Waste Audit GFA Consulting Group Pty Ltd
Level 21/133 Castlereagh Street Sydney, NSW 2000
Telephone (02) 9199 4521
www.wasteaudit.com.au

Midtown Macquarie Park Primary School

Construction Waste Management Sub-Plan

January 2025

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1. Introduction

This Construction Waste Management Sub-Plan (CWMSP) has been prepared by Waste Audit GFA Consulting Group Pty Ltd ('Waste Audit') on behalf of Taylor Construction Group Pty Ltd (the applicant) in support of a State Significant Development Application (SSDA) for Midtown Macquarie Park New Public School.

This Construction Waste Management Sub-Plan is intended to provide guidance on management of general waste and recyclable materials that will be generated during the demolition and construction phases of the project, and addresses current legislation, standards, guidelines and best practices and the approved SSD Conditions.

All waste management provisions, including internal bins, central storage areas, management and handling protocols, and contractor requirements, have been designed to ensure safe and sustainable management of all materials.

Storage areas have been designed to achieve compliance with general best practice requirements as regards design, sizing, and location, and will, as designed, be adequate to manage the expected types and volumes of materials that will be generated.

2. The Site

The site is legally described as Lot 13 DP 1271599:

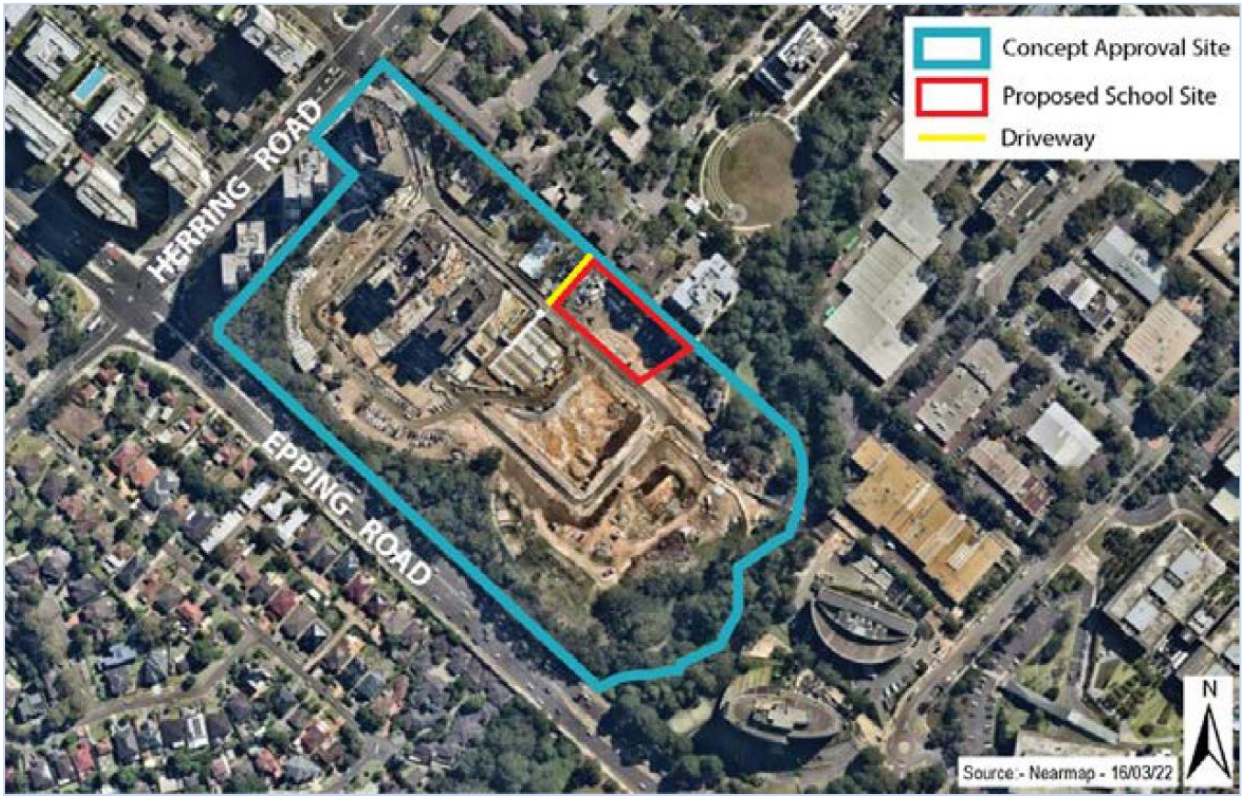


Figure 01: Site plan

3. Project Background & Objectives

3.1 Background

The school site is within Fraser's Midtown at Mac Park development (formerly Ivanhoe Estate) and is subject to a concept development approval under SSD-8707. SSD-8707 includes stamped approved plans that identify the site of the proposed development for use as a school. The development approval includes high-density residential towers, retail, community facilities and green spaces that are currently in design, planning and construction phases, including delivering a multipurpose hall and school garden for community use.
The site is currently legally known as Lot 13 DP 1271599, and is located at 10 Mahogany Ave, Macquarie Park, New South Wales, in the City of Ryde LGA.

3.2 Objectives

Midtown Macquarie Park New Public School will be a new Core 28 urban school located in the Frasers Property Australia (Frasers) 'Midtown at Mac Park' development.
The project is designed to maximise the accommodation of large teaching spaces and provide a learning hub for students in more flexible, collaborative, and larger scale spaces.
Key features of the project include:

- 33 Permanent Learning Spaces for up to 750 students
- Administration and staff facilities
- Library and Canteen
- Multi-purpose hall and covered outdoor learning area
- Outdoor play areas at ground level, on each floor of the building and rooftop
- Landscaped outdoor learning areas
- Eight (8) on-site car parking spaces
- Chamber substation
- Shared driveway
- Temporary pedestrian pathway connecting school to existing Wilga Park pathway

4. Conditions and Requirements

The preparation of this plan has been undertaken with reference to the following NSW Department of Planning, Housing and Infrastructure's SSD 56124984 conditions – B39:

Table 1. Department of Planning, Housing and Infrastructure – Conditions B39

Requirements	Report Section
(a) require that all waste generated during the project is assessed, classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste".	Appendix 1.0
(b) demonstrate that an appropriate area will be provided for the storage of bins and recycling containers and all waste and recyclable material generated by the works.	Appendix 2.0
(c) procedures for minimising the movement of waste material around the site and double handling.	Section 8.0 Section 9.0
(d) waste (including litter, debris or other matter) is not caused or permitted to enter any waterways.	Section 9.2
(e) any vehicle used to transport waste or excavation spoil from the site is covered before leaving the premises.	Section 9.2
(f) the wheels of any vehicle, trailer or mobilised plant leaving the site and cleaned of debris prior to leaving the premises.	Section 9.2

(g) details in relation to the transport of waste material around the site (on-site) and from the site, including (at a minimum): i a traffic plan showing transport routes within the site; ii commitment to retain waste transport details for the project life to demonstrate compliance with the Protection of the Environment Operations Act 1997; and iii the name and address of each licensed facility that will receive waste from the site.	Section 9.4 Section 9.5 Appendix 2.0

5. Legislation, Standards & Guidelines

The following guidelines and standards have been used as references in compiling this Waste Management Plan:

- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (Waste) Regulation 2014, Part 11*
- *Protection of the Environment (General) Operations Act 1998*
- *Waste Avoidance and Resource Recovery Act 2001*
- NSW EPA *Waste Classification Guidelines* 2014
- NSW Department of Planning and Environment, *Secretary's Environmental Assessment Requirements* (SEARs)

6. Risk Management

Current legislation determines that the generator of waste is the owner of the waste until the material crosses a weighbridge into a licensed processing or disposal facility. Waste contractors including construction contractors will be the primary transporters of waste off-site; accordingly, contractors will be required to provide monthly reports on waste reused, reprocessed or recycled, thus diverted from landfill or waste sent to landfill.

The WMP will be implemented on site throughout demolition and construction. All entries in the Waste Data File will include:

- Time and date of material removed
- Description and size of waste
- Waste facility used
- Vehicle registration and waste contractor's company details

The Waste Data File will be available for inspection to any authorized Council Officer at any time during site works. At the conclusion of site works, the designated person will retain all waste documentation and make this validating documentation available for inspection.

7. Objectives & Targets

The project's waste management objectives include:

- Meeting all waste management standards while ensuring the health and safety of the workers on the project
- Maximising the quantities of materials diverted from landfill by reusing, recycling and reprocessing off-site
- Disposal of no more than 20% of residual waste materials to a licensed landfill in accordance with both regulatory and legal requirements

Management strategies and parties responsible for ensuring these objectives are achieved are detailed in Sections 8 & 9.

8. Site Management, Strategies & Responsibilities

The following waste management strategies for the project will operate over the design, procurement, and construction (including fit out) stages of the project.

Table 3. Roles and Responsibilities

Management Strategies	Responsibilities
Design: Use of modular components in design Use of prefabricated components in design Design for materials to standard sizes Design for operational waste minimisation	 Architect & Engineer Architect, Builder, Subcontractors Architect, Subcontractors Architect & Builder
Procurement: Select recycled and reprocessed materials Select components that can be reused after deconstruction	Architect, Engineer, Builder, Subcontractors Architect, Engineer & Builder
Pre-construction: Waste management plan to be reviewed and approved prior to construction	Builder
Construction on-site: Use the waste hierarchy principles of avoidance, reuse, reduction, and recycling Minimisation of recurring packaging materials Returning packaging to the supplier Separation and recycling of materials off site Audit and monitor the correct usage of bins Audit and monitor the Waste Contractor	Builder & Waste Contractor Sub-contractors Builder & Sub-contractor Waste Contractor Builder & Waste Contractor Builder

8.1 Site Contamination

A separate Detailed Site Investigation (Contamination) Report was prepared for Schools Infrastructure NSW by Douglas Partners Geotechnical in July 2023.

The detailed site investigation comprised a review of a previous PSI report, and intrusive soil investigation to assess the suitability of the site for the proposed Primary School development and whether further investigation and / or management of contamination is required. The analysed contaminant concentrations or arithmetic means of all soil samples tested were within the adopted SAC. Asbestos was not detected within the soil samples analysed. The fill soils in the areas of proposed works are preliminary classified as GSW (non-putrescible) with reference to NSW EPA (2014), whilst the natural soils are preliminary classified as VENM.

9. Management Practices

9.1 General Principles

The following standard waste management hierarchy principles have been used to guide this waste management plan:

Avoid: Use sound work practices during the demolition and construction processes that avoid the creation of waste products in the first place (e.g., the Design for Manufacture and Assembly (DfMA) process that combines the manufacture of building components, such as wall systems and facades, in a safe, clean and efficient factory environment, with on-site construction assembly. For details of this process please go to:

https://www.Schoolsinfrastructure.nsw.gov.au/content/infrastructure/www/what-we-do/we-build-Schools/modern-construction-methods.html

Reduce: Reduce the use of materials during demolition that require treatment or disposal

Reuse: Ensure that wherever possible, materials are reused either on site or offsite:

- Identify and put systems in place to separate and store materials for onsite reuse
- Identify the potential applications for reuse offsite and facilitate this process

Recycle and Recover: Identify all recyclable waste products to be produced on site:

- Provide systems, bins, and signage for separating and stockpiling of recyclables
- Process the material for recycling either onsite or offsite

Treat and Dispose: Waste products which cannot be reused or recycled will be removed and treated/disposed of at appropriately licensed facilities. To minimise vehicle movements and transportation costs, bins should be monitored for fullness and collected on an efficient schedule.

9.2 Liquid Waste, Runoff and Vehicle Management

- Ensure water is used in moderation and no taps are left continuously running
- Use any grey water produced on site for irrigation or for dust suppression
- Only discharge clean water into storm water
- Manage all wastewater and runoff in accordance with Sydney Water requirements

Measures put in place to prevent unintended matter from contaminating the surrounding areas or entering the waterways through runoff in accordance with Sydney Water requirements, such as;

- Containers and bins are maintained on a regular basis to prevent any leakage
- All open backed waste vehicles leaving site with waste or spoil must be covered
- No waste is handled in the open hard stand area
- A Road sweeper sweeps all hardstand areas and accessible roads daily
- All waste tipping is conducted inside a specified and protected area
- Vehicles, including trailers and mobile plants, to have their wheels thoroughly monitored and cleaned of debris, before leaving site

9.3 Hazardous Materials Management

Should any materials be suspected of being (or containing), asbestos, the following process will be followed:

i. Treat the material as asbestos unless proven otherwise
ii. Do not disturb the material (i.e., shift or place into a container)
iii. Seek advice from a suitably qualified laboratory to test the material(s) to determine if it is or is not asbestos
iv. If determined not to be asbestos, then it can be managed as an inert waste
v. If determined to be asbestos then it must be managed by a licenced contractor for packaging, removal and disposal
vi. If the material has accidently been uncovered, then the area should be cleared, barriers erected to prevent access, NSW WorkCover and EPA notified, and if the material is broken, it should be covered with a fine spray/mist of water.
vii. Vehicle decontamination and load monitoring will be a strict requirement for vehicles entering and exiting the project site.

For what has been conclusively identified as asbestos-containing materials (including soils), a specialist/licensed asbestos contractor will be used. As required, only workers trained in asbestos removal techniques will be allowed to manage the removal of asbestos-contaminated soil and any material contained in the buildings.
In regard to disposal of asbestos containing materials, there are regulatory requirements under Clause 42 of the *Protection of the Environment Operations (Waste) Regulation 2005* that apply to the management of asbestos waste.

9.4 Waste Reporting

On at least a quarterly basis the project applicant must be informed of:

a. Cumulative waste report generated from the monthly waste reports provided by the waste contractor over the entire duration of construction works, based upon both;
    - Waste Generated by the contractor
    - Waste Diverted by the contractor
b. The processes being used to monitor the re-use/ recycling of construction and demolition waste;
c. The quantities achieved for re-used and recycled waste.

Records will be required to be kept of all wastes and recyclables generated and either re-used on site or transported off-site – for the life of the project.

It will be a condition of appointment that all contractors provide these records and that they also contain details of the facilities that the materials are transported to. Recording and monitoring processes are further outlined below:

1. Clear separation/ tracking system for waste from site to processing facility.

    Prior to depositing materials at the site, trucks enter over the weighbridge, the truck number is registered along with *Gross, Tare and Net weights* (as the truck departs). As loads are deposited, a staff member visually analyses the load(s) and records the estimated volumes per material type. Data is reviewed that validates the process of incoming and outgoing loads for the types of accepted materials.
    The Facility has a system to record all loads entering or exiting the site.
    As materials from individual projects are recorded as to where generated and then recycled, the facility can accurately measure the percentage that is recycled. This is then generated in a report provided to the clients.

2. Certified weighbridge and operational procedures.

    A weighbridge should demonstrate that they can quantify and provide an auditable trail for weights of inbound waste as well as weights of outbound recyclables and residuals and that they can prepare accurate reports and account for all inbound waste received and all outbound waste diverted from and to landfill.
    The operating system should ensure the following information is captured:

    - Date and time are recorded for all loads arriving and departing the site.
    - Details of generating site recorded.
    - Details of facility for departing loads recorded along with tonnage.

3. Source and fate of inbound and outbound waste.

    - Documents record all details for inbound and outbound loads.
    - Reports are provided to clients detailing the volume of materials accepted, disposal and percentages recycled.

4. Calculating Waste.

Waste will be measured in kilograms. To calculate the amount of waste diverted from landfill, the project team is required to report the total amount of waste generated and the total amount of waste diverted from landfill, and report on the proportion diverted as a percentage.

Volume to weight conversion: Waste contractors are often required to determine the weight of waste material streams from visual inspections of a load's volume for the purpose of reporting the estimated weights of material types removed from site (e.g., timber, steel, plasterboard, concrete, carpet).

Special waste and excavation waste are excluded from this requirement. However, soil generated from site clean-up works must be included in the waste-to-landfill calculations, as it forms part of the building site's general waste profile.

- Excavation waste: Includes unwanted material resulting from excavation activities such as a reduced level dig and site preparation and levelling, and the excavation of foundations, basements, tunnels, and service trenches typically consisting of soil and stones.
- Special waste: Includes asbestos waste and asbestos containing material, or other hazardous waste and restricted solid waste as defined by the NSW Environment Protection Authority Environmental Guidelines and Policies.
- Soil generated from site clean-up works: Which incorporates soil leaving the site mixed with general construction and demolition waste.

9.5 Processing Facilities

Specific disposal/recycling facilities have not yet been selected, as a waste removal contractor has not yet been appointed for the project. All contractors and sub-contractors, once appointed, will be required to detail all intended and actual disposal facilities used.

The DPHI would be notified once waste collection contractors have been approved.

Waste contractors and waste processing facilities that provide waste management and reporting services to Green Star projects must achieve independent verification of their compliance with the reporting criteria. Such verification of compliance is a prerequisite for the recognition and acceptance of the waste reports that are provided within Green Star 'Construction and Demolition Waste' credit submissions.

Table 4 – Resource recovery and disposal facilities in proximity to Macquarie Park

Facility	Location	Material Streams
Porters ECoMRF Construction Waste Recycling	162 Wicks Road, Macquarie Park	Disposal of construction materials such as concrete and asphalt. Processed recycled materials such as crushed asphalt and crushed concrete (10mm and 20mm agg).
Cleanaway Ryde Resource Recovery Centre	145 Wicks Road, Ryde	Accepts a range of solid waste from commercial, industrial, domestic customers - including wet and mixed material, tree trunks, large branches, untreated timber, and specific volumes of expanded plastics. Further, offers special recycling for pre-sorted loads of selected material such as paper and cardboard, steel and aluminium cans and scrap metals.
ECORR (ECO Resource Recovery)	155 Newton Road, Wethrill Park	ECORR recycles construction waste to create performance engineered circular construction materials and solutions for projects such as mine and quarry rehabilitation, legacy landfill redevelopment and contaminated site management with classification, handling, treatment and disposal options.

10. Demolition Phase

The site is essentially clear, although there may be some remnant vegetation and debris that require removal before construction begins. Estimated demolition quantities in m^3 to be generated are included in the below table.

11. Construction Phase

The table below shows expected volumes of waste arising from the construction process, including materials generated from deliveries of materials, including pallets, pallet wrap, cardboard packaging, and general waste and recyclable containers disposed of by construction contractor staff.

Table 5. Construction Waste - Expected Materials Streams

Materials on Site		Destination		
Type of Material	Volume (m^3)/ Tonne	Onsite (Reuse or recycle)	Offsite (Reuse or recycle)	Disposal (Landfill)
Excavation Materials	7,500 m3	Yet to be classified as VENM. No on-site reuse or recycling	Collected by contractor and disposed of at recycling facility	No disposal to landfill
Used Pallets	15 m^3	Reused on site for storage where possible	Collected by contractor and disposed of at recycling facility	No disposal to landfill
Paper/Cardboard Recycling	10 m^3	Reuse cardboard boxes for storage where possible	Collected by contractor and taken to concrete recycling facility	No disposal to landfill
Soft Plastics (Pallet Wrap etc.)	10 m^3	Reused on site for storage where possible	Collected by contractor and disposed of at recycling facility	No disposal to landfill
Concrete (Excess)	16 m^3	No on-site reuse or recycling	Collected by contractor and taken to concrete recycling facility	No disposal to landfill
Misc. General Waste	20 m3	No on-site reuse or recycling	Collected by the waste contractor for disposal	Disposal to landfill
Timber Offcuts	10 m^3	Reuse for formwork where possible	Untreated recyclable timber will be collected and recycled at appropriate timber yard. Unrecyclable (treated) timber will be disposed of at landfill	Material that cannot be recycled will be disposed of at landfill facility
Plasterboard Offcuts	5 m3	No on-site reuse	Material to be collected by the waste contractor for recycling for use as soil improver with gypsum etc. removed by recycler	Material that cannot be recycled will be disposed of at landfill facility
Glass (Excess)	4 m^3	No on-site reuse	Recyclers consulted as to potential for recycling	No disposal to landfill
Floor Coverings	4 m^3	No on-site reuse	Collected in designated bin and sent for recycling if of required quality; otherwise sent to landfill	Material that cannot be recycled will be disposed of at landfill facility
Metal Offcuts, Roof Sheeting, Wiring, etc.	2 m^3	No on-site reuse	Collected by specialist metal subcontractor for separation into different metal types for recycling	No disposal to landfill

Materials on Site		Destination		
Type of Material	Volume (m^3)/ Tonne	Onsite (Reuse or recycle)	Offsite (Reuse or recycle)	Disposal (Landfill)
Mixed Recyclables	10 m^3	No on-site reuse or recycling	Collected by contractor and taken to concrete recycling facility	No disposal to landfill
TOTAL VOLUME OF MATERIALS	106 m^3	In total, the development's construction phase, *not including excavation materials*, will produce around 106 cubic metres of waste materials, of which over 81% can potentially be diverted from landfill disposal, either by being reused on or off site, or recycled off-site at a specialised facility.		
POTENTIAL RECOVERY	>81%			

Appendix 1. Classifying Waste

The EPA's Waste Classification Guidelines Part 1: Classifying Waste, classifies building and demolition waste as general solid, non-putrescible waste.

The specific waste stream in the above Table 5 is cross referenced to the waste classification guidelines, below;

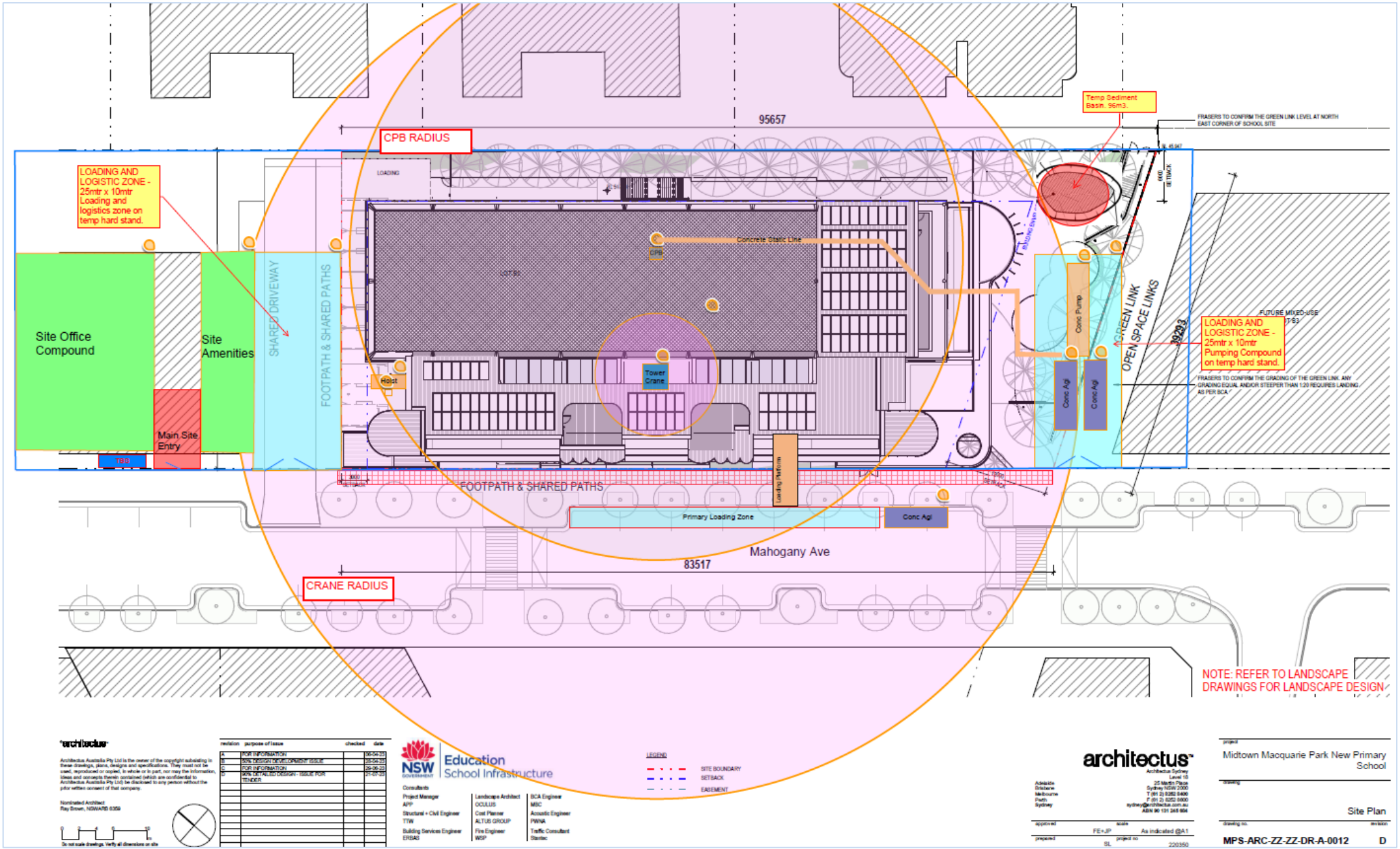
EPA's Waste Classification Guidelines Part 1: Classifying Waste	
Waste Type	Classification
General solid waste (other than special waste) • glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal	General solid waste (non-putrescible) *Page 4, Waste Classification Guidelines*
The demolition, erection, construction, refurbishment or alteration of buildings; • bricks, concrete, paper, plastics, glass and metal	General solid waste (non-putrescible) *Page 5, Waste Classification Guidelines*
The demolition, erection, construction, refurbishment or alteration of buildings; • timber, including unsegregated timber, that may contain timber treated with chemicals such as copper chrome arsenate (CCA), high temperature creosote (HTC), pigmented emulsified creosote (PEC) and light organic solvent preservative (LOSP)	General solid waste (non-putrescible) *Page 5, Waste Classification Guidelines*

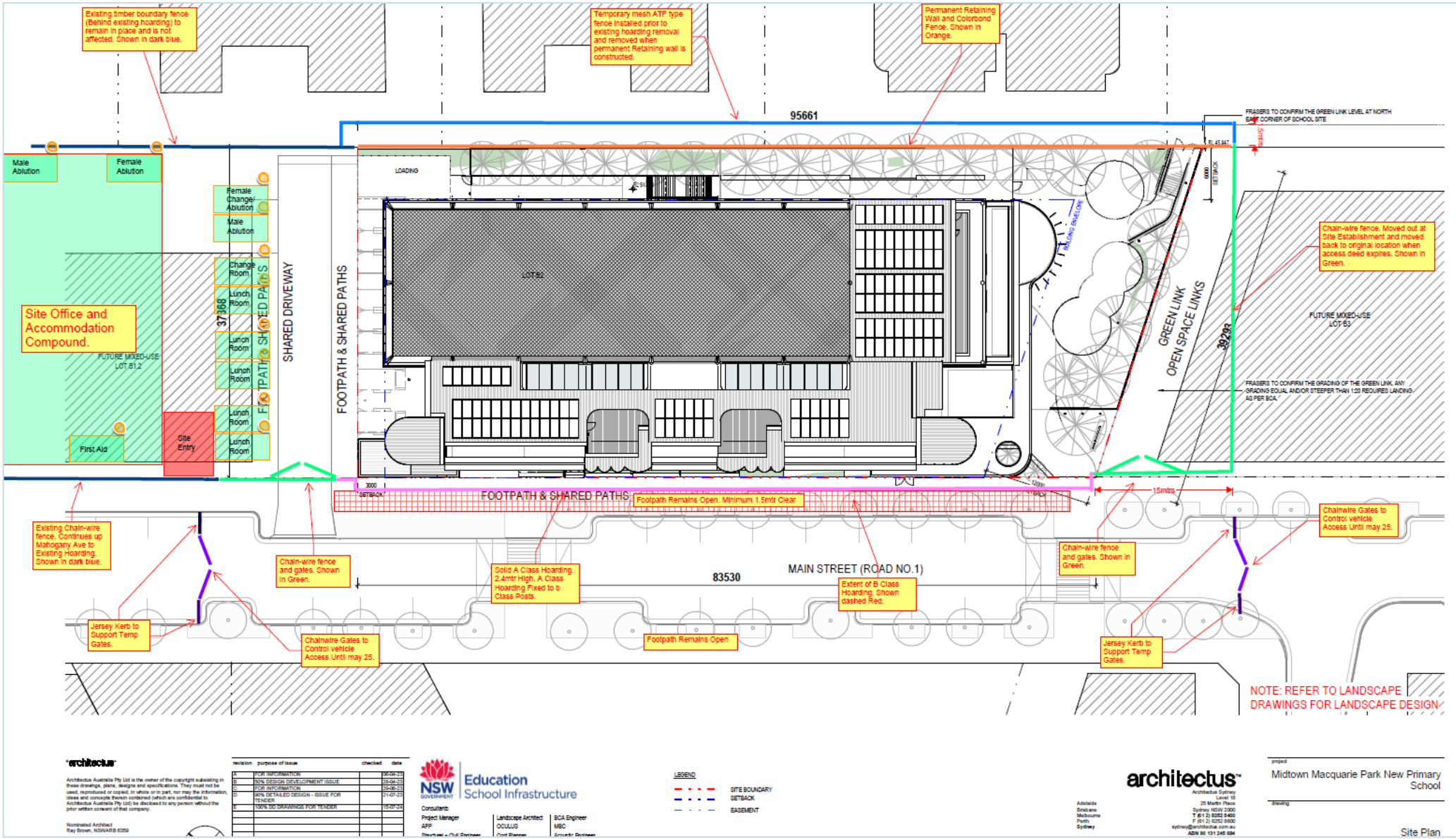
This categorisation does not include excavated soil (for example, soil excavated to level off a site prior to construction or to enable foundations to be laid or infrastructure to be constructed).

Appendix 2. Construction Site

Below are both the Site Plan and short description of the site features;

- Waste and materials are to be stored onsite.
- Storage locations will be centred behind the site office compound with access to hardstand and supporting the use of HRV.
- Vehicle access is available from several locations;
  - Lyonpark Rd via a new access bridge
  - Herring Rd to Main Street
- Both roads support heavy vehicle (HRV) access, and further, the Neighbourhood Street indicated in pink, forms a loop road to effectively enable a U-turn facility for vehicles.
- Blue shaded zones marked as ‘Loading and Logistic Zones’ are the transport routes within the site.


CPB RADIUS
LOADING AND LOGISTIC ZONE - 25mtr x 10mtr Loading and logistics zone on temp hard stand.
Site Office Compound
Site Amenities
Main Site Entry
SHARED DRIVEWAY
FOOTPATH & SHARED PATHS
95657
LOADING
Concrete Static Line
CPB
Hoist
Tower Crane
Temp Sediment Basin. 96m3.
FRASERS TO CONFIRM THE GREEN LINK LEVEL AT NORTH EAST CORNER OF SCHOOL SITE
Conc Pump
Conc Agi
Conc Agi
GREEN LINK OPEN SPACE LINKS
39283
FUTURE MIXED-USE
LOADING AND LOGISTIC ZONE - 25mtr x 10mtr Pumping Compound on temp hard stand.
FRASERS TO CONFIRM THE GRADING OF THE GREEN LINK. ANY GRADING EQUAL AND/OR STEEPER THAN 1:20 REQUIRES LANDING AS PER BCA
FOOTPATH & SHARED PATHS
Loading Platform
Primary Loading Zone
Conc Agi
Mahogany Ave
83517
CRANE RADIUS
NOTE: REFER TO LANDSCAPE DRAWINGS FOR LANDSCAPE DESIGN
architectus
Education
School Infrastructure
LEGEND
SITE BOUNDARY
SETBACK
EASEMENT
architectus
Midtown Macquarie Park New Primary School
Site Plan
MPS-ARC-ZZ-ZZ-DR-A-0012
D


Existing timber boundary fence (Behind existing hoarding) to remain in place and is not affected. Shown in dark blue.
Temporary mesh ATF type fence Installed prior to existing hoarding removal and removed when permanent Retaining wall is constructed.
Permanent Retaining Wall and Colorbond Fence. Shown in Orange.
95661
Male Ablution
Female Ablution
Female Changer/ Ablution
Male Ablution
Change Room
Lunch Room
Lunch Room
Lunch Room
Lunch Room
Lunch Room
Site Office and Accommodation Compound.
FUTURE MIXED-USE LOT 81,2
First Aid
Site Entry
37366
FOOTPATH & SHARED PATHS
SHARED DRIVEWAY
FOOTPATH & SHARED PATHS
LOADING
LOT 82
BUILDING ENVELOPE
GREEN LINK OPEN SPACE LINKS
39293
FUTURE MIXED-USE LOT 83
FRASERS TO CONFIRM THE GREEN LINK LEVEL AT NORTH EAST CORNER OF SCHOOL SITE
FRASERS TO CONFIRM THE GRADING OF THE GREEN LINK. ANY GRADING EQUAL AND/OR STEEPER THAN 1:20 REQUIRES LANDING AS PER BCA
Chain-wire fence. Moved out at Site Establishment and moved back to original location when access deed expires. Shown in Green.
3000 SETBACK
FOOTPATH & SHARED PATHS
Footpath Remains Open. Minimum 1.5mtr Clear
1.5mtrs
Existing Chain-wire fence. Continues up Mahogany Ave to Existing Hoarding. Shown in dark blue.
Chain-wire fence and gates. Shown in Green.
Solid A Class Hoarding. 2.4mtr High. A Class Hoarding Fixed to b Class Posts.
83530
MAIN STREET (ROAD NO.1)
Extent of B Class Hoarding. Shown dashed Red.
Chain-wire fence and gates. Shown in Green.
Chainwire Gates to Control vehicle Access Until may 25.
Jersey Kerb to Support Temp Gates.
Chainwire Gates to Control vehicle Access Until may 25.
Footpath Remains Open
Jersey Kerb to Support Temp Gates.
NOTE: REFER TO LANDSCAPE DRAWINGS FOR LANDSCAPE DESIGN
architectus
Education
School Infrastructure
LEGEND
SITE BOUNDARY
SETBACK
EASEMENT
Midtown Macquarie Park New Primary School
Site Plan