HOLDER SITE SURVEY REPORT

ADDRESS DETAILS: Gas Works Street
Huddersfield
West Yorkshire
HD1 6AF

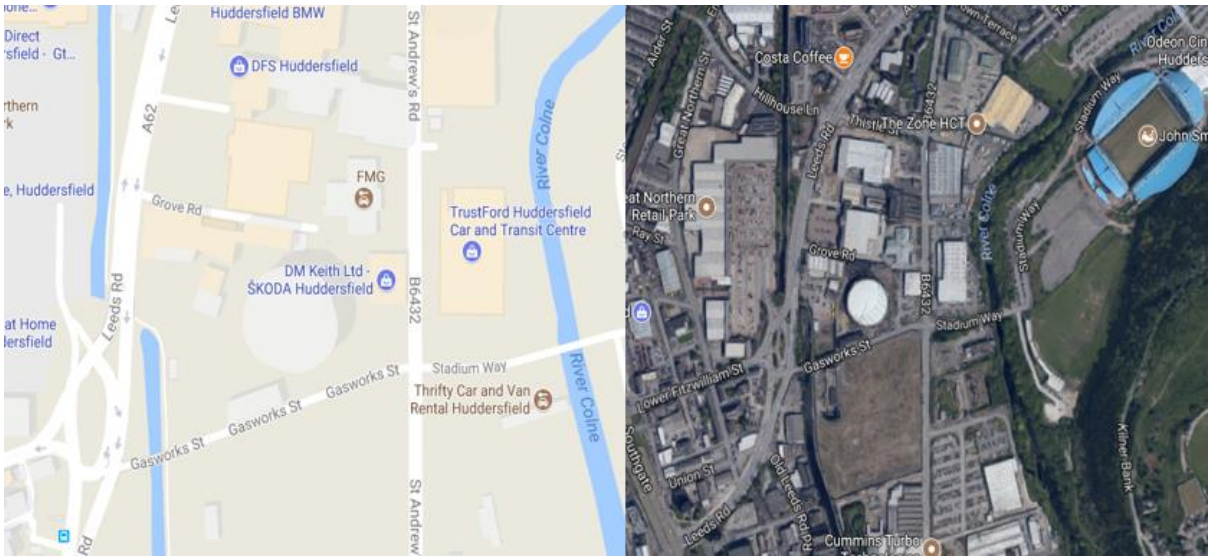
DATE OF SURVEY: Thursday 2nd November 2017

ATTENDEES: Mark Johnson (MJ)
Phil Young (PY)
Andy Miller (AM)
Donald Gilbank (DG)
Phil Lamb (PL)

SUMMARY OF SITE:

The site is situated on Gas Works Street which links the A62 (Leeds Road) and the B6432 (St. Andrews Rd) together. The site is split by Gas Works Street with the Gas Holder, Public House, Car Park and some commercial buildings to the North. To the South there is a large previously de-commissioned site owned by National Grid with a significant PRS / Booster House and pipework bordering the site. This land is used as overflow parking on match days as Huddersfield Town F. C. is situated close by. There is a single entrance to each site which is situated immediately facing one another. The entrance / access ways to the North site and is bordered by a walled boundary rather than palisade fencing and is share by NGN, York House Parking Scheme and the Gas Club.

The site contains one below ground gas holder and is column guided with approximate dimensions of – Diameter 67m, Depth 13m and total volume of 30,200 m3 and is the second largest gas holder within NGN's holder portfolio behind St. Anthony's – Walker, Newcastle.

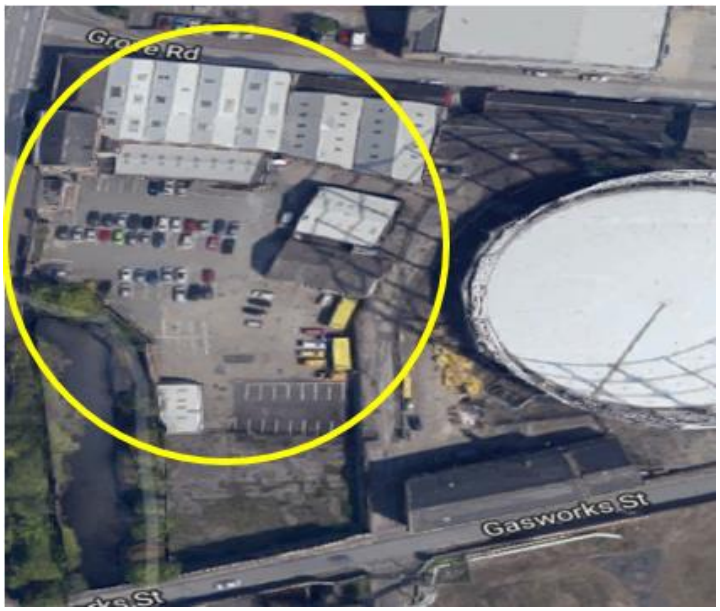


A – HOLDER DEMOLITION (MJ)

1.0 ACCESS

1.1 VISITORS

The route to the Holder Site (North) will need to be maintained as it will be shared by pedestrians and road users not associated with the demolition works. Close liaison must be undertaken with York House Parking Scheme and Industrial Units situation within their land.



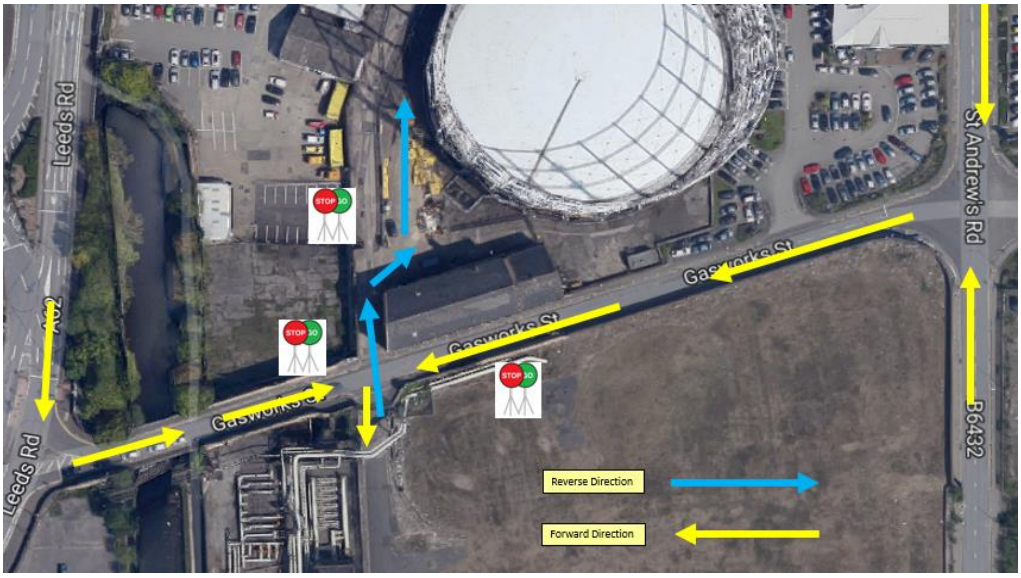
There will be no vehcular access to the North site for visitors and space and room is at a premium and will be an added complication during the management of third party stakeholders mentioned above, however under a traffic management plan and supervision, authorised visitors will be able to access designated areas of the North side as pedestrians.

1.2 PLANT & EQUIPMENT

Demolition traffic can access Gas Works Street via the A62 or the B6432. Gas Works Street has an approximate carriageway width of 6.5m however the turning onto site is of restricted width (4.5m) and will cause low loaders and non-ridged HGV vehicles considerable difficulty in accessing the site.

Demolition excavators must be delivered to site at night and unloaded on Gas Works Street and driven into the site utilising bog mats to ensure the road surface is not damaged during transit. Suitable and sufficient Risk Assessment must be undertaken to ensure loading and unloading of plant can be undertaken safely.

Bulkers collecting scrap and tipper wagons upon backfilling may need to access the South site and reverse back over Gas Work Street and into the site under the control of 3-way stop-go boards as indicated below.

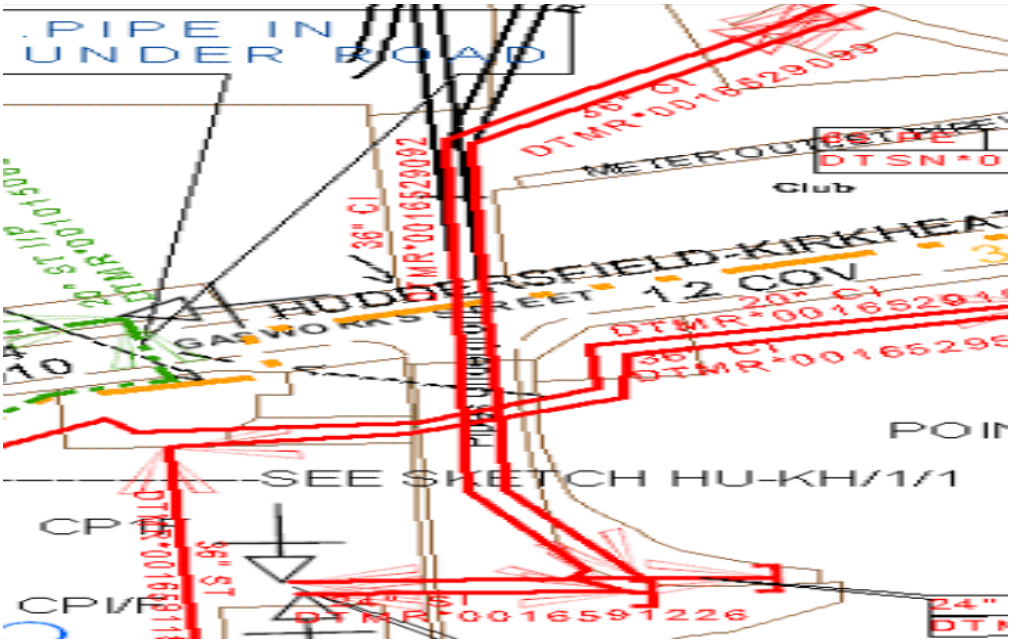


If high sided vehicles are to access the South side for deliveries of to make the above manouvere then the overhead pipelines must be assessed to ensure the risk of interference damage is removed. The pipeline must be measured and a clearence measurement clearly fixed to both sides of the pipeline as one is not currently affixed.

2.0 SITE ESTABLISHMENT

2.1 LIVE GAS PIPELINES & OTHER BURIED PLANT PROTECTION

There is no ground stabilisation of buried plant mitigation measures anticipated as the 2 x 36" CI L/P holder fill and return pipelines have been decommissioned and the 20" ST & 36" ST L/P mains (shown as CI on plans) are above ground (also see 1.2 above). The 300mm ST H/P main is installed in a class A highway.



2.2 CABINS & OFFICES / LAYDOWN AREA

Due to insufficient room in the North Site the offices, welfare and visitor parking will be situated in the South Site.

As this land is owned by National Grid and used for the purposes of visitor packing then Properties will need to negotiate a rental package with NGRID to satisfy the laydown requirements.

Action: MJ to discuss a plan with Tony Smith once the work has been selected for completion.

The following provides a project proposal and is subject to change upon negotiation with NGRID. Equally to satisfy site control the North Site will be provided with a Banksman's 'Arrival Cabin' and will be in two-way radio communications with the overall Principle Contractors' Site Supervisor who will be located at the South Site.

2.3 CCTV (inc. LINE OF SITE)

The Protector Group should will have no significant problems with installation of CCTV and line of sight should not be hampered as most lines of sight are clear and only some areas that are hampered by foliage or trees.

One section of the site perimeter appears to be vulnerable due to the construction of a property attached to the boundary fence line. Dependant on the security of the that building and site it could be a point of entry onto the demolition site.

2.4 SURFACE DRESSING

The site will require little improvement to the running areas for traffic and for pedestrians in the segregated areas as the site surface is made up of concrete hard standings and 20mm-40mm light grey gravelled surface which appears to be in reasonable condition fit for purpose during the demolition phases of the work and will satisfy necessary safety and CCS requirements. (See above).

2.5 POWER, WATER, FIRE HYDRANT

It is anticipated that de-watering equipment, welfare / office and CCTV will need standalone arrangements for power as well as provision for foul waste (pumped and tanker removal) and fresh water (via IBC's).

Due to the operation of a 'split site' the de-watering and CCTV will be situated at the North site and CCTV and Office / Welfare will be situated at the south site.

Action: PY to confirm what power is available from the anti-freeze and site buildings on the North site and whether there is any phases available from the PRS on the south site before confirming whether equipment will need to be stand alone.

Removal of the holder frame work will require hot work in the form of oxy-propane burning however there was no evidence of a fire hydrant on site so the fire-fighting provision will need to be brought to site.

2.6 TRAFFIC & PEDESTRAIN SEGGREGATION

As stated vehicular access / egress for demolition personnel and visitors will be shared therefore a robust traffic management will need to be drafted inclusive of clear pedestrian walkways, crossing points and fenced segregation via security fencing and crowd barrier to manage the arrangements between both the North and South sites.

(See Site Plan – page 3 & 5).

2.7 DEBRIS & PRE-START CLEAN UP

As expected some minor debris was strewn around the site and will need a pre-start clean up, however at the time of the visit there was little evidence of 'over fence' fly-tipping. Litter picking will need to be undertaken on a regular basis throughout the life of the project.

3.0 HOLDER DETAILS

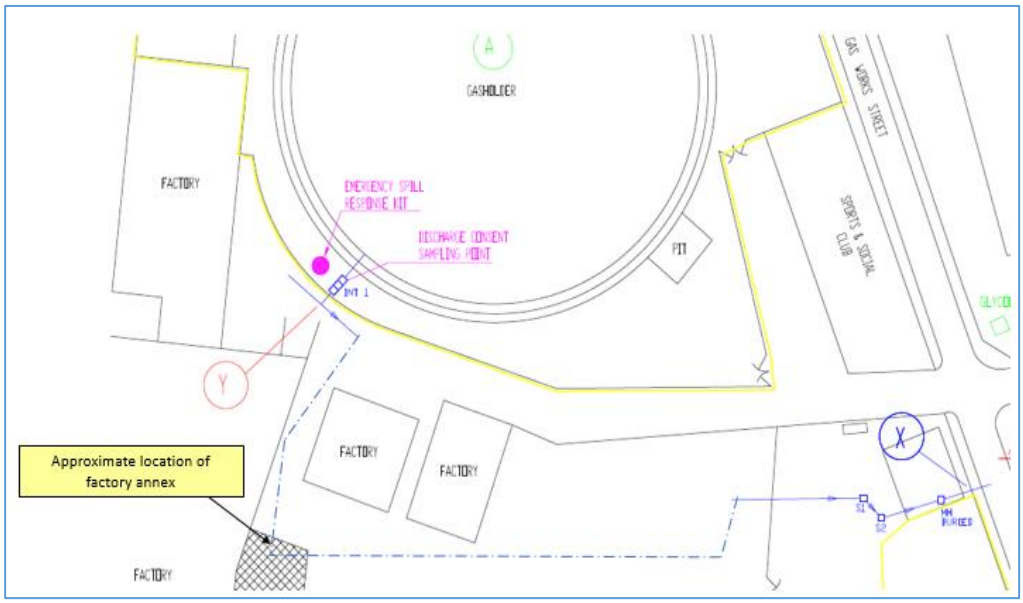
No. OF HOLDERS	1
LIFTS:	3 – Column Guided
HEIGHT (ft.):	13m
DIAMETER (ft.):	67m
ABOVE OR BELOW GROUND:	Below
RIVET OR WELDED:	Rivet
AG PIPEWORK:	Yes (South Site)
TRIAL EXCAVATIONS REQUIRED:	Yes
PIPELINE PROTECTION REQUIRED:	No
VALVE PITS:	Yes – Removal & Backfill Required to allow 'break in' access to tank.

4.0 HOLDER CLEANING WORKS

4.1 DRAINAGE

Drainage routes from Holder Overflow are not fully understood. AM provided some historical background that the drainage become blocked and flooded a factory unit. During the site visited it was noted that a new annex was built onto an existing factory and that a drainage access point may now be enclosed inside the building.

See below plan with assumed but not yet confirmed route of the drainage system from 'Y' to 'X' (dashed line).



4.2 CCTV SURVEY

De-watering Contractor to camera survey drains and unblock via Jet-Vac as appropriate upon NGN sanction of project or as part of a wider de-watering project and provide evidence of exact route in relation to assumed plans and determine drain diameters and capacity to take a minimum of 10l/s pumping rate.

This should include any perceived potential impact on external stakeholders / factors which are also serviced by the interconnecting holder drainage.

4.3 ACCESS TO ENTRANCE DRAINS / INTERCEPTOR

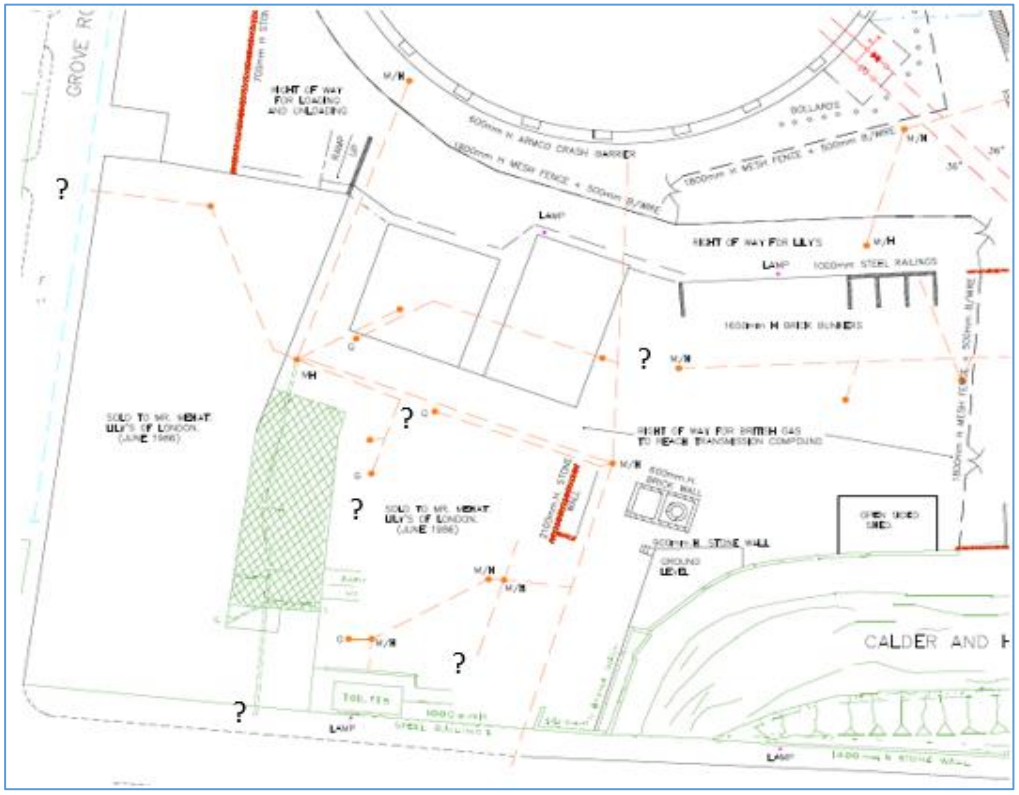
The de-watering process system can be situated adjacent to the Anti-freeze building and hoses ran from the holders to the system and then ran around the rear of the redundant Jet-Booster house to the interceptor and last drain exiting site.

There is also the possibility of lift the kit over the boundary wall and positioned in its bund immediately adjacent to the interceptor and last exit point.

4.4 ACCESS TO SITE EXIT DRAIN

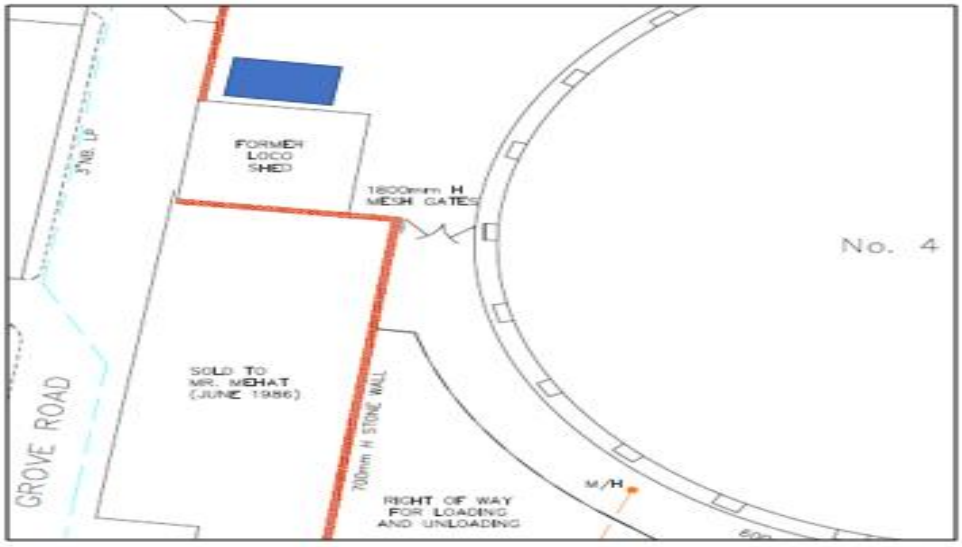
Access to last drain is achievable however Yorkshire Water will need to be consulted regarding the recognised last drain leaving the entire site which will be designated as the sample point for analysis of 'clean water' post treatment.

Note the current General Site Layout Plan and ISO Drainage Plan are providing conflicting data on the position of drainage (see below). As part of the CCTV survey the "?" must be confirmed for route and connection.



4.5 DE-WATERING KIT POSITION

The access road around the perimeter of the holder is of single carriageway width at the position of the interceptor and drain leaving site. Therefore, the rig will need to be positioned adjacent the old loco shed and hoses ran to the last drain.



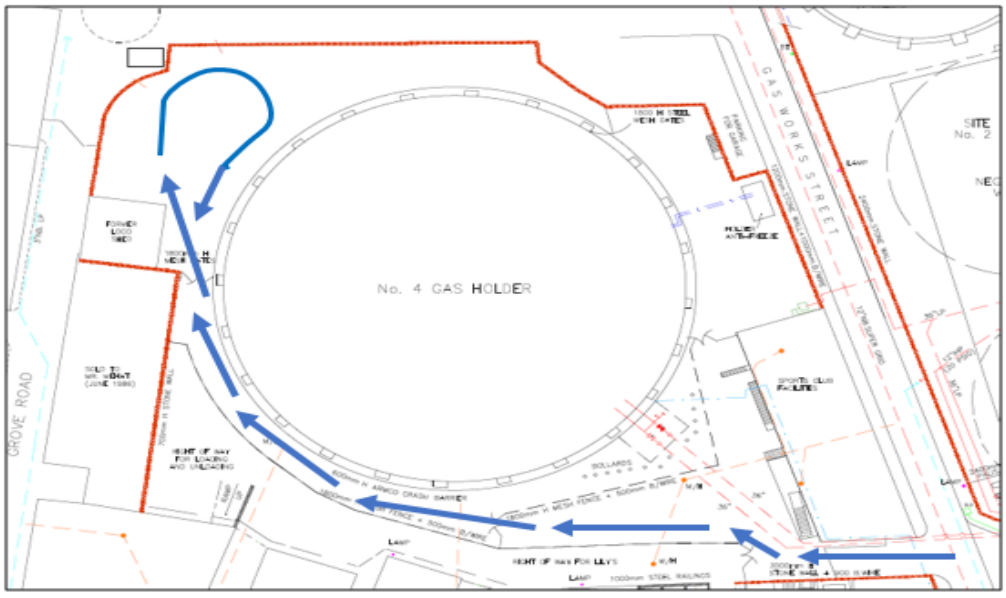
4.6 HOSES CROSSING ACCESS ROADS

None anticipated on this site. See above plans.

4.7 TANKER ACCESS

This will require a robust traffic management plan and will require reversing access / egress via banksmen when on site as room for a turning circle is limited next to the old loco shed.

However, there may be an option to reverse tankers into the site via the plan on page 3. Tank dimensions will need to be checked against gate access and road widths and any revering manoeuvres will need to be in strict accordance with a traffic management plan and banksman control.



Note: for oil removal 17 tonne rigid tankers should be used as 26 tonne articulated tanker will not negotiate the site nor be able to reverse.

5.0 DEMOLITION

5.1 ROOF SUPPORT CONSTRUCTION

Due to a lack of historic design / construction records we know little of the internal construction of the roof supports however as this is a below tank, constructed in circa 1930's we will need to check the roof support construction via sonar surveys or physically (via roof vent hatches, light and camera).

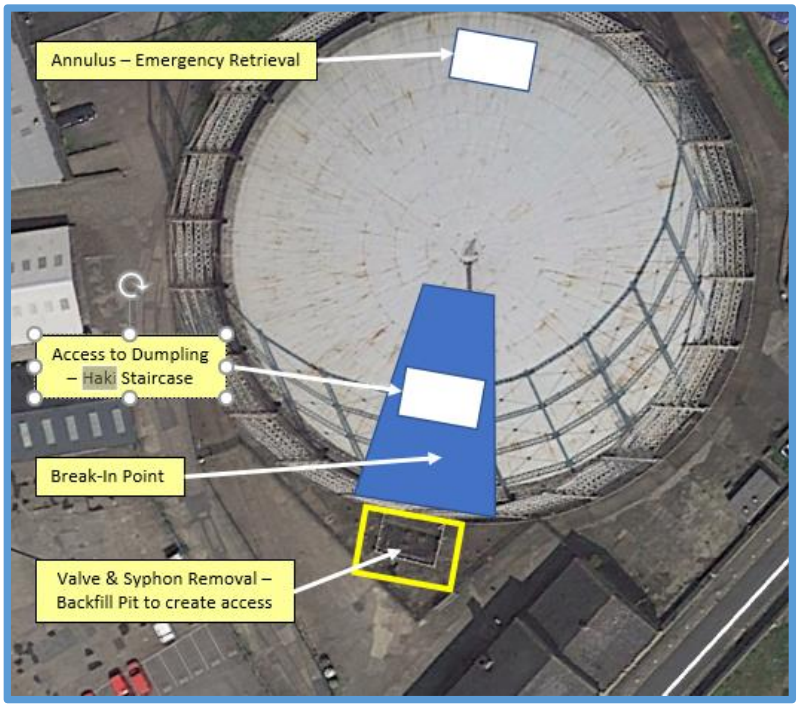
As with some previous tanks which were constructed pre-war we have found that these have had roof replacements, either over-plating of the existing roof or a full remove and replace skin. No evidence of this at Huddersfield during survey.

5.2 CROWN REMOVAL

As per 5.1 crown removal will be via 6 x 3.0m x 3.0m ventilation / light openings performed via cold cut operation. Moved away from 30% crown removal in 2017.

5.3 MAN-ACCESS POINTS

Dependant on roof support construction it is anticipated that man access will be via Haki Staircase arrangement to Dumpling and Trammet Scaffold Staircase to Dumpling Annulus. Emergency retrieval will be via a separate cantilever scaffold and tri-pod system.



5.4 VEHCILE MANOUVERES

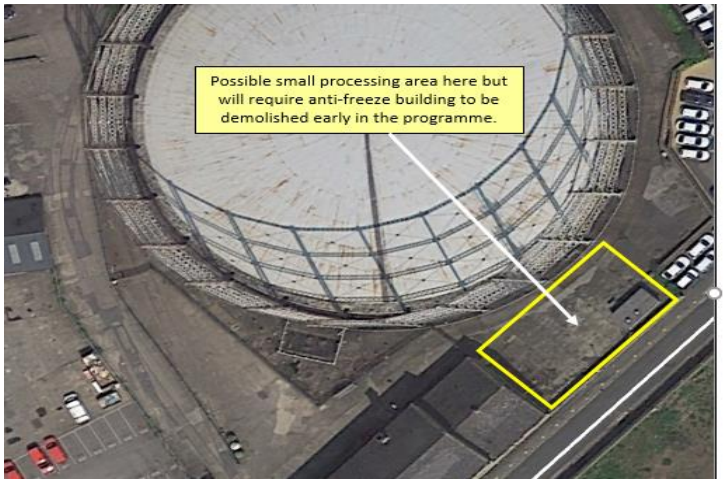
See sections 1.2 and 4.7 as demolition vehicles such as machine deliveries and scrap metal removal will need to be undertaken in a similar manner.

5.5 METAL PROCESSING LOCATION

Unlike above ground holders where metal processing is achieved within the holder void itself the below ground tanks require the metal to be removed by one machine and brought out to ground level to be processed by another.

Due to traffic difficulties, accessibility and lack of land / space to process the scrap metal to the site the metal will require full processing on site rather than going off site ‘oversized’ as this will provide a reduction in the number of Bulker wagons coming and going from the site.

This will need to be piecemeal with regular pick-ups general via 20t, 8 wheel, Tipper wagons as bulkers will be too large to access the site of safe manoeuvre on and off the site.

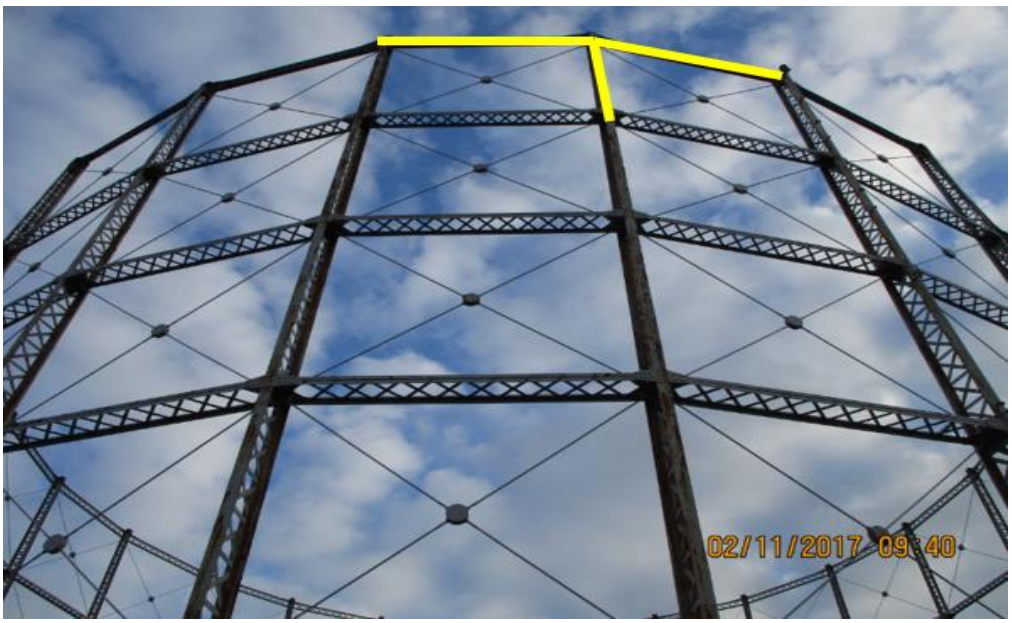


5.6 FRAMEWORK DEMOLITION

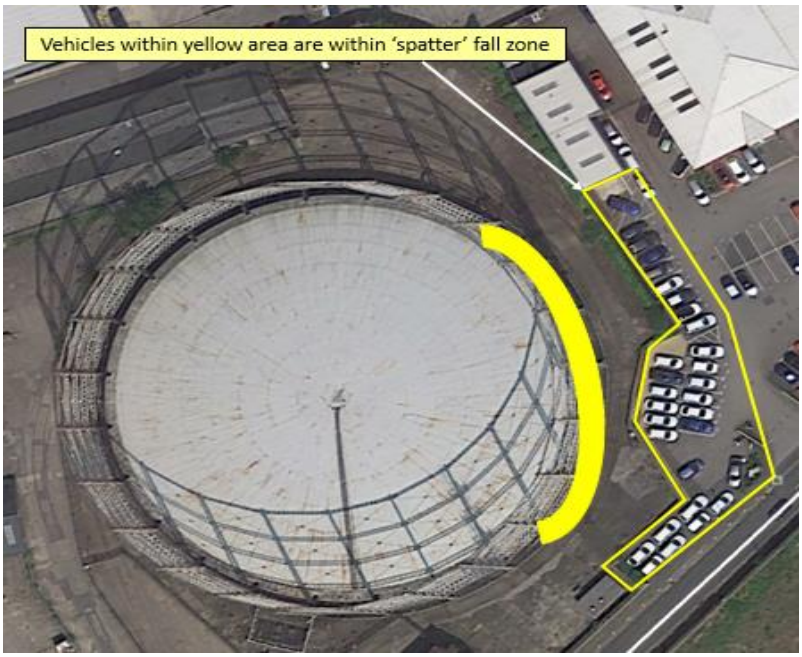
Due to limited space around the full circumference of the framework, it is anticipated that the framework would be demolished post backfill of the tank void to safely position cranes and MEWP's on the footplate of the backfill so that full 360-degree reach can be achieved.

A Structural Engineer would need to be employed to determine how the framework would be taken down. Framework at such sites as St. Anthony's and Redheugh was designed so that the top level was taken down in 'T' sections via crane holding and oxy-propane cutting of the three 'stalks' to allow safe landing at an agreed position below.

Once the top level was removed the remain levels were demolished in a piecemeal fashion using 'long-reach' demolition excavators.



However, during hot works, molten metal spatter will fall to ground and therefore a safe 'catchment' zone must be put in place where pedestrians, works, plant and equipment and third-party apparatus must not enter. A Skoda Car Dealership is position immediately adjacent to these works (at the 4 o'clock position). Stakeholder engagement must take place with the Dealership to ensure their vehicle stock is positioned during these works. These works need to be considered out of normal hours to ensure disruption is kept to a minimum.



5.7 BUILDING DEMOLITION

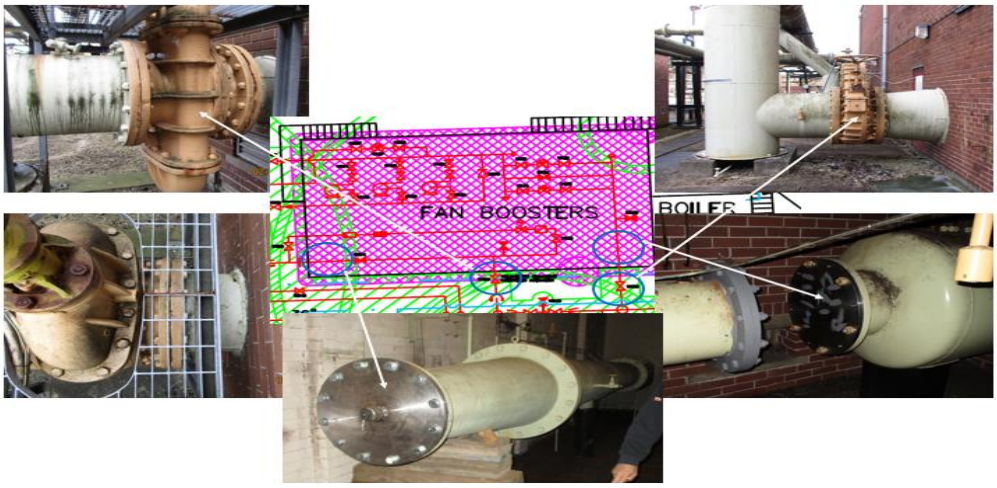
It is envisaged that the only two buildings earmarked for demolition will be the buildings directly associated with the holders i.e. the anti-freeze building and the former loco shed (see page 6).

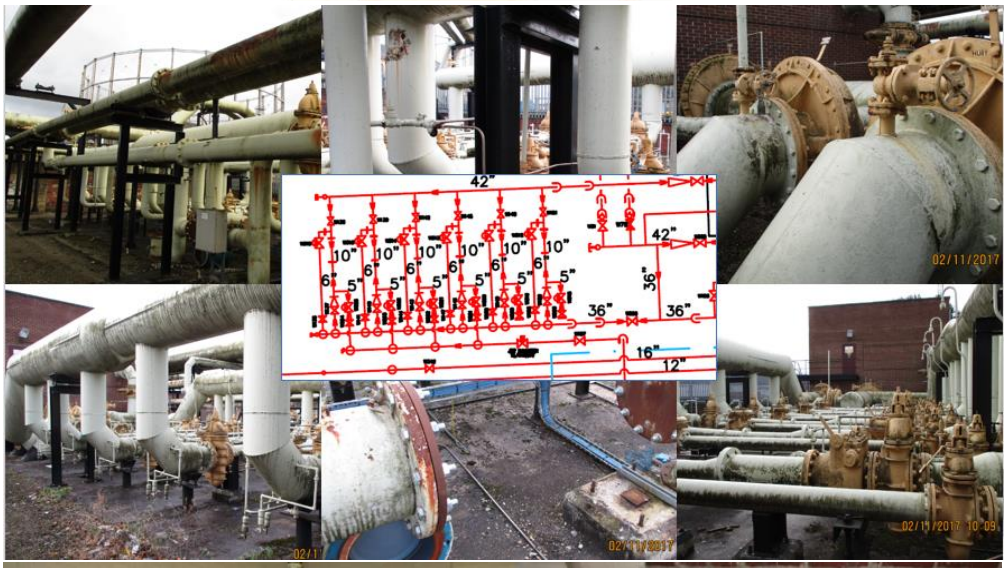
The Jet Booster House is situated on the South Site and is positioned close to some significant live pipework and associated buildings.

The following photos are split into 3 sections for illustration purposes. The first is further pipework removal and pipe supports to ensure the Jet Booster House is clear of gas which would allow safe removal of the building fabric.

The second is evidence of the holder pipework equipment which is now de-commissioned and obsolete.

The third is photographic evidence of the live pipe arrays which will need to remain in situ. A review would need to be required to determine the cost benefit analysis for removal of the Jet Booster House which would potentially require significant investment to protect live pipework and re-location of the electrical sub-station which is included within the fabric of the main building,


FAN BOOSTERS
BOILER


42"
42"
10"
6"
5"
36"
16"
12"
02/11/2017


02/11/2017

5.8 VALVE PITS

Holder fill / return valve and syphon pits will require backfill to allow access for the roof break-in point and ramp installation to the dumpling.

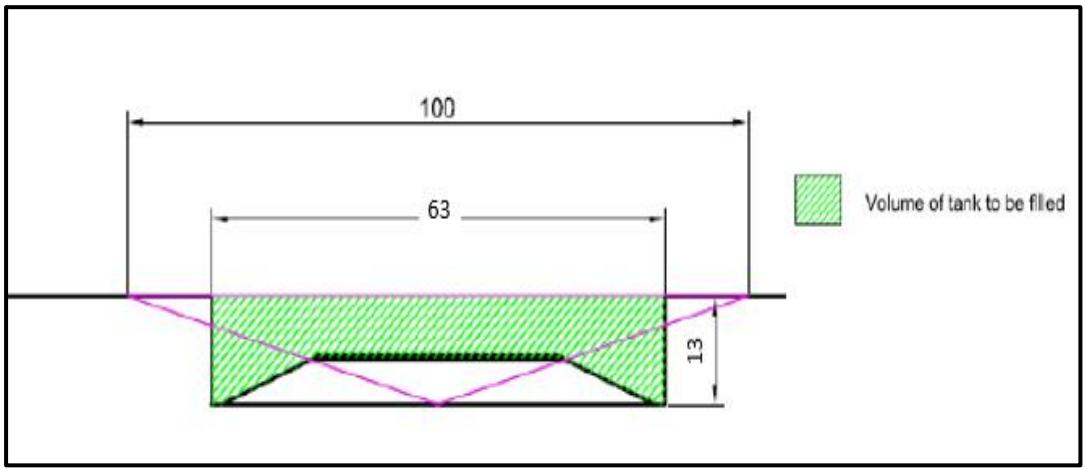
5.9 BACKFILL REQUIREMENTS

The following is based closely on the design at St Anthony's, as the tank is slightly small than that at St Anthony's by circa 5,000 m3. No details are available of the original construction method at Huddersfield though it is believed that the holder will have an internal 'dumpling' that fills a proportion of the below ground void.

As the size and shape of the dumpling is unknown then it is impossible to accurately determine the exact volume to be filled. If no dumpling were present, the volume of the buried tank would be 46,000m3. Assuming, that the dumpling in the gas holder typically represents say

40% of the below ground volume, the volume required for filling would be approximately **30,200m3**

The holder voids will require backfill with re-cycled material, with a clay cap to allow for satisfactory run off.



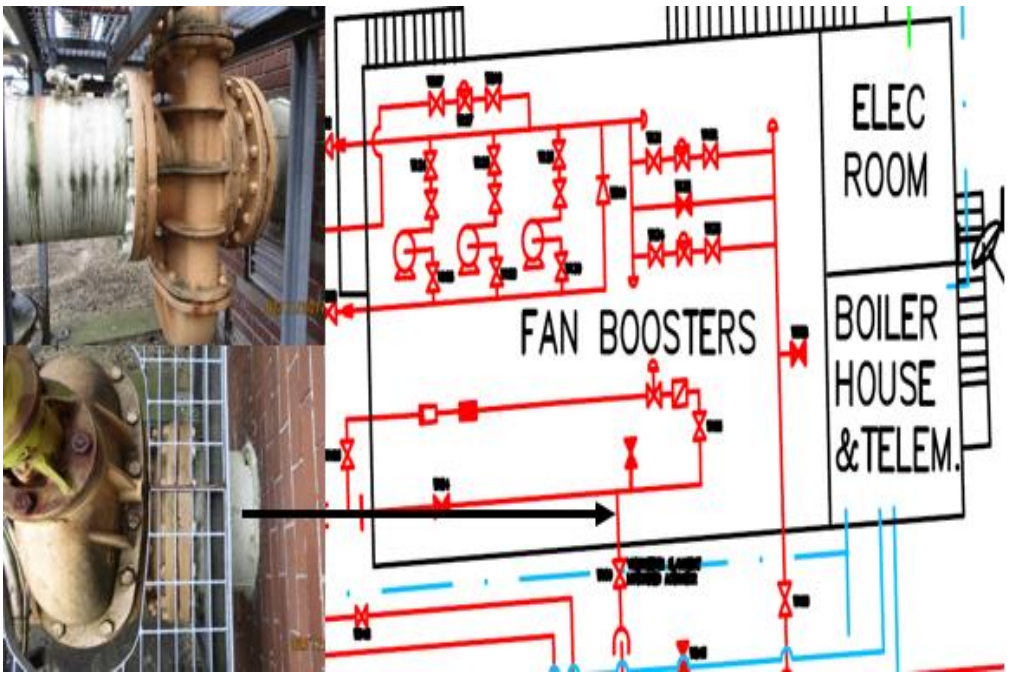
5.10 CLEARENCE OF REDUNDANT ANCILLLAIRIES

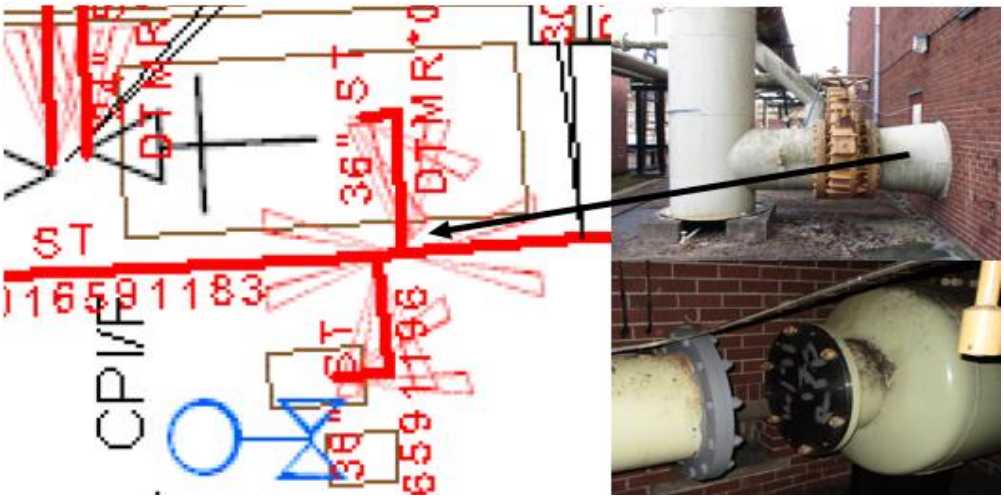
See Section 5.7 and associated photographs.

6.0 OTHER WORKS

6.1 SEPERATION OF LIVE PIPELINES

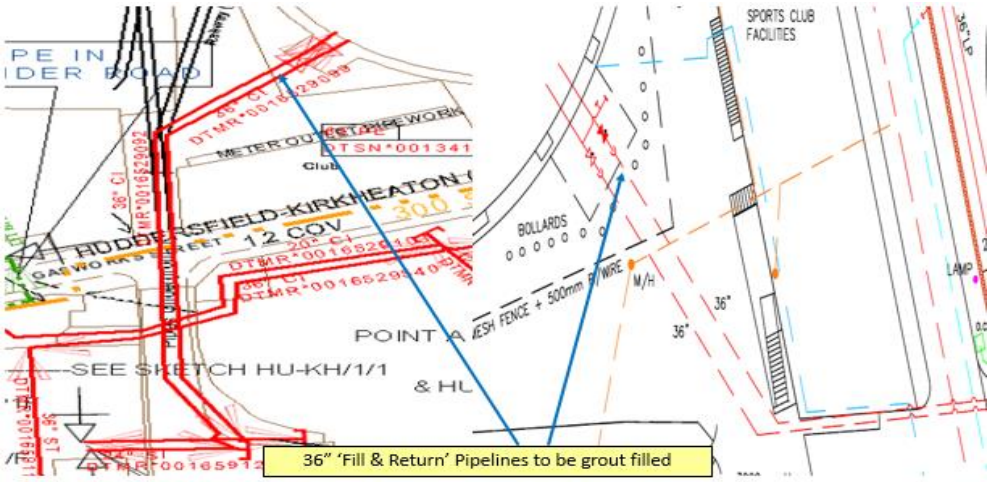
LP Holder / District Mains require physical disconnection to separate the pipework from the internal fabric of the building and allow the building to be successfully decommissioned.





6.2 FILL & CAP OF DEAD PIPELINES

As part of the valve pit backfill of the 2 x 36" 'fill & return' pipelines will need grout (slug) filling unless a physical separation has been made at the closed valves shown on the below plan. This is necessary to ensure the redundant mains do not fill with water and cause issues remote from the site of disconnection.



7.0 CONTAMINATED LAND & POTENTIAL LAND SALE DATA

7.1 Contaminated Land

Site has previously been remediated, however residual contamination remains at depth beneath site (>4m). No significant implications for demolition.