Demolition Management Plan

Prepared by

Liberty Industrial Pty Ltd

For

Hanson Construction Materials Pty Ltd

1A Bridge Road, Glebe NSW 2037

Revision No.	Revision Date	Authority	Changes
A	10.03.2020	LI	First Draft
B	12.03.2020	LI	Second Review

PREPARED: *Sean Zhou* Date: 12 - 03 - 2020

Site Engineer

ACCEPTED: *Percy Piper* Date: 25 - 03 - 2020

Project Manager

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1 INTRODUCTION

This Demolition Management Plan has been designed by the company, hereby referred to as Liberty Industrial, to provide the necessary methodologies and procedures for the demolition of existing buildings and structures that made up the Hanson Construction Materials in Sydney, located at 1A Bridge Road, Glebe NSW 2037.

1.1 PURPOSE

The intent of this demolition management plan is to create an overarching document that details how the physical works required to meet the specifications will be managed and delivered.

In order to meet the specific requirements of AS 2601-2001 – The Demolition of Structures, site-specific Work Method Statements will be created by Liberty Industrial, through detailed inspection and consultation with Liberty Industrial staff undertaking the works, which will not occur until the site is established and hence will not be included in this management plan.

1.2 REFERENCES

- SafeWork NSW Demolition Licensing;
- SafeWork NSW Friable Asbestos Licensing;
- Work, Health and Safety Act 2011;
- Work, Health and Safety Regulation 2011;
- Protection of the Environment Operations Act 1997 (NSW);
- Protection of the Environment Operations (Waste) Regulation 2005 (NSW);
- Protection of the Environment Operations (Noise Control) Regulation 2008 (NSW);
- Demolition Work Code of Practice;
- AS 2601 The Demolition of Structures;
- AS 4361.2 Guide to Lead Paint Management;
- AS 3000 SAA Wiring Rules;
- AS ISO 14004 - 2004-11-15: Environmental management systems - General guidelines on principles, systems and support techniques;
- AS/NZS ISO 14001:2004: Environmental management systems - Requirements with guidance for use;
- AS/NZS ISO 19011:2003 Australian/New Zealand Standard Guidelines for quality and/or environmental management systems auditing;
- Environmental Protection Authority Publication Environmental Guidelines for Major Construction Sites (1996);
- AS 1885.1 – 1990: Workplace injury and disease recording standard;
- AS/NZS 4801 - 2001: Occupational Health and Safety Management Systems - Specification with Guidance for use;
- How to Safely Remove Asbestos Code of Practice;

- AS/NZS ISO 9001:1994: Quality systems - Model for quality assurance in production, installation and servicing;
- AS/NZS 4581 - 1999: Management System Integration – Guidance to Business, Government and Community Organisations;
- AS/NZS 4804 - 2001: Occupational Health and Safety Management Systems - General guidelines on principles, systems and supporting techniques;
- National Code of Practice for Excavation Work;
- Asbestos Blueprint for NSW;
- Fire Brigades Act 1989;
- Local Government Act 1993;
- AS 2865 – 2009 Confined Spaces;
- AS 1319 Safety Signs for the Occupational Environment

1.3 PROJECT BRIEF

RMS is the land owner of Hanson BWB site, this site has been operating as a concrete batching plant located on a wharf deck structure over the bed of Blackwattle Bay. The term of the lease agreement for the use of the site as a concrete batching plant is coming to end. According to the lease agreement, Hanson is required to carry out works to make good the site for vacant possession.

Prior to returning the site to the RMS, all components of the concrete batching plant are required to be removed. Liberty Industrial was engaged to carry out the demolition work for the above structures/buildings.

Figure 1 - Buildings to be demolished

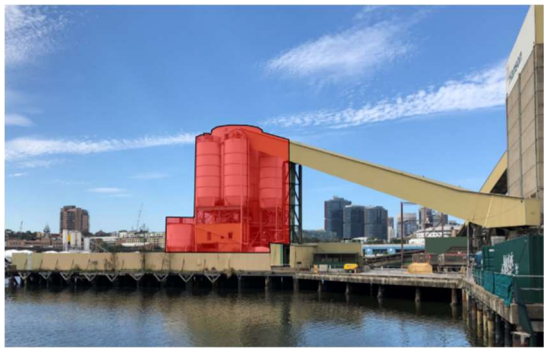
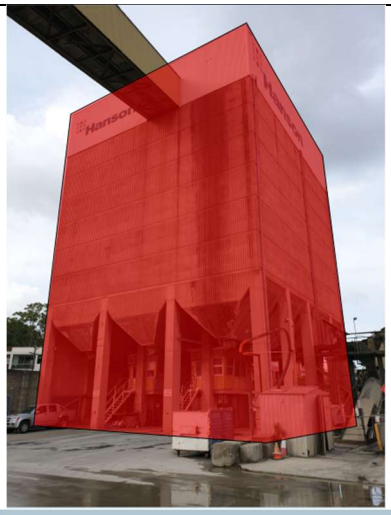
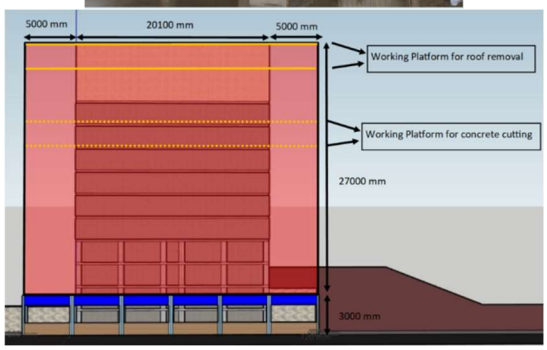
2 SUMMARY SCOPE OF WORKS

A summary of the scope of works is listed below. These tasks are not listed in any special order.

Please refer to Schedule of Works table below for detailed tasks for each structure. The structure name and number can be found within Appendix B.

Demolition Method/ Sequence			
Work Number	**Building/ Structure**	**Description of works.**	**Photos**
1	Site wide	Prior to any demolition works service disconnection will take place. Once Mobilised Liberty will ensure the following work are done respectively 1a - air conditioner de-gassing, 1b - electrical disconnection, 1c - water service disconnection	*Please refer to DBYD plan*
2	Site wide	Hazardous materials removal	*Please refer to Hanson Concrete, Blackwattle Bay Site Asbestos Register, November 2012*

3	Floor level structures around Aggregate Bin	1. Floor level structures around Aggregate Bin to be removed by demolition excavator 2. Floor level structures under/around CV11 to be removed by excavator (Including CV10)	 
4	CV 1 & CV 2	CV 1 and CV 2 to be removed by Mobile Crane, once placed safely on the ground, we will demolish it by demolition excavator and hydraulic shear attachment	
5	CV 11	CV 11 to be pulled and induced collapsed, demolition excavator and shear attachment will demolish the conveyor on ground. All associated conveyors and structures to be removed and demolished by demolition excavator before demolishing the aggregate bin	

6	Batch plant, silos and associated infrastructures	Batch Plant Tanks, Silos and associated infrastructures to be demolished with induced collapse method. Demolition excavator and shear attachment will demolish the structure on ground.	 
8	Structural demolition of Aggregate Storage Bins	Class B hoarding and protective scaffold will be erected prior to the demolition work, top steel structure roof will be lifted and lower to the ground level by crane. Remaining concrete structure will be removed with the combination methodologies of “cut and drop”, “cut and lifted” and mechanical demolition. The method can be seen in WMS001, the roof will be cut to drop, the concrete structure will be demolished mainly by a high reach demolition excavator fitted with concrete cracker, a hydraulic hammer will also be used as required, other methods to gain access include but are not limited to concrete cutting at height and crane lifting of specific concrete sections.	 

3 PRELIMINARY DEMOLITION ACTIVITIES

An investigation of the site has been completed with the following key points noted:

- The location of storm water outlets has been identified and will have sediment controls put in place;
- Asbestos has been identified in various locations throughout the site;
- The location of adjacent roadways and operational areas has been clearly defined;
- There is adjacent boundary of the Aggregate Storage Bin and Bridge Road, class B hoarding and protective scaffold is required to be erected prior to any demolition work.

3.1 UNDERGROUND ESSENTIAL SERVICES

Liberty Industrial has identified the below underground services which will be disconnected or protected prior to work commencement.

- **Ausgrid**
  As for DBYD plan, Ausgrid has underground cable connecting to the site switch room from the substation. As no electrical layout drawings are available for the site, liberty Industrial has engaged Level 2 electrical contractor who has serviced the Hanson site in recent years to carry out the service disconnection work from the switch room to all site equipment. Power connection to the site amenities will remain in live, electricity to site amenities will be disconnected upon all demolition work has completed. The final power isolation will be carried out by level 1 subcontractor to disconnect the power from the substation.
  Isolation of power will be tested upon completion of the work and a Certificate of Electrical Compliance and Notification of Service Work will be provided.
- **Existing Sewer**
  Liberty Industrial will barricade and protect the existing sewer pit within the site boundary.
  Ref: Sediment and Erosion Control Plan

- **Existing Building Water Services**
  As per DBYD plan and confirmed by Hanson plant officials, there is a single water services leading into the site, the source will be isolated and disconnected after the water meter, and a temporary supply manifold will be installed. From the temporary manifold we will feed the ablution facilities and we will draw water for all site water requirements, i.e. dust control, concrete cutting, etc.
  Once complete, the temporary manifold will be removed and a blank flange will be installed to serve as a positive isolation point.

- **Existing Storm Water**
  Referred to DBYD Asset Location Response from COS, it indicates that there are 3 underground stormwater conduits. Storm water drains will be indicated and specific ground bearing pressures of the entire site will be marked out as per the engineer's approval. Machine movements will be planned and limited as per engineer's approval.

Ref: ***Sediment and Erosion Management Plan Dial Before You Dig: Asset Location Response (94918142)***

- **Existing Telstra Service**
  Referred to DBYD Asset Location Response from Telstra, it indicates that there are underground Telstra cable connecting to site from the Telstra pit on Bridge road. Liberty Industrial has submitted a request for the service to be disconnected prior to the commencement.

3.2 ABOVEGROUND ESSENTIAL SERVICES

- Ausgrid - Electricity
  There is an overhead powerline to the southern side of the premises which is within 5 meters clearance to Aggregate Storage Bin. Liberty Industrial has engaged Ausgrid to carry out the Tiger Tail installation work.

3.3 HAZARDOUS MATERIALS

A Waste Management Plan and Asbestos Removal Control Plan has been prepared which outlines handling and disposal procedures to allow for the safe removal of hazardous materials. Hazardous Building Material Survey has been conducted by WorkPlace Environment Consultants Pty Ltd in 2012. Please refer to *Hanson Concrete, Blackwattle Bay Site Asbestos Register* more detailed information.

4 SITE ACCESS

Access to the site will be via Gate 1, Gate 2 and Gate 3 on Bridge Road. With the progress of the project, gates will be used in restrictions and limitation during different stages and different purposes.

Gate 1 – Will be the main exit point as well as the entrance for site visitors.

Parking – No visitors allowed to park on site due to limited space.

Gate 2 – Will be mainly used for material and equipment delivery before the arrival of cranes. This gate will be the entrance point for the cranes. No vehicles are allowed to enter and exist via this gate when crane is on site.

Gate 3 – Gate 3 will be the main entrance point throughout the project, this gate will be mainly used for material and waste transport. Following the demolition work at aggregate bin (concrete building), crushed concrete and brick will be loaded and transported off site from gate 3.

Figure 2 - Site Access

5 SITE ORGANISATION

5.1 DEMOLITION CONTROL ZONE

The perimeter of the defined demolition zone will be barricaded and signposted to prevent unauthorised access. Access points will be established and only worker(s) who have been site inducted with the authority of the Project Manager may enter these zones.

Please see appendix C – Demolition Control Zone (On site vehicle movements within Demolition Control Zone)

5.2 PERIMETER FENCING

The site will be secured with the existing site boundary. Site entrance will be through the main site access gate (gate 1) via Bridge Road. The main entrance gate will be locked or manned when truck movements are underway. (Please see figure 3 – site access)

5.3 TIGER TAILS

Liberty Industrial has engaged Ausgrid to carry out the installation work of Tiger Tails to the southern side of the aggregate bins along Bridge Road. Tiger Tails will be installed prior to erecting of the class B hoarding and the scaffold and will remain till the completion of the project.

5.4 BARRICADE AND SIGNS

As the work progress, different work areas will be barricaded and signposted to define the area and prevent access. Any hazardous material identified will also be barricaded and signposted.

5.5 MATERIALS PROCESSING AND STOCKPILE AREAS

Scrap steel resulting from the demolition of buildings will be segregated from the rest of the debris and processed for safe loading and recycling.

Materials (concrete and bricks, etc.) will be locally stockpiled per task within close proximity of its origin, but allowing for safe processing, segregation, and loadout works as to avoid disruption of demolition progress.

As the site is densely populated, stockpiling of material will be managed as the works progress and loadout of materials will be ongoing throughout the project.

These areas will be identified in a work specific Work Method Statement (WMS) and are subject to approval from the Project Manager.

5.6 SKIP BIN(S) FOR STORAGE OF ASBESTOS MATERIAL

A designated area will be identified prior to asbestos removal works being undertaken. This will be addressed in the Asbestos Removal Control Plan and specific WMS. The skip bin(s) will be covered with tarpaulin when not in use. All asbestos materials will be contained within the bin(s) by approved methods to prevent migration.

5.7 FIRST AID

A certified First Aid worker(s) shall be on site full time during the works to administer First Aid in the event of an incident and to participate in any emergency evacuation drill.

5.8 SITE AMENITIES

Liberty Industrial will continue use the existing site amenities for the duration of the demolition work. Close to the completion of the works, these facilities will need to be demolished, temporary facilities will be established to accommodate the remaining crew for the final period of time on site.

6 HAZARDOUS MATERIALS & SUBSTANCES

Site will be inspected prior to demolition works and all hazmat removal works will be conducted following establishment on site.

All residual ACMs and any other contaminants discovered during the demolition processes will be removed in accordance with statutory requirements and specific Work Method Statements will be developed for their removal.

Disposal of these materials will occur at a licensed facility and will be tracked under the current EPA waste tracking requirements for asbestos.

Please refer to Waste Management Plan and Asbestos Removal Control Plan for more detailed process and information.

7 DEMOLITION METHODOLOGIES

Following is the general information surrounding the development of the site-specific Work Method Statements (WMS's) which are prepared under separate covers and detail the steps required to safely undertake the task. The specific work method statements will include those outlined in the following sections; however, it is noted further method statements may be developed as new task arise due to likelihood of unexpected finds.

Notes:

- A "Work Pack", along with the associated Work Permits will be issued prior to commencement of any activity. For demolition the Work Method Statements will be certified for compliance to AS2601 prior to submitting to the Hanson's representative.
- A Job Hazard Analysis (JHA) will be developed from each of the Work Method Statements and shall be undertaken by the work crew for each activity within each WMS prior to commencement of that activity.

7.1 GENERAL WORK METHOD STATEMENTS

The following general work method statements will be produced in accordance with relevant legislation and standards

- Service disconnections (sub-contractors to provide);
- Hoarding erecting (Sub-contractor to provide);
- Scaffolding erecting (Sub-contractor to provide);
- Hazardous material removal
- Soft strip of buildings (JHA);
- Demolition of Conveyor 1, 2, & 11;

- Demolition of batch plant, silos and associated structures.
- Demolition of remaining conveyors CV 9, CV 8, CV 7, CV6, CV 5 and CV 4
- Demolition of aggregate storage bin.
- Demolition of site offices and amenities.

7.2 DEMOLITION METHOD STATEMENTS

Liberty industrial will provide the demolition work method statements in accordance with AS2601-2001

7.3 DEMOLITION SEQUENCING

The general staging and sequencing of the works is outlined below (refer to project delivery program):

- Site Establishment (Setup work zone, Mobilise plant, Establish amenities);
- Service disconnection;
- Removal of hazardous materials in buildings;
- Soft strip works;
- Demolish structures using demolition techniques, including the development of general Work Method Statements and Job Hazard Analysis;
- Process scrap metals, brick, concrete and GSW (general solid waste) in the designated processing areas; and
- Progressive material segregation, processing and loadout
- Tidy demolition areas;

7.4 MAJOR PLANT & EQUIPMENT

Following is a list of the proposed plant & equipment to be used for the works:

- 1 x 48t Demolition Excavator with 24m High Reach, bucket, grabs, Concrete Cracker RS-2500 and Hydraulic Hammer-V32;
- 1 x 48t Demolition Excavator with shear, hammer, bucket and grab attachments as required;
- 2 x Mobile Hydraulic Crane of suitable size as determined by the lift study
- 1 x Telehandler;
- Various light vehicles; and
- Haulage truck for waste disposal.
- Dust suppression fan

7.5 GENERAL DEMOLITION METHODS

The site consists of demountable offices, conveyors, overhead bins and concrete storage bins

The structures will be demolished using suitable Demolition excavators ranging from a 25t to a 48t High Reach demolition excavator with a 24m reach. Some works will also require the use of one or more mobile hydraulic cranes, concrete cutting machinery and oxy-cutting will also be used on site. Lastly to gain access at height workers will make primarily of EWP and in some cases scaffolding.

Steel structures will be brought to the ground by crane lifting and induce collapse in some cases. Once on the ground, Demolition Excavators will be systematically shearing the structures to a manageable scrap size for loadout.

The main concrete structure will be systematically demolished to the ground in a safe and controlled manner using a variety of sequenced activities and segregating and clearing of materials will be done concurrently.

7.6 ASBESTOS AND HAZARDOUS REMOVAL METHODOLOGIES

An Asbestos Removal Control Plan has been prepared which outlines removal methodologies and management practices to allow for the safe removal of asbestos. Similarly, WMSs have been developed for the removal of asbestos material.

7.7 ON-SITE PROCESSING

On-site processing of steel entails the use of cold cutting techniques by use of a hydraulic shear attachment on an excavator.

On-site processing of concrete entails the use of a combination of hydraulic hammer, concrete cracker and mechanical pulveriser to process the concrete to a manageable size for off-site disposal. Brick materials will be segregate

8 RECYCLING

In the case of steel, all ferrous and non-ferrous materials, concrete, brick, green waste will be transported offsite for recycling at relevant licensed facilities.

9 TRANSPORTATION AND TRACKING

In the case of steel, all ferrous and non-ferrous materials, concrete, brick and green waste, will be transported offsite for recycling. These materials will be transported by semi-tipper trucks which will be organised by the company's preferred contractor.

All hazardous waste including special waste (asbestos) will be transported off-site to a licensed disposal and/or recycling facility, by licensed contractors and tracked using the EPA's online tracking system.

General demolition waste will be loaded into semi-tippers or truck & trailers, and transported to a licenced offsite disposal facility. All material types will be quantified and tracked with relevant information captured in the site Waste Register, which is available to Hanson.

Please refer to Traffic Management Plan and Waste Management Plan for more details of transportation and tracking.

10 REGULATORY AUTHORITY NOTIFICATION

SafeWork NSW will be notified on the prescribed form and in the prescribed manner the intention of the company to undertake the following works:
Demolition Works;
Asbestos Removal Works.

The regulator will be provided with a notification at least 5 days prior to work commencing as prescribed.

11 SAFETY AND ENVIRONMENTAL RISK CONTROL

11.1 DEMOLITION RISK ASSESSMENT WORKSHOP

A Demolition Risk Assessment Workshop (DRAW) will be undertaken prior to work commencing to identify the high-level Safety and Environmental risks that are likely to be encountered during the works.

The site team undertaking the DRAW will include, but not limited to, the following:

- Project Manager(s);
- Site Supervisor(s);
- HSEQ Officer;
- Workers;

The DRAW will then be used by the site team as the foundation for the development of a Job Hazard Analysis (JHA) for each specific task identified within the Work Method Statement. As circumstances change, the DRAW will undergo a review.

11.2 PROTECTIVE MEASURES

Fencing
The perimeter of the defined demolition zone will be fenced (existing block wall) and sign posted as the first line to prevent unauthorised access. Only persons with the authority of the Project Manager(s) may enter the site.
Within the site, task specific safe work zones will be put up and indicated by flag line. Only persons with the authority of the Project Manager(s) may enter the site. Visitors will be escorted by inducted personnel at all times.

Class B Hoarding
A B-Class hoarding will be established for the duration on the pedestrian walkway adjacent to the site boundary and Bridge road. On top of the B-Class hoarding a protective scaffolding equipped with a mesh screen will be installed.
High risk works on the site boundary will also be conducted in off peak times, with spotters on either side of the structure.

Spotters
During any demolition works near or close to the road and neighbouring facilities, spotters will be stationed as required by the JHA to prevent unauthorised access.

11.3 DIMENSIONS OF THE DEMOLITION EXCLUSION ZONE

The exclusion zones for the work are continually defined as the work progresses and depend on the JHA and concurrent activities at any given time.

11.4 DAILY CHECK ITEMS

11.4.1 Before Commencing Work

- All openings and elevated free edges are properly guarded;
- All fire and safety services are operational where required and other services not required have been safely disconnected;
- Any hazardous substances have been removed and correctly disposed of;
- Lines of communication to the supervisor(s) are clear and operational;
- All emergency access routes are clear of debris and clearly marked.

11.4.2 Before Leaving Site

- All partly demolished plant and/or structures are secured and stable;
- All demolished materials have been removed or secured against high winds;
- All heat sources have been properly extinguished;
- All emergency access routes are clear of debris and clearly marked;
- All boundaries have been secured against unlawful entry;
- All areas outside of the demolition and remediation zones are clear of demolished materials and any hazard is properly lit, guarded and clearly marked;
- A daily close out meeting will be held to confirm all of the above.

Please refer to Emergency Management Plan for more details of emergency response.

12 ASBESTOS AIR MONITORING (WHERE FRIABLE IS PRESENT)

Referred to *Hanson Blackwattle Bay Asbestos Register 2012,* there is no friable asbestos has been detected. Liberty Industrial will treat Friable Asbestos as unexpected find.
Air monitoring will be undertaken in accordance with the Asbestos Removal Management Plan and Codes of Practice.

Dust suppression methods will be employed while undertaking the work in accordance with the Asbestos Removal Management Plan.

Note: Referred to Air Quality Management Plan from Hanson, monitor effectiveness of controls visually and review process if required.

13 NOISE & VIBRATION CONTROL

Noise and vibration control measures will be consistent with measures outlined in the Environmental Management Plan.

14 DUST CONTROL

Dust monitoring will be carried out visually during the demolition work. Dust control will be managed according to the task at hand, with task that generate consistent dust, having and continuance control measures will be implemented.

15 PROGRAMME

See Project Delivery Program – Hanson Demolition Program_Rev05which indicates the proposed sequence and estimated completion date of the demolition works to be undertaken in this project.

16 WORKING ADJACENT TO OPERATING AREAS

A pre-demolition dilapidation survey will be conducted by Hanson Construction Materials Pty Ltd; the dilapidation report will outline the condition of nearby properties and the surrounding infrastructure, please refer to Dilapidation Report for more details.

17 WORK PERMITS

The company will use its own Work Permit (WP) system.

The WP register will be made available to Hanson's nominated representative on request. It will include, but not limited to:

- Hot work (drilling, grinding, cutting);
- Working at height (above 2 m);
- Confined space entry;
- Excavation and Penetrations;
- Hazardous Work Permit;
- Crane work box.

18 TRAINING

Only trained worker(s) will be engaged on the project along with their qualifications. Verification of Competencies (VOC's) will also be undertaken, and filed.

19 WORK AREA INSPECTION

Workplace inspections shall be undertaken on a regular basis agreed with the Client's representative.

20 HEALTH AND SAFETY SYSTEM

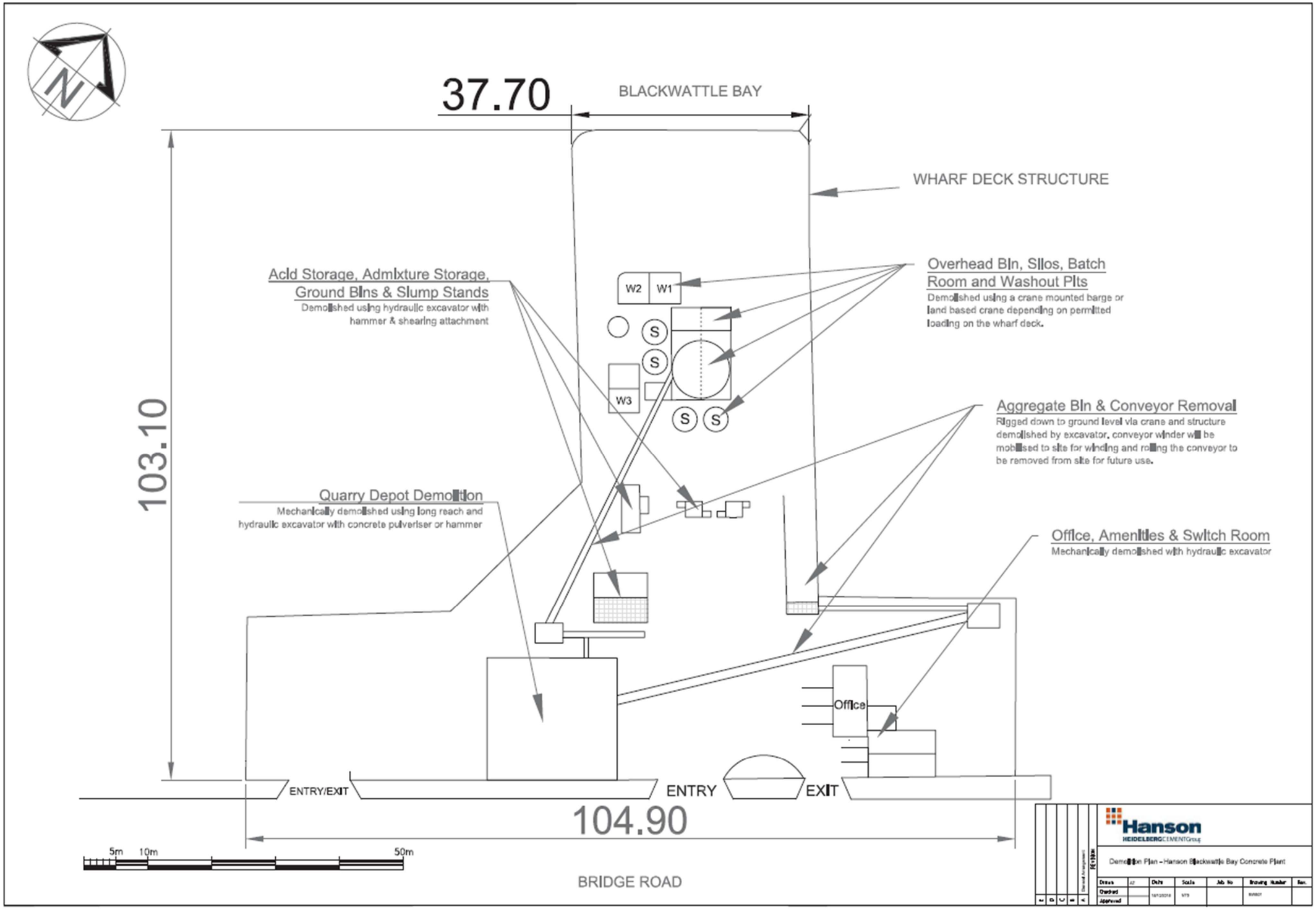
Consideration of health and safety risks and control measures has been included in the site-specific Work Health and Safety Management Plan under separate cover. In addition, a

Demolition Risk Assessment Workshop (DRAW) will be undertaken prior to commencing work along with specific Work Method Statements and Job Hazard Analysis'.

APPENDIX A – PROGRAM

Hanson Demolition Program_Rev 07_13March 2020

APPENDIX B – DEMOLITION SITE MAP



APPENDIX C – DEMOLITION CONTROL ZONE

Notes:

- Signage to be posted at both entry to the site
- Muster Point is located at the eastern end entry near the site compound
- Class B hoarding to be erected at the adjacent footpath to the southern side of Aggregate Bins.
- Entry to be locked or manned during the operating hours to prevent any unauthorised entry
- No "PPE Free Zone" within the site boundary besides in the office and amenities.

Legend	
	Demolition Control Zone
	Class B Hoarding
→	Traffic Ingress
→	Traffic Egress
	Site office and amenities

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