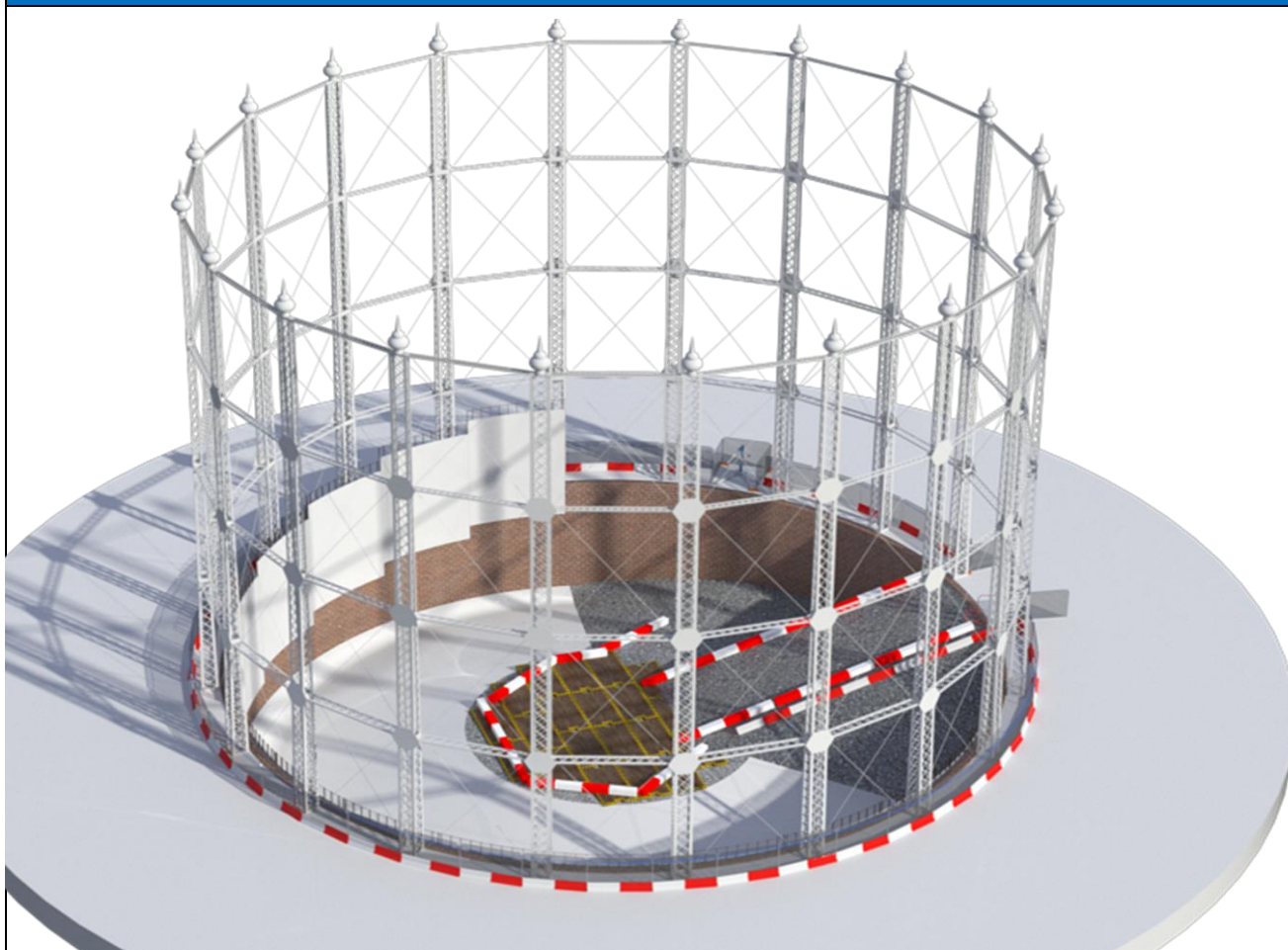


Outline Summary / Demolition Methodology

Gasholder Demolition & Gasholder Infilling Demolition of associated structures.

Saxon Street, Miles Platting, Manchester, M40 7BY



Prepared For	National Grid Property Plc. (NGP)
Prepared By	Erith Contractors Ltd (ECL)
Document Reference	Outline Scope: Gasholder Demolition & Infilling.
Project Reference	R11682 – Manchester GHD & GHI.

Document Revision / Authorisation Record

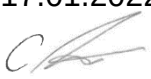
Revision No	Prepared by Position. Date Signature	Authorised by Position Date Signature	Details
01	Carl Timblin Site Manager 17.01.2022 	Matt Balson Project Manager 17.01.2022 	Document Creation and issue to client for review.
02	Scott Hutson Site Manager 23.01.2023 	Matt Balson Project Manager 23.01.2023 	Outline summary updated to reflect the change from partial gasholder infilling to full.

Table of Contents

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Section 7	Infilling Methodology
Section 8	Completion

1. Scope of Works

Erith Contractors Ltd (Erith) have been appointed by National Grid Property Holdings Ltd (NGPH) to undertake the demolition and gasholder infilling works within the former gasholder compound located on Saxon Street, Miles Platting, Manchester. M40 7BY (53.486372, -2.208089).

The works comprise the Asbestos survey and removal, dewatering (under UU consent and EA deployment), desludging and dismantling works of one below-ground column guided gasholder (referenced as Gasholder No.1), the removal of associated redundant above ground pipework and three redundant buildings: a boiler house / Chimney, booster house and switch room. 6 no. lighting columns are to be removed. On completion of the gasholder demolition works, the gasholder void is to be infilling to match the current ground level surrounding the gasholder.

The works are non-intrusive for which all foundations / below ground structures (slabs etc.) will remain in-situ. All works will be undertaken within the site boundary.

Key Dates / Milestones.

Site Access Date: 03/05/2022

(works commenced on this date under previous approval 132850/DEM/2022)

Commencement of Demolition Works: 08/09/2022

(works commenced on this date under previous approval 132850/DEM/2022)

Site Works Completion Date: 20/10/2023

Site Working Hours

Monday – Friday: 08:00 – 17:30

Weekends / Bank Holidays: No works.

2. Environmental Management Plan

200m Zone of Influence

Nearby Habitats

Urban

Boundary Risk Bands

- High Risk
0-30m from site boundary
- Medium Risk
30-80m from site boundary
- Low Risk
80-160m from site boundary

Nesting Season

Prior to the start of bird nesting season netting will be fitted around the superstructure columns and lattice beams by MEWP to prevent nesting, allowing the guide frame dismantling to be undertaken during nesting season.

Sensitive Receptors

Structure Colour Classification: High sensitivity Medium sensitivity Low sensitivity

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NGPH GHD
Manchester

CLIENT:
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Sensitive Receptor Risk Analysis				
Bearing	Receptor	Sensitivity	Distance	Risk
Site	PRS & Gas Assets	High (Vibration)	0m	High
North	Pub & Commercial Property	Medium	5m	High
North	Residential Properties	High	50m	High
North	Park View Community Sch.	High	280m	Low
East	Commercial Properties	Medium	100m	Low
East	Sports Complex	Medium	120m	Low
South	Ashton Canal	Low	5m	Medium
West	Residential Properties	High	5m	High
West	Playground	Low	30m	Low

Monitoring Locations

1 Numbered monitoring locations indicate where environmental monitoring equipment will be positioned. This will depend on the nature and location of the works as well as weather conditions such as prevailing winds

Non numbered locations indicate where additional smell tests and VOC readings shall be undertaken outside of the site boundary and downwind of odorous works.

Odour Management

Potential odour impact area based on prevailing winds & topography

Perforated ducting connected to a waterless dry vapour system shall encircle potentially odorous demolition activities and release a non toxic, bio degradable odour neutralising agent which bonds to airborne particles and gasses, increasing their combined mass and limiting their spread.

Environmental Monitoring					
RT = Real Time W = Weekly D = Daily	Monitoring Locations				
	1	2	3	4	5
Noise	RT	RT	RT	RT	RT
Dust	W	W	W	W	W
Odour	4/D	4/D	4/D	4/D	4/D
Vibration	RT	RT	RT	RT	RT
Asbestos	As required				
Tenex Tubes	As required				
Atmospheric	RT	RT	RT	RT	RT
Appearance	D	D	D	D	D

Prevailing Winds

Likely Dust/Odour Receptor – Commercial

Flooding Probability

Site Risk Band – Zone 1
Less than 1 in 1,000 annual probability of river or sea flooding

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NGPH GHD
Manchester

Environmental Management Plan

Erith Contractors

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3. Traffic Management Plan & Internal Swept Path

Route Analysis

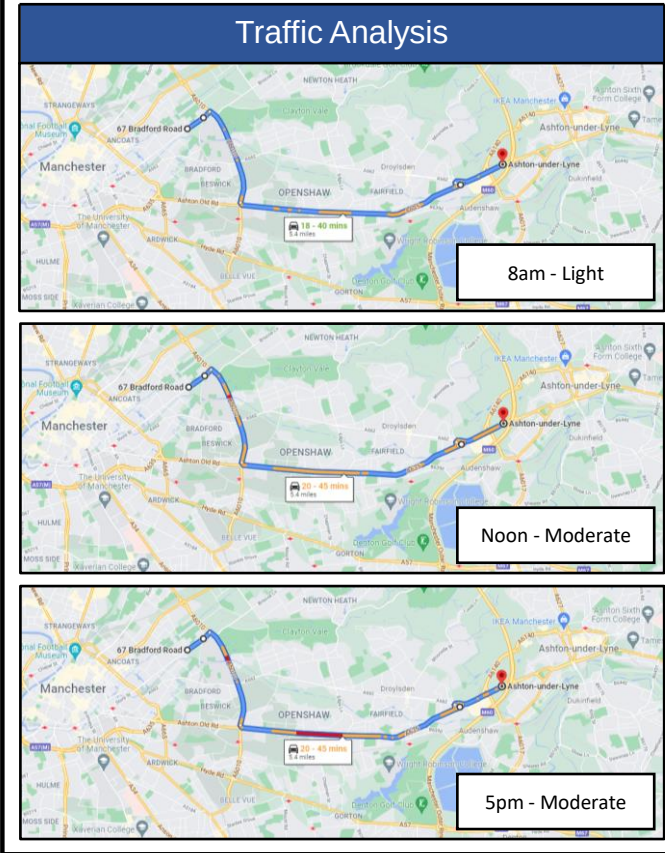
HGV traffic shall access the site from the M60 via the A635, A6010 & Bradford Rd. LGVs may access the site through other routes. Tipper lorries are to be staggered to avoid queuing outside of the project.

Stage Coach busses 74, 76, 76A, 703, 709, & 722 stop at the nearby bus stops.
Manchester Piccadilly rail station is a 25 minute walk from the site.

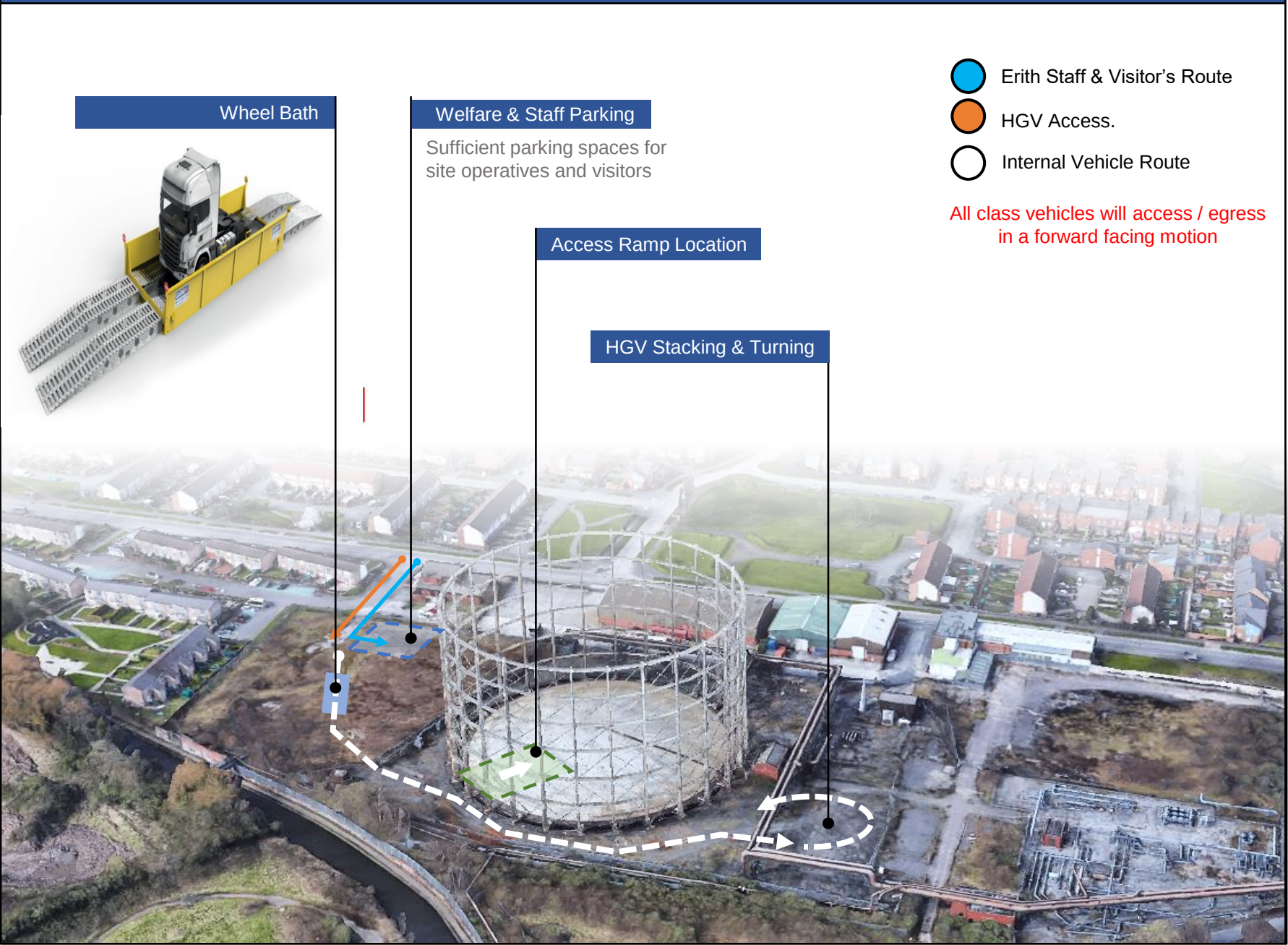
Bradford Road is a mixed residential commercial road with residential properties and a park to the north, and commercial properties to the south. The road is straight and with good visibility when exiting from the gasworks.

Bradford Rd. - Annual average daily traffic (2019 data)					
Bicycles	Motorbikes	Cars & Taxis	Buses & Coaches	Light goods vehicles	Heavy goods vehicles
69	14	3067	6	571	163

Anticipated maximum additional daily HGV(Tippers): 50-70 loads per day.
36% increase to HGVs, 2% total motor vehicles.

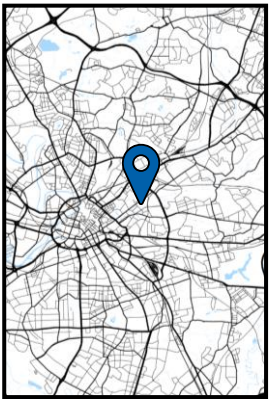
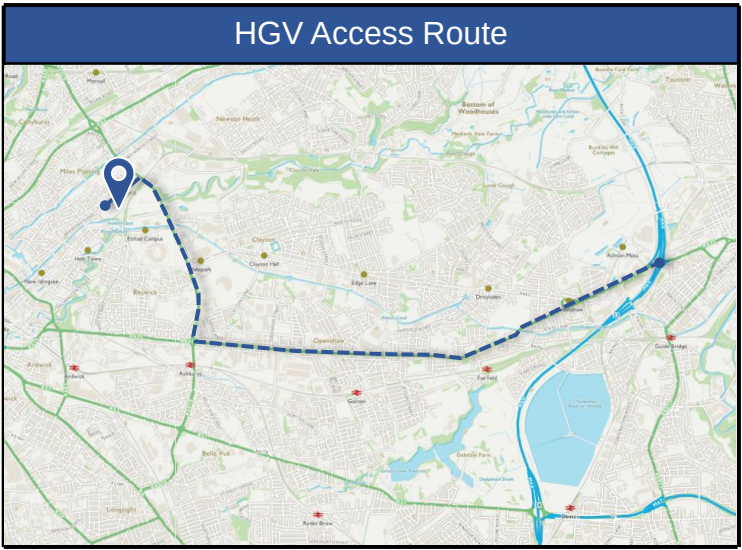


Traffic Management & Site Layout



Site Access / Egress & Vehicle Arrangements

Infilling of the remaining gasholder void will be completed by importing WRAP material from local suppliers. Material will be imported to site by 8w tipper vehicles. This method was utilised to enable the demolition works and the access / egress point on Gleden Street is suitable for HGV's including tipper vehicles. All vehicles will access / egress in forward motion. All works will be managed within the site boundary / CDM area.



PROJECT:

NGP
Gleden Street,
Miles Platting,.
Manchester,
M40 7AS

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Gasholder Infilling

Traffic Management Plan

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Topographical Abbreviations			
A/R	Assumed Route	MKR	Marker
BH	Borehole	MT	Mercury Telecom Cover
BOL	Bollard	OHC	Overhead Cable
BT	British Telecom Cover	OHP	Overhead Pipe
BW	Barbed Wire Fence	OSBM	Ordnance Survey Bench Mark
BWK	Brickwork	PS	Post Box
CATV	Cable TV Cover	PGM	Permanent Ground Marker
CB	Close Boarded Fence	PR	Post & Rail Fence
CCTV	Closed Circuit TV	PW	Post & Wire Fence
CHLK	Chainlink Fence	PWM	Post & Wire Mesh Fence
CHPL	Chestnut Piling Fence	RE	Rodding Eye
CL	Cover Level	RG	Road Gully
CM	Cable Marker	RN	Road Name
CP	Catch Pit	RS	Rodding Sign
CPL	Catch Pit Base Level	RW	Retaining Wall
DIA	Tree Bole (Diameter)	RWP	Rain Water Pipe
DK	Drop Kerb	SAP	Sapling
DP	Down Pipe	SC	Stop Cock
EJB	Electricity Junction Box	SPR	Tree Canopy Spread (Radius)
EC	Electricity Cover	STA	Traverse Station
EP	Electricity Pole	SV	Stop Valve
ER	Earthing Rod	SVP	Soil Vent Pipe
FCL	Finished Ceiling Level	SW	Storm Water
FH	Fire Hydrant	TB	Telephone Box
FIG	Feed Into Ground	TBM	Temporary Bench Mark
FW	Foul Water	TFR	Taken From Records
G	Gully	TJB	Telephone Junction Box
GV	Gas Valve	TPT	Trail Pit
H	Height	TL	Traffic Light
IC	Inspection Cover	TP	Telephone Pole
IL	Invert Level	UTL	Unable To Lift
IR	Iron Railing Fence	UTT	Unable To Trace
KO	Kerb Outlet	VP	Vent Pipe
LB	Litter Bin	WCH	Water Key Hole
LC	Lamp Column	WM	Water Meter
LP	Lamp Post	WV	Water Valve
MH	Manhole		

LEGEND

Comments
This plan should only be used for its original purpose. Erith accepts no responsibility for this plan if supplied to any party other than the original client.
All dimensions should be checked on the site prior to design and construction.
Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

REV	COMMENT	DATE



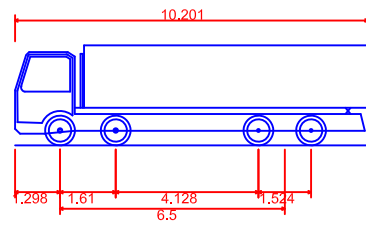
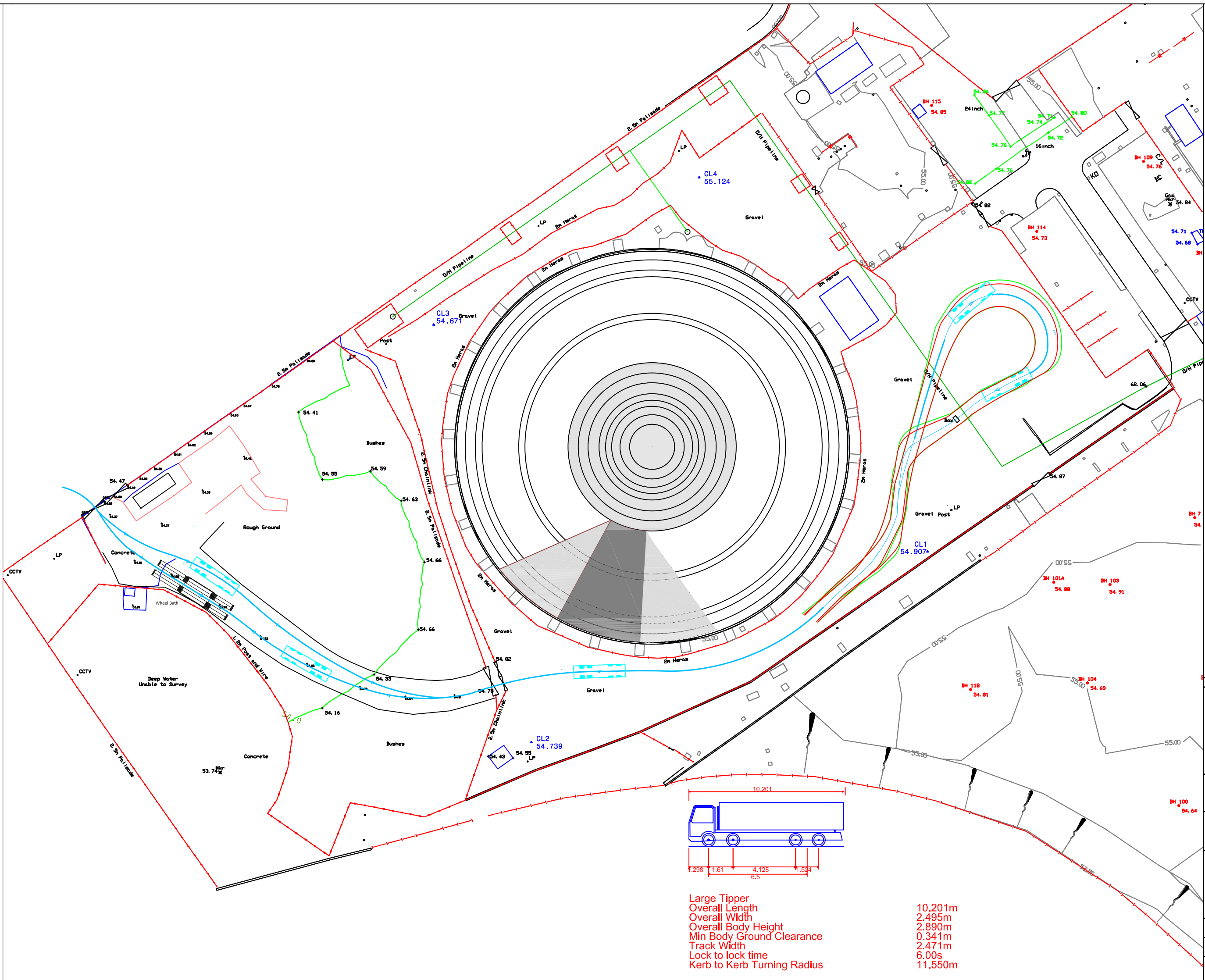
Client
NATIONAL GRID

Project
GHD Miles Platting

Title
**Site Layout
Haul Route
8 wheel Rigid Body Tipper**

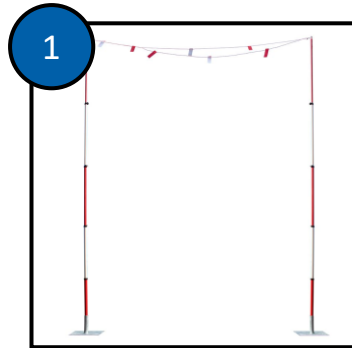
Drawn by Pd	Checked PD	Date 01-2023	Authorised PV	Date 01-2023
Original Scale NTS	Date 01-2023	Rev 0	Paper A0	

Drawing Number
21-1570 -TMP- SP 1001



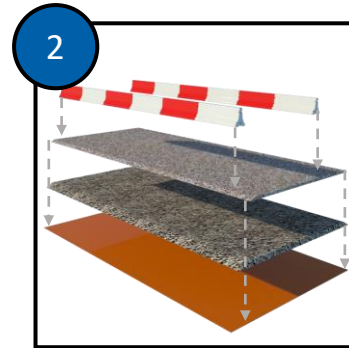
Large Tipper
Overall Length 10.201m
Overall Width 2.495m
Overall Body Height 2.890m
Min Body Ground Clearance 0.341m
Track Width 2.471m
Lock to lock time 6.00s
Kerb to Kerb Turning Radius 11.550m

4. Enabling Works & Ancillary Structures



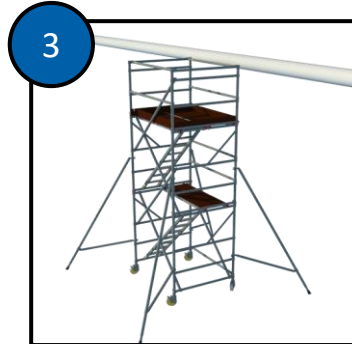
Height Restrictors

An overhead telecoms cable passes over the Gleden Street access gate. Telescopic 'goal post' height restrictors are to be erected either side of the cable for the duration of the works.



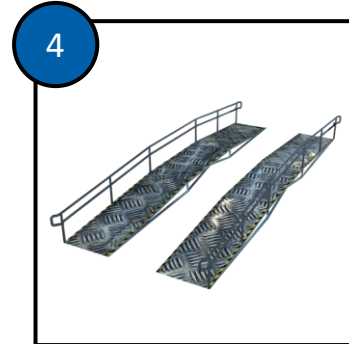
Access Road

A haul road will be created from the proposed site entrance to the holder compound. A geotextile marker layer will be placed, followed by 350mm of 75mm clean stone, capped with 100mm of type one.



Antifreeze Pipework

The six inch diameter antifreeze pipework will be removed by hand by staff working from a mobile scaffold tower. Tower erectors will hold PASMA cards or equivalent.



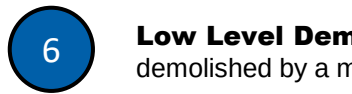
Service Crossing

A prefabricated service crossing bridge shall be used to facilitate crossing of the below ground medium pressure gas main. Vehicle routes will be barriered to prevent plant entering unauthorised areas.



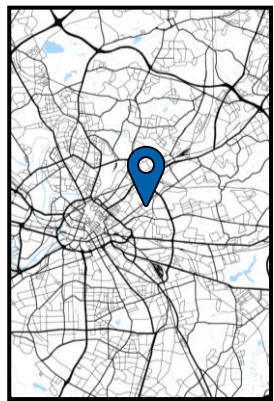
Chimney Demolition

The redundant chimney will be dismantled following an engineering assessment. A MEWP and 20 tonne mobile crane will be used to sling, cut into sections, and dismantle the stack.



Low Level Demolition

The low level structures (the booster house, boiler house, electrical switch room, and lighting column) will be subject to an R&D survey, isolated, and demolished by a mechanical excavator fitted with a multi processor. Materials will be processed and sorted for reuse where possible.



PROJECT:

NGPH GHD
Manchester

CLIENT:

nationalgrid

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Enabling and
Ancillary Demolition
Plan



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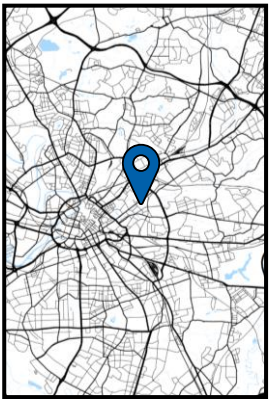
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5. Welfare Arrangements

Typical Welfare Facilities



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Welfare
Arrangements

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Parking

Reverse parking only. Charging facilities for electric crew shuttle. Cycle storage facilities will also be provided.

Notice Board / Fire Point

Site information, first aiders, fire marshals, emergency procedures are displayed here. Also houses ear plug dispenser, eye wash station, first aid kit and fire extinguishers.

Tool Store

To include a bunded, fire resistant, lockable COSHH stores. Internal lighting and smoke detectors to be fitted. Shelves to have maximum SWL marked.

BioSite Alarm

Wirelessly networked remote fire and medical emergency alarm system. Supports site zoning, audio and visual alarms, and mesh networking.

Staff Welfare

An outdoor seating area is to be created including greenery and covered areas. Initiatives such as 'Free Fruit Friday', a book share library scheme, and regular access to on site counselling will also be implemented.

Decontamination Unit

Decontamination unit with separate clean/dirty sections. Includes showers and boot wash as well as drying room facilities.

CCTV

Remote CCTV system to be installed. Vegetation will be trimmed back to ensure lines of sight along site boundaries.

Double Stacked Eco Drying Room & Canteen

Canteen – Fully furnished to CCS standard.
Drying Room – Including individual lockers with integrated USB charging points.

Double Stacked Eco Office & Meeting Room

Office – Including BioSite hub and defibrillator.
Meeting Room – Combined Site Briefing / Induction & Meeting Room (40/60 split)

Hybrid Generator

If mains power is not available a hybrid solar assisted generator ensures that the generator only runs when required, by monitoring the load and providing silent power from its internal lithium battery whilst automatically stop/starting the diesel generator.

Toilets

Separate male & female toilets including shower facilities and hand care stations.



6. Demolition Methodology



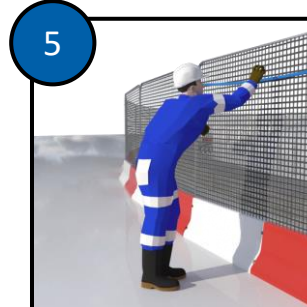
Drone Survey

The superstructure & crown is to be remotely inspected by a UAV equipped with a high definition camera to ascertain structural condition. The drone operator is to be insured for commercial work and registered with the Civil Aviation Authority



Anchor Points

Operatives working on the gasholder crown will be required to wear harnesses and to be attached to a fall restraint system. Attachment points will be determined following a structural assessment of the gasholder and its features.



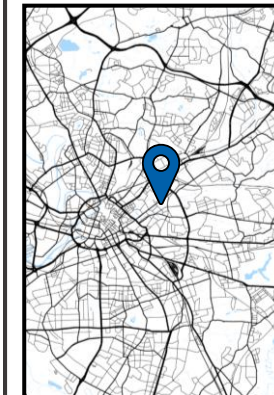
Odour Mitigation

Perforated 100mm ducting will be fastened to either the guide frame, or the perimeter fencing. A waterless, vapor based odour suppressant system will be connected to the hose line and used throughout works likely to result in the release of odours.



Emergency Response Drill

An emergency response drill is to be carried out for the recovery of an operative who has fallen into the gasholder. The drill will be recorded and any findings shared.



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Demolition
Management Plan



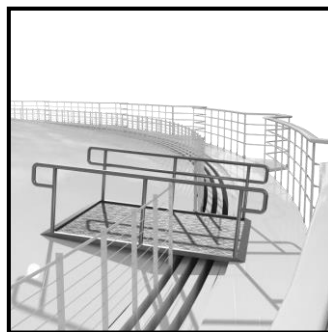
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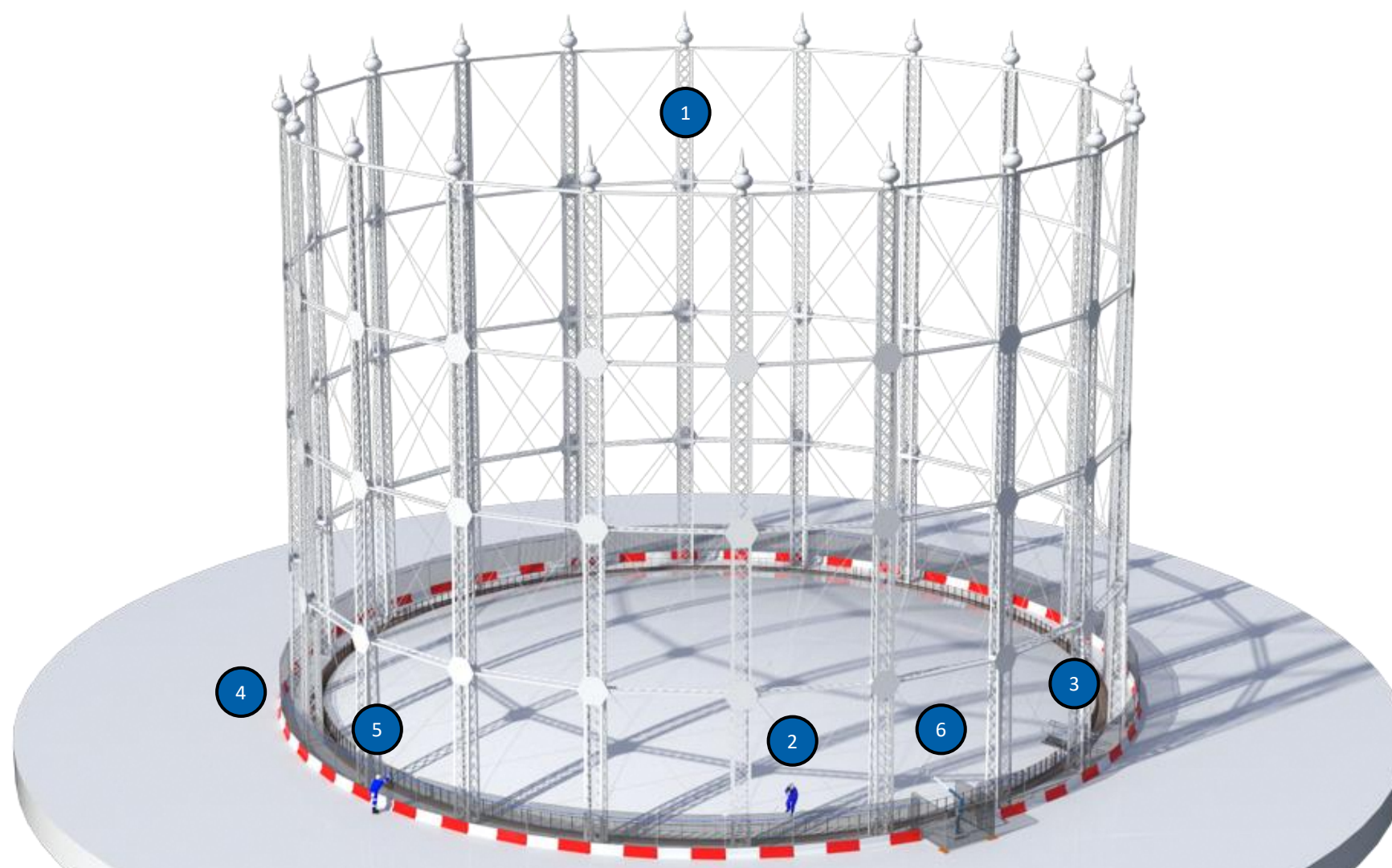
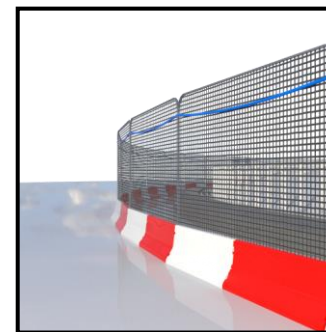
Access Bridge

A section of the holder's lift railings are to be cut away and a prefabricated aluminium bridge will be placed across the voids between the lifts to provide safe access onto the crown. The bridge will be fastened to the existing walkway features.



Fencing

Anti climb fencing will be installed a minimum of 2m from the lip of the gasholder tank perimeter. Fencing is to be double clipped and wind loading analysis carried out. Fencing will be recorded in the Temporary Works Register.



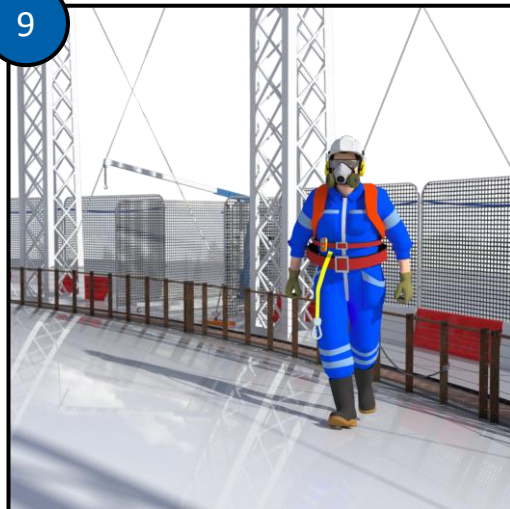
7



Vent Cold Cutting

Vents will be cold cut using 110v circular saws fitted with tungsten carbide blades by an operative using a harness fixed to a fall restraint system. Respirators, personal air monitors, and regular blood tests will be used to protect against any lead present within the crown's paint. Cold cutting shall be treated as Hot Works and performed under a permit to work system. A fire watch shall be in place for any cold cutting activities.

9



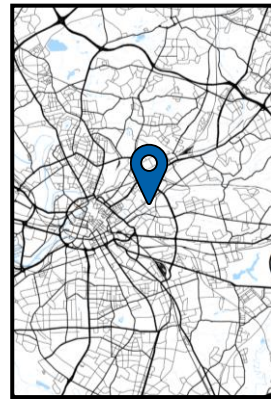
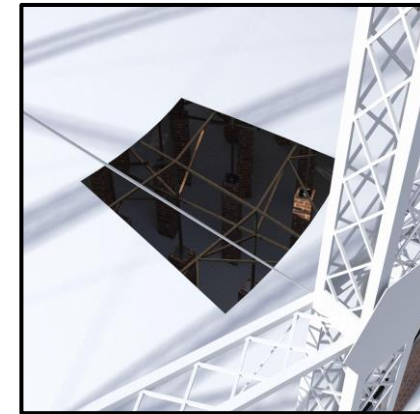
Crown Cutting

The crown will be cut into sectors using cold cutting techniques. Circular saws fitted with tungsten carbide blades will be used to make the cuts. Although cold cutting, these works are to be carried out under a Hot Works Permit system, with a dedicated fire watch officer present and a one-hour fire watch conducted after the cessation of works. Fire watch officers are to be equipped with FLIR thermal imaging cameras so as to identify any hot spots/molten metal. Cutting is to be carried out whilst water is still present within the tank. Circular saws are to be fitted with smart HAVs monitoring systems.

8

Crown Venting

The pre cut crown will be vented by removing four sections spaced equidistantly around the crown. These vents will allow for identification of any film oil that may not be evenly distributed, as well as acting as fire inspection portals. Where sites have neighbours highly susceptible to odour the vents can be covered to reduce the release of potentially nuisance odours. Once the tank has been vented for a minimum of twenty four hours a gas detector will be lowered into the holder through a vent to assess both the potential for flammable/explosive gas build up, as well as the breathability of the atmosphere. If required further vents may be created to improve the atmospheric conditions within the tank. Tests shall be repeated once the dewatering is completed.



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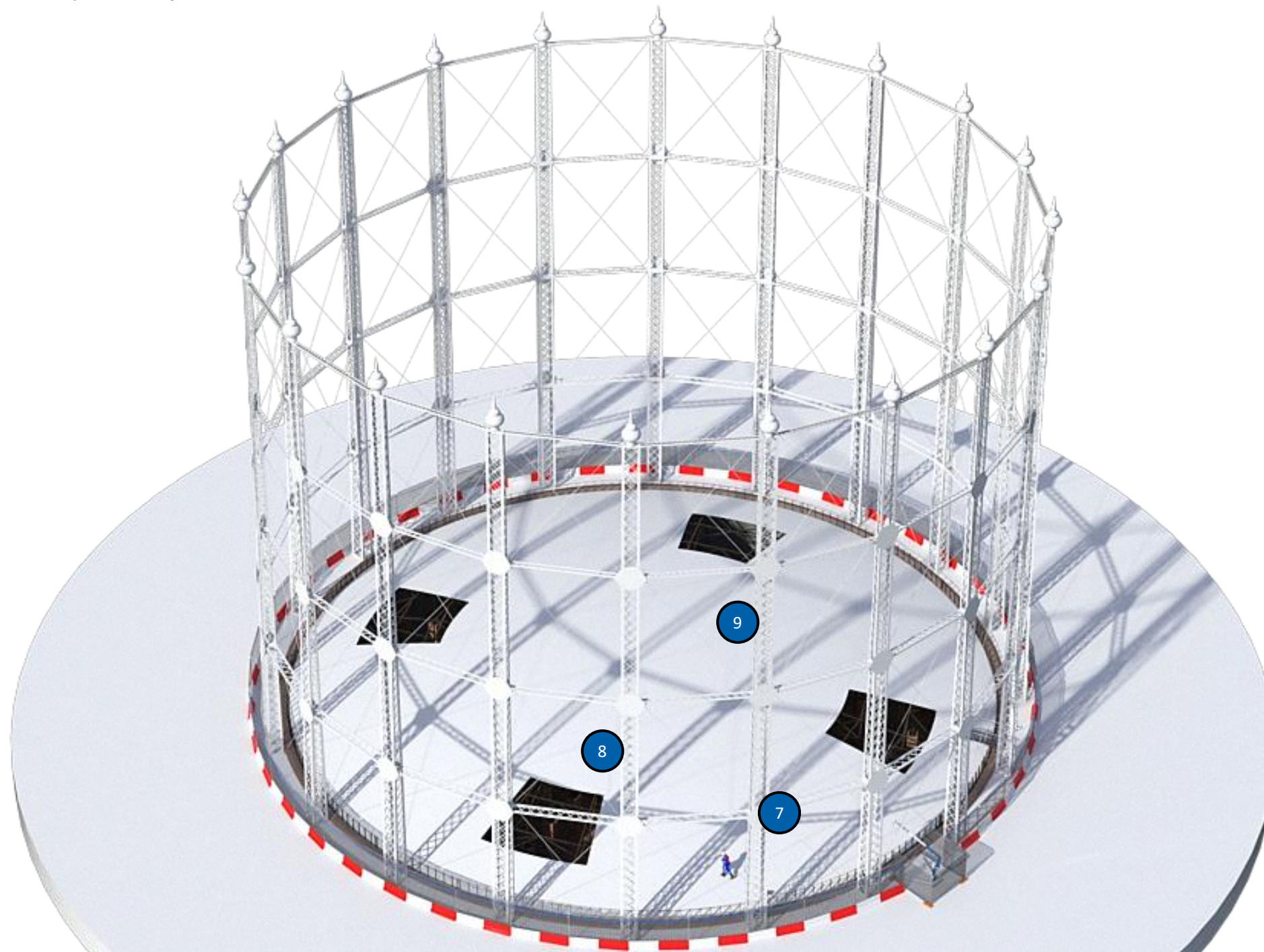
Demolition
Management Plan

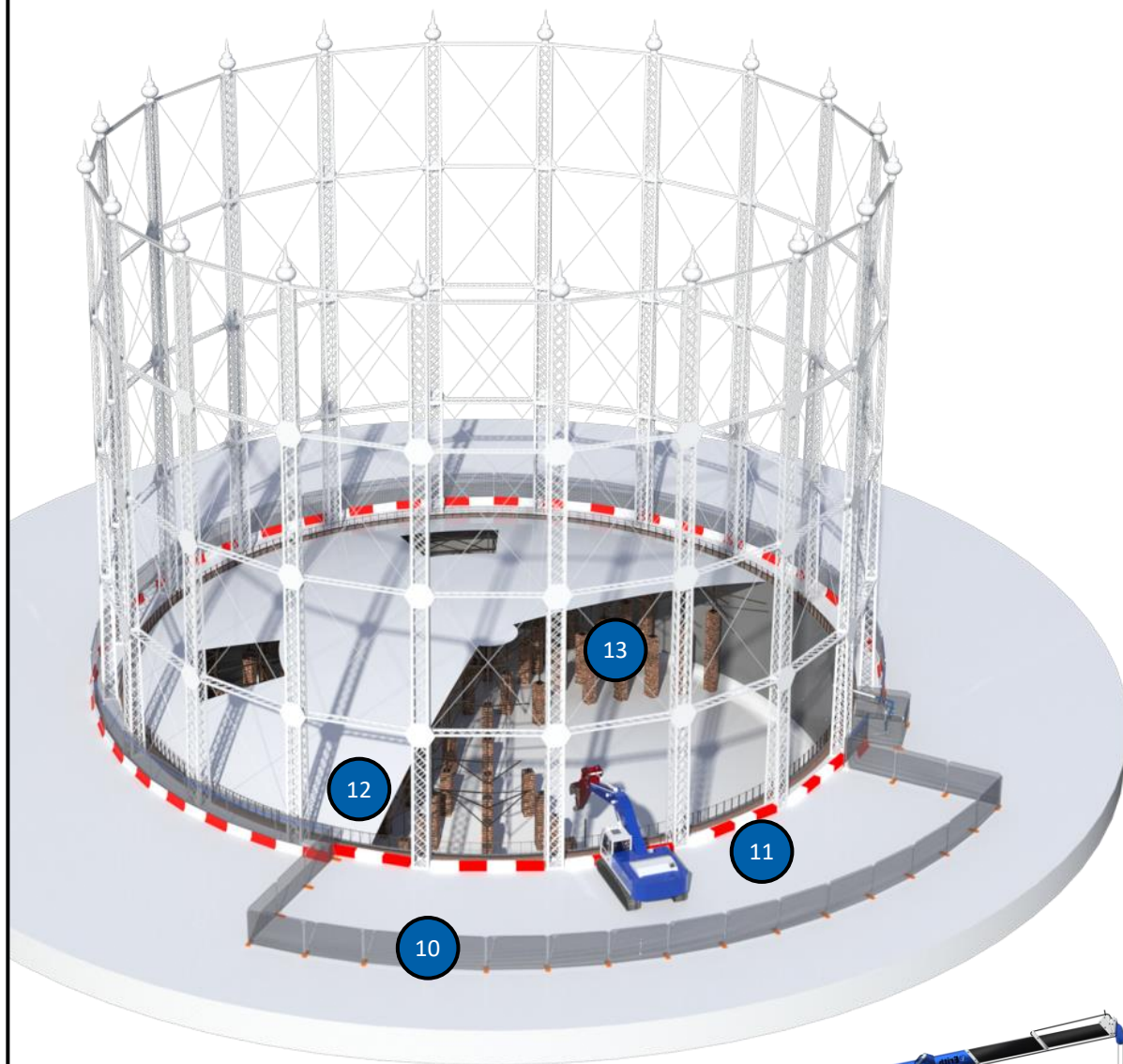


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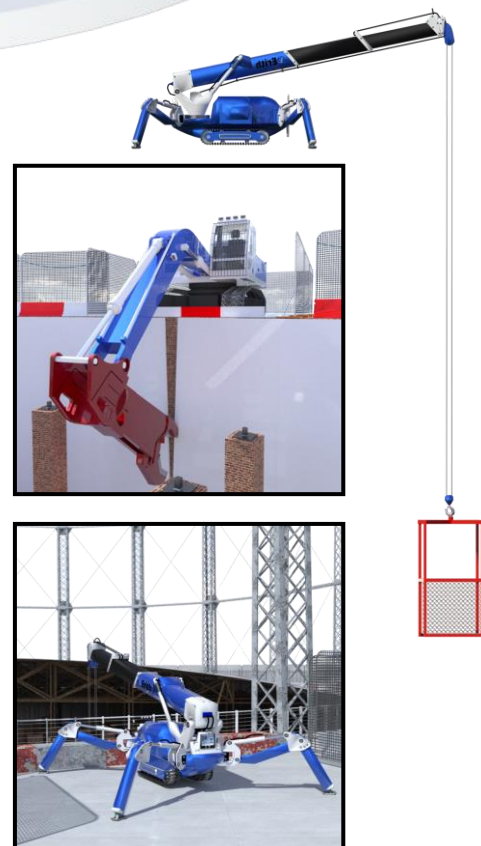
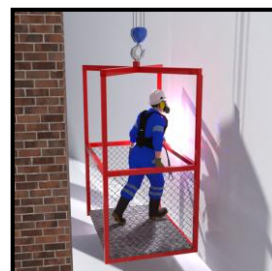


14 Partial Lift Wall Removal

The lift walls present within the proposed ramp locations shall be removed. The lower section of the lifts will be cut vertically by an operative working from a spider crane, whilst the upper sections will be sheared by an excavator. The lift sections will then be removed concurrently with first the inner, and ending with the outer lift sections. Sludge contained within the cups shall be emptied into the annulus prior to the lifts being removed. A secondary crane will be present as an emergency access method.

Lift Details

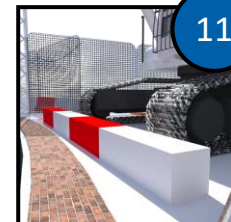
Crane:	MADEA MC285
SWL:	1.2 tonnes
Man Rider:	0.3 tonnes
Block & Tackle:	0.1 tonnes
Operative:	0.1 tonnes
FOS (100%):	0.5 tonnes
TOTAL:	1.0 tonnes
Capacity:	83%



10

Fencing

As fencing is opened up to permit plant access it is to be extended and closed again behind to maintain edge protection



11

Stop Blocks

Heavy duty stop blocks will be used wherever plant is required to approach the edge of the holder's tank.



12

Wind Bracing

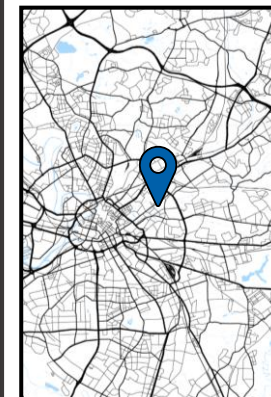
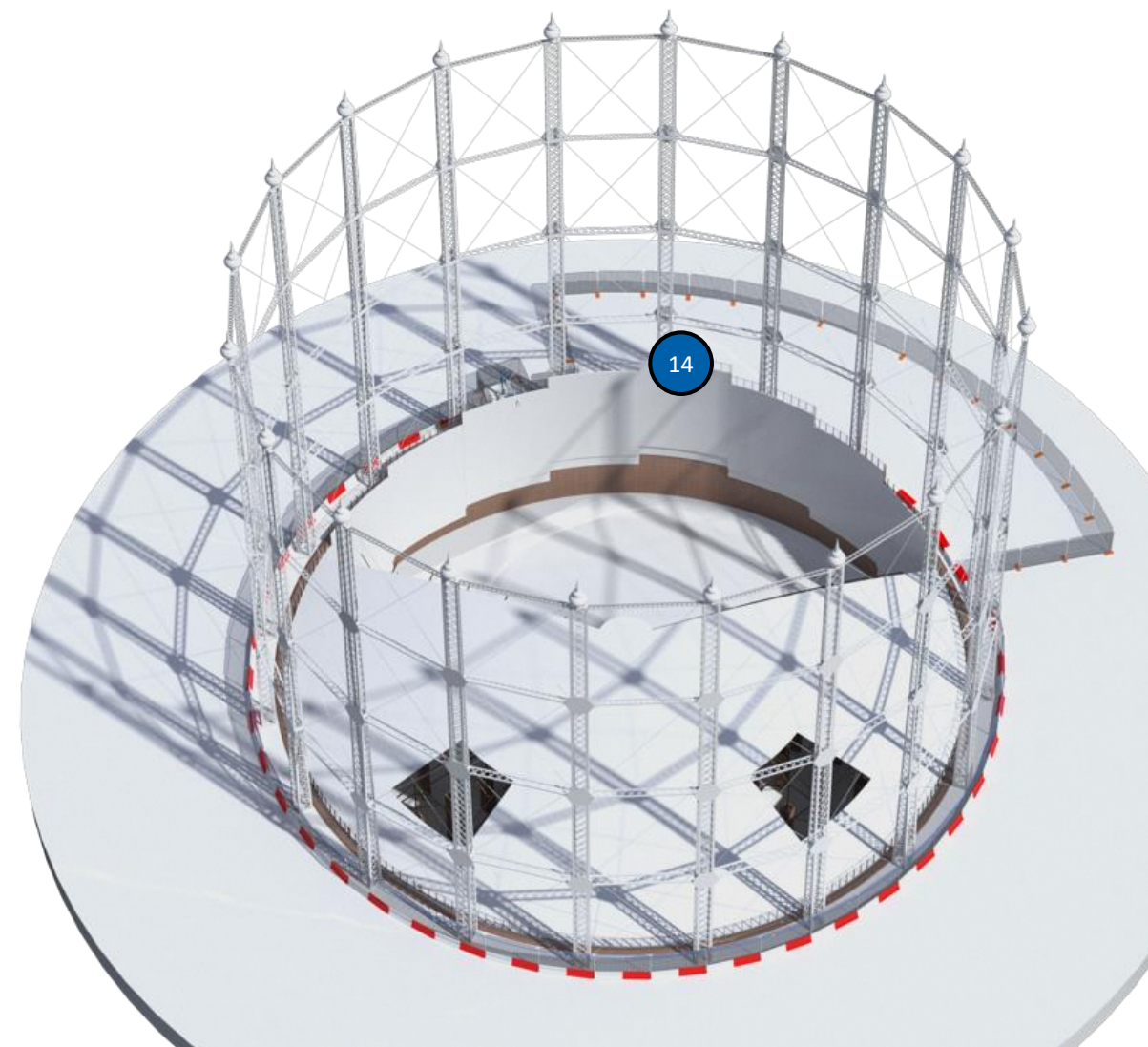
Wind bracing struts present in the lower tier at the proposed ramp location will be removed using hydraulic shears.

13



Partial Crown & Rest Removal

A demolition specification excavator equipped with a selector grab will work from outside of the holder removing sections of the crown and rest structure from within the proposed ramp location in accordance with the demolition design.



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NGPH GHD
Manchester

CLIENT:

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DRAWING REFERENCE:

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Demolition
Management Plan



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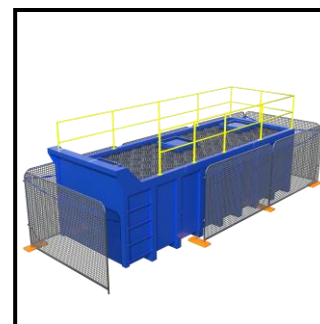
Tel: 0370 950 8800
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Phase One Desludging



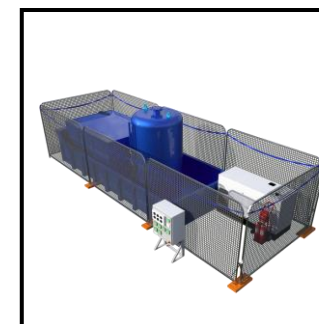
Extraction

The sludge is to be extracted from the holder tank by a Disab pump working around the tank's perimeter. Access holes will be cold cut through the remaining lifts so that the cups with can be desludged. The Disab will be banked into position, stop blocks shall be in place, and the area shall be fenced and odours suppressed. The Disab's vacuum vents will be connected to activated granular charcoal modules to control VOCs.



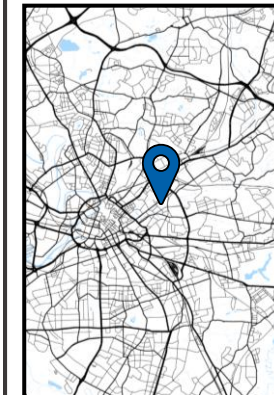
AVC Dewatering

The sludge will be pumped from the Disab to AVC dewatering units. These units comprise a sealed 30 yard roll on/roll off skip with integrated dewatering screens. Polymer is pumped into the sludge, separating the water which passes through the internal screens. The unit is then removed with the dewatered sludge contained within.



Water Treatment

Water recovered from the sludge within the AVC filter units will be pumped to the water treatment plant. The water is to be sampled in a closed loop test to ensure that the treatment methodology is suitable, and the discharge criteria met prior to be discharged into the foul sewer. Weekly sampling shall be undertaken to ensure compliance.



PROJECT:

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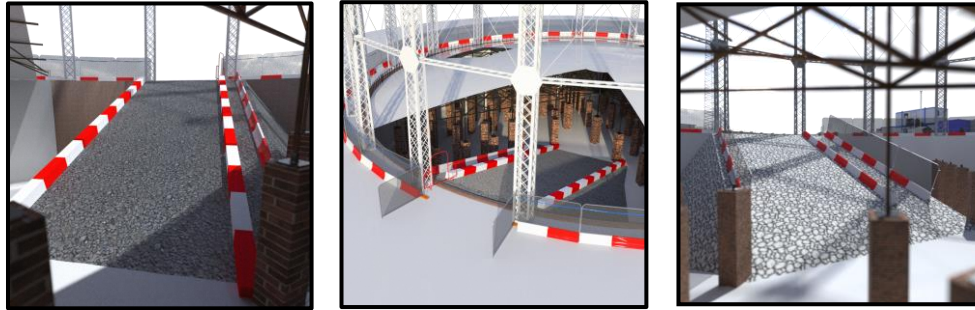


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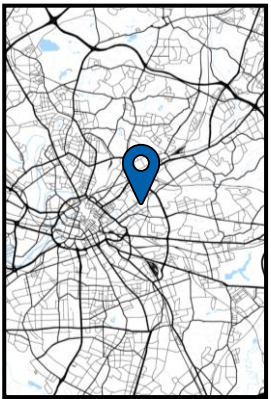
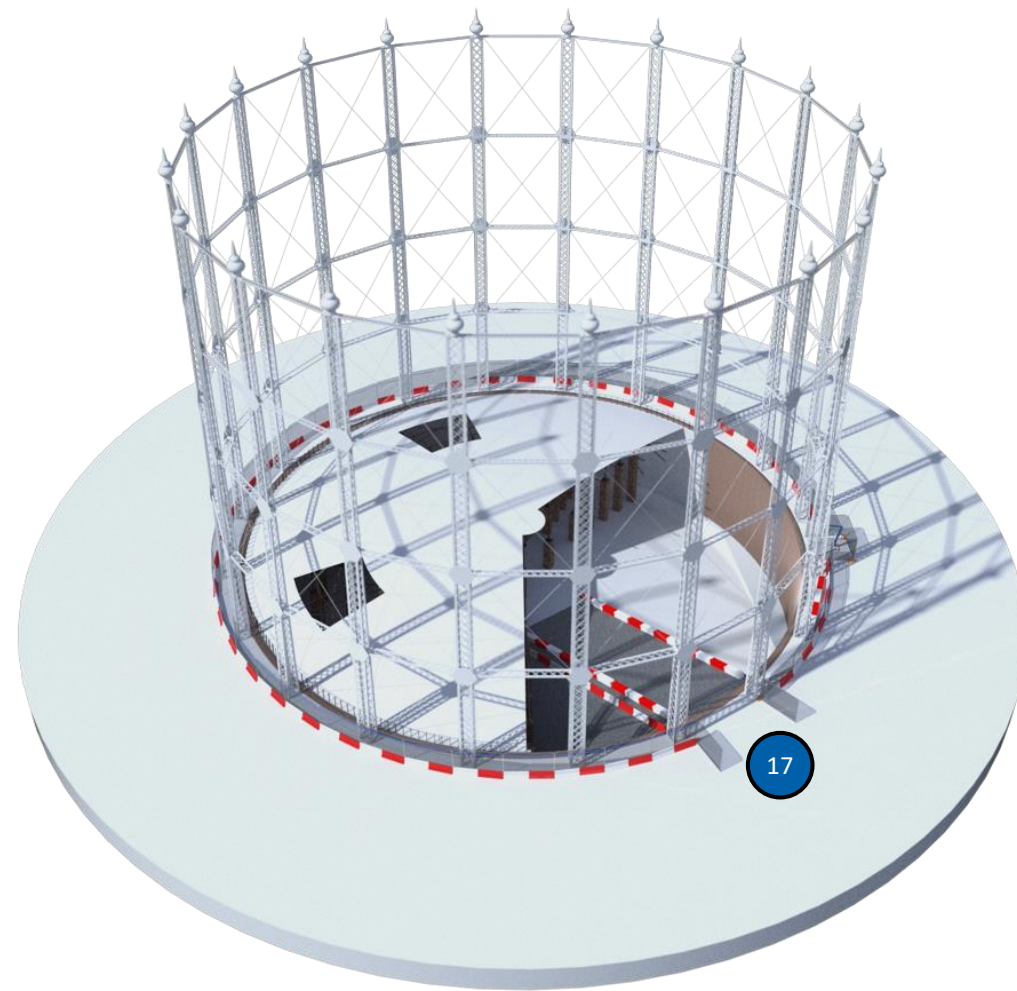
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Ramp Construction



A ramp from ground level to the dumpling is to be constructed from imported self compacting granular fill. The ramp is classed as temporary works and will be designed, recorded and inspected accordingly. Suitable geotechnical testing will be carried out prior to use to confirm suitability. Edge protection will be installed and a separate pedestrian walkway will be established. When not in use the fencing shall be closed off to prevent unauthorised access to the gasholder's interior.

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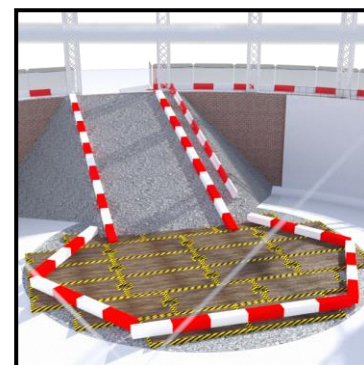
18



Crown & Rest Structure 18

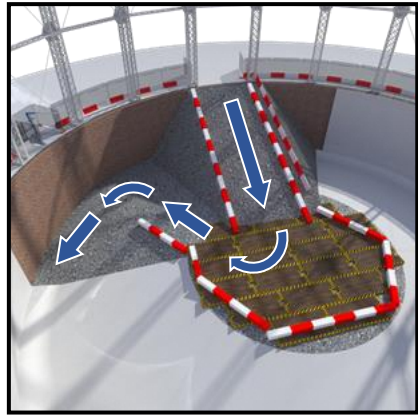
A demolition specification excavator equipped with a selector grab will work from the newly constructed ramp removing sections of the crown and rest structure in accordance with the demolition design. Materials will be processed outside the holder and loaded into skips for off site recycling. The excavator shall work from the ramp inwards ensuring that it is never beneath the crown support structure.

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Dumpling Protection 19

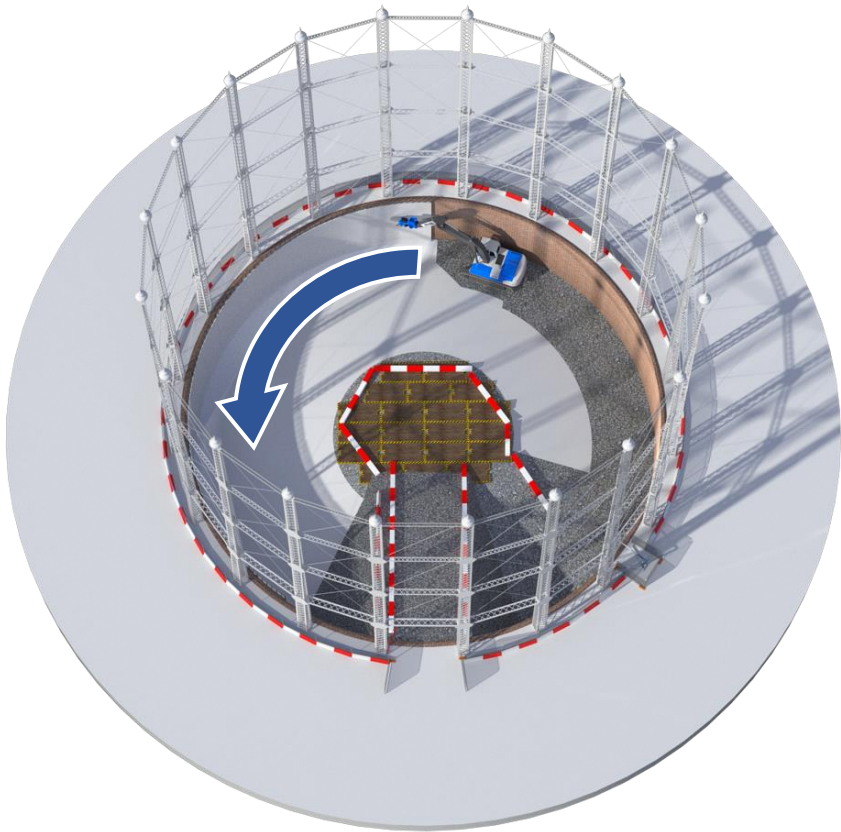
Dependent upon the dumpling's condition and the nature of the plant to be used on it, it may be necessary to create a working surface over the dumpling's centre, either through the creation of an aggregate pad, bog mats, or both. Precise protection methods will be determined following a structural assessment. If timber mats are used these will be removed upon completion.



Annulus Access

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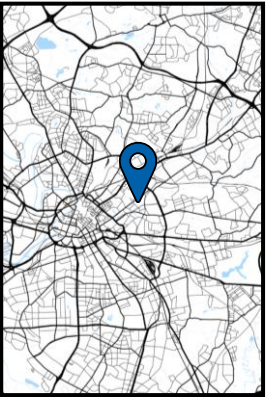
A second ramp between the dumping and the anulus is to be designed and installed. Granular fill will be placed adjacent to the existing ramp. Compaction testing will be carried out prior to use to ascertain suitability. Edge protection will be installed as required. The access ramp will form part of, and be recorded and inspected under Temporary Works.



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Lift Walls

A working platform is to be constructed within the anulus from imported material. This platform will provide adequate width for machine access into the anulus, as well as elevating the excavator so that it can reach the top of the lift sections requiring removal. As each lift section is sheared and removed the platform is to be extended around the anulus to the next lift. The excavator will continue in this fashion, extending its working platform to each section of lifts once the inner, middle, and outer lifts of the current section have been removed.



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Guide Frame Demolition Methodology

1. The guide frame will be dismantled using a combination of a MEWP and a mobile crane.
2. The MEWP will operate from inside the partially infilled holder
3. Hot cutting of the guide frame will only be carried out when wind speeds and direction are favourable.
4. Compaction testing is to be undertaken to ascertain the maximum ground bearing pressure permissible.
5. Tag lines may be used to control the movement of loads whilst in the air.
6. All operations will be overseen by a competent lift supervisor and valid lifting plans must be in place, as well as hot works & lifting permits.
7. Slew restrictors will be used to geofence the working area and prevent over sailing.
8. A fenced exclusion area will be implemented around the works.
9. The crane will be sited internally, and the frame will be dismantled tier by tier.
10. Sections are to be slung from the MEWP by trained, harnessed personal.
11. The frame is constructed from RSJs with geodesic wind bracing.
12. Sections will be slung securely from the MEWP, and the load taken up. Hot cuts will then be made at the approximate mid point of the horizontal sections either side of the column to be removed creating a T lift. Wind bracing will likewise be cut at the midpoint between two columns and removed as part of the T section.
13. With the load taken up by the crane the burning cuts will be made to the base of the tier's column.
14. Sections will be lowered to the ground for removal to the processing area.
15. This does not constitute a lift plan. A qualified Appointed Person will assess each lift upon the award of the project.

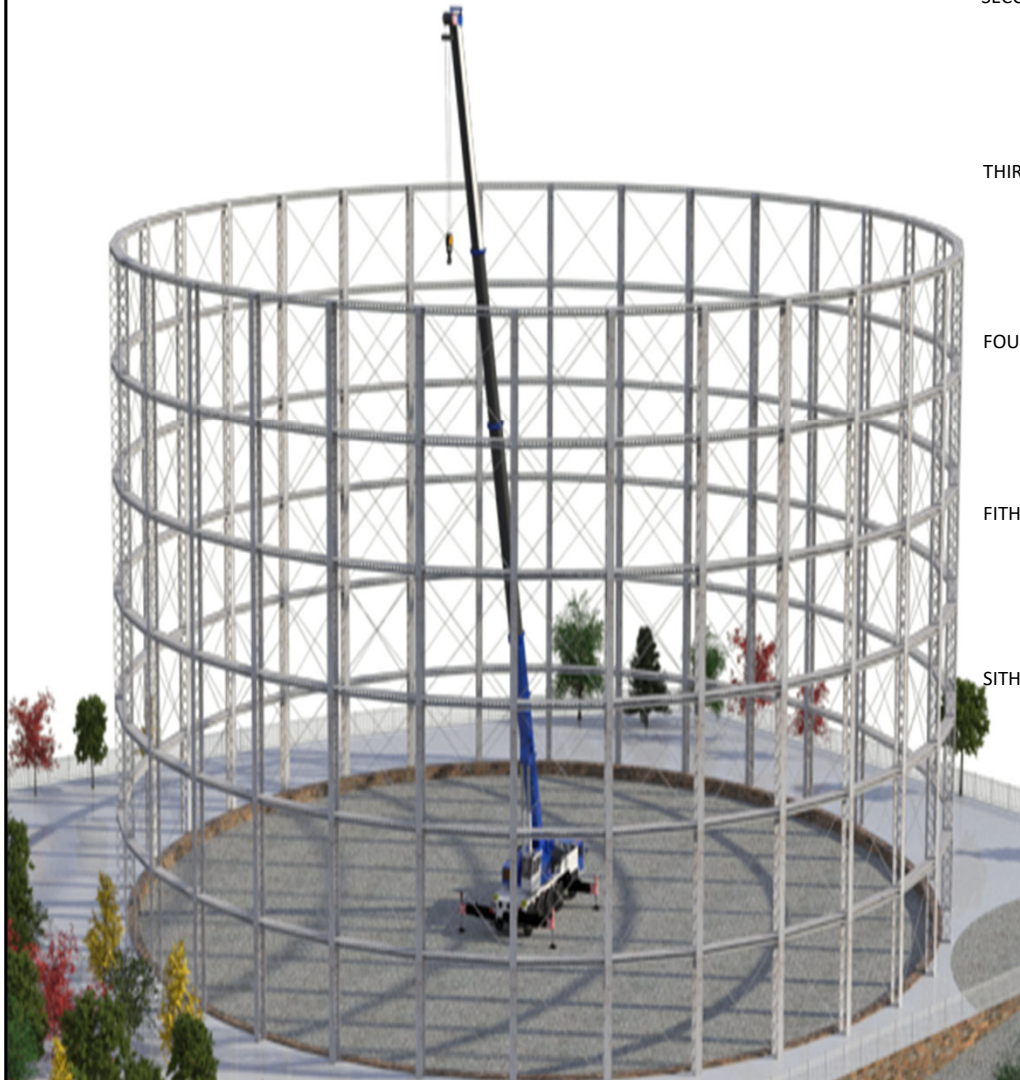
Superstructure Removal

Lift Details

Load weight	3500kg
Factor of Safety (100%)	3500kg
Hook	500kg
Lifting equipment	100kg
Total	7600kg
Max lift radius	44m
Max chart load	10600kg
Maximum capacity used	72%

LTM 1250 Mobile Crane Details

Max Load Capacity	250t
Telescopic Boom	60m
Max Hoist Height	108m
Max Radius	96m
Number of Axles	5
Counterweight	88t



T SECTION 01

FIRST RING 02

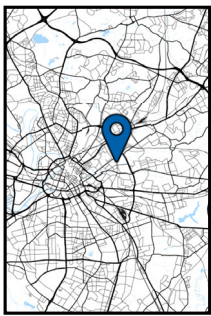
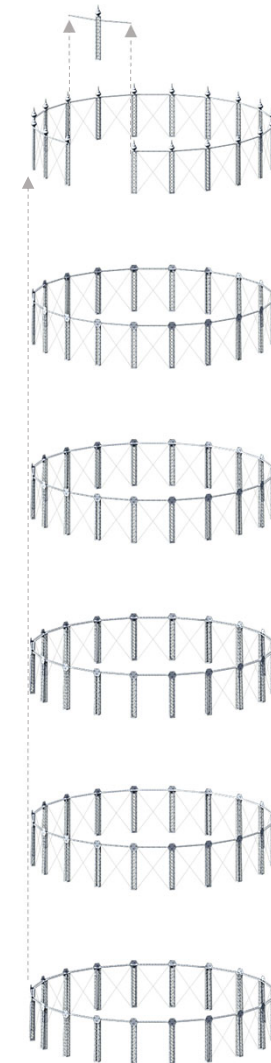
SECOND RING 03

THIRD RING 04

FOURTH RING 05

FIFTH RING 06

SIXTH RING 07



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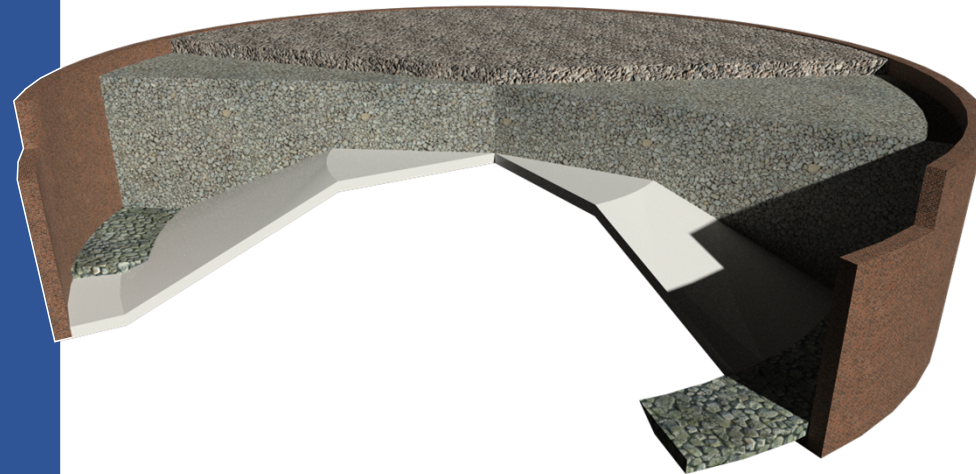
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7. Infilling Methodology



ISOMETRIC SECTION VIEW
(Superstructure not shown for clarity)



Engineering Control

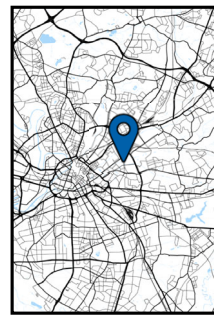
Layer thicknesses, placement, and numbering will be controlled by marking the infill design directly onto the holder wall with line marking paint. Each layer's thickness will be surveyed and checked before the commencement of the next.

Testing

Compaction and nuclear density testing will be carried out by an independent contractor at frequencies & locations identified within the specification.

Compaction

Compaction plant will be selected to suit the fill materials. Compaction will be carried out in accordance with the Gasholder Infilling Specification.



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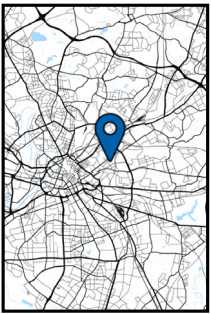


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8. Completion



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Completion

The gasholder void will be infilled to match the existing surrounding ground level.

