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CHIMNEYS, COMBUSTION APPLIANCE AND SMOKE NUISANCE

SEMINAR

CASE STUDY 1

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CASE STUDY – Mr. G. J. of Cambridgeshire

1) Report by Mr. D. H. – Assessment of Alleged Nuisance arising from Smoke discharged from a Flue

**Report on the Assessment of
Alleged Statutory Nuisance arising
from Smoke discharged from a
Flue at [REDACTED]**

Report Commissioned by:

Ms D [REDACTED] S [REDACTED]
Solicitors
House
42 N [REDACTED]
Cambridge [REDACTED]

10th April 2015

Author:

Dr [REDACTED] H [REDACTED] BA DMS FRSPH MCIEH MIOA
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1.0 EXPERIENCE AND QUALIFICATIONS

- 1.1 I am a chartered environmental health practitioner and hold the Chartered Institute of Environmental Health's Diploma in Environmental Health, a Degree from the Open University in Social Science with Technology and post graduate qualifications in air pollution control, acoustics and noise control, and in management studies. I am currently a Corporate Member of the Chartered Institute of Environmental Health (CIEH), a Fellow of the Royal Society for Public Health (RSPH) and a Corporate Member of the Institute of Acoustics (IOA).
- 1.2 I have worked in consultancy since February 1992 and I offer advice to businesses, law firms, planning consultants, architects, government bodies and local authorities on a whole range of issues as they relate to the prevention and resolution of statutory nuisance. Since 2010 in addition to operating as a freelance consultant I have been Technical Partner with the consultancy Statutory Nuisance Solutions
- 1.3 Prior to 1992 I had enjoyed sixteen years as a practising environmental health officer for various local authorities across the country, the last position I held being a Head of Service post for a district council in Essex. I specialised in environmental protection work, principally the investigation and control of statutory nuisances. As a consultant, I advise clients on a whole host of matters, as these relate to statutory nuisance including:
- undertaking environmental impact assessments for town planning purposes;
 - advising clients in the engineering, construction, retail, hospitality and leisure industries on the resolution of discrete nuisances ranging from noise, odour, smoke, accumulations etc;
 - inspecting living conditions of residential properties in connection with statutory nuisances;
 - attending public inquiries and magistrates and county courts and giving expert evidence;
 - leading a team of consultants in drafting a Noise Management Guide and an Odour Guide for Local Authorities which were published jointly by Defra in 2006 and 2010 respectively.

- 1.4 I undertake lecturing assignments and have taught on postgraduate courses in integrated pollution control and acoustics and noise control. I am an accredited assessor for the CIEH's scheme to assess the professional development of Graduate Environmental Health Officers and since 2005 I have acted as an examiner for the Institute of Acoustics in the Regulation and Assessment of Noise module of their postgraduate Diploma course. My published works include: a paper examining the environmental noise impact of a proposed heliport facility; a paper reviewing the British Standard 4142; papers analysing the complementary roles of planning and environmental health in the control of community noise and a paper jointly authored with the barrister John [redacted] on licensing and public nuisance.

2.0 BRIEF

2.1 I have been instructed by H. [REDACTED] LLP Solicitors, acting for their client Mr G. [REDACTED] J. [REDACTED] to make an assessment as to whether the use of a stove at the client's premises is or has been causing a nuisance, to advise upon any steps that have not already been taken to minimise any nuisance and to prepare a report of my findings.

3.0 Tasks Undertaken

3.1 I have studied the documents provided to me, including:

- a copy of the abatement notice served upon the client by Huntingdonshire District Council on 18th February 2015;
- the appeal of the client to this abatement notice by way of a complaint to the Magistrates' Court dated 4th March 2015 ;
- a copy of the operations manual for the *Hunter Herald Stove*;
- a copy of the delivery note from the stove suppliers Flue and Chimney Specialists dated 3rd December 2003.

3.2 I have, in addition, made a visit to site on Wednesday 8th April 2015 where I interviewed at some length Mr J. [REDACTED] inspected the stove installation and made an assessment of the nuisance allegations through observation of smoke emissions resulting from the typical operation of the stove.

4.0 Background

4.1 Number 12 R [REDACTED] C [REDACTED] L [REDACTED] P [REDACTED] is a bungalow forming part of a housing development believed to have been constructed during the 1960s. The bungalow is set in a dip relative to the levels of the adjoining land such as the street pavement and the next door property in G. [REDACTED] Road. R [REDACTED] Close is an 'L' shaped cul-de-sac of similar properties – see photographic log in Appendix 1.

4.2 Mr J. [REDACTED] advised me that he installed the *Hunter Herald Multi-Fuel Stove* over 11 years ago. I have seen delivery notes dated December 2003 which would confirm this. Although the manufacturers of the stove describe the appliance as a 'multi-use' stove and recommend the use of the majority of approved manufactured smokeless fuels with the stove, the *Hunter Herald Stove* is only designated as an 'exempted fireplace' for the burning of wood logs under the Smoke Control Areas (Exempted

Fireplaces)(England) Order 2015. This means that the stove could be used legitimately within a smoke control area if wood logs are burnt on it. I understand that the property in question does not fall within any smoke control area.

4.3 Mr J [redacted] confirmed to me that he ensures that the chimney and flue pipe is cleaned by a local chimney sweeper every year. He further advised me that the stove is used to burn both seasoned timber and *Phumacite* smokeless fuel and he claims that the operation of this stove had never been problematic until a new neighbour moved in next door about a year ago and constructed a significant extension to his own bungalow.

4.4 I understand that this neighbour complained to Huntingdonshire District Council's Environmental Health Service about the smoke being emitted from the chimney serving the stove, which resulted in the council serving upon Mr J [redacted] on 18th February 2015 an abatement notice under the provisions of section 80 of the Environmental Protection Act 1990 citing the existence of a statutory nuisance "*at the premises known as residential properties in the vicinity of 12 R. C. L. P. [redacted] ...arising from smoke from a flue at 12 R. C. L. F. [redacted]*". The notice requires Mr J [redacted] as the owner of the premises, within one hour from the service of the notice "*to abate the same and also hereby prohibit the recurrence of the same.*"

4.5 The abatement notice was appealed against by way of a Complaint to the Magistrates' Court dated 4th March 2015, the grounds of appeal being that:

1. the notice is not justified by the terms of section 80 of the Act;
2. there has been some informality, defect or error in, or in connection with this notice;
3. the time required for compliance with the notice is not reasonably sufficient for the purpose;
4. best practicable means were used to prevent or counteract the effects of the nuisance.

The appeal seeks an order to quash or vary the notice.

5.0 My Assessment of the Matter

5.1 I arrived at the site at 12.00 hrs on Wednesday 8th April 2015. The weather was fine and sunny; there was a light breeze of between 1ms⁻¹ and 2 ms⁻¹ blowing initially from a south-westerly direction and later from an easterly direction; the air temperature was

13°C (all data recorded using a compass and a *Kestrel* mobile weather station). I met with Mr J [redacted] who took me into his house and showed me the *Hunter Herald Stove* housed within a brick fireplace located in the living room. By inspecting the appliance I could ascertain that the circular sectional steel duct mounted on top of the stove is connected to a circular sectional steel flue liner which itself is connected at roof level with a section of stainless steel circular sectional flue approximately 1 m in length protruding from the pitched roof. The top of this flue is fitted with a 'Chinaman's hat' type cap – see photographic log in Appendix 1.

- 5.2 Mr J [redacted] explained to me that both wood and *Phumacite* smokeless fuel supplied in 25 kg bags by CPL are burnt on the stove and that the stove is normally lit for 5-6 months during year between October and March. *Phumacite* is manufactured from anthracite dust compressed to form a hard compact briquette with a high calorific value capable of burning for long periods.
- 5.3 Mr J [redacted] then demonstrated to me how he lights the stove by using rolled up newspaper and kindling. When the stove was alight I went outside to observe how much smoke was exiting the chimney. I saw a small quantity of white smoke which I could just about smell downwind at ground level. This smoke I did not judge to be problematic. Mr J [redacted] then placed a quantity of the *Phumacite* smokeless fuel onto the fire which resulted in bluish smoke 'rolling out' of the stove into the living room with a significant quantity of this smoke exiting the chimney stack. The 'Chinaman's Hat' type cap on top of the chimney stack was seen to impede the effective dispersion of the smoke which swirled around at low level – see photographic log in Appendix 1. This smell from this smoke I observed to be very noticeable from inside the yard of no 12 R [redacted] C [redacted] on the northern aspect and from positions on the surrounding roads and pavements. I recorded that this bluish smoke continued to be emitted from the chimney stack for a period of 40 minutes after the *Phumacite* fuel was added to the fire. After this time no smoke was visible owing to the optimum temperature in the stove being attained.
- 5.4 I judged the smoke emission from burning the solid 'smokeless' fuel *Phumacite* to be problematic and likely to amount to a statutory nuisance based upon the following essential factors:
- (i) the prevailing south-westerly wind is likely to blow the smoke consistently eastwards towards the neighbouring property in G [redacted] R [redacted] which is very close to no 12 R [redacted] C [redacted]

- (ii) the relatively low height of the chimney flue serving the stove in relation to the height of adjoining buildings and the incorporation of the 'Chinaman's Hat' cap on top of the flue which are serving to impede the effective dispersal of the smoke to atmosphere;
- (iii) the smoke is likely to be emitted in significant quantities each time that solid fuel is added to the stove which I believe is likely to amount to a material interference with the immediate neighbour's enjoyment of his property, especially his garden, since it will interfere in a material way with his personal comfort.

6.0 Mitigation Measures

6.1 The problem can, in my opinion be satisfactorily resolved by the implementation by Mr J of a scheme of mitigation measures comprising the following essential components:

- (i) ceasing the burning of solid 'smokeless' fuel on the stove and ensure that only pieces of dry, fully seasoned wood (cut, split and stacked for at least 12 months) are burnt on the stove in accordance with the stove manufacturers' advice, ie by ensuring that the wood fuel sits upon a bed of ash and that combustion air is supplied exclusively from the slots above the doors;
- (ii) the removal of the 'Chinaman's Hat' type cap from the top of the flue;
- (iii) extending the overall height of the stack by a further 1 metre and incorporating a 90° bend oriented in a westerly direction away from the immediate neighbour's property – see Appendix 2 for specialist supplier;
- (iv) continuing to ensure that the chimney and flue pipe are cleaned by a professional chimney sweep at least once a year.

6.2 If each of these measures is properly implemented, I am confident that the current nuisance will be abated. I further believe that the execution of this scheme of measures in full will amount to a best practicable means defence under section 79(7) of the Environmental Protection Act 1990 since the smoke is emitted from a chimney.

7.0 CONCLUSION

- 7.1 I am confident that my investigations allowed me to observe the operation of the stove under representative conditions.
- 7.2 In my professional judgement the smoke emitted from the chimney as a result of the burning of solid 'smokeless' fuel on the *Hunter Herald* stove does amount to a statutory nuisance by virtue of section 79(1)(b) of the Environmental Protection Act 1990.
- 7.3 In my opinion the problem can be readily resolved by the implementation of a scheme of measures as detailed in section 6.1 of this report
- 7.4 I remain available to offer further advice and assistance on any aspect of this report as may be necessary.

Statement of Truth

Pursuant to Practice Direction 35, paragraph 3.2(9) I confirm that:

- (a) I understand my duty to the court and have complied with that duty; and
(b) I am aware of the requirements of Part 35, Practice Direction 35 and the Protocol for the Instruction of Experts to give Evidence.

I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

Signed



D H/

Dated 10th April 2015

Support Photographs Provided by Mr. D. H.









2) Hunter Herald 8 information



Operating Instructions

This appliance is **not** suitable for use in a shared flue
This appliance should **not** be operated with the doors open

Aerosol Sprays

Do not use an aerosol spray on or near the stove when it is alight.

Air Controls

This stove has been designed to burn cleaner and more efficiently than a conventional wood burning stove. If used correctly this stove will burn far more efficiently than normal with the, obvious, notable feature of CLEAN GLASS.

However, for this product to work properly it must be used correctly.

It is essential that the stove has an adequate air supply for combustion and ventilation.

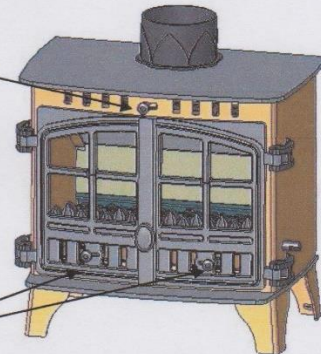
The primary, secondary and tertiary air inlets must be kept clear from obstruction and blockage.

Air Controls

Secondary Air Control (Open Right)

Warning!

This Appliance will be **hot** when in operation and due care should be taken. The riddling tool may be used to operate the door handle. Thick gloves could be used to operate the primary and secondary air controls.



Primary Air Controls (Open Outwards)

Primary Air

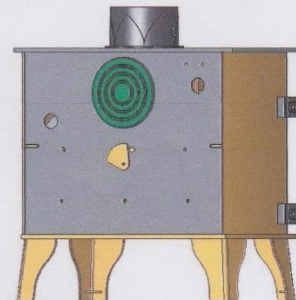
The Sliders in each Door control the Primary air. This provides a conventional air draught to the bed of the fire. The controls are open when the Sliders are pushed towards the outside of the Stove.

Secondary Air

Secondary air is controlled via the slider above the doors; it is this "Airwash" that keeps a clean and uninterrupted view of the fire.

Tertiary Air

Tertiary air aids in good secondary combustion of the fuel and reducing emissions into the chimney and environment. Adjusting the cover plate on the back of the Stove can control tertiary air.



Damper Assembly (Optional)

When the damper is set in the open position the chimney draws at full draught, increasing the volume of airflow through the stove and flue. Shutting the damper restricts the flow, slowing the rate of burning. Close all other air controls and allow the fire to die down before closing the damper.

3) Vitcas information

APPENDIX 2 Specialist Supplier

Vitcas Ltd
8 Bonville Road
Brislington
Bristo BS4 5NZ

Tel. 0117 9117895

<http://shop.vitcas.com/chimney-flue-90-degree-bend-904-p.asp>



Chimney Flue 90 Degree Bend
Stainless steel 90 degree bend for use to extend chimney flue especially designed for wood fired ovens.
Product Code: OVEN-CHIM-BEND
Product Brand: Vitcas

RRP: ~~£39.99~~
£29.99
(inc VAT: £35.99)

Add to Cart

4) NACE official report and photographic evidence



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INSPECTION REPORT

NAME: Mr. G. J

ADDRESS: Withheld (Training purposes only)

INSTALLATION WORKS CARRIED OUT BY: Unknown

NACE INSPECTION CARRIED OUT: Thursday 7th August 2015

NACE INSPECTOR: Howard M. Cane (Technical Director)

INSPECTION COMMENCED: 1130h

INSPECTION COMPLETED: 1530h

Areas referred to in this report are:

A) PROPERTY DETAILS

B) ABOUT THE APPLIANCE & CHIMNEY SYSTEM

C) HISTORY

D) DOCUMENTATION

1. Report issued by Mr. D. H - Environmental Consultant.
2. Letter from Mr. Robert Burke - Technical Director HETAS.
3. Letter from Mr. Graham Donkin - CPL Technical Product Advisor.
4. Reference document, Huntingdon Borough Council 'Carbon-Monoxide'.
5. Reference material, Statutory Document J & BSEN 15287-1:2007.
6. Reference material, Hunter Herald 8.

E) CONCLUSION

A) PROPERTY DETAILS

Geography: Latitude 52.244324
Longitude -0.263741
Easting 518640
Northing 262102

Grid Reference: TL 186621

UTM Reference: 30U 686804 5791741

Altitude: 19 metres (62 feet)

The property is a 5 bedroom detached property built with traditional materials and in close proximity to residing properties set in 1/3rd of an acre of land and constructed sometime in the mid 1960's.

The topography of the property would indicate that it lays in a hollow in relation to the neighbouring property in Gordon Road.

B) ABOUT THE APPLIANCE & CHIMNEY SYSTEM

I would confirm that a Hunter Herald 8 (8KW) multi-fuel room heater (stove) had been installed around 2003 into the lounge fireplace. The appliance was sufficiently spaced to existing non-combustible recess masonry surfaces and the hearth dimensions were sufficiently within minimum statutory requirements.

The appliance and chimney system had not been registered or 'signed off' by a HETAS registrant or LABC certificated.

A non-compliant sliding 'Hit & Miss' Louvre air vent had been installed to an external wall and this had not been calculated properly in relation to the KW output of the appliance or in accordance with 'Document J' specifically page 29 Section 2: ***Air Supply to Appliances 2.1, 2.2 and 2.3.***

This appliance was not DEFRA approved at the time of its construction or is the current available model. Neither product is HETAS approved although DEFRA do refer to a Hunter Herald 8 (slim line) V2 for burning wood logs only. This is not to be confused with the appliance installed at 12 R C .

Appliance specification

Primary Air. Door sliders in each door control primary air. This provides conventional air draught to the bed of the fire.

Secondary Air. This is controlled via the slider above the doors. It is this 'Airwash' that keeps a clean and uninterrupted view of the fire.

Tertiary Air. Tertiary air aids good secondary combustion of fuels and further reduces emissions into the chimney and environment. By adjusting the cover plate at the back of the stove tertiary air can be controlled +/- (Certain models only).

I am unaware if the current product is supported with either a DOP (Declaration of Performance), an ECC (European Certificate of Conformity) or an APD (Appliance Data Plate), all of which are requirements in accordance with the CPR (Construction Products Regulation) and minimum consumer safety standards.

There was an absence of a stove thermometer to monitor flue gas temperature therefore burning was undertaken in a completely 'blind' environment.

Inappropriate burning temperatures, in particular those below 93.3C will have had an impact on appliance and emission efficiency. Hunter 8 user instructions suggest a Mean Flue Gas Temperature of 293 °C should be achieved when burning wood products and a Mean Flue Gas Temperature of 304°C when burning ancit (Anthracite).

The proximity of the connecting flue pipe from the appliance was not in accordance with Document J specifically page 33 diagram 19 refers and being less than 3 x the cross dimension of the flue (6") from a combustible surface.

No evidence of a CDP (Chimney Data Plate) in accordance with Document J specifically page 28: **J4 "Notice Plates for Hearths & Flues" 1.57 a) b) c) d) and 1.58** refer.

Chimney Specifications

The original masonry chimney structure had been removed although I could not determine a logical or technically competent reason for doing so. All of the neighbouring properties appeared to have masonry chimneys terminating at around the same height as Mr. J's metal version.

A rigid Twin Wall stainless steel type of unknown manufacture had been installed with an approx. 6" internal flue in accordance with Hunter installation requirements for the Herald 8KW appliance. The Twin Wall chimney system had not been installed with a ventilation plate at the base of the flue or was one evident at the top of the structure.

This particular Twin Wall chimney system is typical of many stainless steel variants some that are approved, many are not but readily available. Each section should have been twist - locked to the next with locking bands to hold the system in place, this could not be confirmed. The entire system appeared to be vertical and without any obvious mechanical faults. The chimney was terminated with an open rain guard in accordance with the majority of such manufactured systems.

The chimney system/flue terminates at around a meter from the ridge of the property and in all is around 5.15m in height, approx. 515mm above the recommended height of 4.5m in accordance with Document J.

C) HISTORY

I understand from Mr. J that he had been using his appliance/room heater for approx. 14 years without complaint. His neighbour in G R recently extended his property and roof height to include a number of Velux roof windows facing Mr. J's existing flue termination.

Smoke ingress from Mr. J's appliance was reported to Huntingdon environmental control officers by the neighbour with a resulting abatement order almost immediately issued. This is in stark contrast to the Huntingdon Borough Council (HBC) web site where it is clearly stated:

"Where the council finds a statutory nuisance to be in existence it is under duty to pursue formal abatement of the nuisance if the matter cannot be resolved informally".

Mr. J was not offered a route to informally resolve this issue nor were any overtures made by HBC to offer such mediatory services prior to the abatement order being rather heavily handed.

I understand that other domestic properties nearby also burn wood and coal products during the winter months therefore door to door inquiries may have proved significant with regard to Mr. J's defence.

D) DOCUMENTATION

REPORT COMMISSIONED BY H. SOLICITORS, CARRIED OUT BY MR. D. H – A SELF EMPLOYED EH CONSULTANT

It appears from the report issued by Mr. H that although highly qualified, his qualifications and subsequent experience (two pages) do not encompass the expert area of technical structural chimneys or compliant solid fuel appliance installation, statutory guidance and interpretation or appliance use and

operation nor do these qualifications reflect a working knowledge of these environments.

Having read the 'experience and qualifications' page twice, I fail to see where any of his vast experience has been gained in chimney engineering, masonry structures, flue system defect recognition, flue design, thermal-dynamics, chimney, appliance and component manufacture, chimney diagnosis, defect recognition, statutory installation procedures, safety, fire risk assessment, operator fuel abuse, incorrect fuelling of solid fuel appliances, calculated combustion air requirements or subsequently any qualified knowledge of operational procedures and of educated operator use of room heaters.

The following refers to the various sections of Mr. H report (using his enumeration):

3.0 Tasks Undertaken

The studying of a '**copy of the delivery note**' cannot be construed as evidential or that this pointless activity had any technical bearing on the tests undertaken. Why is this referred to officially when many relevant statutory and consumer safety issues of far greater importance appear to have been omitted?

A further reference is made to having read a '**Copy of the operations**' manual as if this document alone would likely provide an untrained layperson with either process or method of correct operational interpretation. Mr. H is not a CPS registrant or a registered member of an acknowledged chimney engineering organisation or does it appear he has a physical understanding of controlled services (structural chimneys & masonry flue systems) or of solid fuel appliance installation procedures, methods and statutory compliance.

How then, by reading an out of date operation manual and with limited industry knowledge was it possible to comment on the existing appliance and chimney system correctly or to have undertaken a suitable type test?

It would appear that Mr. H did not remove the appliance throat plate from its position directly below the spigot leading to the main flue system or did he check to confirm the throat plate was in fact free from any restrictive debris. Mr. H did not check to confirm the structural integrity of the throat plate or the retaining mechanism and that this component wasn't buckled out of shape through overheating prior to his test. Proving the throat plate was clear of any debris prior to testing of the appliance was an essential pre-requisite confirming the existing flue system wasn't blocked and that the throat plate was operable and free of any debris/detritus at the point of testing.

It was also pertinent to have swept the flue system to confirm it was clear of any restriction prior to a live test or to have requested that this activity be completed before any test procedure was undertaken and by a competent chimney sweep with proper certification provided. This wasn't undertaken.

In view of any qualified information to the contrary, it must be accepted that a blockage or a restriction could have been in situ at the time of Mr. H inspection, leading to sufficient issues with draw and thus in the right atmospheric conditions spillage and / or excess smoking to occur.

Due to the lack of any alternative chimney sweeping history to confirm the status of the existing chimney system and the failure to employ any digital or visual camera equipment the condition of the internal flue system remains unknown.

3.0 Tasks Undertaken: 3.2

Mr. H confirms that he '**Interviewed Mr. J**' but failed to interview anyone else in R Close or G Road to gauge the use and possible impact upon the complainant from neighbouring fires, appliances and the fuels these appliances used.

There are three identifiable properties situated on R Close adjacent to number 12 and these have masonry chimneys. Furthermore, there are 12 properties directly opposite R Close along G Road, all of which have masonry chimneys with many more dotted along this thoroughfare. Thus within a few hundred yards of Mr. J's property there are approx.15 masonry chimneys.

The properties referred to may have working fireplaces, live fires, room heaters or gas appliances in use during the winter months. If live fires are in use and depending upon atmospheric conditions, spent gases identifiable as visual smoke or the smell of smoke derived from the burning of anything from household rubbish to high moisture content wood and bituminous coal will likely be experienced by any of the neighbouring properties. Attempting to identify a singular culprit would be almost impossible.

Without having properly investigated any of the surrounding properties, I find it particularly difficult to understand how Mr. H arrived at his pin point accuracy.

Mr. H refers to having '**inspected**' the appliance *and* '**made an assessment of the nuisance allegations**' stating that he observed smoke emissions resulting from the '**typical operation**' of the stove.

Regrettably there is no inspection document regarding this activity, it would however appear having 'inspected' the appliance the following points were overlooked:

- 1) Damaged fire bricks.
- 2) Connecting Vitreous flue to twin wall chimney system unsealed.
- 3) Ceramic door rope defective.
- 4) Riddling bars bent out of shape.
- 5) Connecting Vitreous flue to spigot unsealed.
- 6) Secondary air slider jamming and difficult to operate.
- 7) No CO detector (compliance).

Failure to have identified any of the above defects could have impacted on the safety and health of the building inhabitants as well as the operation of the appliance resulting in visual atmospheric emissions referred to during Mr. H visit.

Having 'inspected' the appliance Mr. H additionally failed to report on the metal twin wall chimney system (controlled service) where the following was also noted:

- 1) No ventilation plates to base of twin wall system or at roof level.
- 2) Connecting Vitreous flue below 3x dimension away from a combustible surface. (Document J Non-compliant).
- 3) No visible means of structural support at any point.
- 4) Locking bands not properly 'tied'.
- 5) Flashing kit not properly installed to flue terminal.

Appropriate directions for the testing of flues and chimneys is provided for within Statutory Document J of the Building Regulations, Appendix A: **'Checklist for checking and testing of Hearths, Fireplaces, Flues and Chimneys'**, however this procedure was not followed.

It is difficult to understand how, in light of such failures, Mr. H determined his **'assessment of the nuisance allegations'** fairly and competently.

No one appliance or its operation can be termed 'typical' or is there a *'typical operation'* that could be referred to as normal or similar. All solid fuel appliances differ in performance and heat output dependent upon random operator use and fuel type, changes in atmospheric conditions as well as appliance temperatures achieved.

Incorrect use of an appliance, incorrect use of manufacturers recommended fuels, incorrect re-fuelling periods, over firing, incorrect use of primary, secondary and tertiary air controls, fuel abuse, meteorological and atmospheric changes in air pressure and wind direction will singularly or together because variant pressures and temperature changes to occur inevitably impacting on the operation and safety of an appliance.

Any reference to the 'typical operation' of an appliance is therefore technically and mechanically incorrect.

No two appliances will ever operate similarly or will they perform identically, irrespective of similarities in KW output, design, cast iron to steel variants or wood only to multi-fuel designations. To suggest an appliance is operating in a 'typical' fashion would require lengthy bench testing under varying conditions and circumstances with quantifiable test values offered to confirm any such theory. This report fails to provide such information or does it refer to a working knowledge and understanding of solid fuel appliance testing and operation (under full load) or fuel type testing procedures within a domestic environment.

No reference appears to have been made to the SFA (Solid Fuel Association) recognised by NACE and HETAS as experts in the field of fossil fuel use within a domestic environment.

The writer has intimated a typical working knowledge of the Hunter Herald 8. To gain such information it would have been necessary to bench test this appliance many hundreds of times, in varying domestic conditions burning various fuels and fuel combinations within different combinations of both masonry and metal chimney systems and subject to various weather conditions before arriving at a credible and technically inarguable emission average that also confirmed correct operator and fuel use. There is no evidence that such testing had taken place.

4.0 Background

4.1 This is correct, however, little attention has been paid to the surrounding properties and the large number of evident masonry chimneys and their possible use.

4.2 'Exempted Fireplace (England) Order 2015', this is not an industry term or is does this statement make any technical sense. The only statutory body responsible for exempted solid fuel room heaters and similar products is DEFRA.

The appliance, a Hunter Herald 8 was not at the point of manufacture in 2003 or is it currently DEFRA exempted or is Mr. J's property in a smoke control zone, therefore any of the appliance manufacturers recommended and preferred fuels may be used.

Mr. J's Hunter Herald 8 and the current available model cannot be used '**legitimately**' within a smoke controlled area as these appliances are not designated DEFRA exempt, the official DEFRA web site refers to a Hunter Herald 8 slim-line MK2 model and not to the appliance in question.

For an appliance to be classified DEFRA exempt, it must demonstrate minimum mechanical design changes that will allow designated fuels to be

burned in a controlled fashion by restricting the closure of the appliance top air slider thus allowing combustion gases to escape whilst fuel slowly burns out instead of an existing air slider closing completely causing potential unburned fuel to smoke or smoulder before eventually dying out.

4.3 There appears to be little evidence that the fuels Mr. J had been using on the Hunter Herald 8 prior to the live load test had been inspected for their suitability. Using a Termatech MD-812 digital moisture meter I recorded random moisture readings (wood logs) of between 17% and 26% when the prescribed maximum is 20%. With regard to the coal Mr. J used, this was delivered in plastic bags and very likely when left in direct sunlight produced enough condensation on the inner material for the coal to absorb moisture, in particular over lengthy periods. The burning of any fuel with a high moisture content in relation to meteorological variants in air pressure and direction and incompetent user operation is a combined cocktail guaranteed to produce heavy than air 'smoke'. No humidity readings were taken to identify possible moisture levels of the tested fuel or humidity readings of the heated air around the appliance.

The moisture content of both coal and wood products were not taken into account or reported upon prior to the live load test. The fuel used may well have been contaminated with excessive levels of moisture and in view of the above comments saturated smoking identified escaping from the flue terminal.

5.0 Assessment of the Matter

5.1 A *'light breeze of between 1ms-1 and 2ms-1'* on the day of inspection with a further reference to a *'breeze blowing initially from a south-westerly direction and later an easterly direction'* were recorded, these are irrelevant unless based on lengthy atmospheric and meteorological testing.

Change in atmospheric conditions on the day of the test would have had little impact on fuel contaminated with high levels of moisture, this scenario combined with negative air pressure, turbulence, incorrect flue temperature and the lack of sufficient combustion air would have assisted in creating the 'smoking' effect referred to, this blanket of heavy dense smoke would have drifted in every direction given the above conditions.

The topographical position of No. R Close and the high termination point of the surround tree line will also have impacted upon the operation of the solid fuel appliance, with the addition of low flue gas temperatures and contaminated fuel as well as day to day changes in local weather patterns the effects of 'smoking' would have most certainly occurred, irrespective of what direction the prevailing winds blew.

Prevailing weather fronts, days that are wet or still and weather conditions that change by the hour will always represent an issue with regard to flue draught and the dispersal of the products of combustion.

The report refers to the use of a '**compass**' and a '**kestrel mobile weather station**' during the testing process although neither processes are referred to within Document 'J' of the Building Regulations or BSEN 15278-1:2007 or BSEN 1443 or within any HETAS guidance documents. The use of a 'compass' and 'weather station' have little bearing on what should have been a qualified and expert undertaking and where recommended and preferred methods of calculating values were employed.

The following procedural tests appear to have been completely overlooked.

- 1) Manometer/Water Gauge flue system draught test.
- 2) Humidity test values (under full live load).
- 3) Flue gas temperature readings taken at specific timed intervals.
- 4) Combustion air flow readings before (cold) and during (hot).
- 5) Moisture meter readings.
- 6) Provision and calculation of compliant combustion air.
- 7) Removal of the rain guard from the twin-wall chimney system.
- 8) Appliance Primary, secondary and tertiary air vent open test/closed test on full live load.
- 9) Digital/visual CCTV recording system confirming flue system integrity and clear pathway without restrictions.
- 10) Initial smoke testing in accordance with statutory Document J, Appendix E '**Flue Test Procedures**' in particular **E11, E12, E13, E14 or E15, E16, E17, E18, E19 and E20.**
- 11) Carbon-Monoxide spillage test.

A reference to having '**ascertained that the circular sectional steel duct was mounted on top of the stove**' is a technically incorrect and mechanically nonsensical statement, '*Vitreous enamel*' flue pipe and appliance '*Spigot*' are correct mechanical and technical terminologies likely to be understood by industry professionals.

The twin-wall chimney system may be terminated with a '*Rain Guard*' and not a '*china man's hat*'.

5.3 Mr. J's apparently demonstrated to Mr. H how he '**lights the stove**' however, Mr. H is unable to demonstrate any industry experience leading to his understanding of how a solid fuel appliance is correctly commissioned or what principals are involved with such process.

The burning of newspaper or any cellulose based material is known to potentially create smoking within an enclosed and air tight combustion chamber, in particular when the combustion chamber is choked with fuel. The use of any paper product will not provide sufficient ignition when attempting to

burn the size of wood log or coal product that appears to have been used during the test (and with the appliance doors left open). This is adequately demonstrated with photo evidence provided.

The wood fuel within the appliance has evidently not caught or can any relevant flame be identified. A large quantity of coal appears to have been laid on top of what amounts to smouldering material with the resulting effect of heavy dense smoke spilling within the combustion chamber. It is patently obvious that the coal has not ignited or has the wood beneath, the resulting 'bluish smoke' referred to is seen emanating from the smouldering material via the chimney system and incorrectly identified in view of a flawed test procedure.

This defective test procedure occurred with one of the two appliance doors open when in fact live load testing should have been undertaken with the appliance doors fully closed and the flue shaft pre-heated.

Live test procedures should be approached with an element of technical skill and understanding having initially confirmed the status of the fuel to be used and that the material was within permitted moisture content levels

It is evident from the supporting photographs that newspaper had been used as an ignition source and this can be clearly identified instead of non-smoking manufactured firelighters and properly spaced out kindling, in this particular instance where a live load test was carried out newspaper should not have been used where it was essential to have achieved suitable combustion chamber heat and high flue temperatures prior to recording any test values.

The procedure taken should have allowed for sufficient 'flaming' to have occurred without a trace of combustion smoke seen within the chamber, once this had been achieved limited amounts of timber and coal could then have been introduced. Failure to operate the appliance air controls correctly or allow sufficient combustion air to have entered the appliance in conjunction with poor fuel combustion and fuel with high moisture content would have certainly produced the environment referred to, the test was I believe completed within 45 minutes without any flue gas or appliance temperature readings having been taken or recorded.

It is evident from the report that recognised industry procedures were not adopted or employed during the test, the appliance doors were left incorrectly 'open' therefore it should come as no surprise that *'bluish smoke rolling out of the stove into the living room'* was identified.

If the appliance air controls were set properly and both wood and coal products adequately set alight, with the appliance doors fully closed in the

locked position, it is highly unlikely any smoke would have permeated the living room with possibly even less visible smoke emanating from the terminal.

Combustion of any material within a closed appliance, in particular wood and coal, requires considerable ignition heat as well as unrestricted air flow through the appliance. The report refers to the appliance reaching 'optimum' temperature, although no test results have been offered to confirm this statement or a reference to what temperature had actually been achieved or if this temperature was sufficient to ignite and then combust the materials seen in the photographs.

It is plainly obvious that 'optimal' temperatures were not achieved whatever those happened to have been, given the method and process employed supposed 'optimal' temperatures were insufficient to have ignited the fuel referred to in the photo on page 10.

5.4 Given the concerns raised and the questionable test methods and procedures employed clarity cannot be simply or easily confirmed, therefore what constitutes a '*smoke nuisance*' in this instance is 'at odds' with the manner in which the test was undertaken and consequently the rather shambolic results arrived at. It could be argued that in fact Mr. H inadvertently assisted in the promotion of the statutory 'smoke nuisance' he refers to in the first place.

It is worth noting that little reference appears to have been made to operator education or to the manufactures recommended firing methods and procedures or to correct re-fuelling of the appliance or to proper mechanical control of the appliance air controls under live load.

The direction of prevailing winds will change dramatically through the passing of each season and where varying pressures are experienced. It is virtually impossible for anyone, no matter how qualified, to make any more than a qualified guess at daily atmospheric conditions. To suggest that fumes and smoke would drift 'consistently' towards any one point on the map is both misleading and technically incorrect.

Mr. H has correctly identified the 'chainman's hat' as a restriction, so why undertake a live load test with this component in situ and then allude to its restrictive qualities afterwards? The rain guard left in place during the test would have only served to impede the slow release of flue gases.

The report refers '***that when solid fuel is added to the stove which I believe is likely to amount to a material interference with the immediate neighbour's enjoyment of his property***'. This statement makes little technical sense at all and should be ignored completely.

If solid fuel is added sensibly to a properly functioning combustion chamber operating at manufacturers minimum appliance temperatures within correct flue gas temperature parameters and combustion air controls set correctly subsequent re-fuelling would not directly cause an appliance to emit either 'smoke' or to 'interfere' with any environment. If damp, moist fuel is introduced to any live appliance and where there is an obvious lack of any pre-ignition or where combustion air is restricted condensates and smoke will inevitably be released into the atmosphere.

6.0 Mitigation Measures

6.1 The report suggests that **'only pieces of dry fully seasoned wood are burned on the appliance'**. This is quite correct, but how would Mr. J know what is seasoned and what is not. No reference to a moisture meter or any operator/fuel use education was offered or guidance with regard to proper appliance operation considered or to the correct method of storage of either wood or coal products.

The report states **'combustion air is supplied exclusively from the slots above the door'**. This is technically and mechanically incorrect, in accordance with the Hunter Herald 8 operational instruction document the following applications apply:

Primary Air: - 'The sliders in each door control the primary air. This provides a conventional air draught to the bed of the fire. The controls are open when the sliders are pushed toward the outside of the stove'.

Secondary Air: - 'Secondary air is controlled via the slider above the doors, it is this "Airwash" that keeps a clean and uninterrupted view of the fire'.

Tertiary Air: - Tertiary air aids in good secondary combustion of the fuel and reducing emissions into the chimney environment. Adjusting the cover plate on the back of the stove can control tertiary air'.

The report has completely overlooked the mechanical adjustment option controlling tertiary air and thus ignored any opportunity to reduce emissions into the chimney and atmosphere, altering the tertiary air control may have had a fundamental effect on the entire test procedure if of course all other elements had been carried out correctly.

Without any mechanical chimney system experience of twin-wall construction and erection, Mr. H suggests that an existing twin-wall chimney system be extended by a further metre yet fails to provide any design methods or calculus to achieve the dispersal of fumes away from the neighbouring property or how this structure is to be competently supported.

The adding of a further metre (if it were mechanically possible) to the existing system would likely create a direct structural issue with an unsupported extremely heavy 2 metre section at risk of collapsing onto ignitable bitumen roofing felt.

The identity, make and manufacturer of the existing chimney system is in question as well as the safety and compliance of what is according to Document J a 'Controlled Service'

The report incorrectly suggests that an additional metre of twin-wall chimney is 'added on' without any mechanical explanation how this is to be achieved safely and within compliant parameters.

If the original manufacturer's components are no longer available, how would such a 'marriage' be achieved and what would the impact be of this 'bodge' on Mr. J's insurance policies should a claim for damages be made?

Different manufactured parts cannot be connected together as there are no safety or compliant means to do so. Ignorance of insulated metal chimney and the statutory requirements for their installation often leads to incorrect advice and opinion being expressed. No reference is made to such activities within either Document J of the Building Regulations or to BSEN 15278 **'Chimneys – Design, Installation and Commissioning of Chimneys'**

It is further suggested that an 'off the shelf' 90 degree non-applicable chimney component is connected to an existing stainless steel twin wall system of unknown manufacture although there is no indication of how these two completely different manufactured components would be technically, mechanically or competently joined to form a gas tight seal in accordance with consumer safety standards, statutory Document J or Statutory Document 7 (workmanship & materials) or BSEN 15278:1 2007.

If it were physically possible (which it is not), how would attaching a non-compatible single skin 90 degree Vitreous chimney component to a twin-wall chimney system negate the ingress of smoke from entering a neighbouring property given the previous comments regarding atmospheric conditions? Quite frankly the suggestion is mechanically ludicrous.

What is extremely troubling is the suggestion that one non-compatible component is joined to another without any explanation of how this is to be compliantly or mechanically achieved.

Pointing a 90 degree bend with a 6" internal diameter away from an adjoining building would likely achieve little to resolve smoke ingress from entering into it, what is more likely is that variant air /wind pressure will most certainly force

carcinogenic materials back down through the flue shaft into Mr. J's property resulting in potential Carbon-Monoxide poisoning of his family. Not only is this an absurd suggestion, it is also non-compliant and potentially lethal.

Unauthorised design changes to an existing chimney system (Controlled Service) and / or the joining of different chimney systems (non-compatible marriage) would be in breach of existing compliance, any such activity would most likely 'null and void' a manufactures warranty and / or guarantee as well as any domestic claim for compensation, in the worst case scenario where an injury or a fatality occurs through negligent and incompetent workmanship a custodial sentence could be expected.

Therefore, Mr. H unqualified technical recommendations which appear to be mechanically unsound and questionable as well as potentially dangerous should be completely and utterly dismissed.

6.2 Mr. H suggests that his technically dangerous measures are adopted and then '**implemented**' however there is little industry evidence to support this opinion. Furthermore, he is '**confident**' that the current nuisance will be abated although his test results are anything but conclusive or are they technically literate. This badly thought out test process appears to have achieved nothing at all to support or confirm either of these opinions.

The incorrect assumption that the execution of this scheme of measures will amount to a '**best practicable means defence**' is seriously floored.

7.0 Conclusion

7.1 It is suggested that an investigation allowing proper observation of the appliance under representative conditions occurred. This is technically incorrect, proper observation would have taken far longer than the brief 40 minutes allotted with the appliance properly fuelled and operated, representative conditions were 'a one off' visit and not an average based on differing metrological weather conditions over a set period of time thus allowing for a suitable average of test results to be arrived at.

7.2 'In my professional judgement'. A strange statement given the evident lack of any qualified knowledge or experience within the solid fuel and chimney engineering environments allowing for this specific response.

I would therefore question Mr. H entire competency with regard to the issues surrounding Mr. J's appliance installation and twin wall chimney system.

7.3 'the problem can be readily resolved by the implementation of a scheme of measures as detailed in section 6.1'

Point ii) is a common sense task.
Point iv) is a recommended process.

Point i) reference to appliance combustion air is incorrect.

Point iii) mechanically dangerous, non-compliant, technically unacceptable.

E) CONCLUSION

Mr. H is far from an expert in either the solid fuel or structural chimney engineering industry or has he demonstrated any technical competency regarding combustion appliance installation and operation (solid fuel) or of controlled services.

The manufacture and installation of stainless steel rigid twin-wall chimney systems, flexible twin-wall liners and associated materials and components are referred to within the CPR (Construction Products Regulation) Document J procedures and methods are implemented through CPS managers such as HETAS a representative body appointed by DCLG, monitored by UKAS to provide a register of competent installers.

HETAS professionally refer to NACE, as do many industry leaders within the solid fuel and chimney engineering industry for competent technical interpretation and guidance. Having discussed this case in considerable depth with my colleagues Robert Burke - HETAS Technical Director, Graham Donkin - Product Technical Advisor for CPL Industries and Jim Lambeth - General Manager of the SFA (Solid Fuel Association) their qualified response confirms my grave concern with regard to the attached document as well as questioning the validity of Mr. H misguided comments and recommendations.

Mr. H should have differed his investigation to a professional body better qualified technically to have provided a competent and compliantly correct inspection on behalf of Mr. J. Through a cocktail of technical errors and inept tests that are by any stretch of the imagination inconclusive Mr. J would appear to have been regrettably and unfairly condemned by the attached report.

Report Ends



DEFECTIVE CHIMNEY COMPONENT



EVIDENCE OF FIRE DAMAGE TO TIMBER BATTEN



**FIRE DAMAGE EVIDENCE AND
BITUMINIOUS ROOF FELT**



RESTRICTED COWL



RESTRICTED FLUE



BITUMINIOUS MATERIAL REMOVED FROM FLUE



FIRE DAMAGE EVIDENCE



LETHAL TWIN WALL CONNECTION



REDUCTION FROM 6 INCH TO LESS THAN 3 INCH

5) Support letter from CPL

CPL PRODUCTS

Part of CPL Industries

Mr Howard Cane
NACE
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Metheringham
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LN4 3WU

~~Westthorpe~~, Fields Road
Killamarsh,
Sheffield
S21 1TZ
Tel: 01246 277001
Fax: 01246 212212

14/08/15

Reference: Mr J, 12 R. Close, PE19

Dear Howard

As requested please find information on the typical performance of a smokeless mineral fuel. Also my comments on the assessment report dated 10th April 2015 produced by Mr D.H.

The typical ignition, smoke production and performance of a fuel

During ignition and recharging of an appliance there will be an amount of smoke produced until combustion is established. There are many factors which determine the amount of smoke produced and length of time it will be present. Such things would include, moisture levels of the fuel, draw on the chimney, condition of appliance and chimney system, operation of the appliance, quantity of fuel used, atmospheric conditions, ventilation within the property and the ignition source (what is being used to aid ignition)

Closed appliance fuels such as Phurnacite (as mentioned in the report) are denser than wood or a typical house coal, they also have a lower volatile gas content. It is therefore paramount that the appliance has a good established fire bed and a sufficient primary air supply.

In preparation to initial ignition of the appliance it would be recommended to preheat the flue. Taking into consideration the determining factors as mentioned above, the next stage would be to prepare the fire bed using firelighters and an amount of kindling which will provide a sufficient sustained heat (ignition) source for the fuel. Secondly you should ensure you have a sufficient air supply through the firebox.

Providing you have a sufficient ignition source and air supply the fuel should reach its ignition temperature relatively quickly thus reducing the amount of smoke produced during initial combustion.

The ignition point of a fuel is calculated when the fuel reaches a temperature equivalent to 2/3rds of the rated output of the appliance. Typically for a closed appliance fuel this temperature would be circa 4.6kw (based on current test standards)

Once the flue has been warmed and a good ignition source has been established a small amount of fuel can then be introduced to the fire bed. Keeping all primary air supply vents open (removing the ash pan and leaving the ash pan cover off if required) once this fuel is established more fuel can then be introduced, again keeping the air supply open to aid combustion.

If the fire bed is not at a sufficient temperature and or the ventilation of the appliance is not adequate then the production of smoke will be present for a prolonged period as the fuel is not reaching the solid phase of combustion.

Observations of the assessment report

5.2 *"Phurnacite is manufactured from Anthracite dust"*

Phurnacite comprises of anthracite dust (as to approximately 65 to 85% of the total weight), petroleum coke (as to approximately 20% of the total weight) and a molasses and phosphoric acid binder (as to the remaining weight);

5.3 *"Smoke continued to be emitted from the chimney stack for a period of 40 minutes"*

This sort of time frame is perfectly normal for a closed appliance fuel, dependant on factors mentioned above typical times would range anywhere from 25 – 50 minutes.

The current standards for the testing of fuels dictate that ignition has to be reached within a 50 minute timescale. However this is based on a standard test appliance (Parkray 88) the fuels having a moisture content of less than 5% and a gas poker is used during ignition.

5.4 *"Smoke is likely to be emitted in significant quantities each time solid fuel is added to the stove"*

It is inevitable that smoke will be produced when an appliance is recharged, the amount of smoke produced and the time period of production will be determined by the factors already mentioned.



Appendix 1 Photographic Log

As you can see from the photograph above and as it was reported, "Phurnacite had been introduced and smoke was generated"

I have a few observations to raise.

- A) The doors are open during ignition, they should be closed with the primary air vents open.

- B) Although an amount of fuel has been placed on the firebed, the majority is around the edge with only a minimal amount in the centre.
- C) The wood used as an ignition aid seems to be just smouldering, indicating a low fire box temperature.
- D) It has been noted that "smoke" was generated as if to say this is out of the ordinary!
- E) I cannot confirm from the photograph, however the ash pan looks like it needs to be emptied, this would aid the flow of primary air.
- F) Again it is difficult to confirm from a photograph, however the fuel looks to be damp. Typically a deep shiny black colour would indicate a higher moisture content of a fuel. If the appearance was more grey in colour this would indicate lower moisture content.
- G) There is obviously no air flow through the appliance, indicated by the spillage of smoke into the room from the firebox.
- H) Although the report and my own comments have made reference to "Phurnacite" being used. The fuel shown in the photograph does not have the physical appearance of Phurnacite.

Phurnacite is manufactured and is identified as a small ovoid-shaped briquettes with two parallel indented lines running longitudinally around the briquette (as pictured below) you can clearly see there is a distinct difference the fuel shown in the photograph.

With that being said if the fuel used is an authorised smokeless fuel the comments already raised would remain the same regardless of the manufactured name. However the identification of the fuel would need to be established to confirm if it is indeed an authorised "smokeless" product.



Phurnacite.

CPL PRODUCTS

Part of CPL Industries

If can be of any further assistance please do not hesitate to contact myself on 07786 703954.

Yours Sincerely

Graham Donkin
Product Technical Advisor

6) Support letter from HETAS



Mr H Cane
NACE Chairman
National Association of Chimney Engineers
PO Box 849
Metheringham
Lincoln
LN4 3WU

10th August 2015

Our ref: 20150810_H_Cane-Mr_J [REDACTED] _Flue_Bend

Dear Howard

RE: 12 R [REDACTED] Close, L [REDACTED] P [REDACTED]

Further to our earlier conversation regarding the flue at 12 R [REDACTED] C [REDACTED] L [REDACTED] P [REDACTED] and the report provided by Mr D [REDACTED] H [REDACTED], and your request for us to comment on installation of a 90 degree bend on the exit of the chimney. We would like to confirm our concern regarding this proposal.

The installation of a 90 degree bend in a solid fuel flue chimney system is only permitted under very specific circumstances as detailed in *BS EN 15287-1 Chimneys. Design, installation and commissioning of chimneys. Chimneys for non-roomsealed heating appliances*. Fitting a 90 degree bend on the exit of a chimney presents very specific dangers to the appliance user. Depending on wind direction the exit of the flue will at times be facing into the prevailing wind which will generate significant pressure at the termination point. This wind pressure is likely to prevent the escape of flue gases from the chimney, forcing them to exit the appliance into the room the appliance is situated in. This situation can be extremely dangerous for the occupier as the escaping flue gases are likely to contain a high proportion of Carbon Monoxide amongst other harmful gases. Should this situation occur whilst the occupant is sleeping and not responsive to a Carbon Monoxide alarm it has the potential to be life threatening. It is for this reason that proprietary fixed 90 degree terminals are not manufactured.

We trust this information will be of assistance

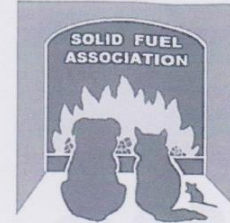
For HETAS Ltd

A handwritten signature in blue ink, appearing to read 'Robert Burke', written over a light blue circular stamp.

Robert Burke
Technical Director

HETAS Limited
Severn House, Unit 5, Newtown Trading Estate
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7) Support letter from SFA



7 Swanwick Court
Alfreton
Derbyshire DE55 7AS
Telephone: 01773 835400
Fax: 01773 834351
www.solidfuel.co.uk

To whom it may concern

Re. Mr J [REDACTED], [REDACTED]

10th September 2015

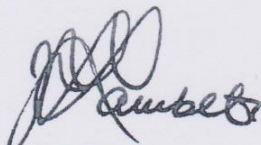
Having studied the report issued by D [REDACTED] H [REDACTED] on 10th April 2015 regarding the above property, I make the following observations.

1. The Hunter Herald is only DEFRA Exempted if fitted with their 'Slider Stop Rev A or Smoke Control Area Kit'. Irrespective of this fact, as the property is not located within a Smoke Control Area this is an irrelevance.
2. The report contains no evidence of the total flue height and no clue as to whether it complies with minimum requirement of ADJ. Similarly, there is no reference to the horizontal distance from the termination to the weather surface, nor whether the termination point is clear of the ridge. The photographs are insufficient to determine these facts.
3. The 'Chinaman's Hat' cowl is, I believe inappropriate for this situation. Due to its design, smoke discharging from the chimney is forced to travel horizontally and prevailing winds will carry the odour into neighbour's gardens etc. I believe a more appropriate flue termination could be selected to permit smoke to discharge vertically into the atmosphere and away from neighbour's property. (Incidentally, this cowl does not resemble a Chinaman's Hat.)
4. At the time of testing, it is apparent the flue gasses were unable to achieve the temperature one would expect under normal operating conditions. The photographs indicate a slow combustion rate coupled with the fact that the appliance fire-door remained open allowing smoke to 'roll out' of the stove. Operating this stove with the doors open will allow excess air to enter the appliance via the fire-door thus cooling the flue gasses. As a consequence the

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chimney would be unable to operate efficiently and the velocity of the flue gasses would be reduced. On leaving the chimney terminal the smoke would likely roll down the weather-surface due to lack of buoyancy.

5. The extended period during which bluish smoke was emitted would indicate a prolonged period of incomplete combustion. Under normal operating conditions (with the fire-door closed) one would expect volatile elements of the Phurnacite to burn off sooner than 40 minutes. From the report it took in excess of 40 minutes to record clean emissions.
6. Lastly, some of the 'Mitigation Measures' listed are misguided.
 - (i) Burning only wood is not the solution to this complaint. Wood smoke is equally considered to be a nuisance factor. The higher calorific value and longer burn period of solid smokeless fuel renders it a preferred choice.
 - (ii) Removing the 'Chinaman's Hat' is worthwhile as discussed in para 3 above.
 - (iii) Raising the flue height is worthy of consideration, subject to stability and visual impact. Over 1 metre above the weather surface will require some form of guy-ropes to prevent movement in windy weather. The suggestion to fit a 90° bend off the top of the chimney is totally unacceptable. Firstly, 90° bends in flue systems are contrary to Building Regulations and secondly such an arrangement would prevent the chimney from being swept throughout its length. This notion would be dangerous leading to the risk of carbon monoxide poisoning.
 - (iv) Chimney sweeping is essential and would be required more often than once a year when burning wood. As stated above, any offset greater than 45° is unsafe as brushes and rods will not navigate a more acute angle.



Jim Lambeth,

General Manager