

6033 - Steel Museum

Risk Assessment & Method Statement (RAMS) – Bessemer Converter Installation

Ace Capital Projects Ltd

15th March 2024

0002



Notice

This document and its contents have been prepared and are intended solely as information for Ace Capital Projects Ltd and use in relation to Health & safety Procedures & methods.

Blueprint Construction assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

Document history

Document title: Risk Assessment & Method Statement (RAMS) – Bessemer Converter Installation

Document reference: 0002

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	To Present to Client	M.C.	S.H.	J.L.	ALL	15/03/2024

Client signoff

Client	Ace Capital Projects Ltd
Project	6033 - Steel Museum
Job number	6033-ACECP-CD-XX-HS-C-0002-Rev01- RISK ASSESSMENT & METHOD STATEMENT
Client signature/date	

Contents

Chapter	Page
Introduction	4
1. The Project	5
1.1. Site Location	5
1.2. Site Access	5
1.3. Activities on or Adjacent to Site During Work & Adjacent Land Use	6
1.4. Travel and Site Access Arrangements	6
2. Minimum PPE Requirements	8
3. Contact Details and Competency	9
4. Method of Working	10
5. Reporting Incidents and Near Misses	12
6. Hazard Schedule and Risk Assessment	13
References	20

Tables

Table 3-1 - Staff contact numbers	9
-----------------------------------	---

Figures

Figure 1-1 - Site Location (approximate co-ordinates 276478, 190036)	5
Figure 1-2 - Suitable access from the M4 motorway	6

Introduction

This set of RAMS covers the installation process of the 120t Bessemer converter, within the proposed steel museum building, along with limitation to the install. The risk assessment sets out potential risks and mitigation actions which are necessary to ensure all personnel are safe whilst undertaking the works. This will be used at the time of installation along with the encouragement of dynamic risk assessments that are to be undertaken at the start of every shift, should anything change.

1. The Project

1.1. Site Location

The scheme is located adjacent to the A48 Heilbronn Way, the current site is used as a car parking facility for the town of Port Talbot. Access into the site can be attained by exiting the A48 onto Grove Place and then onto Station Road until you come to the south-eastern extent of the site. The proposed steel museum development is located along the northern boundary of the site extents with the area currently holding the Riverside Church Building, in which we propose to demolish, please see Figure below for site location, approximate OS grid reference number is: SS764900.

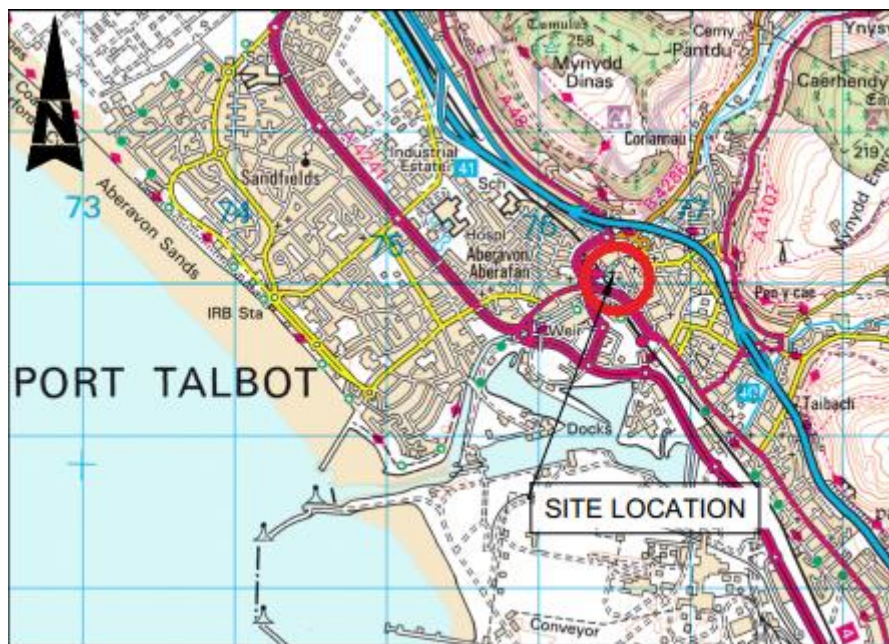


Figure 1-1 - Site Location (approximate co-ordinates 276478, 190036)

1.2. Site Access

Please refer to Pre-Construction information and 6033-ACECP-CD-XX-DR-C-0003-SITE ACCESS. Drawing for more information, Further to this for the transportation of the Converter an abnormal load permit will be undertaken along with an escort ensuring minimal disruption to the local area.

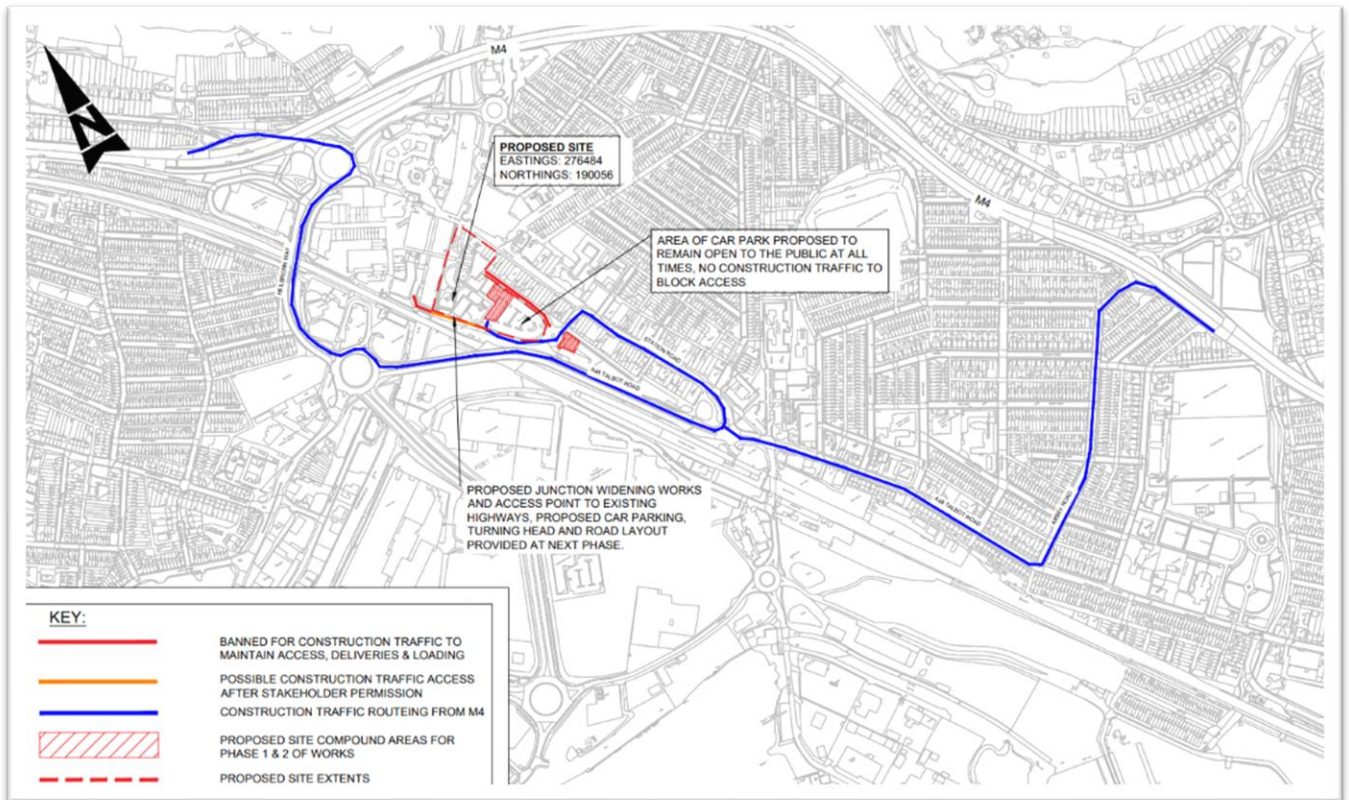


Figure 1-2 - Suitable access from the M4 motorway

1.3. Activities on or Adjacent to Site During Work & Adjacent Land Use

Some of the activities undertaken at the time will be as follows:

- General public car park with 24-hour access
- Live train services along adjacent trainline
- Deliveries to shopping centre access road and local shops from Station Road

1.4. Travel and Site Access Arrangements

Travel to and from site by all relevant parties involved within this phase of construction will be covered within the Pre-Construction Information ([6033-ACECP-CD-XX-HS-C-0001](#)). It is also expected that all vehicles are to plan their routes using the drawing outlined in section 1.2. parking will then be located in the public car park adjacent to the proposed site compound. All

site staff are then to sign in at the main compound prior to moving and starting any works. They are then to ensure to sign out at the end of each days reporting any near misses or incidents using the protocols outlined in the PCI.

2. Minimum PPE Requirements

The following Personal Protective Equipment (PPE) is to be worn on site at all times, to help maintain safety:

1. Safety boots with steel toecap and midsole protection or wellies with the same protection and anti-ankle roll properties.
2. High visibility vest, with two visibility bands
3. White hard hat, with two-point chinstrap
4. Safety Glasses
5. Gloves

Additionally, the following items shall be carried by all staff:

- Sun cream
- Hand sanitiser
- Water bottle and food
- Spare warm/dry clothing
- Waterproof PPE (Optional)
- Ear defenders
- Dust control

3. Contact Details and Competency

Name	Mobile Contact Number	HSE Training Complete
Mathew Catlin	07441202987	CSCS
Joe Bloggs	07518709122	CSCS

Table 3-1 - Staff contact numbers.

In the event of an emergency, accident or near miss incident the following approach will be undertaken:

1. Follow emergency procedures set out by Blueprint Construction Ltd.
2. Follow the emergency plan with respect to emergencies on site.
3. Complete the hazard schedule and risk assessment.

A dynamic risk assessment further to this one will also be done on a daily basis aiming to capture on changes to the site or environment in order to keep on top of site safety and controlling risk where reasonably practicable:

1. Eliminate the risk.
2. Reduce the risk.
3. Prevent contact with hazard.
4. Implement safe systems of work.
5. Use of Personal Protective Equipment (PPE)

All staff on Blueprint Construction site have all completed a CSCS training course suitable to their level of qualification, it should also be noted that all supervisory staff will have also completed a SSSTS training course to help further manage safety.

The risk assessment has been completed in accordance with the health and safety at work act 1974 and also in accordance with the project Pre-Construction Information Package.

4. Method of Working

Below outlines a step-by-step process of how Blueprint plans to complete the construction and installation involving the moving and relocation of the Bessemer converter proposed for the steel museum, this method statement includes processes across all disciplines of work ensuring safety is paramount and quality is maintained:

1. Ensure safety procedures are followed when travelling to and accessing site.
2. Check lift plan and all safety documentation.
3. Base to be set out by setting out engineer.
4. Prepare ground, where Bessemer converter is to be landed, excavate to sub-formation, and remove spoil.
5. Inspection of sub-formation ground to ensure suitability California Bearing Ratio (CBR) testing to be undertaken.
6. Begin piling rig setup and crane setup and load out site with pile reinforcement cages.
7. Drive down rounded sheet piles to act as supports and begin piling until reach desired depth of 4 no. Piles.
8. Install reinforcement cages into pile ensuring centred with sufficient cover.
9. Undertaken C32/40 Concrete mix to be poured into 4 no. Piles.
10. Allow concrete to cure and then remove rounded sheet piles.
11. Break piles to expose top of re-bar and pour concrete blinding to level area ready to attach steel from the capping slab.
12. Begin fixing reinforcement for Bessemer converter base, following design reinforcement drawings.
13. Reinforcement to undertake quality checks and approval.
14. Formwork to be erected around base ensuring sufficient cover to reinforcement.
15. Pre-pour inspections check and approval to be undertaken.
16. Concrete pour to be undertaken using a concrete pump or concrete skip.
17. Power floating and finishing works to be undertaken to ensure correct finish to concrete.
18. Cover scanning of base to be undertaken to confirm sufficient cover.

19. SHIMS to be put into place ready for lift.
20. Crane pad to be erected using 6F2 material and compacted well and tested.
21. Erection of 600t Crane to be undertaken.
22. Delivery of Bessemer Converter to be undertaken following site access arrangement and following abnormal load procedures.
23. Lift preparation undertaken with Converter placed onto transporter and situated near 600t crane ready for lift.
24. Exclusion zones set up and final lift preparations completed.
25. Lift of Bessemer converter undertaken and placed onto SHIMS on top of base.
26. Temporary supports, to be erected to ensure the Bessemer's security.
27. Once in place, formwork to be erected around SHIMS and flowable grout or similar approved to poured to fill voids underneath Bessemer converter.
28. Once grout has cured, removal of temporary supports.
29. Exclusion zones can be decommissioned and de-rigging of crane to be completed.
30. Once crane is removed from site, area with Bessemer converted to be barriered off, to avoid any collisions with ongoing work as building is erected around converter.
31. Site to be surveyed and all relevant quality checks and paperwork to be completed.

5. Reporting Incidents and Near Misses

All near misses and incidents are to be reported to the health and safety team directly. This process will then be recorded, and an update provided to the team regarding action to improve or mitigate these risks. In the event of an accident reportable under RIDDOR, all parties will be notified, and the relevant information recorded and passed on accordingly.

6. Hazard Schedule and Risk Assessment

The following table presents a scoring system to be applied to quantify the risks before and after risk control measures have been implemented:

$$\text{RISK (R)} = \text{PROBABILITY (P)} \times \text{SEVERITY (S)}$$

RISK CLASSIFICATION			Severity				
			1	2	3	4	5
			Minor Harm	Moderate Harm	Serious Harm	Major Harm	Catastrophic Harm
Probability	1	Very Unlikely	1	2	3	4	5
	2	Unlikely	2	4	6	8	10
	3	Likely	3	6	9	12	15
	4	Extremely Likely	4	8	12	16	20
	5	Almost Certain	5	10	15	20	25

RISK (R)

1 to 2	LOW (Ensure control measures are maintained)
3 to 12	MEDIUM TO HIGH (Activity only permitted if probability category 1 (very unlikely) or 2 (unlikely). If probability category 3, 4 or 5 then eliminate hazard or improve control measures to reduce probability to 1 or 2.
15 to 25	HIGH (Activity not permitted – hazard to be avoided or risk considerably reduced)

PROBABILITY THAT HARM WILL OCCUR DURING THE PERIOD OF THIS RISK ASSESSMENT (P)	
1	Very Unlikely - harm will not occur (almost 0% chance)
2	Unlikely

POTENTIAL SEVERITY OF HARM (S)	
1	Minor harm (minor injury with short term effect, minor damage or loss).
2	Moderate harm (lost time injury or illness, moderate damage or loss)

3	Likely – harm may occur (50% chance)
4	Extremely Likely
5	Almost certain – harm will occur (100% chance)

3	Serious harm (over three-day injury or illness, substantial damage or loss – reportable to the HSE under RIDDOR)
4	Major harm Major injury, major damage or loss (<i>e.g. broken bone in main limb</i>)
5	Catastrophic harm (fatality or disabling illness, catastrophic damage or loss)

Table 6-1 - Risk Classification Matrix (Guevara, 2023)

RISK ASSESSMENT: Risk (R) = Probability (P) x Severity (S)

Item	Hazard	Consequences	Initial Analysis			Proposed Risk Control Measures	Final Analysis					
		Who may be harmed and how?	Before Control measures				If Control Measures Actioned					
			P	S	R		P	S	R	By Whom	When	Check and Sign
TRAVEL TO AND FROM THE SITE AND DURING TRAVEL IN TRAFFIC MANAGEMENT												
1	Collision while driving to or from site.	Injury or death to personnel and/or the public	3	5	15	i. Take regular rest breaks if travelling for a period of over 2 hours or if tired. ii. Ensure others know of your estimated travel times if travelling alone. iii. All site staff to familiarise themselves with the safe driving procedures and site access arrangements, plan route ahead of time. iv. Staff to check the weather forecast before driving and to cease driving in periods of extreme weather, including icy ground conditions, snow, low sun angles, fog and heavy rain. Site staff to stop as soon as safely possible, for example at local services or in parking areas, should visibility become too poor or if ground conditions are deemed by personnel to be unsafe.	2	5	10	Site Staff	Travelling to/from site	
2	Breakdown while driving to or from site.	Injury, illness or inconvenience to personnel	2	3	6	i. Staff shall ensure that warm clothes and provisions are available in vehicles in the event that they are stranded. ii. Ensure that breakdown cover details are kept in the vehicle. iii. Ensure vehicle checks, carried out before getting into the vehicle on each journey. iv. Ensure that any damage or faults are reported straight away, aim to get repaired. v. Ensure that a charged mobile phone is kept on person whilst driving.	1	3	3	Site Staff	Travelling to/from site	
PERSONAL SECURITY & STAFF WELFARE												

RISK ASSESSMENT: Risk (R) = Probability (P) x Severity (S)

3	Lack of mobile phone reception	Unable to contact members of staff in case of emergency	3	2	6	i. Check mobile phone coverage using signalchecker.co.uk. ii. Upon arrival at the sites, mobile phones should be tested for reception from a safe place. If no signal, alternative methods of communication must be established.	2	2	4	Site Staff	Whilst on site	
4	Aggressive behaviour from landowners / members of the public	Injury or intimidation to personnel.	3	2	6	i. No lone working - stay within visual and audible contact of others in the group. ii. Be aware of surroundings. iii. Be aware of suspicious behaviour and report any incidents. iv. Wear suitable PPE including high visibility clothing. v. Avoid confrontation and remove yourself from an aggressive situation vi. All personnel to be calm and polite if confronted by any member of the public. vii. No valuables shall be left visible in vehicles at any time.	2	2	4	Site Staff	Whilst on site	
5	Contracting tick-borne diseases, particularly Lyme's disease.	Illness or death to personnel. Ticks can be active on mild winter days and are most active between March and October.	3	4	12	i. Avoid area where ticks can be picked up such as dense vegetation etc. ii. Use insect repellent prior to attending areas of dense vegetation and areas used by animals and other forms of deterrent. iii. Where possible, site staff to tuck trousers into socks and wear long sleeved tops. iv. Check PPE and clothing regularly for ticks during and after attending site. v. Site staff will be made aware of Lyme disease symptoms as part of site briefing. vi. Ensure tick removal kits are provided to staff on site in the event of being bitten. Bites must be checked regularly for signs of a rash or Lyme's disease, if staff are concerned then they should consult a doctor or go to A&E for medical advice. vii. Any bite site must then be checked regularly for signs of a rash and reported as a near miss.	2	4	8	Site Staff	Whilst on site	

RISK ASSESSMENT: Risk (R) = Probability (P) x Severity (S)

6	Exposure to infection and disease. Contracting Leptospirosis or Weil's Disease	Illness to personnel	3	5	15	i. For control of the risk of all infections and diseases, staff must wear appropriate PPE and ensure that they maintain good hygiene practices. ii. Staff should not touch any waste material, directly unless controls are in place. iii. Staff should wash hands thoroughly before eating any food. iv. Wear gloves whilst on site. Be particularly vigilant when working near watercourses, including rivers, ponds, land drains, stagnant water, ditches etc.	2	5	10	Site Staff	Whilst on site	
7	Lone working	Injury to personnel	2	4	8	i. Lone working is not permitted. Staff to remain in contact with other staff on site.	1	4	4	Site Staff	Whilst on site	
8	Noise, dust and debris	Injury to personnel	3	2	6	i. Wear appropriate PPE to be supplied by Blueprint Construction such as glasses, ear defenders and dust control for tools.	1	2	2	Site Staff	Whilst on site	
9	Potential for periods of heavy rain and/or cold temperatures.	Illness to personnel: (e.g. hypothermia)	2	3	6	i. Appropriate PPE and general clothing to be worn (e.g. warm and/or waterproof). ii. Spare dry clothes to be taken in the event of significant rainfall. iii. Weather conditions to be checked daily. iv. Waterproof PPE to be made available for staff working outside.	1	3	3	Site Staff	Whilst on site	
10	Potential for periods of high temperatures and excessive sun exposure.	Illness to personnel (heat stroke) and sunburn	3	3	9	i. Appropriate PPE and general clothing to be worn (e.g. thin high visibility long sleeve vest rather than thick coat). ii. Carry sufficient water and stay hydrated. iii. Carry sun cream and apply throughout the day on exposed skin. iv. Take rest breaks when needed.	2	3	6	Site Staff	Whilst on site	

RISK ASSESSMENT: Risk (R) = Probability (P) x Severity (S)

11	Fatigue and dehydration due to long working hours and distance of site to home.	Illness to personnel and higher likelihood of injury or death to personnel and the public due to accidents.	3	5	15	i. Ensure regular breaks in order to stay hydrated staff encouraged to take regular water breaks. ii. If required, site staff to be accommodated close to site during the week.	1	5	5	Site Staff	Whilst on site; when travelling to/from site	
13	Distraction from use of mobile phone and iPad	Injury or death to personnel	2	5	10	i. Always check with the person you are calling whether it is safe for them to receive your call/use the device. ii. Stand in a plant exclusion zone when using a mobile device. iii. Ensure out of the way of any heavy lifting procedures. iv. No wandering around site when on a call/using the device. v. Do not use mobile phone/device whilst driving.	1	5	5	Site Staff	Whilst on site	
14	Reduced awareness due to drugs and alcohol	Illness or death to personnel or the public	3	5	15	i. The site has a strict NO alcohol and drugs policy. Consumption of alcohol and drugs are not permitted. ii. Staff never to attend site under the influence of drugs or alcohol. iii. D&A testing will be provided at random intervals.	1	5	5	Site Staff	Whilst on site; when travelling to/from site	
15	Heavy lifting processes	Injury, illness or death to personnel	3	5	15	i. Ensure to be out of the area when heavy lifting is undertaken. ii. Familiarise yourself with lifting plan to ensure procedures met. iii. Always make contact with crane driver when passing by.	2	5	10	Site Staff	Whilst on site	
16	Slips, trips and falls or entrapment	Injury or Illness to personnel	3	3	9	i. Undertake dynamic risk assessment at each location and plan routes carefully. ii. Appropriate PPE should be worn, to include suitable footwear with adequate ankle support. iii. Avoid walking on grids/cable troughing for risk of collapse and potential injury.	2	3	6	Site Staff	Whilst on site	

RISK ASSESSMENT: Risk (R) = Probability (P) x Severity (S)

					iv. Tripping over vegetation is one of the main risks. Be vigilant when walking through any form of vegetation.						
GENERAL SITE CONDITIONS											
17	Being struck by moving plant	Injury or death	2	5	10	i. Remain vigilant. ii. Always get a thumbs up from plant operator when passing. iii. Make site personnel aware of yourself. iv. Ensure to follow pedestrian exclusion zones to minimise plant/people interface.	1	5	5	Site Staff	Whilst on site
18	Heavy items falling from height	Injury or Death	2	5	10	i. Ensure all heavy lifting is followed with a lift plan. ii. Ensure there's a lift supervisor and relevant exclusion zones are set up iii. Don't allow other work disciplines into the area until lift has completed and is secure. iv. Ensure correct lifting straps are used.	1	5	5	Site Staff	Whilst on site
19	Adverse Weather, Storms, High winds.	Injury, illness or death to personnel. Flying objects, unsafe working conditions	2	5	10	i. All lifting procedures must be assessed prior to extreme weather. ii. Awareness of flying or falling objects in winds. iii. Lifting procedures should be halted with extreme weather conditions.	1	2	2	Site Staff	Whilst on site
20	Encountering asbestos	Illness or injury to personnel or the public	2	5	10	i. Remain vigilant. If asbestos is identified on site stay clear and do not disturb to prevent the fibres becoming airborne.	2	5	10	Site Staff	Whilst on site

References

Guevara, P. (2023). *5x5 Risk Matrix: Importance and Examples*. [online] SafetyCulture. Available at: <https://safetyculture.com/topics/risk-assessment/5x5-risk-matrix/> [Accessed 25 Mar. 2024].