval Consultation Record

Identified Party to Consult:	Hills Shire Council/RMS/Transport for NSW
Consultation type:	Meeting/Teleconference/Email
When is consultation required?	Prior to Construction
Why	To meet Sub Condition B14 (b)
When was consultation scheduled/held	17 th January 2020, Office Meeting with Council 17 th January 2020, Email with Council 17 th January 2020, Teleconference with Council 28 th January 2020, Email with Council 5 th February 2020, Email with TfNSW 6 th February 2020, Email with Council and TfNSW 11 th February 2020, Email with Council
When was consultation held	17 th January 2020, Office Meeting with Council 17 th January 2020, Email with Council 17 th January 2020, Teleconference with Council 28 th January 2020, Email with Council 5 th February 2020, Email with TfNSW 6 th February 2020, Email with Council and TfNSW
Identify persons and positions who were involved	- Andy Smith and Vitaly Kaakoush (Hutchinson Builders) - Rodney Pavitt, Angela Vernicos & Craig Hopfe (Council) - Rahim Gergis (TfNSW) - Kshitij Shah (RMS)
Provide the details of the consultation	- Introduction to the project - Consultation with TfNSW, RMS and Council with regards to the development of the CTPMSP
What specific matters were discussed?	- Proposed parking for construction workers - Construction vehicle access to site requirements - Work Zone application - Work Zone hours - Timing of approvals
What matters were resolved?	- ROL Approval from TfNSW - Endorsed Work Zone Hours - Requirements for Site Entry/Driveway
What matters are unresolved?	- None
Any remaining points of disagreement?	- No
How will SINSW address matters not resolved?	- N/a

APPENDIX H – CONSTRUCTION NOISE AND VIBRATION MANAGEMENT SUB PLAN

As per Condition B13 (c)



DAY DESIGN PTY LTD
CONSULTING ACOUSTICAL ENGINEERS

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Construction Noise & Vibration Management Sub - Plan

Redevelopment of Samuel Gilbert Public School
Ridgecrop Drive, Castle Hill, NSW

REPORT No
6395-3.1R Rev B

DATE ISSUED
7 April 2020

Prepared For:

Samuel Gilbert Public School
C/- Hutchinson Builders
23 Dunning Avenue
Rosebery NSW 2018

Attention: Mr Vitaly Kaakoush



Construction Noise & Vibration Management Sub - Plan**Revision History**

Report	Date	Prepared	Checked	Comment
Draft	25/02/2020	Adam Shearer	Stephen Gauld	By email, for client review
Final	11/03/2020	Adam Shearer	Stephen Gauld	
Rev A	31/03/2020	Adam Shearer	Stephen Gauld	Appendix E
Rev B	07/04/2020	Adam Shearer	Stephen Gauld	Client revisions

Document R\6395-3.1R Rev B, 27 pages plus attachments

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Recommendations made in this report are intended to resolve acoustical problems only. No claims of expertise in other areas are made and no liability is accepted in respect of design or construction for issues falling outside the specialist field of acoustical engineering including but not limited to structural, fire, thermal, architectural buildability, fit for purpose, waterproofing or other aspects of building construction. Supplementary professional advice should be sought in respect of these issues.

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1.0 EXECUTIVE SUMMARY

The Department of Education (DoE) has recently received approval (SSD 9274, 15 February 2020) to redevelop the existing Samuel Gilbert Public School at Ridgescrop Drive, Castle Hill, NSW.

The School is located on land zoned R2 – Low Density Residential under The Hills Local Environmental Plan (LEP) 2012. The School is bounded by Castle Glen Reserve to the north, commercial premises to the east (including a Child Care Centre), Gilbert Road to the south-east, Ridgescrop Drive to the south-west and residential premises to the west. Residential premises are also located on the opposite side of Gilbert Road to the south-east and Ridgescrop Drive to the south-west.

The approved proposal includes the removal of the demountables on the site to accommodate the redevelopment of the School and also the construction of 25 new permanent teaching spaces (home bases). The construction will include the removal of demountables, excavation of the site and the construction of the new Samuel Gilbert Public School buildings. The approved hours of construction are during standard working hours, as follows:

- 7.00 am to 6.00 pm Monday to Friday inclusive;
- 8.00 am to 1.00 pm Saturday; and
- No work on Sundays or public holidays.

The development is a State Significant Development (SSD) and as part of the Development Consent issued by the NSW Department of Planning and Environment, attached as Appendix C, an assessment against the NSW Environment Protection Authority's (EPA) *Interim Construction Noise Guideline 2009* is required.

This construction noise and vibration management sub-plan has been prepared in accordance with the Australian Standard AS2436:2010 "*Guide to noise and vibration control on construction, demolition and maintenance sites*". Construction noise and vibration management levels have been derived from the Environment Protection Authority's *Interim Construction Noise Guideline 2009* and *Assessing Vibration: a technical guideline 2006* and are used for a quantitative assessment at the nearest affected residential and educational receiver locations.

The major noise sources associated with the project are mobile plant and machinery to be used during the excavation and bulk earth works including rock hammering (if required) and the transport of raw materials to and from site in trucks.

There is potential, at least on some occasions, for noise emission from construction works to exceed the noise management level at some residences during various stages of the works.

All feasible and reasonable methods to reduce noise emissions and minimise the noise impact on neighbouring properties have been provided in Section 6 of this report. These include, limiting construction activity to within the prescribed hours, selecting quiet equipment, incorporating periods of respite, maintaining community consultation relations, managing noise complaints and conducting ground-borne vibration monitoring (if necessary).



Construction Noise & Vibration Management Sub - Plan

Provided the recommendations in Section 6 of this report are implemented and adhered to, the level of noise and vibration from the construction works will be minimised in accordance with Australian Standard AS2436:2010 and the NSW Environment Protection Authority's *Interim Construction Noise Guideline 2009* and *Assessing Vibration: a technical guideline 2006*.



Construction Noise & Vibration Management Sub - Plan

2.0 CONSULTING BRIEF

Day Design Pty Ltd has been engaged by Hutchinson Builders on behalf of Samuel Gilbert Public School to assess the environmental noise impact of the construction of the proposed redevelopment of Samuel Gilbert Public School at Ridgecrop Drive, Castle Hill, NSW.

This commission involves the following:

Scope of Work:

- Inspect the site and environs
- Measure the background noise levels at critical locations and times
- Establish acceptable noise level criterion
- Quantify noise emissions from the demolition, excavation and construction works
- Calculate the level of noise emission, taking into account distance attenuation
- Prepare a site plan identifying the development and nearby noise sensitive locations
- Provide recommendations for noise control (if necessary)
- Prepare a Construction Noise and Vibration Management Sub-Plan.



Construction Noise & Vibration Management Sub - Plan**3.0 PROJECT DESCRIPTION****3.1 Site Description**

Samuel Gilbert Public School is located on land zoned R2 – Low Density Residential under The Hills Local Environmental Plan (LEP) 2012. The School is bounded by Castle Glen Reserve to the north, commercial premises to the east (including a Child Care Centre), Gilbert Road to the south-east, Ridgescrop Drive to the south-west and residential premises to the west. Residential premises are also located on the opposite side of Gilbert Road to the south-east and Ridgescrop Drive to the south-west, as shown on Figure 1.

The nearest noise sensitive receptors to the property, in various directions, are shown in Figure 1 and as follows in Table 1.

Table 1 Noise Sensitive Receptors

Receptor and Type	Address	Direction from site
R1 – Child Care Centre (Educational)	22 Gilbert Road	East
R2 – Residential	75 Gilbert Road	South-East
R3 – Residential	2 Galahad Crescent	South-West
R4 – Residential	9 Squire Place	West

3.2 Development Description

The development process is broken down into two phases:

- Phase 1 – Excavation and earth moving
 - Expected timeframe of 8 weeks
 - Activities include use of excavator and dump trucks, a pile bore and a rock breaker as required
- Phase 2 – Construction
 - Expected timeframe 40 weeks
 - Activities include use of cement trucks, cranes, gensets, and hand tools.

The approved hours of construction works, including delivery of materials to and from the site, are as follows:

- Monday to Friday: 7 am to 6 pm;
- Saturdays: 8 am to 1 pm; and
- Sundays and public holidays: No work.



Construction Noise & Vibration Management Sub - Plan

The approved hours for rock breaking, rock hammering, sheet piling , pile driving and similar activities, are as follows:

- Monday to Friday: 9 am to 12 pm and 2 pm to 5 pm;
- Saturdays: 9 am to 12 pm; and
- Sundays and public holidays: No work.



Figure 1 - Location Plan, Ridgecrop Drive, Castle Hill, NSW.



Construction Noise & Vibration Management Sub - Plan**4.0 NOISE CRITERIA****4.1 Measured Ambient Noise Level**

In order to assess the severity of a possible environmental noise problem in a residential area it is necessary to measure the ambient background noise level at the times and locations of worst possible annoyance. The lower the background noise level, the more perceptible the intrusive noise becomes and the more potentially annoying.

The ambient L_{90} background noise level is a statistical measure of the sound pressure level that is exceeded for 90% of the measuring period (typically 15 minutes).

The Rating Background Level (RBL) is defined by the NSW EPA as the median value of the (lower) tenth percentile of L_{90} ambient background noise levels for the day, evening or night time periods, measured over a number of days during the proposed days and times of operation.

The places of worst possible annoyance are the nearby residential dwellings and Child Care Centre. These locations are shown in the Site Plan on Figure 1 as 'R1' to 'R4'. The times of worst possible annoyance will be during the day when the construction is occurring.

Ambient noise levels were measured in two locations - the front yard of 73 Gilbert Road and the backyard of 9 Squire Place - shown as Logger Locations 'A' and 'B' on Figure 1, respectively, from Wednesday 13 December to Wednesday 20 December, 2017.

The day time ambient noise levels are presented in the attached Appendix B1 and B2 and also below in Table 2.

Table 2 Ambient Noise Levels

Noise Measurement Location	Time Period	L_{90} Rating Background Level	Existing L_{eq} Noise Level
Logger Location 'A' - Front yard – 73 Gilbert Road	Day (7 am to 6 pm)	49 dBA	62 dBA
Logger Location 'B' - Backyard – 9 Squire Place	Day (7 am to 6 pm)	35 dBA	52 dBA

Meteorological conditions during the testing typically consisted of clear skies and temperatures of 16 to 42°C. Atmospheric conditions were ideal for noise monitoring. Noise measurements were therefore considered reliable and typical for the receptor areas.



Construction Noise & Vibration Management Sub - Plan**4.2 NSW Department of Planning & Environment**

The NSW Department of Planning and Environment issued the Development Consent (SSD 9274, 15 February 2020) for the Samuel Gilbert Public School Redevelopment, Ridgescrop Drive, Castle Hill, NSW. As part of the Development Consent, the following Conditions relating to acoustics must be satisfied:

'Part B Prior to Commencement of Construction

B15. *The Construction noise and Vibration Management Sub-Plan must address, but not be limited to, the following:*

- (a) be prepared by a suitably qualified and experienced noise expert;*
- (b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);*
- (c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;*
- (d) include strategies that have been developed with the community for managing high noise generating works;*
- (e) describe the community consultation undertaken to develop the strategies in condition B8(d);*
- (f) include a complaints management system that would be implemented for the duration of the construction; and*
- (g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the management measures in accordance with Condition B12(d).*

Note on parts (d) and (e): Community consultation for DoE projects is not permitted by consultants or contractors unless explicitly instructed. Parts (d) and (e) of the Consent Condition B15 are to be completed by DoE representatives prior to the commencement of construction (see "*Community Relations*" on page 23). These parts of the Consent can only in part be satisfied by a consultant, prior to the actual community consultation by the DoE, through the implementation of strategies specific to the project, in line with the requirements of Australian Standard AS2436 and the EPA's *Interim Construction Noise Guideline*.

During Construction**Construction Hours**

C4. *Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:*

- (a) Between 7 am and 6 pm, Mondays to Fridays inclusive; and*
- (b) Between 8 am and 1 pm, Saturdays.*

No work may be carried out on Sundays or public holidays.



Construction Noise & Vibration Management Sub - Plan

- C5.** *Activities may be undertaken outside of the hours in condition C5 if required:*
- (a) By the Police or a public authority for the delivery of vehicles, plant or materials; or*
 - (b) In an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or*
 - (c) Where the works are inaudible at the nearest sensitive receivers; or*
 - (d) Where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is approved for the works.*
- C6.** *Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.*
- C7.** *Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:*
- (a) 9 am to 12 pm, Monday to Friday;*
 - (b) 2 pm to 5 pm, Monday to Friday; and*
 - (c) 9 am to 12 pm, Saturday.*

4.3 Australian Standard AS2436

The Australian Standard AS2436:2010 *“Guide to noise and vibration control on construction, demolition and maintenance sites”* provides guidance on noise control in respect to construction, demolition and maintenance sites. The Standard also provides guidance for the preparation of noise and vibration management plans.

Section 1.5 ‘Regulatory Requirements’ of the Standard states:

“Legislation associated with the control of noise and vibration on and from construction, demolition and maintenance sites in Australia is generally the responsibility of the relevant State or Territory government, local council or a designated statutory authority.”

Consequently the Standard does not provide specific noise criterion rather sets out practical methods for determining the potential for noise and vibration impact on the community from construction, demolition and maintenance sites.

A qualitative method is described in Section 3.3 of the standard, which is designed to avoid the need for complex noise predictions by following a series of questions relating to, for example, whether the noise is likely to be loud, have annoying characteristics or affect sleep.

In the event that any of these outcomes are likely, a more detailed and quantitative approach should be adopted.



Construction Noise & Vibration Management Sub - Plan

In relation to carrying out detailed noise impact assessments, Section 4 'General' of the standard states:

"Regulatory authorities may have relevant policies and/or guidelines for the control of noise and vibration on construction sites. These should also be referred to when developing noise and vibration management plans for such projects."

In NSW this is the NSW Environment Protection Authority's *Interim Construction Noise Guideline 2009* as outlined in Section 4.4.

The Standard further states, in Section 4.6.1, that if noisy processes cannot be avoided, then the amount of noise reaching the receiver should be minimised and goes on to provide advice and recommendations to reduce noise and vibration impacts as far as reasonably practicable.

This report has been prepared in accordance with the guidance provided in AS2436:2010.

4.4 EPA Construction Noise Guideline

The NSW Environment Protection Authority published the *Interim Construction Noise Guideline* in July 2009. While some noise from construction sites is inevitable, the aim of the Guideline is to protect the majority of residences and other sensitive land uses from noise pollution most of the time.

The Guideline presents two ways of assessing construction noise impacts; the quantitative method and the qualitative method.

The quantitative method is generally suited to longer term construction projects and involves predicting noise levels from the construction phase and comparing them with noise management levels given in the guideline.

The qualitative method for assessing construction noise is a simplified way to identify the cause of potential noise impacts and may be used for short-term works, such as repair and maintenance projects of short duration.

In this instance, the quantitative method is the most appropriate and has been used in this assessment. Details of the quantitative method are given in Section 4 of the Guideline.

Normal construction hours are defined by the EPA as follows:

- 7.00 am to 6.00 pm Monday to Friday;
- 8.00 am to 1.00 pm Saturday; and
- No work on Sunday or Public Holiday.

Table 2 in Section 4 of the Guideline sets out noise management levels at affected residences and how they are to be applied during normal construction hours. The noise management level is derived from the rating background level (RBL) plus 10 dB in accordance with the Guideline. This level is considered to be the 'noise affected level' which represents the point above which there may be some community reaction to noise.



Construction Noise & Vibration Management Sub - Plan

The 'highly noise affected' level of 75 dBA represents the point above which there may be strong community reaction to noise. This level is provided in the Guideline and is not based on the RBL. Restrictions to the hours of construction may apply to activities that generate noise at residences above the 'highly noise affected' noise management level.

Based on the RBLs at all sensitive residential receiver locations in the daytime, the recommended noise management level during all aspects of the construction program are summarised in Table 3.

Table 3 L_{eq} Noise Management Levels from Construction Activities

Receptor Location	Noise Management Level	How to Apply
'R2' & 'R3'	59 dBA (49 + 10)	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured L_{Aeq} (15 min) noise level is greater than the noise affected level, the proponent should apply all feasible and reasonable* work practices to meet the noise affected level.
'R4'	45 dBA (35 + 10)	The proponent should 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.
All Residential Receptors	Highly noise affected 75 dBA	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 relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: - times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences); - if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.

*Section 6, 'work practices' of The *Interim Construction Noise Guideline*, states: "there are no prescribed noise controls for construction works. Instead, all feasible and reasonable work practices should be implemented to minimise noise impacts. This approach gives construction site managers and construction workers the greatest flexibility to manage noise".

Definitions of the terms feasible and reasonable are given in Section 1.4 of the Guideline.



Construction Noise & Vibration Management Sub - Plan

Section 4.1.2 of the guideline sets out noise management levels at the nearby affected Child Care Centre. It states that *'internal noise levels are to be assessed at the centre of the occupied room'*, however, *'where internal noise levels cannot be measured, external noise levels may be used. A conservative estimate of the difference between internal and external noise levels is 10 dB for buildings other than residences'*, as follows:

- Classrooms at schools and other educational institutions: external $L_{Aeq, 15 \text{ minute}} (45 + 10 =)$ 55 dBA.

During construction, the proponent should regularly update the occupant of the Child Care Centre regarding noise levels and hours of work.

4.5 EPA Vibration Guideline

The NSW EPA published the *Assessing Vibration: a technical guideline* in February 2006. This guideline is based on the British Standard BS6472:1992 *"Evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz)."*

The guideline presents preferred and maximum vibration values for use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques. The guideline considers vibration from construction activities as Intermittent Vibration. Table 2.4 of the guideline sets out limits for Vibration Dose Values to assess intermittent vibration and is replicated below in Table 4 for residential and educational receptor locations.

Table 4 Vibration Dose Values (VDV) from Construction Activities

Receptor Location	Daytime	
	Preferred value ($\text{m/s}^{1.75}$)	Maximum value ($\text{m/s}^{1.75}$)
All Residences	0.20	0.40
Schools, educational institutions	0.40	0.80

The British Standard BS7385-2:1993 *"Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration"* provides guide values for transient vibration relating to cosmetic damage, replicated below in Table 5 for residential and educational buildings.

Table 5 Transient Vibration Guide Values for Cosmetic Damage

Type of building	Peak component particle velocity in frequency range of predominant pulse	
	4 Hz to 15 Hz	15 Hz and above
Residential buildings and light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above



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In our opinion, an overall peak particle velocity of **15 mm/s** at the boundaries will comply with the recommended values in Table 5, and is an acceptable criterion for intermittent vibration to prevent cosmetic damage to the adjacent residential and educational buildings.

4.6 Project Specific Noise Criteria

In our opinion, the most relevant noise and vibration management levels for this development are those outlined in Sections 4.4 and 4.5 of this report, and summarised as follows:

- Noise management level of **55 dBA** ($L_{eq, 15 \text{ minute}}$) for educational receptor 'R1';
- Noise management level of **59 dBA** ($L_{eq, 15 \text{ minute}}$) for residential receptors 'R2' and 'R3';
- Noise management level of **45 dBA** ($L_{eq, 15 \text{ minute}}$) for residential receptor 'R4';
- A Vibration Dose Value (VDV) between **0.2 – 0.4 m/s^{1.75}** for human annoyance in residential buildings;
- A Vibration Dose Value (VDV) between **0.4 – 0.8 m/s^{1.75}** for human annoyance in schools or educational institutions; and
- A Peak Particle Velocity no greater than **15 mm/s** for cosmetic damage.



5.0 NOISE EMISSION

The main sources of noise on the site during the two phases of excavation and construction will be from heavy machinery such as excavators, dump trucks, cranes, cement mixers, rock breakers, etc.

Unless otherwise noted, the predicted noise levels in the following Sections assume that all equipment and plant listed are operating at the same time within the same general area along the nearest or furthest boundaries. This constitutes a worst-case scenario, however, due to the nature of the works, it is more likely that equipment will be dispersed over a wider area of the construction site and will not be continuously operating simultaneously. Typically, therefore, lower average levels can be expected.

A schedule of the sound power levels for the main demolition, excavation and construction equipment was extracted from the Day Design database of Sound Power Levels and the Australian Standard AS2436:1981 *"Guide to Noise Control on Construction, Maintenance and Demolition Sites"*.

Knowing the sound power level of a noise source, the sound pressure level (as measured with a sound level meter) can be calculated at a remote location using suitable formulae to account for distance losses, barrier effects, etc.

Calculations consider distance attenuation only and the range of levels are based on the closest potential distance and furthest potential distance at which each item of plant may operate from each respective residential and educational location. The calculated noise levels at nearby residential receptors are presented in Tables 7, 9 and 10.



Construction Noise & Vibration Management Sub - Plan**5.1 Phase 1 – Excavation and Bulk Earth Works**

The removal of the demountables, excavation and bulk earth works is estimated to take 8 weeks and will involve the use of excavators, rock hammers / saws, pile bores and regular truck movements transporting waste materials from the site. The equipment likely to be used and their corresponding sound power levels are presented below in Table 6.

Table 6 Typical Excavation Works Equipment - Sound Power Levels

Description	Sound Power Level, dBA
Excavator – Hitachi 330	107
Truck	107
Compressor	101
Generator	99
Piling (Bored)	111
Hydraulic Rock Breaker	118

Note: (All sound power levels are based on previous noise measurements at various sites)

Given the intensity of work involved with rock breaking, it is unlikely that this activity will take place at the same time as any other activity. Therefore we have assessed the noise impact of rock breaking individually. The calculated noise levels at nearby residential and educational receptors are presented below in Table 7 as a worst case scenario.

Table 7 Calculated Receptor Sound Pressure Levels from Excavation Works

Receptor Location	Calculated Sound Pressure Levels (dBA)
R1 - 22 Gilbert Road	56 – 60
R2 - 75 Gilbert Road	57 – 70
R3 - 2 Galahad Crescent	62 – 72
R4 - 9 Squire Place	53 – 59
Rock Breaking	
R1 - 22 Gilbert Road	63 – 67
R2 - 75 Gilbert Road	65 – 77
R3 - 2 Galahad Crescent	69 – 79
R4 - 9 Squire Place	60 – 66



Construction Noise & Vibration Management Sub - Plan**5.2 Phase 2 – Construction**

The construction of the mixed use building is estimated to take 40 weeks and will involve the use of heavy vehicles, power tools and portable mechanical plant such as generators and compressors. The equipment likely to be used and their corresponding sound power levels are presented below in Table 8.

Table 8 Typical Construction Equipment - Sound Power Levels

Description	Sound Power Level, dBA
Cement Truck	109
Crane	104
Generator	99
Compressor	101
Power Saw	105
Nail Gun	95
Grinder	101
Bobcat	106

Note: (All sound power levels are based on previous noise measurements at various sites)

During the construction phase, work will be more dispersed across the site as the scale of work, compared to the previous phase, is less intensive. The calculated noise levels at nearby residential and educational are presented below in Table 9 as a worst case scenario.

Table 9 Calculated Receptor Sound Pressure Levels from Construction Works

Receptor Location	Calculated Sound Pressure Levels (dBA)
R1 - 22 Gilbert Road	59 – 62
R2 - 75 Gilbert Road	60 – 72
R3 - 2 Galahad Crescent	64 – 74
R4 - 9 Squire Place	56 – 62



Construction Noise & Vibration Management Sub - Plan**5.3 Noise Emission Summary**

From the calculated noise levels in Sections 5.1 to 5.2, the levels of exceedance are presented below in Table 10.

Table 10 Calculated L_{eq} 15 minute Noise Levels (Without Noise Controls)

Description	Calculated Noise Levels (dBA)			
	22 Gilbert Street	75 Gilbert Street	2 Galahad Crescent	9 Squire Place
Phase 1 – Excavation Works				
Excavation Works	56 – 60	57 – 70	62 – 72	53 – 59
Rock Hammering	63 – 67	65 – 77	69 – 79	60 – 66
Noise Management Level	55	59	59	45
Exceedance	Up to 12 dB	Up to 18 dB	Up to 20 dB	Up to 21 dB
Phase 2 – Construction				
Construction Works	59 – 62	60 – 72	64 – 74	56 – 62
Noise Management Level	55	59	59	45
Exceedance	Up to 7 dB	Up to 13 dB	Up to 15 dB	Up to 17 dB

It can be seen from Table 10 above, that the predicted levels of noise from construction activities will at times be in excess of the noise management levels of 53 dBA and 45 dBA, respectively, at residential receptor locations. There is also potential for the highly noise affected level of 75 dBA to be exceeded, if required, during any rock hammering.

To minimise the noise impact from the construction activities we recommend that the noise controls and the management sub-plan detailed in Section 6 of this report be implemented.

Rock hammering is not considered cumulatively as it is unknown at this stage whether it will be required, and if so where it may be required. To include it in the cumulative noise predictions would potentially over-state the predicted impact. However, as a precaution, it is recommended in the noise management controls (Section 6.2) that in the event that rock hammering is required near to residential receptors, it is conducted in the absence of any other plant operations to avoid a cumulative noise impact.



5.4 Vibration Emission

It is difficult to accurately predict levels of ground borne vibration at remote locations as there are many variables to consider including the surrounding terrain, strata, rock density, etc.

Previous measurements of ground borne vibration from rock hammering show that vibration levels can vary significantly at different distances and receptor locations. Given the distances from neighbouring developments to any potential rock hammering on site, we recommend that if warranted compliance monitoring of ground borne vibration is carried out at the nearest residences and Child Care Centre, wherever these activities are required.

Recommendations are made in Section 6.4 of this report should complaints arise from nearby residences regarding vibration from the site.



Construction Noise & Vibration Management Sub - Plan**6.0 NOISE CONTROL RECOMMENDATIONS**

The predicted level of noise emission from the excavation and construction activities at Samuel Gilbert Public School, Ridgescrop Drive, Castle Hill, NSW is in excess of the noise management levels established in Section 4.6 of this report.

In order to minimise the noise impact from all excavation and construction activities, we recommend the following engineering and management noise controls be implemented.

6.1 Engineering and Practical Noise Controls

Australian Standard AS2436:2010, Appendix C, Table C3 provides the relative effectiveness of various forms of noise control that may be applicable and implemented on various construction sites and projects. Table C3 is replicated below in Table 11.

Table 11 Relative Effectiveness of Various Forms of Noise Control

Control by	Nominal Noise Reduction Possible, dB
Distance	Approximately 6 dB for each doubling of distance
Enclosure	Normally 5 dB to 25 dB maximum 50 dB
Silencing	Normally 5 dB to 10 dB maximum 20 dB

Distance

Where applicable, we recommend locating mechanical plant near the centre of the site such that it is as far as practically possible from the residences to the east, south and west.

Enclosure

Constructing acoustical enclosures around items of mobile plant such as generators is recommended where extended use for long periods of time is expected.

Silencing

Consideration should be given to any mobile plant already acoustically treated when assessing tenders. All plant and machinery should be selected with consideration to low noise options where practicable and available.

Care should be taken to ensure that not more than one item of plant is operating simultaneously within close proximity of any given residence as far as reasonably practicable, to minimise cumulative noise impacts.



Construction Noise & Vibration Management Sub - Plan

6.2 Noise Management Controls

The following noise management controls are derived from, or are in accordance with recommendations given in Australian Standard AS2436:2010 and the EPA's *Interim Construction Noise Guideline*.

Periods of Respite

We recommend that noisy construction activities such as rock hammering or the like only operate for 2 to 3 hours at a time.

Ensure activities in any one location are staggered, for instance, if rock hammering is occurring near to a residential receptor, all other construction activities will cease in the same location so as to minimise cumulative noise impacts.

Work Practices

We recommend that workers and contractors be trained in work practices to minimise noise emission such as the following:

- Avoid dropping materials from a height.
- Avoid shouting and talking loudly outdoors.
- Avoid the use of radios outdoors that can be heard at the boundary of residences.
- Turn off equipment when not being used.
- Carry out work only within the proposed hours of operation (see Section 3.2).

Heavy Vehicles and Staff Vehicles

- Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling).
- Locate site vehicle entrances away from residences where practicable.
- Optimise the number of vehicle trips to and from the site – movements can be organised to amalgamate loads rather than using a number of vehicles with smaller loads.
- Staff parking areas should be located as far from residential receiver locations as practicable.
- No motor vehicles should access the site via, or park within residential areas prior to 7 am on any occasion, in order avoid sleep disturbance.

Community Relations

- A Community Liaison Officer (Project Manager or Site Manager) is to be appointed by the contractor prior to the commencement of any works.
- The Community Liaison Officer will approach all potentially affected residents prior to the commencement of any works as an initial introduction and provide his or her contact details.



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- The Community Liaison Officer will explain the project, duration of works, potentially noisy periods as well as determine any particularly sensitive receivers or sensitive time periods and schedule works accordingly, as far as reasonably practical.
- A contact number will be provided for any residents to call with complaints or queries.

Once works commence, communication with the community should be maintained by the Community Liaison Officer. Communication should be maintained via a range of media including, for example, continued individual contact, letter box drops or a clearly visible notice board at the site office or on construction site boundaries.

Consultation and cooperation between the contractor and the neighbours and the removal of uncertainty and rumour can help to reduce adverse reaction to noise.

In addition –

- The DoE is to hold an Information Booth at the Samuel Gilbert Public School, adjacent to the site, to provide the community an opportunity to review the proposed construction activities. Residents in the vicinity are to be provided with 7 days notice. Comments will be captured per the NSW Department of Education Community Communication Strategy protocol. (See Appendix E)
- The NSW Department of Education Community Communication Strategy for complaints is to be implemented on this project. For the duration of the project a free call 1300 community information line is to be accessible and manned by Schools Infrastructure NSW.

Managing a Noise Complaint

The Community Liaison Officer should receive and manage noise complaints.

All complaints should be treated promptly and with courtesy.

Should a justified noise complaint not be resolved, noise monitoring may be carried out at the affected receptor location and appropriate measures be taken to reduce the noise emission as far as reasonably practicable.

Where it is not practicable to stop the noise, or reduce the noise, a full explanation of the event taking place, the reason for the noise and times when it will stop should be given to the complainant.

The following guidelines are recommended in Section 6 of the *Interim Construction Noise Guideline* to manage a noise complaint:

- Provide a readily accessible contact point.
- Give complaints a fair hearing.
- Have a documented complaints process, including an escalation procedure so that if a complainant is not satisfied there is a clear path to follow.



Construction Noise & Vibration Management Sub - Plan

- Call back as soon as possible to keep people informed of action to be taken to address noise problems. Call back at night-time only if requested by the complainant to avoid further disturbance.
- Provide a quick response to complaints, with complaint handling staff having both a good knowledge of the project and ready access to information.
- Implement all feasible and reasonable measures to address the source of complaint.
- Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, work area (for larger projects), time of verbal response and timeframe for written response where appropriate.

6.3 Noise Monitoring

We recommend that noise emissions from the development be measured during the construction periods in the event that complaints arise from nearby residences, regarding noise.

The noise measurements should be carried out using an attended noise monitor at the location (or as close as practically possible) of the noise complaint. Noise level measurements should be carried out by an appropriately qualified acoustical consultant / engineer, using Type 1 (see AS1259) noise measuring equipment.

The measured noise level are to be compared against the Project Specific Noise Criteria shown in Section 4.6 of this report. The outcomes of the noise monitoring should be submitted to the relevant authority for review.

6.4 Vibration Monitoring

We recommend that the level of vibration be measured during any rock hammering in the event complaints arise from any nearby residences regarding vibration.

The vibration measurements can be carried out using either an attended or an unattended vibration monitor. An unattended vibration monitor should be fitted with an alarm in the form of a strobe light or siren to make the plant operator aware immediately when the vibration limit is exceeded. The vibration monitor should be set to trigger the alarm when the overall Peak Particle Velocity (PPV) exceeds **15 mm/s** at the nearest residential building.

Dilapidation reports should be commissioned for potentially affected residential premises prior to any works being undertaken. This may be reassessed once the extent of required work is known.

In the event that levels of ground-borne vibration exceed the recommended acceptable levels for cosmetic damage, vibration causing works should cease immediately and alternative methods, such as rock sawing, be considered.



6.5 Construction Disclaimer

Recommendations made in this report are intended to resolve acoustical problems only. We make no claims of expertise in other areas of building construction and therefore the recommended noise controls should be implemented into the building design in consultation with other specialists to ensure they meet the structural, fire, thermal or other aspects of building construction.

We encourage clients to check with us before using materials or equipment that are alternative to those specified in our Acoustical Report.



Construction Noise & Vibration Management Sub - Plan

7.0 CONCLUSION

Day Design was engaged by Hutchinson Builders on behalf of Samuel Gilbert Public School to prepare a Construction Noise and Vibration Management Sub-Plan for the proposed redevelopment of Samuel Gilbert Public School at Ridgecrop Drive, Castle Hill, NSW.

Provided the recommendations in Section 6 of this report are implemented, the level of noise and vibration from the construction works at Samuel Gilbert Public School on Ridgecrop Drive, Castle Hill, NSW will be minimised as far as reasonably practical in accordance with the Australian Standard AS2436:2010 *“Guide to noise and vibration control on construction, demolition and maintenance sites”* and the EPA’s *Interim Construction Noise Guideline 2009* and *Assessing Vibration: a technical guideline 2006*, as detailed in Section 4 of this report.



Adam Shearer, BCT (Audio), MDesSc (Audio and Acoustics), MAAS

Senior Acoustical Consultant

for and on behalf of Day Design Pty Ltd

AAAC MEMBERSHIP

Day Design Pty Ltd is a member company of the Association of Australasian Acoustical Consultants, and the work herein reported has been performed in accordance with the terms of membership.

APPENDICES

Appendix A – Instrumentation

Appendix B1 & B2 – Ambient Noise Survey

Appendix C – Development Consent – SSD 9274, 15 February 2020

Appendix D – Adam Shearer – *Curriculum Vitae*

Appendix E – Post Approval – SINSW Consultation Record

AC108-1 to 4 – Glossary of Acoustical Terms



NOISE SURVEY INSTRUMENTATION

Noise level measurements and analysis in this report were made with instrumentation as follows:

Table A1 Noise Survey Instrumentation

Description	Model No	Serial No
Infobyte Noise Logger (Type 1)	iM4	107
Condenser Microphone 0.5" diameter	MK 250	107
Infobyte Noise Logger (Type 2)	iM4	118
Condenser Microphone 0.5" diameter	MK 250	118

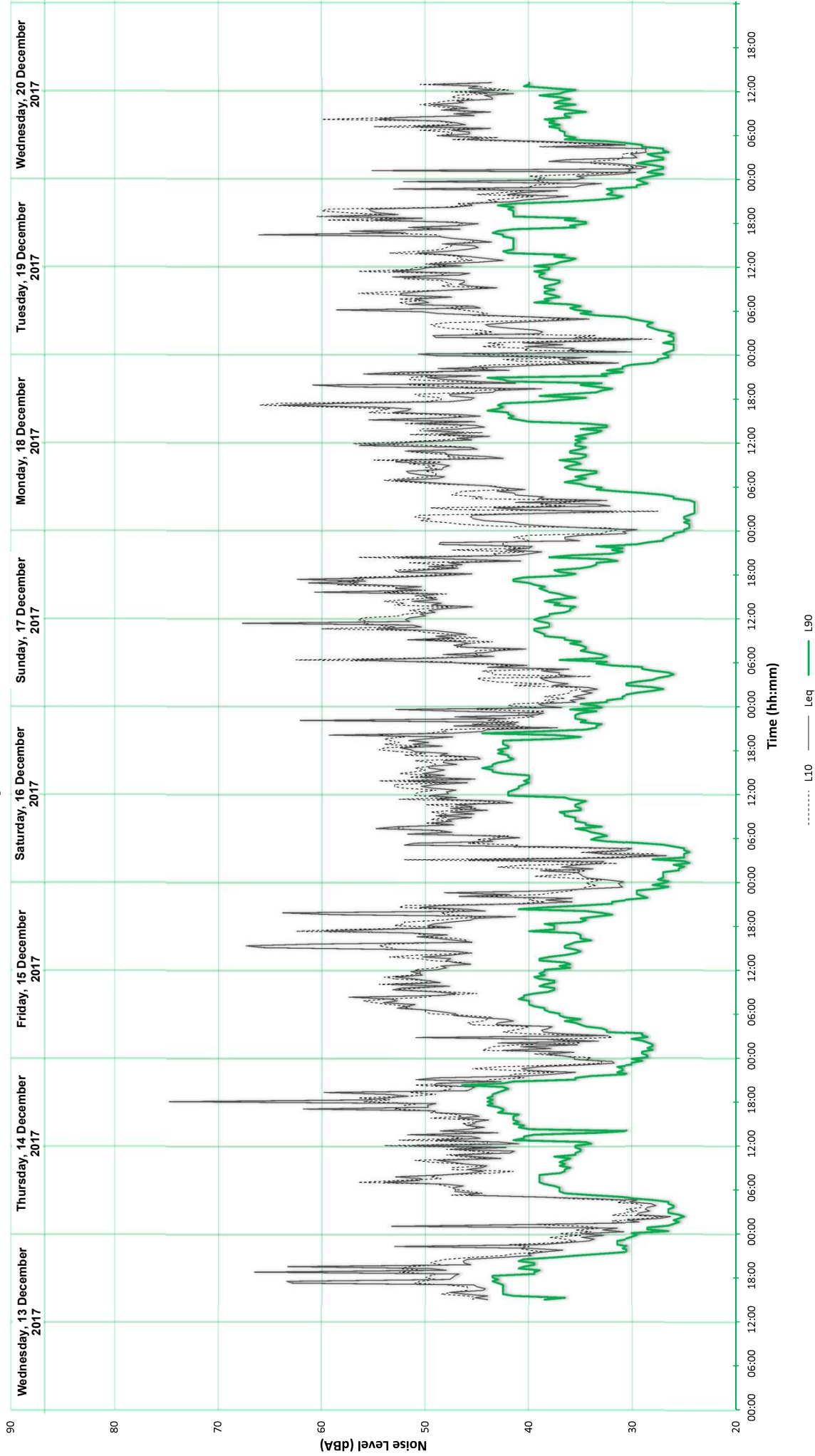
An environmental noise logger is used to continuously monitor ambient noise levels and provide information on the statistical distribution of noise during an extended period of time. The Infobyte Noise Monitor iM4s are Type 2 precision environmental noise monitor meeting all the applicable requirements of AS1259 for an integrating-averaging sound level meter.

All instrument systems had been laboratory calibrated using instrumentation traceable to Australian National Standards and certified within the last two years thus conforming to Australian Standards. The measurement system was also field calibrated prior to and after noise surveys. Calibration drift was found to be less than 1 dB during unattended measurements. No adjustments for instrument drift during the measurement period were warranted.



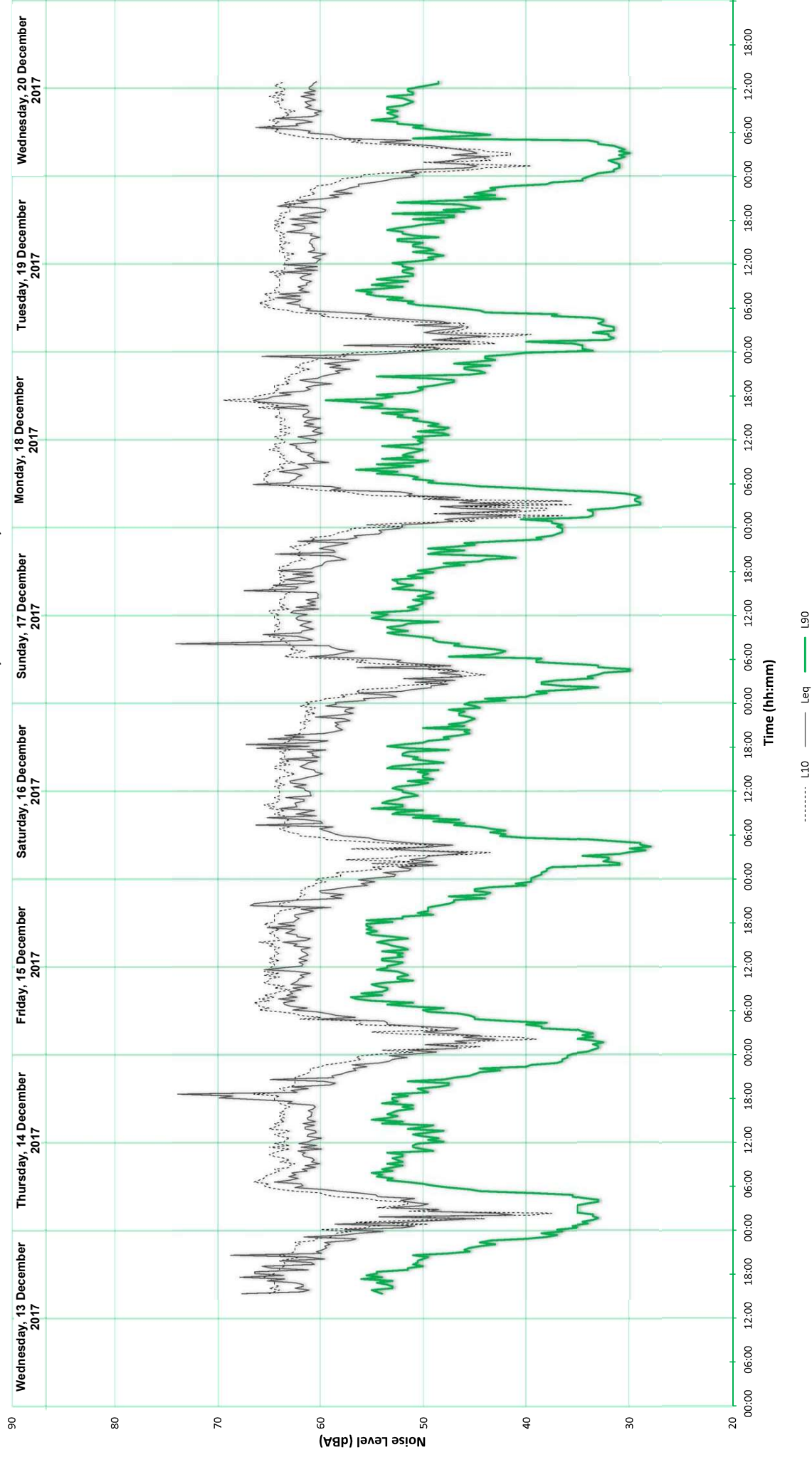
AMBIENT NOISE SURVEY

Located at 9 Squire Place, Castle Hill, NSW



AMBIENT NOISE SURVEY

Located at 73 Gilbert Road, Castle Hill, NSW



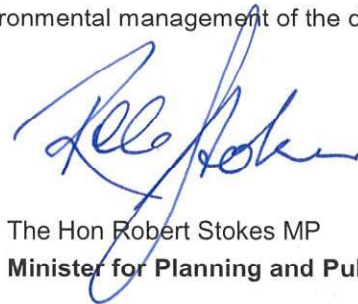
Development Consent

Section 4.38 of the Environmental Planning and Assessment Act 1979

As the Minister for Planning and Public Spaces, I approve the Development Application referred to in Schedule 1, subject to the conditions specified in Schedule 2.

These conditions are required to:

- prevent, minimise, or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.



The Hon Robert Stokes MP
Minister for Planning and Public Spaces

Sydney

15th February, 2020

SCHEDULE 1

Application Number: SSD 9274

Applicant: NSW Department of Education

Consent Authority: Minister for Planning and Public Spaces

Site: Lot 1 DP 719671, 20 Gilbert Road, Castle Hill
Samuel Gilbert Public School

Development: Redevelopment of Samuel Gilbert Public School comprising:

- demolition of classroom spaces and removal of trees;
- construction of a new three storey building along Ridgescrop Drive containing 23 new teaching spaces, new staff and administration offices, new library and school entry forecourt;
- construction of a new school hall with a separate entrance for out of school hours and community use;
- alterations and additions to the existing administration building and library building to convert these into six new home bases;
- refurbishment of two toilet blocks; and

- associated works including construction of a new circulation axis, landscaping and signage.

DEFINITIONS

Aboriginal object	Has the same meaning as the definition of the term in section 5 of the <i>National Parks and Wildlife Act 1974</i>
Aboriginal place	Has the same meaning as the definition of the term in section 5 of the <i>National Parks and Wildlife Act 1974</i>
Advisory Notes	Advisory information relating to the consent but do not form a part of this consent
Applicant	NSW Department of Education or any other person carrying out any development to which this consent applies
Approved disturbance area	The area identified as such on the development layout
Archaeological Salvage	The collection and removal of archaeological data and materials from site
BCA	Building Code of Australia
BC Act	<i>Biodiversity Conservation Act 2016</i>
CEMP	Construction Environmental Management Plan
Certifying Authority	Professionals that are accredited by the Building Professionals Board to issue construction, occupation, subdivision, strata, compliance and complying development certificates under the EP&A Act, <i>Strata Schemes (Freehold Development) Act 1973</i> and <i>Strata Schemes (Leasehold Development) Act 1986</i> or in the case of Crown development, a person qualified to conduct a Certification of Crown Building works.
Conditions of this consent	The conditions contained in Schedule 2 of this document
Construction	All physical work to enable operation including but not limited to the demolition and removal of buildings, the carrying out of works for the purposes of the development, including bulk earthworks, and erection of buildings and other infrastructure permitted by this consent, but excluding the following: • building and road dilapidation surveys; • investigative drilling or investigative excavation; • Archaeological Salvage; • establishing temporary site offices (in locations identified by the conditions of this consent); • installation of environmental impact mitigation measures, fencing, enabling works; and • minor adjustments to services or utilities. However, where heritage items, or threatened species or threatened ecological communities (within the meaning of the <i>Biodiversity Conservation Act 2016</i> or <i>Environment Protection and Biodiversity Conservation Act 1999</i>) are affected or potentially affected by any physical work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with EES Group or DPIE Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation)
Council	The Hills Shire Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Demolition	The deconstruction and removal of buildings, sheds and other structures on the site
Department	NSW Department of Planning, Industry and Environment
Development	The development described in the EIS and Response to Submissions, including the works and activities comprising demolition, construction and

	operation of Samuel Gilbert Public School, as limited by the conditions of this consent
Earthworks	Bulk earthworks, site levelling, import and compaction of fill material, excavation for installation of drainage and services
EES Group	Environment, Energy and Science Group of the Department of Planning, Industry and Environment (Former Office of Environment and Heritage)
EIS	The Environmental Impact Statement titled Proposed Expansion of Samuel Gilbert Public School, prepared by Minto Planning Services dated 14 November 2018, submitted with the application for consent for the development, including any additional information provided by the Applicant in support of the application
ENM	Excavated Natural Material
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence under the POEO Act
Evening	The period from 6pm to 10pm.
Feasible	Means what is possible and practical in the circumstances
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement
Heritage NSW	Heritage, Community Engagement of the Department of Premier and Cabinet
Heritage Item	An item as defined under the <i>Heritage Act 1977</i> , and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i> , the World Heritage List, or the National Heritage List or Commonwealth Heritage List under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth), or anything identified as a heritage item under the conditions of this consent
IBRA	Interim Biogeographic Regionalisation for Australia
Incident	An occurrence or set of circumstances that causes, or threatens to cause, material harm and which may or may not be, or cause, a non-compliance <i>Note: "material harm" is defined in this consent</i>
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
Management and mitigation measures	The management and mitigation measures set out in Section 7 of EIS and Section 5 of Response to Submission
Material harm	Is harm that: a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister	NSW Minister for Planning and Public Spaces (or delegate)
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring

Monitoring	Any monitoring required under this consent must be undertaken in accordance with section 9.39 of the EP&A Act
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
NSW RFS	New South Wales Rural Fire Service
OEMP	Operational Environmental Management Plan
Operation	The carrying out of the approved purpose of the development upon completion of construction.
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation, benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements.
Registered Aboriginal Parties	Means the Aboriginal persons identified in accordance with the document entitled “ <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i> ” (DECCW)
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting.
Response to submissions	The Applicant's response to issues raised in submissions received in relation to the application for consent for the development under the EP&A Act.
Sensitive receivers	A location where people are likely to work, occupy or reside, including a dwelling, school, hospital, office or public recreational area.
Site	The land defined in Schedule 1.
Site Auditor	As defined in section 4 of the <i>Contaminated Land Management Act 1997</i>
Site Audit Report	As defined in section 4 of the <i>Contaminated Land Management Act 1997</i>
Site Audit Statement	As defined in section 4 of the <i>Contaminated Land Management Act 1997</i>
STIF	Sydney Turpentine Ironbark Forest
TfNSW	Transport for New South Wales
TfNSW(RMS)	Transport for New South Wales (Roads and Maritime Services)
Upgrading	The carrying out of works (including replacing plant, equipment, or machinery or updating relevant technology) to improve the efficiency of the development or to enable or enhance its continued operation, and the carrying out of the maintenance works.
VENM	Virgin Excavated Natural Material
Waste	Has the same meaning as the definition of the term in the Dictionary to the POEO Act
Year	A period of 12 consecutive months

SCHEDULE 2

PART A ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

- A1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and, if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development.

Terms of Consent

- A2. The development may only be carried out:
- (a) in compliance with the conditions of this consent;
 - (b) in accordance with all written directions of the Planning Secretary;
 - (c) generally in accordance with the EIS and Response to Submissions;
 - (d) in accordance with the approved plans in the table below:

Architectural Plans prepared by <i>Fulton Trotter</i>			
Dwg No.	Rev	Name of Plan	Date
AEX1002	P16	Site Demolition Plan	15/08/19
SD1001	P24	Proposed Site Plan	15/08/19
A-S-1400	01	Staging Plan	17/01/20
SD1603	P12	External Materials 1	7/05/19
SD1604	P12	External Materials 2	7/05/19
SD1605	P10	External Materials 3	7/05/19
SD1607	P10	Site Sections	7/05/19
SD1608	P10	Block N & P Street Elevation	7/05/19
SD1609	P14	Tree Plan	11/09/19
SD1610	P8	Proposed Signage	7/05/19
SD1611	P9	Construction Environmental Management Plan	7/05/19
SD1613	P3	Height Blanket Site Perspective & Section	7/05/19
SD1614	P2	End of Trip Facilities Plan	7/05/19
SD1615	P1	Kiss and Ride	7/05/19
SD-A-2001	P15	Building A – Ground Floor Plan	7/05/19
SD-A-2101	P7	Building A – Roof Plan	7/05/19
AEX-A-2001	P9	Building A – Demolition Floor Plan	7/05/19
AEX-E-2001	P9	Building E – Demolition Floor Plan	7/05/19
SD-E-2001	P16	Building E – Ground Floor Plan	7/05/19
SD-E-2101	P6	Building E – Roof Plan	7/05/19
AEX-F-2001	P3	Building D & F Demolition Floor Plans	7/05/19
SD-F-2101	P6	Building D & F Roof Plan	7/05/19
SD-F-3001	P3	Building D & F Elevations	7/05/19
SD-N-2002	P22	Building N – Ground Floor Plan	7/05/19

SD-N-2003	P21	Building N – Level 1 Floor Plan	7/05/19
SD-N-2004	P20	Building N – Level 2 Floor Plan	7/05/19
SD-N-2101	P15	Building N – Roof Plan	7/05/19
SD-N-3001	P18	Building N – North South Elevations	7/05/19
SD-N-3002	P18	Building N – East & West Elevations	7/05/19
SD-N-3101	P12	Building N – Sections N1, N2 & N3	7/05/19
SD-P-2002	P20	Building P – Ground Floor Plan	7/05/19
SD-P-2003	P19	Building P – Level 1 Floor Plan	7/05/19
SD-P-2004	P19	Building P – Level 2 Floor Plan	7/05/19
SD-P-2101	P15	Building P – Roof Plan	7/05/19
SD-P-3001	P18	Building P – North & South Elevations	7/05/19
SD-P-3002	P18	Building P – East & West Elevations	7/05/19
SD-P-3101	P12	Building P – Sections P1 & P3	7/05/19
SD-P-3102	P9	Building P – Section P4	7/05/19
SD-Q-2001	P19	Building Q – Ground Floor Plan	7/05/19
SD-Q-2101	P12	Building Q – Roof Plan	7/05/19
SD-Q-3001	P15	Building Q – North and East Elevations	7/05/19
SD-Q-3002	P17	Building Q – South and West Elevations	7/05/19
SD-Q-3101	P7	Building Q – Section Q1 & Q2	7/05/19
Landscape Plans prepared by <i>Ground Ink Landscape Architects</i>			
Dwg No.	Rev	Name of Plan	Date
LDA-05	-	Proposed External Works Plan	12/09/19
LDA-07	-	Landscape Masterplan	12/09/19
LDA-08	-	Materials Palette	12/09/19
LDA-09	-	Indicative Plant Palette	12/09/19
LDA-10	-	Central Plaza Landscape Plan	12/09/19
LDA-11	-	Central Plaza Section Elevation	12/09/19
LDA-12	-	Section Elevation	12/09/19
LDA-13	-	Ridgecrop Drive (Southern) Elevation	12/09/19
LDA-14	-	Proposed Tree Plan	12/09/19
Civil Plans prepared by <i>Henry & Hymas</i>			
Dwg No.	Rev	Name of Plan	Date
17787_DA_BE01	04	Bulk Earthworks Cut and Fill Plan	28/02/19
17787_DA_C100	09	General Arrangement Plan	28/02/19
17787_D1_BE01	01	Bulk Earthworks Cut and Fill Plan Staff Car Park	16/08/19
17787_D1_C000	01	Cover Sheet, Drawing Schedule Notes and Locality Sketch	16/08/19

17787_D1_C100	01	Staff Car Park – Detail Plan	16/08/19
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- A3. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:
- (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary;
 - (b) any reports, reviews or audits commissioned by the Planning Secretary regarding compliance with this approval; and
 - (c) the implementation of any actions or measures contained in any such document referred to in (a) above.
- A4. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c) or A2(d). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A2(c) and A2(d), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

Limits of Consent

- A5. This consent lapses five years after the date of consent unless work is physically commenced.

Prescribed Conditions

- A6. The Applicant must comply with all relevant prescribed conditions of development consent under Part 6, Division 8A of the EP&A Regulation.

Planning Secretary as Moderator

- A7. In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this approval or relevant matter relating to the Development, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's resolution of the matter must be binding on the parties.

Evidence of Consultation

- A8. Where conditions of this consent require consultation with an identified party, the Applicant must:
- (a) consult with the relevant party prior to submitting the subject document for information or approval; and
 - (b) provide details of the consultation undertaken including:
 - (i) the outcome of that consultation, matters resolved and unresolved; and
 - (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

Staging

- A9. The project may be constructed and operated in stages. Where staged construction or operation is proposed, a Staging Report (for either or both construction and operation as the case may be) must be prepared and submitted for the approval of the Planning Secretary. The Staging Report must be submitted to the Planning Secretary no later than one month before the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one month before the commencement of operation of the first of the proposed stages of operation).
- A10. A Staging Report prepared in accordance with condition A9 must:
- (a) if staged construction is proposed, set out how the construction of the whole of the project will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish;
 - (b) if staged operation is proposed, set out how the operation of the whole of the project will be staged, including details of work and other activities to be carried out in each stage

- and the general timing of when operation of each stage will commence and finish (if relevant);
 - (c) specify how compliance with conditions will be achieved across and between each of the stages of the project; and
 - (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.
- A11. Where staging is proposed, the project must be staged in accordance with the Staging Report, as approved by the Planning Secretary.
- A12. Where staging is proposed, the terms of this approval that apply or are relevant to the works or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.

Staging, Combining and Updating Strategies, Plans or Programs

- A13. With the approval of the Planning Secretary, the Applicant may:
- (a) prepare and submit any strategy, plan (including management plan, architectural or design plan) or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan (including management plan, architectural or design plan) or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan (including management plan, architectural or design plan) or program);
 - (b) combine any strategy, plan (including management plan, architectural or design plan), or program required by this consent (if a clear relationship is demonstrated between the strategies, plans (including management plan, architectural or design plan) or programs that are proposed to be combined); and
 - (c) update any strategy, plan (including management plan, architectural or design plan), or program required by this consent (to ensure the strategies, plans (including management plan, architectural or design plan), or programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).
- A14. If the Planning Secretary agrees, a strategy, plan (including management plan, architectural or design plan), or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.
- A15. If approved by the Planning Secretary, updated strategies, plans (including management plan, architectural or design plan), or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan, program or drawing.

Structural Adequacy

- A16. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the BCA and any additional requirements of the Subsidence Advisory NSW where the building or structure is located on land within a declared Mine Subsidence District.

Notes:

- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.*
- *Under section 21 of the Coal Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of Subsidence Advisory NSW's approval before carrying out certain development in a Mine Subsidence District.*

External Walls and Cladding

- A17. The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the BCA.

Applicability of Guidelines

- A18. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.
- A19. Consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

Monitoring and Environmental Audits

- A20. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, Site audit report and independent auditing.

Note: For the purposes of this condition, as set out in the EP&A Act, “monitoring” is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an “environmental audit” is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.

Access to Information

- A21. At least 48 hours before the commencement of construction until the completion of all works under this consent, or such other time as agreed by the Planning Secretary, the Applicant must:
- (a) make the following information and documents (as they are obtained or approved) publicly available on its website:
 - (i) the documents referred to in condition A2 of this consent;
 - (ii) all current statutory approvals for the development;
 - (iii) all approved strategies, plans and programs required under the conditions of this consent;
 - (iv) regular reporting on the environmental performance of the development in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent;
 - (v) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
 - (vi) a summary of the current stage and progress of the development;
 - (vii) contact details to enquire about the development or to make a complaint;
 - (viii) a complaints register, updated monthly;
 - (ix) audit reports prepared as part of any independent audit of the development and the Applicant’s response to the recommendations in any audit report;
 - (x) any other matter required by the Planning Secretary; and
 - (b) keep such information up to date, to the satisfaction of the Planning Secretary.

Compliance

- A22. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

Incident Notification, Reporting and Response

- A23. The Planning Secretary must be notified in writing to compliance@planning.nsw.gov.au immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one), and set out the location and nature of the incident.
- A24. Subsequent notification must be given and reports submitted in accordance with the requirements set out in **Appendix 1**.

Non-Compliance Notification

- A25. The Planning Secretary must be notified in writing to compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of any non-compliance. The Certifying Authority must also notify the Planning Secretary in writing to compliance@planning.nsw.gov.au within seven days after they identify any non-compliance.
- A26. The notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.
- A27. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Revision of Strategies, Plans and Programs

- A28. Within three months of:
- (a) the submission of a compliance report under condition B33;
 - (b) the submission of an incident report under condition A23;
 - (c) the submission of an Independent Audit under condition C34;
 - (d) the issue of a direction of the Planning Secretary under condition A2 which requires a review,
- the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary and the Certifying Authority must be notified in writing that a review is being carried out.
- A29. If necessary to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans, programs or drawings required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review.
- Note:** This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.

Design and Construction for Bush Fire

- A30. Proposed Building N must comply with Sections 3 and 5 (BAL 12.5) Australian Standard AS3959-2009 Construction of buildings in bushfire-prone areas or NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate and section A3.7 Addendum Appendix 3 of Planning for Bush Fire Protection 2006; and
- A31. New works proposed to Building A must comply with Sections 3 and 5 (BAL 12.5) Australian Standard AS3959-2009 Construction of buildings in bushfire-prone areas or NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate and section A3.7 Addendum Appendix 3 of Planning for Bush Fire Protection 2006.

PART B PRIOR TO COMMENCEMENT OF CONSTRUCTION

Notification of Commencement

- B1. The Applicant must notify the Planning Secretary in writing of the dates of commencement of physical work and operation at least 48 hours before those dates.
- B2. If the construction or operation of the development is to be staged, the Planning Secretary must be notified in writing at least 48 hours before the commencement of each stage, of the date of commencement and the development to be carried out in that stage.

Certified Drawings

- B3. Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifying Authority structural drawings prepared and signed by a suitably qualified practising Structural Engineer that demonstrates compliance with this development consent.

External Walls and Cladding

- B4. Prior to the commencement of construction (excluding earthworks), the Applicant must provide the Certifying Authority with documented evidence that the products and systems proposed for use or used in the construction of external walls, including finishes and claddings such as synthetic or aluminium composite panels, comply with the requirements of the BCA. The Applicant must provide a copy of the documentation given to the Certifying Authority to the Planning Secretary within seven days after the Certifying Authority accepts it.

Protection of Public Infrastructure

- B5. Prior to the commencement of construction, the Applicant must:
 - (a) consult with the relevant owner and provider of services that are likely to be affected by the development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;
 - (b) prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths); and
 - (c) submit a copy of the dilapidation report to the Planning Secretary, Certifying Authority and Council.

Pre-Construction Dilapidation Report

- B6. Prior to the commencement of construction, the Applicant must submit a pre-commencement dilapidation report to Council and the Certifying Authority. The report must provide an accurate record of the existing condition of adjoining private properties and Council assets that are likely to be impacted by the proposed works.

Unexpected Contamination Procedure

- B7. Prior to the commencement of earthworks, the Applicant must prepare an unexpected contamination procedure to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the CEMP in accordance with condition B13 and where any material identified as contaminated is to be disposed off-site, the disposal location and results of testing submitted to the Planning Secretary prior to its removal from the site.

Community Communication Strategy

- B8. No later than two weeks before the commencement of construction, a Community Communication Strategy must be submitted to the Planning Secretary for information. The Community Communication Strategy must provide mechanisms to facilitate communication between the Applicant, the relevant Council and the community (including adjoining affected landowners and businesses, and others directly impacted by the development), during the design and construction of the development and for a minimum of 12 months following the completion of construction.

The Community Communication Strategy must:

- (a) identify people to be consulted during the design and construction phases;

- (b) set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the development;
- (c) provide for the formation of community-based forums, if required, that focus on key environmental management issues for the development;
- (d) set out procedures and mechanisms:
 - (i) through which the community can discuss or provide feedback to the Applicant;
 - (ii) through which the Applicant will respond to enquiries or feedback from the community; and
 - (iii) to resolve any issues and mediate any disputes that may arise in relation to construction and operation of the development, including disputes regarding rectification or compensation.

Ecologically Sustainable Development

- B9. Prior to the commencement of construction, unless otherwise agreed by the Planning Secretary, the Applicant must demonstrate that ESD is being achieved by either:
- (a) registering for a minimum 4 star Green Star rating with the Green Building Council Australia and submit evidence of registration to the Certifying Authority; or
 - (b) seeking approval from the Planning Secretary for an alternative certification process.

Outdoor Lighting

- B10. Prior to commencement of lighting installation, evidence must be submitted to the satisfaction of the Certifying Authority that all outdoor lighting within the site has been designed to comply with AS 1158.3.1:2005 Lighting for roads and public spaces – Pedestrian area (Category P) lighting – Performance and design requirements and AS 4282-2019 Control of the obtrusive effects of outdoor lighting.

Demolition

- B11. Prior to the commencement of construction, demolition work plans required by *AS 2601-2001 The demolition of structures* (Standards Australia, 2001) must be accompanied by a written statement from a suitably qualified person that the proposals contained in the work plan comply with the safety requirements of the Standard. The work plans and the statement of compliance must be submitted to the Certifying Authority and Planning Secretary.

Environmental Management Plan Requirements

- B12. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:
- (a) detailed baseline data;
 - (b) details of:
 - (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - (ii) any relevant limits or performance measures and criteria; and
 - (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;
 - (c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;
 - (d) a program to monitor and report on the:
 - (i) impacts and environmental performance of the development;
 - (ii) effectiveness of the management measures set out pursuant to paragraph (c) above;
 - (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;

- (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
- (g) a protocol for managing and reporting any:
 - (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);
 - (ii) complaint;
 - (iii) failure to comply with statutory requirements; and
- (h) a protocol for periodic review / update of the plan and any updates in response to incidents or matters of non-compliance.

Note: *The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans*

Construction Environmental Management Plan

B13. Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the satisfaction of Certifying Authority and provide a copy to the Planning Secretary. The CEMP must include, but not be limited to, the following:

- (a) Details of:
 - (i) hours of work;
 - (ii) 24-hour contact details of site manager;
 - (iii) management of dust and odour to protect the amenity of the neighbourhood;
 - (iv) stormwater control and discharge;
 - (v) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site;
 - (vi) groundwater management plan including measures to prevent groundwater contamination;
 - (vii) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting;
 - (viii) community consultation and complaints handling;
- (b) Construction Traffic and Pedestrian Management Sub-Plan (see condition B14);
- (c) Construction Noise and Vibration Management Sub-Plan (see condition B15);
- (d) Construction Waste Management Sub-Plan (see condition B16);
- (e) Construction Soil and Water Management Sub-Plan (see condition B17);
- (f) Biodiversity Management Sub-Plan (see condition B18);
- (g) Bush Fire Emergency Response Sub-Plan (see condition B19);
- (h) an unexpected finds protocol for contamination and associated communications procedure;
- (i) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;
- (j) waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in these areas of the site; and

B14. The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must address, but not be limited to, the following:

- (a) be prepared by a suitably qualified and experienced person(s);
- (b) be prepared in consultation with Council and TfNSW;
- (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;
- (d) detail heavy vehicle routes, access and parking arrangements;
- (e) include a Driver Code of Conduct to:

- (i) minimise the impacts of earthworks and construction on the local and regional road network;
 - (ii) minimise conflicts with other road users;
 - (iii) minimise road traffic noise; and
 - (iv) ensure truck drivers use specified routes;
 - (f) include a program to monitor the effectiveness of these measures; and
 - (g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.
- B15. The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:
- (a) be prepared by a suitably qualified and experienced noise expert;
 - (b) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009);
 - (c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;
 - (d) include strategies that have been developed with the community for managing high noise generating works;
 - (e) describe the community consultation undertaken to develop the strategies in condition B8(d);
 - (f) include a complaints management system that would be implemented for the duration of the construction; and
 - (g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the management measures in accordance with Condition B12(d).
- B16. The Construction Waste Management Sub-Plan (CWMSP) must address, but not be limited to, the following:
- (a) detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations; and
 - (b) removal of hazardous materials, particularly the method of containment and control of emission of fibres to the air, and disposal at an approved waste disposal facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines, prior to the commencement of any building works.
- B17. The Applicant must prepare a Construction Soil and Water Management Plan (CSWMSP) and the plan must address, but not be limited to the following:
- (a) be prepared by a suitably qualified expert, in consultation with Council;
 - (b) describe all erosion and sediment controls to be implemented during construction;
 - (c) include an Acid Sulfate Soils Management Plan, if required, including measures for the management, handling, treatment and disposal of acid sulfate soils, including monitoring of water quality at acid sulfate soils treatment areas.
 - (d) provide a plan of how all construction works will be managed in a wet-weather events (i.e. storage of equipment, stabilisation of the Site);
 - (e) detail all off-Site flows from the Site; and
 - (f) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 1-year ARI, 1 in 5-year ARI and 1 in 100-year ARI.
- B18. The Biodiversity Management Sub-Plan (BMSP) must address, but not be limited to, the following:
- (a) should any injured fauna species be found during the construction period, construction must stop immediately so that the injured animal can be taken to a vet or wildlife carer. All handling of fauna species must be conducted by a qualified ecologist or wildlife carer;

- (b) during vegetation clearing, animals that are injured or displaced are to be captured and relocated by a qualified ecologist or wildlife carer to nearby bushland (subject to landowner approval), or trees containing wildlife must be sectioned and dismantled before relocating the animals;
- (c) nocturnal fauna species such as gliders and possums, if captured and rescued during vegetation clearing are to be secured in suitable enclosures and kept in a quiet, dark and cool environment until they can be released into suitable habitat after dark;
- (d) include a Vegetation Management sub-plan (VMP) for the site during construction works.
- (e) include measures to communicate to the construction workforce the biodiversity values that are to be retained and protected;
- (f) any hollows removed be salvaged and replaced into trees within the vegetated areas to be retained or they be replaced with nest boxes in consultation with Council suitable to native fauna likely to use the site;
- (g) include a Fauna Management Plan for the site including details of impacts and proposed mitigation measures due to impact on movement, construction traffic, proposed construction hours, details of any fencing, restricting developments in identified areas, light spill, construction noise and on-site crane movements; and
- (h) include details to install and maintain exclusion fencing along and around any native vegetation not being removed as part of this development.

B19. The Bush Fire Emergency Response Sub-Plan (FERSP) must address, but not be limited to, the following:

- (a) be prepared by a suitably qualified and experienced person(s);
- (b) address the provisions of the Planning for Bush Fire Protection 2006;
- (c) include details of:
 - (i) the bushfire emergency responses for both construction and operation phases of the development;
 - (ii) assembly points and evacuation routes;
 - (iii) evacuation and refuge protocols; and
 - (iv) awareness training for employees and contractors, and students.

Construction Worker Transportation Strategy

B20. Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the satisfaction of the Certifying Authority. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities.

Operational Noise – Design of Mechanical Plant and Equipment

B21. Prior to installation of mechanical plant and equipment, the Applicant must incorporate the noise mitigation recommendations in the Environmental Noise Assessment (6395-1R Rev A) report prepared by Day Design Pty Ltd dated 8 November 2018, into the detailed design drawings. The Certifying Authority must verify that all noise mitigation measures have been incorporated into the design to ensure the development will not exceed the recommended operational noise levels identified in the Environmental Noise Assessment report.

Pre clearing

B22. Prior to the commencement of construction and/or vegetation clearing (whichever occurs first), pre clearing surveys and inspections for fauna must be undertaken. The surveys and inspection, and any subsequent relocation of fauna, must be undertaken under the guidance of a suitably qualified ecologist and must be in accordance with the methodology incorporated in the Biodiversity Management Sub-Plan. Evidence of the pre clearing surveys and inspections for fauna and any relocation of fauna must be provided to the satisfaction of the Certifying Authority.

Biodiversity

B23. Prior to the commencement of vegetation clearing, the class and number of ecosystem credits in the table below must be retired to offset the residual biodiversity impacts of the development.

Impacted Plant Community Type (PCT)	Number of Credits	Containing hollow bearing trees	IBRA subregions	Plant community type(s) that can be used to offset the impacts from development
PCT 1081 – Bloodwood – Grey Gum woodland on edges of the Cumberland Plain, Sydney Basin Bioregion	13	Yes	Cumberland, Burragorang, Pittwater, Sydney Cataract, Wollemi and Yengo or any IBRA subregion that is within 100 Kilometers of the outer edge of the impacted site.	Sydney Hinterland Dry Sclerophyll Forests (including PCT's 612, 621, 624, 1080, 1081, 1086, 1159, 1246, 1255, 1327, 1328, 1614, 1622, 1628, 1631, 1634, 1640, 1664, 1666, 1667, 1789, 1790, 1912)
PCT 1281 – Turpentine – grey Ironbark open forest on shale in the lower Blue Mountains, Sydney basin Bioregion	1	No	Cumberland, Burragorang, Pittwater, Sydney Cataract, Wollemi and Yengo or any IBRA subregion that is within 100 Kilometers of the outer edge of the impacted site.	Sydney Turpentine-Ironbark Forest (including PTC's 1183, 1281, 1284)

B24. The requirement to retire credits in Condition B23 above may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the class and number of ecosystem credits, as calculated by the Biodiversity Offsets Payment Calculator.

B25. Evidence of the retirement of credits or payment to the Biodiversity Conservation Fund in satisfaction of condition B24 must be submitted to the Planning Secretary prior to carrying out development that will impact on biodiversity values.

Landscaping

B26. Prior to the commencement of construction, the Applicant must prepare a revised Landscape Plan to manage the revegetation and landscaping works on-site, to the satisfaction of the Certifying Authority. The plan must:

- (a) provide for the planting of 54 trees;
- (b) provide for the planting of 50 shrubs and groundcover;
- (c) detail the location, species, maturity and height at maturity of plants to be planted on-site;
- (d) include species (trees, shrubs and groundcovers) indigenous to the local area;
- (e) include the planting of trees with a pot container of 100 litres or greater, with a minimum height at maturity of 10m;
- (f) include the provision of nest boxes suitable to native fauna likely to use the site;
- (g) comply with the principles of Appendix 5 of *Planning for Bush Fire Protection 2006*;
- (h) the revegetated area(s) of STIF must be contiguous with the areas of existing STIF and be fully structured with a diversity of local native tree, shrub and groundcover species;
- (i) the existing STIF and revegetated areas of STIF must not be managed as an APZ under this consent;
- (j) trees to be removed are salvaged and used in the remnant vegetation on site to enhance habitat including tree hollows and tree trunks (greater than 25-30cm in diameter and 3m in length).

Landscaping

B27. Prior to the commencement of construction, the existing STIF must be delineated and be protected by exclusion fencing on the ground.

Rainwater Harvesting

B28. Prior to the commencement of construction, the Applicant must ensure that a rainwater reuse/harvesting system for the development is developed for the site. A rainwater re-use plan must be prepared and certified by an experienced hydraulic engineer.

Roadworks and Access

B29. Prior to the commencement of construction, the Applicant must submit design plans to the satisfaction of the relevant roads authority which demonstrate that the proposed construction accesses to the development are designed to accommodate the turning path of a heavy ridged vehicles.

Car Parking and Service Vehicle Layout

B30. Prior to the commencement of construction, compliance with the following requirements must be submitted to the satisfaction of the Certifying Authority:

- (a) all vehicles must enter and leave the Site in a forward direction;
- (b) that the operational car parking layout provides a minimum of 38 on-site car parking spaces for use during operation of the development and new car parking spaces must be designed in accordance with the latest versions of AS 2890.1 and AS 2890.6;
- (c) that the construction access and car parking arrangements provide the swept path of the longest construction vehicle entering and exiting the Site in association with the new work, as well as manoeuvrability through the Site, must be in accordance with the latest version of AS 2890.2; and
- (d) the safety of vehicles and pedestrians accessing adjoining properties, where shared vehicle and pedestrian access occurs, is to be addressed.

Bicycle Parking and End-of-Trip Facilities

B31. Prior to the commencement of construction, evidence must be submitted to the satisfaction of the Certifying Authority with the following requirements for bicycle parking and end-of-trip facilities:

- a) the provision of a minimum 60 bicycle parking spaces;
- b) the layout, design and security of bicycle facilities must comply with the minimum requirements of the latest version of AS 2890.3:2015 *Parking facilities - Bicycle parking*, and be located in easy to access, well-lit areas that incorporate passive surveillance;
- c) the provision of end-of-trip facilities for staff;
- d) appropriate pedestrian and cyclist advisory signs are to be provided; and

- e) all works/regulatory signposting associated with the proposed developments shall be at no cost to the relevant roads authority.

Public Domain Works

- B32. Prior to the commencement of any footpath or public domain works, the Applicant must consult with Council and demonstrate to the Certifying Authority that the streetscape design and treatment meets the requirements of Council, including addressing pedestrian management. The Applicant must submit documentation of approval for each stage from Council to the Certifying Authority.

Compliance Reporting

- B33. No later than two weeks before the date notified for the commencement of construction, a Compliance Monitoring and Reporting Program prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2018) must be submitted to the Planning Secretary and the Certifying Authority.
- B34. The Applicant must make each Compliance Report publicly available 60 days after submitting it to the Planning Secretary and notify the Planning Secretary and the Certifying Authority in writing at least seven days before this is done.
- B35. Notwithstanding the requirements of the Compliance Reporting Post Approval Requirements (Department 2018), the Planning Secretary may approve a request for ongoing annual operational compliance reports to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an operational compliance report has demonstrated operational compliance.

PART C DURING CONSTRUCTION

Site Notice

- C1. A site notice(s):
- (a) must be prominently displayed at the boundaries of the site during construction for the purposes of informing the public of project details including, but not limited to the details of the Builder, Certifying Authority and Structural Engineer is to satisfy the following requirements;
 - (b) minimum dimensions of the notice must measure 841 mm x 594 mm (A1) with any text on the notice to be a minimum of 30-point type size;
 - (c) the notice is to be durable and weatherproof and is to be displayed throughout the works period;
 - (d) the approved hours of work, the name of the site/ project manager, the responsible managing company (if any), its address and 24-hour contact phone number for any inquiries, including construction/ noise complaint must be displayed on the site notice; and
 - (e) the notice(s) is to be mounted at eye level on the perimeter hoardings/fencing and is to state that unauthorised entry to the site is not permitted.

Operation of Plant and Equipment

- C2. All construction plant and equipment used on site must be maintained in a proper and efficient condition and operated in a proper and efficient manner.

Demolition

- C3. Demolition work must comply with the demolition work plans required by *Australian Standard AS 2601-2001 The demolition of structures* (Standards Australia, 2001) and endorsed by a suitably qualified person as required by Condition B11.

Construction Hours

- C4. Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:
- (a) between 7:00am and 6:00pm, Mondays to Fridays inclusive; and
 - (b) between 8:00am and 1:00pm, Saturdays.
- No work may be carried out on Sundays or public holidays.
- C5. Construction activities may be undertaken outside of the hours in condition C4 if required:
- (a) by the Police or a public authority for the delivery of vehicles, plant or materials; or
 - (b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or
 - (c) where the works are inaudible at the nearest sensitive receivers; or
 - (d) where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works.
- C6. Notification of such construction activities as referenced in Condition C5 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.
- C7. Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:
- (a) 9am to 12pm, Monday to Friday;
 - (b) 2pm to 5pm Monday to Friday; and
 - (c) 9am to 12pm, Saturday.

Implementation of Management Plans

- C8. The Applicant must carry out the construction of the development in accordance with the most recent version of the approved CEMP (including Sub-Plans).

Construction Traffic

- C9. All construction vehicles (excluding site personnel vehicles) are to be contained wholly within the site, except if located in an approved on-street work zone, and vehicles must enter the site before stopping.

Hoarding Requirements

- C10. The following hoarding requirements must be complied with:
- (a) no third-party advertising is permitted to be displayed on the subject hoarding/ fencing; and
 - (b) the construction site manager must be responsible for the removal of all graffiti from any construction hoardings or the like within the construction area within 48 hours of its application.

No Obstruction of Public Way

- C11. The public way (outside of any approved construction works zone) must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances.

Construction Noise Limits

- C12. The development must be constructed to achieve the construction noise management levels detailed in the *Interim Construction Noise Guideline* (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan.
- C13. The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the site or surrounding residential precincts outside of the construction hours of work outlined under condition C4.
- C14. The Applicant must implement, where practicable and without compromising the safety of construction staff or members of the public, the use of 'quackers' to ensure noise impacts on surrounding noise sensitive receivers are minimised.

Vibration Criteria

- C15. Vibration caused by construction at any residence or structure outside the site must be limited to:
- (a) for structural damage, the latest version of *DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures* (German Institute for Standardisation, 1999); and
 - (b) for human exposure, the acceptable vibration values set out in the *Environmental Noise Management Assessing Vibration: a technical guideline* (DEC, 2006) (as may be updated or replaced from time to time).
- C16. Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C15.
- C17. The limits in conditions C15 and C16 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition B13 of this consent.

Tree Protection

- C18. For the duration of the construction works:
- (a) street trees must not be trimmed or removed unless it forms a part of this development consent or prior written approval from Council is obtained or is required in an emergency to avoid the loss of life or damage to property;
 - (b) all street trees immediately adjacent to the approved disturbance area must be protected at all times during construction. Any tree on the footpath, which is damaged or removed during construction due to an emergency, must be replaced, to the satisfaction of Council;

- (c) all trees on the site that are not approved for removal must be suitably protected during construction as per recommendations of the Arboricultural Impact Assessment report (5229/J1) prepared by TreeTalk Arboricultural consulting dated September 2019;
- (d) if access to the area within any protective barrier is required during the works, it must be carried out under the supervision of a qualified arborist. Alternative tree protection measures must be installed, as required. The removal of tree protection measures, following completion of the works, must be carried out under the supervision of a qualified arborist and must avoid both direct mechanical injury to the structure of the tree and soil compaction within the canopy or the limit of the former protective fencing, whichever is the greater; and
- (e) the area of fill/rubber built around trunks of trees in the STIF must be remediated and the fill/rubber removed as per the recommendations in Arboricultural Impact Assessment report (5229/J1) prepared by TreeTalk Arboricultural consulting dated September 2019.

Air Quality

C19. The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.

C20. During construction, the Applicant must ensure that:

- (a) exposed surfaces and stockpiles are suppressed by regular watering;
- (b) all trucks entering or leaving the site with loads have their loads covered;
- (c) trucks associated with the development do not track dirt onto the public road network;
- (d) public roads used by these trucks are kept clean; and
- (e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.

Erosion and Sediment Control

C21. All erosion and sediment control measures must be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works have been stabilised and rehabilitated so that it no longer acts as a source of sediment. Erosion and sediment control techniques, as a minimum, are to be in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom, 2004) commonly referred to as the 'Blue Book'.

Imported Soil

C22. The Applicant must:

- (a) ensure that only VENM, ENM, or other material approved in writing by EPA is brought onto the site;
- (b) keep accurate records of the volume and type of fill to be used; and
- (c) make these records available to the Certifying Authority upon request.

Disposal of Seepage and Stormwater

C23. Adequate provisions must be made to collect and discharge stormwater drainage during construction of the building to the satisfaction of the principal certifying authority. The prior written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter.

Emergency Management

C24. The Applicant must prepare and implement awareness training for employees and contractors, including locations of the assembly points and evacuation routes, for the duration of construction

Stormwater Management System

C25. Within three months of the commencement of construction, the Applicant must design an operational stormwater management system for the development and submit it to the satisfaction of the Certifying Authority. The system must:

- (a) be designed by a suitably qualified and experienced person(s);
- (b) be generally in accordance with the conceptual design in the EIS;
- (c) be in accordance with applicable Australian Standards; and
- (d) ensure that the system capacity has been designed in accordance with *Australian Rainfall and Runoff* (Engineers Australia, 2016) and *Managing Urban Stormwater: Council Handbook* (EPA, 1997) guidelines.

Unexpected Finds Protocol – Aboriginal Heritage

- C26. In the event that surface disturbance identifies a new Aboriginal object, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and the registered Aboriginal representatives must be contacted to determine the significance of the objects. The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) which is managed by EES Group and the management outcome for the site included in the information provided to AHIMS. The Applicant must consult with the Aboriginal community representatives, the archaeologists and EES Group to develop and implement management strategies for all objects/sites. Works shall only recommence with the written approval of EES Group.

Unexpected Finds Protocol – Historic Heritage

- C27. If any unexpected archaeological relics are uncovered during the work, then all works must cease immediately in that area and the Heritage NSW contacted. Depending on the possible significance of the relics, an archaeological assessment and management strategy may be required before further works can continue in that area. Works may only recommence with the written approval of the Heritage NSW.

Waste Storage and Processing

- C28. All waste generated during construction must be secured and maintained within designated waste storage areas at all times and must not leave the site onto neighbouring public or private properties.
- C29. All waste generated during construction must be assess, classified and managed in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014).
- C30. The Applicant must ensure that concrete waste and rinse water are not disposed of on the site and are prevented from entering any natural or artificial watercourse.
- C31. The Applicant must record the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations for the duration of construction.
- C32. The Applicant must ensure that the removal of hazardous materials, particularly the method of containment and control of emission of fibres to the air, and disposal at an approved waste disposal facility is in accordance with the requirements of the relevant legislation, codes, standards and guidelines.

Outdoor Lighting

- C33. The Applicant must ensure that all external lighting is constructed and maintained in accordance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting.

Independent Environmental Audit

- C34. Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the preparation of an Independent Audit Program or commencement of an Independent Audit.
- C35. Prior to the commencement of construction, an Independent Audit Program prepared in accordance with the Independent Audit Post Approval Requirements (Department 2018) must be submitted to the Planning Secretary and the Certifying Authority.
- C36. Table 1 of the Independent Audit Post Approval Requirements (Department 2018) is amended so that the frequency of audits required in the construction phase is:
- (a) An initial construction Independent Audit must be undertaken within eight weeks of the notified commencement date of construction; and

- (b) A subsequent Independent Audit of construction must be undertaken no later than six months from the date of the initial construction Independent Audit.

In all other respects Table 1 remains the same. The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified above, upon giving at least 4 weeks notice to the applicant of the date upon which the audit must be commenced.

- C37. Independent Audits of the development must be carried out in accordance with:
 - (a) the Independent Audit Program submitted to the Planning Secretary and the Certifying Authority under condition C34 of this consent; and
 - (b) the requirements for an Independent Audit Methodology and Independent Audit Report in the Independent Audit Post Approval Requirements (Department 2018).
- C38. In accordance with the specific requirements in the Independent Audit Post Approval Requirements (Department 2018), the Applicant must:
 - (a) review and respond to each Independent Audit Report prepared under condition C36 of this consent;
 - (b) submit the response to the Planning Secretary and the Certifying Authority; and
 - (c) make each Independent Audit Report and response to it publicly available within 60 days after submission to the Planning Secretary and notify the Planning Secretary and the Certifying Authority in writing at least seven days before this is done.
- C39. Notwithstanding the requirements of the Independent Audit Post Approval Requirements (Department 2018), the Planning Secretary may approve a request for ongoing annual operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an audit has demonstrated operational compliance.

Detailed Site Investigation

- C40. Following the relocation or demolition of any existing structures, infrastructure and in ground utilities, the Applicant is to carry out further investigation of soil contamination (including within the footprint and immediate surrounds of those structures, infrastructures and utilities prior to undertaking any construction) to address any contamination with regard to the following:
 - (a) NSW EPA Sampling Design Guidelines;
 - (b) Guidelines for the NSW Site Auditor Scheme (3rd edition) 2017;
 - (c) Guidelines for Consultants Reporting on Contamination Sites, 2011; and
 - (d) The National Environment Protection (Assessment of Contamination) Measure.

PART D PRIOR TO COMMENCEMENT OF OPERATION

Notification of Occupation

- D1. At least one month before commencement of operation, the date of commencement of the operation of the development must be notified to the Planning Secretary in writing. If the operation of the development is to be staged, the Planning Secretary must be notified in writing at least one month before the commencement of each stage, of the date of commencement and the development to be carried out in that stage.

External Walls and Cladding

- D2. Prior to commencement of operation, the Applicant must provide the Certifying Authority with documented evidence that the products and systems used in the construction of external walls including finishes and claddings such as synthetic or aluminium composite panels comply with the requirements of the BCA.
- D3. The Applicant must provide a copy of the documentation given to the Certifying Authority to the Planning Secretary within seven days after the Certifying Authority accepts it.

Post-construction Dilapidation Report

- D4. Prior to commencement of operation, the Applicant must engage a suitably qualified person to prepare a post-construction dilapidation report at the completion of construction. This report is:
- a) to ascertain whether the construction created any structural damage to adjoining buildings or infrastructure;
 - b) to be submitted to the Certifying Authority. In ascertaining whether adverse structural damage has occurred to adjoining buildings or infrastructure, the Certifying Authority must:
 - i) compare the post-construction dilapidation report with the pre-construction dilapidation report required by these conditions; and
 - ii) have written confirmation from the relevant authority that there is no adverse structural damage to their infrastructure and roads.
 - c) to be forwarded to Council.

Protection of Public Infrastructure

- D5. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:
- (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the development; and
 - (b) relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the development.

Protection of Property

- D6. Unless the Applicant and the applicable owner agree otherwise, the Applicant must repair, or pay the full costs associated with repairing any property that is damaged by carrying out the development.

Utilities and Services

- D7. Prior to commencement of operation, the Applicant must obtain a Compliance Certificate for water and sewerage infrastructure servicing of the site under section 73 of the *Sydney Water Act 1994*.

Pedestrian crossing

- D8. Prior to the commencement of operation or other timeframe agreed in writing by the Planning Secretary, evidence must be submitted to the Planning Secretary that demonstrates that the Applicant has consulted with Council with respect to investigating the provision of formal pedestrian crossing within the refuge across Ridgeway Drive. If a pedestrian crossing is required by Council, evidence of details of the pedestrian crossing in accordance with Council requirements must be provided to the satisfaction of the Certifying Authority.

Works as Executed Plans

- D9. Prior to the commencement of operation, works-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the Certifying Authority.

Green Travel Plan

- D10. Prior to the commencement of operation, a Green Travel Plan (GTP), must be submitted to the satisfaction of the Planning Secretary to promote the use of active and sustainable transport modes. The plan must:
- (a) be prepared by a suitably qualified traffic consultant in consultation with The Hills Shire Council and (Sydney Coordination Office) Transport for NSW;
 - (b) include objectives and modes share targets (i.e. Site and land use specific, measurable and achievable and timeframes for implementation) to define the direction and purpose of the GTP;
 - (c) include specific tools and actions to help achieve the objectives and mode share targets;
 - (d) include measures to promote and support the implementation of the plan, including financial and human resource requirements, roles and responsibilities for relevant employees involved in the implementation of the GTP; and
 - (e) include details regarding the methodology and monitoring/review program to measure the effectiveness of the objectives and mode share targets of the GTP, including the frequency of monitoring and the requirement for travel surveys to identify travel behaviours of users of the development.

Operational Transport and Access Management Plan (OTAMP)

- D11. Prior to the commencement of operation, an OTAMP is to be prepared by a suitably qualified person, in consultation with Council, Transport for NSW and TfNSW(RMS), and submitted to the satisfaction of the Certifying Authority and submitted to the Planning Secretary for information. The OTAMP must address the following:
- (a) detailed pedestrian analysis including the identification of safe route options – to identify the need for management measures such as staggered school start and finish times to ensure students and staff are able to access and leave the Site in a safe and efficient manner during school start and finish;
 - (b) the location of all car parking spaces on the school campuses and their allocation (i.e. staff, visitor, accessible, emergency, etc.);
 - (c) the location and operational management procedures of the pick-up and drop-off parking located within Gilbert Road and Ridgecrop Drive, including staff management/traffic controller arrangements;
 - (d) the location and operational management procedures for the pick-up and drop-off of students by buses and coaches for excursions and sporting activities, including staff management/traffic controller arrangements;
 - (e) delivery and services vehicle and bus access and management arrangements;
 - (f) management of approved access arrangements;
 - (g) potential traffic impacts on surrounding road networks and mitigation measures to minimise impacts, including measures to mitigate queuing impacts associated with vehicles accessing pick-up and drop-off parking at Gilbert Road and Ridgecrop Drive;
 - (h) car parking arrangements and management associated with the proposed use of school facilities by community members; and
 - (i) a monitoring and review program.

Evacuation and Emergency Planning

- D12. Prior to the commencement of operation, a Bush Fire Emergency Management and Evacuation Plan must be prepared consistent with *Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan* December 2014.

School Zones

- D13. Prior to the commencement of operation, all required School Zone signage, speed management signage and associated pavement markings along Gilbert Road and Ridgescrop Drive must be installed, inspected by TfNSW(RMS) and handed over to TfNSW(RMS).

Note: Any required approvals for altering public road speed limits, design and signage are required to be obtained from the relevant consent authority.

- D14. The Applicant must maintain records of all dates in relation to installing, altering and removing traffic control devices related to speed.

Mechanical Ventilation

- D15. Prior to commencement of operation, the Applicant must provide evidence to the satisfaction of the Certifying Authority that the installation and performance of the mechanical ventilation systems complies with:

- (a) AS 1668.2-2012 *The use of air-conditioning in buildings – Mechanical ventilation in buildings* and other relevant codes; and
- (b) any dispensation granted by Fire and Rescue NSW.

Operational Noise – Design of Mechanical Plant and Equipment

- D16. Prior to the commencement of operation, the Applicant must submit evidence to the Certifying Authority that the noise mitigation recommendations in the Environmental Noise Assessment report (6395-1.1R Rev A) dated 8 November 2018 and prepared by Day Design Pty Ltd have been incorporated into the design to ensure the development will not exceed the recommended operational noise levels identified in the Environmental Noise Assessment.

Car Parking Arrangements

- D17. Prior to the commencement of operation or other timeframe agreed in writing by the Planning Secretary, evidence must be submitted to the Planning Secretary that demonstrates that:
- (a) the Applicant has consulted with Council to form an agreement to use Council's carpark on Ridgescrop Drive as overflow staff carparking during school hours. If an agreement is formed, the agreement must be submitted to the Planning Secretary for information.
 - (b) construction works associated with the proposed expansion of school, as proposed under SSD 9274, have been completed and that the expanded car parking facility is operational; and
 - (c) works associated with the reconfiguration of the existing on site car park to create for 4 additional car parking spaces have been completed.

Road Damage

- D18. Prior to the commencement of operation, the cost of repairing any damage caused to Council or other Public Authority's assets in the vicinity of the Subject Site as a result of construction works associated with the approved development must be met in full by the Applicant.

Fire Safety Certification

- D19. Prior to commencement of occupation, a Fire Safety Certificate must be obtained for all the Essential Fire or Other Safety Measures forming part of this consent. A copy of the Fire Safety Certificate must be submitted to the relevant authority and Council. The Fire Safety Certificate must be prominently displayed in the building.

Structural Inspection Certificate

- D20. Prior to the commencement of occupation of the relevant parts of any new or refurbished buildings, a Structural Inspection Certificate or a Compliance Certificate must be submitted to the satisfaction of the Certifying Authority. A copy of the Certificate with an electronic set of final drawings (contact approval authority for specific electronic format) must be submitted to the approval authority and the Council after:

- (a) the site has been periodically inspected and the Certifying Authority is satisfied that the structural works is deemed to comply with the final design drawings; and

- (b) the drawings listed on the Inspection Certificate have been checked with those listed on the final Design Certificate/s.

Compliance with Food Code

- D21. Prior to the commencement of operation, the Applicant is to obtain a certificate from a suitably qualified tradesperson, certifying that the kitchen, food storage and food preparation areas have been fitted in accordance with the AS 4674 *Design, construction and fit-out of food premises* and provide evidence of receipt of the certificate to the satisfaction of the Certifying Authority.

Stormwater Quality Management Plan

- D22. Prior to the commencement of operation, an Operation and Maintenance Plan (OMP) is to be submitted to the satisfaction of the Certifying Authority along with evidence of compliance with the OMP. The OMP must ensure the proposed stormwater quality measures remain effective and contain the following:
- (a) maintenance schedule of all stormwater quality treatment devices;
 - (b) record and reporting details;
 - (c) relevant contact information; and
 - (d) Work Health and Safety requirements.

Rainwater Harvesting

- D23. Prior to the commencement of operation, signed works-as-executed Rainwater Re-use Plan must be provided to the Planning Secretary and Certifying Authority.

Warm Water Systems and Cooling Systems

- D24. The installation of warm water systems and water cooling systems (as defined under the *Public Health Act 2010*) must comply with the *Public Health Act 2010*, Public Health Regulation 2012 and Part 1 (or Part 3 if a Performance-based water cooling system) of AS/NZS 3666.2:2011 *Air handling and water systems of buildings – Microbial control – Operation and maintenance* and the NSW Health Code of Practice for the Control of Legionnaires' Disease.

Outdoor Lighting

- D25. Prior to the commencement of operation, the Applicant must submit evidence from a suitably qualified practitioner to the Certifying Authority that demonstrates that installed lighting associated with the development achieves the objective of minimising light spillage to any adjoining or adjacent sensitive receivers and:
- (a) complies with the latest version of AS 4282-2019 - *Control of the obtrusive effects of outdoor lighting* (Standards Australia, 1997); and
 - (b) has been mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

Signage

- D26. Prior to the commencement of operation, way-finding signage and signage identifying the location of staff car parking must be installed.
- D27. Prior to the commencement of operation, bicycle way-finding signage must be installed within the site to direct cyclists from footpaths to designated bicycle parking areas.
- D28. Prior to the commencement of operation, 'Do not drink' signage on non-potable water used for toilet flushing and to new hose taps and irrigation systems for landscaped areas must be installed within the site.
- D29. Prior to the commencement of operation, the approved illuminated signs must be installed with a timed intensity and illumination adjuster to the satisfaction of the Certifying Authority.

Operational Waste Management Plan

- D30. Prior to the commencement of operation, the Applicant must prepare a Waste Management Plan for the development and submit it to the Certifying Authority. The Waste Management Plan must:

- (a) detail the type and quantity of waste to be generated during operation of the development;
- (b) describe the handling, storage and disposal of all waste streams generated on site, consistent with the *Protection of the Environment Operations Act 1997*, *Protection of the Environment Operations (Waste) Regulation 2014* and the *Waste Classification Guideline* (Department of Environment, Climate Change and Water, 2009);
- (c) detail the materials to be reused or recycled, either on or off site; and
- (d) include the Management and Mitigation Measures included in Section 7 of EIS, Section 5 of RtS and Appendix Z.

Landscaping

- D31. Prior to the commencement of operation, the Applicant must prepare an Operational Landscape Management Plan to manage the revegetation and landscaping on-site, to the satisfaction of the Certifying Authority. The plan must:
- (a) describe the ongoing monitoring and maintenance measures to manage revegetation and landscaping; and
 - (b) be consistent with the Applicant's Management and Mitigation Measures at Section 7 of EIS and Section 5 of RtS;
- D32. The Applicant must not commence operation until the Operational Landscape Management Plan is submitted to the Certifying Authority.

Asset Protection Zones

- D33. Asset protection Zones must be provided and maintained in accordance with the 'Bushfire hazard Analysis and Asset protection Zone', Figure 4, prepared by Peterson Bushfire Consulting, dated 1/08/2019. And managed as outlined within appendices 2 and 5 of planning for Bush Fire protection 2006 and the NSW Rural Fire Service's document Standards for asset protection zones.

Traffic and Parking Management Plan

- D34. Prior to the commencement of operation, the Applicant must prepare a Traffic and Parking Management Plan to the satisfaction of the Planning Secretary, which details measures to safely manage the daily transport task to/from the school. Traffic management measures that need to be addressed include:
- (a) kerbside vehicle pick-up/drop-off management and orderly vehicle queuing;
 - (b) maintaining bus accessibility and student waiting areas;
 - (c) safe parent and student behaviour during pick-up/drop-off; and
 - (d) safe pedestrian movements to the school entrances, minimising vehicle-pedestrian conflicts.

The plan must detail the responsibility of various personnel executing the plan and include measures to monitor, review the performance and make improvements to the plan.

Signage and Linemarking Plan

- D35. Prior to the commencement of operation, the Applicant must prepare a detailed signage and linemarking plan to the satisfaction of Certifying Authority of the proposed changes to kerbside parking restrictions to accommodate the various vehicle movements to/from the development within the local road network. The preparation of the plan must be undertaken in consultation with Council.
- D36. The detailed signage and linemarking plan must include 'no stopping' signpost along the proposed drop-off/pick-up arrangement.
- D37. The approved kerbside parking restrictions must be implemented prior to the commencement of operation.

Road Safety Audit

- D38. Prior to the commencement of operation, a Road Safety Audit (RSA) (refer Austroads Guide to Road Safety Part 6 and Part 6a) must be submitted to the satisfaction of the Certifying Authority. The RSA must consider all the proposed measures including any traffic management facilities, bus and private vehicle pick-up and drop-off arrangements, and signage and line-marking plan.
- D39. The findings of the RSA must be incorporated into the proposed design in consultation with Council prior to commencement of operation to the satisfaction of the Certifying Authority.

Note: the audit needs to be undertaken by an independent TfNSW accredited auditor.

Validation Report

- D40. The Applicant must prepare a Validation Report for the development. The Validation Report must:
- (a) be prepared by an EPA accredited Site Auditor;
 - (b) be submitted to EPA, the Planning Secretary and the Certifying Authority for information one month after the completion of remediation works;
 - (c) be prepared in accordance with the RAP and the *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011);
 - (d) include, but not be limited to:
 - (i) comment on the extent and nature of the remediation undertaken;
 - (ii) describe the location, nature and extent of any remaining contamination on site;
 - (iii) sampling and analysis plan and sampling methodology;
 - (iv) results of sampling of treated material, compared with the treatment criteria;
 - (v) details of the volume of treated material emplaced within the containment cell and its location;
 - (vi) results of any validation sampling, compared to relevant guidelines/criteria;
 - (vii) discussion of the suitability of the remediated areas for the intended land use; and
 - (viii) any other requirement relevant to the project.

Site Audit Report and Site Audit Statement

- D41. Prior to occupation of the building, the Applicant must obtain from an EPA accredited Site Auditor, a Site Audit Statement and a Site Audit Report which demonstrates that the site is suitable for its intended use(s).
- D42. Within 3 months of submission of the Validation Report required by condition D40, the Applicant must demonstrate to the satisfaction of the Certifying Authority that the Site Auditor has submitted a Site Audit Report and Site Audit Statement to EPA in accordance with the requirements of EPA's *Guidelines for the NSW Site Auditor Scheme* (DEC, 2006).

Vegetation Management Plan

- D43. Prior to the commencement of operation, a final Vegetation Management Plan must be prepared for the site and be submitted to the Certifying Authority.
- D44. The Vegetation Management Plan must be developed to guide the management of retained native vegetation and adjoining Asset Protection Zones.

PART E POST OCCUPATION

Out of Hours Event Management Plan

- E1. Prior to the commencement of the first out of hours events (school use) run by the school that involve 100 or more people, the Applicant is to prepare an Out of Hours Event Management Plan (School Use) and submit it to the Council and Planning Secretary in consultation with Council. The plan must include the following:
- (a) the number of attendees, time and duration;
 - (b) arrival and departure times and modes of transport;
 - (c) where relevant, a schedule of all annual events;
 - (d) demonstrate measures to encourage non-vehicular travel to the school and promote and support the use of alternate travel modes (i.e. public transport);
 - (e) details of the use, where applicable, restricting use before 8am and after 10pm;
 - (f) measures to minimise localised traffic and parking impacts; and
 - (g) include measures to minimise CEMP impacts on any sensitive residential receivers, including the preparation of acoustic management plan.
- E2. The Out of Hours Event Management Plan must be implemented by the Applicant for the duration of the identified events or use.
- E3. Prior to the commencement of out of hours events (community use) run by the external parties that involve 100 or more people, the Applicant is to prepare an Out of Hours Event Management Plan (Community Use) in consultation with Council and submit it to the Council and Planning Secretary. The plan must include the following:
- (a) the number of attendees, time and duration;
 - (b) arrival and departure times and modes of transport;
 - (c) where relevant, a schedule of all annual events;
 - (d) demonstrate measures to encourage non-vehicular travel to the school and promote and support the use of alternate travel modes (i.e. public transport);
 - (e) details of the use, where applicable, restricting use before 8am and after 10pm;
 - (f) measures to minimise localised traffic and parking impacts; and
 - (g) include measures to minimise noise impacts on any sensitive residential receivers, including the preparation of acoustic management plan.
- E4. The Out of Hours Event Management Plan must be implemented by the Applicant for the duration of the identified community event or use.

Operation of Plant and Equipment

- E5. All plant and equipment used on site must be maintained in a proper and efficient condition operated in a proper and efficient manner.

Warm Water Systems and Cooling Systems

- E6. The operation and maintenance of warm water systems and water cooling systems (as defined under the Public Health Act 2010) must comply with the Public Health Act 2010, Public Health Regulation 2012 and Part 2 (or Part 3 if a Performance-based water cooling system) of AS/NZS 3666.2:2011 Air handling and water systems of buildings – Microbial control – Operation and maintenance and the NSW Health Code of Practice for the Control of Legionnaires' Disease.

Community Communication Strategy

- E7. The Community Communication Strategy, as submitted to the Planning Secretary, must be implemented for a minimum of 12 months following the completion of construction.

Operational Transport and Access Management Plan (OTAMP)

- E8. The OTAMP(s) approved under condition D11 (as revised from time to time) must be implemented by the Applicant for the life of the development.

Operational Noise Limits

- E9. The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in Environmental Noise Assessment report (6395-1.1R Rev A) dated 8 November 2018 and prepared by Day Design Pty Ltd.
- E10. The Applicant must undertake short term noise monitoring in accordance with the *Noise Policy for Industry* where valid data is collected following the commencement of use of each stage of the development. The monitoring program must be carried out by an appropriately qualified person and a monitoring report must be submitted to the Planning Secretary within two months of commencement use of each stage of the development to verify that operational noise levels do not exceed the recommended noise levels for mechanical plant identified in Environmental Noise Assessment report (6395-1.1R Rev A) dated 8 November 2018 and prepared by Day Design Pty Ltd. Should the noise monitoring program identify any exceedance of the recommended noise levels referred to above, the Applicant is required to implement appropriate noise attenuation measures so that operational noise levels do not exceed the recommended noise levels or provide attenuation measures at the affected noise sensitive receivers.

Unobstructed Driveways and Parking Areas

- E11. All driveways, footways and parking areas must be unobstructed at all times. Driveways, footways and car spaces must not be used for the manufacture, storage or display of goods, materials, refuse, skips or any other equipment and must be used solely for vehicular and/or pedestrian access and for the parking of vehicles associated with the use of the premises.

Green Travel Plan

- E12. The Green Travel Plan required by condition D10 of this consent must be updated annually and implemented unless otherwise agreed by the Planning Secretary.

Ecologically Sustainable Development

- E13. Unless otherwise agreed by the Planning Secretary, within six months of commencement of operation, Green Star certification must be obtained demonstrating the development achieves a minimum 4 star Green Star Design & As Built rating. If required to be obtained, evidence of the certification must be provided to the Certifying Authority and the Planning Secretary. If an alternative certification process has been agreed to by the Planning Secretary under Condition B9, evidence of compliance of implementation must be provided to the Planning Secretary and Certifying Authority.

Outdoor Lighting

- E14. Notwithstanding Condition D25, should outdoor lighting result in any residual impacts on the amenity of surrounding sensitive receivers, the Applicant must provide mitigation measures in consultation with affected landowners to reduce the impacts to an acceptable level.

Landscaping

- E15. The Applicant must maintain the landscaping and vegetation on the site in accordance with the approved Landscape Management Plan required by condition D31 for the duration of occupation of the development.

Asset Protection Zones

- E16. The asset protection zones required by condition D33 shall be maintained for the duration of occupation of the development.

Signage

- E17. Signage approved for illumination under this consent must not be illuminated between the hours of 10pm and 7am seven days per week.

APPENDIX 1 ADVISORY NOTES

General

AN1. All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.

Long Service Levy

AN2. For work costing \$25,000 or more, a Long Service Levy must be paid. For further information please contact the Long Service Payments Corporation Helpline on 131 441.

Legal Notices

AN3. Any advice or notice to the consent authority must be served on the Planning Secretary.

Access for People with Disabilities

AN4. The works that are the subject of this application must be designed and constructed to provide access and facilities for people with a disability in accordance with the BCA. Prior to the commencement of construction, the Certifying Authority must ensure that evidence of compliance with this condition from an appropriately qualified person is provided and that the requirements are referenced on any certified plans.

AN5. Water, electricity and gas are to comply with sections 4.1.3 and 4.2.7 of Planning for Bush Fire Protection 2006.

Utilities and Services

AN6. Prior to the construction of any utility works associated with the development, the Applicant must obtain relevant approvals from service providers.

AN7. Prior to the commencement of above ground works written advice must be obtained from the electricity supply authority, an approved telecommunications carrier and an approved gas carrier (where relevant) stating that satisfactory arrangements have been made to ensure provisions of adequate services.

Road Design and Traffic Facilities

AN8. All roads and traffic facilities must be designed to meet the requirements of Council or TfNSW(RMS) (whichever is applicable). The necessary permits and approvals from the relevant road authority must be obtained prior to the commencement of road or pavement construction works.

Road Occupancy Licence

AN9. A Road Occupancy Licence must be obtained from the relevant road authority for any works that impact on traffic flows during construction activities.

SafeWork Requirements

AN10. To protect the safety of work personnel and the public, the work site must be adequately secured to prevent access by unauthorised personnel, and work must be conducted at all times in accordance with relevant SafeWork requirements.

Hoarding Requirements

AN11. The Applicant must submit a hoarding application to Council for the installation of any hoardings over Council footways or road reserve.

Handling of Asbestos

AN12. The Applicant must consult with SafeWork NSW concerning the handling of any asbestos waste that may be encountered during construction. The requirements of the Protection of the Environment Operations (Waste) Regulation 2014 with particular reference to Part 7 – 'Transportation and management of asbestos waste' must also be complied with.

Speed limit authorisation

AN13. At least eight weeks prior to the commencement of operation, the Applicant must submit the following details to TfNSW(RMS) and obtain authorisation to install School Zone signs and associated pavement markings, and / or removal / relocation of any existing Speed Limit signs:

- (a) a copy of the Conditions of Consent;
- (b) the proposed school commencement/opening date;
- (c) two sets of detailed design plans showing the following:
 - (i) accurate Site boundaries;
 - (ii) details of all road reserves, adjacent to the Site boundaries;
 - (iii) all proposed access points from the Site to the public road network and any additional conditions imposed/proposed on their use;
 - (iv) all existing and proposed pedestrian crossing facilities on the adjacent road network;
 - (v) all existing and proposed traffic control devices and pavement markings on the adjacent road network (including School Zone signs and pavement markings); and
 - (vi) all existing and proposed street furniture and street trees.

Fire Safety Certificate

AN14. The owner must submit to Council an Annual Fire Safety Statement, each 12 months after the final Safety Certificate is issued. The certificate must be on, or to the effect of, Council's Fire Safety Statement.

APPENDIX 2 WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

Written Incident Notification Requirements

1. A written incident notification addressing the requirements set out below must be emailed to the Planning Secretary at the following address: compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition A23 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
 - a. identify the development and application number;
 - b. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
 - c. identify how the incident was detected;
 - d. identify when the applicant became aware of the incident;
 - e. identify any actual or potential non-compliance with conditions of consent;
 - f. describe what immediate steps were taken in relation to the incident;
 - g. identify further action(s) that will be taken in relation to the incident; and
 - h. identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
 - a. a summary of the incident;
 - b. outcomes of an incident investigation, including identification of the cause of the incident;
 - c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
 - d. details of any communication with other stakeholders regarding the incident.



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Curriculum Vitae

Adam Shearer

Adams Shearer is a Senior Acoustical Consultant at Day Design Pty Ltd. Adam has valuable knowledge and experience in the assessment of earthmoving machinery noise, environmental noise, architectural / building acoustics, mechanical services noise and transportation noise control.

Adam manages a wide variety of projects including the acoustical design of schools, child care centres, places of public worship, pubs and clubs, residential, commercial and industrial developments and mechanical services systems. He is competent in the measurement and assessment of noise, and in the design of noise control for such projects, which often require his reports to be submitted to regulatory authorities for approval. Adam also provides advice and evidence as an expert witness for matters listed in the NSW Land and Environment Court.

Adam regularly operates acoustical instrumentation including noise and vibration meters and analyses the data during the course of his work.

Qualifications: Bachelor of Creative Technology (Audio),
 JMC Academy;
 Masters of Design Science (Audio & Acoustics),
 University of Sydney (2009)

Membership: Member – Australian Acoustical Society

Professional Experience: *August 2017 - Present*
Senior Acoustical Consultant
 Day Design Pty Ltd

December 2013 – August 2017
Acoustical Consultant
 Day Design Pty Ltd



• AIRCRAFT, ROAD TRAFFIC AND TRAIN NOISE CONTROL
 • ARCHITECTURAL ACOUSTICS • INDUSTRIAL NOISE AND VIBRATION CONTROL
 • ENVIRONMENTAL NOISE IMPACT INVESTIGATION AND CONTROL
 • OCCUPATIONAL NOISE INVESTIGATION • QUIET PRODUCT DEVELOPMENT



A short overview of the nature of **Mr Shearer's professional experience** is provided below:

Schools and Child Care Centres:

Schools located at East Leppington, Catherine Fields, Sydney CBD, Harrington Park, Armidale, Balmain, Lake Munmorah, Wahroonga, Ultimo, Castle Hill, Wentworthville, Drummoyne, Canada Bay, Point Claire, Dee Why, Woolwich, Tamworth and Merrylands.

Child Care Centres located at Normanhurst, Olympic Park, Wahroonga, Eden, Kogarah, Lindfield, Glendenning, Killara, Middleton Grange, Schofields, Hornsby, Brighton Le Sands, Fairfield, St Leonards, Granville, Mudgee, Willoughby, Gympie, Bexley, Chatswood and Peakhurst.

Hotels/Clubs

Tapavino Restaurant Sydney, Cabra-vale Diggers, Harbord Diggers, St George Hotel, Toukley RSL, Willoughby Hotel, Doonside Hotel, Red Lantern Hotel Eastwood, Tathra Hotel, Woy Woy Bowling Club, Magpies Waitara, Gladesville RSL, Campsie RSL, Club Five Dock and Canterbury Hurlstone Park RSL.

Churches and Places of Worship:

Islamic Prayer Hall at Greenacre, Marsden Park Anglican Church, Eastwood Anglican Church, The Salvation Army at Rouse Hill, Saints in Sydney at Kellyville, St Aidan's Anglican Church at Hurstville Grove, Vine Church at Surry Hills and St Andrews Cathedral in Sydney CBD.

Environmental Noise

Malabar Waste Water Treatment Plant, Kurrajong Zone Substation, Munmorah Substation, Huntingwood Zone Substation, Mount Tomah Communications Facility, Shine Australia The Biggest Loser, Rossi Water Pumping Station, the Smeaton Grange Substation and resource recovery facilities in Kings Park, Somersby and Belmore.

Animal facilities located at Kenthurst, North Richmond, Collaroy, Richmond Race Club, Colo Heights, Londonderry, Zetland and Fiddletown.

Mechanical:

New Acland Coal Mine – assessment of earthmoving machinery sound power levels.

Residential and commercial mechanical services at Rose Bay, Potts Point, Canada Bay, Willoughby, Bellevue Hill, Bronte, Glebe, Singleton, Chatswood, Surry Hills, Ultimo, Convent Hills and Ryde.



Aircraft Noise:	Assessment of aircraft noise intrusion from Bankstown, Richmond and Sydney Airports. Design and compliance for residential developments in Botany, Mascot, Richmond, Windsor, Annandale, Revesby and Arncliffe.
Traffic Noise:	Design and compliance for residential and commercial developments at Lucas Gardens SSP, Iluka Residential Aged Care Facility, Kiah Residential Development, Fairlight, Pyrmont, West Wollongong, Eastern Creek, Schofields and Box Hill.
Train Noise	Design and compliance for residential and commercial developments at Kiama, Gosford, Revesby, Granville, Belmore, Haywards Bay, Miranda and Thirlmere.
Hearing Loss Assessments:	B&M Quality Meats at Umina, Wyong Rugby League Club at Kanwal, Belmont Golf Club at Marks Point, Hengl Transport at Beresfield, Hancock Sheetmetal at Lambton, Australian Timber Shutters at Berkeley Vale, Punchbowl Bus Co at Riverwood, MET Grono Transport at Ballina, Volvo Group Australia at Beresfield, Flamesafe Fire Protection at Rydalmere, Hunter Valley Buses at Hunter Valley and Integrated Steel Mill Services at Newcastle.
Occupational Noise	ARV Laundry at Glendenning, RBM Plastic Extrusions at Silverwater.
Legal Assignments	ArtMade Architectural Pty Ltd v Willoughby City Council, Child Care Centre. Seventh Street Ventures Pty Ltd v Willoughby City Council, Child Care Centre. Omid Mohebati-Arani v Ku-ring-gai Council, Child Care Centre. Antoniou v Bayside Council, Child Care Centre.



Post Approval – Consultation

Consultation needs to be meaningful, done with courtesy and respect and be well documented. These are people/ organisations that we need to be building meaningful relationships with.

Conditions of all consent can require consultation with a range of stakeholders. Consultation in the post approval world needs to be well documented to satisfy the condition requirements.

Examples include Council, service providers (eg. Electricity gas etc.), consult with local bus provider and TfNSW.

Read each condition carefully, any reference to consult triggers consultation.

Typically on State Significant Development, there will be a specific consultation condition as to how this piece can be appropriately addressed.

Consultation is not:

- A token gesture
- Done at the end of the piece of work,
- An email to the relevant stakeholder with no response;
- A meeting with the stakeholder with no meeting minutes.

Consultation is:

- Meaningful
- Done prior to the requirement,
- Captures an outcome,
- Identifies matters resolved,
- Identifies matters unresolved,
- Any disagreements are disclosed; and
- How we are going to address unresolved matters?

How to capture all the relevant details on consultation requirements? Any consultation requirement in a condition is required to be accompanied with the following table:

Post Approval Consultation Record

Identified Party to Consult:	Castle Hill Community
Consultation type:	Information Booth
When is consultation required?	Prior to Commencement
Why	B15 – Construction Noise and Vibration Management Sub-Plan The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following: (e) describe the community consultation undertaken to develop the strategies in condition B8;
When was consultation scheduled/held	19 th March 2020
When was consultation held	19 th March 2020
Identify persons and positions who were involved	Schools Infrastructure NSW: Project Director, Senior Manager Community Engagement and Community Engagement Manager, Hutchinson Builders Construction Team
Provide the details of the consultation	Consultation with the community regarding construction noise and vibration impacts. - Information display boards showing artist renders of the new school and the project scope - Project update flyer, with details of SSD process, construction milestones, minimising construction impacts and future communication - Contact cards including SINSW email address and phone number for queries - Flythrough and site plans shown digitally - Project page and SSD documents shown digitally
What specific matters were discussed?	Discussion: - Project scope and delivery timelines - Construction impacts including noise and traffic, and how these would be managed - How to contact SINSW with queries, concerns or complaints - Future communication, including door knocks, letterbox drops, information sessions Outcomes: - Approximately 40 residents attended - One resident asked about the kiss and drop during and after construction - One question about noise and visual impacts - Most attendees were more interested in school opening dates and parking impacts

What matters were resolved?	Not applicable – consultation only
What matters are unresolved?	Not applicable
Any remaining points of disagreement?	No
How will SINSW address matters not resolved?	Not applicable

ACOUSTICAL – Pertaining to the science of sound, including the generation, propagation, effects and control of both noise and vibration.

AMBIENT NOISE – The ambient noise level at a particular location is the overall environmental noise level caused by all noise sources in the area, both near and far, including road traffic, factories, wind in the trees, birds, insects, animals, etc.

AUDIBLE – means that a sound can be heard. However, there are a wide range of audibility grades, varying from “barely audible” to “just audible”, “clearly audible” and “prominent”. Chapter 83 of the NSW Environment Protection Authority – Environmental Noise Control Manual (1985) states:

“noise from a particular source might be offensive if it is clearly audible, distinct from the prevailing background noise and of a volume or character that a reasonable person would be conscious of the intrusion and find it annoying or disruptive”.

It follows that the word “audible” in an environmental noise context means “clearly audible”.

BACKGROUND NOISE LEVEL – Silence does not exist in the natural or the built-environment, only varying degrees of noise. The Background Noise Level is the average minimum dBA level of noise measured in the absence of the noise under investigation and any other short-term noises such as those caused by cicadas, lawnmowers, etc. It is quantified by the L_{A90} or the dBA noise level that is exceeded for 90 % of the measurement period (usually 15 minutes).

- **Assessment Background Level (ABL)** is the single figure background level representing each assessment period – day, evening and night (ie three assessment background levels are determined for each 24hr period of the monitoring period). Determination of the assessment background level is by calculating the tenth percentile (the lowest tenth percent value) of the background levels (L_{A90}) for each period (refer: NSW Industrial Noise Policy, 2000).
- **Rating Background Level (RBL)** as specified by the Environment Protection Authority is the overall single figure (L_{A90}) background noise level representing an assessment period (day, evening or night) over a monitoring period of (normally) three to seven days.

The RBL for an assessment period is the median of the daily lowest tenth percentile of L_{90} background noise levels.

If the measured background noise level is less than 30 dBA, then the Rating Background Level (RBL) is considered to be 30 dBA.

DECIBEL – The human ear has a vast sound-sensitivity range of over a thousand billion to one. The decibel is a logarithmic unit that allows this same range to be compressed into a somewhat more comprehensible range of 0 to 120 dB. The decibel is ten times the logarithm of the ratio of a sound level to a reference sound level. See also Sound Pressure Level and Sound Power Level.

Decibel noise levels cannot be added arithmetically since they are logarithmic numbers. If one machine is generating a noise level of 50 dBA, and another similar machine is placed beside it, the level will increase to 53 dBA, not 100 dBA. Ten similar machines placed side by side increase the sound level by 10 dBA, and one hundred machines increase the sound level by 20 dBA.

dBA – The human ear is less sensitive to low frequency sound than high frequency sound. We are most sensitive to high frequency sounds, such as a child’s scream. Sound level meters have an inbuilt weighting network, termed the dBA scale, that approximates the human loudness response at quiet sound levels (roughly approximates the 40 phon equal loudness contour).



However, the dBA sound level provides a poor indication of loudness for sounds that are dominated by low frequency components (below 250 Hz). If the difference between the “C” weighted and the “A” weighted sound level is 15 dB or more, then the NSW Industrial Noise Policy recommends a 5 dBA penalty be applied to the measured dBA level.

dbc – The dbc scale of a sound level meter is similar to the dBA scale defined above, except that at high sound intensity levels, the human ear frequency response is more linear. The dbc scale approximates the 100 phon equal loudness contour.

EQUIVALENT CONTINUOUS NOISE LEVEL, L_{Aeq} – Many noises, such as road traffic or construction noise, vary continually in level over a period of time. More sophisticated sound level meters have an integrating electronic device inbuilt, which average the A weighted sound pressure levels over a period of time and then display the energy average or L_{Aeq} sound level. Because the decibel scale is a logarithmic ratio the higher noise levels have far more sound energy, and therefore the L_{Aeq} level tends to indicate an average which is strongly influenced by short term, high level noise events. Many studies show that human reaction to level-varying sounds tends to relate closely to the L_{Aeq} noise level.

FREE FIELD – This is a sound field not subject to significant reflection of acoustical energy. A free field over a reflecting plane is usually outdoors with the noise source resting on hard flat ground, and not closer than 6 metres to any large flat object such as a fence or wall; or inside an anechoic chamber.

FREQUENCY – The number of oscillations or cycles of a wave motion per unit time, the SI unit being the Hertz, or one cycle per second.

IMPACT ISOLATION CLASS (IIC) – The American Society for Testing and Materials (ASTM) has specified that the IIC of a floor/ceiling system shall be determined by operating an ISO 140 Standard Tapping Machine on the floor and measuring the noise generated in the room below. The IIC is a number found by fitting a reference curve to the measured octave band levels and then deducting the sound pressure level at 500 Hz from 110 decibels. Thus the higher the IIC, the better the impact sound isolation.

IMPACT SOUND INSULATION ($L_{nT,w}$) – Australian Standard AS ISO 717.2 – 2004 has specified that the Impact Sound Insulation of a floor/ceiling system be quantified by operating an ISO 140 Standard Tapping Machine on the floor and measuring the noise generated in the room below. The Weighted Standardised Impact Sound Pressure Level ($L_{nT,w}$) is the sound pressure level at 500 Hz for a reference curve fitted to the measured octave band levels. Thus the lower $L_{nT,w}$ the better the impact sound insulation.

IMPULSE NOISE – An impulse noise is typified by a sudden rise time and a rapid sound decay, such as a hammer blow, rifle shot or balloon burst.

INTRUSIVE NOISE LEVEL, L_{Aeq} – The level of noise from a factory, place of entertainment, etc. in NSW is assessed on the basis of the average maximum noise level, or the L_{Aeq} (15 min). This is the energy average A weighted noise level measured over any 15 minute period.

LOUDNESS – The degree to which a sound is audible to a listener is termed the loudness. The human ear perceives a 10 dBA noise level increase as a doubling of loudness and a 20 dBA noise increase as a quadrupling of the loudness.



MAXIMUM NOISE LEVEL, L_{Amax} – The rms maximum sound pressure level measured on the "A" scale of a sound level meter during a noise survey is the L_{Amax} noise level. It may be measured using either the Fast or Slow response time of the meter. This should be stated.

NOISE RATING NUMBERS – A set of empirically developed equal loudness curves has been adopted as Australian Standard AS1469-1983. These curves allow the loudness of a noise to be described with a single NR number. The Noise Rating number is that curve which touches the highest level on the measured spectrum of the subject noise. For broadband noise such as fans and engines, the NR number often equals the dBA level minus five.

NOISE – Noise is unwanted sound. Sound is wave motion within matter, be it gaseous, liquid or solid. "Noise includes sound and vibration".

NOISE REDUCTION COEFFICIENT – See: "Sound Absorption Coefficient".

OFFENSIVE NOISE - (Reference: Dictionary of the Protection of the Environment Operations Act 1997). *"Offensive Noise means noise:*

- (a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:*
 - (i) is harmful to (or likely to be harmful to) a person who is outside the premise from which it is emitted, or*
 - (ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or*
- (b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances prescribed by the regulations."*

PINK NOISE – Pink noise is a broadband noise with an equal amount of energy in each octave or third octave band width. Because of this, Pink Noise has more energy at the lower frequencies than White Noise and is used widely for Sound Transmission Loss testing.

REVERBERATION TIME, T_{60} – The time in seconds, after a sound signal has ceased, for the sound level inside a room to decay by 60 dB. The first 5 dB decay is often ignored, because of fluctuations that occur while reverberant sound conditions are being established in the room. The decay time for the next 30 dB is measured and the result doubled to determine the T_{60} . The Early Decay Time (EDT) is the slope of the decay curve in the first 10 dB normalised to 60 dB.

SOUND ABSORPTION COEFFICIENT, α – α Sound is absorbed in porous materials by the viscous conversion of sound energy to heat energy as the sound waves pass through it. Sound is similarly absorbed by the flexural bending of internally damped panels. The fraction of incident energy that is absorbed is termed the Sound Absorption Coefficient, α . An absorption coefficient of 0.9 indicates that 90 % of the incident sound energy is absorbed. The average α from 250 to 2000 Hz is termed the Noise Reduction Coefficient (NRC).

SOUND ATTENUATION – If an enclosure is placed around a machine, or a silencer is fitted to a duct, the noise emission is reduced or attenuated. An enclosure that attenuates the noise level by 30 dBA, reduces the sound energy by one thousand times.

SOUND EXPOSURE LEVEL (SEL) – The total sound energy of a single noise event condensed into a one second duration or in other words it is an L_{eq} (1 sec).



SOUND PRESSURE LEVEL, L_p – The level of sound measured on a sound level meter and expressed in decibels, dB, dBA, dBC, etc. $L_p = 20 \times \log (P/P_0) \dots \text{dB}$

where P is the rms sound pressure in Pascal and P_0 is a reference sound pressure of 20 μPa .
 L_p varies with distance from a noise source.

SOUND POWER LEVEL, L_w – The Sound Power Level of a noise source is an absolute that does not vary with distance or with a different acoustic environment.

$$L_w = L_p + 10 \log A \dots \text{dB, re: } 1\text{pW,}$$

where A is the measurement noise-emission area in square metres in a free field.

SOUND TRANSMISSION CLASS (STC) – An internationally standardised method of rating the sound transmission loss of partition walls to indicate the decibels of noise reduction of a human voice from one side to the other. (Refer: Australian Standard AS1276 – 1979)

SOUND TRANSMISSION LOSS – The amount in decibels by which a random sound is reduced as it passes through a sound barrier. A method for the measurement of airborne Sound Transmission Loss of a building partition is given in Australian Standard AS1191 - 2002.

STATISTICAL EXCEEDENCE SOUND LEVELS, L_{A90} , L_{A10} , L_{A1} , etc – Noise which varies in level over a specific period of time (usually 15 minutes) may be quantified in terms of various statistical descriptors:

The L_{A90} is the dBA level exceeded for 90 % of the time. In NSW the L_{A90} is measured over periods of 15 minutes, and is used to describe the average minimum or background noise level.

The L_{A10} is the dBA level that is exceeded for 10 % of the time. In NSW the L_{A10} measured over a period of 10 to 15 minutes. It was until recently used to describe the average maximum noise level, but has largely been replaced by the L_{Aeq} for describing level-varying noise.

The L_{A1} is the dBA level that is exceeded for 1 % of the time. In NSW the L_{A1} may be used for describing short-term noise levels such as could cause sleep arousal during the night.

STEADY NOISE – Noise, which varies in level by 6 dBA or less, over the period of interest with the time-weighting set to “Fast”, is considered to be “steady”. (Refer AS 1055.1 1997)

WEIGHTED SOUND REDUCTION INDEX, R_w – This is a single number rating of the airborne sound insulation of a wall, partition or ceiling. The sound reduction is normally measured over a frequency range of 100 to 3,150 Hertz and averaged in accordance with ISO standard weighting curves (Refer AS/NZS 1276.1:1999).

Internal partition wall $R_w + C$ ratings are frequency weighted to simulate insulation from human voice noise. The $R_w + C$ is always similar in value to the STC rating value. External walls, doors and windows may be $R_w + C_{tr}$ rated to simulate insulation from road traffic noise. This is normally a lower number than the STC rating value.

WHITE NOISE – White noise is broadband random noise whose spectral density is constant across its entire frequency range. The sound power is the same for equal bandwidths from low to high frequencies. Because the higher frequency octave bands cover a wider spectrum, white noise has more energy at the higher frequencies and sounds like a hiss.



APPENDIX I – CONSTRUCTION WASTE MANAGEMENT SUB PLAN

As per Condition B13 (d)



Construction and Demolition Waste Management Plan

Proposed Samuel Gilbert Public School Redevelopment

At Ridgescrop Dr, Castle Hill

On behalf of Fulton Trotter Architects



About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

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Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	A. Stamatiou	E. Atkins	Draft	07/09/2018
2.	A. Stamatiou	E. Atkins	Final	27/09/2018
3.	A. Stamatiou	E. Atkins	Updated Final	09/10/2018
4.	A. Stamatiou	M. Krisanski	Minor Amendment	13/03/2020
5.				

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1. Introduction

1.1. Background

TTM Consulting has been engaged by Fulton Trotter Architects to prepare a construction and demolition waste management plan for the existing school (Samuel Gilbert Public School) redevelopment at Ridgescrop Drive, Castle Hill. Significant waste volumes can be generated during the construction phase and as such, this plan will assist to guide in reducing wastage and reusing materials.

It should be noted that the site currently has 12 demountable buildings which will be removed from site. Being demountable buildings, minimal demolition waste will be generated from the removal of these buildings and has therefore not been addressed in this report.

Construction wastes can include excavated materials such as soil, rocks, vegetation, building materials such as bricks, concrete, timber, fittings, plasterboard and also contaminated or dangerous materials such as asbestos and contaminated soils. Some of these wastes have particular handling, transport and disposal requirements, and all wastes have been identified by the NSW State government as having significant potential to contribute to the circular economy – recovering and recycling materials and reducing the need for virgin materials. As such, best practice waste management is required to not only comply with laws and guidelines, but also to contribute to improved environmental performance and also to reduce waste disposal costs.

The Hills Shire Council Development Control Plan (DCP) also identifies the importance of minimising waste to landfill and maximising recovery of resources from wastes from construction activities. As such, it is a requirement of The Hills Shire to develop and submit a waste management plan that discusses waste minimisation, reuse, recycling and disposal options for all types of waste, and that the WMP must be implemented throughout the development process. During construction, the WMP and proof of lawful waste disposal/recycling, must be retained on site in a Waste Data File. Proof is to include a log book with associated receipts/invoices, waste classification and site validation certificates.

This construction waste management analysis of the project has been undertaken to meet the requirements of The Hills Shire DCP – Appendix A Waste Management Plan. The goal of this document is in line with the DCP as well as the waste hierarchy (avoid, reduce, reuse, recycle, recover (energy), treat and dispose), shown in Figure 1.1, and aims to:

- Minimise the amount of waste generated;
- Maximise the reuse, recycling and reprocessing of construction waste materials; and
- Minimise the volume of material disposed to landfill.

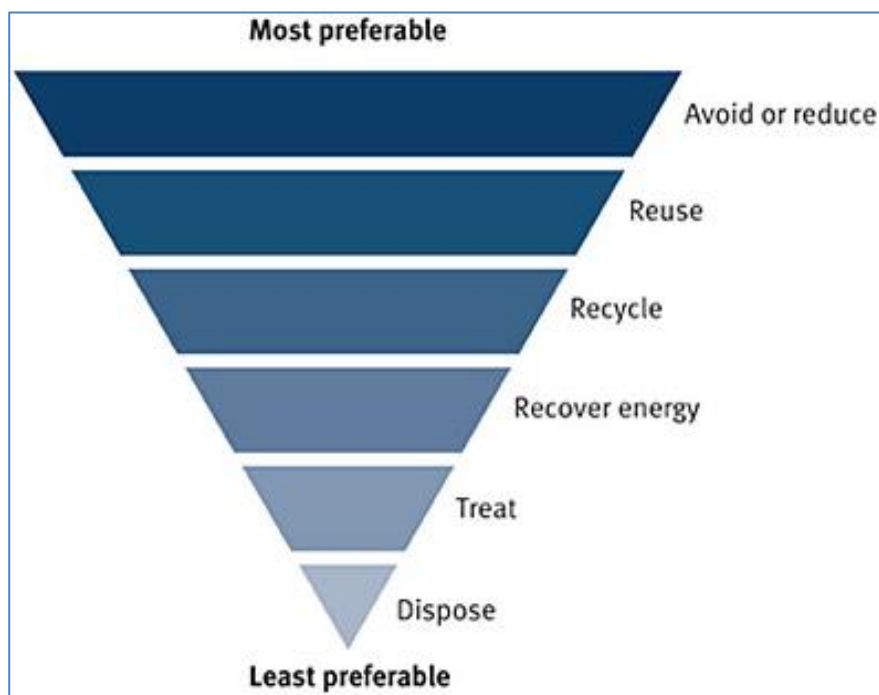


Figure 1.1 Waste Hierarchy

This report will provide guidance on activities and design before works on site commence, and will also outline the requirements to comply with Council and State legislation, and actions required during construction phases.

Information contained within the report is based on local government authority requirements related to The Hills Shire and the associated waste services department. The recommendations provided are designed to comply with:

- The Hills Shire DCP – Appendix A Waste Management Plan;
- NSW Waste Avoidance and Resource Recovery Act 2001 and Strategy 2014-2021.
- Any asbestos removal must be removed and disposed of in accordance with the requirements of Work Cover;
- All lead contaminated materials must be handled and disposed of in accordance with the NSW Environment Protection Authority's requirements.

This waste management plan relates to the construction phases only and does not include additional requirements during the operational phase of the development, which requires its own separate plan.

1.2. Site Location

The site is located on the corner of Ridgescrop Drive and Gilbert Road, as shown in Figure 1.2. The site has road frontages to Gilbert Road and Ridgescrop Drive, with the latter utilised for the service vehicle access. The site is currently operating as an educational facility.

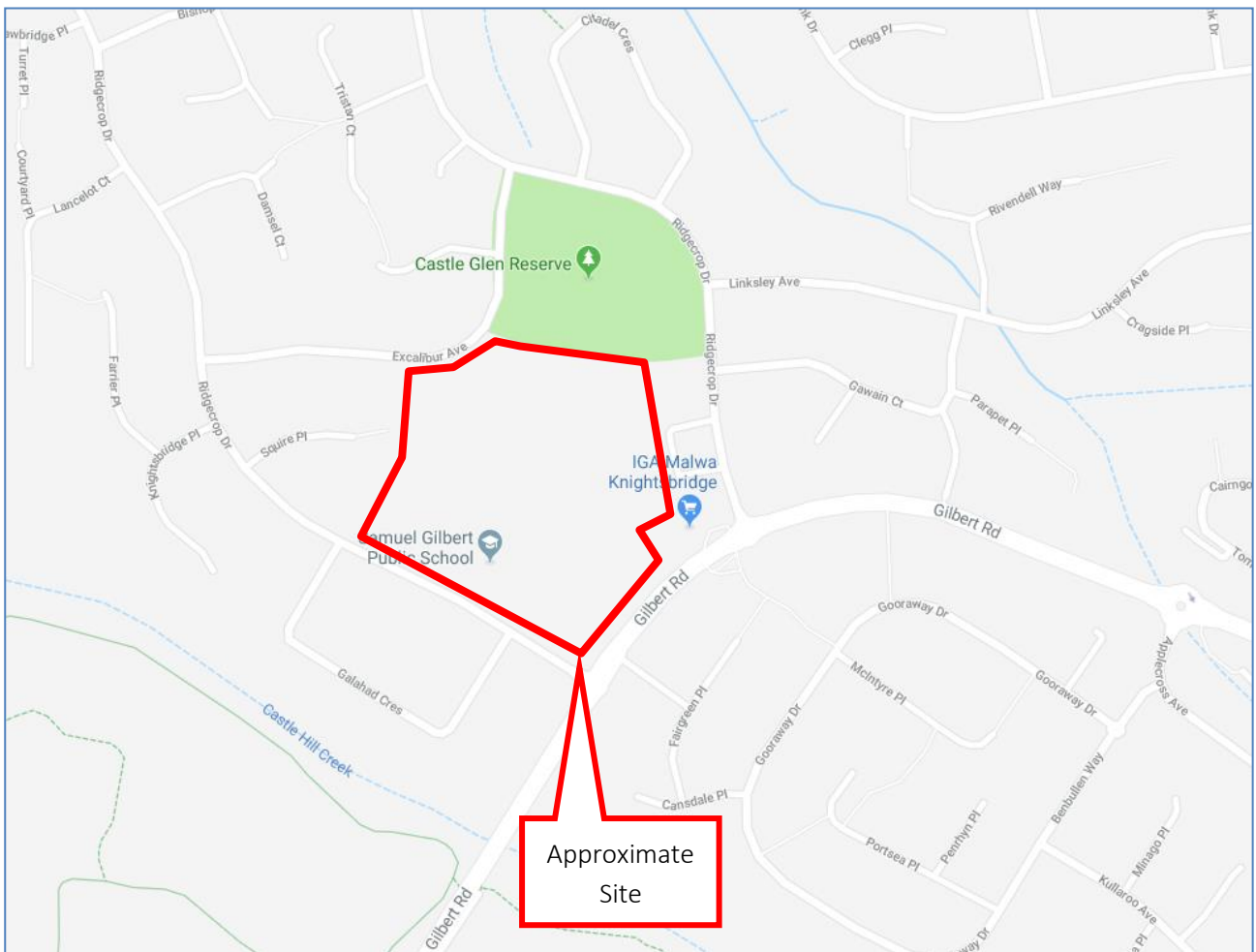


Figure 1.2: Site location



Figure 1.3: Site location

1.3. Development Summary

The development consists of an existing educational facility (school) including administration, classrooms, library and canteen areas.

The development proposal consists of removing 12 demountable buildings from an existing school, to provide 25 new teaching spaces totalling 43 permanent spaces, including a new hall, administration and home bases and canteen catering for 1000 students.

The total GFA for the new buildings is 3974.2m² GFA, with 679.7m² GFA for the refurbishment buildings.

The construction of the new buildings mainly consists of glazing and metal deck roofing.

It is noted that all demountables will be removed at the completion of the project.

Note – the SSDA reports are based on the assumption that any new demountables required for construction would be on site and counted as existing for the purposes of the SSDA application.

2. Construction Waste Legislation

The transfer, transport and disposal of particular wastes have a range of legislative requirements that will need to be adhered to during the life of the project. This legislation has bearing on both the owner of the waste and the transporter.

2.1. General Requirements

Under Section 143 of the *Protection of the Environment Operations Act 1997*, waste can only be transported to a place that can lawfully accept it. If wastes are transported to a place that cannot lawfully accept the material, both the owner of the waste and the transporter can be held liable for clean up costs and for subsequent lawful disposal. Therefore, it is essential for the project managers/owners to ensure that due diligence is undertaken prior to transportation of waste materials. Additional measures owners of waste can protect themselves from fines and penalties are outlined at <https://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>.

- It is recommended that a copy of this WMP along with proof of lawful disposal for all waste that is disposed of, or otherwise recycled from the site, be retained on site. Proof of disposal/recycling should include a log book with associated receipt/invoices, waste classification, and site validation certificates. All entries should include:
- Time and date;
- Description and size of waste;
- Waste facility used;
- Vehicle registration and company name.

Both the logbook and associated receipts should be made available for inspection by authorised Council Officers at any time during site works and at the conclusion of works should be retained by the person responsible and made available for inspection by authorised Council Officers.

2.2. Asbestos

Structures built or renovated in NSW prior to 1987 are likely to contain asbestos. Asbestos may be found in cement sheet walls and sheet roofing, backing to floor tiles, external cladding, switchboard backings and lagging insulation for water pipes. There are specific laws relating to working with or around asbestos (*Work Health and Safety Regulation 2017*). If building that are to be removed or demolished were built prior to 1987, an asbestos specialist should be engaged to identify if asbestos containing materials (ACM) are present and an appropriate removal process be undertaken. For more information, visit <http://www.safework.nsw.gov.au/health-and-safety/safety-topics-a-z/asbestos/asbestos-at-work>. As such, all removal and disposal of asbestos will be in accordance with all requirements of the relevant legislation, codes, standards and guidelines.

Details of removal procedures and risk management will be detailed in the Hazardous Building Materials Assessment Report. All works should be halted if unidentified materials are suspected. Additional sampling may be required to areas that were not accessible at the time the report was undertaken.

2.3. Contaminated Land

Any contaminated soil identified after demolition and excavation has commenced is to be remediated and disposed of to an approved contaminated/remediated soil facility as per the *Contaminated Land Management Act 1997* as required by NSW EPA. If during the course of demolition or excavation and activities lead to the contamination of land, or once a person becomes aware that there is evidence of previous contamination, there is a legal obligation to notify the EPA. Further information on requirements can be found at the following guideline <https://www.epa.nsw.gov.au/-/media/09353B1ABE5C431BAE803A0BCE72510C.ashx?la=en>.

3. Planning for Construction

In order to achieve effective waste reduction during the construction phase, there are a number of measures that should be undertaken by the project manager, construction contractors, and site staff. A commitment to reducing waste sent to landfill will need to be agreed by all stakeholders and actions coordinated early in the planning phases, in order to achieve best practice diversion rates. These measures are discussed in the following sections.

3.1. Contractor Selection

The projects site performance relies on the attitudes of the chosen contractors (and construction), which will ultimately have a significant impact on waste performance of the site. Contractor tendering should include a requirement for all contractors to identify their waste minimisation strategies and actions, and outline the materials that they are likely to reuse on site, recycle through the supply of bins, or recycle themselves through product stewardship arrangements for specialty wastes, and those items that they regularly dispose of to landfill.

Contractors supplying goods and equipment should also document within the tender submission the methods they undertake to reduce overordering, the anticipated/known wastage, and other waste minimisation actions. As a minimum, all contractors should follow the intent of this WMP, and where not achievable, discussions with the Site Manager/Foreman must be undertaken and recycling contractors engaged to provide consultation on alternative solutions.

3.1.1. Education

Site induction of all construction site staff and contractor will include education regarding the importance of recycling and reducing the amount of waste sent to landfill. Induction will also include a familiarisation of appropriate bins and stockpiles, and an introduction of the person responsible for managing the wastes. It is important to ensure people continue to use the facilities as originally intended.

3.2. Material Identification

It is recommended that construction contractors meet with site managers to identify those materials or items that are to be salvaged or reused during the construction stage. All other materials should then be categorised based on acceptance criteria for available recyclers (see Table 6.1 and Appendix B). This presents a clear idea of those materials that are to be excluded from being sent offsite for recycling/reprocessing or for disposal to landfill.

In the absence of readily available data on anticipated volumes of waste materials from the construction of commercial buildings, TTM have estimated volumes by extrapolating data available on the construction of houses (and assumed that the current buildings requiring construction equate to approximately 7 residential houses). The resulting quantities are a guide only to assist in planning appropriate management solutions (access, bin capacity, training) for each of the waste streams.

Without knowing quantities of materials that will be brought on to site, it is difficult to accurately estimate volumes of materials that will require recycling or landfilling. Therefore, without this information, TTM have provided industry knowledge on wastage percentages of materials ordered, of regularly used construction materials in the table below.

Table 3.1: Anticipated Construction Waste Volumes (% of total material)

Material	Waste as a percentage of the total amount of material ordered
Timber	5-7%
Plasterboard	5-20%
Concrete	3-5%
Bricks	5-10%
Cladding*	5-15%
Roofing*	1-5%

*Assumed based on timber and plasterboard percentages.

Source: http://www.wastenet.net.au/Profiles/wastenet/Assets/ClientData/Document-Centre/WAL2708_Construction_waste_A4_v2_singles.pdf

To convert volumes to tonnages for these materials, use the following table.

Table 3.2: Construction Waste Volumes (Tonnes/m²)

Material	Tonnes/m ²
Timber	0.5
Plasterboard	2.4
Concrete	1.0
Bricks	0.75
Cladding**	2.4
Roof**	0.5

**Assumed based on timber and plasterboard densities.

Source: http://www.wastenet.net.au/Profiles/wastenet/Assets/ClientData/Document-Centre/WAL2708_Construction_waste_A4_v2_singles.pdf

As anticipated volumes are currently unknown, it is essential that the construction contractor complete the table in Appendix B as soon as known quantities of materials are calculated. An estimation of volumes has been provided below, but is indicative only.

Table 3.3: Anticipated Construction Waste Volumes

Material	Estimated Qty – to be updated by construction contractor
Timber	2t
Plasterboard	10m ³
Concrete	10m ³
Bricks	30m ³
Cladding	10m ³
Roofing	5m ³

4. Construction

4.1. Construction Objectives

The key objectives for reducing total waste to landfill during the construction phase should be to:

- Minimise the amount of waste generated for the project – this should be the primary focus “waste avoidance”;
- Maximise the amount of materials reused/salvaged, sent for reuse or recycling; and
- Minimise the amount of waste sent to landfill.

These goals can be achieved with the right planning, commitment, infrastructure and site preparation. The site foreman, and contractor representatives should be engaged early and clear guidelines on the expectations to minimise waste to landfill communicated.

4.1.1. Waste Avoidance

- Plan to use building materials with low wastage rates such as prefabricated or modular materials;
- Design using standard material sizes, reducing off-cuts and time and labour saving;
- Store materials appropriately from weather, accidents, machinery and theft;
- Regularly undertake stocktake checks to ascertain available resources;
- Check all goods upon delivery for defects and return to supplier – do not accept oversupply as compensation;
- Purchase materials or request materials to have no packaging where appropriate; and
- Support the purchase of recycled content materials.

4.1.2. Reuse

- Reuse materials identified in the pre-planning consultation with the Site Foreman and construction contractor;
- Identify and source other salvaged materials from salvage yards or look for bespoke items on for sale websites/pages; and
- Stockpile materials that can be reused in future stages or projects.

4.1.3. Recycle

- Provide bins for each material stream based on acceptance criteria from recycling contractors/s;

- Some contractors will provide mixed bins and they will undertake the sorting process within their facility – this may be particularly useful where available space or access is limited; and
- Remember to provide a comingled (mixed) recycling bin for staff to dispose of recyclables from lunches and packaging.

4.1.4. Contaminated Items

- Must go to appropriately licensed facility, with appropriately licensed transporter.

4.1.5. Landfill

- This should be a last resort option for those items that cannot be readily reused, recycled or reprocessed.

5. Waste Bin Guidelines

All waste containers/skip bins are to be positioned within the property boundary. Bins outside of the property boundary such as the roadway or nature strip may require a permit application to Council. Storage of skip bins/containers should be placed in a suitable location as to not cause disturbance to normal stormwater flow. Under no circumstances should hazardous, flammable or explosive materials be disposed of within skip bins.

All bins and stockpiles will be appropriately labelled, clearly visible to and from the property, easily accessible and stored in a well-lit area. It is proposed that bins and stockpiles will be located in close proximity to the existing refuse bin area (refer Figure 5.1).

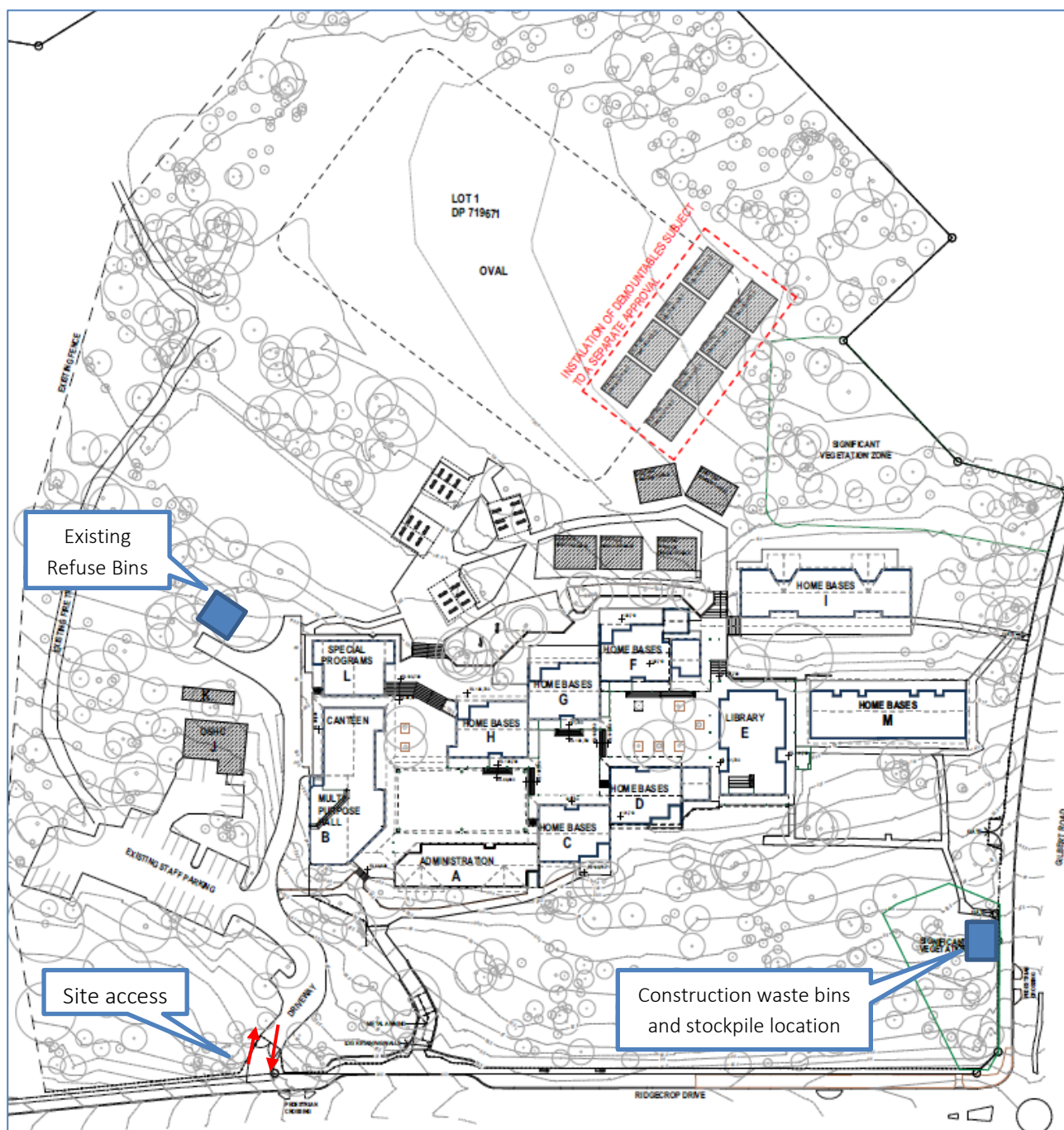


Figure 5.1 Proposed construction waste storage location and site access

Access to the construction area will be via Ridgecrop Drive. Each construction waste contractor has different collection methods, bins and vehicles and as such, the site foreman will be responsible for liaising directly with the contractors to ensure correct placement of bins/stockpiles to maximise safe access for both users and transporters.

6. Recycling Contractors

6.1. Recycling, Reuse and Recovery Guiding Principles

Reducing waste generation and keeping materials circulating within the economy are priorities for NSW. Through Waste Less, Recycle More funding, programs and services, the EPA is working hard to make it easier for businesses and communities to become better recyclers and reduce waste sent to landfill. On-site separation can reduce recycling costs and simplifies the sorting process.

6.2. Contractors and Services

The following is an indicative only list of Sydney based contractors that provide various services for handling the recycling, reuse and disposal of construction waste from the proposed project. This list has been assembled not in recommendation of any particular contractor but to demonstrate the general availability of recycling services around Sydney. The following larger waste transporters and operators are recommended:

Table 6.1: Recycling, Reuse and Recovery Services Contractors

Waste Material	Company	Description	Contact / Location Details
Concrete, blockwork, Bricks, Porcelain, Bitumen / Asphalt	Benedict Industries	Primarily a rubble recycling company but manages a wider range of waste streams as per below. Benedict will separate loads by hand or machine, screen some loads and crush masonry products. Non-recyclable elements will go to landfill. Materials accepted: • Clean concrete, blockwork, brick, mortar (masonry), porcelain; • Rubble+ soil; • Mixed load – concrete rubble and mixed in non-recyclables (incl mixed demolition waste, vegetation, timber, plastics); • Electrical cable; • Cardboard; • Clean timber; • Green waste; • Clean and laminated MDF, laminated timbers, stumps and plastics will generally go to landfill; • Steel loads – not mixed with other materials that requires sorting. Do not accept paints, liquids or food waste. Do not provide a bin collection service and are regularly serviced by bin suppliers and transporters such as: • Onesteel • Remondis • Reliance Skip Bins • Workhorse Waste and Recycling • Jims Skip bins • Vina Skip Bins • Brown Bros	A: Chipping Norton W: www.benedict.com.au Matthew Rooke E: matthew.rooke@benedict.com.au Ph. 02 9986 3500. M: 0431 737 444

	Bingo Industries	Primarily a rubble recycling service similar to Benedict however they also provide their own bins.	A: 305 Parramatta Rd, Auburn W: www.bingoindustries.com.au Ph: 02 9737 0351
	Boral Recycling	Provides concrete, asphalt, roof tiles, bricks and masonry blocks removal and disposal.	A: Wetherill Park W: https://www.boral.com.au/locations/boral-recycling-wetherill-park Ph. (02) 9604 9101
	Concrete Recyclers	Provides concrete, brick, asphalt waste removal.	A: 14 Thackeray St, Camellia W: www.concreterecyclers.com.au Ph: (02) 8832 7400
	Dial a Dump	Provides waste removal, waste management and waste transfer service.	A: 84-88 Burrows Rd, Alexandria W: http://www.dadi.com.au/recycling-landfill/genesis-eastern-creek
	Hi Quality	Resource recovery and recycling facility licensed to accept: • VENM; • Blast furnace slag; • Building and demolition wastes; and • Soils (CT1 thresholds); and • Organic wastes (mill wastes, green waste and wood waste).	A: Elizabeth Dr & Mamre Road, Kemps Creek W: http://www.hiquality.com.au Ph: 02 9826 1666
	Kimbriki Resource Recovery Centre	• Concrete; • Brick; • Asphalt; • Roof tiles Disposal facility only – requires use of transporter.	A: Kimbriki Rd, Ingleside/Terrey Hills W: Kimbriki.com.au Ph: 02 9486 3512
	M&K Demolition Group	Demolition, asbestos removal, strip outs and any other earthmoving service.	W: http://www.mkdemogroup.com.au/ Ph: Karl: 0404 429 995 Michael: 0404 222 995
Plasterboard / Gypsum	Bin only company	Rubbish removal (waste and recycling) from residential and commercial buildings, construction sites and deceased and hoarding affected estates.	W: www.1300rubbish.com.au Ph: 1300 78 22 47
	Gyprock	Only new, clean Gyprock product plasterboard waste is accepted. They do not provide bins.	A: Wetherill Park W: www.gyprock.com.au Ph. 131744
	ReGyp	Regyp provide and collect their own bins for new and old plasterboard per below: • Plasterboard and cornice off-cuts • Plasterboard with paint or wallpaper • Non-laminated plasterboard tiles • Gypsum blocks, gypsum prefab wall panels eg RFC rapid wall • Chemical precipitate gypsum (eg FGD) • Suitable industrial gypsum waste	A: Kurnell W: http://www.regyp.com.au/ Ph: 1300 473 497

	Remondis	Accepted materials: • Chemical & FGD gypsum • Scrap metal, • Organic waste, • Paper • Glass • Plastics	A: 32-36 Christie Street, St. Marys W: remondis.com.au Ph: +61 2 96234733 E: info@remondis.com.au
	Sydney Rubbish Services	Collection and removal of plasterboard and gyprock for delivery to recycling centre.	W: http://sydneyrubbishservices.com.au Ph: 02 9785 5526
Paints	paintback	Taking unwanted paint and packaging for innovative reuse and responsible disposal. Further information regarding acceptable paints can be found on the website.	W: www.paintback.com.au P: 1300 390 380
Metal - Metal recycling generally falls into ferrous and non-ferrous metal categories numerous recyclers exist to handle both types in mixed and separated loads	Benedict Industries	As above.	As above.
	Liverpool Scrap Metal – Moorebank	Removal and disposal of scrap metal.	W: http://www.liverpoolscrapmetal.com.au Ph. (02) 9602 4330
	Kimbriki Resource Recovery Centre	Scrap metal accepted	As above
	North Shore Metal Recyclers	Wire, copper pipe, plumbing fixtures, steel	A: Artarmon W: www.nsmr.com.au Ph. 02 9436 3000
	Onesteel Recycling	Mixed metals recycling, full site clean-up and bin services	A: Chipping North, Wetherill Park W: www.onesteel.com
	Remondis	As above.	As above.
	Veolia	All waste metal in large volumes.	W: https://www.veolia.com/anz/our-services/our-services/recycling-waste-services/construction-demolition-waste Ph. 132 955
Timber	Benedict Industries	As above.	As above.
	Kimbriki Resource Recovery Centre	Untreated unpainted timber	As above
Cardboard + Polystyrene	Brandown	Privately owned and operated Resource Recovery Centre, General Solid Waste (Non-Putrescible) Landfill and Quarry	A: Lot 90 Elizabeth Drive, Kemps Creek W: http://www.brandown.com.au/ Ph. - General Enquiries - 02 9826 1256
	Cleanaway	Sustainability for recycling, reuse, repurposing, treating or shredding across the following areas: • General Waste • Recycling • Hazardous Chemical Waste Disposal Services	A: Multiple Locations throughout Australia W: https://www.cleanaway.com.au/our-services/building-construction-scrap-

		• Used Oil and Oily Water • Construction and Demolition Waste	metal-and-timber-waste/ Ph. - General Customer Enquiries - 13 13 39
	Liverpool City Council	As above.	As above.
	Kimbriki Resource Recovery Centre	Cardboard and paper	As above
	Remondis	As above.	As above.
Soft plastics from packaging	Cleanaway	As above.	As above.
	Remondis	As above.	As above.
	Suez	Sustainability across the following areas: • Commercial Waste Management • Waste Removal & Disposal • General Waste Management • Commercial Waste Recycling • Advanced Resource Recovery Technology • Diversion Solutions • Households & Small Business • Collection & Disposal • General Waste Management • Skip Bins	W: http://www.sita.com.au/commercial-solutions/resource-recovery-recycling/construction-demolition/

Appendix A Construction Checklist

Waste and/or Recyclable Materials		Destination		
		Reuse and Recycling		Disposal
Possible Materials Generated	Estimated volume (m³) or area (m²) or weight (t) (Contractor to confirm)	On-site (How will materials be reused and/or recycled on-site?)	Off-site (Specify the contractor and recycling facility)	Specify the contractor and/or landfill site/transfer station
	Construction			
Timber				
Plasterboard				
Concrete				
Bricks				
Tiles				
Fittings				
Green Waste				
Asbestos (if any)				
Other (specify)				
How and where will materials be stored on-site for reuse and recycling? e.g. in skip bins located near entry.				
How will site operations be managed to ensure minimal waste creation and maximum reuse and recycling? e.g. staff training, feedback from waste management service provider, on-going checks by site managers, separate area set aside for sorted wastes, clear signage for waste areas etc.				
How will this plan be evaluated, and who is responsible for the evaluation? e.g. feedback from staff collected by the site manager.				

Appendix B Action and Responsibilities During Construction Stages

Stage	Action	Responsibility	Checklist
Construction	Sourcing of recycling agents/contractors and transportation – gain an understanding of site access requirements and bin choices.	Project / Site manager	
	Installation of any barrier fencing to protect pedestrian safety, access pathways, and stockpiles to be protected/retained.	Project manager, site manager and construction contractor	
	Identification of best bin storage areas for the number of material streams and collection vehicle access, ensuring unimpeded access for users and waste collection contractors.	Project / Site manager	
	Installation of recycling bins.	Project / Site manager	
	Preparation of access points and installation of safety and educational signage at waste storage areas.	Project / Site manager	
	Site induction for all staff to include discussion on commitment to waste minimisation, reuse and recycling, available stockpiles of salvaged materials, how to use bins appropriately, and who to contact for any issues.	Site manager	
	Regular checks on bin capacity and scheduling of removal contractors.	Site manager	
	Waste information maintained and updated with each collection.	Site manager and construction contractor	

SAMUEL GILBERT PUBLIC SCHOOL

**RIDGECROP DRIVE, CASTLE HILL
NSW 2154**

**NON-DESTRUCTIVE HAZARDOUS
BUILDING MATERIALS SURVEY**

JULY 2018





SAMUEL GILBERT PUBLIC SCHOOL

**RIDGECROP DRIVE, CASTLE HILL NSW
2154**

NON-DESTRUCTIVE HAZARDOUS BUILDING MATERIALS SURVEY

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REV	DATE	DETAILS
A	06/08/2018	First issue

	NAME	DATE	SIGNATURE
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OUR REF: PS110440_Fulton_&_Trotter JULY 2018

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GLOSSARY

ACRONYM	DEFINITION
A	Amosite Asbestos (Brown Asbestos)
AC	Asbestos cement (Asbestos-containing fibrous cement material)
ACM	Asbestos containing material
AS 1216	Standards Association of Australia, Classification and Class Labels for Dangerous Goods
AS 1319	Standards Association of Australia, Rules for the Design and Use of Safety Signs for the Occupational Environment
AS 1715	Standards Association of Australia, Selection, Use and Maintenance of Respiratory Protective Devices
AS 1716	Standards Association of Australia, Respiratory Protective Devices
ASCC	Australian Safety & Compensation Council
C	Crocidolite Asbestos (Blue Asbestos)
CH	Chrysotile Asbestos (White Asbestos)
DECC	Department of Environment and Climate Change (now NSW EPA)
EPA	Environment Protection Authority
Fibres/mL	Countable fibres per millilitre of air sampled
FC	Fibre cement (usually sheeting)
L/min	Litres per minute of air
NAD	No Asbestos Detected
NATA	National Association of Testing Authorities, Australia
NOHSC	National Occupational Health and Safety Commission
ODS	Ozone Depleting Substance
PAM	Presumed Asbestos Material
PCB	Polychlorinated Biphenyls
PPE	Personal protective equipment
RPE	Respiratory protective equipment
SMF	Synthetic Mineral Fibre
WH&S	Workplace health and safety

EXECUTIVE SUMMARY

On 11th July 2018, WSP Australia Pty Ltd conducted a Non-Destructive Hazardous Building Materials Survey of Samuel Gilbert Public School at Ridgescrop Dr, Castle Hill NSW 2154. The survey was undertaken on behalf of Fulton Trotter Architects.

The scope of services for this inspection comprised a detailed visual inspection of all accessible areas on the site. Representative samples were collected from materials suspected of containing Asbestos and paint systems suspected of containing Lead and all items suspected of containing Synthetic Mineral Fibres (SMF) were conducted via a visual inspection only. All data generated from the survey was used to create a hazardous building materials register (Appendix B). A summary of the hazardous building materials inspection findings is shown in **Table E.1** and a summary of inaccessible areas is shown in **Table E.2**.

Table E.1 Summary of hazardous materials identified at the time of inspection

HAZARDOUS MATERIAL	FOUND
Friable asbestos containing materials (ACM)	No
Non-friable ACM	No
Synthetic mineral fibre (SMF)	Yes
Lead-based paints	No
Capacitors with polychlorinated biphenyls (PCBs)	No

Table E.2 Summary of inaccessible areas at time of inspection

INACCESSIBLE AREAS	DETAILS
Ceiling Space	Building Block A & Block B have suspended ceilings. A visual assessment was made via the ceiling access point
Subfloors	Building Block L, limited access to all areas of subfloor
Electrical Distribution Cupboards	Building Block A, Block B, Block E & Block L - Locked Door - Electric Distribution Board - Live
Areas at heights	Height above 3 meter and not fully accessed in line with company OHS policies

Details of all hazardous building materials identified are presented within the register in Appendix B.

To assist in the management of possible hazardous building materials being identified on site and to ensure compliance with relevant regulations, it is recommended that a separate Hazardous Building Materials Management Plan be prepared, which should include information regarding:

- Roles and responsibilities
- Training
- Prohibitions
- Management plan and register reviews
- Labelling
- Demolition and refurbishment works
- Asbestos removal works
- Lead paint removal works
- Incidents and emergencies
- Record keepings

1 INTRODUCTION

WSP Australia was commissioned by Fulton Trotter Architects to undertake Non-destructive Hazardous Building Materials inspection and risk assessment of Samuel Gilbert Public School located at Ridgecrop Dr, Castle Hill NSW 2154.

This report presents the findings of the inspection conducted on 11th July 2018.

The term hazardous building materials for the purpose of this report refers to the following:

- Asbestos containing materials (ACM);
- Lead based paints;
- Synthetic Mineral Fibre (SMF) materials; &
- Light fittings and accessible electrics that may contain polychlorinated biphenyls (PCB) capacitors

A complete list of the in-situ and suspected hazardous materials identified during the inspection, including details about the condition and the risk posed by each situation and a risk matrix, has been provided in the hazardous building materials register including photographs and certificates of analysis that form the deliverable component of the project. These are attached as Appendices A to D.

No one section or part of a section of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including the asbestos materials register and sample results.

1.1 LEGISLATIVE REQUIREMENTS

The pre-demolition hazardous materials survey works and production of this report have been undertaken in accordance with the requirements of the following documents:

- Work Health and Safety Act 2011 (Commonwealth)
- Work Health and Safety Act 2011 (NSW)
- Work Health and Safety Regulation 2017 (NSW)
- SafeWork NSW: How to Manage and Control Asbestos in the Workplace: Code of Practice 2016.
- SafeWork NSW: How to Safely Remove Asbestos: Code of Practice 2016.
- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres. 2nd Edition [NOHSC:3003(2005)]
- ANZECC (1997) Identification of PCB-containing Capacitors: An information booklet for Electricians and Electrical Contractors.
- AS 1319, Standards Association of Australia, Rules for the Design and Use of Safety Signs for the Occupational Environment
- AS 1715, Standards Association of Australia, Selection, Use and Maintenance of Respiratory Protective Devices
- AS 1716, Standards Association of Australia, Respiratory Protective Devices
- AS 2601 Demolition of Structures
- AS 4361.1 Guide to Lead Paint Management, Part 1: Industrial Application 1995
- AS 4361.2 Guide to Lead Paint Management, Part 2: Residential and Commercial Buildings 2017
- National Code of Practice for the Control and Safe Use of Inorganic Lead at Work [NOHSC:2015 (1994)].
- AIOH positional paper: Synthetic Mineral Fibres and Occupational Health Issues 2011
- NOHSC (1989b). Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres. [NOHSC:3006 (1989)] June 1989
- National Standard for Synthetic Mineral Fibres [NOSHC:1004 (1990)].
- National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOSHC:2006 (1990)].
- AS 3640 Workplace atmospheres - Methods for sampling and gravimetric determination of inhalable dust 2009
- NSW Protection of the Environment Operations Act 1997.

1.2 SCOPE OF SERVICES

The objectives of the hazardous building material inspection were to:

- Conduct a Non – Destructive Inspection at to identify hazardous building materials;
- Confirm the type, location, friability, disturbance potential and labelling status of hazardous building materials identified;
- Sampling of representative materials suspected of containing asbestos or lead;
- Suspected ACM and Lead containing samples collected during the re-inspection were sent to NATA accredited laboratories for analysis;
- Prepare a Hazardous Building Materials Register, including asbestos containing materials;
- Provide a semi-quantitative risk assessment of the hazardous building materials identified and;
- Provide recommendations on the control measure strategies in the event of any refurbishment or demolition works.

2 SURVEY METHODOLOGY

2.1 SITE INSPECTION

The identification of hazardous building materials involves a combination of visual inspection of the accessible areas of the building/structure and the collection of representative samples of the suspect materials for the purpose of analytical confirmation. Where identical suspect materials are detected at different locations, visual confirmation only may have been made rather than additional sample collection.

Access was made only where safe access by solid floors, decking, walkways, protected catwalks or ladders was available. Minimal to no disturbance of any equipment was undertaken as part of the survey as all plant, electrical installations, pipe-work and associated equipment were considered live at the time of the survey.

Access through the building and structures on the site was made by systematic walkthrough, with the order of the items listed in the Asbestos Register reflective of the order of the inspection. This inspection was semi-destructive in nature and could not be a fully destructive survey as services were still connected to the building.

2.2 IDENTIFICATION OF MATERIAL

2.2.1 ASBESTOS CONTAINING MATERIALS (ACM)

Representative samples of materials suspected to contain asbestos were collected and analysed at WSP Australia's NATA Accredited. The identification of asbestos fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. This is detailed in Australian Standard 4964-2004 '*Method for the qualitative identification of asbestos in bulk samples*'. Asbestos samples were only collected for analysis where the safety of personnel would not be compromised. Sampling was conducted in accordance with the WSP Australia's in house survey guide, SafeWork Australia's Code of Practice, '*How to Manage and Control Asbestos in the Workplace*' and the United Kingdom Health & Safety Executive publication, '*HSG 264: Asbestos: The survey guide*'.

2.2.2 LEAD-BASED PAINTS

Representative samples of paint suspected to be lead based were collected and analysed at Envirolab Services NATA Accredited Laboratory. Laboratory analysis of lead based paints is used to achieve a reportable weight by weight percentage of lead throughout the paint layers and is reported against AS 4361.-2017 *Guide to lead Paint Management, Part 2: Commercial and Residential Buildings* lead containing paint system level of 0.1 per cent (w/w) of the dried film.

The analysis of the physical samples is achieved by digestion of the sample for determination of lead content by one of two methods, atomic absorption spectroscopy (AAS) or inductively coupled plasma emission spectrometry (ICP-AES). Collection of lead based paint samples was only conducted where the safety of personnel would not be compromised. Sampling was conducted in accordance with the WSP Australia's in house survey guide and AS 4361.2-2017 *Guide to lead Paint Management, Part 2: Commercial and Residential Buildings*.

Sampling methodology will consider the various paint coats and record these layers accordingly, these observations will be referred to alongside the analytical sample results to acknowledge that lead paint layers of varying lead content will affect the analytically observed lead weight concentration recorded from the sample. To this end, where multiple lead paint layers have been visually recorded but analytically determined lead percentage of the collective paint layers is below actionable limits, the paint undercoats may still be determined as hazardous due to its dilution in the sample by the non-lead topcoats. Sampling methodology may also consist of the use of a lead paint chemical colorimetric test reagent that can provide an instantaneous result of lead presence within specific layers. This testing will however be used in conjunction with a physical sample to determine the lead concentration as above.

2.2.3 SYNTHETIC MINERAL FIBRES (SMF)

If representative samples of materials suspected to contain asbestos were collected and analysed at WSP Australia's in-house NATA Accredited Laboratory, SMF can also be identified. The identification of SMF fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. Alternatively, our experienced surveyor visually identified and recorded the presence of synthetic mineral fibre products onsite.

2.2.4 POLYCHLORINATED BIPHENYLS (PCBS)

Where access was available and power was isolated representative examples of each major type of fluorescent light fittings were examined to determine, which lights were fitted with PCB containing ballast capacitors. The details of the brand, model of each capacitor and capacity were recorded and checked against with the ANZECC database of known PCB capacitors and PCB free capacitors.

The Australian and New Zealand Environment Conservation Council 'Polychlorinated Biphenyls Management Plan, November 1996' outlines the National Strategy for the management of PCBs.

The document defines PCB materials and wastes as follows:

Table 2.1 PCB Concentration Classification

PCB CONCENTRATION	WASTE CLASSIFICATION
<2 mg/kg	PCB free
2 mg/kg to <50 mg/kg	Non-scheduled PCB material or waste
>50 mg/kg	Scheduled PCB material or waste
>100,000 (10%)	Concentrated PCB material

3 SITE DESCRIPTION

3.1 SITE LOCATION

Site is located at 3-7 McPherson Street, Banksmeadow, NSW 2019

3.2 SITE DESCRIPTION

The survey was limited to specified buildings selected by Fulton Trotter Architects. Details of the buildings are presented below:

Table 3.1 Building Description

BUILDING	BUILDING DESCRIPTION
Block A (Administration)	Single storey building constructed in 1984. The building is made of brick walls, concrete floor slab. There is SMF ceiling batts, the ceiling is suspended and the roof is corrugated iron.
Block B (Communal Facilities/ Pupil Facilities)	Single storey building constructed in 1984. The building is made of brick / Besser block walls, with a concrete floor slab. There are tall ceilings within the Hall, suspended ceilings are gyprock material. There are SMF ceiling batts within the ceiling space and the roof is corrugated iron.
Block E (Library/ Tiered Learning)	Single storey building constructed in 1984. The building is made of brick walls, concrete floor slab. There is SMF ceiling batts, and the roof is corrugated iron.
Block L (General Learning/ Music)	Single storey building constructed in 2002. The building is made of brick veneer walls, concrete floor slab. Ceiling lining is plaster gyprock, there is SMF ceiling batts, as well as SMF A/C ducting and the roof is corrugated iron

3.3 SURVEY RESTRICTIONS

No access was possible to areas above 3 meters in height and confined spaces due to not being fully accessed in line with the companies OHS policies. Certain areas of the sub-floor void could not be accessed due to the space of the void not being tall enough for human occupancy. Refer to Table E.2 for a detailed list of no-access areas.

4 HAZARDOUS MATERIALS RISK ASSESSMENT

To assess the health risk posed by the presence of ACMs, SMF, lead based paint and PCBs; the following factors must be considered:

4.1 ACM & SMF RISK ASSESSMENT FACTORS

These factors include:

- Condition of the material. This is described as either good (not been damaged or have not deteriorated), medium (minor deterioration or damage) or poor (materials which have been extensively damaged or their condition has deteriorated over time);
- Proximity of air plenums and direct air stream;
- Friability of the material (ease with which the material can be crumbled) listed as either friable or non-friable;
- Requirement for access for building or maintenance operations and accessibility (low, medium or high);
- Likelihood of disturbance of the material;
- Exposed surface areas and;
- Environmental conditions.

These aspects are in turn judged upon; (i) potential for fibre generation; and, (ii) the potential for exposure. When these factors have indicated that there is a possibility of exposure to airborne fibres, appropriate recommendations for repair, maintenance or abatement of the asbestos containing materials are made.

4.2 LEAD BASED PAINT RISK ASSESSMENT FACTORS

Risk assessment factors include:

- Concentration of lead in paint;
- Condition of the paint.
- Deterioration/damage (peeling, flaking);
- Proximity of air plenums, direct air stream and sensitive receptors such as foodstuffs;
- Ease with which the paint can be disturbed/removed;
- Requirement for access for building or maintenance operations and accessibility (low, medium or high) and;
- Magnitude of exposed surface areas.

These aspects are in turn judged upon the potential for exposure. When these factors have indicated that there is a possibility of exposure to lead-based paint appropriate recommendations for the repair, maintenance, abatement and removal of the paint are made.

4.3 POLYCHLORINATED BIPHENYLS (PCBS) RISK ASSESSMENT FACTORS

Risk assessment factors include:

- The manufacture age and location of the capacitor;
- The condition of the capacitor (visible leaks/spills of fluid);
- Potential of exposure to the PCBs from contact with capacitors;
- Ease with which the capacitors can be accessed and;
- The requirement for access to light fittings for building or maintenance operations and accessibility (low, medium or high).

As above, these aspects are in turn judged upon the potential for exposure. When risk factors have indicated a possibility of exposure to PCBs, appropriate recommendations for the removal and disposal of the capacitors are made.

5 FINDINGS AND RECOMMENDATIONS

5.1 ASBESTOS CONTAINING MATERIALS

At the time of the inspection, Asbestos containing material was presumed in the following location:

Table 5.1 Presumed Asbestos containing materials

BUILDING	LOCATION	MATERIAL
Block A - Administration	R0013 - Distribution Board	Backing board
Block B - Communal Facilities/ Pupil Facilities	R0015 - Distribution Board	Backing board
Block E - Library/ Tiered Learning	R0004 - Main Switch Board	Backing board
Block L - General Learning/ Music	R0002 - Main Switch Board Cupboard	Backing board

It is recommended that the materials above be tested and if confirmed to contain asbestos be removed by appropriately licensed contractors prior to demolition/refurbishment works. Any work conducted on material should be under controlled conditions to reduce the amount of airborne fibres. Appropriate PPE and RPE should be worn.

5.2 SMF CONTAINING MATERIALS

At the time of the inspection, SMF containing materials were identified in the following locations:

Table 5.2 Identified SMF containing materials

BUILDING	LOCATION	MATERIAL
Block A - Administration	Ceiling Space (suspended ceilings)	Ducting to ceiling
Block A - Administration	Ceiling Space (suspended ceilings)	Ceiling Batts
Block B - Communal Facilities/ Pupil Facilities	Ceiling Space (suspended ceilings)	Ducting to ceiling
Block B - Communal Facilities/ Pupil Facilities	Ceiling Space (suspended ceilings)	Ceiling Batts
Block E - Library/ Tiered Learning	Ceiling Space	Ducting to ceiling
Block E - Library/ Tiered Learning	Ceiling Space	Ceiling Batts
Block L - General Learning/ Music	Ceiling Space	Ducting to ceiling
Block L - General Learning/ Music	Ceiling Space	Ceiling Batts

It is recommended that any work conducted on material should be under controlled conditions to reduce the amount of airborne fibres. Appropriate PPE and RPE should be worn.

5.3 LEAD BASED PAINTS

Table 5.3 Identified Lead containing materials

BUILDING	LOCATION	MATERIAL
NA	NA	NA

It is recommended that the material above be removed by appropriately licensed contractors prior to demolition/refurbishment works. Any work conducted on material should be under controlled conditions to reduce the amount of airborne lead content. Appropriate PPE and RPE should be worn.

6 STATEMENT OF LIMITATIONS

This report has been prepared for the benefit of the client and no other party. WSP assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of WSP or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

In accordance with the scope of services, WSP has relied upon the data and has conducted field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report. On all sites, varying degrees of non-uniformity of conditions are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of actual situations. The conclusions are based upon the data and the field monitoring and/or testing and are therefore merely indicative of the conditions of the site at the time of preparing the report.

It should also be recognised that site conditions, including the extent and concentration of contaminants, can change with time.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable Occupational Hygiene consultants under similar circumstances. No other warranty, expressed or implied, is made.

APPENDIX A

RISK MATRIX



Table 1 Definitions

CODE	ITEM	DEFINITION
U	Unknown	No access to assess friability or condition
N/A	Not Applicable / Practicable	Not Applicable / Practicable
FRIABILITY (ASBESTOS AND SMF)		
F	Friable	Material that; (A) is in a powder form or that can be crumbled, pulverised or reduced to powder by hand pressure when dry, and (B) contains asbestos.
NF	Non-friable	Material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound.

Note: Friability only applies to asbestos and SMF

Table 2 Condition and Disturbance Assessment

CONDITION		
1	Unknown	No access to assess condition
2	Poor	Obvious damage or deterioration, extensive dust and contamination
3	Moderate	Major damage throughout, no debris or dust, not sealed or encapsulated
4	Fair	Minor damage or deterioration, not sealed or encapsulated
5	Good	No obvious damage or deterioration, secured in place, sealed and encapsulated
DISTURBANCE POTENTIAL		
A	Public	Public access areas
B	Certain	Disturbance very likely to occur during typical occupancy of the building and during maintenance works
C	High	Disturbance may occur during typical occupancy of the building and is likely during maintenance works
D	Medium	Disturbance unlikely during typical occupancy of the building however may occur during maintenance works
E	Low	Disturbance unlikely during typical occupation of the building



Table 3 Risk Assessment Chart

MATERIAL CONDITION		PROBABILITY OF DISTURBANCE				
		Public	Certain	Likely	Possible	Unlikely
		A	B	C	D	E
Unknown	1	1	2	4	7	11
Poor	2	3	5	8	12	16
Moderate	3	6	9	13	17	20
Fair	4	10	14	18	21	23
Good	5	15	19	22	24	25

LEGEND:

1-6

HIGH RISK

7-15

MEDIUM RISK

16-25

LOW RISK

APPENDIX B

HAZARDOUS BUILDING MATERIALS REGISTER



Address: Samuel Gilbert Public School, Ridgecrop Drive, Castle Hill 2154
Consultant Names: Daniel Sharkey
Survey Date: 12/7/18



Hazard	Sample No	Result	Photo ID	Description of Hazardous Material	Location of Hazardous Material	Quantity	Friability (F, NF)	Condition (Good, Fair,Poor)	Risk Rating (L, M, H)	Consultant Comments
Block A - Administration - 1984 - Brick Veneer Structure										
B00A - External Movement										
Asbestos	WSP-050267	NAD		Ceiling linings	Covered Walkway Throughout	>150m2	NA	NA	NA	No Further action required
B00A - R0001 Movement										
No Asbestos identified at time of inspection										
B00A- R0002 Entry Vestible										
No Asbestos identified at time of inspection										
B00A-R0003 - Clerical Office										
No Asbestos identified at time of inspection										
B00A-R0004 - Principal										
No Asbestos identified at time of inspection										
B00A-R0005 - Deputy Principal										
No Asbestos identified at time of inspection										
B00A-R0006 - Deputy Principal										
No Asbestos identified at time of inspection										
B00A-R007 - Movement										
No Asbestos identified at time of inspection										
B00A-R0008 - Staff Room										
No Asbestos identified at time of inspection										
B00A-R0009 - Movement										
No Asbestos identified at time of inspection										
B00A-R0010 - Staff Room Annexe										
No Asbestos identified at time of inspection										
B00A-R0011 - Staff Toilet										
No Asbestos identified at time of inspection										
B00A-R0012 - Staff Toilet										
No Asbestos identified at time of inspection										
B00A-R0013 - Distribution Board										
No Access at time of inspection										
B00A-R0014 - Security Store										
No Asbestos identified at time of inspection										

Address: Samuel Gilbert Public School, Ridgecrop Drive, Castle Hill 2154
Consultant Names: Daniel Sharkey
Survey Date: 12/7/18



Hazard	Sample No	Result	Photo ID	Description of Hazardous Material	Location of Hazardous Material	Quantity	Friability (F, NF)	Condition (Good, Fair,Poor)	Risk Rating (L, M, H)	Consultant Comments
B00A-R0015 - Security Store										
Asbestos	WSP-050268	NAD	2	Blue Vinyl	Floor throughout	16m2	NA	Good	NA	No Further action required
Asbestos		NAD		Adhesive beneath Blue Vinyl	Floor throughout	16m2	NA	Good	NA	No Further action required
B00A-R0016 - Sick Bay										
No Asbestos identified at time of inspection										
B00A-R0017 - Duplicating Workroom										
No Asbestos identified at time of inspection										
B00A-R0018 - Interview										
No Asbestos identified at time of inspection										
B00B-R0010 - Movement										
No Asbestos identified at time of inspection										
B00A - Ceiling Space (suspended ceilings)										
SMF	Visual	SMF	1	Insulation	Ducting to ceiling	50lm	NF	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
B00A - Ceiling Space (suspended ceilings)										
SMF	Visual	SMF	3	Insulation	Ceiling Batts	>150m2	F	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
Block B - Communal Facilities/ Pupil Facilities - 1984 - Brick/Besser Block Structure										
B00B-R0001 - Movement										
No Asbestos identified at time of inspection										
B00B-R0002 - Toilet Boys										
No Asbestos identified at time of inspection										
B00B-R0003 - Toilet Girls										
No Asbestos identified at time of inspection										
B00B-R0004 - Cleaning Distributed Store										
No Asbestos identified at time of inspection										
B00B-R0005 - Disabled Toilet										
No Asbestos identified at time of inspection										
B00B-R0006 - Cleaning Supplies										
No Asbestos identified at time of inspection										
B00B-R0007 - Canteen Office/Store										
No Asbestos identified at time of inspection										
B00B-R0008 - Canteen Office/ Store										

Address: Samuel Gilbert Public School, Ridgecrop Drive, Castle Hill 2154
Consultant Names: Daniel Sharkey
Survey Date: 12/7/18



Hazard	Sample No	Result	Photo ID	Description of Hazardous Material	Location of Hazardous Material	Quantity	Friability (F, NF)	Condition (Good, Fair,Poor)	Risk Rating (L, M, H)	Consultant Comments
No Asbestos identified at time of inspection										
B00B-R0009 - Canteen										
Asbestos	WSP - 050265	NAD		Red Vinyl	Floor throughout	40m2	NA	Good	NA	No Further action required
B00B-R0010 - Movement										
No Asbestos identified at time of inspection										
B00B-R0011 - Hall Chair Store										
No Asbestos identified at time of inspection										
B00B-R0012 - P.E Store										
Asbestos	WSP - 050266	NAD	5	Green Vinyl	Floor throughout	25m2	NA	Good	NA	No Further action required
B00B-R0013 - Cleaning Supplies										
No Asbestos identified at time of inspection										
B00B-R0014 - Plant										
No Asbestos identified at time of inspection										
B00B-R0015 - Distribution Board										
No Access at Time of Inspection										
B00B-R0016 - Movement										
No Asbestos identified at time of inspection										
B00B-R0017 - Raised Platform										
No Asbestos identified at time of inspection										
B00B-R0018 - Communal Space/Hall										
No Asbestos identified at time of inspection										
No inspection to ceiling space within Hall as limited by heighth restriction										
B00B-R0019 - General Assistant/ Bulk Store										
No Asbestos identified at time of inspection										
B00B-R0020 - Uniform Shop										
No Asbestos identified at time of inspection										
B00B-R0021 - Garden Store										
No Asbestos identified at time of inspection										
B00B-R0022 - General Storeroom										
No Asbestos identified at time of inspection										
B00B - Ceiling space (suspended ceiling)										

Address: Samuel Gilbert Public School, Ridgecrop Drive, Castle Hill 2154
Consultant Names: Daniel Sharkey
Survey Date: 12/7/18



Hazard	Sample No	Result	Photo ID	Description of Hazardous Material	Location of Hazardous Material	Quantity	Friability (F, NF)	Condition (Good, Fair,Poor)	Risk Rating (L, M, H)	Consultant Comments
SMF	Visual	SMF		Insulation	Ducting to ceiling	90lm	NF	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
B00B - Ceiling space to (suspended ceiling)										
SMF	Visual	SMF	4	Insulation	Ceiling Batts	>200m2	F	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
Block E - Library/ Tiered Learning - 1984 - Brick/Veneer Structure										
B00E-R0001- Movement										
No Asbestos identified at time of inspection										
B00E-R0002 - Reading Area										
No Asbestos identified at time of inspection										
No inspection to ceiling space within reading area as limited by heighth restriction										
B00E-R0003 - K.L.A. Store										
No Asbestos identified at time of inspection										
B00E-R0004 - Main Switch Board										
No Access at Time of Inspection										
B00E-R0005 - Library Office/Work Room										
Asbestos	WSP - 050262	NAD	7	Membrane Beneath Sink	Floor throughout	<1m2	NA	NA	NA	No Further action required
Asbestos	WSP - 050263	NAD	6	Green Vinyl	Floor throughout	12m2	NA	NA	NA	No Further action required
B00E - R0006 - Special Programs Store										
No Asbestos identified at time of inspection										
B00E - R0007 - Plant										
No Asbestos identified at time of inspection										
B00E - R0008 - Special Programs Store										
No Asbestos identified at time of inspection										
B00E - Ceiling Space										
SMF	Visual	SMF		Insulation	Ducting to ceiling	50lm	NF	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
B00E - Ceiling Space										
SMF	Visual	SMF		Insulation	Ceiling Batts	>100m2	F	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
Block L - General Learning/ Music - 2002 - Brick/Veneer Structure										
B00L - R0001 - General Store										
No Asbestos identified at time of inspection										
B00L - R0002 - Main Switch Board Cupboard										
No Access at Time of Inspection										

Address: Samuel Gilbert Public School, Ridgecrop Drive, Castle Hill 2154
Consultant Names: Daniel Sharkey
Survey Date: 12/7/18



Hazard	Sample No	Result	Photo ID	Description of Hazardous Material	Location of Hazardous Material	Quantity	Friability (F, NF)	Condition (Good, Fair,Poor)	Risk Rating (L, M, H)	Consultant Comments
B00L - R0003 - External Movement										
No Asbestos identified at time of inspection										
B00L - R0004 - Interview										
No Asbestos identified at time of inspection										
B00L - R0005 - Withdrawal Space - 1hb										
No Asbestos identified at time of inspection										
B00L - R0006 - Special Programs Room										
No Asbestos identified at time of inspection										
B00L - R0007 - Withdrawal Space - 1hb										
No Asbestos identified at time of inspection										
B00L - R0008 - Special Programs Room										
No Asbestos identified at time of inspection										
B00L - R0009 - General Store										
No Asbestos identified at time of inspection										
B00L - R0009 - External Movement										
No Asbestos identified at time of inspection										
B00L - Subfloor										
Asbestos	WSP - 050264	NAD	9	Compressed flooring	Floor throughout	>100m2	NA	NA	NA	No Further action required
B00L -Ceiling Space										
SMF	Visual	SMF	8	Insulation	Ducting to ceiling	45lm	NF	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
B00L - Ceiling Space										
SMF	Visual	SMF	8	Insulation	Ceiling Batts	>100m2	F	Good	L	WSP 2018: Handle in accordance with the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].

APPENDIX C

CERTIFICATES OF ANALYSIS





**WSP Australia
Pty Limited**

Level 27 Ernst & Young Centre 680 George
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PO Box 20967 World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@pbworld.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Samuel Gilbert Public School

CERTIFICATE NO: SYD-PS110440-0001-98761

CLIENT: Fulton Trotter Architects

DATE/S SAMPLED: 11/07/2018

CLIENT ADDRESS: PO BOX 1669, Bondi NSW 1355

DATE RECEIVED: 11/07/2018

TELEPHONE: 02 8383 5151

DATE ANALYSED: 13/07/2018

EMAIL: johnw@fultontrotter.com.au

ORDER NUMBER: N/A

CONTACT: John Ward

SAMPLED BY: Dan Sharkey

TEST METHOD: Qualitative identification of Asbestos fibre in bulk and soil samples at WSP Corporate Laboratories, by polarised light microscopy, including dispersion staining techniques using AS4964 (2004) and supplementary in house laboratory procedure (LP3 - Identification of Asbestos Fibres). This document is issued in accordance with NATA's requirements under NATA accreditation No. 17199, accredited for compliance with ISO/IEC: 17025 - Testing. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standard.

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	WSP-050262	Block E - Library Office - Beneath sink - Membrane	Bituminous Membrane	3 gm	OF, NAD
002	WSP-050263	Block E - Library Office - Green Floor Covering	Vinyl	2 gm	NAD
002A			Adhesive		OF, NAD
003	WSP-050264	Block L - Subfloor South Elevation - Compressed Sheeting	Fibre Cement Sheet	3 gm	OF, NAD
004	WSP-050265	Block B - Canteen - Red Floor Covering	Vinyl	6 gm	NAD
004A			Adhesive		OF, NAD
005	WSP-050266	Block B - Store Room in Hall - Green Floor Covering	Vinyl	4 gm	NAD
005A			Adhesive		OF, NAD
006	WSP-050267	Block A - Awning Lining to Movement	Fibre Cement Sheet	2 gm	OF, NAD
007	WSP-050268	Block A- Store - Blue Vinyl Floor Covering	Vinyl Sheeting	2 gm	NAD
007A			Adhesive		OF, NAD

LEGEND:

NAD - No Asbestos Detected
CH - Chrysotile Asbestos Detected
A - Amosite Asbestos Detected
C - Crocidolite Asbestos Detected
UMF - Unknown Mineral Fibres Detected
SMF - Synthetic Mineral Fibres Detected
OF - Organic Fibres Detected

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.



ACCREDITED FOR
**TECHNICAL
COMPETENCE**

Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Clare Brockbank

AUTHORISATION DATE

Friday, 13 July 2018



**WSP Australia
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Email ANZLab@pbworld.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Samuel Gilbert Public School

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LEGEND:

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ACCREDITED FOR
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COMPETENCE**

Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Clare Brockbank

AUTHORISATION DATE

Friday, 13 July 2018

APPENDIX D

PHOTOGRAPHS

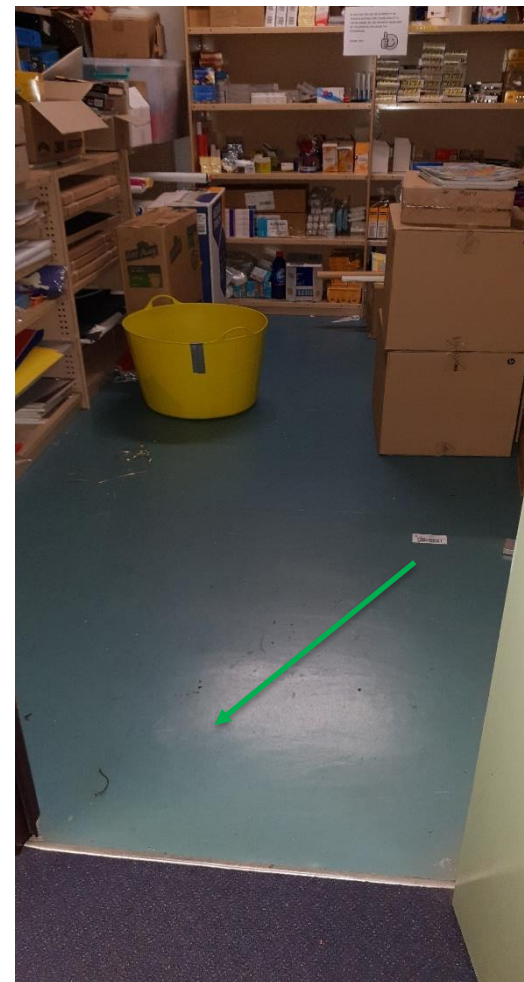




Photograph 1: B00A - Ceiling space – SMF ceiling batts



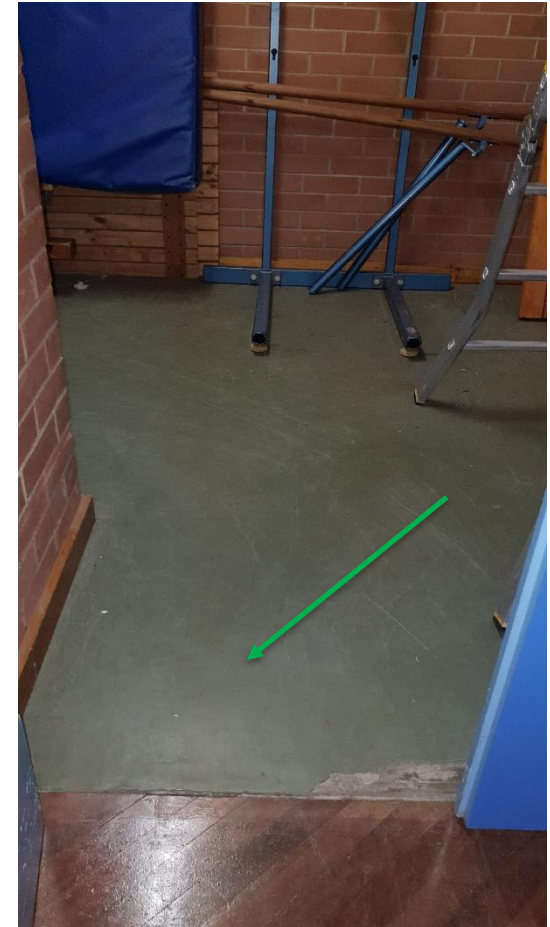
Photograph 3: B00A - Ceiling space – SMF ceiling batts



Photograph 2: B00A R00015 - Blue vinyl floor lining – No Asbestos detected (**WSP-050268**)



Photograph 4: B00B - Ceiling space – SMF ceiling batts



Photograph 5: B00B R0012 - Green vinyl floor lining – No Asbestos detected (**WSP-050266**)



Photograph 6: B00E R0005 - Green vinyl floor lining – No Asbestos detected (WSP-050263)



Photograph 7: B00E R0005 – Membrane beneath sink – No Asbestos detected (WSP-050262)



Photograph 8: B00L Ceiling Space– SMF ceiling batts as well as A/C ducting



Photograph 9: B00L Subfloor – Compressed fibre cement sheeting – No Asbestos detected (**WSP-050264**)

APPENDIX E

SITE MAP



4574 - Samuel Gilbert Public School
Administration (B00A) - Ground Floor (Room Function)



0 4 8 12 Meters

4574 - Samuel Gilbert Public School
Communal Facilities/Pupil Facilities (B00B) - Ground Floor (Room Function)



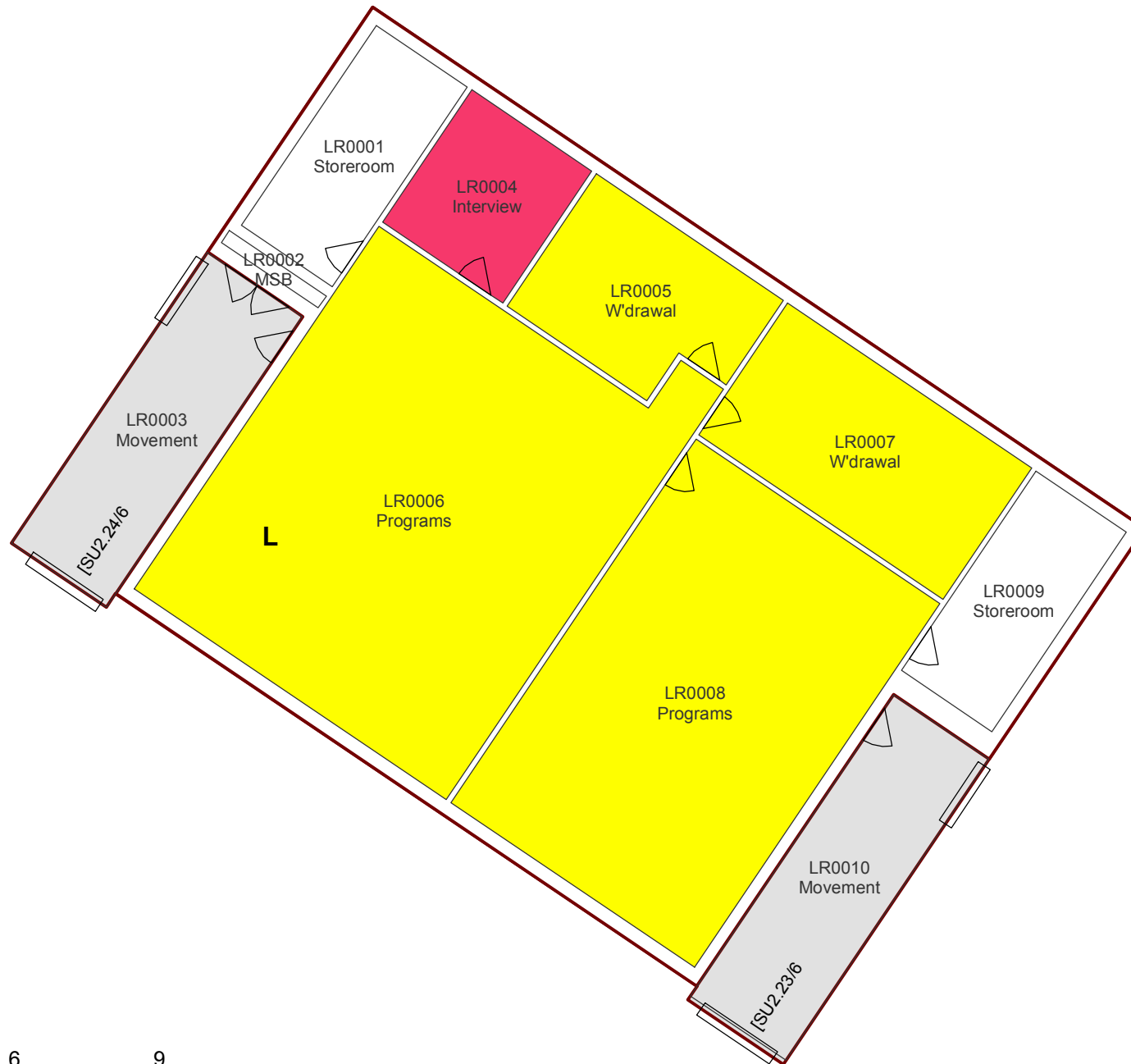
4574 - Samuel Gilbert Public School
Library/Tiered Learning (B00E) - Ground Floor (Room Function)

SD13.387



0 2.5 5 7.5
Meters

4574 - Samuel Gilbert Public School
General Learning/Music (B00L) - Ground Floor (Room Function)





- Excavation
- Demolition
- Contract Hire
- Underpinning
- Shoring Systems



NMK Group Pty Ltd

6 Shortland Ave Strathfield NSW 2135

ABN 58 152 310 784

Samuel Gilbert Public School

Ridgecrop Drive, Castle Hill, NSW

Demolition Plan – In Accordance with AS 2601-2001

March 2020



- **Excavation**
- **Demolition**
- **Contract Hire**
- **Underpinning**
- **Shoring Systems**

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Building Type:	
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Finished Date:.....	
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Plant and Equipment	
Hours of Work:	
Boundaries and signage locations:	
Emergencies:	
Emergency Plan:	