



Site Waste Minimisation and Management Plan

SINSW - Wilton Public School

11 Greenbridge Drive, Wilton NSW 2571

PREPARED FOR

School Infrastructure NSW (SINSW)
C/- MBB Group
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Sydney NSW 2000
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Due Diligence Report

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Table of Contents

1. Introduction	3
1.1 General.....	3
1.2 Applicant Details	3
1.3 Project Details and Description	3
1.4 Referenced Documents	5
1.5 Limitations of Investigation	5
2. Demolition	6
2.1 General.....	6
2.2 Aim	6
2.3 Objectives.....	6
2.4 Controls/Requirements	6
3. Construction	8
3.1 General.....	8
3.2 Aim	8
3.3 Objectives.....	8
3.4 Controls/Requirements	8
4. Ongoing Operation.....	10
4.1 General.....	10
4.2 Aim	10
4.3 Objectives.....	10
4.4 Controls/Requirements	10
4.5 Generation Rates	11

1. Introduction

1.1 General

Northrop Consulting Engineers (Northrop) has been engaged by School Infrastructure NSW (SINSW) as the waste consultant for the development to prepare a Site Waste Minimisation and Management Plan (SWMMP).

This SWMMP outlines the demolition, construction and operation waste management and waste generations.

1.2 Applicant Details

Detail	Response
Application No.	1
Name	Nicholas Grinter
Address	Level 11, 345 George Street, Sydney NSW 2000
Phone Number	02 9241 4188
Email	ngrinter@northrop.com.au

1.3 Project Details and Description

Detail	Response
Address of Development	11 Greenbridge Drive, Wilton NSW 2571 (see Figure 1)
Existing waste generation buildings and other structures currently on the site	27 classrooms (see Table 1)
Description of proposed development	Net increase of 11 classrooms (see Table 1)

Figure 1 shows the general locality of the site. The site is bound by Greenbridge Drive, Woodward Road, Charlton Street and associated housing and Kenniff Street.

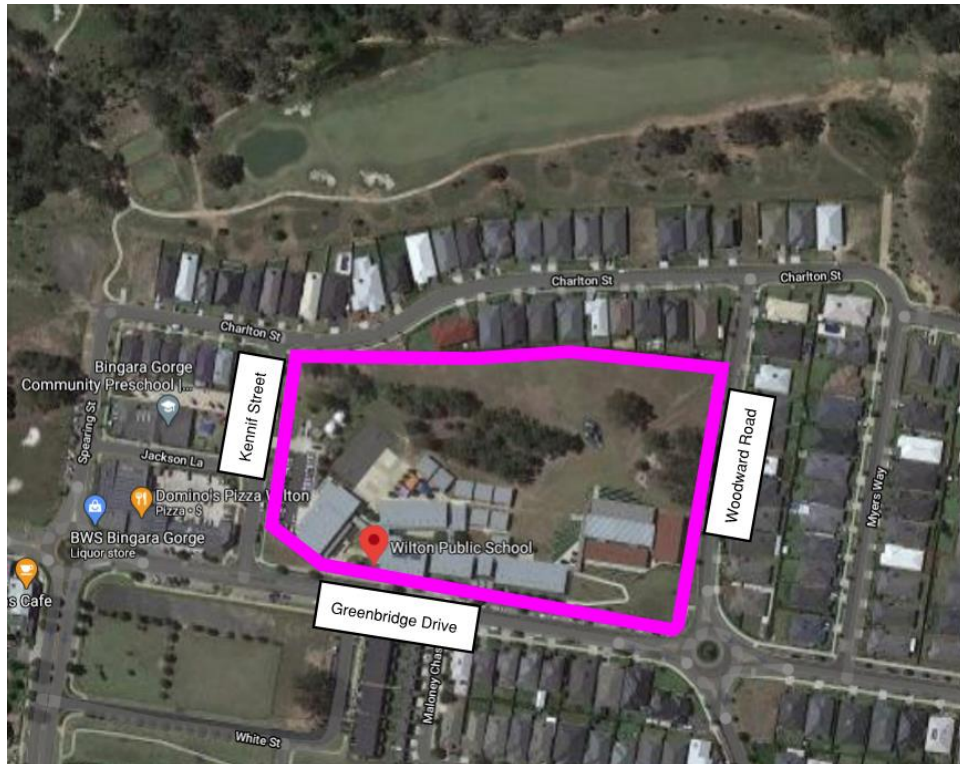


Figure 1 Site Aerial Image

Table 1 Classroom Summary

	Current			Proposed			Change		
	PTS	DTS	Total	PTS	DTS	Total	PTS	DTS	Total
Primary School (Homebases)	10	11	21	30	0	30	20	-11	9
Primary School (Support Classes)	6	0	6	8	0	8	2	0	2

1. PTS – Permanent teaching space
2. DTS – Demountable teaching space
3. (Homebases) – Mainstream primary school classes with a maximum 23 students
4. (Support Classes) – For students with varying learning needs with a maximum of 12 students

The following notes the maximum number of students at Wilton Primary School during current conditions:

$$21 \text{ Homebases} \times 23 \text{ Students} + 6 \text{ Support Classes} \times 12 \text{ Students} = 555 \text{ Students}$$

The following noted the maximum number of students at Wilton Primary School with a total of 30 Homebases and 8 Support Classes:

$$30 \text{ Homebases} \times 23 \text{ Students} + 8 \text{ Support Classes} \times 12 \text{ Students} = 786 \text{ Students}$$

1.4 Referenced Documents

Document Name	Revision	Date Issued
Department of Environment and Climate Change NSW – Model “Waste Not” DCP Chapter 2008 – A Site Waste Minimisation and Management Chapter for Consolidated Development Control Plans	-	July 2008
Randwick City Council Waste Management Guidelines Appendix A Waste Generation Rates	-	Accessed 01.12.2020
Various correspondence between Northrop and MBB Group	-	Various

1.5 Limitations of Investigation

This report is based on the accuracy and completeness of the information provided at the time of the report. Northrop takes no responsibility for any misrepresentation, incompleteness, or inaccuracies provided within that information. Should any other information become available this report must be reviewed accordingly.

This report has been complete upon a desktop study and information provided by the client. This report has not included reference to swept paths and has been complete using sketches, photography by others and aerial images.

This report has been complete prior to the commencement of construction. The contractor engaged for the works are to complete a waste management plan for the demolition and construction phases of the works. Estimates of waste generation are to be complete by the demolition and construction phases of the works if requested from authorities.

Storage and disposal of liquid waste, such as oils and chemicals, are not covered by this Site Waste Minimisation and Management.

This site waste management plan has assumed waste generation based on the Randwick City Council Waste Management Guidelines Appendix A Waste Generation Rates. Wilton Primary School are to monitor the Operational Waste procedures and make adjustments as required.

2. Demolition

2.1 General

The demolition stage provides scope for waste minimisation. Consideration to adaptive reuse opportunities of materials.

2.2 Aim

The principal aim of Section 2 of this SWMMP is to identify how to achieve maximum resource recovery and minimise residual waste from demolition activities.

2.3 Objectives

- Maximise reuse and recycling of materials.
- Minimise waste generation.
- Ensure appropriate storage and collection of waste.
- Minimise the environmental impacts associated with waste management.
- Avoid illegal dumping.
- Promote improved project management.

2.4 Controls/Requirements

- The contractor is to pursue adaptive reuse opportunities of buildings/structures.
- The contractor is to identify all waste likely to result from the demolition, and opportunities for reuse of materials.
- The contractor is to facilitate reuse/recycling by using the process of 'deconstruction', where various materials are carefully dismantled and sorted.
- The contractor is to reuse or recycle salvaged materials onsite where possible.
- The contractor is to nominate an area for the storage of materials for use, recycling and disposal (giving consideration to slope, drainage, location of waterways, stormwater outlets, vegetation, and access and handling requirements).
- The contractor is to provide separate collection bins or areas for the storage of residual waste.
- The contractor is to clearly 'signpost' the purpose and content of the bins and storage areas.
- The contractor is to implement measures to prevent damage by the elements, odour and health risks, and windborne litter.
- The contractor is to minimise site disturbance, limiting unnecessary excavation.

When the contractor is implementing a SWMMP:

- Footpaths, public reserves, street gutters are not used as places to store demolition waste or materials of any kind without Council approval.
- Any material moved offsite is transported in accordance with the requirements of the Protection of the Environment Operations Act (1997).
- Waste is only transported to a place that can lawfully be used as a waste facility.
- Generation, storage, treatment and disposal of hazardous waste and special waste (including asbestos) is conducted in accordance with relevant waste legislation administered by the EPA and relevant Occupational Health and Safety legislation administered by WorkCover NSW.
- Evidence such as weighbridge dockets and invoices for waste disposal or recycling services are retained.

Note: Materials that have an existing reuse or recycling market should not be disposed of in a landfill. Reuse and recycling opportunities are decreased when asbestos is not carefully removed and segregated from other waste streams.

As part of this SWMMP, sketch SK1000 has been attached which shows:

- The potential bin/stockpile configuration.
- The potential location of the bins/stockpiles.
- The potential arrangements for secure separation of students and school staff from the bin area.
- The potential bin servicing arrangements including directional flow of waste collection vehicles onto and off site and traffic management requirements for the access at Woodward Road.

Table 2 identifies possible disposal arrangements for waste streams which may arise from the demolition work should the contractor not be able to reuse or recycle the materials.

Table 2 Demolition Waste

Type of Waste Generated	Proposed Disposal Facility
Excavation material	Remondis Australia PTY LTD - Picton
Timber	Remondis Australia PTY LTD - Picton
Concrete	Remondis Australia PTY LTD - Picton
Bricks/pavers	Remondis Australia PTY LTD - Picton
Tiles	Remondis Australia PTY LTD - Picton
Metal (specify)	Remondis Australia PTY LTD - Picton
Glass	Remondis Australia PTY LTD - Picton
Furniture	Remondis Australia PTY LTD - Picton
Fixtures and Fittings	Remondis Australia PTY LTD - Picton
Floor coverings	Remondis Australia PTY LTD - Picton
Packaging (used pallets, pallet wrap)	Remondis Australia PTY LTD - Picton
Garden organics	Remondis Australia PTY LTD - Picton
Containers (cans, plastic, glass)	Remondis Australia PTY LTD - Picton
Paper/cardboard	Remondis Australia PTY LTD - Picton
Residual Waste	Remondis Australia PTY LTD - Picton

The contractor for the proposed works are to nominate the estimated volume of waste for each stream and track the waste volume of each stream leaving site during the works.

3. Construction

3.1 General

Attention to design, estimating of materials and waste sensitive construction techniques and management practices can achieve significant rewards in managing waste.

3.2 Aim

The principal aim of Section 3 of this SWMMP is to identify how to achieve maximum resource recovery and minimise residual waste from construction activities.

3.3 Objectives

- Maximise reuse and recycling of materials.
- Minimise waste generation.
- Ensure appropriate storage and collection of waste.
- Minimise the environmental impacts associated with waste management.
- Avoid illegal dumping.
- Promote improved project management.

3.4 Controls/Requirements

- The contractor is to estimate volumes of materials to be used and incorporate these volumes into a purchasing policy so that the correct quantities are purchased.
- The contractor is to identify potential reuse/recycling opportunities of excess construction materials.
- The contractor is to incorporate the use of prefabricated components and recycled materials.
- The contractor is to arrange for the delivery of materials so that materials are delivered 'as needed' to prevent the degradation of materials through weathering and moisture damage.
- The contractor is to consider organising to return excess materials to the supplier or manufacturer.
- The contractor is to allocate an area for the storage of materials for use, recycling and disposal (considering slope, drainage, location of waterways, stormwater outlets and vegetation).
- The contractor is to arrange contractors for the transport, processing and disposal of waste and recycling. The contractor is to ensure that all contractors are aware of the legal requirements for disposing of waste.
- The contractor is to promote separate collection bins or areas for the storage of residual waste.
- The contractor is to clearly 'signpost' the purpose and content of the bins and storage areas.
- The contractor is to implement measures to prevent damage by the elements, odour and health risks, and windborne litter.
- The contractor is to minimise site disturbance and limit unnecessary excavation.
- The contractor is to ensure that all waste is transported to a place that can lawfully be used as a waste facility.
- The contractor is to retain all records demonstrating lawful disposal of waste and keep them readily accessible for inspection by regulatory authorities such as council, DECC or WorkCover NSW.

- Prior to commencement of construction, the contractor is to outline how measures for waste avoidance have been incorporated into the design, material purchasing and construction techniques of the development.

As part of this SWMMP, sketch SK1000 has been attached which shows:

- The potential bin/stockpile configuration.
- The potential location of the bins/stockpiles.
- The potential arrangements for secure separation of students and school staff from the bin area.
- The potential bin servicing arrangements including directional flow of waste collection vehicles onto and off site and traffic management requirements for the access at Woodward Road.

Table 3 identifies possible disposal arrangements for waste streams which may arise from the demolition work should the contractor not be able to reuse or recycle the materials.

Table 3 Construction Waste

Type of Waste Generated	Proposed Disposal Facility
Excavation material	Remondis Australia PTY LTD - Picton
Timber	Remondis Australia PTY LTD - Picton
Concrete	Remondis Australia PTY LTD - Picton
Bricks/pavers	Remondis Australia PTY LTD - Picton
Tiles	Remondis Australia PTY LTD - Picton
Metal (specify)	Remondis Australia PTY LTD - Picton
Glass	Remondis Australia PTY LTD - Picton
Furniture	Remondis Australia PTY LTD - Picton
Fixtures and Fittings	Remondis Australia PTY LTD - Picton
Floor coverings	Remondis Australia PTY LTD - Picton
Packaging (used pallets, pallet wrap)	Remondis Australia PTY LTD - Picton
Garden organics	Remondis Australia PTY LTD - Picton
Containers (cans, plastic, glass)	Remondis Australia PTY LTD - Picton
Paper/cardboard	Remondis Australia PTY LTD - Picton
Residual Waste	Remondis Australia PTY LTD - Picton

4. Ongoing Operation

4.1 General

Commercial Developments including education establishments present an array of unique waste minimisation opportunities and management requirements.

4.2 Aim

To ensure new developments and changes to existing developments within Wilton Primary School are designed to maximise resource recovery (through waste avoidance, source separation and recycling); and to ensure appropriate well-designed storage and collection facilities are accessible for Wilton Primary School and service providers.

4.3 Objectives

- Ensure appropriate waste storage and collection facilities.
- Maximise source separation and recovery of recyclables.
- Ensure waste management systems are as intuitive for occupants as possible and readily accessible to occupants and service providers.
- Ensure appropriate resourcing of waste management systems, including servicing.
- Minimise risk to health and safety associated with handling and disposal of waste and recycled material and ensure optimum hygiene.
- Minimise adverse environmental impacts associated with waste management.
- Discourage illegal dumping by providing on site storage, and removal services.

4.4 Controls/Requirements

- Sketch SK1001 submitted with the SWMMP shows:
 - The location of the designated waste and recycling area, sized to meet the waste and recycling needs of all users.
 - The location of temporary waste and recycling storage areas. These are to be of sufficient size to store a minimum of one day's worth of waste.
 - An identified collection point for the collection and emptying of waste and recycling waste bins.
 - The path of travel for moving bins from the storage area to the identified collection point (if collection is to occur away from the storage area).
 - The on-site path of travel for collection vehicles (if collection is to occur on-site). • There must be convenient access from each classroom to the waste/recycling storage area.
- There is step-free access between the point at which bins are collected/emptied and the waste/recycling storage area.
- There is a designated collection area which is pre-existing for the development prior to the addition of classrooms.
- There are bins in each classroom and the playground of the school. Waste from these bins are then transferred to the bins in the waste/recycling storage area.
- There is a contract between Remondis Australia PTY LTD and Wilton Primary School for the collection of waste and recycling.
- Between collection periods, all waste/recyclable materials generated on site must be kept in enclosed bins with securely fitting lids so the contents are not able to leak or overflow. Bins must be stored in the designated waste/recycling storage area.

- Arrangements must be in all parts of the development for the separation of recyclable materials from general waste. Arrangements must be in all parts of the development for the movement of recyclable materials and general waste to the main waste/recycling storage area.
- The waste/recycling storage area accommodates bins that are of sufficient volume to contain the quantity of waste generated between collections.
- The waste/recycling storage area must provide separate containers for the separation of recyclable materials from general waste.
- The type and volume of containers used to hold waste and recyclable materials must be compatible with the collection practices of the nominated waste contractor.
- The existing waste area is being used for these development works.
- Where possible, waste/recycling containers should be collected from a rear lane access point. Consideration should be given to the time of day at which containers are collected so as to minimise adverse impacts upon residential amenity, pedestrian movements and vehicle movements.
- The size and layout of the waste/recycling storage area must be capable of accommodating reasonable future changes in use of the development.
- A waste/recycling area is assumed to be provided for each and every kitchen area in a development. Each waste/recycling area must be of sufficient size to hold a minimum of a single day's waste and to hold separate containers for general waste and recyclable materials.
- It has been assumed that Wilton Primary School does not produce trade waste.
- Arrangements must be in place regarding the regular maintenance and cleaning of waste management facilities. It would be assumed that Wilton Primary School has arrangements in place.

4.5 Generation Rates

To determine the Operational Waste for Wilton Primary School, documented waste generation for educational establishments and information provided from Wilton Primary School has been assessed.

4.5.1 Documentation of Waste Generation Rates

Investigation into waste generation rates have been undertaken by Northrop.

The Wollondilly Shire Council development control plan has been reviewed for waste generation rates. There were no waste generation rates however the NSW Office of Environment and Heritage's Model Waste was been referenced.

The NSW Office of Environment and Heritage's Model Waste did not list any waste generation rates.

The Randwick City Council Waste Management Guidelines Appendix A Waste Generation Rates was reviewed. In general, there were consistencies between the rates used for Randwick City Council and the rates provided by the NSW Office of Environment and Heritage and hence, the Randwick City Council rates have been adopted.

For primary school educational facilities as per Randwick City Council, the typical waste generation rates are as follows:

- Garbage – 1.5L/day/student
- Recycling – 0.5L/day/student (recyclable paper)

4.5.2 Waste Generation Rates as Provided by Wilton Primary School

Northrop has been informed by Wilton Primary School and MBB Group (on behalf of Wilton Primary School):

- Cleaners empty bins in the classrooms and the playground daily.
- The waste skip bin is collected weekly and the recycling skip bin is collected fortnightly.
- The skip bins are full or overflowing when collected.
- Each classroom has a 10L waste paper basket.
- Bins in the playground are 120L wheelie domestic style bins typical for residences.
- There are currently 21 classes with maximum 23 students (Homebase).
- There are currently 6 classes with maximum 12 students (Support Classes).

As the waste bin is 3,000L collected once a week (assuming a 10% factor for over flow as described), the following would the waste generated for a student on a daily basis:

$$3,000L \times 10\% \div 555 \text{ Students} \div 5 \text{ days per week} = 1.2L \text{ per student per day}$$

As the recycling bin is 3,000L collected once a fortnight (assuming a 10% factor for over flow as described), the following would the waste generated for a student on a daily basis:

$$3,000L \times 10\% \div 555 \text{ Students} \div 10 \text{ days per fortnight} = 0.6L \text{ per student per day}$$

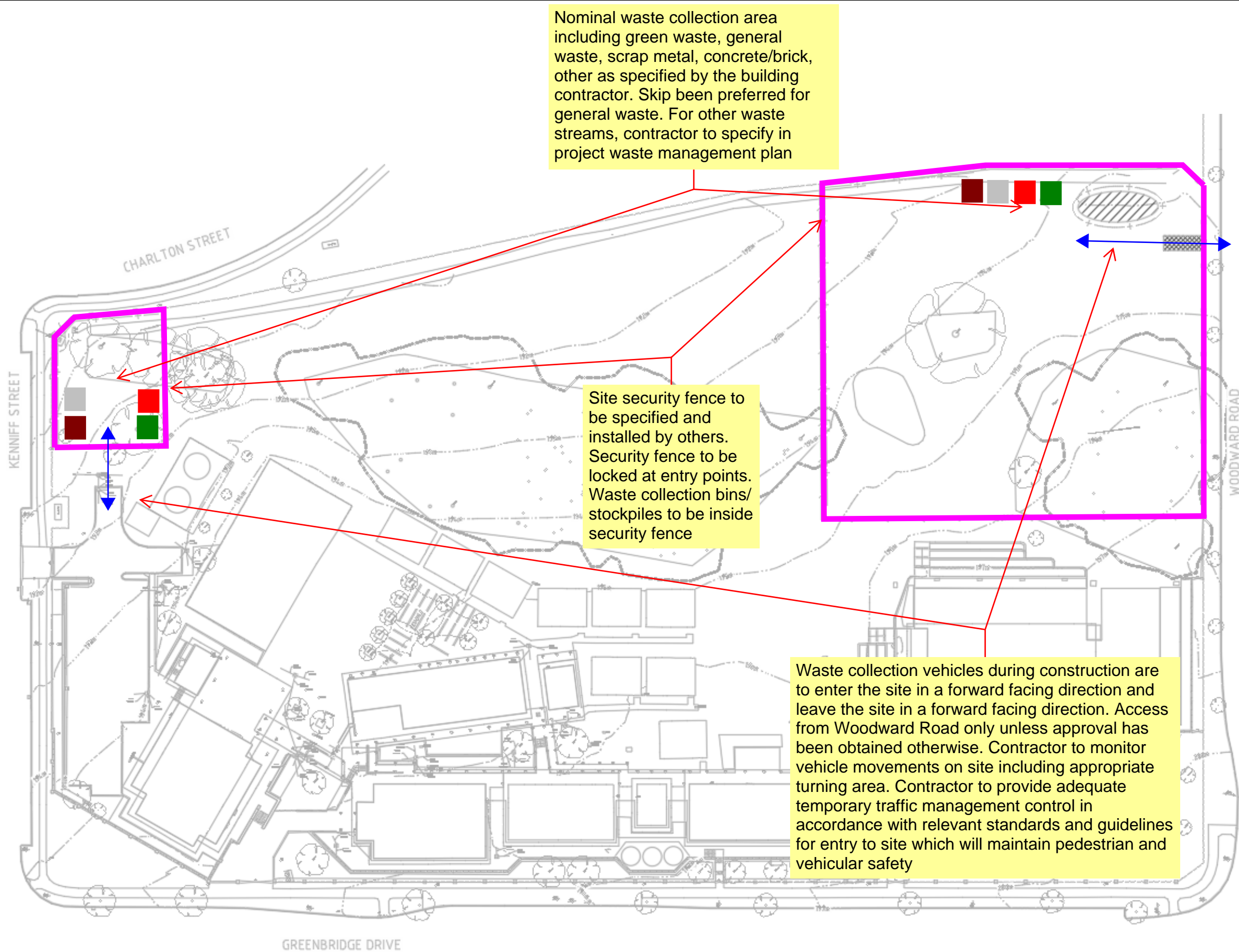
4.5.3 Ongoing Operation Waste

For the purpose of this SWMMP, the highest rates between the Randwick City Council and waste generation rates as per the current use of Wilton Primary School have been used, i.e.:


- Garbage – 1.5L/day/student
- Recycling – 0.6L/day/student (recyclable paper)

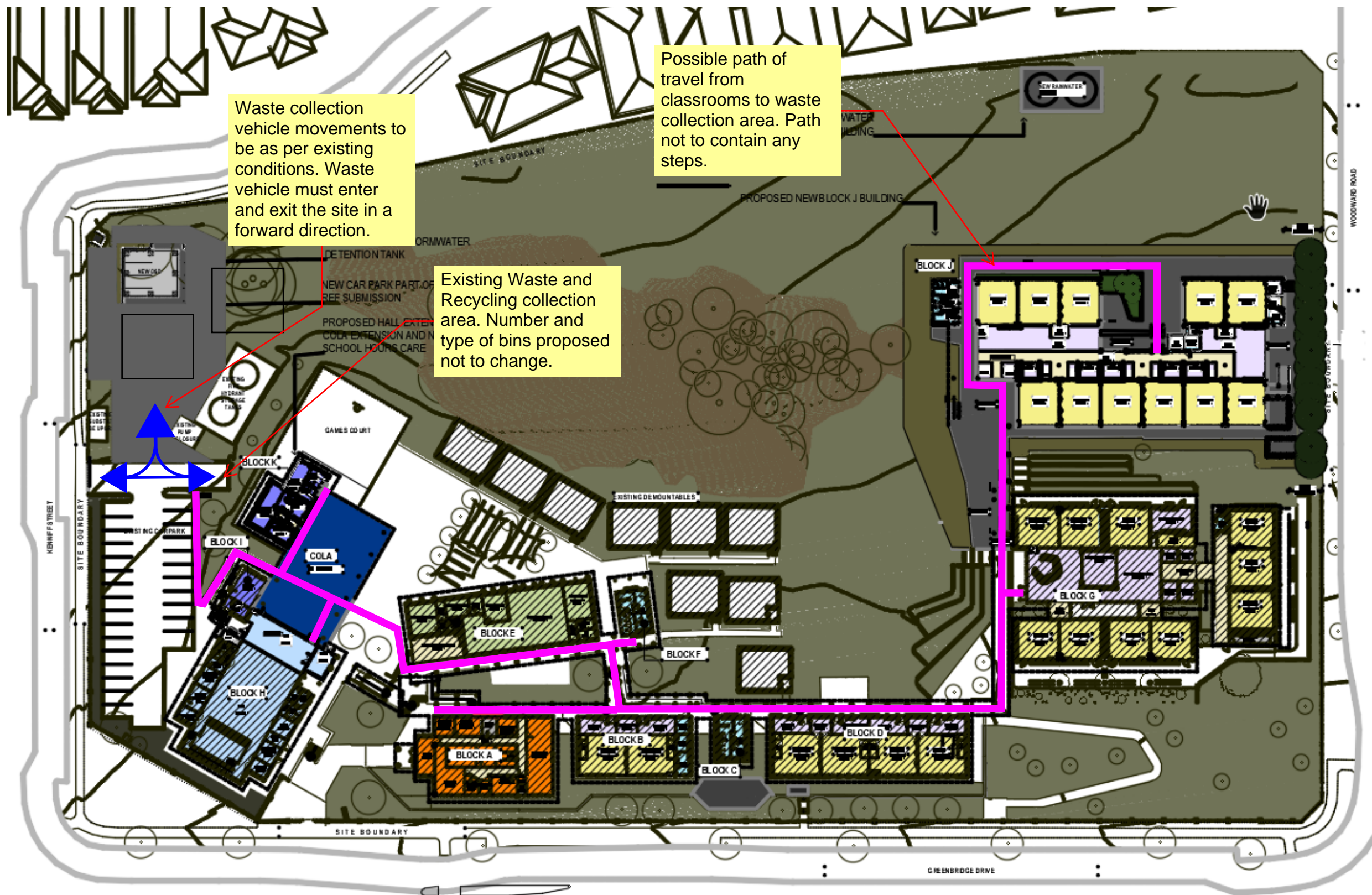
Table 4 Ongoing Operational Waste

	Recyclables	Garbage	Other
Amount generated (L per 786 students per day)	472	1,179	Nil
Amount generated (L per 786 students per week)	2,360	5,895	Nil
Any reduction due to compacting equipment	Nil	Nil	Nil
Frequency of collections (per week)	1	2	Nil
Number and size of storage bins required	1x3,000L front lift bin	1x3,000L front lift bin	Nil
Floor area required for storage bins (m2)	Current Operational Arrangement	Current Operational Arrangement	Nil
Floor area required for manoeuvrability (m2)	Current Operational Arrangement	Current Operational Arrangement	Nil
Height required for manoeuvrability (m)	Not Applicable	Not Applicable	Nil



1. Image extracted from Northrop Drawing 190220-DA2.01 Rev 3 (13/02/2020).
2. Demolition and construction contractor/s to ensure a waste management plan is in place for demolition and construction works.
3. Demolition and construction contractor/s to allow for sufficient room on site to ensure waste vehicle enters and exits the site front first.
4. Demolition and construction contractor/s to ensure adequate temporary roadways are built to access nominal waste collection areas and reinstatement of the area to existing condition or better is complete once the works are complete.

Date:	07.12.2020	Project No:	SY190220
Project:	Wilton Primary School		
Title:	Demolition and Construction Stages		
Drawing No:	SK1000	Revision:	1
Drawn:	NG	Scale:	NTS
			



1. Image extracted from Lahznimmo Architects Drawing A-DA-1102 Rev P2.
2. Path to waste collection area indicative only.
3. Path to waste collection area to have no steps.
4. Operational waste procedure to be monitored by Wilton Primary School during operation for safety and efficiency. Wilton Primary School to manage adjustments as required.

Date:	07.12.2020	Project No:	SY190220
Project:	Wilton Primary School		
Title:	Operational Waste		
Drawing No:	SK1001	Revision:	1
Drawn:	NG	Scale:	NTS