



# Construction Waste Management Plan

The Tweed Valley Hospital

At 771 Cudgen Road, Cudgen, NSW 2487

On behalf of ADCO Constructions Pty Ltd



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## Revision Record

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## Executive Summary

This construction waste management plan (CWMP) has been prepared by TTM to accompany a development application (DA) for a proposed “The Tweed Valley Hospital” development located at 771 Cudgen Road, Cudgen.

This report has been provided for the purpose of providing compliance with the Condition B17 of the Development Consent and Tweed Shire Council Development Control Plan (DCP). The content of the CWMP is written with the purpose of providing information for the construction phase of the development and will also be required to be updated by appropriate contractors during the construction stage.

The CWMP provides the following information:

- Profile of likely waste volumes during construction,
- Details of reuse, recycling or off-site disposal,
- Provide a list of locally available contractors/facilities,
- Location of temporary waste storage areas during construction and indicate access points.
- Provide details on removal of hazardous materials, the method of containment and control of emission of fibres to the air, details of approved waste disposal facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines, prior to the commencement of construction.

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# 1. Introduction

## 1.1. Background

This CWMP has been prepared by TTM to accompany a DA for a proposed “The Tweed Valley Hospital” development located at 771 Cudgen Road, Cudgen. It is understood that an SSD application has been lodged and subsequently has received development consent.

Significant waste volumes can also be generated during the construction phase and as such, this CWMP will assist to guide in reducing wastage and reusing materials.

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

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

This construction waste management analysis of the project has been undertaken to meet the requirements of the Tweed Shire DCP 2012. The goal of this document is in line with the DCP as well as the waste hierarchy (avoid, reduce, reuse, recycle, recover (energy), treat and dispose), shown in Figure 1.1, and aims to:

- Reduce the amount of construction waste going to landfill.
- Reduce amount of waste generated in the operation of a development from going to landfill and maximise resource recovery.
- Ensure waste from within developments can be collected and disposed in a manner that is healthy, efficient, minimises disruption to amenity, and is conducive to the overall minimisation of waste generated.

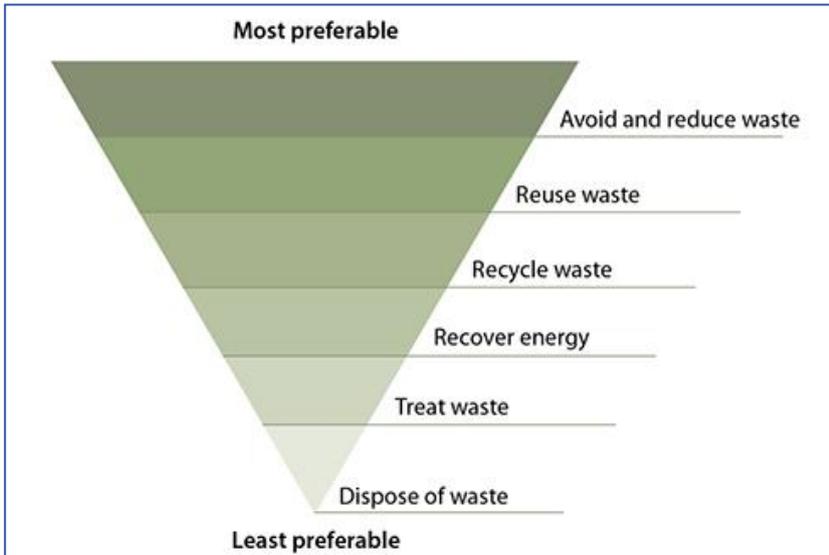


Figure 1.1 Waste Hierarchy

Source: <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/warr-strategy/the-waste-hierarchy>

## 1.2. Scope

This report will provide guidance on activities and design before works on site commence. It will also outline the requirements to comply with council and state legislation as well as actions required during excavation/earthworks and construction phases. The CWMP plan has been updated to include condition B17 of the development consent executed on 21 July 2021 (application reference number SSD-10353) as follows:

B17. The Construction Waste Management Sub-Plan (CWMS) must address, but not be limited to, the following:

- (a) detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations, and
- (b) removal of hazardous materials, particularly the method of containment and control of emission of fibres to the air, and disposal at an approved waste disposal facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines, prior to the commencement of construction.

The items covered within the report are explained in Table 1.1.

Table 1.1: Scope Items

Item	Explanation
Construction Waste Legislation	Legislative and regulatory considerations and guidelines regarding construction waste management, taking into account local and state government requirements
Planning for Excavation/ Earthworks and Construction	Waste contractor selection, waste material identification prior to commencement of works, and anticipated waste volumes
Storage Locations	On-site position and labelling of bins as well as access to bins during construction.
Construction	General guidelines for waste from construction activities

## 1.3. Regulatory Considerations

### 1.3.1. LGA Requirements

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

- Development consent - SSD- 10353 – Condition B17
- Tweed DCP 2012 – Section A15, Part B
- NSW Waste Avoidance and Resource Recovery Act 2001 and Strategy 2014-2021.

All lead contaminated materials must be handled and disposed of in accordance with the NSW Environment Protection Authority's requirements. Any asbestos removal must be removed and disposed of in accordance with the requirements of Work Cover and all lead contaminated materials must be handled and disposed of in accordance with the NSW Environment Protection Authority's requirements.

### 1.3.2. Council DCP

TTM have referred to the Tweed DCP regarding the specific site objectives which are outlines in Table 1.2.

Table 1.2: CWMP Objectives

Objectives	Comments	Compliance
To maximise avoidance, reuse and recycling of subdivision debris / refuse, demolition waste, building / construction materials, household generated waste and industrial / commercial waste.	The aim of this CWMP is to reduce the amount of waste disposed to landfill. Further detail is provided within the CWMP.	✓
To assist in achieving Federal and State Government waste minimisation targets in accordance with Regional Waste Plans.	This CWMP should be used as a guide to assist in achieving all waste minimisation targets.	✓
Minimise adverse environmental impacts associated with the waste management	Environmental impacts are required to be minimized.	✓
Ensure waste management systems are as intuitive for occupants as possible and readily accessible to occupants and service providers. .	This CWMP details further information on actions and minimizing waste generation and disposal.	✓
Maximum source separation and recovery of recyclables	All contractors must use techniques to reduce and minimize waste generation.	✓
Minimise risk to health and safety associated with handling and disposal of waste recycled material and ensure optimum hygiene.	Appropriate waste disposal equipment, all contractors must use proper PPE.	✓
Ensure appropriate resourcing of waste systems, including servicing and discourage illegal dumping by providing onsite storage, and removal services.	All construction waste streams will be appropriately stored and removed. A separate plan will be provided for on-going waste management.	✓
Ensure appropriate waste storage and collection facilities	Appropriate storage and facilities will be provided. A separate plan will be provided for on-going waste management.	✓

## 1.4. Site Location

The Tweed Valley Hospital site is located at 771 Cudgen Road, Cudgen, as shown in Figure 1.2. The property description is Lot 11 on DP 1246853 and is currently vacant land. Tweed Valley Hospital is located with road frontages to Cudgen Road and Turnock Street.



Figure 1.2: Site Location

(Source: [Tweed Valley Hospital Development](#))

## 1.5. Proposed Development

A five-level carpark is proposed to be developed in Tweed Valley Hospital site. The approximate area of carpark is 5000<sup>2</sup> area, with approximately 1,100 spaces anticipated to be catered for the Tweed Valley Hospital site.

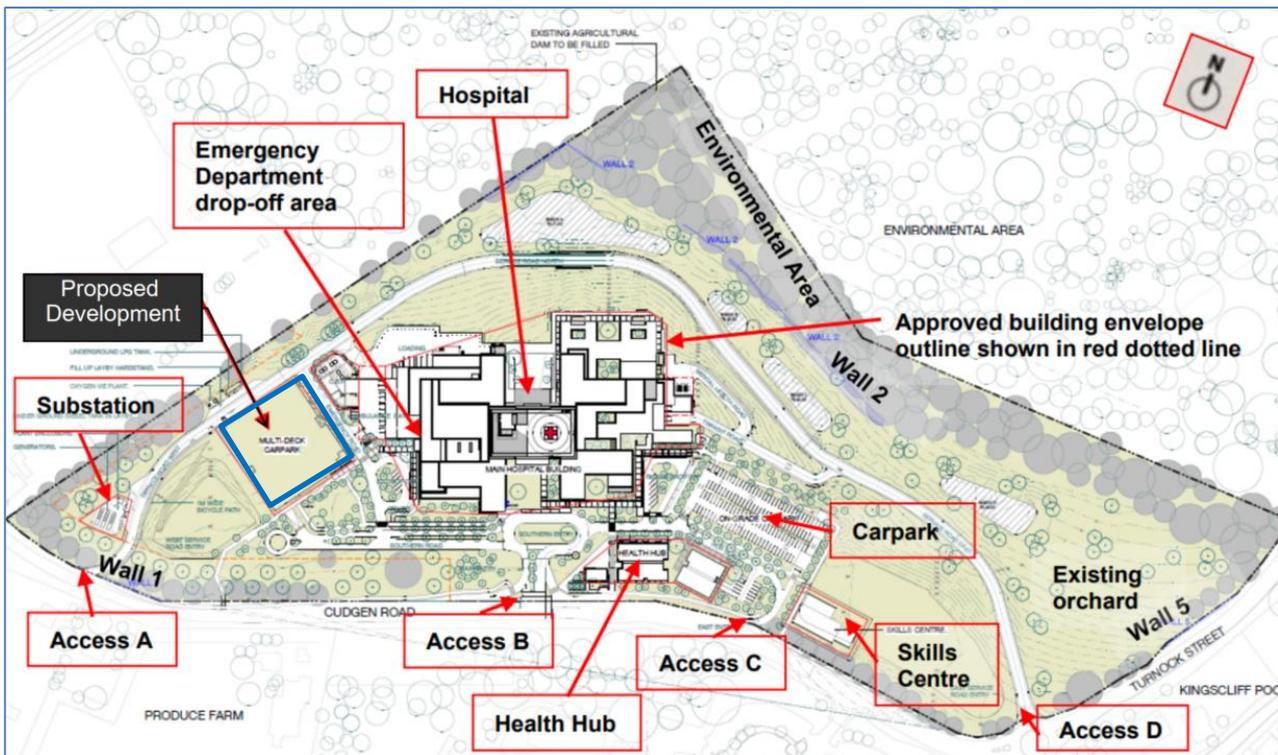


Figure 1.3: Carpark location

(Source: ADCO – Main Site Location Plan)

## 2. Construction Waste Legislation

### 2.1. Legislative Requirements

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

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

As part of the Development Approval, it will be a requirement to keep a copy of this CWMP along with proof of lawful disposal for all waste that is disposed of, or otherwise recycled from the site must be retained on site in a Waste Data File. Proof is to include a logbook with associated receipt/invoices, waste classification, and site validation certificate. All entries must include:

- Time and date.
- Description and size of waste.
- Waste facility used.
- Vehicle registration and company name.

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

### 2.2. Handling, Storage and Disposal

Each construction waste contractor has different processes for storage and collection methods, and as such, the site foreman will be responsible for liaising directly with the contractors to maximise safe and efficient methods are used.

Handling, storage and disposal of all waste streams generated on site is described in Sections 3-5 and in accordance with the following:

- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (Waste) Regulation 2014
- Waste Classification Guideline (department of Environment, Climate Change and Water, 2009)

### 2.2.1. Contaminated Land

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

### 2.2.2. Asbestos

There are specific laws relating to working with or around asbestos (*Work Health and Safety Regulation 2017*). An asbestos specialist should be engaged to identify if asbestos containing materials (ACM) are present and an appropriate removal process be undertaken. For more information, visit <http://www.safework.nsw.gov.au/health-and-safety/safety-topics-a-z/asbestos/asbestos-at-work>. Asbestos may be found in cement sheet walls and sheet roofing, backing to floor tiles, external cladding, switchboard backings and lagging insulation for water pipes.

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

## 3. Planning for Construction

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

### 3.1. Contractor Selection

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

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

A list of actions and responsibilities during the construction stage are provided in Appendix B to assist in construction planning.

### 3.2. Material Identification

Prior to commencement of works, it is recommended that construction contractors meet with site managers to identify those materials or items that are to be salvaged or reused during the excavation/earthworks or construction stages.

All other materials should then be categorised based on acceptance criteria for available recyclers (see Section 6). This presents a clear idea of those materials that are to be excluded from being sent offsite for recycling/reprocessing or for disposal to landfill.

Key principles to be followed during excavation/earthworks, in order of preference and generally in accordance with the waste hierarchy, include:

- Manual deconstruction of the following:
  - Materials that can be reused on site during further excavation/earthworks and/or construction stages,

- Materials of high cost to dispose/treat. This material should not be mixed with other generic building materials, as the entire load will be deemed as contaminated, and therefore the entire load will be charged at the higher rate,
  - High risk/dangerous materials (e.g. asbestos) by a licensed contractor / suitably qualified person, and
  - Items that will attract a high rebate (e.g. copper pipe).
- Materials that cannot be reused or recycled are to be disposed of to landfill.
  - Segregation of like materials (e.g. timber) and separate storage on site in bins, depending on market availability of recycling agents (see further discussion in Section 3.4).

Volumes will also be dependent upon the method of construction, and greater recovery rates will be achieved with dismantling of building structures by hand rather than with heavy machinery however this can also:

- Be time consuming,
- Have greater workplace health and safety risk, and
- Have significantly higher labour costs for little recompense for the level of segregation of materials (as it is more labour intensive).

Therefore, it is recommended that those items of high costs to dispose, high rebate value (e.g. copper pipe), or have special handling requirements (e.g. lead pipe, asbestos and plasterboard) should be deconstructed by hand in the appropriate stages where possible, and segregated and disposed of accordingly. The remainder of materials may then be deconstructed either in phases to maximise segregation, or if a recycling disposal point accepts mixed materials and sorts at their processing plant, only then should materials be placed into mixed material bins.

### 3.3. Education

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

### 3.4. Construction Volumes

Without knowing quantities of materials that will be brought on to site, it is difficult to accurately estimate volumes of materials that will require recycling or landfilling. Therefore, without this information, TTM have provided industry knowledge on wastage percentages, of regularly used construction materials in the table below. The below tables have been estimated from the baseline volumes indicated within the following documents:

- Construction Waste Management Plan Guidelines - A Resource for Western Australian Local Government, Developers, Property Owners and Builders.

[http://www.wastenet.net.au/Profiles/wastenet/Assets/ClientData/DocumentCentre/WAL2708\\_Construction\\_waste\\_A4\\_v2\\_singles.pdf](http://www.wastenet.net.au/Profiles/wastenet/Assets/ClientData/DocumentCentre/WAL2708_Construction_waste_A4_v2_singles.pdf)

- Northern Beaches Construction Waste Management Plan Guidelines

[www.northernbeaches.nsw.gov.au/sites/default/files/documents/general-information/building-waste/waste-management-guidelines-2016-chapter-2-construction.pdf](http://www.northernbeaches.nsw.gov.au/sites/default/files/documents/general-information/building-waste/waste-management-guidelines-2016-chapter-2-construction.pdf)

Table 3.1 indicates the anticipated construction waste volumes by percentage of total material.

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

Material	Total amount of material (%)
Plasterboard	5-10%
Concrete	60-75%
Bricks	5-10%
Tiles	2-5%

Table 3.2 demonstrates the conversion factor to convert volumes to tonnages for these materials.

Table 3.2: Construction Waste Volumes (Tonnes/m<sup>2</sup>)

Material	Tonnes/m <sup>2</sup>
Plasterboard	2.4
Concrete	1.0
Bricks	0.75
Tiles	2.4

As anticipated volumes are currently unknown, it is essential that the construction contractor complete the table in Appendix A as soon as known quantities of materials are calculated. An estimation of volumes has been provided below and are indicative only based on the anticipated volumes in the Northern Beaches Construction Waste Management Plan Guidelines.

Table 3.3: Anticipated Construction Waste Volumes

Material	Estimated Material for Construction (per 100m <sup>3</sup> )
Bricks	1-3m <sup>3</sup>
Tiles	0-0.5m <sup>3</sup>
Concrete	2-3m <sup>3</sup>
Plasterboard	0-0.5m <sup>3</sup>
Roof Sheeting	1-3m <sup>3</sup>
Metal	2-3m <sup>3</sup>
Other Waste	5-10m <sup>3</sup>
<b>Total</b>	<b>11-23m<sup>3</sup></b>

## 4. Construction

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

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

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

### 4.1. Waste Avoidance

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

### 4.2. Reuse

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

### 4.3. Recycling

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

### 4.4. Contaminated Items

Contaminated items must go to an appropriately licensed facility with appropriately licensed transporter.

### 4.5. Landfill

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

### 4.6. Recycled Materials

All materials listed above are suitable for recycling must be transported to an appropriately registered and accredited business to the satisfaction of the Principal Certifying Authority. Section 6.2 provides a list recycling, reuse and recovery services contractors and facilities for appropriate disposal of materials.

## 5. Storage Locations

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

All bins should be appropriately labelled, clearly visible to and from the property, easily accessible and stored in a well-lit area. Each stage will require a separate bin / stockpile location. Potential bins and stockpile locations as shown in

Figure 5.1.

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

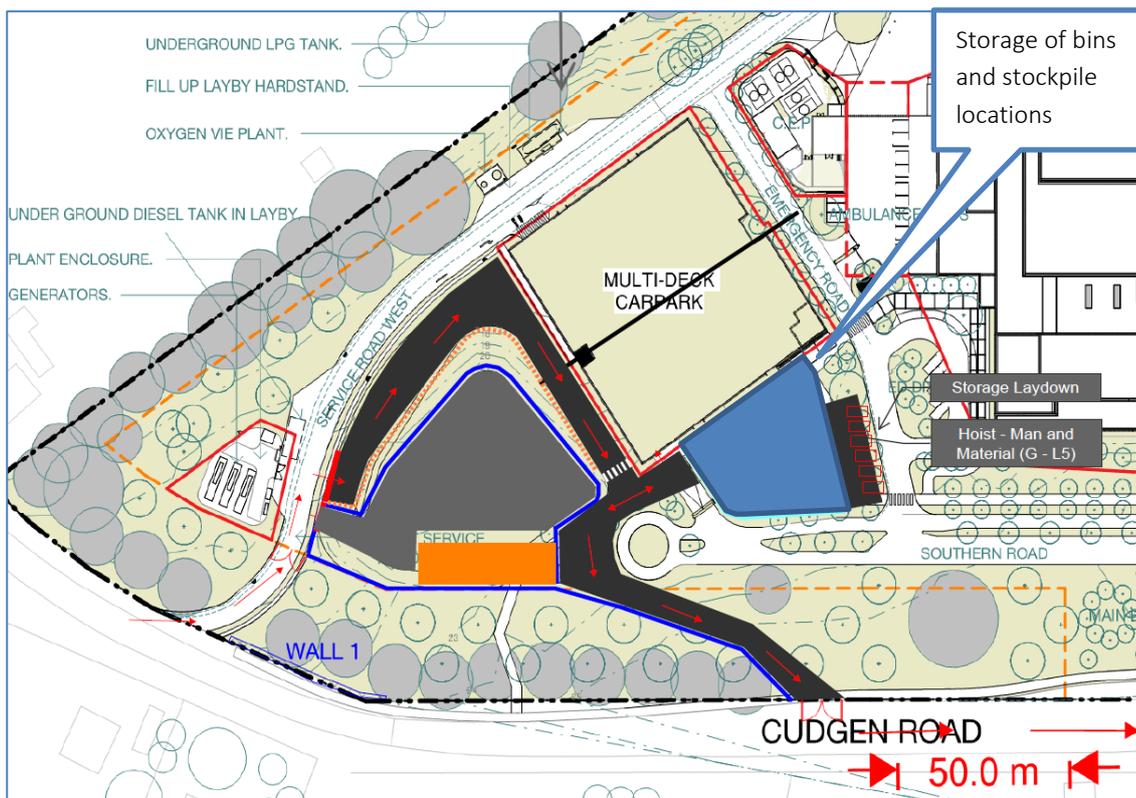


Figure 5.1 Indicative waste storage location on site

Source: ADCO – Site Establishment Plans

## 6. Recycling Contractors

### 6.1. Recycling, Reuse and Recovery Guiding Principles

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

Resource recovery orders and resource recovery exemptions allow some wastes to be beneficially and safely re-used independent of the usual NSW laws that control waste. On-site separation can reduce recycling costs and simplifies the sorting process.

### 6.2. Contractors and Services

The following is an indicative list of a select range of facilities in the Tweed Valley Region. This list provides various services for handling the recycling, reuse and disposal of construction waste for the proposed project.

Table 6.1: Recycling, Reuse and Recovery Services Contractors

Company	Contact / Location Details
Building Waste Removal Sydney - Household & Commercial Disposal Sydney	A: 64 Ourimbah Rd, Tweed Heads NSW 2485 Ph: 0413 000 624
Tweed Skips	A: 40 Industry Dr, Tweed Heads South NSW 2486. Ph: 0421 999 018
BML 4m3 Mobile Skip Bin Hire & Rubbish Removal	A: 31 Boyd St, Tweed Heads NSW 2485 Ph: 1300 421 700
Raptor Waste Management	A: 49 Boyd St, Tweed Heads NSW 2485 Ph: 0435 097 867
About Rubbish Removals	A: 15/1 Falcon Way, Tweed Heads NSW 2486 Ph: 0478 131 415
Sorted Waste	A: South Golden Beach, NSW Ph: 0408 210 772
A1	A: 13/27-29 Morton St, Chinderah NSW 2487 Ph: 0418 992 111
Solo Resource Recovery	A: 86-88 Chinderah Bay Drive, Chinderah, NSW 2487 Ph: 02 6674 7656
Veolia Environmental Services / Collex	A: 43 Alex Fisher Dr, Burleigh Heads QLD 4220 Ph: 1800 022 788

## Appendix A Construction Waste Materials

To be completed by contractors

Waste and/or Recyclable Materials		Destination		
		Reuse and Recycling		Disposal
Possible Materials Generated	Estimated construction volume (m <sup>3</sup> ) or Area (m <sup>2</sup> ) or weight (t) (Contractor to confirm)	On-site (How will materials be reused and/or recycled on-site?)	Off-site (Specify the contractor and recycling facility)	Specify the contractor and/or landfill site/transfer station
Timber (specify)				
Excavation material				
Concrete				
Bricks				
Tiles				
Metal(specify)				
Glass				
Plasterboard (off cuts)				
Fixtures and fittings				
Floor coverings				
Green waste organics				
Containers				
Paper/cardboard				
Residual waste				
Hazardous/special waste				
Other				
<p><b>How and where will materials be stored on-site for reuse and recycling?</b> e.g. in skip bins located near entry.</p>				
<p><b>How will site operations be managed to ensure minimal waste creation and maximum reuse and recycling?</b> e.g. staff training, feedback from waste management service provider, on-going checks by site managers, separate area set aside for sorted wastes, clear signage for waste areas etc.</p>				
<p><b>How will this plan be evaluated, and who is responsible for the evaluation?</b> e.g. feedback from staff collected by the site manager.</p>				

## Appendix B    Action and Responsibilities During Construction Stage

Stage	Action	Responsibility	Checklist
Pre-construction	Appointment of site manager/foreman with clear responsibilities on reduction of waste to landfill.	Project manager	
	Review construction targets set by State government.	Project / Site manager	
	Review legislated documentation requirements.	Project and site manager	
	Appoint contractors who are committed to achieving compliance with associated targets and processes.	Project and site manager	
	Selection of appropriate recycling contractors and analysis of site access requirements and constraints.	Project manager, site manager and possibly demolition contractor	
Construction	Sourcing of recycling agents/contractors and transportation – gain an understanding of their site access requirements and bin choices.	Project / Site manager	
	Installation of any barrier fencing to protect pedestrian safety, access pathways, and stockpiles to be protected/retained.	Project manager, site manager and construction contractor	
	Identification of best bin storage areas for the number of material streams and collection vehicle access, ensuring unimpeded access for users and waste collection contractors.	Project / Site manager	
	Installation of recycling bins.	Project / Site manager	
	Preparation of access points and installation of safety and educational signage at waste storage areas.	Project / Site manager	
	Site induction for all staff to include discussion on commitment to waste minimisation, reuse and recycling, available stockpiles of salvaged materials, how to use bins appropriately, and who to contact for any issues.	Site manager	
	Regular checks on bin capacity and scheduling of removal contractors.	Site manager	
	Waste Data File maintained and updated with each collection.	Site manager and construction contractor	