

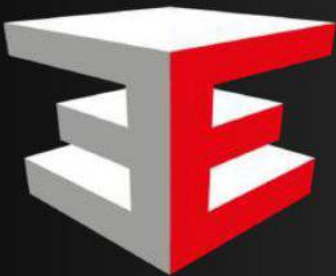
CONFINED SPACE - SITE SURVEY

[REDACTED], SHEFFIELD.



[REDACTED]

[REDACTED]



ELEMENT

SAFETY ♦ TRAINING ♦ RESCUE

- Confined Space Training -
- Height Training -
- Rescue Training -
- Consultancy -
- Safety Equipment -

EMERGENCY SERVICES PEOPLE.
TEACHING YOU TO SAVE LIVES



SITE SURVEY

12 May 2021 / [REDACTED]

Complete

Score	100%	Failed items	0	Actions	0
Address	[REDACTED]				
Conducted on	12th May, 2021 12:30 PM BST				
Prepared by	[REDACTED]				

Survey Details

100%

Type of survey

[Redacted]

Who is the survey being carried out for (company, organisation, person)

[Redacted]

Is this survey linked to other surveys

Yes

Address and company/organisation/person of linked survey

[Redacted]

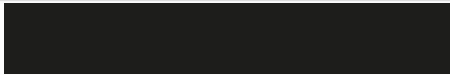
Report once the survey has been carried out.

Survey Areas

AREA

AREA 1

Location / Area / Plant



Good access via substantial concrete staircase at one end and a vertical CAT ladder (approx 15ft) at the other.
 Concrete constructed service duct containing pipework and cabletrays/cables.
 Excellent Housekeeping.

Photos



Photo 1



Photo 2



Photo 3



Photo 4

Hazards

Oxygen flow and return pipes - copper tube running the full length of the duct, possible source of oxygen enrichment of the atmosphere. It was noticed on the day of inspection that there was a small audible leak on the oxygen pipe.
 9" Mains Cold Water Services pipe - constructed of cast iron and operating at 6 bar pressure
 Hot water Flow and Return pipes - carrying hot water around the heating system at low pressure.
 Limited ventilation - 1 louver vent located on the staircase

Risks

O2 enrichment - Increased risk of fire and/or explosion
 Rupture of water main - A rupture of a water main of this size and pressure could potentially cause the service duct to fill with water.

Current Control Measures

Access is restricted to maintenance engineers employed by the hospital or authorised contractors. There is no lone working in this area.

Additional Control Measures

Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space.
 Recommend use of atmospheric monitoring devices to alert any entrants to changes in the atmosphere.
 Recommend some basic rescue training to cover stretcher packaging and use of a sliding stretcher.

Rescue Plan

Currently there is no rescue plan in place.
 It is recommended that a rescue plan be formulated and takes into account the need to extricate a casualty from the furthest point of the space to a place of safety.
 In this case the rescue should be carried out from the staircase end of the duct as this will alleviate the need to haul a casualty/stretcher up the CAT (Fixed Access) ladder.
 The use of a sliding stretcher will be adequate to move a casualty along the smooth concrete floor to the base of the stairs. It should be incorporated into the plan to have a means of contacting extra staff to help lift the casualty/stretcher up the stairs to safety.

Training Required

Low/Med Risk Confined space entry
 Basic rescue including stretcher packaging

Equipment Required

Atmospheric monitoring devices (1 per entrant)
 Sliding Stretcher

Other

AREA 2

Location / Area / Plant



This plant room is located above the Firth Basement Corridor and is accessed from the ground floor of the main hospital building, or at the top of the CAT ladder at the far end of the Firth Basement Corridor.
 The plantroom is well ventilated.
 It is recommended that the plantroom continues to be considered a restricted area, but not allocated as a confined space. The access to the Firth Basement corridor (which is a confined space) is via the 15ft CAT ladder located through a door on the right hand side of the plant room (see photos)

Photos



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9

Hazards

Not considered a confined space
 Falls from Height if using CAT ladder to access basement corridor

Risks

Slipping/falling over open edge at top of CAT ladder

Current Control Measures

Access is restricted to maintenance engineers employed by the hospital or authorised contractors. There is no lone working in this area.

Additional Control Measures

Recommend collective protection installed at the top of ladder top prevent falls and unintended access into confined space.

Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space (on door that leads to ladder).

Rescue Plan

Currently no rescue plan in place.

This plantroom should be considered a restricted space as opposed to a confined space and as such does not require a rescue plan.

Training Required

None required

Equipment Required

None required

Other

AREA 3

Location / Area / Plant



There is good access in to the initial space, on the left, a vertical ladder rises approx 8ft to a perpendicular brick built pipe duct. This duct progresses for approx 25m before rising again via a set of steps. The duct runs for approx 100m and is a complete dead end with no other access.

Due to the difficulty of access and the length of the duct, combined with the limited ventilation, this space should be classified as a Medium Risk Confined Space.

Photos

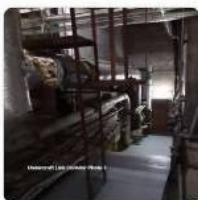


Photo 10

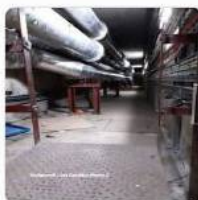


Photo 11

Hazards

Oxygen flow and return pipes - copper tube running the length of the duct, possible source of oxygen enrichment of the atmosphere - an audible leak could be heard leaking from a valve in this space

Limited ventilation

Long (approx 100m) duct with no other exits

Mains cold water services pipework.

Low pressure heating flow and return pipework

Risks

Oxygen enrichment - increased risk of fire and/or explosion
 Limited ventilation - potential reduced oxygen levels
 Long duct - potentially difficult extrication
 Mains cold water services pipework - leaks potentially causing slippy areas, particularly at top of ladder
 Low pressure heating flow and return pipework - burns to skin after coming into contact with unlagged pipework, burns from leaking heating water

Current Control Measures

Access is restricted to maintenance engineers employed by the hospital or authorised contractors. There is no lone working in this area.

Additional Control Measures

Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space.
 Recommend use of atmospheric monitoring devices to alert any entrants to changes in the atmosphere.
 Recommend use of escape breathing apparatus to enable self rescue in the event of an atmospheric emergency.
 Recommend some basic rescue training to cover stretcher packaging and use of a sliding stretcher that can also be used to lower a casualty from the top of the ladder down to the ground.
 Installation of a suitable high anchor point to enable the lowering of the stretcher.

Rescue Plan

Currently there is no rescue plan in place. It is recommended that a rescue plan be formulated and takes into account the need to extricate a casualty from the furthest point of the space to a place of safety - The use of a sliding stretcher is recommended to enable a casualty to be dragged the length of the space.
 It is also recommended that anchor points are installed at the head of the ladder to allow a lowering device to be attached to allow the stretcher to be lowered in a safe and controlled way.

Training Required

Recommend medium risk confined space training and basic rescue training that incorporates the lowering of a packaged casualty

Equipment Required

Signage
 Atmospheric monitoring devices (1 per entrant)
 Sliding Stretcher
 Anchor bolts installed in ceiling
 Emergency lowering device.
 Emergency Escape Breathing Apparatus

Other

AREA 4

Location / Area / Plant



The C16 Plantroom is recommended to be designated as a restricted space as opposed to a confined space. The area that is located down the stairs and through the doors is a series of brick built pipework/cable ducts. It is recommended that the ducts are classified as a medium risk confined space due to the limited ventilation and tight access and egress. The main duct has reasonable access and egress, but the duct immediately to both the left and right have very limited restricted access/egress. It would be extremely difficult to extricate a casualty.

Photos



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19

Hazards

- Potential for asbestos
- Limited ventilation
- Tight access and egress from some of the ducts
- Low pressure heating/domestic water services

Risks

- Risk of disturbing asbestos
- Limited Ventilation - Potential for low oxygen levels
- Tight access/egress - difficult and time consuming rescue from tight spaces which are compounded by obstacles such as pipework, both tight ducts are also elevated above floor level by about 4ft.
- Low pressure heating/hot water services - If there is an escape of hot water into a space it would be difficult for a worker to move quickly to a place of safety and they could suffer serious burns

Current Control Measures

Access is restricted to maintenance engineers employed by the hospital or authorised contractors. There is no lone working in this area.

Additional Control Measures

- Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space.
- Recommend checking asbestos register to confirm absence of asbestos.
- Recommend use of atmospheric monitoring devices to alert any entrants to changes in the atmosphere.
- Recommend use of escape breathing apparatus to enable self rescue in the event of an atmospheric emergency.
- Recommend some basic rescue training to cover stretcher packaging and use of a sliding stretcher.

Rescue Plan

Currently there is no rescue plan in place.

It is recommended that a rescue plan be formulated and takes into account the need to extricate a casualty from the furthest point of the space to a place of safety.

The use of a sliding stretcher is recommended to enable a casualty to be dragged the length of the space.

Using the stretcher would also make a rescue from the tight, side ducts slightly easier, this rescue would probably need to incorporate a basic 2:1 rope system to help move the stretcher through the space whilst being guided from behind.

Arrangements should be made to allow entrants to contact fellow staff to help lift the stretcher safely down from the duct and up the stairs of the plant room to a place of safety, should an emergency occur.

Training Required

Recommend Medium risk confined space training and basic stretcher packing and rescue training that incorporates very basic rope work (2:1 mechanical advantage)

Equipment Required

- Signage
- Atmospheric monitoring devices (1 per entrant)
- Sliding Stretcher
- Rope/anchor equipment/pulley/carabiners
- Emergency Escape Breathing Apparatus

Other

AREA 5

Location / Area / Plant



This service duct is roughly 500m long and runs under the full length of the Vicar's corridor. It is larger at the Porters Lodge end and considerably smaller at Sorby end.

There are access hatches into the duct every 15-20m, but some hatches may not have been lifted for upwards of 30 years. There is ground water intrusion on occasion and also an open grey water drain that runs in the duct.

The duct houses an 9", 6 bar water main that would provide a considerable threat to life if it were to rupture, filling the small space very quickly. There is also a natural gas line running the length of the duct.

Ventilation in the space is naturally very limited and there is a real possibility of rat infestation.

Photos



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24



Photo 25

Hazards

Limited access/egress
Extremely limited working space within duct due to pipe work and cable runs
Ingress of ground water, waste grey water open drain
Natural gas pipeline running length of duct
9", 6 bar water main running length of duct
Rat infestation - Leptospirosis
Access via short, fixed ladders through hatches
Limited ventilation

Risks

limited access/working space - risk of entrapment
Overcome by gasses by leak on pipework
Fire and explosion risk due to presence of methane
Groundwater and open drain providing means of Hydrogen Sulfide gas production
Risk of drowning from an increase in water level due to rupture of water main.
Leptospirosis from contact with rat urine/droppings
Risk of reduced oxygen level due to limited ventilation
Difficult access/egress

Current Control Measures

Use of qualified external contractors
No entry to hospital staff

Additional Control Measures

Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space.
Consider refurbishing and identifying escape hatches, both inside and out.
Consider making some hatches light weight so as to make it easier to open from inside the space
Consider fitting lighting to the space.
Ensure all contractors are suitably qualified and have the correct equipment to carry out the task without compromising safety.
Consider asking them to demonstrate their rescue plans prior to work commencing.

Rescue Plan

None currently
Contractor to provide rescue plans as part of a safe system of work

Training Required

Awareness training

Equipment Required

N.A.

Other

AREA 6

Location / Area / Plant



This area was unseen on the day of the survey due to the theatres being in use. The area was described to us as an enclosed loft space, accessed via a 12ft vertical ladder. The space itself houses medical gasses and general services.

Due to the nature of this space being enclosed and housing a potential for a specified risk (under the the Confined Spaces Regulations 1997), coupled with the fact that the only access and egress is via a 12ft vertical ladder, then this space should be designated as a medium risk confined space.

Photos



Photo 26

Hazards

- The space can only be accessed via 12ft CAT ladder
- Medical gas lines are located in this loft space
- O2 lines located in this loft space
- Water tanks

Risks

- Medical gas pipelines - potential for entrant to be overcome by gases in the event of a leak or rupture
- Atmosphere enriched by O2 - Increased risk of fire and/or explosion

Current Control Measures

Access is restricted to maintenance engineers employed by the hospital or authorised contractors. There is no lone working in this area.

Additional Control Measures

- Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space.
- Recommend use of atmospheric monitoring devices to alert any entrants to changes in the atmosphere.
- Recommend use of emergency escape breathing apparatus to enable self rescue in the event of an atmospheric emergency.
- Recommend some basic rescue training to cover stretcher packaging and use of a sliding stretcher that can also be used to lower a casualty from the top of the ladder down to the ground.
- Installation of a suitable high anchor point to enable the lowering of the stretcher.

Rescue Plan

- Currently there is no rescue plan in place.
- It is recommended that a rescue plan be formulated and takes into account the need to extricate a casualty from the furthest point of the space to a place of safety
- The use of a sliding stretcher is recommended to enable a casualty to be dragged the length of the space.
- It is also recommended that anchor points are installed at the head of the ladder to allow a lowering device to be attached to allow the stretcher to be lowered in a safe and controlled way.

Training Required

Recommend medium risk confined space training and basic rescue training that incorporates the lowering of a packaged casualty

Equipment Required

- Signage
- Atmospheric monitoring devices (1 per entrant)
- Sliding Stretcher
- Anchor bolts installed in ceiling
- Emergency lowering device.
- Emergency Escape Breathing Apparatus

Other

AREA 7

Location / Area / Plant



Underground service duct carrying heating pipes, access is gained via a series of manholes. The duct links up with another duct that runs between "Brierley and the boiler house".

There is evidence of the ingress of groundwater and the very real possibility of the presence of rats and therefore leptospirosis. There are ventilated lids on some of the access hatches although this cannot guarantee a safe atmosphere.

Photos



Photo 27



Photo 28



Photo 29



Photo 30



Photo 31



Photo 32



Photo 33

Hazards

- Limited access/egress
- Presence of ground water - gasses of decomposition
- Duct carries lagged heating pipes
- Rat infestation
- Limited ventilation

Risks

Limited access/egress - Difficulty in retrieving someone in an emergency
 Groundwater - potential for gases of decomposition to form in the space resulting in a dangerous atmosphere
 Burns from heating pipes or escape of heating water.
 Risk of leptospirosis
 Potential for low oxygen levels

Current Control Measures

Use of external contractors for entry
 No hospital staff enter

Additional Control Measures

Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space.
 Ensure all contractors are suitably qualified and have the correct equipment to carry out the task without compromising safety.
 Consider asking them to demonstrate their rescue plans prior to work commencing.

Rescue Plan

None currently
 Contractor to provide rescue plans as part of a safe system of work

Training Required

Equipment Required

NA

Other

AREA 8

Location / Area / Plant



Photos

Multi level, brick built pipe ducting running underground for approx 100m, there are 3 drops via cat ladders over length of the duct. The duct that runs to Spinal injuries joins this duct approx half way along the length. The Brierley end of the duct is accessed via a small brick built shed that houses a vertical cat ladder, the other end of the duct terminates in the boiler house at high level onto a steel staging that is accessed via another vertical ladder.



Photo 34



Photo 35



Photo 36



Photo 37



Photo 38



Photo 39

Hazards

Limited access/egress
Limited working space within duct due to pipe work and cable runs
Ingress of ground water.
Potential rat infestation - Leptospirosis
Access via approx 3.5m fixed ladder through open hole housed in a very small, dedicated, brick built building
Falls from height
Limited ventilation
Potential multi-stage rescue
Service/heating pipes

Risks

Potential low O2 levels
Groundwater contamination/decomposition gasses
Extremely difficult rescue, possibly involving multiple levels to negotiate.
Risk of Leptospirosis
Risk of burns from heating pipes
injury caused by fall from height at both access points or mid level drops

Current Control Measures

Use of external contractors for entry
No hospital staff enter

Additional Control Measures

Signage denoting "No Entry - Confined Space - Authorised/trained Personnel only" or similar message to be installed at entrance to confined space.
Ensure all contractors are suitably qualified and have the correct equipment to carry out the task without compromising safety.

Rescue Plan

None currently
Contractor to provide rescue plans as part of a safe system of work

Training Required

NA

Equipment Required

NA

Other

Additional Information

Additional Information

It is clear that there are some confined spaces located on site, some with significant access issues and varying risks. Some of the more risky and difficult spaces are managed by preventing entry by hospital employees, and the employing of qualified and competent contractors to carryout the work.

The confined spaces that remain, must still be managed to reduce the risks to employees as low as possible, this can be achieved by putting into practice the recommended measures that this survey sets out.

The level of training that this survey recommends for entry is Medium Risk (CS2). This will ensure that staff will be able to enter any of the spaces that hospital staff are authorised to work within, with the correct procedures and equipment.

Rescue planning is an essential part of confined space working and this survey recommends a basic level of rescue training that will enable staff to effect the rescue of a co-worker should an incident occur.

Signatures

Survey carried out by



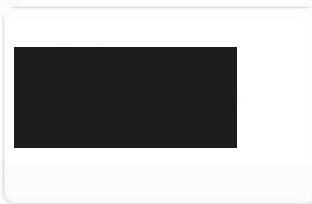
14th May, 2021 2:10 PM BST



Date survey carried out

12th May, 2021

Report prepared by



13th May, 2021 12:37 PM BST

Date of report

13th May, 2021

Report checked by



13th May, 2021 10:00 PM BST

Date checked

13th May, 2021

Appendix



Photo 1



Photo 2



Photo 3

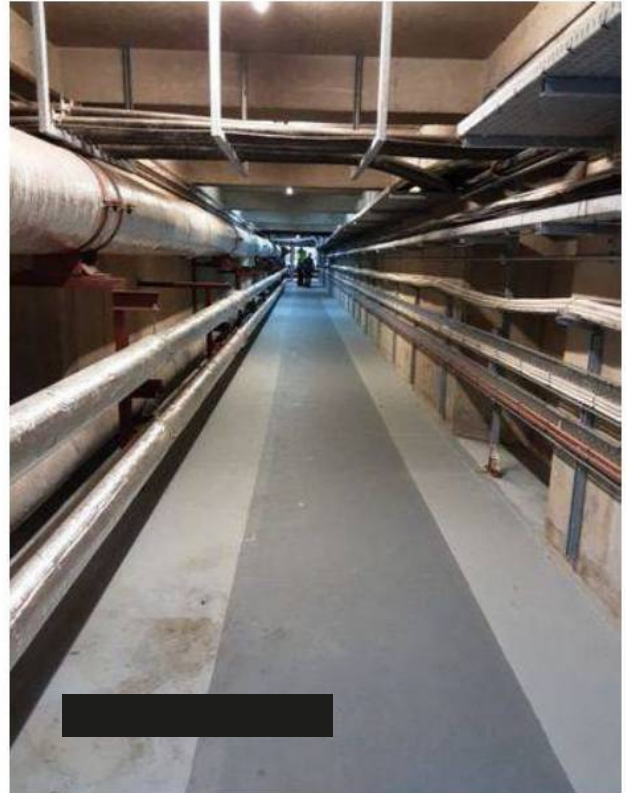


Photo 4



Photo 5

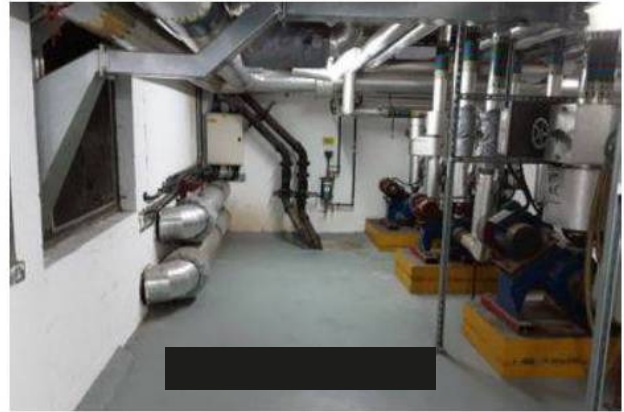


Photo 6



Photo 7



Photo 8

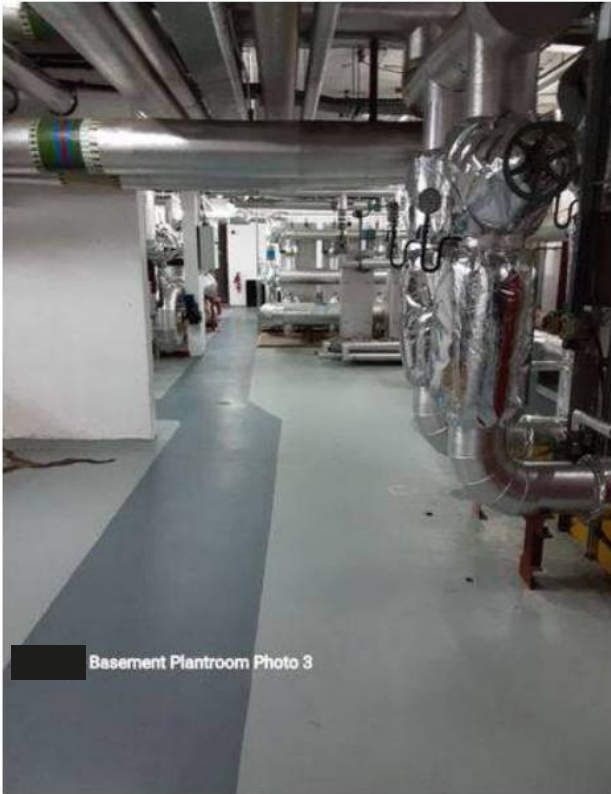


Photo 9



Photo 10



Photo 11

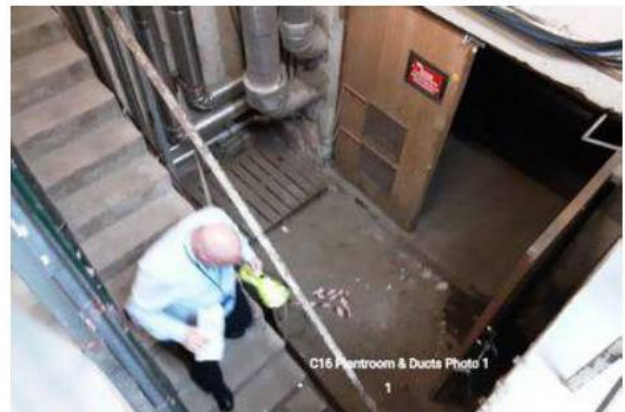


Photo 12



Photo 14



Photo 13



Photo 15



Photo 17



Photo 16

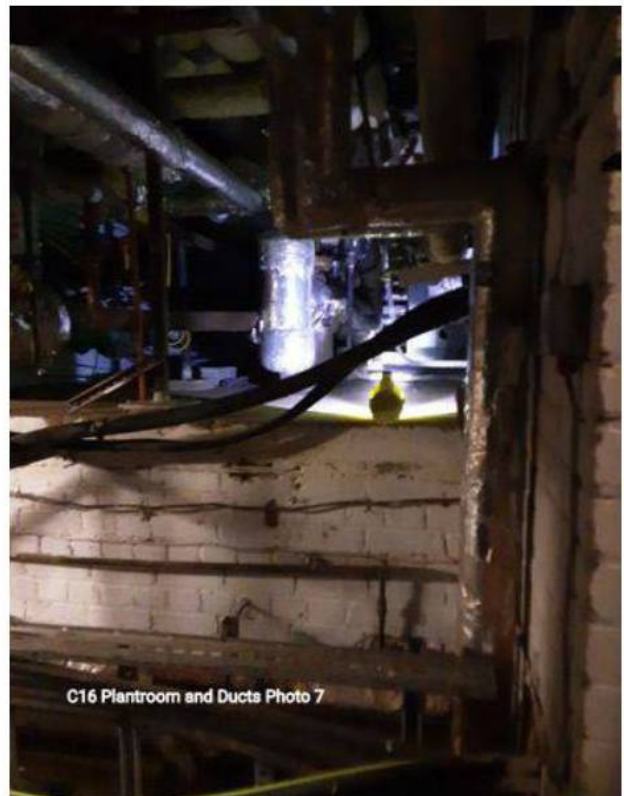


Photo 18



Photo 19



Photo 20



Photo 21



Photo 22



Photo 24

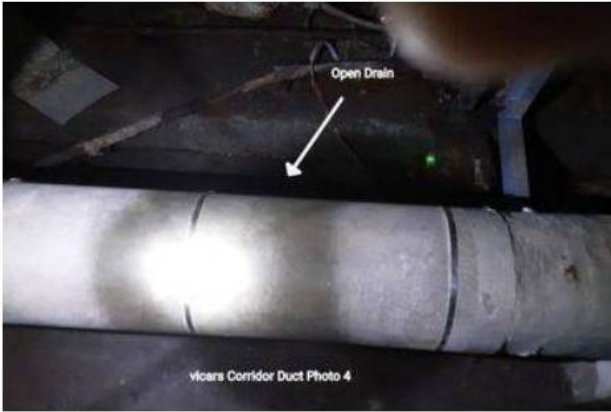


Photo 23



Photo 26



Photo 25



Photo 27



Photo 28



Photo 29



Photo 30



Photo 31



Photo 32

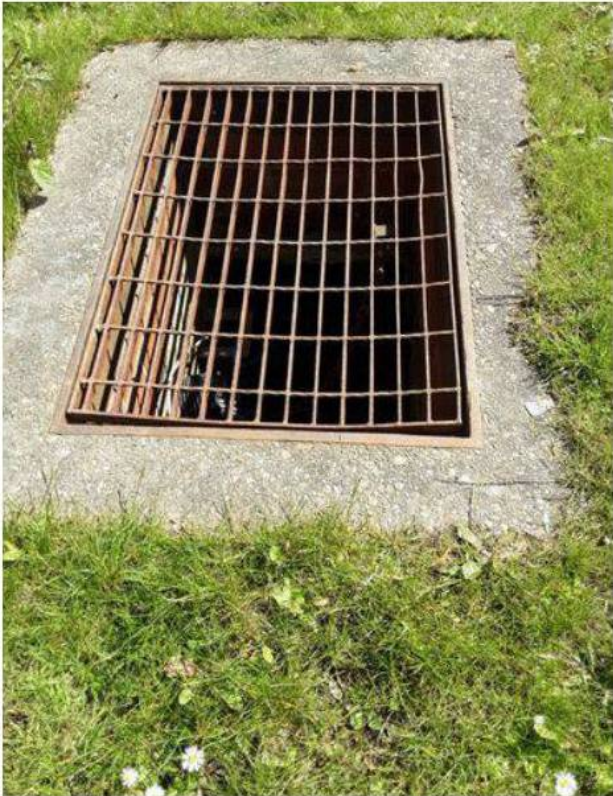


Photo 33



Photo 34



Photo 35



Photo 36



Photo 38



Photo 37



Photo 39