

Smoking Fireplace

Implementation of the suggested improvements:

- 1) The square pot was removed and replaced by 300mm Windkat cowl:
 - a. The fireplace worked perfectly well independent of outside weather conditions.
 - b. Opening and closing windows, doors and ventilators throughout the house did not effects the good operation of the fireplace

The Chimney, Pot and Cowl - Before -



Chimney Sack terminated with tapered square pot 206-180mm and 206mm rain-hat cowl

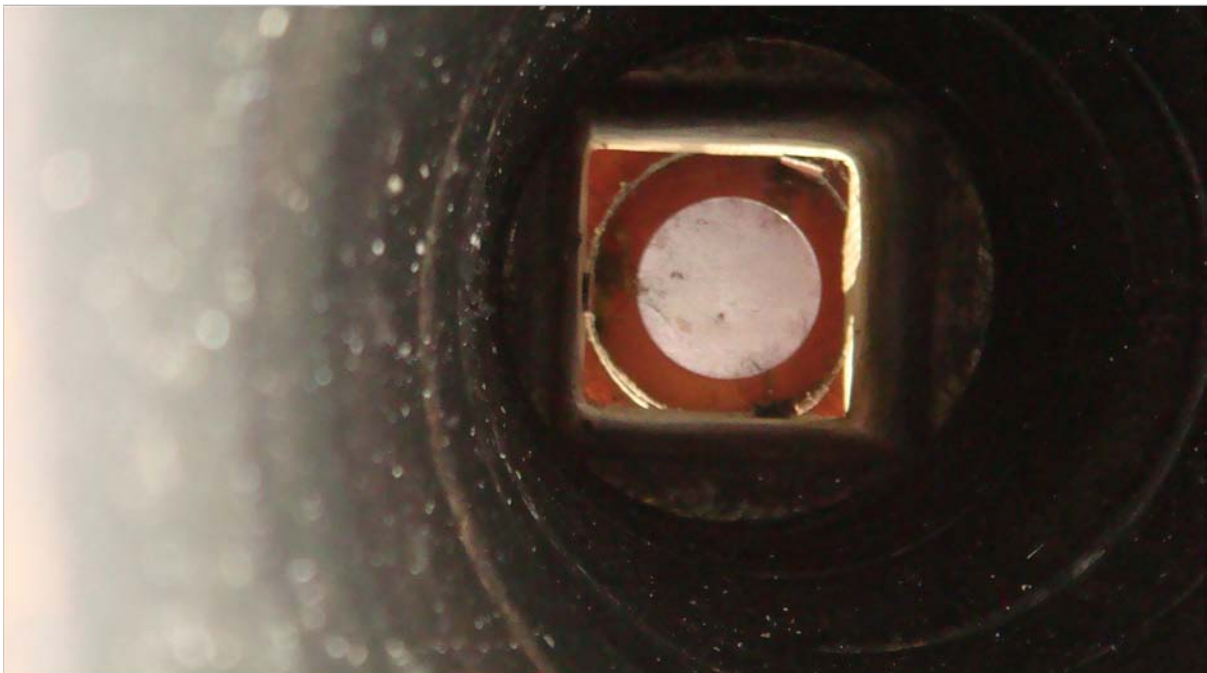
The Chimney and Cowl - After -



Chimney Sack terminated with 300mm anti-downdraught Windkat cowl

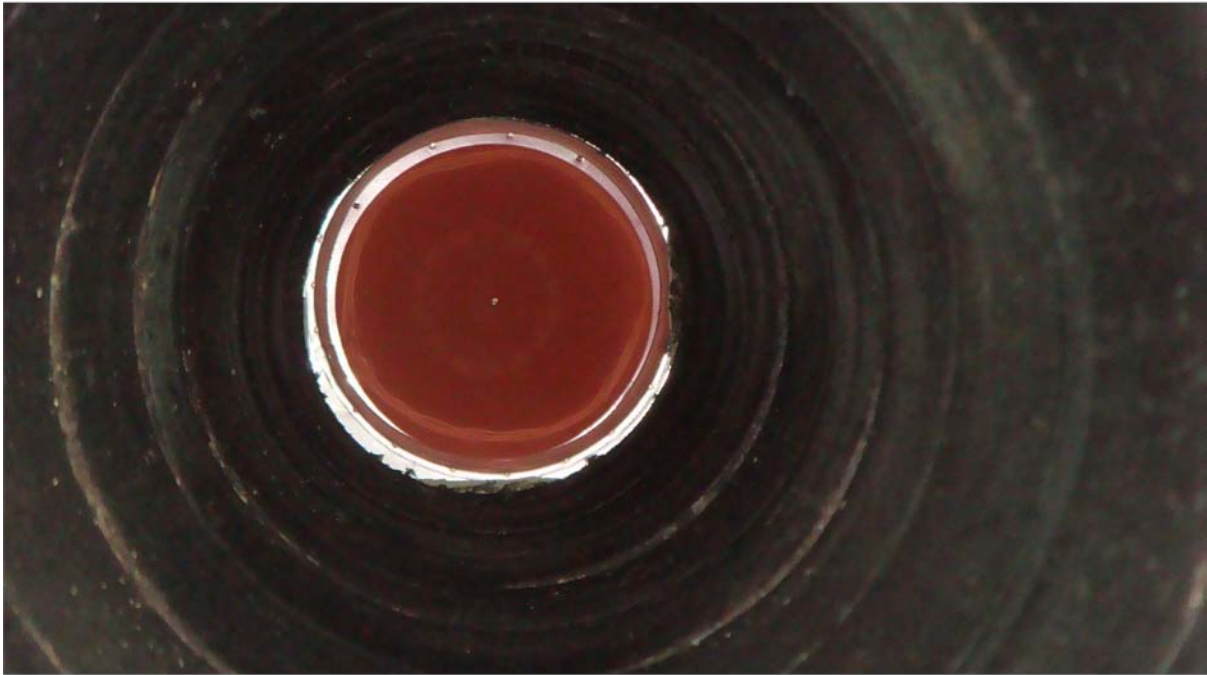
It may be concluded that the 180mm square pot is unsuitable for the 300mm circular flue, induce smoke turbulence inside the flue and reduces the thermal up lift by 20% (See Venturi effects analysis). The unsuitability of the pot is definitely the most dominant factor.

The Flue, Pot and Cowl - Before -



300mm Flue terminated by 180mm Square Pot and standard 206mm rain-hat cowl

The Flue, Pot and Cowl - After -



300mm Flue terminated by 300mm anti-downdraught Windkat cowl

- 2) Fitting the hood to the fireplace: The fireplace was working perfectly well without the hood, it is noted that the hood may improved the combustion and the fire had more flame and less smoke. The ratio of the fireplace opening to that of the flue cross sectional area has been effectively halved by fitting the hood above the fire basket as shown below.

The Fireplace - Before -



The fireplace with 1000X500mm Basket and Back Plate

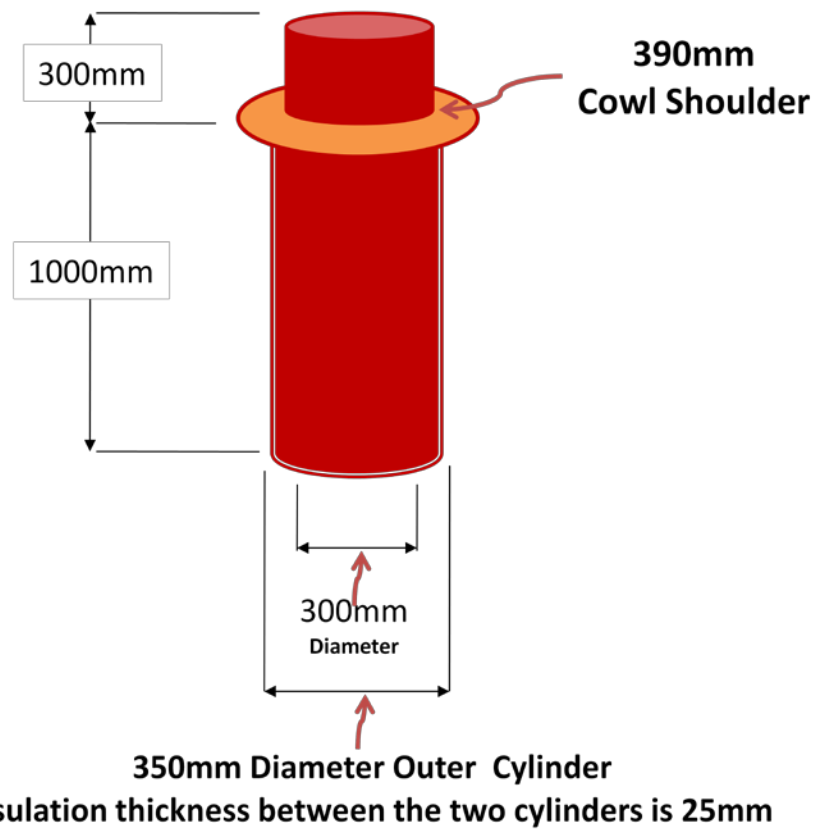
The Fireplace - After -



The fireplace with 1000X500mm Basket, Back Plate and 1055X500mm Smoke Panel

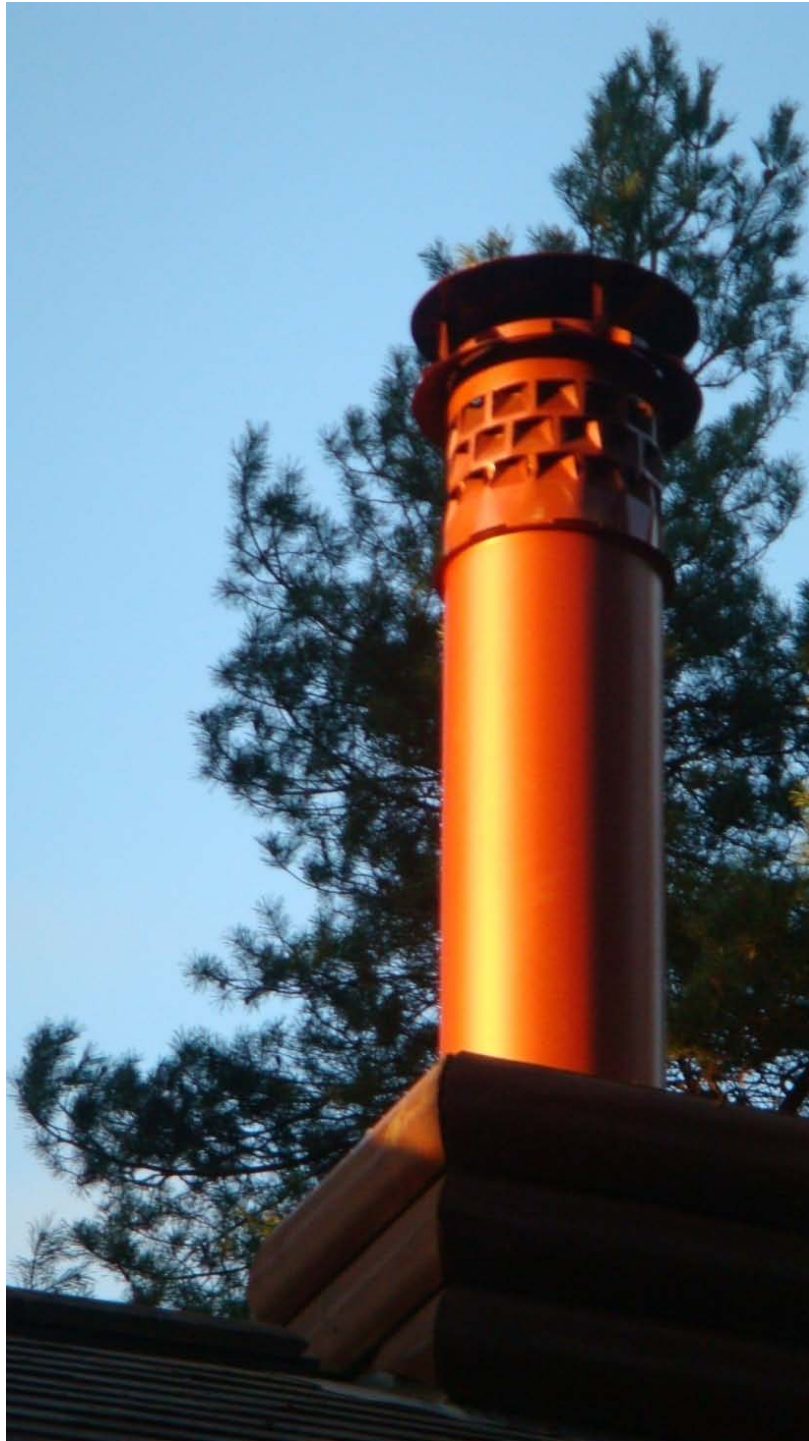
- 3) Extending the pot length by 1000mm, the pot extension raises the pot outlet by at least 900mm above the heights ridge of the roof.

The Ultimate Chimney Pot Two Insulated Concentric Stainless Steel Cylinders



The fireplace is working perfectly well before the fitting of the extension, however, the extinction will defiantly guard against critical negative pressure zone created by the surrounding high trees, hill and the different pressure level created by the two roof structure.





The improvements were very successful and satisfactory;

4) Cost:

- | | |
|--|---------|
| a. Professional Consultancy from Malcolm of Argyle Canopies
[argylecanopies@googlemail.com], (Free) | £0.00 |
| b. Windkat cowl and pot from Philip Gorchach [phil@windkat.co.uk] | |
| 300mm Windkat Base Cowl | £359.00 |
| Terracotta Colour | £23.00 |
| 1000mm extension | £187.00 |

- c. Smoke Panel
Manufactured by Sean Relph-JAMES SMELLIE LTD [sdrelph@btconnect.com] to
given specification £135.13
- d. Labour cost £180.00
- e. Total cost **£684.13**

5) The work done by me is also free at zero cost. Thanks are due to Malcolm of Argyle Canopies, Philip of Windkat, UK and Sean of Relph-James Smellie Ltd for their help and professional advice.

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