

## **2.0 VISIT TO SITE**

It was immediately evident entering the boiler house that there are several issues with the existing installation.



## **3.0 LTHW Boiler Plant**

There are 2No. existing oil fired cast iron sectional boilers. Working in the manner of 'Lead-Lag'.

On inspection of the plant room it can be said that the burners are well maintained with the majority of pipework insulated. The installation as a whole however is deemed to be in a very poor condition.

There is an Automatic Controls System in place that includes a number of heating zones controlled by time and ambient room temperature.

**REPORT ON:  
EXISTING BOILERS & FLUES AT:  
CARNDONAGH CC Co. DONEGAL**

**4.0 Existing Boilers**

The existing boilers are in very poor condition with the cast iron boiler sections showing signs of leaks at many areas. The product name of the boilers is Hogfors 25, each rated at 360 kW and manufactured in 1986 making them 29 years old.



The boiler insulation has deteriorated in many places. As can be seen from the photographs the boiler casings are also corroding due to the leaks in the boiler sections.



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The backend of each boiler are showing signs of corrosion. It is very possible that due to the age of the boilers, the boiler seals and gaskets are manufactured from asbestos.



The burners are well maintained but have reached the end of their economic life. Boiler service reports repeatedly raise concerns of parts that require replacement. (see appendix A)



There is evidence of seals also passing where the burner fixes to the boiler.



## **5.0 Existing Flues**

The existing flues are in a very poor state of repair and would be deemed dangerous in terms of health and safety.



The 2No. flues are expected to be self supporting structures being held by a webbed base plate with 8No. holding down bolts. There is evidence of some of the holding down bolts now missing or not even installed during the initial installation.



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There are heavy sulphur deposits on both flue systems to the extent that both of the flues are now corroded to dangerous level.



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The corrosion is such that may very well have brought about the structural instability of the entire flue systems to a point that they may collapse.



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The sulphur build up at the base of each flue is that extreme that it is actually forcing the inspection doors open



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There is no physical evidence of the flues being supported in any other manner except for the base plate and holding down bolts.



Externally the flues termination pieces shows sign of staining which is a result of in efficient burning of the fuel.





## **6.0 Existing Pipework and Valves**

The majority of valves in the boiler house are in a below average condition with some being that heavily corroded that immediate replacement is necessary.



## **7.0 Fire Protection**

Over time sections of the steelwork that was once fire protected has been exposed to the elements.



## **8.0 Comments**

The 2No. boilers are in very poor state of repair.

Combustion gases are passing through the seals of each boiler.

The burners are well maintained but are at the end of their economic life.

The flues are in very poor condition and raise concerns for health and safety as they are not structurally sound.

Some valves require replacement.

Structural steel requires to be fire protected.

## **9.0 Recommendations**

On the observations recorded and included in this Report we recommend that:

1. The 2No. Boilers be replaced.
2. The 2No. Burners be replaced.
3. The 2No. flues be removed in their entirety and replaced with new flues in compliance with current Irish standards and guidelines.
4. A number of valves be replaced.
5. The structural steel be fire proofed to retain the desired fire proof rating.

**When was the affected part(s) of the building last replaced and/or remedial works carried out? Where applicable, a description of previous remedial works should be included.**

The flues, boilers, burners and associated pipework are the original installation from 1989.

**What evidence is there of an effective maintenance programme for the affected area(s)?**

The existing burners are serviced once annually.

There is no evidence of an effective maintenance programme for the affected flues and boilers.

**Provide proposals for rectifying the defective areas/works including 3 fully costed options for addressing the issues.**

**Option 1**

Remove the existing 2no. defective flues and replace with new self supporting chimney systems including baseplates and holding down bolts in compliance with current Irish Standards and compliance. Carry out remedial work to existing flue openings through roof to make weathertight.

Remove existing oil fired cast iron sectional boilers and replace with new high efficiency models to match existing heat output.

Remove existing problematic burners and replace with new high/low oil fired burners to match new boilers.

Remove faulty valves and replace with new.

The structural steel to be fire proofed to retain the desired fire proof rating.