

The Harlington Centre



Gas Boilers – Visual Condition Report

Report produced on the 11th October 2018

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1. Brief

Corrigenda were requested by Lorraine Pallas (Hart District Council) to attend site and carry out a visual condition report on gas fired boilers on the 9th July 2018 and produce a report of findings.

2. Details and Report of Condition of Plant

The heating system is supplied from five (5) Sangiorgio Regency GBS Series 2 gas fired boilers. Each boiler has a heat output of 67.0 Kw. The boiler data plate did not provide a “date of manufacturer” but following conversations with the boiler manufacturer, it is estimated that these boiler are in excess of 25 years. The boilers would appear to supply the heating system as I was unable to identify any hot water plant. There was no hot water pumps labelled on the control panel so it is assumed the hot water in the building would be fed from local point of use water heaters.



Regency GBS series 2

Boiler size	221-52	N° of boiler section	7
Serial N°	627027	Date of manufacture	
Heat input	286,600 Btu/h		84.0 kW
Heat output	227,500 Btu/h		67.0 kW
Burner setting pressure	12.0 mbar		4.8 in. w.g.
Main injector diameter	4.30 mm		
Heat input of pilot	0.27 kW	Gas family:	Natural Gas Cat 1N
Max working pressure	5 bar (167 ft)	Max flow temperature	90°C
Rated voltage	240 V · 50 Hz	Fuse rating	3 A
This appliance has been tested and certificated by BRITISH GAS			
n°	41 504 - 09	Country of origin: ITALY	
U.K. Distributor: MODULAR HEATING SALES LTD.			
35, Nobel square Burnt Mills industrial estate - Basildon - Essex - SS131LT			
Ph. no. (0268) 591010			
Manufacturer: SANGIORGIO			

Boiler No. 1

Boiler No. 1 was fully operational and there were no obvious visual defects to the boiler.

Boiler No. 2

Boiler No. 2 shut down and the gas supply to boiler isolated and capped off. The electrical supply to boiler was also disconnected.



The multifunctional gas valve and pilot assembly had been removed from the boiler and would appear to have been left on top of the boiler.



Since my site visit on the 19th July 2018, I have received a worksheet completed by the current maintenance provider, which is attached in section 3 in the report. The contractor carried out a PPM on 18th September and the worksheet would indicate that boiler No. 2 has been repaired and is now operational.

Boiler No. 3

Boiler No. 1 was fully operational and there were no obvious visual defects to this boiler.

Boiler No. 4

Boiler No. 4 was not operational. Following visual investigation no parts had been removed from the boiler and it was found that the pilot flame was extinguished. The pilot flame being extinguished could be due to a faulty part which could include the thermocouple, multifunctional gas valve or high limit interrupter. Several used thermocouples had been left on top of the boiler.



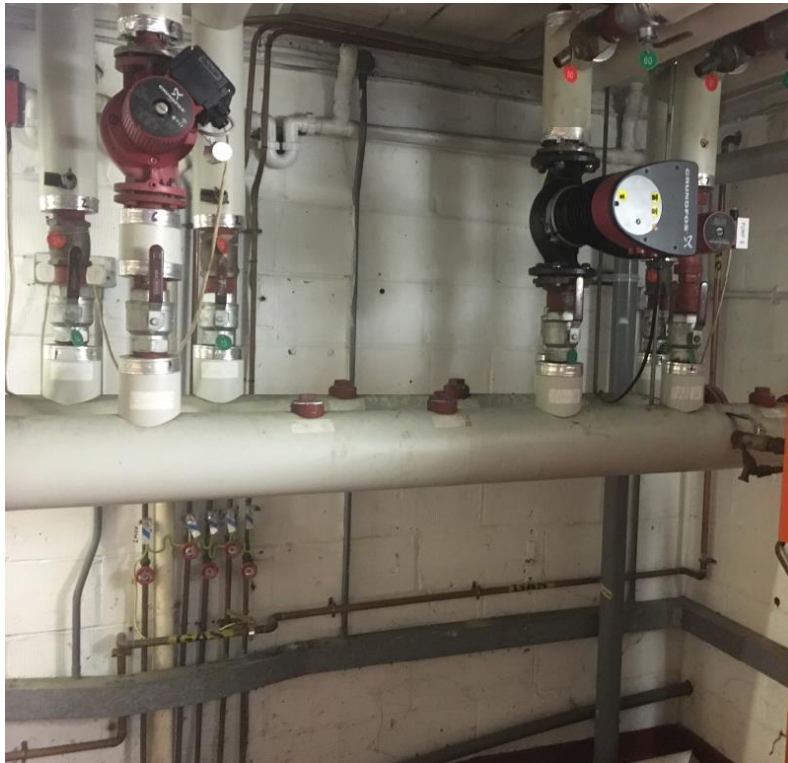
Since my site visit on the 19th July 2018, I have received a worksheet from the current maintenance provider, which is attached in section 3 in the report. The contractor carried out a PPM visit on the 18th September and the worksheet would indicate that boiler No. 4 is not operational.

Boiler No. 5

Boiler No. 5 was shut down and electrically disconnected with a warning notice attached internally in the boiler. The multifunctional gas valve, pilot assembly, overheat thermostat and control panel had all been removed from the boiler.



At some time in the past the gas supply for boiler No. 5 has been disconnected and utilized to supply gas an appliance not located in the main plant room.



On further investigation, I located a valve chart which confirmed that that the gas supply that original supplied boiler No. 5 had been altered to supply a Worcester gas boiler located in reception.

BLACK DISCS	1	2 1/2" GAS COCK	Isolates Gas Supply of Building
	2	2" GAS COCK	Isolates Gas Supply of Kitchen
	3	2" GAS COCK	Isolates Gas Supply to All Boilers
	4	3/4" GAS COCK	Isolates Gas to Future Water Heater
	5	—————"————"	Isolates Gas Supply to Boiler 1
	6	—————"————"	—————"————" Boiler 2
	7	—————"————"	—————"————" Boiler 3
	8	—————"————"	—————"————" Boiler 4
	9	Worcester	Reception Boiler 5
	10	15mm STOP COCK	Isolates Mains Water to Pressure Set
	11	1" L.H. BALL VALVE	Isolates System Water from Pressure Set
	12	3" L.H. BALL VALVE	Isolates Zone 1 Flow
	13	2" L.H. BALL VALVE	—————"————" Zone 2 ————"————"

3. Gas Certificates / Worksheets Documentation

At the time of my site visit, I was informed by Harlington Centre staff that they would not have access to previous gas certificates, and that the manager who would have access was not available. I was provided contact details to request copies of previous gas certificates.

An email was sent to request copies of the gas certificates but I received an out of office email informing me that the manager would not be returning until the 24th July.

I received an email containing copies of previous worksheets on the 17th September 2018. The quality of the worksheets is poor due to carbon copies being left on site. Due to this it cannot be evidenced when each of the boilers failed, which at the time of the survey left two out of the 5 boilers operating.

COMBUSTION REPORT

Client: Harlington Centre Report no: CR 03613

Site address: Harlington Centre Job no: 03613

Date: 18/09/2018

Additional reports: ☐

For the report numbers: ☐

System information

	1	2	3	4	5	6	7	8
Check - ✓ pass, ✗ further action required, NA not applicable								
Values/indicators								
TRVs	✓	✓	✓	✓	✓	✓	✓	✓
Circulation pumps	✓	✓	✓	✓	✓	✓	✓	✓
Oil/water separator	✓	✓	✓	✓	✓	✓	✓	✓
Flue gas analysis (attach)	✓	✓	✓	✓	✓	✓	✓	✓
Flue gas analysis (attach)	✓	✓	✓	✓	✓	✓	✓	✓
Flue complete	✓	✓	✓	✓	✓	✓	✓	✓
Flue terminal position	✓	✓	✓	✓	✓	✓	✓	✓
Tightness tested	✓	✓	✓	✓	✓	✓	✓	✓
Controls tested	✓	✓	✓	✓	✓	✓	✓	✓
Flame/ignition checked	✓	✓	✓	✓	✓	✓	✓	✓
Drive mechanism lubricated	✓	✓	✓	✓	✓	✓	✓	✓
Oil pump pressure	✓	✓	✓	✓	✓	✓	✓	✓
Oil valve number	✓	✓	✓	✓	✓	✓	✓	✓
Burner pressure set point	✓	✓	✓	✓	✓	✓	✓	✓
Ignition checked	✓	✓	✓	✓	✓	✓	✓	✓
Thermocouple tested	✓	✓	✓	✓	✓	✓	✓	✓
Check heat exchanger	✓	✓	✓	✓	✓	✓	✓	✓
Part adjustment	✓	✓	✓	✓	✓	✓	✓	✓
Check burner register	✓	✓	✓	✓	✓	✓	✓	✓
Clean combustion chamber	✓	✓	✓	✓	✓	✓	✓	✓
Clean burner/boiler externally	✓	✓	✓	✓	✓	✓	✓	✓
Clean ventilation grills	✓	✓	✓	✓	✓	✓	✓	✓
Ventilation size correct	✓	✓	✓	✓	✓	✓	✓	✓
Left in full working order	✓	✓	✓	✓	✓	✓	✓	✓
Warning notice issued	✓	✓	✓	✓	✓	✓	✓	✓

Equipment condition:

General 1 2 3 4 5 6

1 = good 6 = poor

Job complete: Yes ☒ No ☐

Parts Required: Yes ☐ No ☐

* Complete a Parts Request form. Parts Request Report no. 03613

Logbook completed: Yes ☐ No ☐

Parts removed from site: Yes ☐ No ☐

*Details

Start: 18/09/2018

Arrive: 18/09/2018

Leave: 18/09/2018

Engineer's Signature: [Signature]

Print: [Signature]

Parts fitted: Boiler No. 1, 2, 3, 4, 5

Van stock ☐ Office ☐ Supplier ☐

Comments: Boiler No. 1, 2, 3, 4, 5

What every engineer is made to give our clients satisfaction we cannot under any circumstances guarantee that both will not develop in the near future. All equipment contains numerous component parts and in carrying out our repair the parts described have been replaced. The breakdown of other parts may give rise to symptoms identical to those which were present prior to this repair.

COMFORT BUILDING SERVICES LTD, Sterling House, Stroudley Road, Basingstoke, Hampshire, RG24 8UD. Telephone: 01256 842500. Facsimile: 01256 814661 E-mail: enquiries@cbuk.com, Website: www.cbuk.com. Company Registration: 3054348 England, VAT Number: GB 941 8231 03. CBS0010905

COMBUSTION REPORT

Client: Harlington Centre Report no: CR 002904

Site address: Harlington Centre Job no: 002904

Date: 18/09/2018

Additional reports: ☐

For the report numbers: ☐

System information

	1	2	3	4	5	6	7	8
Check - ✓ pass, ✗ further action required, NA not applicable								
Values/indicators								
TRVs	✓	✓	✓	✓	✓	✓	✓	✓
Circulation pumps	✓	✓	✓	✓	✓	✓	✓	✓
Oil/water separator	✓	✓	✓	✓	✓	✓	✓	✓
Flue gas analysis (attach)	✓	✓	✓	✓	✓	✓	✓	✓
Flue gas analysis (attach)	✓	✓	✓	✓	✓	✓	✓	✓
Flue complete	✓	✓	✓	✓	✓	✓	✓	✓
Flue terminal position	✓	✓	✓	✓	✓	✓	✓	✓
Tightness tested	✓	✓	✓	✓	✓	✓	✓	✓
Controls tested	✓	✓	✓	✓	✓	✓	✓	✓
Flame/ignition checked	✓	✓	✓	✓	✓	✓	✓	✓
Drive mechanism lubricated	✓	✓	✓	✓	✓	✓	✓	✓
Oil pump pressure	✓	✓	✓	✓	✓	✓	✓	✓
Oil valve number	✓	✓	✓	✓	✓	✓	✓	✓
Burner pressure set point	✓	✓	✓	✓	✓	✓	✓	✓
Ignition checked	✓	✓	✓	✓	✓	✓	✓	✓
Thermocouple tested	✓	✓	✓	✓	✓	✓	✓	✓
Check heat exchanger	✓	✓	✓	✓	✓	✓	✓	✓
Part adjustment/cleaned	✓	✓	✓	✓	✓	✓	✓	✓
Check burner register	✓	✓	✓	✓	✓	✓	✓	✓
Clean combustion chamber	✓	✓	✓	✓	✓	✓	✓	✓
Clean burner/boiler externally	✓	✓	✓	✓	✓	✓	✓	✓
Clean ventilation grills	✓	✓	✓	✓	✓	✓	✓	✓
Ventilation size correct	✓	✓	✓	✓	✓	✓	✓	✓
Left in full working order	✓	✓	✓	✓	✓	✓	✓	✓
Warning notice issued	✓	✓	✓	✓	✓	✓	✓	✓

Equipment condition:

General 1 2 3 4 5 6

1 = good 6 = poor

Job complete: YES ☒ NO ☐

Parts required: YES ☐ NO ☐

* Complete a Parts Request form. Parts Request Report no. 002904

Logbook completed: YES ☐ NO ☐

Parts removed from site: YES ☐ NO ☐

*Details

Start: 18/09/2018

Arrive: 18/09/2018

Leave: 18/09/2018

Engineer's signature: [Signature]

Print: [Signature]

Parts fitted: Boiler No. 1, 2, 3, 4, 5

Van stock ☐ Office ☐ Supplier ☐

Comments: Boiler No. 1, 2, 3, 4, 5

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As reported in section 2, the current contractor attended site to carry out a PPM visit to the boilers on the 18th September 2018. The worksheet indicates that three of the five boilers that are operational. The worksheet identifies that PPM checks have been carried out on boiler No.4, but the boiler has not been left in working order.

COMBUSTION REPORT



Client: The Worthington Centre
 Site address: Green Road.
Fleet Hants.

Report no: CR 03808
 Job no: 33682
 Date: 18 September 18.
☐ Additional reports

List the reports numbers

System information	1	2	3	4	5	6	7	8
Check - ✓ pass, ✗ further action required, NA not applicable								
Valves/actuators	✗	✗	✗	✗				
TRV's	✗	✗	✗	✗				
Circulation pumps	✗	✗	✗	✗				
Chlorofluorocarbon	✗	✗	✗	✗				
Fuel gas analysis (attach)	✓	✓	✓	✓				
Burner type	GAS	GAS	GAS	GAS				
Nozzle size / .0	.5	.5	.5	.5				
Flue complete	✓	✓	✓	✓				
Flue terminal position	✓	✓	✓	✓				
Tightness tested	✓	✓	✓	✓				
Controls tested	✓	✓	✓	✗				
Electrodes clean/reset	✓	✓	✓	✗				
Drive motor/fan lubricated	✗	✗	✗	✗				
Oil pump pressure	✗	✗	✗	✗				
Oil smoke number	✗	✗	✗	✗				
Burner pressure set point	10mBar	10mBar	10mBar	✗				
Ignition checked	✓	✓	✓	✗				
Thermocouple tested	✓	✓	✓	✗				
Check heat exchanger	✓	✓	✓	✓				
Pilot adjusted/cleaned	✓	✓	✓	✗				
Check burner tray/bar	✓	✓	✓	✓				
Clean combustion chamber	✓	✓	✓	✓				
Clean burner/boiler externally	✓	✓	✓	✓				
Clean ventilation grills	✓	✓	✓	✓				
Ventilation size correct	✓	✓	✓	✓				
Left in full working order	✓	✓	✓	✗				
Warning notice issued	✗	✗	✗	✗				

1	Boiler	Regency II	Sangriogro
2	Boiler	Regency II	Sangriogro
3	Boiler	Regency II	Sangriogro
4	Boiler	Regency II	Sangriogro

Standard Information

Equipment condition:

General 1 2 3 4 5 6

1 = good 6 = poor

Job Complete

Yes ☐ No ☒

Parts Required

Yes* ☒ No ☐

* Complete a Parts Request form.
 Parts Request Report no.

8199.

Logbook completed

Yes ☐ No ☐

Parts removed from site:

Yes* ☐ No ☐

*Details

Start 0800

Arrive 0830

Leave 1600

Engineers Signature

[Signature]

Print Chris Sadler



Parts fitted

Van stock ☐ Office ☐ Supplier ☐

Comments

Whilst every endeavour is made to give our clients satisfaction we cannot under any circumstances guarantee that faults will not develop in the near future. All equipment contains numerous component parts and in carrying out our repairs the parts specified have been replaced. The breakdown of other parts may give rise to symptoms identical to those which were present prior to this repair.

[Signature]

Brune

Pink copy - Client White copy - office

CBS

4. Availability of Boiler Parts / Components

Following conversations with the boiler manufacturer, Corrigenda were informed that due to the age of the boilers, there are limited replacement parts / components currently available for this boiler.

Corrigenda requested from the boiler manufacturer, a current list of parts / components that are available and the parts / components that are obsolete but due to the age of the boilers the manufacturer was unable to be able to provide this in a document. The boiler manufacturer was able to verbally provide me with a list of available parts / components which I have listed below.

- Thermocouple
- Overheat thermostat
- Interrupter leads
- Piezo ignitor
- Pump overrun relay
- Temperature control thermostat
- Multifunctional Gas Valve (there were 4 valves manufactured for this model of boiler over the period that the boilers were produced and only 2 gas valves are available).

5. Options / Budget Costs

Corrigenda would propose that there are three possible options which I have listed below.

1, To continue to utilize the existing three existing operational boilers. If the boilers were to fail and repair was not possible temporary or permanent boiler plant could be installed. This option is risk based, as it not known how long the existing boilers will continue to operate.

2, To replace the existing four boilers with new high efficiency condensing boilers. The budget cost for this project would be £55,000.

3, To install temporary boiler plant. The budget cost for temporary plant would be £1,500 for installation of the plant, £500 for removal of the plant and £400 a week hire charge. This option is based on the assumption that the temporary boiler plant can be installed in a location external to the plant room. It would be recommended that if this is an option you would look to explore, a site survey be carried out to confirm this option is possible.

6. Executive Summary

Corrigenda were requested to carry out a visual survey of the boilers located in the Harlington Centre and provide a report of findings.

On the 19th July when Corrigenda carried out the survey only two out of the five boilers were operating. One boiler was in fault as the pilot flame was extinguished. Two of the boilers were in very poor condition which included have parts / components disconnected and in cases removed from the boiler. As highlighted in section 3 of the report, there are 3 boilers operational at the time of the last PPM on the 18th September 2018.

Corrigenda believe the boilers were manufactured around 25 + years previous and believe the boilers have exceeded their recommended working lifespan. Corrigenda would assume that the boiler with parts / components disconnected and removed, have been left in this condition due to the parts being obsolete. It is assumed engineers previously working on the boilers have utilizing these parts when required to install on another boiler to maximize the number of operational boilers.

Depending on the possibility of boiler No. 4 being repaired and becoming operational there would be 3 out of the 5 boilers operating. As the gas supply from boiler No. 5 has previously been utilized to supply a boiler in reception it would have to be assumed that only four boilers in the main plant room have been operational since the boiler in reception was installed.

Corrigenda would not be confident that the boilers would operate for a further 3 / 4 years with a PPM regime in place, as if a components fails which is obsolete, the boiler would become redundant.

Corrigenda would also highlight that to carry out a full strip down service to the boilers, tests would need to be carried out to ensure there is no ACM's (asbestos containing materials) contained internally in the boiler (usually found on seals on boilers). This test would not be required if it could be proven that any ACM's had been removed previously.

Depending on the timeframe that the building / heating system is required to remain in use, will have a significant impact on any decision to replace the existing boilers or investigate the possibility of installing temporary boiler plant.

7. Contact details

Lawrence Barnaby
lawrence.barnaby@corrigenda.co.uk,
01489 557667