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# ***Preliminary Construction Management Plan***

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*Proposed Primary & Secondary School  
SSD 9227  
Pt Lots 1 & 2 DP 52599  
No.85 Byron Road & No. 63 Ingleburn Road  
Leppington, NSW*

*prepared by*



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*for*

*Amity College*

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**July 2019**

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# 1. INTRODUCTION

## 1.1 PURPOSE

The purpose of this document is to broadly outline how the Amity College intends to manage the construction of a primary and secondary school campus No. 85 Byron Road, at Leppington NSW (the project site- refer **Figure 1**) on a staged basis.

This report provides a preliminary outline of management strategies for the construction of the various stages of the school campus. A more detailed list of measures will be provided by the Head Contractor, once engaged.

This Draft Construction & Environmental Management Report has been prepared by Outline Planning Consultants Pty Ltd on behalf of Amity College, for inclusion in the Plans and Documents noted in the NSW Department of Planning and Environment (DPE) Secretary's Environmental Assessment Requirements (SEARs) for Development Application Number SSD 9227.

This document forms a guide as to how the above works may occur, including nature of measures likely to be used, control measures and environmental responsibilities. It will assist in ensuring:

- Best practice environmental management procedures are applied to the construction of the staged school development.
- The environmental risks associated with the project are properly identified and managed. In this regard the findings and recommendations of the various environmental assessments undertaken in support of the approved school project are to be adhered to.
- Compliance with the requirements of the development consent issued, once issued, and in particular with any relevant conditions pertaining to the management of soils and geotechnical conditions on site, contamination, water management and/or construction management generally.
- Compliance with all current environmental legislation.

The successful Head Contractor shall use this document as a critical reference in the preparation of a more detailed, job-specific construction management plan.

## 1.2 PROJECT SITE

The project site is at No. 85 Byron Road and No 63 Ingleburn Road at Leppington, comprising Pt Lots 1 & 2 DP 525996. It lies within a part of the NSW Government's South West Priority Growth Area, at Leppington, within the Camden Local Government Area. The project site lies approximately 1.2km away from the planned Leppington Major Centre railway station- refer **Figure 1**. The land proposed to be developed for a school campus is roughly rectangular in shape and has an area of approximately 2.37ha- refer area shaded red in **Figure 1** [NOTE: area of entire property holding is 3.2ha]. It is bounded to the south-east by Byron Road and to the north-east by Ingleburn Road.



**FIGURE 1: The Project Site**

The lots adjacent to the Project Site are currently undeveloped, however a low density residential area is currently under construction to the south-west. Adjacent land to the north-west and to the north-east is earmarked for medium density housing.

## **1.3 PROJECT OBJECTIVES**

This preliminary Construction Management Plan will be used to define the management measures to be adopted by the Head Contractor for the various stages of the school project. These construction management measures are to be implemented to:

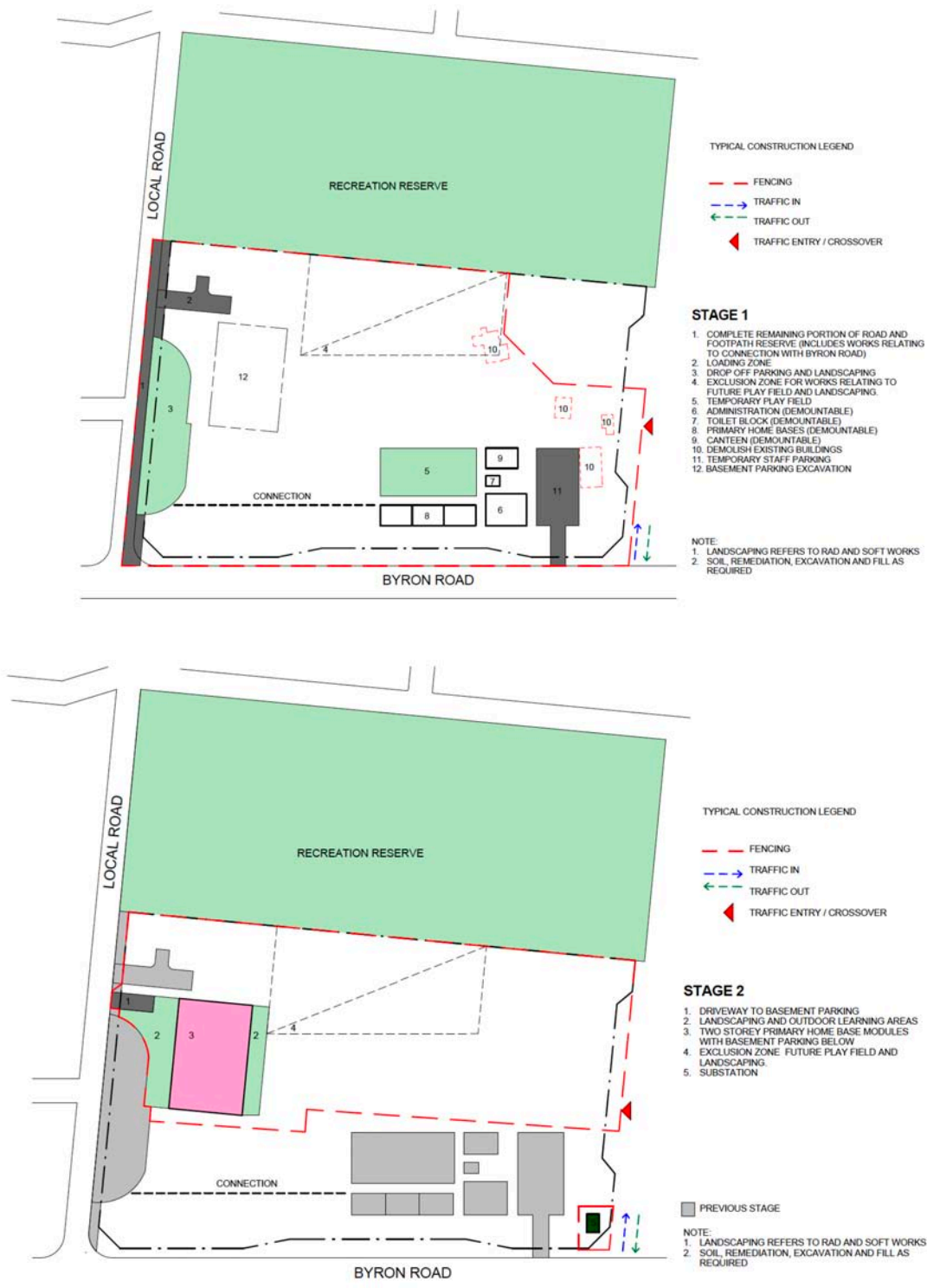
- Provide a safe environment for all surrounding residents, road users and workers on-site. In so doing, the plan will provide for safety procedures to enable work personnel to enter and leave the various nominated work areas in a safe manner.
- Ensure that the works associated with the staged construction of the school campus is carried out in accordance with appropriate statutory requirements and relevant consent conditions.
- Ensure that works are carried out in such a way as to minimise potential environmental degradation by the implementation of best environmental practice.
- Ensure that all personnel engaged in the works comply with the terms and conditions of the final adopted Construction Management Plan.
- Ensure that corrective actions are completed in a timely manner.
- Provide protection to workers, visitors and the general public from traffic and environmental hazards and risks that may arise as a result of the construction activity.
- Minimise the disruption, congestion and delays to all road users and to ensure that road network performance is maintained at an acceptable level throughout the term of the work. The Construction Management Plan will also ensure that disruptions to traffic flows on the surrounding road system are minimised.

## **1.4 A STAGED SCHOOL DEVELOPMENT IS PROPOSED**

The project seeks to establish a new school on that part of the above property zoned SP2 Infrastructure (Educational Establishment), including roadworks on designated roads. The proposed new school will have a kindergarten, a 3-stream primary school and a 3-stream secondary school with a maximum capacity of 1,000 students ie. serving K-12 students.

Refer to accompanying figures showing works proposed in each stage, including identification of work areas associated with each stage and fencing proposed.

As it is progressively developed, it is intended that Amity College will continue to operate on-site as normal, with construction and allied works appropriately managed to minimise adverse dust and noise impacts on school users or its neighbours.



**FIGURES 2 & 3 : Stages 1 & 2 of the Project**



**FIGURES 4 & 5 : Stages 3 & 4 of the Project**



**FIGURE 6 & 7 : Stages 5 & 6 of the Project**



**FIGURES 8 & 9 : Stages 7 & 8 of the Project**

Amity College has gained considerable experience in maintaining the amenity of the immediate school environment during construction based on its experience with the expansion of its Prestons, Auburn and Illawarra school campuses that has occurred over the past decade or more.

Careful design and supervision of these works by the School has enabled teaching and other school-based activities to continue during construction with minimal adverse impact for students, staff and neighbours. This past experience will inform the proposed staged development of the Leppington campus.

Amity College will aim to be respectful of its neighbours at all times and will work with them on an ongoing basis to minimise any disruption during construction.

The draft construction management plan identifies measures that can be put into place to ensure that this aim is achieved. These measures include controls on hours of operation, public safety and protection measures, stormwater management, as well as dust controls and traffic management.

It is intended that local roads will be progressively dedicated to Camden Council as they are constructed.

## 1.5 PRE-CONSTRUCTION INVESTIGATIONS, PERMITS ETC.

Prior to construction works being undertaken on site, the following investigations will be undertaken in order to identify risks, and to mitigate and control impacts arising from the works:

- Existing condition and dilapidation survey of roads, light poles, and other government infrastructure.
- Infrastructure investigations in order to locate existing services, capacities of infrastructure to withstand upgrades etc. that may be required, and to consult with authorities to make relevant applications. Advice received from Sydney Water.
- Obtain approvals and permits including Permit for a vehicular crossing from Byron Road onto the site.

Prior to start of construction on-site, licenses and approvals and worker training are required, as set out below.

### APPROVALS/PERMITS

The following approvals and permits must be obtained for each stage of the project:

- **Construction Certificate:** A separate valid Construction Certificate shall be issued prior to commencement of any construction works.
- **Sydney Water Authorisation:** A suitable approval must be obtained from Sydney Water.
- **Detailed landscaping plans** consistent with the issued consent, and prepared by a qualified landscape architect, are to form a part of the Construction Certificate application.

■ **Notice shall be given to Camden Council** at least two (2) days prior to works commencing in accordance with Clause 104 of the EP&A Regulation 2000, the notice to include details relating to the following:

- a) the name and address of the person by whom the notice is being given;
- b) a description of the work to be carried out;
- c) the address of the land on which the work is to be carried out;
- d) the registered number and date of issue of the relevant development consent and construction certificate;
- e) a statement signed by or on behalf of the PCA to the effect that all conditions of the consent that are required to be satisfied prior to the work commencing have been satisfied; and
- f) the date on which the work is intended to commence.

■ **Works within Byron Road road reserve:** An approval under the *Roads Act 1993*, is required for road works on Byron Road, including the staged construction of a bus bay and dedication to Council, once constructed. Council permits required will be applied for by the relevant contractor with implementation of traffic management in accordance with the contractor's approved Traffic Management Plan.

■ **Services:** 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.

## TRAINING

Prior to commencing construction activities, all of the Head Contractor's employees shall attend a project induction workshop carried out by the Head Contractor. This shall be documented and all participants are to sign an attendance sheet.

Additionally, all contractors working on the project site will be required to undertake a thorough induction specific to the site and to hold on-site briefings periodically as the project site is progressively developed.

Typically, the workshop would cover environmental aspects of the particular stage of the school project, environmental management responsibilities (for example, under the *Protection of the Environment Operations Act 1997*), the main proposed in-site controls and the reporting procedure for any incidents and/or emergencies.

## COMPOUND ESTABLISHMENT, FENCING OF WORK AREAS

Prior to any staged works commencing on the school campus, various steps need to be undertaken as a part of site establishment. This will include the establishment of site contractors' offices and mess and toilet facilities within a designated compound, car parking areas for workers and equipment, vehicle access and vehicle loading, unloading and lay down areas, commissioning of equipment, plant and operations and establishment and maintenance of on-site work areas within the car park site.

The site compound shall be located as far away as practical from any residences. The compound area shall be clearly marked out prior to any establishment activities. All necessary erosion and sediment controls for the compound site, in the form of drains and sediment fences, shall be installed prior to site establishment of the compound. Exclusion zones, including fenced exclusion zones, will be set up.

Fencing will also be established prior to the demolition and construction. The hoarding and fencing locations throughout the staged development, will be positioned in such a way as to ensure appropriate public, student and staff safety and to prevent unauthorised access to the construction compound.

The location of hoarding and fencing required for each construction stage will be confirmed and agreed with Amity College throughout the staged development to ensure the college remains operational. Fencing will be used, clearly demarcating the construction compound required, in each stage of construction.

The Head Contractor will be required to ensure the security of all active work areas on the car park site to ensure the safety of the public and protection of the works.

## **TRAFFIC MANAGEMENT**

The type of vehicles which will be operating on the site and requiring access to the site include, tip trucks, excavators, backhoes, graders, water carts, concrete mixers and pumps, rollers and the like. Vehicular construction site access is to be only from Byron Road and local roads, once constructed.

The Byron Road roadway is to be kept free of obstruction by work materials and/or plant. All trucks and associated plant are to be kept wholly within the site. Refer to Section 3 for details.

## **DILAPIDATION REPORTING**

Prior to the commencement of any work, the Applicant is to engage a suitably qualified person to prepare a Pre-Construction Dilapidation Report detailing the current structural condition of all retained existing and adjoining buildings within the project site, infrastructure and roads within the 'zone of influence'.

Any entry into private land is subject to the consent of the owner(s) and any inspection of buildings on privately affected land must include details of the whole building where only part of the building falls within the 'zone of influence'. The report must be submitted to the Certifying Authority, Council and Secretary prior to the commencement of any building works. A copy of the report is to be forwarded to Camden Council.

The Dilapidation Report will include a photographic survey of existing public roads, kerbs, footpaths, drainage structures, street trees and any other existing public infrastructure within the immediate area of the project site.

## ENVIRONMENTAL AND SAFETY CONTROLS

Environmental and safety controls will need to be established on the school site prior to work being undertaken. These will include, but not be limited to:

- Security measures (fencing and gate access). Appropriate signage will be placed on areas at the entrance to each (progressive) work zone, indicating the works area and restricted access to the site. The entry to the site will have a security guard to control entry of authorised personnel only.
- Occupational health and safety measures (personal protective equipment, first aid supplies, signage and barriers if needed). All works will be undertaken in accordance with the requirements of Workcover NSW as well as the relevant standards and codes of practice to ensure the safety of personnel on and around the site.
- Environmental management measures (eg. weed management).
- Protection of public places.
- All earthworks associated with the project must be executed safely and in accordance with appropriate standards. Camden Council will be given 48 hours notice of the destination of any excavated spoil or like material leaving the site. The disposal of waste must be to an approved waste disposal depot.
- An on-site detention system and water quality system will be provided for the project site and designed in accordance with Council's Engineering Specifications.
- An Erosion and Sediment Control Plan (ESCP)- refer to Section 6.
- Toilet facilities shall be provided on the site at the rate of 1 toilet for every 20 persons or part thereof employed at the site.

## SIGNAGE

A sign is to be erected and maintained in a prominent position on the site in accordance with Clause 98A(2) of the *Environmental Planning and Assessment Regulation 2000* indicating all of the following:

- The name, address and telephone number of the Principal Certifying Authority (PCA) for the work.
- The name of the principal contractor (if any) for the building work and a telephone number on which that person may be contacted outside working hours.
- Stating that unauthorised entry to the work site is prohibited.

## 1.6 COMPLIANCE REPORTING, AUDITS

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 required *Compliance Reporting Post Approval Requirements* (Department Planning & Environment 2018) must be submitted to the Department and the Certifier.

Compliance Reports of the project must be carried out in accordance with the required *Compliance Reporting Post Approval Requirements* (Department Planning & Environment June 2018). The Compliance Report will be publicly available 60 days after submission to the Department and the Department and the Certifier are to be notified in writing at least seven days before this is done.

No later than two weeks before the date notified for the commencement of construction, an Independent Audit Program prepared in accordance with the *Independent Audit Post Approval Requirements* (Department Planning & Environment 2018) must be submitted to the Department and the Certifier.

## **1.7 MANAGEMENT & RESPONSIBILITIES**

It is anticipated that Amity College will engage a Head Contractor to deliver each stage of the school development project at Leppington. The Head Contractor will be responsible for oversight of this CMP and sub-contractors, as well as complying with the issued development consent, and construction site management generally.

Management responsibilities referred to in this CMP are applicable to the construction works on the project site. Handover of responsibilities to operational managers will occur at the completion of the contractual maintenance periods for construction works.

## **1.8 HANDLING OF COMPLAINTS**

In the interests of maintaining goodwill with near neighbours, the Head Contractor will be required to develop a Complaint Handling Procedure, to be developed by the Head Contractor in conjunction with Amity College.

A complaint contact number will be displayed at the construction site entrances, enabling complainants to contact the Head Contractor in a prompt manner. The Head Contractor will appoint a contact officer who register, address and respond to any complaints received during each stage of construction of the school.

## 2. CONSTRUCTION PLAN

### 2.1 OVERVIEW: CONSTRUCTION ACTIVITIES & SEQUENCING

The following outlines the project scope delivery methodology proposed for each stage of the project. The adopted construction plan has been established in order to achieve the following:

- Enable logical and orderly delivery of works to each planned stage of the school project in an efficient and safe manner.
- Minimise on-site impacts.

#### CONSTRUCTION ACTIVITIES TO BE UNDERTAKEN

Broadly, the type of construction operations which will be undertaken onsite will include:

- Bulk Earthworks and site remediation. Prior to this work commencing equipment and machinery will be transferred to the project site. Includes establishment of site compounds and facilities, as well as the construction of protective/construction fencing and the establishment of erosion and sedimentation control measures, stripping of topsoil and bulk earthworks cut/fill to grade.
- Tree removal.
- Road and drainage works. This would include the construction of roads fronting the school site, including associated access to the site and works.
- Provision of ground level and basement car parking.
- Service utility installation.
- Construction/installation of school buildings.
- Landscape works.

#### CONSTRUCTION SEQUENCING

In summary, the school will be developed in stages, with the following generalised sequences of work envisaged:

- The site will be dozed and trees marked for removal shall be removed.
- Once cleared, bulk earthworks can then be undertaken on the site, on a staged basis. Excavation of the land for the two basement car parking areas (one underneath the primary school, one underneath the secondary school) will also be undertaken.
- Existing services within the site will be located and either capped if redundant or modified if they are to be used as temporary services for the works.

- The land proposed for outside learning areas and playgrounds and sports courts will be progressively shaped, with cut/fill, drainage and retaining walls installed where required and on a staged basis. Landscaping will be established around completed school buildings and disturbed areas once each stage of building works is completed.
- The land proposed for the school buildings will be formed, with cut/fill and drainage installed where required and on a staged basis.
- The land proposed for school car parking including access to Byron Road, will be formed, with cut/fill and drainage installed where required.
- The bus bay on Byron Road will be formed and sealed.

## **2.2 HOURS OF OPERATION: CONSTRUCTION WORK**

The proposed working hours for demolition, site preparation, bulk earthworks, construction and construction-related activities on the project site are as follows:

- 7.00am to 6.00pm Monday to Friday inclusive.
- Saturdays- 8:00am to 1:00pm.
- No work is to be carried out on Sundays or gazetted public holidays.

Activities may be undertaken outside of the hours above if required:

- By the Police or a public authority for the delivery of vehicles, plant or materials; or
- In an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or
- Where the works are inaudible at the nearest sensitive receivers; or
- Where a variation is approved in advance in writing by the Planning Secretary or her nominee if appropriate justification is provided for the works.

[NOTES: At this stage it is not anticipated that any work is to be undertaken on the project site outside of the above standard construction hours. Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards. ]

## **2.3 CONSTRUCTION PHASES**

### **PRE-CONSTRUCTION PHASE**

In summary, the main activities at this stage of the project will comprise:

- Dilapidation survey.
- Due diligence investigations for existing services.
- Obtain all necessary authority approvals.

Refer also to Section 2.4 for further details.

## **CONSTRUCTION PHASE**

The main activities during construction will comprise:

- Demolition. Refer to Section 2.5 for further details.
- Site clearance, earthworks. Refer to Section 2.6 for further details.
- Site remediation works and removal of hazardous materials present within the existing site. Refer to Section 2.7 for further details.
- Road works. Refer to Section 2.8 for further details.
- Provision of services, including drainage facilities. Refer to Section 2.9 for further details.
- Provision for car parking and access. Refer to Section 2.10 for further details.
- Construct and/or install school buildings on the project site. Refer to Section 2.11.
- Landscaping of the project site, and the creation of school playgrounds and discrete play/ learning spaces within the school campus. Refer to Section 2.12.

The likely sequence of pre-construction and construction activities to be undertaken for each stage of the development are set out below, summarised in the following:

- Equipment and machinery transferred to site. Includes establishment of site compounds and facilities.
- Construction of protective/construction fencing and establishment of erosion and sedimentation control measures.
- Fencing of areas not to be disturbed by construction activities and clearing/earthworks and building works. Includes the installation of drainage measures.
- Construction of relevant stage of school school, including school buildings, car parking, playgrounds, drainage, and other associated works.
- Landscaping (grass) around completed school building, disturbed areas etc. once building works are completed. Includes clean up and restoration of disturbed areas following the completion of construction and remedial plantings.
- Construction of roads fronting the school site, including associated access to the site and works.

The Principal Certifying Authority (PCA) must be informed in writing before any site works, building or demolition commences of:

- The name and contractor licence number of the licensee who has contracted to do, or intends to do, work ; or
- The name and permit number of the owner/builder who intends to do the work; and
- Any change to these arrangements for carrying out of the work.

Construction activities will be managed to minimise the potential for generation of waste. Security fencing is to be provided around the perimeter of each development area on the school site during each stage of construction.

Where there is a need to remove any identified materials from the site that contain contaminated material, it will be disposed of to a licensed waste facility suitable for the classification of the waste.

The site is to be remediated in accordance with the remediation action plan (RAP) prepared by GeoEnviro Consultancy Pty Ltd and which forms a part of this development application.

## **2.4 PRE CONSTRUCTION PROGRAM**

The project scope involves the staged construction of a school campus facility by Amity College on the project site with planned multiple access points to Byron Road. In addition to the measures outlined in Section 1 the following measures will be undertaken.

The project site will be appropriately secured and fenced during earthworks, clearing and construction work to ensure there are no unacceptable impacts on the amenity of adjoining properties. All site works must comply with the occupational health and safety requirements of WorkCover NSW. All necessary approvals will be obtained.

Some of the main features of the pre-construction program are set down in the following:

- The project site will be fully enclosed to prevent unauthorised access. A new security fence/hoarding will be installed around the work areas, to achieve an appropriate level of security. Refer to staging plans in Section 1 which show fencing proposed.
- Staged Clearing of vegetation and stripping of topsoil/organic layers to expose the natural clay. The topsoil may be reused as much as possible on site in landscaping and any surplus topsoil would need to be disposed off-site. The area exposed by the excavation should be proof-rolled. All structural fill beneath buildings and pavements should be controlled and compacted in layers not exceeding 250mm thickness compacted to the above specified compaction level. Any imported fill should be of good quality material such as ripped shale or sandstone with a maximum particle size of 75mm. Earthworks should be closely monitored by a geotechnical consultant. All material handling during the demolition and excavation works will be carried out within the confines of the site.
- The Project Site will be remediated where required, in accordance with the remediation action plan (RAP) prepared by GeoEnviro Consultancy Pty Ltd dated May 2019.

- Dust control measures to be implemented.
- All construction access to the site will be through the nominated driveways for the duration of the works.
- Prior to the commencement of construction, adequate parking facilities are to be provided on-site for heavy vehicles and for site personnel.
- Prior to commencement of any works, dilapidation reports of adjacent properties and Council's footpath and road will be carried out, where required.
- A traffic management plan will be prepared for each stage of the construction generally in accordance with the principles of the traffic reports, prepared by Traffix, accompanying the Development Application.
- Byron Road will be used as the main means for construction vehicles to access the site.
- Portable toilet facilities are to be used during demolition and excavation works where access is not available to existing serviced dwellings on the site.
- Provision of waste and recycle bins at strategic location on site. Construction waste bins to be also provided. Bins to be removed from the site on a regular basis.
- Compliance with authorities requirements for waste (including contaminated waste) disposal and site amenities and safety.
- On site treatment of stormwater run-off. Refer to Martens & Associates engineering plans for details.
- All material handling during any demolition and/or excavation works will be carried out within the confines of the site.
- Compliance with authorities requirements for waste disposal, site amenities and safety.
- Earthworks will be closely monitored by a geotechnical consultant and will include field density testing of fill at an appropriate frequency and level of supervision as detailed in AS3798 -2007.

## 2.5

## DEMOLITION WORKS

### OVERVIEW

To facilitate the proposed development on the project site various existing buildings and structures will need to be demolished. "Demolition works" means any physical activity to tear down or break up a structure (or part thereof) of surface, or the like, and includes the loading of demolition waste and the unloading of plant or machinery. Contractors undertaking any demolition works will be required to develop and implement specific plans to ensure works appropriately deal with safety and environmental issues in accordance with the guidelines contained in Australian Standard 2601-2001 "The Demolition of Structures" and the Construction Safety Act Regulations.

## COMPLIANCE WITH STATUTORY REQUIREMENTS

The demolition of a structure or building involving the removal of dangerous or hazardous materials, including asbestos or materials containing asbestos must be carried out in accordance with the requirements of the Workcover Authority of New South Wales and the EPA, and with the provisions of:

- *Work Health and Safety Act 2011 and Work Health and Safety Regulation 2014.*
- *Protection of the Environment Operations Act 1997 (NSW) and NSW EPA Waste Classification Guidelines 2009.*
- Work zones and decontamination procedures.
- Contingency plans and incident reporting.
- Environmental monitoring.

## ACCESS RESTRICTIONS, SIGNAGE, NOTIFICATION: DEMOLITION

Access to demolition areas shall be protected by the use of suitable fences. If required, temporary construction exits, to reduce or eliminate the transport of sediment from a demolition area onto public roads, is to be provided before demolition commences. During the demolition or erection of a building, a sign must be provided in a prominent position stating that unauthorised entry to the premises is prohibited and contain all relevant details of the responsible person/company including a contact number outside working hours.

At least two (2) working days (i.e. Monday to Friday exclusive of public holidays), the developer or demolition contractor must notify adjoining residents prior to the commencement of any asbestos removal works. Notification is to include all of the following information, at a minimum:

- The date and time when asbestos removal works will commence.
- The name, address and business hours contact number telephone number of the demolisher, contractor and or developer.
- The full name and license number of the asbestos removalist.
- The telephone number of the WorkCover Hotline 13 10 50.
- Warning signs must be placed so as to inform all people in the nearby vicinity that asbestos removal work is taking place in the area. Signs should be placed at all main entry points to the asbestos work area where asbestos is present. These signs should be weatherproof, constructed of light weight material and adequately secured so they remain in prominent locations. The signs should be in accordance with AS 1319-1994 Safety signs for the occupational environment for size, illumination, location and maintenance.

Byron Road will be kept clear at all times of any trucks and any other vehicles. Trucks will leave the site accordingly and under the instruction of traffic management if required. The roadside verge will also be kept clear at all times of vehicles, including any rubbish and debris. Any damage to Byron Road will be repaired by the demolition contractor.

## COMPLIANCE WITH REMEDIATION PLAN

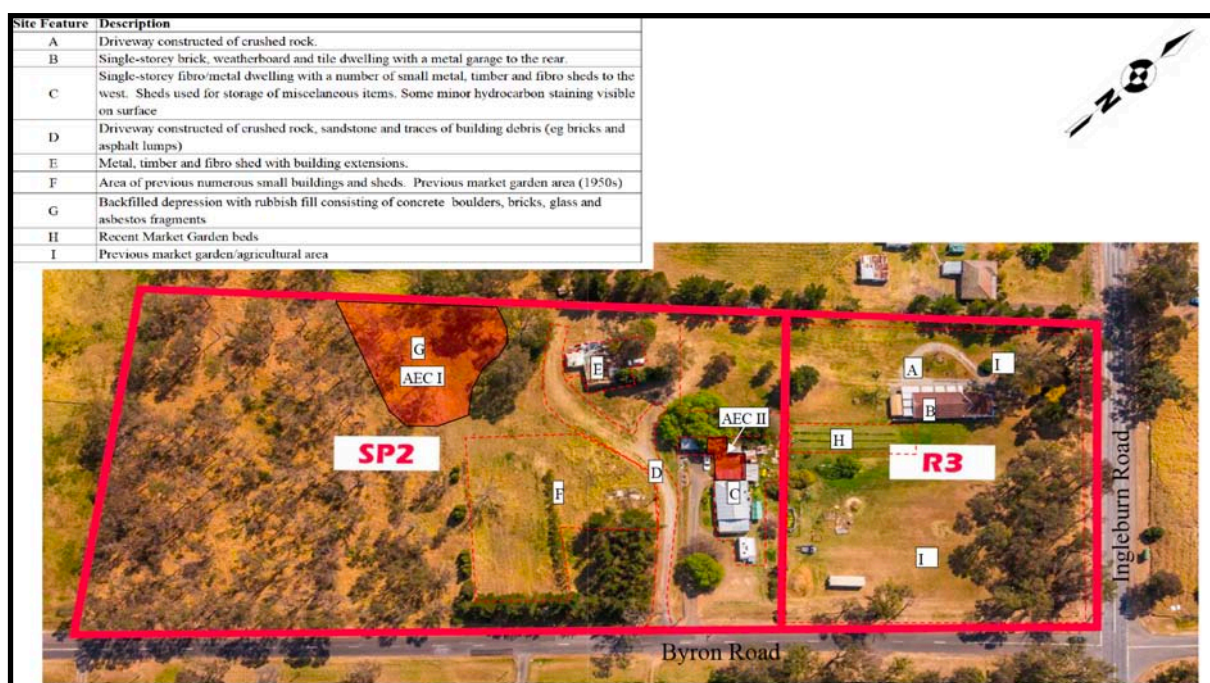
Contractor works will include the removal of hazardous materials present within the existing buildings and structures that are to be demolished as part of the proposed school development. These works are to be undertaken strictly in accordance with the approved Remediation Action Plan. All demolition materials will be loaded into road trucks and removed offsite and deposited at a designated waste facility.

## DEMOLITION WORKS

The proposed redevelopment will require the demolition on a staged basis of the following:

- Single-storey brick, weatherboard and tile dwelling with a metal garage to the rear.
- Single-storey fibro and metal dwelling with metal, timber and fibro sheds to the rear. Some hydrocarbon staining were noted in some of the sheds.
- Shed constructed of metal, timber and fibro.
- Area of previous numerous small buildings and sheds.

Refer to **Figure 10** for the location of the above site improvements.



**FIGURE 10: Site Improvements to be Demolished + Areas With Contamination Potential (shaded orange)**

(Map Base Source: GeoEnviro Consultancy Stage 1 and 2 Contamination Assessment Proposed New Amity College Campus Lot 1 DP 525996 No 85 Byron Road and Lot 2 DP 525996 No 63 Ingleburn Road Leppington NSW dated May 2019 Drawing No. 2)



Demolition will be completed safely by a professionally appointed contractor who hold a current WorkCover NSW Friable Class A Asbestos Removal Licence or where applicable a Non-friable Class B (bonded) Asbestos Removal Licence.

Removal must be carried out in accordance with the *Code of Practice on how to safely remove asbestos* published by WorkCover NSW (catalogue no.WC03561).

No asbestos products are to be reused on site. No asbestos laden skips or bins are to be left in any public place without the approval of Camden Council.

All adjoining properties and those opposite the development must be notified in writing of the dates and times when asbestos removal is to be conducted. The notification is to identify the licensed asbestos removal contractor and include a contact person for the site together with telephone and email address.

Hand demolition will initially commence, the dwelling will initially be stripped and tested for any asbestos.

Once hand demolition has been completed, excavators will remove the structure safely and in accordance with WorkCover guidelines.

Existing chain wire fencing over part of the project site will be included as part of this demolition works. Additionally, existing driveways, as well as landscaping and trees (school site only), are to be cleared from the site.

All septic systems will be disconnected from the dwelling by an accredited plumber, with the tank then pumped and cleaned in accordance with regulatory requirements.

Burning of demolished building materials is not permitted.

All demolition materials will be loaded into road trucks and removed offsite and deposited at a designated waste facility.

Soil and water management facilities will be installed and maintained during any demolition works.

### **PROTECTIVE CLOTHING: DEMOLITION**

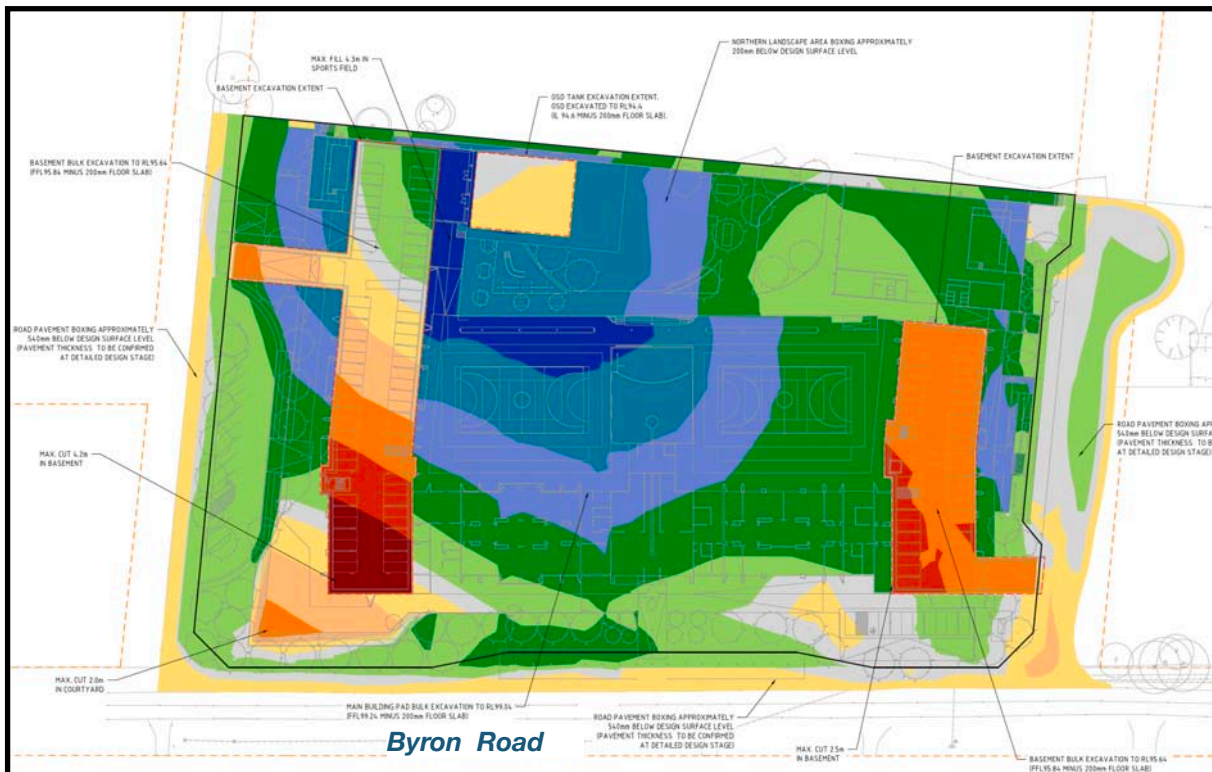
All contractors and employees directly involved in the removal of hazardous dusts and substances shall wear personal protective equipment conforming with Australian Standard 1716 *Respiratory Protective Devices* and adopt work practices in accordance with Workcover requirements.

[NOTE: A person taking down or demolishing or causing to be taken down or demolishing any building or part thereof shall, upon identifying or suspecting that asbestos is present in the building, immediately notify the WorkCover Authority. The Authority is the controlling body for the safe removal, handling and disposal of asbestos.]

## 2.6

### SITE CLEARANCE & EARTHWORKS









Excavation and earthworks will be carried out to facilitate various components of the school project over time in accordance with the plans prepared by Martens & Associates, accompanying the DA-refer **Figure 11**.



**FIGURE 11: Preliminary bulk earthworks design**

(Source: Martens & Associates 2019)

**NOTE: Areas of cut identified by warm colours. Areas of fill identified by cool colours**

CUT-FILL DEPTH DESIGN TO EXISTING				
Lower__value		Upper__value	Colour	
-99999	to	-3.000	m	
-3.000	to	-2.250	m	
-2.250	to	-1.500	m	
-1.500	to	-0.750	m	
-0.750	to	-0.150	m	
-0.150	to	0.150	m	
0.150	to	0.750	m	
0.750	to	1.500	m	
1.500	to	2.250	m	
2.250	to	3.000	m	
3.000	to	99999	m	

Site clearance and earthworks will include but not be limited to the following:

- Site clearance works, including removal of vegetation. In order to accommodate the proposed school development it will be necessary to remove almost all existing trees from the site. This is discussed further in the Arborists Report accompanying the DA. It is envisaged that all removed trees will be transported off site to a registered waste disposal recycling facility or recycled/mulched on-site. The protection of existing trees and other landscape features, other than any existing trees and natural landscape features authorised for removal, pruning, impact upon or disturbance by this Consent, must be carried out as specified in the Australian Standard AS 4970-2009 Protection of Trees on Development Sites. All initial procedures for the protection of existing trees and landscape features, as detailed in AS 4970-2009, must be installed prior to the commencement of any earthworks, demolition, excavation or construction works on the Development site. The works and procedures involved with the protection of existing trees and other landscape features, are to be carried out by suitable qualified and experienced persons or organisations. This work should only be carried out by a fully insured and qualified Arborist.
- Excavation and earthworks associated with the construction of local roads and upgrading of Byron Road frontage. Includes removal of driveways and areas subject to previous works requiring remediation. Any excavation and/or backfilling associated with the development shall be executed safely and in accordance with appropriate professional standards, with any excavation properly guarded and protected to prevent such work being dangerous to life or property.
- Re-shaping of the landform of the site for new school buildings and play areas.
- Excavation for basement car parking facilities.
- Earthworks associated with provision for drainage facilities, as well as for sediment and erosion control measures.
- Bus bays provided on the Byron Road frontage.

The geotechnical investigation reveals the site to be generally underlain by natural ground comprising of topsoil overlying clayey soil overlying siltstone bedrock at shallow depths. All topsoil stockpiles shall be maintained in a neat and tidy condition during the execution of the works and until replacement of topsoiling is carried out. Following the removal of topsoil and before the specified earthworks is commenced in any area all exposed deleterious materials, including vegetation, roots and stumps, considered unsuitable for the placing of filling, are removed from the site. All unsuitable material shall be disposed of by the Head Contractor. The compaction and testing of earthworks and sub-grades shall be undertaken in accordance with Camden Council engineering specifications.

Typical bulk earthworks would include the following:

- Clearing of site vegetation and stripping of topsoil/organic layers to expose the natural clay. The topsoil may be reused as much as possible on site in landscaping and any surplus topsoil would need to be disposed off-site.
- Excavation of insitu fill where encountered to expose natural residual soil. The insitu fill should be assessed by a suitably qualified NATA accredited laboratory to ensure suitability of the material for reuse as structural fill on site. Suitable structural fill should consist of compactable clays, shale and

sandstone free of deleterious material (eg organic material and vegetation), silt and large oversized material with particle size greater than 75mm.

■ The area exposed by the excavation will be proof rolled using a minimum 8 tonne vibrating roller to identify any soft or heaving areas. Any soft or heaving areas observed during proof rolling should be excavated and re-compacted to a minimum 95% Standard Maximum Dry Density at  $\pm 2\%$  Optimum Moisture.

■ All structural fill beneath buildings and pavements will be controlled and compacted in layers not exceeding 250mm thickness compacted to the above specified compaction level. Any imported fill should be of good quality material such as ripped shale or sandstone with a maximum particle size of 75mm.

■ Fill placed and compacted in accordance with AS3798 may be classified as “Controlled” fill.

■ During the bulk earthworks operations remedial site works will be undertaken, including erosion and sediment controls. Stockpiles of topsoil, sand, aggregate, soil or other material will not be located on any drainage line or easement, natural watercourse, footpath or roadway and will be protected with adequate sediment controls.

■ All building materials, spoil, debris and other material arising from the carrying out of work, shall be contained wholly within the allotment boundaries. Such accumulation is to be properly disposed of at regular intervals. All spoil loads to be covered and the wheels of haulage vehicles washed prior to leaving the site.

## 2.7 SITE REMEDIATION WORKS

Site remediation works are to be carried out in accordance with the Remediation Action Plan prepared by GeoEnviro Consultancy, who have recommended that contaminated material be removed from site and reinstated with clean material.

The general protocols to be followed include the following:

■ The existing shed and buildings on site known to contain asbestos should be removed by licensed contractors to ensure all asbestos is removed off-site in accordance with relevant legislation.

■ Areas known to contain contamination will need to have all topsoil/fill and fill excavated to expose natural ground. Refer to **Figure 10** identifying those parts of the site that have contamination potential and that may require remediation. These sections of the site so affected are shown shaded in orange.

■ All hydrocarbon impacted fill may be remediated by excavation and disposal to a landfill or bio-remediate on site.

■ All excavated fill should be noted for buried rubbish inclusion including bonded asbestos. Clean fill should be isolated from rubbish impacted fill.

- Validation sampling and laboratory analysis to be carried out after site remediation works to ensure the areas are adequately remediated. Validation sampling and laboratory analysis to be also be carried out in all other areas previously occupied by buildings after removal/demolition of the structures to ensure that contamination does not exist in these areas. Should contaminants be encountered some additional remediation works may be required.
- All site remediation and validation works should be carried out under the supervision of an environmental consultant and this should include soil sampling and validation sampling to ensure these areas are adequately remediated.
- All other surface rubbish material not mentioned above and asbestos material where encountered on-site should be appropriately disposed off-site to an OEH approved landfill.
- Should asbestos be encountered, the asbestos impacted fill should be disposed to a landfill. Rubbish fill containing bonded asbestos should be removed and disposal to a landfill as "Special Waste – Asbestos". Refer also to Section 2.5 for further details relating to asbestos removal notification requirements.
- All fill material requiring off-site disposal should be laboratory tested and characterised in accordance with NSW EPA guidelines.
- A Site Auditor to be engaged in accordance with the requirements of the *Contaminated Land Management Act 1997* for the purposes of remediation work. Upon completion of remedial works, a Site Audit Report and Section A Site Audit Statement shall be prepared for the relevant part of the site prepared by a NSW EPA accredited Site Auditor. The Site Audit Report and Section A Site Audit Statement must verify the relevant part of the site is suitable for the purpose of an educational establishment and be provided to the satisfaction of the Certifying Authority.

## 2.8 ROAD WORKS

Road reserve civil infrastructure works are likely to be undertaken in a number of stages as follows:

### ■ Stage 1:

- ▶ Construction of remainder of the part-constructed local road abutting the south-west boundary of the Project Site (ie. the 'Local Street' as identified in the Indicative Layout Plan referred to in *Camden Growth Centre Precincts Development Control Plan*). Once constructed, it is proposed that it be dedicated to Camden Council as a public road. [NOTE: The developers of the land to the south-west, Crownland Leppington No.3 Pty Ltd, have already constructed a temporary half-width road on their site, comprising a 5.5m wide sealed carriageway.]
- ▶ Construction of new vehicular access points from the local road described above, serving the car parking area and internal drop-off area for the primary school and loading zone to service the new primary school.
- ▶ New temporary access point from Byron Road for staff car park.

### ■ Stage 2:

- ▶ Construction of a new vehicular access driveway serving primary school basement car park.

■ **Stage 3:**

- ▶ Construction of a bus bay and road widening on that part of the project site fronting Byron Road.

■ **Stage 4:**

- ▶ Removal of temporary car parking area fronting Byron Road.

■ **Stage 5:**

- ▶ Construction of full-width local road abutting the northern boundary of the school site (ie. the 'Local Street' as identified in the Indicative Layout Plan referred to in *Camden Growth Centre Precincts Development Control Plan*), including provision for on-street car parking for 15 vehicles. Once constructed, it is proposed that the new road, including on-street car parking, be dedicated to Camden Council as a public road.
- ▶ Construction of visitor car parking area near the main school entrance, to be accessed directly from Byron Road
- ▶ Construction of a new vehicular access driveway serving the secondary school basement car park.

■ **Stage 8:**

- ▶ Construction of new loading zone to service the new secondary school.

All of the road works above will involve one or more of the following:

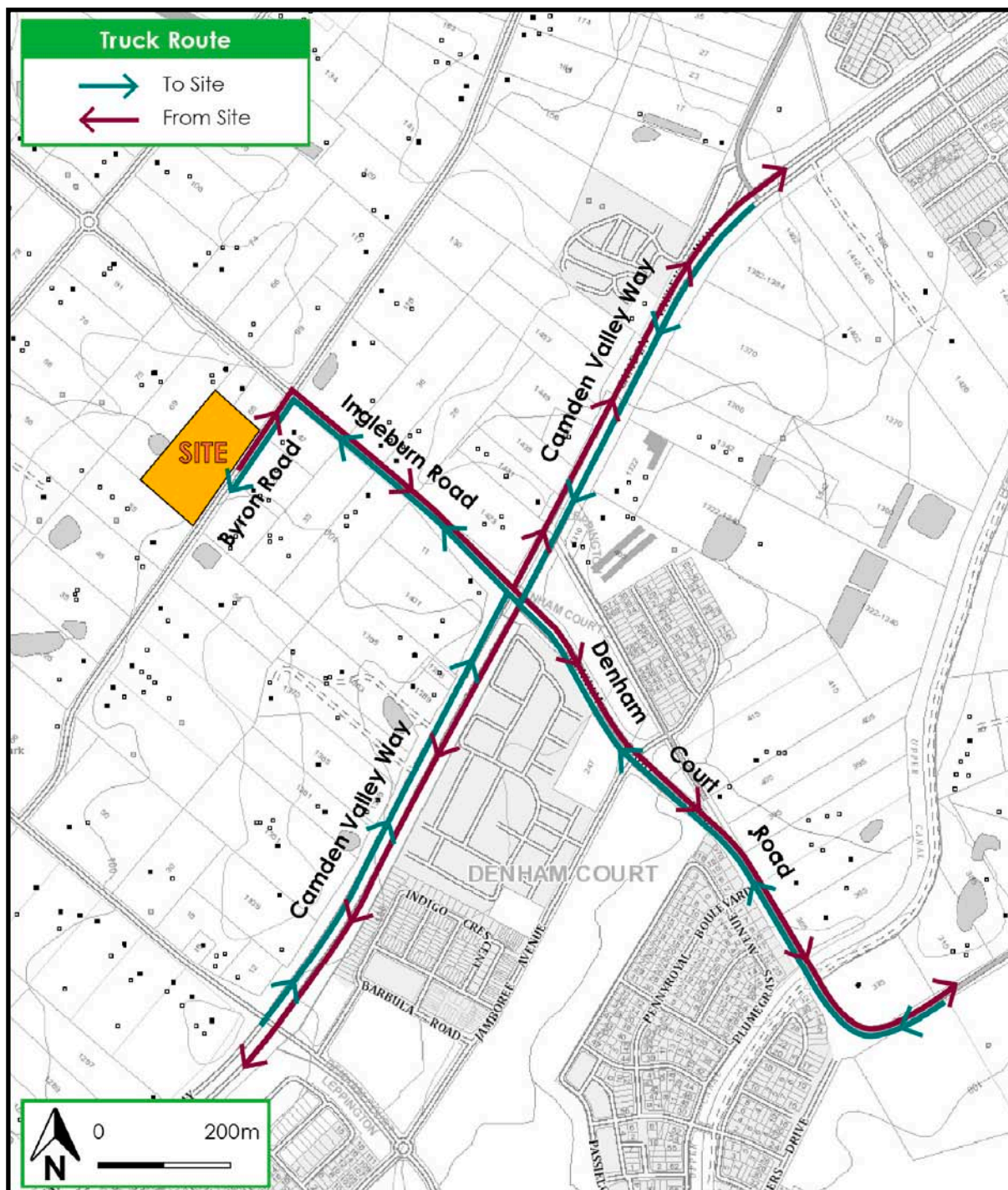
- Sediment and erosion control establishment works.
- Minor demolition or relocation works.
- Bulk earthworks and regrading, as required.
- Pavement construction works for roads, access points and bus bays, including drainage and associated works.
- Revegetation/stabilisation and sediment and erosion control maintenance works during establishment period.

**Heavy truck traffic movements**

Traffic Control Plans (TCPs) are to be provided and are to be implemented for all vehicle and pedestrian movements around the proposed works, in accordance with NSW RTA (2006) *Traffic Control at Work Sites Manual*.

Construction access to the proposed works for all stages of road works is to be from Byron Road. The recommended heavy vehicle haulage route access to/from the proposed road works is Byron Road and Ingleburn Road, and thence to Camden Valley Way.

Refer **Figure 12** and **Appendix M** of the EIS for traffic assessments relating to construction traffic.



**FIGURE 12: Construction truck traffic routes**  
 (Source: Traffix 2019)



It is anticipated that heavy truck traffic will be of the order as estimated in the following:

■ **Demolition works:** It is estimated that this may involve between 5-10 truck arrivals per day, with minimal activity during peak periods. The majority of activity would be expected to take place before the opening of the school, including the demolition of existing dwelling houses, although the temporary buildings for earlier stages will also need to be removed prior to construction of the permanent development. Tippers would be the most appropriate design vehicle for demolition activity, which will not exceed the size of a 12.5m HRV for rigid types. Trucks will enter and exit the site directly from Byron Road, with forward movements permissible at all times.

■ **Excavation works:** Excavation activity will comprise of removing earth to construct two (2) basements, as well as general cut and filling. Given the basements will only be single level, and occupy a limited footprint, it is not expected that these works will be substantial. In this regard, approximately 10-15 trucks per day are estimated during peak activity. Tippers would be the most appropriate design vehicle for demolition activity, which will not exceed the size of a 12.5m HRV for rigid types. Trucks will enter and exit the site directly from Byron Road, with forward movements permissible at all times.

■ **Construction works:** The construction of the school buildings will be built over 8 stages, over the next 10 years or more. During this time the Leppington precinct will become increasingly urbanised, with increased levels of traffic and upgraded roads becoming the norm. Whilst the majority of the construction activity will occur whilst the school is operational, there is opportunity to schedule peak activity outside peak pick-up and drop-off periods, while more intense work, such as concrete pours, could be undertaken during school holiday periods (but not on public holidays).

Different trucks will be used during these phases, although it is expected that most trucks can be rigid types for the delivery of construction material (e.g. concrete agitator trucks). Special traffic control measures would be prepared in the instance where oversize precast materials would be transported to the site.

The site access points would also change during the various stages, shifting from access to Byron Road to the side roads, which will minimise impacts as network traffic volumes increase. Trucks could initially use the pick-up and drop-off areas to park on-site and in later stages can rely on the permanent hardstand loading areas at all times.

It will be likely that traffic controllers will be needed to facilitate site access movements when the school is operational to ensure pedestrian safety. This would be formalised with the preparation of Traffic Control Plans in future construction traffic management plan (CTMP) reports.

All loading and unloading of excavation and construction machinery, excavation and building materials is to occur within the site boundaries or stockpiled along the road reserve fronting the site boundary. All loading and unloading operations are to comply with relevant WorkCover and other statutory regulations.

The design and construction of local streets will be generally consistent with *Camden Growth Centre Precincts Development Control Plan*, where modified, and any relevant Camden Council Engineering Specifications. [NOTE: On-street car parking is proposed in the new local street to be constructed on the northern side of the proposed school campus]

Council's road systems will be maintained during the construction works period.

Any damage to Council's infrastructure within the road reserve by construction operations will be repaired and/or reinstated.

A swept path analysis for the critical movements of heavy vehicles at the intersections of Camden Valley Way/Ingleburn Road/Denham Court Road and Ingleburn Road/Byron Road finds that a 12.5m Heavy Rigid Vehicle (HRV), which was found to be the largest design vehicle defined in AS2890.2 (2002) which can safely complete each turning movement.

The 12.5m HRV will account for all standard rigid construction vehicles, including tippers and concrete agitator trucks.

Under the existing intersection configuration for Ingleburn Road/Byron Road, articulated vehicles such as truck and dog combinations, will require traffic control. However, it is expected that the signalised upgrade of this intersection will improve manoeuvrability, given the duplication of lanes (allowing straddling) and carriageway widening.

Construction access to the proposed works for all stages of road works is to be from Byron Road, with access from the new northern Local Street ( via Byron Road) for Stages 5 and onwards.

All loading and unloading of excavation and construction machinery, excavation and building materials is to occur within the site boundaries or stockpiled along the road reserve fronting the site boundary. All loading and unloading operations are to comply with relevant WorkCover and other statutory regulations.

Council's road systems shall be maintained during the construction works period. Any damage to Council's infrastructure within the road reserve by construction operations shall be repaired / reinstated.

## **2.9 SERVICES PROVISION**

Currently, the project site is serviced by existing water mains (including Byron Road street frontage), telephone services, and overhead reticulated electricity (including Byron Road street frontage).

The existing dwellings on the project site are serviced by on-site septic systems. All septic systems will be disconnected from the dwelling by an accredited plumber, with the tank then pumped and cleaned in accordance with regulatory requirements.

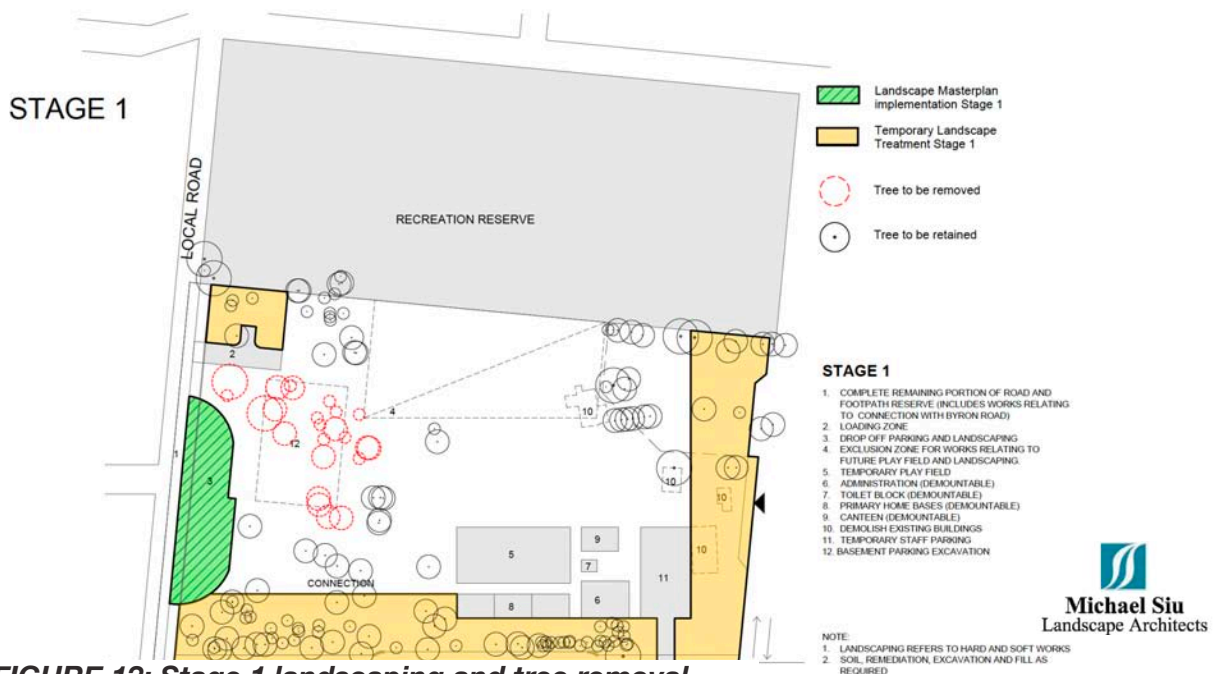
Before commencing any works on the project site information will be sought from the site survey as well as from "Dial Before You Dig" confirming the exact positions of all services in and around the project site. A suitably qualified contractor will conduct an investigation of existing services in ground in conjunction with design documentation and any other client supplied information

The applicant is to seek approval from all relevant authorities regarding connection to services infrastructure prior to the issue of a Construction Certificate.

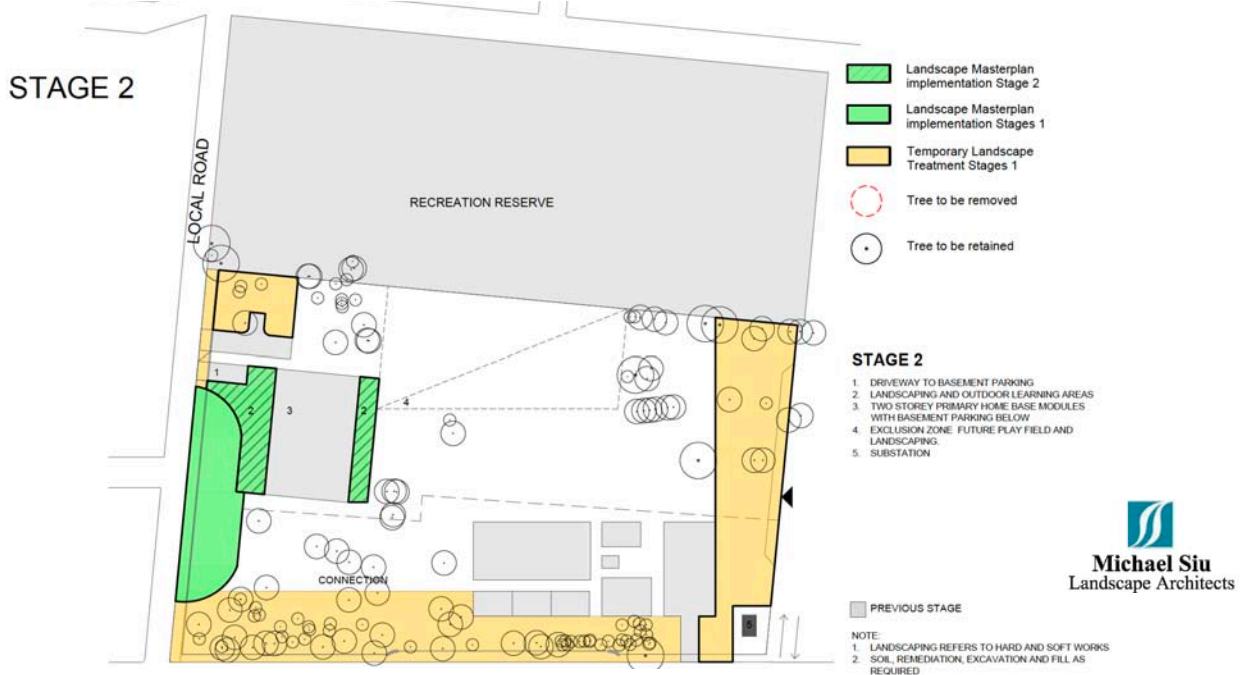
A minimum of two weeks notice is to be provided to any neighbour who may be impacted by any service disruption.

## 2.10 LANDSCAPING

Landscaping of the site will be undertaken in stages, illustrated in the following figures.



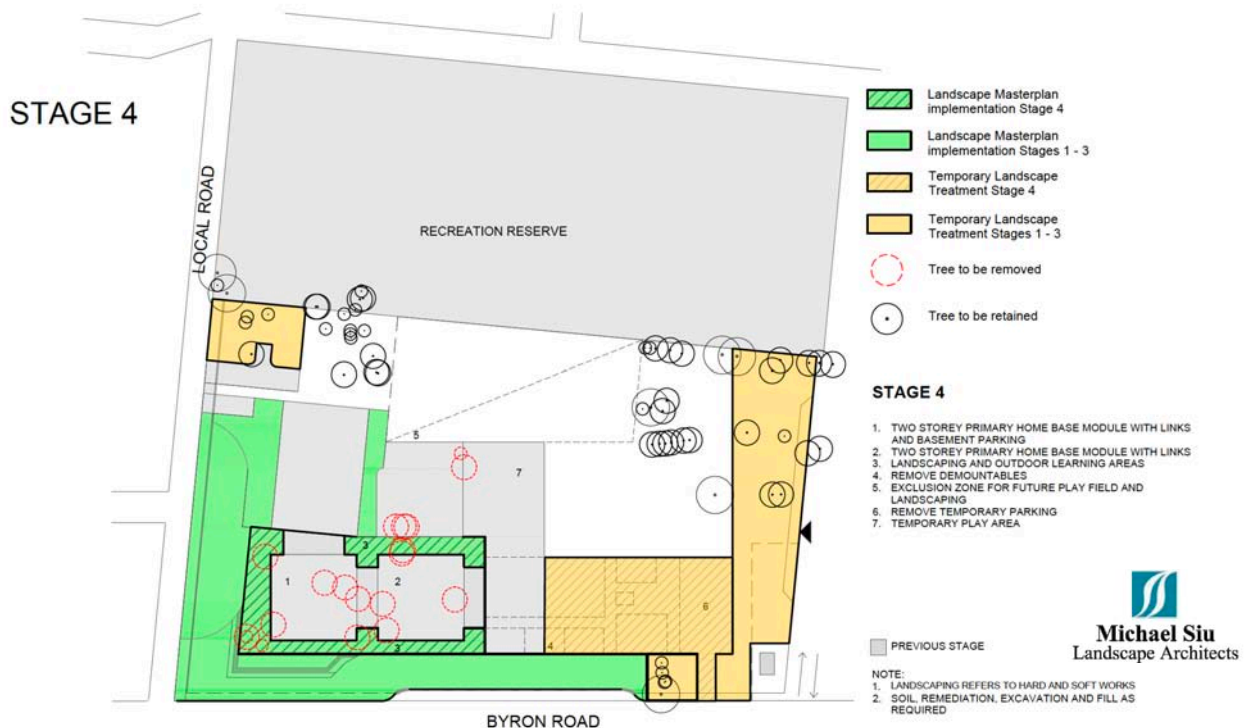
**FIGURE 13: Stage 1 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)



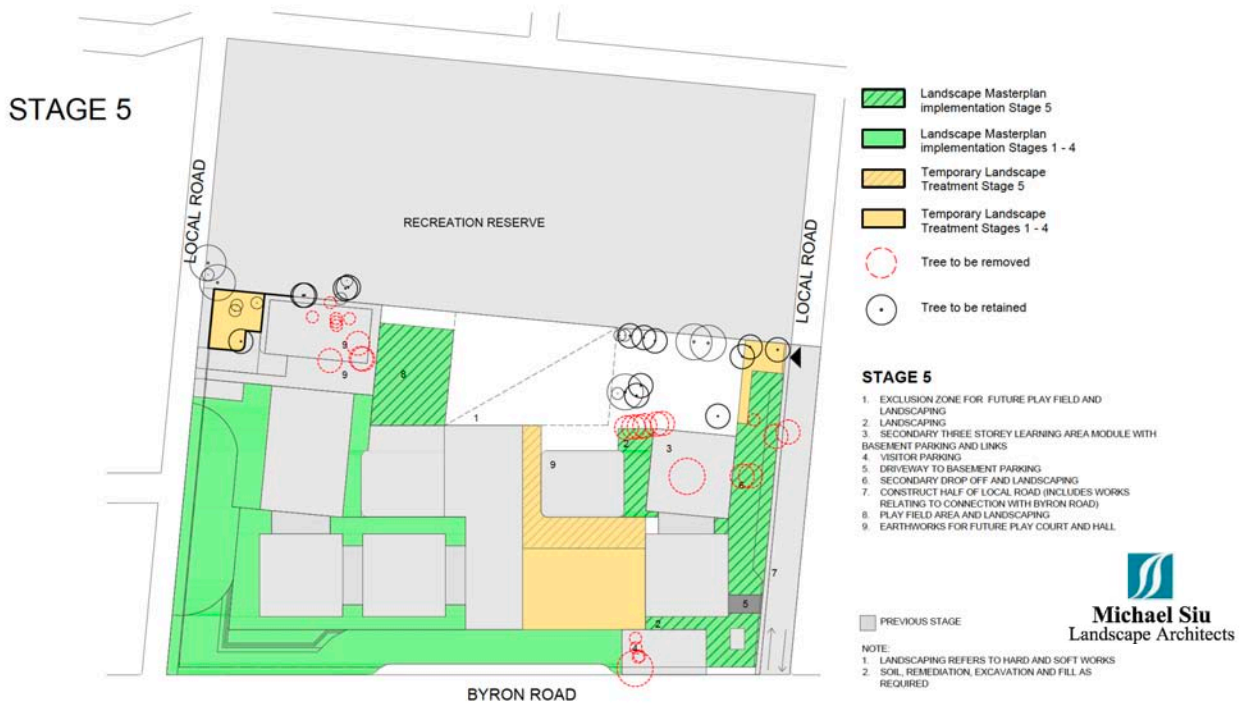
**FIGURE 14: Stage 2 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)



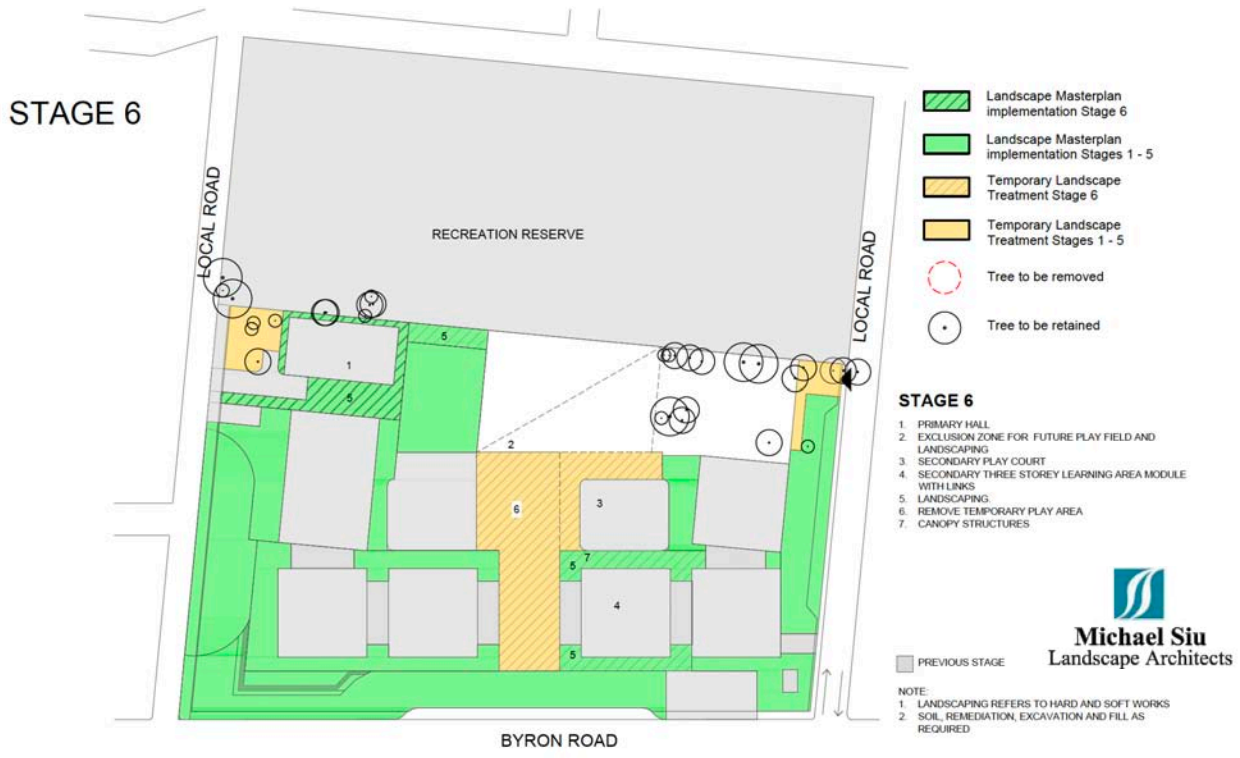
**FIGURE 15: Stage 3 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)



**FIGURE 16: Stage 4 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)



**FIGURE 17: Stage 5 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)



**FIGURE 18: Stage 6 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)



**FIGURE 18: Stage 7 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)



**FIGURE 19: Stage 8 landscaping and tree removal**  
 (Source: Michael Siu Landscape Architects 2019)

The landscape staging plans illustrate the progressive removal of existing trees proposed and replacement with native trees and other species suitable for a school environment.

## **2.11 SITE OFFICES & AMENITIES**

Site offices and amenities will be positioned according to the relevant stage of the school development. They shall be neat, clean, well-constructed and well maintained at all times, as well as being in compliance with applicable statutory requirements and industrial agreements. It is proposed to provide the following site offices and amenities on the project site over the life of the school project:

- Toilet facilities for the workers on-site.
- Administration office, with a separate meeting room for carrying out site meetings.
- Separate area set aside for changing facilities, first aid and OH&S facilities.

## **2.12 PUBLIC DOMAIN WORKS**

The project will involve the carrying out of various works within the Byron Road road reserve, including construction of bus bay, landscaping and associated roadworks.

Prior to the commencement of public domain works, the Applicant must consult with Camden Council and demonstrate to the Certifier 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 Certifier.

## 3. ENVIRONMENTAL MANAGEMENT

### 3.1 NOISE & DUST MANAGEMENT

Noise and dust generated during construction are the impacts most referenced by clients and local residents. Vibration will be also a key concern during the demolition of the works. Dilapidation reports will be prepared of the adjacent buildings prior to commencement of any works. All construction activities undertaken at on the approved school site shall be managed in accordance with the *Protection of the Environment Operations Act*. The Head Contractor will commit to achieving minimal impact on the immediate surrounds during the construction. Consultants will be used to monitor vibration, dust and noise during major excavations and structural works, with results made available to all stakeholders for review.

#### NOISE MANAGEMENT

Appropriate construction noise mitigation strategies have been identified including but not limited to the following:

- All work to be undertaken strictly during the approved hours of operation, namely, 7.00am to 6.00pm Monday to Friday and 8:00am to 1:00pm on Saturdays, with no work on Sundays or gazetted public holidays. In order to avoid noise impacts associated with the early arrival and idling of construction vehicles (including concrete agitator trucks) at the development site and in the residential precincts surrounding that site, construction vehicles (including concrete agitator trucks) involved in demolition, site preparation, bulk earthworks, construction and construction-related activities are not to arrive at the project site or in surrounding residential precincts outside approved construction hours.
- No work to be carried out on Sundays or public holidays.
- The selection of plant and equipment based on acoustic performance.
- Rock breaking, rock hammering, sheet piling, pile driving, and similar activities may only be carried out between the following hours: 9.00am to 12.00pm Monday to Friday; 2.00pm to 5.00pm Monday to Friday; and 9.00am to 12.00pm, Saturday.
- Where practicable, switching off equipment when not in use.
- Conducting particularly noisy activities for short durations, that is, allowing for intra-day respite periods, where practical. Respite periods shall be considered where activities are particularly noisy or annoying and there are no practical alternative construction methods or plant selection available, or complaints are received. NOTE: These intra-day respite periods are not proposed to apply to those demolition, site preparation, bulk earthworks, construction and construction-related activities that do not generate noise with particularly annoying or intrusive characteristics.
- The use of moveable screens for specific work practices.
- To minimise vibration from rock breaking, it is recommended that a hydraulic hammer attachment with a pointed 'cone' type hammer is used in place of a flat 'block' type hammer.

- The minimum work distances should be observed at all times, especially regarding structural damage guidelines.
- Exhaust silencers may be considered to motorised plant and equipment such as the excavators. Silenced plant and equipment could lower noise emission from the exhaust system by 5 to 10dB.
- Progress noise monitoring could also be conducted during construction works to provide feedback to site managers as to the level of noise being emitted from the site.
- Community Liaison will allow occupants of local residences in close proximity to the construction works, to plan and organise their week around any noisy activities, including providing contact details for complaints and discussions. Identify when high noise generating activities are likely to take place and conducting this work during times of least noise sensitivity as agreed through community consultation.
- A register of (noise) complaints shall be maintained. If noise complaints occur, they will be registered, investigated and responded to in a timely manner to ensure issues are not repeated.

For further details and discussion of the above refer to the acoustic report prepared by Koikas Acoustics, accompanying the development application.

## **DUST MANAGEMENT**

All construction activities shall be managed in accordance with the *Protection of the Environment Operations Act (1997)*. Construction activities on the project site are to be undertaken such that dust emissions from exposed soil areas and stockpiles comply with the requirements of the 'Blue Book'. All construction activities undertaken at the project site shall be managed in accordance with the following:

- Use of wet suppression techniques on all potential dust sources, where practicable.
- Controlling plant and employees, and the movement of construction vehicles.
- Consultation with local residents, to ensure dust nuisance is minimised.
- All permanent bunds and reshaped areas will be revegetated after completion of earthworks (including excavation and backfilling of services trenches).
- The period of stockpiling onsite will be minimised where possible, with effective revegetation and rehabilitation of disturbed areas.
- The site will be watered daily and additional watering will be conducted during high-risk times such as high winds and low rainfall and after receipt of complaints from neighbours.
- Covering of all truck loads.
- A register of dust complaints shall be maintained. If dust complaints occur, they will be registered, investigated and responded to in a timely manner to ensure issues are not repeated.
- Contractors staff to be trained to implement dust minimisation measures.
- Hazardous dust not being allowed to escape from the site. In this regard, the use of fine mesh dust proof screens or other measures should be considered. Any existing accumulations of dust

(eg. ceiling voids and wall cavities) must be removed by the use of an industrial vacuum fitted with a high efficiency particulate air (HEPA) filter.

■ All dusty surfaces and dust created from work is to be suppressed by a fine water spray. Water must not be allowed to enter the street and stormwater systems. Demolition is not to be performed during adverse winds, which may cause dust to spread beyond the site boundaries.

■ During the carrying out of demolition works all required dust suppression methods will be undertaken including the wetting of the works prior to demolition, the wrapping of demolished materials, and the wetting of the demolished materials prior to removal from the project site.

■ Truck shaker grids will be installed at the entry gates to ensure that there is minimal tracking of dirt onto the local road system roads. Any tracked dirt will be cleaned daily.

■ Where the construction personnel are required to work in a dusty environment, they will be required wear the appropriate protective clothing and equipment.

For dust incidents the following corrective actions will be undertaken:

- Apply water sprays to vegetation or other affected areas, where practicable
- Cover or water exposed areas.
- If dust persists, cease the dust creating activities.

## SUMMARY

The above measures aim to ensure potential impacts from construction noise, dust and vibration are minimised to acceptable levels. Further reviews would be undertaken through the construction period, as required, in response to revised methods and equipment, as well as in response to the monitoring and evaluation of actual impacts.

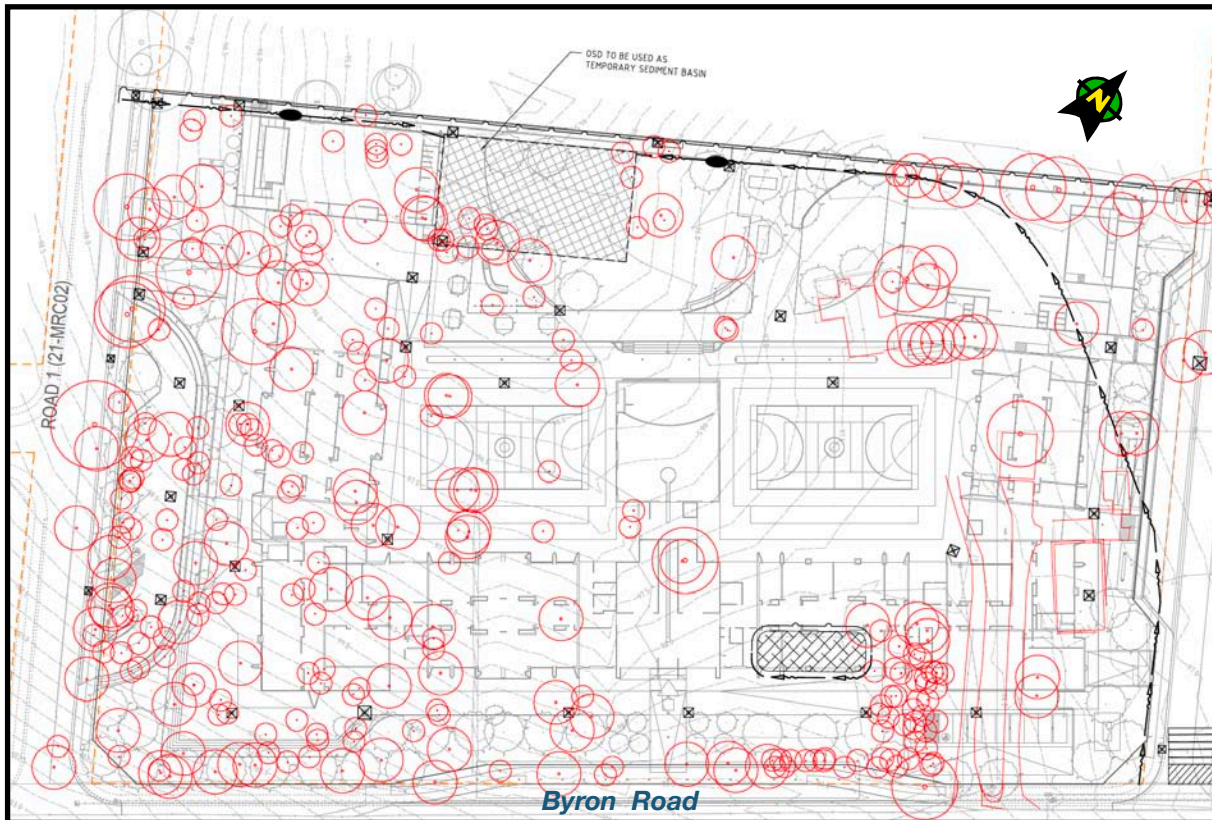
## 3.2 SEDIMENT & EROSION CONTROL

### OBJECTIVES

Sediment and erosion controls are to be effectively maintained at all times during the course of construction of all stages of the school project and are not to be removed until each stage is satisfactorily completed. The following overarching objectives apply to the prevention of erosion and sediment run-off from the project site:

- To ensure that the water quality of the downstream environment is not worsened by the site development.
- Minimise sediment transport in surface water runoff during all stages of construction and operational stages of the school development. In this regard it is proposed to install temporary storm water drains and sediment pits around the perimeter of the project site.

Refer **Figure 20**.














**FIGURE 20: Sediment & erosion controls, clearing plan**

(Source: Martens & Associates 2019)

**NOTE:**

- TO BE READ IN CONJUNCTION WITH SEDIMENT AND EROSION CONTROL DETAILS
- ALL EXCESS MATERIAL SHALL BE REMOVED FROM SITE.
- COUNCIL PERMISSION TO BE OBTAINED FROM REMOVAL OF TREES ON COUNCIL LAND.
- EROSION AND SEDIMENT CONTROLS TO BE IN PLACE AT ALL TIMES. CONTROLS TO BE INSPECTED, MAINTAINED AND REPLACED AS REQUIRED BY THE CONTRACTOR UNTIL WORKS ARE COMPLETED AND PERMANENT MEASURES HAVE BEEN ESTABLISHED.
- WHEEL WASH TO BE PROVIDED AT THE SITE ENTRY (BUILT IN SITU OR PORTABLE).
- TREE ROOT PROTECTION IS TO BE PROVIDED DURING CONSTRUCTION.
- WATER LEAVING THE SITE MUST MEET THE 50mg/L TSS LIMITS.

**KEY**

	EXISTING TREE TO BE REMOVED
	EXISTING TREE TO BE RETAINED
	INDICATIVE STOCKPILE AREA
	SEDIMENT FENCE
	EARTH BANK (LOW FLOW) FOR UPSTREAM STORM WATER DIVERSION
	EARTH BANK (LOW FLOW) FOR SITE STORM WATER DIVERSION
	GEOTEXTILE/MESH AND GRAVEL FILTER
	TEMPORARY WATER WAY CROSSING
	STABILISED SITE ACCESS WITH SHAKER PAD / WHEEL WASH (SEE NOTES)
	LEVEL SPREADER
	ROCK CHECK DAM

## SEDIMENT & EROSION CONTROL MEASURES

The sediment and erosion controls measures accord with the requirements of the relevant guidelines, including *Managing Urban Stormwater Soils and Construction*, 4th Edition published by Landcom (the so-called 'Blue Book') and Camden Council requirements, as set down in the Martens & Associates plans and drawings. The adopted sediment and erosion control measures for the staged school project will include:

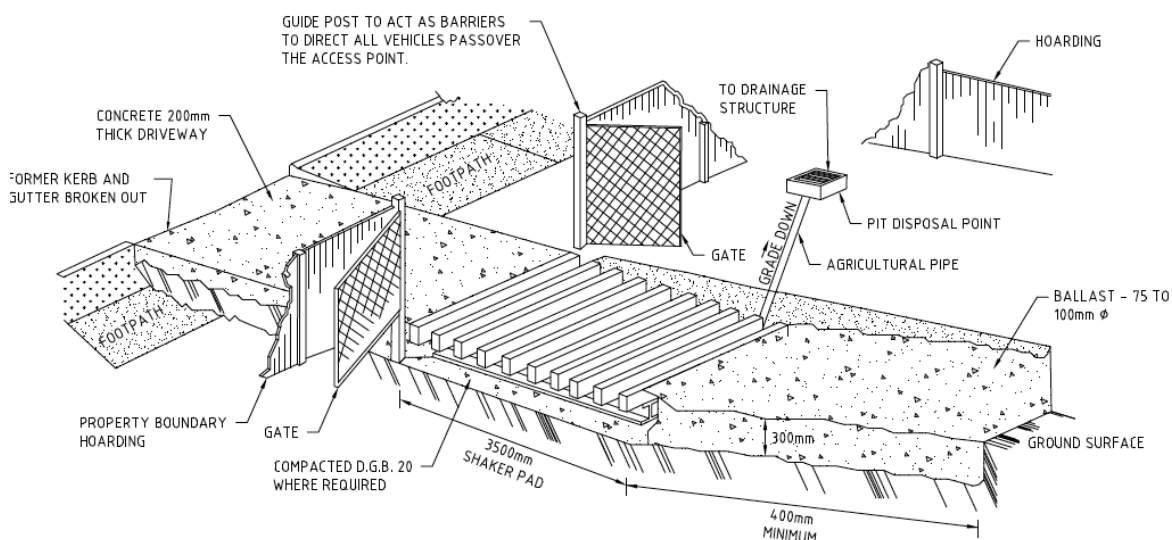
- Erosion and sediment control devices will be installed prior to commencement of work in each stage in accordance with the Martens & Associates engineering plans, to accept stormwater runoff from all proposed works areas.
- Stabilised site access point and shaker pad at the entry/exit point to each works area. Refer Figure 21.

### STABILISED ACCESS POINT

#### TYPE II SAP

THE TYPE II SAP DESIGN IS MORE DEFINED IN THAT IT REQUIRES AN AREA OF BALLAST WITHIN THE SITE COMBINED WITH A SHAKER PAD; ADJACENT THE SHAKER PAD AND IN THE PUBLIC WAY IS A TEMPORARY (CONCRETE) VEHICULAR CROSSING. (SEE DIAGRAM)

#### STABILISED ACCESS POINT – TYPE 2



IN BOTH TYPE I AND TYPE II SAP'S, THE TEMPORARY VEHICULAR CROSSING MUST: CONNECT TO AN EXISTING GUTTER LAYBACK (WHERE THE KERB AND GUTTER EXIST). IF A GUTTER LAYBACK DOES NOT EXIST THEN THE CONNECTION MUST BE MADE TO THE GUTTER BY REMOVING THE ADJACENT KERB SECTION ONLY. CONNECT TO A DISH CROSSING (WHERE KERB AND GUTTER DOES NOT EXIST). IF A DISH CROSSING DOES NOT EXIST, THEN IT MUST BE CONSTRUCTED IN ACCORDANCE WITH DETAILS CONTAINED IN COUNCIL'S ISSUED FOOTPATH CROSSING LEVELS.

IT SHOULD BE NOTED THAT THESE TYPES OF SAPS ARE CONSIDERED TO BE APPLICABLE FOR THE MAJORITY OF ACTIVITIES HOWEVER SOME SITES MAY REQUIRE SPECIAL CONSIDERATION.

WHEEL WASH (BUILT IN OR PORTABLE) TO BE PROVIDED AS PART OF STABILISED ACCESS POINT.

**FIGURE 21: Stabilised access point design- site access for construction vehicles**  
(Source: Martens & Associates 2019)

■ Minimising the area of disturbance during construction and the adopting of the following construction practices:

- ▶ Sediment controls are installed.
- ▶ Minimise the area of soils exposed and conserve topsoil for re-use on site, where possible. Identify and protect proposed stockpile locations.

■ To control surface water flows through each stage of the development in a manner that:

- ▶ Diverts clean run-off around disturbed areas. and minimise surface run-off.
- ▶ Disturbed areas are promptly rehabilitated.
- ▶ Trap sediment on site.

■ Sediment fences are to be constructed along the lower side of the school site, parallel to the contours of the site.

■ Use of earth banks in higher flow areas.

■ Sediment barriers to be installed on site, to be located as close as possible to being parallel to the contours of the site.

■ Build stockpiles in the centre of the site- refer Martens & Associates diagrams. The stockpiles are to be constructed on the contour as low, flat, elongated mounds.

■ Carry out regular monitoring and maintenance of erosion and sediment control measures and rehabilitation works until the school site is stabilised (includes landscaping). Sediment will be removed immediately following rainfall events when the operating capacity of the devices is impaired.

■ Remove sediment fences and inlet filters after the establishment of the landscaping and grass cover.

These measures will be installed at the outset as each construction stage is established and inspected daily to ensure they remain properly in place.

As construction proceeds, the adequacy and efficiency of the sediment controls will be reviewed and adjusted as necessary to provide continual protection to Byron Road, local streets (as constructed) as well as to neighbouring properties.

## **MAINTENANCE OF SEDIMENT & EROSION CONTROLS**

The Head Contractor is responsible for the installation and maintenance of the sediment and erosion control measures during the construction phase and the defects liability period (normally six months).

Maintenance responsibilities for the establishment of vegetation, which is the requirement to irrigate the plants and grass used to generate ground cover, lies with the Head Contractor initially but ultimately reverts to the Amity College once the defects liability period has expired for that completed stage of the project.

Sediment and erosion control must remain in place throughout the entire construction process until final landscaping is finished and established.

## MONITORING OF SEDIMENT & EROSION CONTROLS

The installation of the erosion and sediment control measures as detailed in this plan will ameliorate potential impact to water quality in the receiving waters. A monitoring program is proposed to ensure that the control measures achieve the desired ESCP objectives as set out above. A visual monitoring program is proposed due to the size of the development to take place on the approved school site. Monitoring will take place on a weekly basis and after each storm event to ensure that the proposed control measures are operating as intended and are being maintained in a suitable condition.

Where excessive siltation or scouring or deterioration in water quality is found to occur the following measures will be adopted:

- Locate the source of water quality deterioration.
- Temporary controls are to be established to prevent further deterioration.
- Existing sediment and erosion controls are to be restored or upgraded.
- Surface flows are to be directed away from the areas susceptible to erosion
- Areas suffering from erosion are to be covered and/or protected with turf.

Any complaint related to the water quality or erosion and sediment control measures is to be investigated and reported within twenty-four hours (24 hrs.) The monitoring of and maintenance of all control devices is the responsibility of the Head Contractor.

## 3.3 CONTAMINATED SOIL MANAGEMENT

Some contaminated soil was noted on site during investigation and has been identified for removal prior to earthworks commencing on site. Before the removal of hazardous soil materials takes place, the following measures should be implemented:

- Removal, handling and disposal of any contaminated material is to be undertaken by an appropriately licensed contractor and in accordance with the requirements of the NSW WorkCover Authority and the NSW Office of Environment and Heritage. The Head Contractor is required to consult with Safework NSW concerning the handling of any asbestos waste that may be encountered during the course of the project.
- All contaminated soil and other materials are to be appropriately contained and disposed of at an appropriately licensed facility (as issued by the NSW Office of Environment and Heritage).
- Prior to works commencing in any area containing contaminated soils, barricades (including safety tape) shall be erected to control access to the Designated Work Area. Warning signs will be erected indicating "No unauthorised access".
- Facilities for workers at the site must be supplied in accordance with the NSW *Occupational Health and Safety Regulation 2015* including the relevant Codes of Practice. A Decontamination Area will be required to be established for workers immediately adjacent to the Designated Work Area containing any contaminated soil.

- Prior to starting works in areas with soil contamination, site workers involved in the project shall attend a site-specific Safety Induction. Documented evidence of the safety induction/s must be

readily available on site and will be recorded on forms. The contractor should supply site workers including visitors to the site with appropriate personal protective equipment (PPE), comprising the following:

- ▶ **Body Protection:** High visibility disposable coverall should be worn by personnel entering and/or working within the designated work area, with high visibility clothing/vest requisite for the remainder of the site.
  - ▶ **Eye Protection:** Eye protection is required to prevent eye injuries resulting from contact with contaminated soil or liquid. Safety glasses are required to be worn by site personnel during handling of soil and liquid.
  - ▶ **Foot Protection:** Steel toed boots will be worn by all onsite personnel.
  - ▶ **Skin Protection:** Long sleeves and trousers must be worn at all times. Skin protection will be required to prevent absorption of contaminated soil into the body. Gloves should be worn by personnel involved in site activities which will come into contact with contaminated soil or liquid. Sunscreen (SPF +30) shall also be worn to protect exposed skin areas not covered by PPE from the sun.
  - ▶ **Hearing Protection:** Personnel who are likely to be exposed to potentially harmful noise levels on site will wear hearing protection (ear plugs or ear muffs).
  - ▶ **Respiratory Protection:** Appropriate respiratory protection equipment will be required to prevent inhalation of organic vapours (if present) and airborne dusts.
- During soil remediation works, the various methods should be employed to minimise dust generation - refer Section 3.1.
- Prior to leaving site, earthworks machinery would be required to decontaminate with all accumulated potentially contaminated soil material removed as waste.

## 3.4 FILL MATERIAL

Prior to the importation and/or placement of any fill material (if required) on the project site, a validation report and sampling location plan for such material must be provided to and approved by the PCA.

The validation report and associated sampling location plan must:

- Be prepared by a person with experience in the geotechnical aspects of earthworks; and
- Be endorsed by a practising engineer with Specific Area of Practice in geotechnics; and
- Be prepared in accordance with Virgin Excavated Natural Material (VENM) the Department of Land and Water Conservation publication *Site investigation for Urban Salinity* and ii) the Department of Environment and Conservation - *Contaminated Sites Guidelines "Guidelines for the NSW Site Auditor Scheme (Second Edition) - Soil Investigation Levels for Urban Development Sites in NSW*, and EPA requirements for ENM fill
- Confirm that the fill material:
  - ▶ provides no unacceptable risk to human health and the environment;
  - ▶ is free of contaminants;

- ▶ has had salinity characteristics identified in the report, specifically the aggressiveness of salts to concrete and steel (refer Department of Land and Water Conservation publication *Site investigation for Urban Salinity*);
- ▶ is suitable for its intended purpose and land use; and
- ▶ has been lawfully obtained.

[NOTE: If soil is required to be removed from the project site, for use on other projects, may be classified as Virgin Excavated Natural Material (VENM). However it needs to be certified to confirm that it is VENM. As this site was used for agricultural purposes, it is uncertain whether spoil from the project site can be classified as VENM. Where an excavated material cannot be classified as VENM, it may still be eligible for reuse under the NSW EPA excavated natural material order and exemption. However, excavated natural material (ENM) does not include material located in a contamination hotspot. Soils excavated from deeper areas that may not have been exposed to agricultural chemicals and surplus to requirements would be assessed for classification as VENM, and kept segregated from other shallow spoil, to maximise the possibility that they can be disposed of as VENM.]

### **3.5 PROHIBITION ON BURNING OF ANY WASTE OR TIMBER**

The open burning of waste and other refuse on or near the project site will be prohibited.

### **3.6 NOXIOUS WEEDS MANAGEMENT**

Weed dispersion must be minimised and weed infestations must be managed during all stages of the development. Any noxious or environmentally invasive weed infestations that occur during or after works must be fully and continuously suppressed and destroyed by appropriate means. New infestations must be reported to Camden Council.

Pursuant to the Biosecurity Act 2015 and the Biosecurity Regulation 2017, the Head Contractor for each and every stage of the school project must at all times ensure that any machinery, vehicles or other equipment entering or leaving the site are clean and free from any noxious weed material to prevent the spread of all weeds to or from the property. Earth moved containing noxious weed material must be disposed of at an approved waste management facility and be transported in compliance with the *Biosecurity Act 2015* and the *Biosecurity Regulation 2017*.

### **3.7 DECOMMISSIONING OF ONSITE SEPTICS**

In order to decommission any in ground concrete tanks, the following steps will be required to be undertaken:

- A licensed plumber is to disconnect and cap all pipes from the household which connect to the onsite sewage management system.
- A licensed waste service provider will de-sludge and clean the system, with waste removed for disposal at a licensed waste facility. The tank must then be disinfected.
- The tank to be then removed for disposal at a licensed waste facility.

## **3.8** EXTERNAL LIGHTING

In order to minimise the impact of external lighting arising from construction-related activities on local amenity, all external lighting is to be in compliance with *AS4282:1997 Control of the obtrusive effects of outdoor lighting*.

## 4. CONSTRUCTION TRAFFIC MANAGEMENT

### 4.1 OVERVIEW

The traffic management objectives for this project are as follows:

- Ensure the safety of its employees, contractors, the general public, Amity College personnel, pedestrians, cyclists and traffic in and around the school site.
- Maintenance of satisfactory access to the school site during construction of the various stages.
- To minimise environmental nuisance and impact as a result of construction traffic, and to keep traffic delays on Byron Road to a minimum.
- When required, obtain approvals and licenses such as Road Occupancy.
- Minimise disturbance to the environment and to minimise the risk of noise, dust complaints or complaints in relation to construction traffic from neighbouring property owners or residents in the immediate local area.

A detailed Traffic Management Plan that addresses construction deliveries and movement of plant on site will be implemented by the Head Contractor at each stage of construction works.

### 4.2 CONSTRUCTION ACCESS

The access requirements for construction traffic will vary depending on what stage of the school project is under construction. Refer **Figures 2-9** showing access arrangements for each stage of the project.

The first stage of the project will entail site remediation and demolition, earthworks and site clearing, the establishment of the primary school, construction of a (first stage) bus bay on Byron Road and completion of the half-road construction of the Local Street that abuts the south-western boundary of the project site.

The main access to the construction site will be from Camden Valley Way, Byron Road and thence to one of the two future Local Streets along the south-western and north-western boundaries of the proposed school campus. Access to the latter Local Street will be required upon construction of works associated with the secondary school campus.

The above recommended routes for construction traffic will provide a safe and most direct vehicular access to the project site and should act to minimise the potential conflict between construction traffic and residential traffic.

## **4.3 CONSTRUCTION VEHICLE TRAFFIC**

Construction vehicles types expected to require access to the project site during the staged construction of the project will range from cars and small utility vehicles, to larger articulated vehicles for material deliveries, including truck and dogs and semi-trailers.

In addition a range of equipment including excavators, bulldozers, rollers, cranes and other heavy equipment will be delivered via truck float to undertake tasks including earthworks and site clearing, as well as construction of car parks and buildings. at a time when there is the least amount of traffic within the area to ensure minimal disruption.

Truck movements will occur throughout the various stages of construction of the school, with delivery of materials occurring on a daily basis, throughout the day. The largest number of truck movements would typically occur during concrete pours, when up to 40 trucks a day could be attending the site.

## **4.4 STUDENT & PEDESTRIAN SAFETY**

Once the primary school is established, access to the project site for construction traffic will be directed to areas removed from the primary school to ensure that there is no conflict between students and the construction traffic.

Once the school is established there will be increasingly higher levels of pedestrian traffic in and surrounding the school. During the school hours for pick and drop off will be the highest traffic times. In this latter scenario, all construction access will be coordinated with Amity College. Truck movements will be restricted in the morning during the drop-off period and will be restricted during the afternoon pick-up period. In addition, there will be no truck movement on site during the recess and lunch break periods. This will be finalised with the Head Contractor for Stage 2 and later stages.

For Stage 2 and later stages fencing and/or hoarding will be provided around work areas, to provide protection and prevent unauthorised access. Where works are required in the public domain, safe routes will be provided around the worksite, which will require a site specific management plan.

To further ensure safety, parents, staff and students will be notified in advance when construction access points are to be off limits.

## **4.5 SUMMARY: MITIGATION MEASURES**

Where required, the Head Contractor is to engage suitably qualified and approved traffic controllers in order to undertake works in a safe and responsible manner. Traffic controllers are to carry licence tickets at all times. Specific controls and measures would include the following:

- Prior to the commencement of construction, design plans are to be submitted to the satisfaction of the relevant roads authority which demonstrate that the proposed accesses to the development are designed to accommodate the turning path of all construction vehicles.
- All transport vehicles to have proper noise attenuation and to be maintained in good order.
- Queuing will be forbidden in local streets. Truck movements will be staggered to prevent queuing occurring.

- Vehicle and machinery movements during works will be restricted to designated areas within the site.
- Oversize truck movements (predominantly floats) will only occur during approved hours 10.00am to 2.00pm and will not operate during peak traffic curfews.
- Traffic will be confined to maintained tracks and roads. All construction vehicles (excluding worker 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.
- All vehicles will be restricted to the on site speed limit of 25 km/hr.
- Adequate off-road parking will be provided for construction vehicles and construction workforce vehicles.
- All trucks and earthmoving machinery on site will have fitted, and will maintain, reversing lights and reversing alarms for on site safety.

## **4.6 MONITORING & CORRECTIVE ACTIONS**

### **TRAFFIC CONTROL: MONITORING**

Construction roads will be inspected to ensure road conditions support safe working and driving. Following periods of heavy rain or adverse conditions, on-site construction roads will be inspected prior to heavy vehicle traffic use to ensure driver and vehicle safety.

### **TRAFFIC CONTROL: CORRECTIVE ACTIONS**

In the event of a traffic incident, the relevant sub-contractor shall stop the vehicle involved in the incident and clear any spills. In the event of a complaint the Head Contractor or their representatives will investigate the complaint promptly and initiate appropriate action to reduce impact.

All incidents are to be reported to Amity College.

## 5. CONSTRUCTION WASTE MANAGEMENT

### 5.1 OVERVIEW

The Head Contractor for each stage of the project should manage waste in accordance with the waste management hierarchy.

The waste hierarchy, established under the *Waste Avoidance and Resource Recovery Act 2001*, is one that ensures that resource management options are considered against the following priorities:

- **Avoidance** including action to reduce the amount of waste generated by households, industry and all levels of government.
- **Resource recovery** including reuse, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources.
- **Disposal** including management of all disposal options in the most environmentally responsible manner. All wastes generated during the project must be properly assessed, classified and managed in accordance with the EPA's guidelines to ensure proper treatment, transport and disposal at a landfill legally able to accept those wastes.

No information is available at this stage of the project about the likely quantities of each type of waste produced during construction.

A Preliminary Construction Waste Management Plan has been prepared by Gran Associates and is appended to this preliminary Construction Management Plan report (refer **APPENDIX A**).

A total of approximately 1,445 tonnes of waste has been estimated to be produced from construction activities.

### 5.2 WASTE MANAGEMENT MEASURES

The project site is to be cleared and made ready for earthworks and the site buildings and other items that existed on site prior to this project (including old cars, and other debris) will be removed from the site by contractors- refer to dot points below for further details.

Construction waste generated on site will be removed by a licensed waste contractor and sorted for recycling off-site. Records will be kept of transporting trackable / regulated waste. Without proper site controls and management, mud and waste may be tracked off the site during the course of the project. Measures are proposed to address this potential impact.

The Head Contractor is to ensure that:

- All waste generated (including waste soil) during the project is assessed, classified and managed in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (Department of Environment Climate Change and Water, December 2009).
- Ensuring that construction wastes are only disposed of to licensed facilities.

- ▶ Waste metals to be collected by a metals recycler. A dedicated bin would be used for any metal offcuts eg. from trimming of roof sheets or from other building materials that cannot be prefabricated.
- ▶ Concrete waste would be collected in a dedicated bin for transport to a licensed construction waste processing facility.
- ▶ Wiring offcuts to be disposed of with general waste or they may be collected by the responsible electrical contractor if small quantities are involved.
- ▶ Timber pallets are to be stacked on site and returned to the pallet suppliers for re-use. However, where pallets are damaged and not suitable for re-use, they are to be placed in a dedicated wood waste bin and sent to a recycling facility.
- ▶ Plastics such as shrink wrap, plastic ties and miscellaneous items, are to be collected in a dedicated bin and transported to a licensed plastic waste reprocessing facility.
- ▶ Damaged plasterboard sheets and carpet/underlay offcuts to be collected by a licensed waste contractor and transported to a recycling facility or licensed disposal facility depending on its suitability for recycling.

■ The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste, or spoil from the vehicle or trailer.

■ Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the site, is removed before the vehicle, trailer or motorised plant leaves the premises.

■ Recycling and reuse of all materials, where possible.

■ Disposing of general waste that is not recyclable to an approved Waste Management Facility. No waste collection services to be undertaken outside the hours of 7.30 am to 6.00 pm Monday to Friday.

■ Ensuring that material being transported to or from the site is secure.

■ The RMS Traffic Management Centre is to be notified of the truck route(s) to be followed by trucks transporting waste material from the site, prior to the commencement of the removal of any waste material from the site.

■ Concrete waste and rinse water are not to be disposed of on the development site, and must be prevented from entering the downstream environment. In this regard, waste concrete can either be returned in the agitator trucks to the supplier or directed to a dedicated watertight skip protected from the entry of precipitation. Concrete rinse water can either be directed to a dedicated watertight skip protected from the entry of precipitation or to a suitable water treatment plant.

In addition to the above, the following waste management activities will be required:

■ Care employed in the ordering of materials such as building products in order to match quantities delivered to the project site during construction with the amounts ultimately required, with on time ordering rather than having materials stored on site for months before being used.

- Segregation of construction materials on the project site, to avoid losses through mixing/contamination, and providing weather protection for stored materials to maximise their fitness for use. This will entail segregating wastes generated on site, using different skip bins for recycling and waste, with separate bins for different recyclable materials, as well as ensuring that all waste disposal bins are clearly marked.
- Encouraging bulk handling and use of reusable and returnable containers for construction materials delivered to the project site.
- Monitoring the use of waste and recycling bins on site (to be included in any tender documentation). This will entail keeping records of quantities of waste and recycled materials disposed of, and the destinations of these materials.
- General waste to be collected by a licensed waste contractor and disposed of at a licensed waste disposal facility, namely: food and drink containers used by workers; non-recyclable packaging in which food and drink is sold or stored; packaging in which building material is delivered or stored; composite materials not able to be separated; and miscellaneous waste generated during the construction process.

## **5.3 WASTE STORAGE AREAS**

Waste collection areas will be located within the hoarding lines for each stage of the school project. Each proposed bin storage area has been designed to accommodate vehicle movements associated with collecting the bins, doing a three point turn, and leaving in a forward direction. Screening will be provided around the bins to control dust and loose material as necessary. Separate bins to be provided for each type of recyclable material.

Prior to the commencement of construction, agreement is to be obtained from Camden Council for the design of the operational waste storage area where waste removal is undertaken by Council.

## 6. SUPPORTING MANAGEMENT MEASURES

### 6.1 MONITORING

#### SITE INSPECTIONS & RESPONSES

The conduct of all construction operations will be monitored to ensure that it proceeds as explained in this document.

Daily inspections before construction will ensure they are concurrent with those specified in the plan and that there are no potential hazards.

Any adverse impacts will be recorded and immediately dealt with if they arise.

#### PUBLIC FEEDBACK

The Head Contractor will be obligated to develop a constructive relationship with those neighbours in the immediate vicinity of the approved school campus development.

A letter box drop to inform local residents of construction timing, work duration and what works are occurring at what times, changes to these times should also be notified to residents. Any suggestions or complaints concerning the construction traffic will be processed, recorded and appropriate action taken where necessary. The neighbours will then be notified as to how each issue of concern has been dealt with.

### 6.2 WORKER SAFETY

#### INTRODUCTION

Work health and safety management involves the control of construction processes and the achievement of a safe working environment during construction of all stages of the school development. In implementing such management controls the potential for work health, safety and rehabilitation industrial incidents and accidents to employees, contractors and visitors are reduced.

All construction activities shall be managed in accordance with the *Work Health and Safety Act 2011* and the *Work Health & Safety Regulation 2011*. It will be the Contractor's responsibility to ensure that WHS practices are implemented and revised where necessary to reduce the occurrence and impact of work place accidents and incidents. An Incident Management Plan is to be developed and implemented.

WHS monitoring and review operations will be programmed on a daily basis, to minimise work place incidents and accidents. WHS issues shall be continually monitored. Consultation with employees, subcontractors and visitors as required will also be required to ensure WHS accidents and incidents are kept to a minimum.

## SITE INDUCTION

Anyone entering that part of the school site where construction activities are being undertaken will be required to undergo a site induction.

The induction will include parking and access, deliveries, emergency procedures, WHS and standard environmental requirements.

The induction will cover aspects relating to safety and amenity; including access, emergency evacuation procedures, location of first aid facilities, location of amenities, site hours, material handling, noise and dust policies and environmental management.

The Head Contractor is required to provide adequate training of its employees, subcontractors and site visitors including mandatory site inductions.

The site induction should make all parties aware of their site responsibilities and may include the following:

- Implementation of safe work method statements for high risk construction work, such as excavation work.
- Implement pre-start checks for all plant and equipment used on site.
- Encourage all personnel to report possible hazards and to promote a safe work culture.
- Emergency evacuation, including site inductions for all site personnel and visitors.
- Hoarding or fencing should be erected in accordance with Council requirements.
- All work practices are to comply with WorkCover requirements and the *Work Health and Safety Act*.

Prior to commencing works on site, all subcontractors will be required to submit a project specific Safety Management Plan. This plan will be reviewed by Amity College.

## PERSONAL PROTECTIVE EQUIPMENT

It is the responsibility of the Head Contractor that all site personnel are aware of and adhere to all requirements for personal protective equipment.

This would include the following:

- Safety helmets (AS1800 and AS1801).
- Safety footwear (AS2210.1/.2).
- Eye Protection (AS1336 and AS1337).
- Ear Protection (AS1270).

Refer also to Section 2.5 and 3.3 for PPE required the dealing with possibly contaminated soil and other material.

## **6.3 QUALITY ASSURANCE**

All tasks undertaken in relation to the project whether they be physical construction activities or procedural tasks; are to be undertaken in accordance with the following:

- Suppliers and contractors shall provide assurance of the quality of all goods, materials and services to be provided.
- All materials and works are to be undertaken to the manufacturers' specification or industry standards.

## **6.4 EMERGENCY MANAGEMENT PLAN**

The successful Head Contractor will be required to prepare an Emergency Management Plan specific to each stage of the school project. The plan will provide guidance in the event of any environmental or safety related emergency affecting the project. Relevant details of the Emergency Management Plan will be provided to all personnel during the site induction and information posted on notice boards.

In order to ensure that the environmental impact of catastrophic events is minimised, emergency procedures are to be followed. These include:

- The first priority is the safety of any persons either workers or others involved in the events. Whatever reasonable actions necessary to protect safety will be taken.
- The second priority is to quickly minimise the environmental damage. All emergency action should take place as soon as possible after the event. Actions to be taken may include the containment of any pollution by booms, silt fences or other means. Supplies of silt fences are to be kept on-site.

The Head Contractor will nominate specific persons to be the primary contact for environmental or other types of emergencies. Emergency contacts are to be clearly displayed within the Site Office and to be accessible by employees working on site.

## **6.5 FIRE CONTROL MEASURES**

All workplace amenities, offices, workshops, vehicles, plant and storage facilities including those of contractors will have a suitable type and number of fire extinguishers available for use in the event of a fire.

AS2444 provides details on the various extinguishers available, their use and effectiveness for various types of fire. All bulk storage of fuels, oils or other products should be in accordance with the relevant Australian standard. Signage will be located at all extinguisher locations on site to indicate the extinguisher type and suitability for the fuels, oils or other products stored on site.

## 7. UNEXPECTED FINDS PROTOCOLS

### 7.1 UNEXPECTED FINDS: CONTAMINATION

Previous investigations on the project site have identified the potential presence of contaminated fill materials in the surface and sub-surface. Those parts of the site so affected will be remediated. A Remediation Action Plan (RAP), which sets out the remediation strategy for the site, has been prepared.

The unexpected finds and site conditions that may arise at the site include:

- Finding contamination in areas not previously surveyed or the uncovering of currently unknown types of contamination.
- The uncovering of greater amounts of ground contamination than currently identified.
- The uncovering of additional Asbestos containing materials.
- The uncovering of any suspect or unacceptable odour containing materials. This material is typically identified by unusual staining, odour, discolouration or inclusions such as building rubble, asbestos, ash material, etc.

Should any of the above be encountered during any stage of works (including earthworks, site preparation or construction works, etc.), such works shall cease immediately until a qualified environmental specialist has been contacted and conducted a thorough assessment. Refer to step by step guide below for details. The following steps will apply:

- Camden Council shall be notified immediately.
- Excavation works at that part of the site where the suspicious material (soil, fill or other) was encountered should cease and must be isolated and stockpiled on bunded, strong, impermeable plastic sheeting, protected from erosion, with seepage retained until reviewed by a contamination consultant representative.
- Based on visual inspection, the authorised contamination consultant will provide interim advice on construction health and safety, soil storage and soil disposal to allow construction to proceed if practicable. Follow up sampling and analysis of the material will occur, if required.
- At the completion of the excavation, a clearance certificate must be issued.
- Details are to be recorded in the site record system.

Before re-commencing works in or near the source of the unexpected find the following actions will be followed:

- Approval will be required from the contamination consultant is required to allow the re-commencement of works or part thereof.

- The extent of the unexpected find must be delineated.
- Review the need, if any, to amend or update the Remediation Action Plan as necessary to include the additional remediation and validation of the unexpected find, and to update if required.

[NOTE: In the context of the above, examples of “suspicious” material would include oily or odorous material, drums or metal or plastic chemical containers. Refer to Remediation Action Plan in **Appendix O** of the EIS for further details]

## 7.2 UNEXPECTED FINDS: ABORIGINAL

If any any Aboriginal objects be exposed during construction works:

- All work must stop immediately in that area.
- The Cultural Heritage Division of Office of Environment and Heritage (OEH) must be advised of the discovery in writing in accordance with section 89A of the *National Parks & Wildlife Act 1974*.

Works should not continue without the written consent of OEH.

## 8. LIMITATIONS

Outline Planning Consultants Pty Ltd has prepared this Preliminary Construction & Environmental Management Plan for the use of Amity College in regard to the proposed school development at Byron Road, at Leppington.

The document has been prepared in advance of the appointment of a successful Head Contractor to carry out the work. The Plan will be finalised and more details provided upon engagement of the successful Head Contractor to undertake the project.

This document is in accordance with the usual care and thoroughness of the consulting profession. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The document was prepared in February 2019 and is based on the information reviewed and available at the time of preparation. Outline Planning Consultants Pty Ltd disclaims responsibility for any changes that may have occurred after this time.

This document should be read in full. No responsibility is accepted for use of any part of this document in any other context or for any other purpose or by third parties. This document does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

# APPENDIX A

## PRELIMINARY CONSTRUCTION WASTE MANAGEMENT PLAN (GRAN ASSOCIATES AUSTRALIA PTY LTD)



# AMITY COLLEGE LEPPINGTON CAMPUS

## PRELIMINARY CONSTRUCTION WASTE MANAGEMENT PLAN

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#### 4.10 Plasterboard

#### 4.11 Carpet/Underlay

#### 4.12 Residual/Mixed

## APPENDIX

### 1. Staging Plans

## 1. SUMMARY

This Preliminary Construction Waste Management Plan has been prepared by Gran Associates to accompany a State Significant Development Application for the Amity College Leppington Campus to be located at 85 Byron Road and No 63 Ingleburn Road at Leppington, comprising Lots 1 & 2 DP 525996 respectively. The proposal seeks to establish a new school (the project) on that part of the above property zoned SP2 Infrastructure (Educational Establishment), including roadworks on designated roads. The proposed new school will have a kindergarten, a 3-stream primary school and a 3-stream secondary school with a maximum capacity of 1,000 students ie. serving K-12 students.

The New South Wales State Environmental Planning Policy designates Leppington as part of the South West Priority Growth Area and land has been released for development, including low and medium density housing.

This preliminary construction waste management plan provides a preliminary outline of waste management strategies for the construction of the various stages of the school campus. A more detailed list of measures will be provided by the Head Contractor, once engaged.

A total of approximately 1,445 tonnes of waste has been estimated to be produced from construction activities.

During construction, wastes generated on the site would typically be managed and minimised by a combination of waste planning and on site controls. Waste planning would include designing buildings to minimise on site cutting of components, and maximising on site assembly tasks, careful ordering of materials such as sand and building products to match quantities with amounts required, and on time ordering rather than having materials stored on site for months before being used and segregating materials and providing weather protection for stored materials on site, to maximise their fitness for use.

On site controls will include developing and implementing a Construction Waste Management Plan, segregating wastes generated on site, using different skip bins for recycling and waste, with separate bins for different recyclable materials, ensuring all waste disposal bins are clearly marked, keeping records of quantities of waste and recycled materials disposed of, and the destinations of these materials and ensuring that wastes are only disposed of to licenced facilities.

The cut and fill assessment of the preliminary civil design for the site indicates that there will be approximately 300m<sup>3</sup> of spoil to be disposed of. All soils excavated from site and surplus to requirements would be assessed, and deeper soils kept segregated from other material, to maximise the possibility that they can be disposed of as VENM. All contaminated waste will be disposed of in accordance with the Remediation Action Plan prepared by GeoEnviro and submitted as part of the EIS.

This waste management plan will consider the estimated waste volumes (based on student and staff numbers), waste collection and removal strategies, waste collection facilities and waste minimisation initiatives in order to develop an effective waste management system.

## 2. PROJECT DESCRIPTION

### 2.1 Description of the Works

The proposed development includes:

- Central administration, library, canteen and community facilities wing with Primary and secondary school wings
- Primary and Secondary multi-purpose halls
- Carparking
- Play field
- Primary play equipment area
- Primary and Secondary sports playgrounds
- Vegetable garden
- Landscaped areas
- Paved areas

Refer Appendix 1 – Site Plan

### 2.2 Project Construction Stages

The project is intended to be carried out in 8 stages to suit the school's growth over a projected ten year period. Refer Appendix 2 – Staging Plans.

Each stage will include aspects of the following:

#### 2.2.1 Earthworks and site preparation

- Clearing of vegetation from site and disposal to licensed green waste facilities
- Establishing stormwater drainage systems to divert clean stormwater around cleared areas and construction zones
- Erosion and sediment controls to prevent sediments from leaving site
- Construction/adjustment of temporary berms to prevent excess stormwater run off to adjacent residential sites
- Establishing/adjusting internal site construction access roads, laydown areas and a dedicated construction management compound with temporary offices and site facilities
- Connecting temporary site services to the construction compound (Stage 1 only)
- Bulk earthworks to create the general levels for buildings and outdoor areas
- Stockpiling and conditioning of existing topsoils
- Site re-profiling including construction of retaining walls and batters to create building pads

#### 2.2.2 Services

- Provision of services to the site including sewerage connection, water, gas, telecommunications

#### 2.2.3 Buildings

- Excavations associated with building foundations and slabs
- Provision of below ground building services including plumbing and drainage
- Building slab construction
- Building framing

- Walls, windows and roofing
- Internal services (power, lighting)
- Internal fit out of buildings

#### 2.2.4 Roadways – Stages 1,2, 3 & 5 only

- Laying stormwater drainage pipes and placing pits
- Constructing kerbs and gutters for roads
- Paving of carparks

#### 2.2.5 Landscaping and external works

- Utilisation of stored topsoil for garden beds
- Planting
- Paving of pedestrian areas
- Play field construction
- Sports court construction
- Vegetable garden area construction

### 3. REQUIREMENTS

#### 3.1 SEARs

The SEARs requirements for the EIS for waste management are addressed as follows:

**Table 1 SEARs requirements**

SEARs Requirements	Where addressed
<b>19. Waste</b> <ul style="list-style-type: none"> <li>Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.</li> <li>Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.</li> </ul>	<p>Refer Section 4.2 of this Plan and Operational Waste Management Plan</p> <p>Refer also separate Contamination Assessment and Remedial Action Plan (RAP) prepared by GeoEnviro and submitted as part of this EIS.</p> <p>Refer Operational Waste Management Plan included in EIS</p>

#### 3.2 Requirements of Construction Waste Management Plan

**Table 2 Construction Waste Management Plan**

	Requirement	How/Where addressed
Demolition and construction	To ensure sufficient storage and collection of wastes and recyclables during demolition and construction stages of development	Demolition wastes – refer Section 4.1 Construction wastes – refer Section 4
Recycling	To minimise waste generation and disposal to landfill via use of the waste hierarchy and careful source separation, reuse and recycling	Refer Section 4
Storage areas	To ensure the provision of adequate and appropriate storage areas for waste and recyclables	Refer Section 4
Waste Management Plan	Best practice recycling and reuse of construction and demolition materials	Refer Section 4

	How recycled material, garbage and other waste generated by clearing, excavation and construction are to be stored and controlled	Refer Section 4.1 and 4
	The type and volume of waste expected to be generated during construction	Types of waste are addressed in Section 4

## 4. CONSTRUCTION AND DEMOLITION WASTES

### 4.1 Demolition Wastes

The site is to be cleared and made ready for earthworks and the site buildings and other items that existed on site prior to this project will be removed from the site by contractors in accordance Construction Certificate requirements. All asbestos containing materials (ACM) to be removed and disposed of in accordance with the RAP.

### 4.2 Construction Waste Generation

Waste that would typically be produced by construction works is as follows:

- Brick
- Waste mortar
- Concrete
- Asbestos sheeting (discussed above)
- Metals
- Timber
- Soil
- Paper and cardboard

The estimated weight of each construction component is based on tables produced by various councils in NSW. It is noted that Camden Council does not publish a comparative table. There is no accurate data for the estimation of waste for a school. However the Hills Shire (Hills Shire Council DCP 2012 Appendix A) publishes a table for the estimation of waste. We have used the Office block category as a basis for estimation of construction waste for a school.

**Table 4 Construction Waste Estimate**

Building Type	Waste Type							
	Green waste - trees (tonne)	Soil (tonne)	Timber (tonne)	Concrete (tonne)	Bricks (tonne)	Gyprock (tonne)	Metal (tonne)	Other (tonne)
Office Block per 1000m <sup>2</sup>	Not estimated	8.8	5.10	18.8	8.5	8.6	2.75	5.0

The development will involve the removal of approximately 400 trees and existing site vegetation. Although most of these trees will be mulched on site, it is envisaged that the mulch will be in excess of what is required for the development at each stage and so the green waste is estimated at approximately 25% of the weight of the mulched trees (360tonne x 0.25 = 90tonne)

**Table 5 Estimated Construction Waste by Stage**

Stage	Building Area	Waste Type							
		Green waste - trees (tonne)	Soil (tonne)	Timber (tonne)	Concrete (tonne)	Bricks (tonne)	Gyprock (tonne)	Metal (tonne)	Other (tonne)
Stage 1	650m2	22.5	50	0.3	1.2	-	-	1.5	0.3
Stage 2	1676m2	22.5	50	8.7	31.4	128.6	143.8	4.8	8.8
Stage 3	-	-	-	-	10.0	-	-	-	10.0
Stage 4	2420m2	22.5	-	12.3	45	20.6	20.8	12.2	12.1
Stage 5	3055m2	22.5	-	15.6	57.3	25.9	26.2	8.4	15.3
Stage 6	3840m2	-	150	19.6	72.2	32.6	33.0	10.6	19.2
Stage 7	2937m2	-	100	15.0	55.3	25.0	25.3	7.9	14.7
Stage 8	1027m2	-	-	5.3	19.4	11.1	8.9	2.8	5.2

This adds up to a total of 1,444.2 tonnes of waste estimated to be produced from construction activities.

### 4.3 Waste Handling Procedures and Site Responsibilities

During construction, wastes generated on the site would typically be managed and minimised by a combination of waste planning and on site controls.

#### 4.3.1 Waste Planning

Waste planning activities would include:

- Designing buildings to minimise on site cutting of components, and maximising on-site assembly tasks
- Careful ordering of materials such as sand and building products to match quantities with amounts required, and on time ordering rather than having materials stored on site for months before being used
- Segregating materials and providing weather protection for stored materials on site, to maximise their fitness for use
- Bringing in material such as sand in large bags rather than as bulk loads, to enable excess materials to be easily picked up and used at other sites
- Encouraging bulk handling and use of reusable and returnable containers
- At the time of tendering, advise contractors and sub-contractors and suppliers of the requirements to minimise waste on site
- Include provision in the tender documentation for the client to monitor the use of waste and recycling bins on site

- Development of a Construction Waste Management Plan by the main contractor, which includes all of the above elements

#### 4.3.2 On-Site Controls

On site controls would include:

- Implementation by the main site contractor of a Construction Waste Management Plan
- Segregating wastes generated on site, using different skip bins for recycling and waste, with separate bins for different recyclable materials
- Discussion about the site's waste management and recycling policies and practices with employees and subcontractors during site inductions and tool box talks
- Ensuring all waste disposal bins are clearly marked
- Keeping records of quantities of waste and recycled materials disposed of, and the destinations of these materials
- Ensuring that wastes are only disposed of to licenced facilities

#### 4.4 Soil

Spoil refers to fill and soil from surface clearing, excavation and site re-profiling. Bulk earthworks will be required at the site to create level platforms for construction. The preliminary civil design indicates that there will be a net fill requirement and therefore no waste spoils to dispose of.

However if soil is required to be removed from a site, it can possibly be used on other projects, if it is classified as Virgin Excavated Natural Material (VENM). However it needs to be certified to confirm that it is VENM. As this site was used for agricultural purposes, it is uncertain whether spoil from the site can be classified as VENM.

Where an excavated material cannot be classified as VENM, it may still be eligible for reuse under the NSW EPA excavated natural material order and exemption. However, excavated natural material (ENM) does not include material located in a contamination hotspot, material that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores. Refer also separate Contamination Assessment and Remedial Action Plan (RAP) prepared by GeoEnviro and submitted as part of this EIS.

Soils excavated from deeper areas that may not have been exposed to agricultural chemicals and surplus to requirements would be assessed for classification as VENM, and kept segregated from other shallow spoil, to maximise the possibility that they can be disposed of as VENM.

#### 4.5 Metals

Small quantities of metals are expected to be generated during construction from trimming of roof sheets and other activities resulting from construction of items that cannot be prefabricated. A dedicated bin would be used for these offcuts, which would be collected by a metals recycler.

#### 4.6 Concrete

Concrete waste would be generated during construction, in the form of excess concrete from site pours, and washout from concrete pumps and other equipment. Concrete waste would be scraped up from the ground and collected in a dedicated bin for transport to a licensed construction waste processing facility.

#### 4.7 Wiring

Wiring offcuts would be generated during building fit out. This would either be disposed of with metal wastes, or separately. Small pieces may be disposed of with mixed wastes, if the quantities are not great enough to justify a separate bin, or they may be collected by the electrical contractor, for co-disposal with their other wastes (assuming they generate this type of waste frequently and can demonstrate that they have suitable recycling arrangements in place).

#### 4.8 Timber

Timber pallets would be stacked on site and returned to the pallet suppliers for re-use. Where pallets are damaged and not suitable for re-use, or non-standard, they would be placed in a dedicated wood waste bin, and sent to a recycling facility for chipping or fuel production. If they are made of treated timber, and not suitable for re-use or fuel, they would be disposed of to a licenced waste facility.

#### 4.9 Plastic

Various plastic wastes would be generated during construction. They would range from shrink wrap, to plastic ties and miscellaneous items. Plastics would be collected in a dedicated bin and transported to a licensed plastic waste reprocessing facility.

#### 4.10 Plasterboard

Plasterboard offcuts and damaged sheets or part sheets would be generated during building fit out. Plasterboard will be collected by a licenced waste contractor and transported to a recycling facility or licenced disposal facility depending on its suitability for recycling.

#### 4.11 Carpet/Underlay

Carpet and underlay offcuts would be generated during building fit out. Plasterboard will be collected by a licenced waste contractor and transported to a recycling facility or licenced disposal facility depending on its suitability for recycling.

#### 4.12 Residual/Mixed

Residual and mixed wastes would be generated during construction works. This material is expected to consist of:

- Small quantities of food and drink
- Non recyclable packaging in which food and drink is sold or stored
- Packaging in which building material is delivered or stored
- Composite materials not able to be separated and
- Small quantities of miscellaneous waste generated during the construction process.

General waste would be collected by a licenced waste contractor and disposed of at a licensed waste disposal facility.