

## Consulting Engineers LLP

## Multi Discipline Consultancy

### **Mechanical Inspection Report**

# at McNulty Yard for Port of Tyne

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Date: February 2013

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Parsons House

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#### 1.0 **EXECUTIVE SUMMARY**

- 1.1 The Mechanical Services Installation across McNulty Yard are typical of systems whose infrastructure is some 40 years old with many of the buildings having been added to on an ad hoc basis over the past 20/25 years. In these instances it is unlikely that the Mechanical installations will meet current standards although certain elements may still be retained.
- 1.2 Other buildings have clearly been updated more recently within the last 5-10 years and their installations, while in much better condition, still require updating to meet current standards.
- 1.3 The whole of the mechanical infrastructure installations, mains cold water, gas and compressed air, should be identified and tested for safe usage in any future development.
- 1.4 Water and Gas meters, where found, have been identified.





#### 2.0 INTRODUCTION

#### **BRIEF**

- 2.1 DTA Consulting Engineers LLP were appointed in September 2012 by Port of Tyne to undertake a condition report at McNulty Yard and this particular report forms part of the overall report on the site.
- 2.2 This specific report should be read in conjunction with the other sections of the overall report.

#### **RESTRICTIONS AND LIMITATIONS**

- 2.3 The inspection was undertaken without any intrusive investigations or testing.
- 2.4 No design appraisal of the systems has been undertaken.

#### **CIRCULATION OF REPORT**

2.5 The Report has been prepared for the use of the person or organisation giving the instruction and should only be used within the context under which the instruction is given. It may be disclosed to other professional advisors assisting in respect of that purpose but must not be disclosed to a third party without the approval of DTA Consulting Engineers LLP.

#### **GENERAL CONDITIONS**

- 2.6 Mechanical Services Installations Rating
  - a) Fair to Good. Could be re-useable or need little improvement.
  - b) Fair to Poor. Likely to require a lot of repairs to bring up to standard.
  - c) Poor. Will require to be stripped out and replaced.





#### 3.0 BUILDING REFERENCE 01 PIPE SHOP

#### **GENERAL**

3.1 The Pipe Shop and upper floor offices are unoccupied and the Mechanical Services are in relatively good condition.

#### **INCOMING SERVICES**

- 3.2 MCWS. Supplied from incoming mains that enter the building in MDPE on East façade. Condition: fair / poor. Installation poor.
- 3.3 A Gas meter is installed at lower ground floor level of the brick built offices adjacent to the road side

#### **HEATING**

3.4 No heating in workshop (North)

Upper Floor Offices: Above Workshop.

3.5 Heating: Electric convectors and tubular heaters Condition: Good to fair

Upper Floor. East: Adjacent to main road.

3.6 Gas fired LPHW radiator system. Condition: Good

#### **VENTILATION**

3.7 No mechanical ventilation in workshop apart from welding and specialist extract systems.

#### **HOT & COLD WATER SERVICES**

3.8 DHWS. None in Workshop.

#### Upper floor offices: Above workshop

- 3.9 DHWS: via Electric water heaters. Condition: Good to fair.
- 3.10 MCWS: To toilets and amenities. Condition: Good to fair.

#### **Upper Floor East: Adjacent to Main Road**

3.11 Served via gas fired combi boiler Condition: Good.

#### **COMPRESSED AIR**

3.12 There is a compressed air system that runs around the building perimeter it is fed from an internal plant and is in fair condition. It runs at mid-level with droppers to serve the welding bays etc. Condition fair.





#### **CONCLUSIONS AND RECOMMENDATIONS**

3.8 The 3 areas that make up the Pipe Shop are in fair to good condition, and could be brought back into service without great expenditure.







**Main Pipe Shop** 



Main Pipe Shop Specialist Exhaust Ventilation System



Main Pipe Shop. Specialist Extract Vent.



**Main Pipe Shop** 



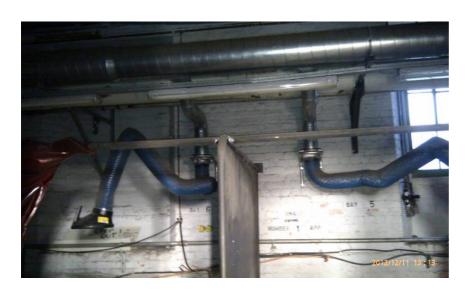




**Welding Specialist Ventilation System** 



**MDPE Water Services Distribution** 

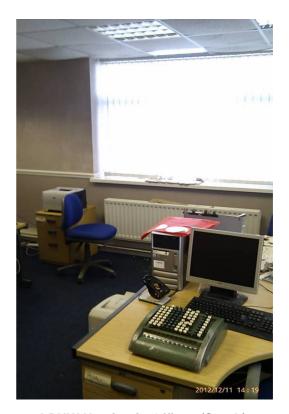


**Welding Extract Ventilation System** 





**Offices LPHW Boiler** 



**LPHW Heating in Offices (South)** 



Pipe Shop Mess. Electric Heater



Offices (South) Gas Meter

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#### 4.0 BUILDING REFERENCE 02 GATE HOUSE

#### **GENERAL**

4.1 The Gate House is a new prefabricated building in good condition, as are the Mechanical Services.

#### **INCOMING SERVICES**

- 4.2 Incoming MCWS to Kitchen and W.C. Condition good.
- 4.3 Incoming Electricity Supply to serve water heater and heaters.

#### **HEATING**

4.4 Electric convector heaters. Condition good.

#### **VENTILATION**

4.5 None

#### **HOT & COLD WATER SERVICES**

4.6 Mains cold water and hot water, via an electric water heater are in good condition.

#### **CONCLUSIONS AND RECOMMENDATIONS**

4.7 The building services are self-contained and in good condition.





#### **PHOTOGRAPHS**



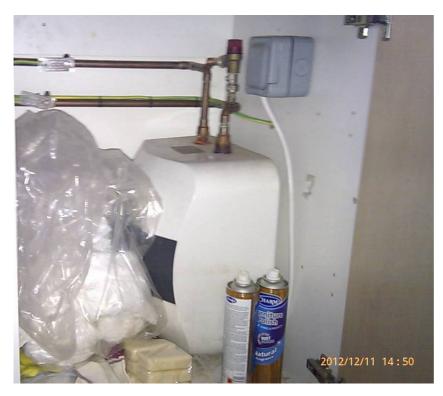
#### **External**



Office







**DHWS Electric Water Heater** 





#### 5.0 BUILDING REFERENCE 03 STORES 1

#### **GENERAL**

5.1 This Building is used as a store area.

#### **INCOMING SERVICES**

5.2 MCWS: None

#### **HEATING**

5.3 Heating: None apart from electric portable heaters. Condition: Fair/Good

#### **VENTILATION**

5.4 Ventilation: None

#### **HOT & COLD WATER SERVICES**

5.5 DHWS: None

#### **CONCLUSIONS AND RECOMMENDATIONS**

5.6 There are no mechanical services, apart from portable electric convector heaters.





#### **PHOTOGRAPHS**



#### **External**



Internal





#### 6.0 BUILDING REFERENCE 04 WORKSHOP & STORES 2

#### **GENERAL**

6.1 The building is in poor fabric condition and has various mechanical services installed in an ad hoc fashion.

#### **INCOMING SERVICES**

- 6.2 Poorly installed MDPE CWS pipework.
- 6.3 Poorly installed compressed air pipework

#### **HEATING**

6.4 Heating: Electric tubular Condition: Poor

#### **VENTILATION**

6.5 Ventilation: None

#### **HOT & COLD WATER SERVICES**

- 6.6 DHWS: None
- 6.7 MCWS: Yes on external wall. Condition Materials Good. Installation Poor.

#### **CONCLUSIONS AND RECOMMENDATIONS**

6.8 The mechanical services are in poor condition.





#### **PHOTOGRAPHS**



**Electric Tubular Heaters** 



Water & Compressed Air Lines





Parsons House



Water & Compressed Air Lines Feeding Portable Building Annex & Outside Discharge Valves





Parsons House

#### 7.0 BUILDING REFERENCE 05 RUB SHELTER

#### **GENERAL**

7.1 No Mechanical Building Services are installed in the Building.

#### **INCOMING SERVICES**

7.2 N/A

**HEATING** 

7.3 N/A

**VENTILATION** 

7.4 N/A

**HOT & COLD WATER SERVICES** 

7.5 N/A

**CONCLUSIONS AND RECOMMENDATIONS** 

7.6 N/A





Parsons House

#### 8.0 BUILDING REFERENCE 06 TEMPORARY BUILDING

#### **GENERAL**

8.1 No Mechanical Building Services are installed in the Building.

#### **INCOMING SERVICES**

8.2 N/A

**HEATING** 

8.3 N/A

**VENTILATION** 

8.4 N/A

**HOT & COLD WATER SERVICES** 

8.5 N/A

**CONCLUSIONS AND RECOMMENDATIONS** 

8.6 N/A





#### 9.0 BUILDING REFERENCE 07

#### **GENERAL**

9.1 2 Storey Temporary Building used as an off shore training facility.

#### **INCOMING SERVICES**

9.2 None

#### **HEATING**

9.3 Heating: Electric convectors and wall mounted electric fan heaters. Condition: Good

#### **VENTILATION**

9.4 Ventilation: Dummy air valves are installed in the offices. Condition fair.

#### **Upper Floor**

9.5 As above but with Punka ceiling fans installed. Condition: Good

#### **HOT & COLD WATER SERVICES**

9.6 DHWS: None

9.7 MCWS: None

#### **CONCLUSIONS AND RECOMMENDATIONS**

9.8 The Mechanical services are in good/fair Fabric condition.





#### **PHOTGRAPHS**



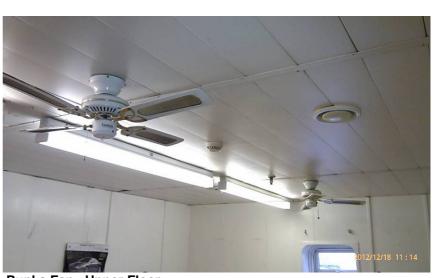
**External** 



**Electric Heater** 



**Electric Heater** 



Punka Fan. Upper Floor





#### 10.0 BUILDING REFERENCE 08 MAIN OFFICE

#### **GENERAL**

10.1 3 Storey & Basement Office Block with building fabric and mechanical services in good condition.

#### **INCOMING SERVICES**

#### **Basement**

- 10.2 Ground Floor, Entrance Lobby Meter In cupboard. Condition Good.
- 10.3 Incoming metered gas supply and MCWS service. Condition: Poor

#### FLOORS GROUND, 1ST AND 2ND FLOORS

#### Heating

10.4 Heating: Via 2 gas fired LPHW heating systems. Condition: Good

#### Ventilation

- 10.5 Ventilation: Male and Female Toilet Extracts. Condition: Good
- 10.6 Air Conditioning: 2 Split AC systems in Conference rooms. Condition: Good

#### **Hot & Cold Water Services**

10.7 DHWS: Electric Water Heaters. Condition: Good

#### **CONCLUSIONS AND RECOMMENDATIONS**

10.8 The Mechanical services apart from the incoming Gas & MCWS are in good condition.





#### **PHOTOGRAPHS**



Radiator



**AC Unit. Conference Room** 



Radiator



Combi Gas Boiler located in cupboard on stair landing







**Gas Meter (Ground Floor Lobby)** 



Water Meter (Basement)





#### 11.0 BUILDING REFERENCE 09 TRAINING/SAFETY

#### **GENERAL**

11.1 Temporary 2 Storey Building used for Training purposes.

#### **INCOMING SERVICES**

11.2 MCWS – Condition Good.

#### **HEATING**

11.3 Heating: Electric Convectors. Condition: Good

#### **VENTILATION**

11.4 Ventilation: Yes. Central System. Condition. Poor

#### **HOT & COLD WATER SERVICES**

11.6 DHWS: Electric water heaters. Condition: Good

11.7 MCWS: To Amenities. : Condition: Fair

#### **CONCLUSIONS AND RECOMMENDATIONS**

11.8 Mechanical Services generally in good condition, apart from Mechanical Ventilation.





#### **PHOTOGRAPHS**





Internal



**Electric Water Heater** 



**Electric Heater** 



Vent. Grille

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#### 12.0 BUILDING REFERENCE 10 CANTEEN

#### **GENERAL**

12.1 This building has formally been used as a Canteen (Ground Floor) and Locker Room (First Floor). It has been identified as being, internally, a Health and Safety issue in regards to possible asbestos content and also structural issues.

#### **INCOMING SERVICES**

12.2 MCWS entry point not visible. Probably fed from external supply between the boundary wall and the building structure.

#### **HEATING**

- 12.3 Electric Convectors. Ground Floor, Condition Poor.
- 12.4 Electric Fan Heaters First Floor. Condition Poor.

#### **VENTILATION**

12.5 Kitchen cooker hood installed and has a window mounted extract fan.

#### **HOT & COLD WATER SERVICES**

12.6 Kitchen & Mess Area have sinks. An electric water heater sited under the mess room sink and supplies both the mess and kitchen.

#### **CONCLUSIONS AND RECOMMENDATIONS**

12.7 This mechanical services are in poor condition.







**Mess Servery** 



Mess/Kitchen Electric Water Heater







**Kitchen Cooking Equipment** 

**Kitchen Extract Vent** 



First Floor Locker Room







**Locker Room Electric Fans** 







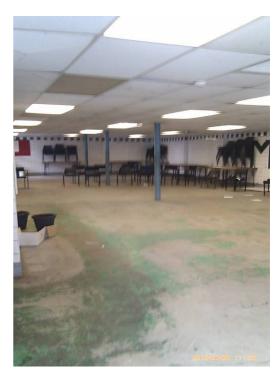
#### **External**



Kitchen Entrance



**External** 



**Mess Area** 







**Mess Entrance** 





#### 13.0 BUILDING REFERENCE 11 ELECTRIC SUBSTATION

13.1 No Mechanical services





#### 14.0 BUILDING REFERENCE 12 ELECTRICAL STORES

#### **GENERAL**

14.1 Temporary Building in poor fabric condition

#### **INCOMING SERVICES**

14.2 None

#### **HEATING**

14.3 Heating: Electrical convector heaters .Condition: Poor

#### **VENTILATION**

14.4 Ventilation: None

#### **HOT & COLD WATER SERVICES**

14.5 DHWS: None

14.6 MCWS: None

#### **CONCLUSIONS AND RECOMMENDATIONS**

14.7 The portable electric heaters.





#### **PHOTOGRAPHS**



**External View** 





#### 15.0 BUILDING REFERENCE 13 FAB SHOP

#### **GENERAL**

15.1 Large open workshop with offices on first floor.

#### **INCOMING SERVICES**

15.2 Incoming 50Ømm MCWS supply from ring main on south elevation.

#### **HEATING**

#### Workshop

15.3 None in Workshop.

#### **Upper Offices**

15.4 Electric convectors and fan heaters in offices and tubular heaters in corridors. Condition: Fair/Poor

#### **VENTILATION**

#### Workshop

15.5 None apart from welding booth extract systems.

#### **Upper Offices**

- 15.6 Ventilation in most offices and canteen. From central ducted systems.
- 15.7 Ventilation Plant Room: No Access
- 15.8 Air Conditioning: In Conference and meeting rooms Condition: Good

#### **HOT & COLD WATER SERVICES**

#### Workshop

- 15.9 DHWS: None
- 15.10 MCWS: to various points around the workshop. Condition: Fair
- 15.11 Compressed Air: Installed around the perimeter of the building, with droppers to welding booths. Fed from external plant. Condition: Pipework: Fair. Plant: Poor

#### **Upper Floor Offices**

- 15.12 DHWS Electric water heaters. Condition Good.
- 15.13 MCWS Condition Good.

#### **CONCLUSIONS AND RECOMMENDATIONS**

15.14 Mechanical Services generally in fair to poor condition.





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## **PHOTOGRAPHS**





**Shop Floor** 





**External Plant** 



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**Comp Air Plant** 



1<sup>st</sup> Floor Offices, Corridor Electric Heater



1<sup>st</sup> Floor Offices, Corridor Ventilation Grille







**Vent Duct** 



**AC System** 



Kitchen. Electric Water Heater





#### 16.0 BUILDING REFERENCE 14 RIGGING STORE

#### **GENERAL**

16.1 2 Storey Building in Fair to Poor fabric condition.

## **INCOMING SERVICES**

16.2 MCWS. Assumed to be fed from external mains to rear of building. Gas incomer not visible.

#### **HEATING**

- 16.3 Heating: Electric Convector heaters; Condition: Poor
- 16.4 LPHW gas fired heating system installed on upper floor. Boiler stripped down and out of use.

#### **VENTILATION**

16.5 Ventilation: None

#### **HOT & COLD WATER SERVICES**

- 16.6 DHWS: Point of use electric water heaters. Condition Poor
- 16.7 MCWS: To water heaters. Condition Fair
- 16.8 Sprinkler System: Runs through the building with branch lines to sprinkler heads. Assumed to be out of commission.

#### **CONCLUSIONS AND RECOMMENDATIONS**

16.9 Mechanical services are in poor fabric condition.





## **PHOTOGRAPHS**



External



Internal



**Heating Boiler** 





# 17.0 BUILDING REFERENCE 15 RUB SHELTER

# **GENERAL**

17.1 No Mechanical Services

## **PHOTOGRAPH**



**Rub Shelter** 

**External** 





# 18.0 BUILDING REFERENCE 16

18.1 No access as building is unsafe.





## 19.0 BUILDING REFERENCE 17

#### **GENERAL**

19.1 Standalone prefabricated (Industrial) building, Used as offices.

## **INCOMING SERVICES**

- 19.2 MCWS fed in MDPE to the building from the mains serving building 18. Condition: Poor
- 19.3 No gas service evident.

#### **HEATING**

- 19.4 Previously by ducted warm air vent systems (electric) now disconnected.
- 19.5 Presently heated via portable electric convectors. Condition: Fair/Poor.

#### **VENTILATION**

19.6 See item 19.4

#### **HOT & COLD WATER SERVICES**

- 19.7 DHWS: Is provided by an electric water heater. Condition: Fair
- 19.8 MCWS: Fed from MDPE mains at rear of Building 18. Condition: Poor.

## **CONCLUSIONS AND RECOMMENDATIONS**

19.9 Mechanical Services in Fair/Poor condition.



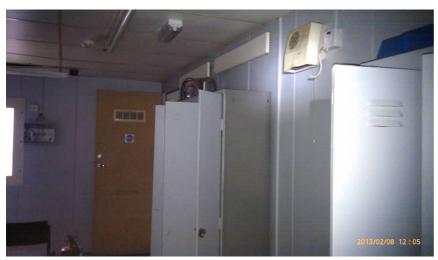




# **External**



# **External Vent Duct**



**Electric Fan Heater** 







**Redundant Duct Heating System** 



**External MCWS** 





## 20.0 BUILDING REFERENCE 18 THREE STOREY OFFICE BUILDING

#### **GENERAL**

20.1 Industrial Type Temporary 3 Storey Building

## **INCOMING SERVICES**

20.2 MCWS Risers to rear and enters the building on: 3 Levels.

#### **HEATING**

20.3 Heating. Electric convector heaters. Condition Fair

## **VENTILATION**

20.4 Ventilation. Central System, plant disconnected. External ductwork. Condition: Poor

## **HOT & COLD WATER SERVICES**

- 20.5 DHWS: Point of use electric water heaters. Condition: Fair
- 20.6 MCWS: To amenities and mess room. Condition: Fair
- 20.7 No header tanks visible.

## **CONCLUSIONS AND RECOMMENDATIONS**

20.8 Mechanical Services in Fair Condition





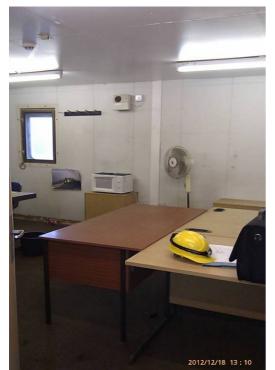
## **PHOTOGRAPHS**

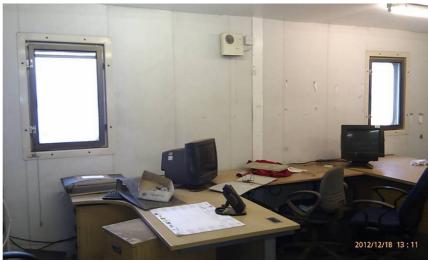




**External** 

# **External**





Office

Office

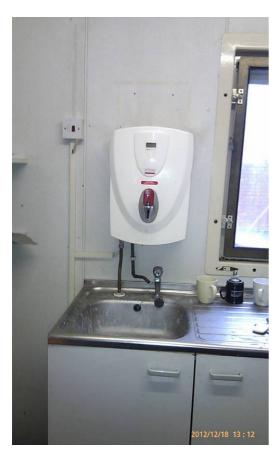




**Electric Heaters Mess Area** 



Ventilation



**Water Heater** 



Kitchen





# 21.0 BUILDING REFERENCE 19 SUBSTATION

# **GENERAL**

## 21.1 No Mechanical Services



**External** 





# 22.0 BUILDING REFERENCE 20 ELECTRICAL STORE

# **GENERAL**

**Stores** 

## 22.1 No Mechanical Services



External





# 23.0 BUILDING REFERENCE 21 RUB SHELTER

# **GENERAL**

## 23.1 No Mechanical Services



**External** 





# 24.0 BUILDINGS GENERAL CONCLUSIONS AND RECOMENDATIONS

- 24.1 Existing Gas and Water Infrastructure will need detailed inspection to ensure compliance in regard to current legislation
- 24.2 Any existing plant and pipework installations deemed fit for purpose will need testing prior to commencement of any works.





## 25.0 SITE WIDE SERVICES

#### **INCOMING GAS SERVICES**

- As per the northern gas networks drawings N80071 dated 02/07/2012 and N392921 dated 10/01/12. Gas meters found on site are as detailed in the previous notes.
- 25.2 DTA recommend that an in depth survey of the distribution pipework within the site boundary is commissioned for general site knowledge, for isolation points, and local health and safety procedures.
- 25.3 Note: Also McNulty drawing number YED-082 Rev. 3 April 08 is titled layout of mains gas supply, it actually indicates industrial gas tank locations.

## **INCOMING WATER SUPPLY**

- 25.4 As per Northumbria Water Drawing NZ3566SE dated 21.01.2011 and NZ3566SE dated 21.01.2011 (2 part drawing).
- 25.5 Refer also to McNulty drawing YED-059 Rev. 01 dated Sept 07.
- 25.6 McNulty Drawing YED 01Y 017 is 'Layout of Water Mains' is incomplete and should be subject to a further in depth survey, for general site knowledge and local health, for isolation points and safety procedures..





#### 26.0 APPENDIX 1 - DRAWINGS

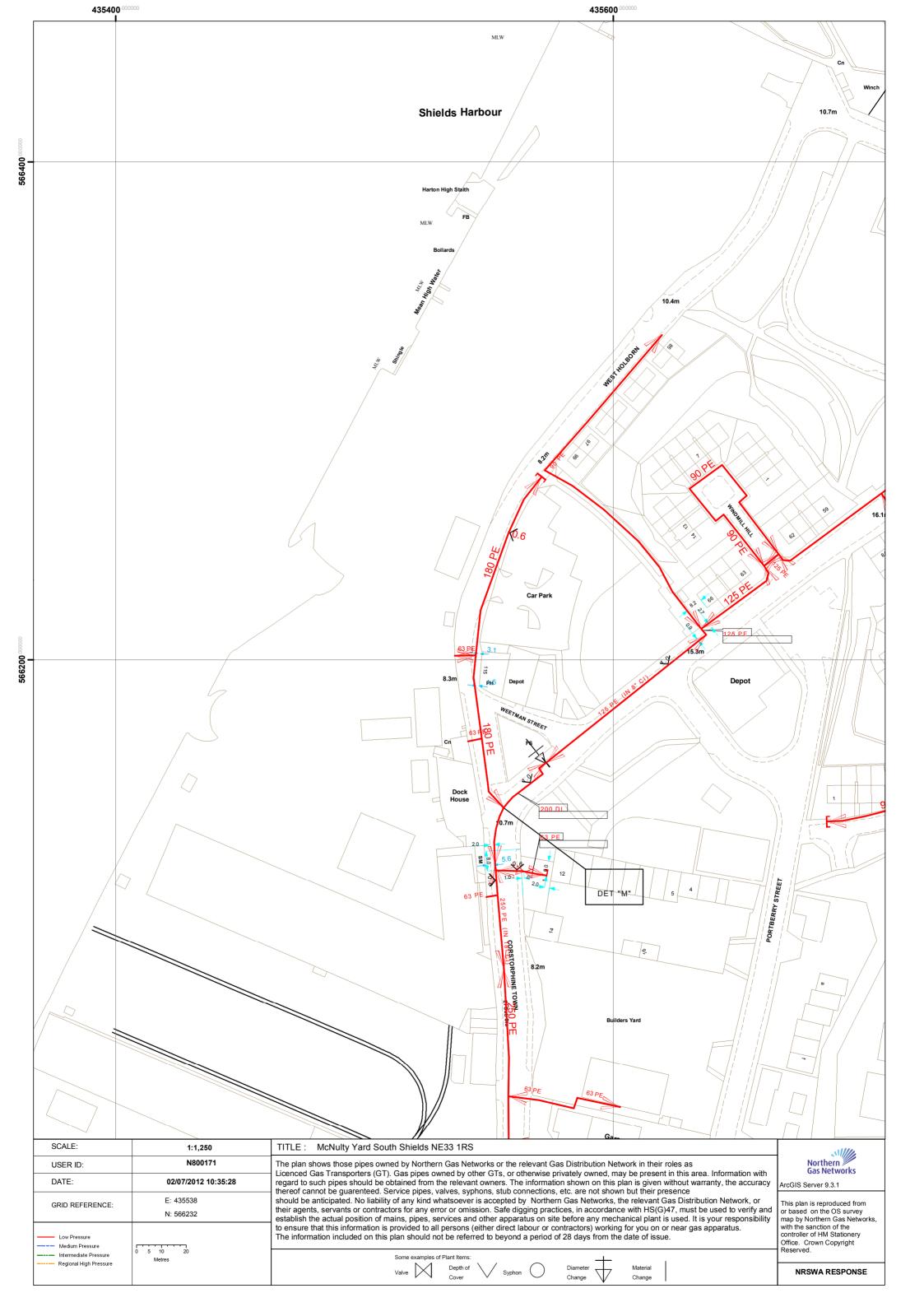
Northern Gas Networks drawings N80071 dated 02/07/2012 and N392921 dated 10/01/12.

Northumbria Water Drawing NZ3566SE dated 21.01.2011 and NZ3566SE dated 21.01.2011 (2 part drawing).

McNulty drawing YED-017 Rev. 08.

McNulty drawing YED-059 Rev. 01

McNulty drawing number YED-082 Rev. 3

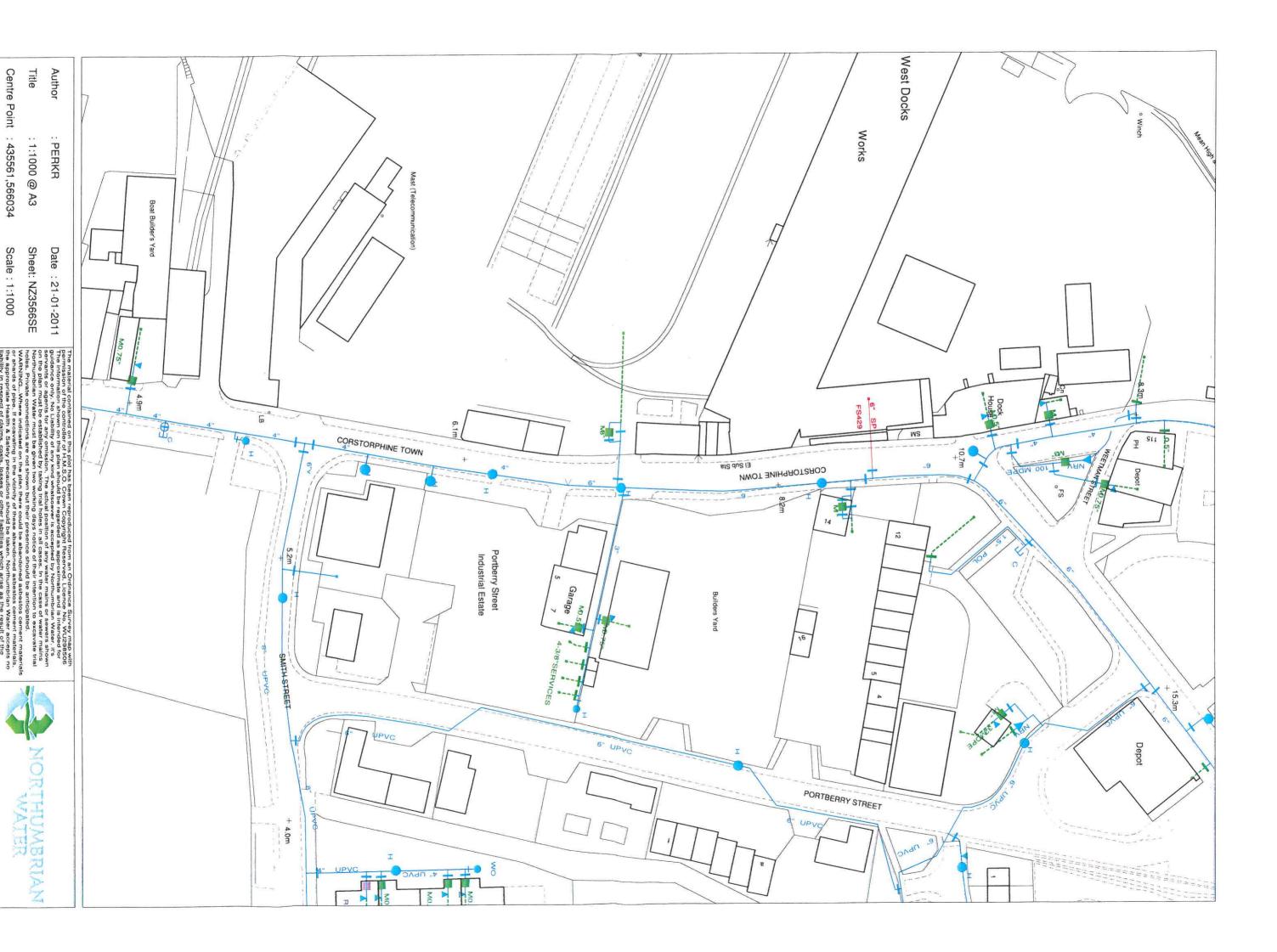




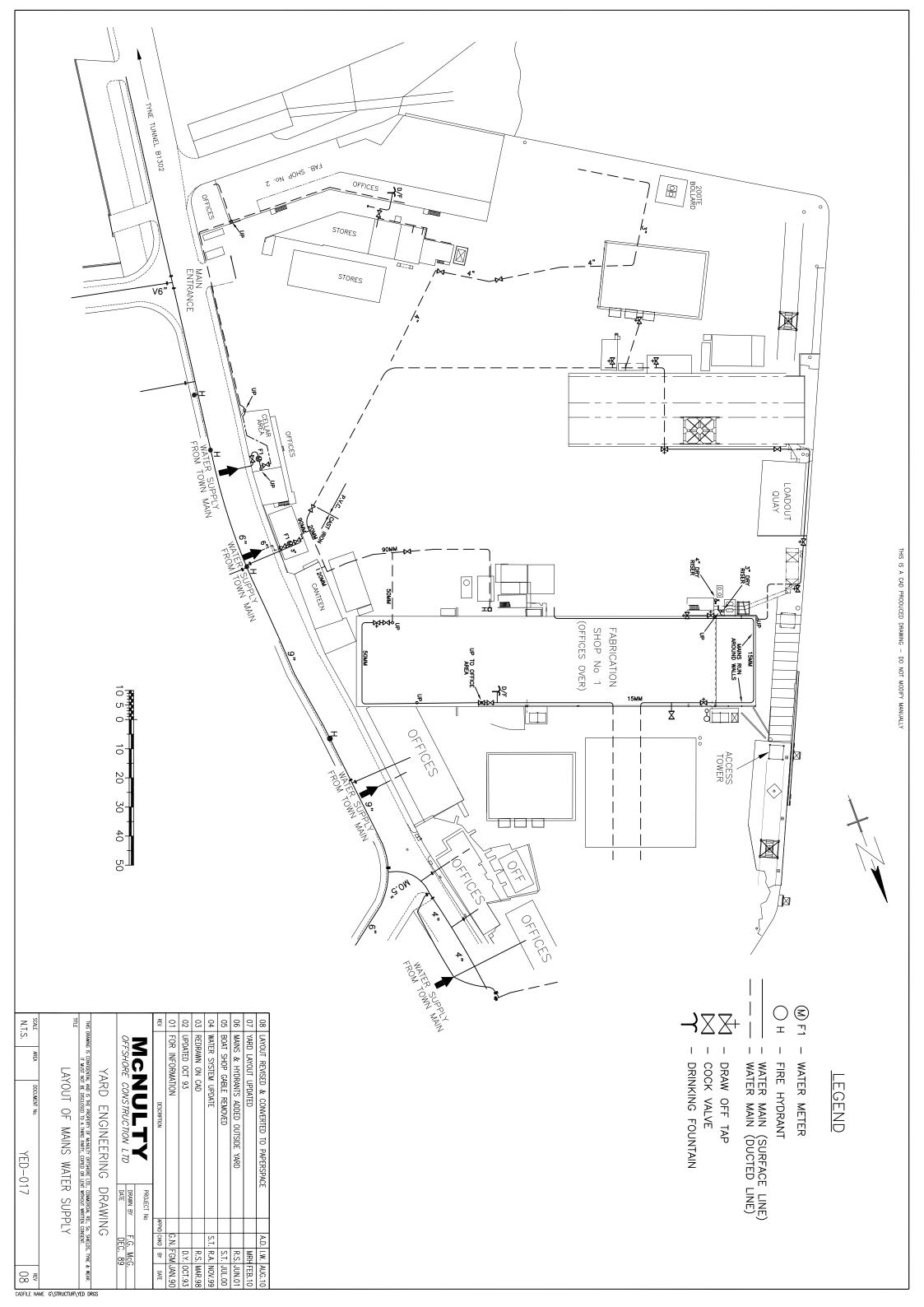


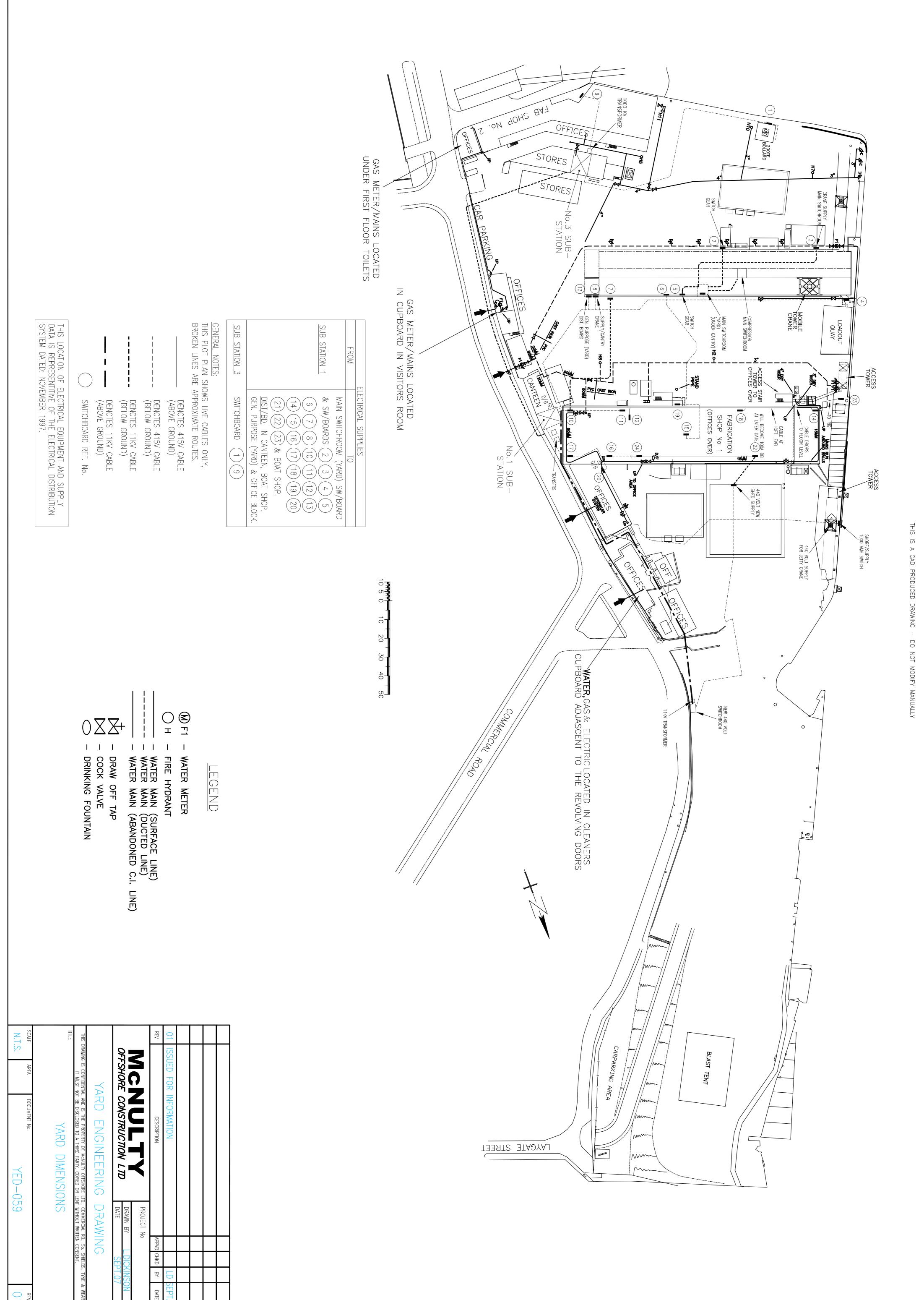




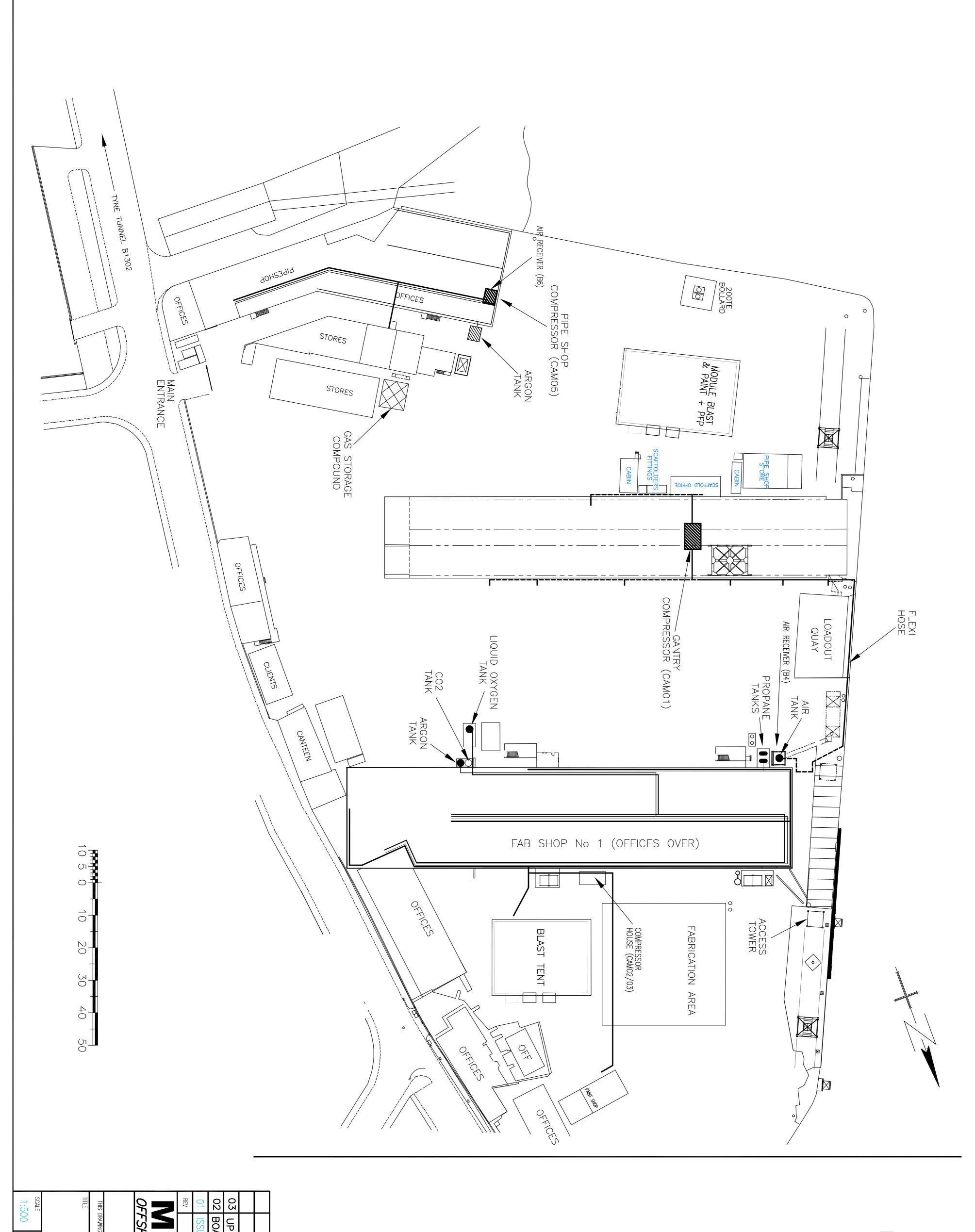








CADFILE NAME G\STRUCTUR\YED DRGS



LEGEND

SIHL

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A CAD PRODUCED DRAWING — DO NOT MODIFY MANUALLY

ARGON COMPRESSOR OXYGEN

PROPANE

UPDATED WITH NEW SYSTEMS BOAT SHOP CABLE REMOVED CONSTRUCTION LTD PROJECT No

ВҮ

A.LAPR 08 S.T JUL 00

LAYOUT

MAINS GAS

SUPPLY

YED-082

MOCL YARD

ENGINEERING

DRAWING

CADFILE NAME G\STRUCTUR\YED DRGS