



Sydney Grammar School
Weigall Sports Complex

Operational Waste
Management Plan
September 2020

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1. Introduction

This Operational Waste Management Plan report for the proposed Weigall Sports Complex development has been prepared by Waste Audit & Consultancy Services (Aust) Pty Ltd for Jattca Property Solutions and Sydney Grammar School to provide guidance on environmentally sound and cost-effective management of waste and recyclable materials during the operational phase of the proposed development.

This report supports State Significant Development Application SSD-10421 submitted to the NSW Department of Planning, Infrastructure and Environment (DPIE) pursuant to Section 4.12 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and Schedule 2 of the Environmental Planning and Assessment Regulation 2000 for the proposed development located in Neild Avenue, Rushcutters Bay.

2. Background

Sydney Grammar School (SGS) has three campuses including two preparatory schools located at Edgecliff and St Ives catering for students from kindergarten to year 6 and the senior school located at the founding College Street site in Sydney catering for students from years 7 to 12. The school's student population at St Ives, Edgecliff and College Street are respectively around 400, 300 and 1,150 boys annually.

Sport is an integral part of the school's working. The School believes sporting activities, both team or individual, provide highly valuable avenues for students to be healthy, develop physical skills, develop teamwork and camaraderie, accept success and defeat intellectually and gracefully, develop defined and inadvertent leadership opportunities in the context of making new friends and having fun.

SGS has been an integral part of the Athletic Association of Great Public Schools of New South Wales (AAGPS) sports program since its inception in 1982. This organisation enables schoolboy sporting matches and contest between member schools through a summer and winter program.

Summer sports comprise basketball, cricket, rowing, tennis, water polo and swimming. Winter sports comprise athletics, volleyball, cross country, football, rugby and rifle shooting. In addition to the AAGPS program, the School offers fencing and taekwondo and personal development, health and physical education (PDHPE).

The senior school is having difficulty accommodating its current sport programs and will find it increasingly more difficult to accommodate future sport programs. Popular and dominant sports have limited offerings due to student demand and limited or no facilities.

Currently the school relies on the availability of external facilities which are limited and logistically difficult to manage. The project is proposed to address this need.

The objective of the proposal is to meet the PDHPE needs of the SGS community arising from the requirement to:

- Consolidate and minimise the locations of the current sporting programs to enable greater supervision and protection of students particularly in relation to the use of external facilities
- Relocate and rationalise current facilities
- Update current facilities to reflect the changes and demands in school sports
- Provide all weather sporting facilities for Edgecliff Preparatory School
- Accommodate an increased swimming and basketball sport program at Weigall by relocating the current tennis program.

3. SEARS Requirements

This report has been prepared with regard to the Secretary's Environmental Assessment Requirements issued for the project by DPIE on 5 February 2020.

Preparation of this Operational Waste Management Plan has been undertaken with reference to the following SEARs requirement 20. Waste, as well as industry best practices.

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. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.

This report addresses the operational aspects of waste management for the proposed project. Construction and demolition waste (including excavation) is addressed in a separate report.

4. The Site

4.1 Background & Site Description

The SGS Weigall Sports Complex comprises the following development:

1. Demolition of the following existing structures and buildings (which are not heritage significant) at the southern edge of the SGS Weigall Sports Ground:

- (a) Multipurpose/tennis courts and associated fencing;
- (b) Barry Pavilion;
- (c) The existing cricket nets off Alma Street; and
- (d) Paved carpark near Neild Avenue.

2. Construction of the SGS Weigall Sports Complex comprising the following:

- (a) Building 1 - Sports facilities building accommodating the following facilities:
 - (i) Ground floor: Main pool, programme pool, terrace/assembly facing Weigall, entry foyer, offices, change rooms, back of house, services and external car parking (5 spaces) and loading
 - (ii) Mezzanine floor: spectator terrace and services
 - (iii) First floor: Multipurpose sports hall 01 – basketball and volleyball, Multipurpose sports hall 02 – cardio, weights, taekwondo, fencing, PDHPE, change rooms, storage and services
 - (iv) Level 2: Multipurpose room 04; Multipurpose sports hall 03 – cardio, weights, taekwondo, fencing, PDHPE, storage and services
 - (v) Driveway entry from Neild Avenue (comprising relocation of the existing driveway southwards with existing driveway potential retained for maintenance access)
- (b) Building 2 – Car park comprising an ancillary car park of one/two split levels accommodating 93 spaces with an additional 4 spaces on grade, accessed from an existing entry from Alma Street (located on the existing cricket nets site). The lower ground level includes the flexibility to be used as an extension of the existing playing fields.
- (c) Parking for a total of 102 cars comprising:
 - (i) Building 1: 5 spaces
 - (ii) Building 2: 97 car spaces (93 within the building and four at grade)
- (d) Landscaping of the site including tree removal/retention/replacement, paths, fencing and lighting

(e) Building identification signage

(f) New kiosk substation

3. Use of the completed building as an educational establishment with external/community use of the proposed facilities that coordinates with the programming of the SGS.

The proposal does not include any of the following:

- General learning areas (GLA)
- An increase in the existing student or staff population.

The State Significant Development Application (SSDA) site is part of the Weigall Playing Fields located on Neild Avenue at Rushcutters Bay.

Weigall is bordered by (see Figure 1):

- Neild Avenue to the west (Neild Avenue is classified as a collector road and also forms part of the State Road MR625 managed by Roads and Maritime Services)
- State Rail land and the Eastern Suburbs Railway viaduct to the north
- White City (Hakoah Club and Maccabi Tennis Club), SGS Edgecliff Preparatory School, Vialoux Avenue, Alma Street and residential development to the south
- Residential development to the south and north-east
- A Sydney Water stormwater channel which traverses the site
- A right of way from Alma Street, benefiting the site, which crosses the site formerly known as White City.

Figure 1 shows the overall site and location of the proposed development.

Figure 1: Site Location



Sports to be accommodated in the proposed SGS Weigall Sports Complex include:

- Aquatic program
- Basketball
- Fencing
- PDHPE
- Taekwondo
- Volleyball
- Weight and fitness training

4.2 Statutory Planning Provisions

The following Act, State Environmental Planning Policies (SEPPs), local environmental plan, development control plan and contributions plan are relevant to Weigall and the SSDA site:

- Environmental Planning and Assessment Act, 1979 (EP&A Act)
- SEPP (State and Regional Development) 2011 (SEPP SRD)
- SEPP (Educational Establishments and Child Care Facilities) 2017 (Education and Child Care SEPP)
- SEPP 55 - Remediation of Land (SEPP 55)
- Woollahra LEP 2014
- Woollahra DCP 2015, Chapter E5

5. Operational Waste Generation

5.1 Estimated Volumes

The proposed Sports Complex will result in the net addition of around 6,685 m² of GFA (proposed GFA of 6,735 m² of new buildings, less 50 m² of structures to be demolished).

Currently Weigall produces an estimated monthly average of 9.5 cubic metres of general waste (3-4 collections of 2 x 3 cubic metre bins), based on invoices provided by SGS. This estimate is based on a conservative assumption that the bins are full at the time of collection, which is unlikely to be the case, as the bins are being collected on a fixed fortnightly schedule.

The contents of these bins are understood to consist of garden waste (prunings, branches, lawn clippings, soil, etc.), as well as some food scraps and packaging generated by users of the existing playing fields and tennis courts, and spectators using Barry Pavilion.

In planning for future waste management requirements, we recommend removing one of these bins and replacing the other one with a dedicated 3 cubic metre green waste (front lift) bin for garden waste materials only, with all general waste from the playing fields to be taken to the bin storage room located in the Sports Complex and placed in the designated bin.

Due to space and height restrictions in the Sports Complex building, the 3 cubic metre green waste front lift bin will be situated externally, near the access roadway to Neild Avenue, as shown in the drawings in Appendix 1. This area will be secured and accessible only to authorised users and screened from public view so that it is not visible from outside the site.

Standard dimensions of a 3 cubic metre front lift bin are shown in Table 2.

Tables 1-3 show projected volumes of general waste and recycling, dimensions of proposed bins, and storage area requirements, based on the range of activities that will be conducted in the Sports Complex and playing fields and resultant general waste and recycling outputs. Bin footprints include 20% additional area for access and movement within storage areas. The current floor area of the bin storage room on ground level of the Sports Complex is 15 m².

Locations of all waste storage areas are shown on the drawings in Appendix 1.

Table 1: Operational General Waste & Recycling

Waste/Recycling Stream	Bins/Week	Litres/Week
General Waste	1 x 1,100 litre	1,000
Cardboard & Paper Recycling	1 x 1,100 litre	100
Commingled Recycling	1 x 240 litre	100
Medical Waste	1 x 120 litre	<100
Garden Waste	1 x 3,000 litre (3 cubic metre)	3,000
Total		4,200

Table 2: Bin Dimensions

Waste/Recycling Stream	Bin Size Litres	Dimensions in mm (H x D x W)
General Waste	1,100	1470 x 1245 x 1370
Cardboard & Paper Recycling	1,100	1470 x 1245 x 1370
Commingled Recycling	240	1080 x 735 x 580
Medical Waste	120	1065 x 540 x 500
Garden Waste	3,000	1225 x 1505 x 1805

Table 3: Storage Areas

Waste/Recycling Stream	Litres/Week	Bin Size Litres	No. of Bins	Footprint (m ² /Bin)	Area Required m ²	
					Internal	External
General Waste	1,000	1,100	1	2.05	2.05	
Cardboard & Paper	100	1,100	1	2.05	2.05	
Commingled Recycling	100	240	1	0.51	0.51	
Medical Waste	<100	120	1	0.33	0.33	
Bin Wash Area	N/A				2.50	
Bulk Waste/Other Materials	Variable/To be determined			N/A	4.00	
Garden Waste	3,000	3,000	1	3.26		3.26
Total					11.44	3.26

5.2 Storage Room Design

While not specifically mandated in the SEARs requirements or by Woollahra Council, the guiding principles below represent best practices and as such should be taken into account in design of the waste storage room in the Sports Complex:

- Suitably ventilated (natural not mechanical should be sufficient in this case)
- Walls to be constructed from masonry or similar, washable, and painted with light colour
- Floors to be sealed, with flat and even surface and graded drains to sewer connection
- All corners coved and sealed 100 mm up to eliminate build-up of dirt
- Storm water entrance preventative measures in place
- Brightly lit to Australian standard and light switches at 1.6 m (sensors recommended)
- All doors are lockable, tightly fitted, hinged, and self-closing and of at least 2 m width
- Conformance with the Building Code of Australia, Australian standards, and local laws
- Childproofing and public/operator safety assessed and ensured
- A regular cleaning schedule and documented pest control regime
- All bin lids to be kept closed when not being used

Examples of storage room design and signage are shown in Appendix 2.

5.3 Servicing & Management

We recommend that a single private contractor (either SGS's existing contractor or an alternative company) be engaged to collect these materials. Collection frequencies should be set at twice weekly for general waste and recycling initially, to cater for increased volumes of materials expected to be generated during the first two months of occupancy. After this, collection frequencies can be adjusted based on reduced volumes of materials generated.

Waste compaction equipment and/or chutes are not proposed for the development, as they are not required for commercial developments; moreover, expected materials volumes are too low to warrant installing these types of systems, even if there was sufficient space for them.

It is expected that collection of general waste and recycling from the playing fields/public areas and the Sports Complex will be carried out by SGS's cleaning and/or maintenance staff.

6. Expected Waste Streams

6.1 General Waste & Recycling

Standard procedures for managing general waste and recycling generated from the Sports Complex and playing fields will be as follows:

- Building users (staff and students) dispose of material into designated bins
- Cleaners collect materials and transfer to the bins within storage room
- Private contractor services bins according to designated schedule

6.2 Garden Waste

Green garden waste will continue to be managed by maintenance staff, who will place the materials in the dedicated external bins. No increase in the volume of green waste is expected as a result of the proposed development; there may be a small overall decrease as a result of the removal of some vegetation.

6.3 Medical Suites

The Sports Complex will include 137 m² of medical suites located on the second floor. It is presumed that these will be used primarily for treating sports injuries, and would not be expected to generate significant quantities of clinical waste, sharps, etc. However, allowance has been made for a small volume of this material, with space allocated in our calculations for a single 120-litre mobile bin to be stored in the bin room.

6.4 Other Materials

Other materials, which will be generated irregularly and infrequently, include printer cartridges, e-waste, and fluorescent lamps. Space has been allocated for storage of these materials in the calculations shown in Table 3. A bin wash area should also be provided within the storage room, appropriately drained.

7. Roles & Responsibilities

SGS's Property Manager will be responsible for reviewing the Operational Waste Management Plan annually, ensuring its objectives are met, and making adjustments where required, to ensure continued accuracy and relevance to actual operational circumstances.

Students will also be involved in ongoing efforts to reduce waste to landfill.

7.1 Waste Diversion Targets

Based on the expected waste profiles of the proposed development, we recommend setting an initial diversion target of 50% of overall waste diverted from landfill. This target should be reviewed by SGS after the first year of operations, and annually thereafter, and adjusted accordingly based on actual measured performance.

7.2 Monitoring & Measurement

SGS will establish systems for tracking the quantities of general waste and recycling generated by the proposed development. This data could be incorporated into existing systems and reviewed periodically to measure reductions in waste to landfill.

Annual performance and contract reviews will be conducted with the school's Facilities Manager, private waste contractor, and cleaning/maintenance manager, to assess progress towards waste diversion targets and other KPIs, identify operational issues, and address any shortcomings. Waste audits will also be conducted annually to benchmark performance.

8. Internal Receptacles

It is recommended that all internal areas of the development are equipped with bin hubs for:

- Paper & Cardboard Recycling
- Commingled Recycling
- General Waste

Bins should be situated in areas which effectively service a group of workstations and offices, with no bins under desks; this improves cleaning staff efficiencies by reducing the number of bins that require collection, and also reduces the number of bin liners required.

Examples of bins are shown on the following page. Differently colored bin liners (general waste-black; paper-clear; commingled-blue) are recommended to assist cleaning staff to distinguish the different streams and enable them to identify contamination, prior to final disposal in the bins in the central storage room.

The green lid bin bins shown in the second two photographs are for food organics: due to the small volumes of these materials expected to be generated by the Sports Complex, we do not recommend implementing a recycling program for this waste stream.

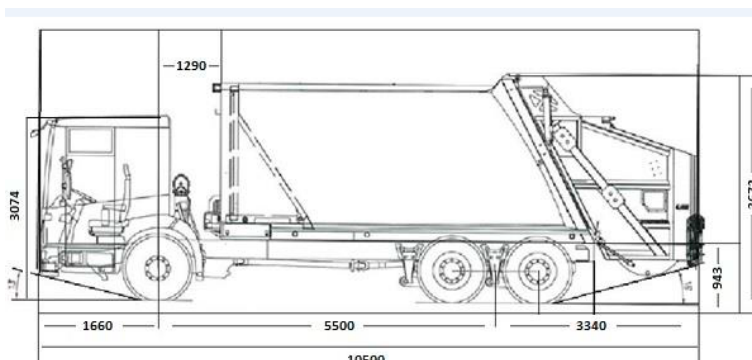


9. Vehicle Access & Site Safety

Contractors responsible for the removal of general waste and recycling will be required to undertake a site induction process to ensure their operational practices are conducted safely and efficiently, and conform with the specific requirements listed in Section 10.

General waste and recycling will be collected in standard trucks as shown below. A swept path analysis has been undertaken by ptc Consultants using a 10.5 m long waste collection vehicle and confirms that the proposed design of the car park is able to accommodate the necessary manoeuvres of the heavy vehicle to perform its duties as follows:

The heavy vehicle is to enter the site in a forward direction from Neild Avenue, perform a 3-point turn within the proposed car park and reverse through the proposed car park to the refuse collection area. The vehicle is to exit the site in a forward direction.



10. Waste Contractor Requirements

The development's waste contractor(s) will comply with the following specific requirements:

- Reliable and efficient servicing, and meeting agreed schedules
- Working with the site to achieve continuous improvements in recovery rates
- Providing monthly reports on diversion and financial outcomes
- Providing tenant engagement and education programs
- Maintaining current details of processing facilities used
- Having collection vehicles fitted with weighing technology

This report has been prepared by:

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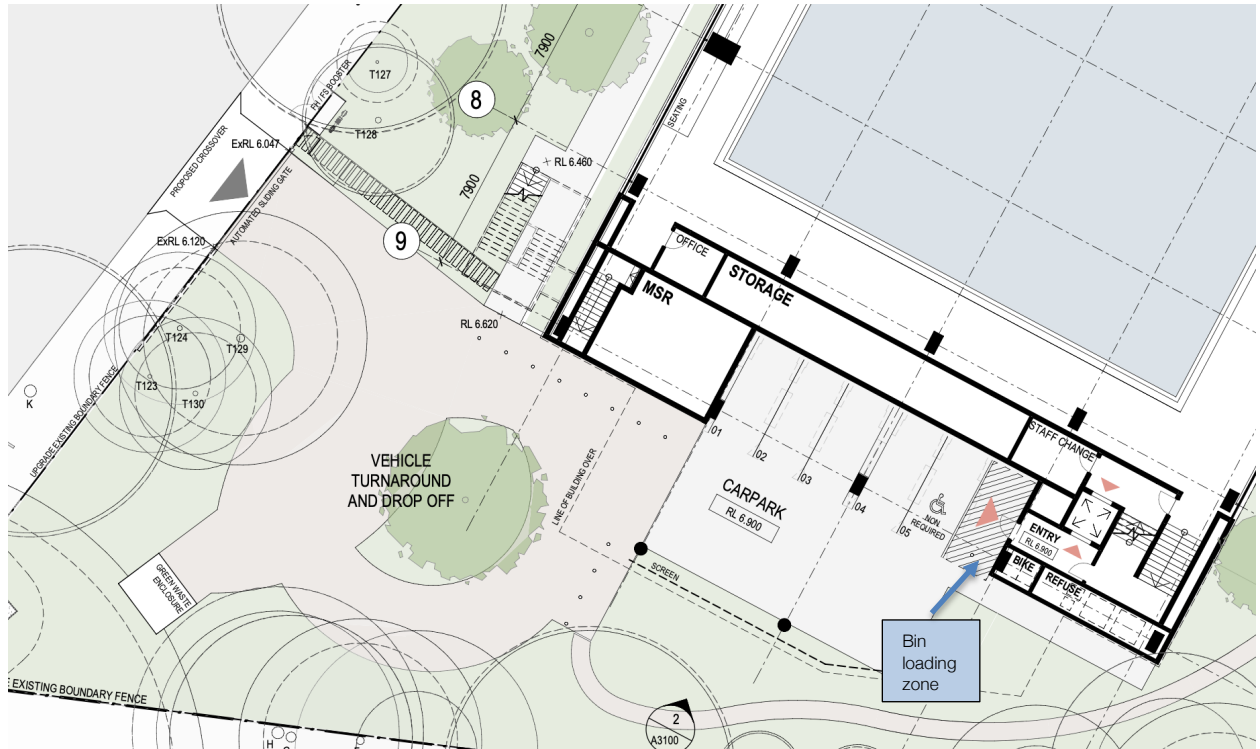


Director

Waste Audit & Consultancy Services (Aust) Pty Ltd

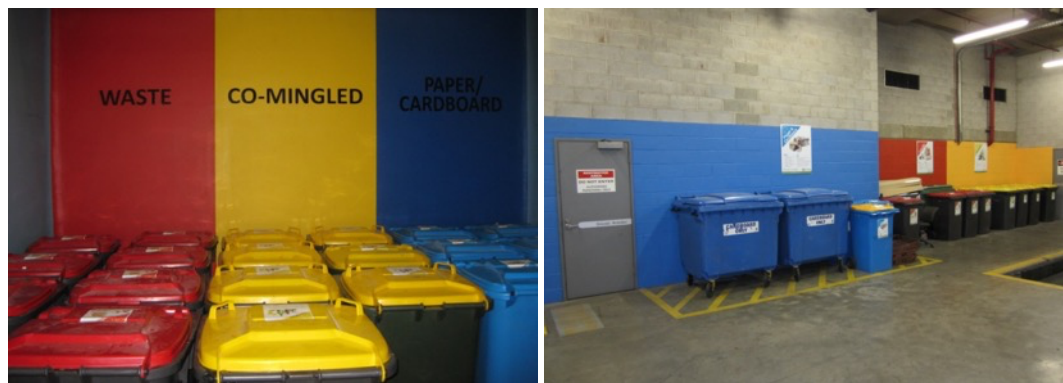
September 29, 2020

Appendix 1: Waste Storage Areas



Appendix 2: Storage Area Design & Signage Examples

The photographs below show examples of best practice in storage area design and layout:



The signage examples below are for illustration purposes only. Actual signage should include suitable branding specific to SGS.



Appendix 3: List of Drawings

Sydney Grammar School - Weigall Sports Complex - Drawing List

Drawing Number	Description	Name	Issue
SITE PLANS			
A1000	WEIGALL SPORTS COMPLEX [BUILDING 01 AND BUILDING 02]	LOCALITY PLAN	A
A1001	WEIGALL SPORTS COMPLEX [BUILDING 01 AND BUILDING 02]	SITE PLAN	A
DEMOLITION PLAN			
A1100	WEIGALL SPORTS COMPLEX [BUILDING 01 AND BUILDING 02]	DEMOLITION PLAN	A
GENERAL ARRANGEMENT PLANS			
A2100	BUILDING 01 SPORTS FACILITIES BUILDING	BASEMENT	A
A2101	BUILDING 01 SPORTS FACILITIES BUILDING	GROUND	A
A2102	BUILDING 01 SPORTS FACILITIES BUILDING	MEZZANINE	A
A2103	BUILDING 01 SPORTS FACILITIES BUILDING	FIRST	A
A2104	BUILDING 01 SPORTS FACILITIES BUILDING	SECOND	A
A2105	BUILDING 01 SPORTS FACILITIES BUILDING	ROOF	A
A2110	BUILDING 02 CAR PARK	LOWER/UPPER GROUND	A
A2111	BUILDING 02 CAR PARK	LOWER/UPPER FIRST	A
ELEVATIONS			
A3100	BUILDING 01 SPORTS FACILITIES BUILDING	NORTH AND SOUTH	A
A3101	BUILDING 01 SPORTS FACILITIES BUILDING	EAST AND WEST	A
A3110	BUILDING 02 CAR PARK	NORTH AND SOUTH	A
A3111	BUILDING 02 CAR PARK	EAST AND WEST	A
SECTIONS			
A3200	BUILDING 01 SPORTS FACILITIES BUILDING	01 AND 02	A
A3201	BUILDING 01 SPORTS FACILITIES BUILDING	03 AND 04	A
A3210	BUILDING 02 CAR PARK	01 AND 02	A
A3211	BUILDING 02 CAR PARK	03 AND 04	A

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