Case Study:
Queen’s University Belfast
Kitchen Ventilation Canopy

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UV Filtration
Fire Suppression

Design and Construction Team

Builder – Tracey Brothers
M&E Consultants – Williams & Shaw
M&E – Vaughan Engineering Services
Kitchen Canopy – HOGG
“The canopy system has a modern easy to use control panel and with residents living so close to the facility we needed a system that would greatly reduce any odours produced from our kitchen and eliminate as much of the associated fire risk as possible.”

Brian Horgan, Food and Beverage Manager, Queens University Belfast

In 1915 the original Riddel Hall opened on the Stranmillis Road, founded as a residence for female students at Queen’s University.

Riddel Hall was part of a vision to help make Northern Ireland a world-class society with world-class services, businesses and institutions. Queen’s have now established their new Leadership Institute in Riddel Hall, with a remit to support senior managers and emerging leaders in all sectors. The Institute of Directors has relocated its Belfast office to the site.

HOGG Kitchen Canopy

With the strong history of both Queen’s University and Riddel Hall, it was essential that every aspect of the new centre would be of high quality. With this in mind, the Ultra Violet (UV) secondary filtration was selected for this project as a conventional filtration system would not be suitable.

Over and above conventional filtration, UV filtration tackles the following issues:

- **Fire risk** – With conventional filtration some grease inevitably gets carried in to the ductwork after prolonged use.
- **Odour** - from the canopy can act as an irritation for people working within the building and living nearby.

HOGG have been involved in the supply and design of Heating, Ventilation and Air Conditioning products to the building services industry in Ulster since 1979 and provided the solution for Riddel Hall.
Ultraviolet Filtration System

UV filtration significantly reduces odour and breaks down grease before it reaches the lengths of ductwork.

After passing through the conventional baffles, the air is then subject to the UV system.

Intense UV light generates trace elements of Ozone, which reacts with the organic compounds in the fat odour by photolysis and ozonolysis to leave an end product of primarily carbon dioxide and water.

Operation

Pressure sensors are located in this canopy to automatically turn on the UV filtration when the extraction fan is in operation.

Maintenance

The maintenance of a UV filtration system canopy is much lower than conventional systems. The fine ash adheres to the UV lamps and should be removed periodically. The ash deposits are removed by means of a cloth, with water and detergent.

The lifespan of the UV lamps is approximately 10,000 hours, relating to around two years heavy use. The UV lamp lifespan is shown on the control panel, indicated by the red light.

*DPL* UV filtration kitchen ventilation canopies are designed bespoke to the client, and in accordance with HVCA DW/172.

Fire Suppression

*Ansul R-102* liquid agent system extinguishes the fire quickly with a well directed blast, this creates a thick foam blanket which suffocates the fire and cools the appliances.

The system is activated by either fusible links in the canopy hood or by manual pull ring.

UV Filtration System Benefits:

- Reduces fire risk from within the ductwork
- Helps protect downstream heat exchangers
- Significantly reduces odours
- Reduces ductwork cleaning

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