FORESIGHT ENVIRONMENTAL

Western Sydney Stadium

Stage 2 – Construction Waste Management Plan

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Revision No.	Issue date	Author	Reviewed by	Reason/comments
1	17/2/17	Scott Ebsary	Patrick Arnold	Initial draft for review
2	3/3/2017	Scott Ebsary	Patrick Arnold	Update with current photos and standard text
3	21/4/2017	Scott Ebsary		Updated to address NSW EPA feedback
4	1/9/2017	Patrick Arnold	Scott Ebsary	Updated to address draft DA conditions

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1. Introduction

This report supports a State Significant Development (SSD) Development Application (DA) submitted to the Minister for Planning pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Application (referred to as SSDA16_8175) follows the approval of a Stage 1 SSD DA (SSDA16_7534) in December 2016. The Stage 1 SSDA sets out a Concept Proposal for the redevelopment of the Western Sydney Stadium and future supporting uses. In summary, the Stage 1 Consent includes the following components:

- Concept Proposal for the Western Sydney Stadium, including building envelopes, a new 30,000 seat stadium, 500 surface car parking spaces, access, ancillary infrastructure and landscaping; and
- Detailed works for staged demolition and removal of the existing stadium and associated infrastructure and the Parramatta Swimming Centre

This document details the way in which the proposed Western Sydney Stadium (WSS) development will manage the waste and recycling generated from the Stage 2 construction activities of the stadium in line with industry best practice and in accordance with the relevant development controls.

2. Overview of Proposed Development

The proposal relates to a detailed ('Stage 2') DA for the detailed design and construction of the stadium. This SSD DA seeks approval for the following components of the development:

- Detailed design of the stadium, public domain and car parking spaces;
- Construction and use of the 30,000 seat stadium including:
    - General Admission Facilities including bars, food and drink stalls, amenities and viewing areas;
    - A function centre and kitchen facility;
    - Associated Stadium facilities including player and coaching facilities, media and press conference rooms, security and stadium managers facilities;
    - Waste storage and loading dock;
- Construction and embellishment of the public domain including;
    - Outdoor sporting and recreation facilities;
    - Public plazas and entertainment areas;
    - General landscaping works;
- Provision of up to 500 car parking spaces with vehicle access to the development from O'Connell Street and internal roads for vehicular circulation;
- Provision of signage zones, lighting and other ancillary stadium elements;
- Pedestrian access and footpath upgrades along O'Connell Street; and
- Extension and augmentation of physical infrastructure / utilities as required.

3. Background

Stadia Strategy

The stadium is the first project to be delivered under the NSW Government's $1.6 billion Stadia Strategy, the largest investment in sporting infrastructure since the 2000 Olympics. The new Western Sydney Stadium will:

- Be able to cater for bigger crowds, provide an improved game day experience and bring major benefits to the Western Sydney economy
- Generate approximately 1,200 jobs during construction and between 600 and 900 jobs once operational for sporting event days and major events
- Cater for a range of sporting and community uses within the precinct.

Concept Proposal (SSDA 16_7534)

Infrastructure NSW (iNSW) on behalf of Venues NSW submitted a State Significant Development Application (SSDA) for the Stage 1 concept proposal and demolition of the existing stadium in July 2016. Consent for the Stage 1 SSDA was granted by the Minister for Planning on 7 December 2016 and includes:

- a maximum total GFA of approximately 60,000 m^2 (excluding the playing pitch) for the stadium development, including:
    - additional seating for approximately 10,000 more spectators in a seating bowl with 30,000 seats, including 27,000 general admission seats and 3,000 corporate seats;
    - playing pitch;
    - five levels of premium box/terrace, function/lounge offerings and a number of suite offerings;
    - flood lighting, stadium video screens and other ancillary fittings;
    - additional facilities for team, media, administration and amenity, including:
        - police facility and security office;
        - players changing rooms;
        - ticket gates and ticket boxes;
        - media interview rooms;
        - green room;
        - production suite and joint operation control room;
        - event briefing rooms;
        - hirers office and patron services offices;
        - first aid facilities;
        - loading docks for deliveries; and
        - food, beverage and retail facilities.
    - a maximum GFA of approximately 20,000 m^2 for future development of ancillary uses within the northern corner of the Site;
    - transport, parking and accessibility;
    - public domain elements; and
    - landscaping elements throughout the Site.

Design Excellence and Project Tender Phase

Since receiving the development consent for Stage 1, Venues NSW have appointed Lendlease as the contractor for the Stage 2 detailed design and the demolition and construction of the stadium. The tender process also served as a competitive design process in accordance with the Director General's Design Excellence Guidelines and Clause 7.10 of the Parramatta Local Environmental Plan 2011.

Site Establishment works Modification

A modification application (MOD 1) was made to the Stage 1 DA pursuant to Section 96(2) of the EP&A Act in February 2017. The modification seeks to expand the approved range of site preparation works to include piling and remediation/earthworks, as outlined below:

Remediation works comprising the excavation and storage of contaminated materials and bulk excavation. Contaminated materials will be stored on site and capped below ground in accordance with the recommendations outlined in the Remedial Action Plan.

Piling works which will comprise the driving and drilling of concrete piles to establish foundations for the construction of a stadium located within the Stage 1 building envelope

The modification application is currently under assessment by the Department of Planning and Environment (DPE) and is awaiting determination.

4. Site Description

The Western Sydney Stadium is located at 11-13 O'Connell Street, within the Parramatta Park on the north-eastern edge of the Parramatta CBD. It is bound to the south and west by the Parramatta Park and the Parramatta River, the Parramatta Leagues Club to the north and O'Connell Street to the east. The Site is located within the City of Parramatta local government area (LGA). A locational context plan is provided at Figure 1 below.

Figure 1 – Site context Plan

The site has an area of approximately 95,000m^2 and owned by Venues NSW and The Parramatta Park Trust. The site is irregular in shape and is illustrated in Figure 2 below.

Figure 2 – Site Aerial Plan

5. Waste Generation Estimate

The aim of this Plan is to ensure that all waste resulting from construction and demolition activities is managed in an effective and environmentally aware manner. Specifically,

- To maximize the reuse and recycling of demolition and construction materials
- To reduce the volume of materials going to landfill
- To maximise waste material avoidance and reuse on site
- To ensure that where practicable, an efficient recycling procedure is applied to waste materials
- To ensure efficient storage and collection of waste

5.1 Construction

The quantity of waste materials to be generated onsite are estimates based on the information provided to Foresight Environmental and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated. Active site management during the construction phase will ensure all waste/recyclable materials are disposed of appropriately and that all waste receptacles are of sufficient capacity to manage onsite activities.

Table 1 below details the estimated composition by area or volume of construction waste to be generated.

Table 1 - Composition of construction waste by volume

Material	M^3
Fill/excavation	237,185
Concrete	1,557
Metal	1,017
Plasterboard	267
Tiling	191
Paint	143
Glazing	141
Carpet	115
General residual	50
Recycling residual	50
Total	240,716

6. Waste Management Strategy

The following waste hierarchy will be used as a guiding principle:

Avoid and Reduce

Minimise the production of waste materials in the construction process by

- Assessing and taking into consideration the resultant waste from different design and construction options
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.
- Not over ordering products and materials

Reuse

Ensure that where ever possible, materials are reused either on site or offsite

- Identify all waste products that can be reused
- Put systems in place to separate and store reusable items
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

Recycling

Identify all recyclable waste products to be produced on site

- Provide systems for separating and stockpiling of recyclables
- Provide clear signage to ensure recyclable materials are separated

- Process the material for recycling either onsite or offsite

Note: In some cases it may be more economical to send the unsorted waste to specialised waste contractors who will separate and recycle materials at an offsite location.

Disposal

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with OEH requirements
- Implement regular collection of bins

6.1 Hazardous Wastes

It is not anticipated that any hazardous wastes will be present, however During any demolition and material recovery activities, one should beware of potentially hazardous materials. Hazardous construction materials should be disposed of in accordance with EPA guidelines in order to protect the environment.

This document recognises the importance of waste management and draws from the following legislations:

- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (Illegal Waste Disposal) Act 2013
- Protection of the Environment Operations (Waste) Regulation 2014
- Waste Avoidance and Resource Recovery Act 2001
- NSW Waste Minimisation and Management Regulation 1996

Within the above legislations hazardous waste includes dangerous goods, poison, liquids and other waste containing hazardous components. Hazardous wastes in a C&D environment may include:

- Fluorescent tubes and HID lamps (in commercial quantities)
- Industrial and laboratory chemicals
- Mercury, NiCad and Lithium Hydride batteries
- PCBs
- Asbestos
- Pesticides and herbicides
- Contaminated soil

During any demolition and material recovery activities, one should beware of potentially hazardous materials. Hazardous construction materials should be disposed of in accordance with EPA guidelines in order to protect the environment.
The EPA can require the waste generator, transporter, and receiver to clean up and pay for waste to be taken to a lawful place. It is recognised that the penalties related illegal waste management practices include:

- If waste is illegally dumped and harms the environment, the maximum penalty is $5 million or seven years jail.
- The maximum penalty for unknowingly supplying false or misleading information about waste is $250,000 for a corporation or $120,000 for an individual.
- The maximum penalty for knowingly supplying false or misleading information is $500,000 for a corporation or for an individual $240,000 or 18 months imprisonment, or both.

In order to avoid risk to the environment and any breach of legislation this development endeavours to uphold the following practices:

- Early identification and reporting of hazardous waste
- Reporting of any suspicious activities of involved stakeholders (waste generator, transporter or receiver) to including handling waste unlawfully or illegally dumping waste through the Environment Line on 131 555.
- Ensure waste is transported to a place that can lawfully accept it under Section 143 of the Protection of the Environment Operations Act 1997.
- Take reasonable precautions and exercised due diligence to prevent commission of the offence.
- Keep accurate written records such as:
    - who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
    - copies of waste dockets/receipts from the waste facility (date and time of delivery, name and address of the facility, its ABN, contact person).

7. Waste Management Systems

7.1 Onsite and Offsite Systems

Table 2 details the expected waste materials and management systems for the construction phase of the project.

Table 2 – Waste management systems (construction)

Material	Estimated volume (m^2 or m^3 where indicated)	Onsite (re-use or recycle)	Offsite (recycling contractor)	Disposal (contractor and landfill site)
Fill	237,185m^3	Suitable soil to be reused where appropriate for onsite landscaping/fill	Separated where possible and taken to appropriate C&D facility for processing/reuse	
Concrete	1,557m^3		Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site.	
Metal	1,017m^3		Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling	
Plasterboard	267m^3		Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate recycling facility	
Tiling	191m^3		Stockpiled and collected as required by specialty metal recycling contractor for recycling/resale	
Paint/	143L		Clean tins recycled by metal recycler where possible	Residue/wash-off hardened and disposed appropriately
Glazing	141m^3		Stockpiled and collected as required by specialty glass recycler or taken to appropriate C&D facility for separation and recycling	
Carpet	115m^3		Stockpiled and collected as required by carpet supplier for recycling contractor	Unsuitable material will be taken to landfill for disposal
Residual general recyclables	50m^3		Collected by contractor and disposed at appropriate recycling facility	
Residual general waste	50m^3			Collected by contractor and

				disposed at appropriate landfill

Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities[1]. The figures in Table 3 and 4 above are estimates and are used as a guide for designing the waste management systems on site. These figures will be adjusted according to the final building material selection and quantities. The waste management systems will be adjusted as necessary.

It should be noted that there are multiple offsite recycling/disposal facilities available for the appropriate processing of the materials detailed above and the facility choice will depend largely on the waste contractor/supplier engaged.

7.2 Contracts and Purchasing

Each subcontractor working on the site will be required to adhere to this Waste Management Plan.
The Head Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work
- Implements procedures to ensure waste resulting from their work will be actively managed and where possible recycled, as part of the overall site recycling strategy or separately as appropriate
- Ensures that the right quantities of materials are ordered, minimally packaged and where practical pre fabricated. Any oversupplied materials are returned to the supplier
- Implements source separation of off cuts to facilitate reuse, resale or recycling.

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Ensuring all skips/bins/stockpiles are clearly labeled identifying which material is suitable for each receptacle
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted
- Providing training to all site employees and subcontractors in regards to the WMP as detailed in section 5.3 below.
- Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems
- Retaining demolition and construction waste dockets to confirm and verify which facility received the material for recycling or disposal.

[1] McGregor Environmental Services (2000) Predicting C&D waste quantities in the Inner Sydney Waste Board Waste Planning Guide for Development Applications-Planning for Less Waste (1998) NSW Waste Boards

7.3 Training and Education

All site employees and sub contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

All employees are to have a clear understanding of which products are being reused/recycled on site and where they are stockpiled. They are also to be made aware of waste reduction efforts in regards to packaging.

The site manager will post educational signage in relation the recycling activities on site in breakout areas, lunch rooms etc.

7.4 Site waste control and management

To ensure adequate site environmental standards are maintained, is recommended that the following controls be implemented and enforced by the proponent:

1. All waste generated during the project is assessed, classified and managed in accordance with the "Waste Classification Guidelines Part 1: Classifying Waste" (DECCW, December 2009)
2. The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste or spoil from the vehicle or trailer
3. Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorized plant leaving the site, is removed before the vehicle, trailer or motorized plant leaves the premises.

7.5 Waste Storage and Collection

A designated waste storage area will be allocated for the collection of all waste and recyclables. The waste storage area shall have appropriate signage to clearly identify the area to construction workers and to prevent unauthorised access to the area.

Stockpile size should be minimised by regular removal of waste from site and construction staging plans must allow for the waste storage area to move within the site as the development progresses.

The construction waste storage area does not have to be enclosed. However, containers should be covered where possible to prevent odour, wind impacts, vermin and vandalism or theft. Containers will be stored on a hardstand area with appropriate sediment control measures implemented to mitigate run-off into stormwater. Any spillages in the waste storage area should be treated immediately using a spill kit. Contaminated or hazardous wastes should be stored in a secure area with appropriate signage.

7.6 Waste Truck Routes

A detailed Construction Traffic and Pedestrian Management Plan has been prepared and outlines the primary truck routes in and out of the site. Notification has been provided to the RMS Traffic management centre of the proposed truck routes for transporting waste. The primary routes is outlined in the figure below and as

follows: trucks will exit the site and travel east on Victoria Rd, turn right into Macarthur St, turn left into Hassall St, cross James Ruse Drive and enter Grand Drive. The primary destination of the waste is KLF Holdings Pty Ltd, 6 Grand Avenue Camellia NSW 2142.

Figure 3 – Waste truck route out of site