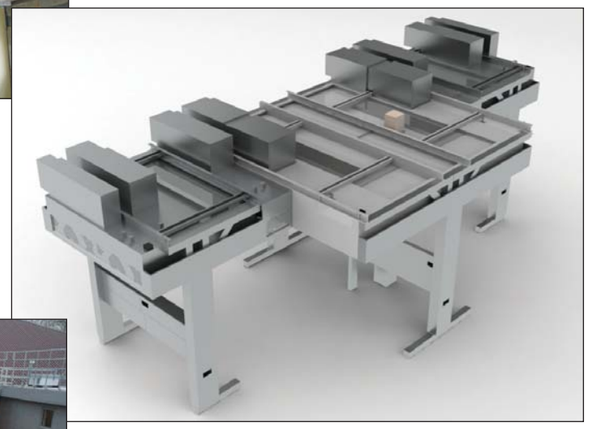
Defence Food Services School
Worthy Down, Winchester

Britannia
kitchen ventilation

Britannia designed and manufactured the whole project in its UK factory, using the latest 3D CAD technology and computer aided manufacture.

The existing fragile roof structure was only able to support its own weight. As a result it was necessary to incorporate ground support frames when installing the ventilation canopies.

To assist the design team, all elements of the project were drawn in 3D to illustrate how the systems would be incorporated into the building.



A project with so many kitchens requires extensive air movement facilities. The central courtyard at Worthy Down is packed with the very latest air handling units to handle both extract and supply from 14 kitchens.

84 UV canopies need accurate controls. Each kitchen had the main controls housed in adjacent risers, with a mimic panel positioned within the kitchen for ease of control and indication.

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04/2009

Design & Photography – Peter Taylor @ Britannia

Case Study:
Defence Food Services School
Worthy Down, Winchester

One of the largest kitchen ventilation projects in the world delivered on time and on budget

Britannia
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Defence Food Services School
Worthy Down, Winchester

84 self-supporting UV Canopies, on time, on budget

Britannia kitchen ventilation

Above: *close up detail of splashback cladding working around services pipework and support frame.*
Left and below: *wall canopy showing the ground support frames and supply air diffusers.*

Above: *close up detail of service distribution unit that works around structural column and support frame.*
Right and below: *Island canopy showing the ground support frames, supply air diffusers and ductwork connections.*

The multi-award winning Defence Food Services School, newly refitted under Defence Estates regional prime contract at Worthy Down, Winchester, provides tri-service training for military personnel who provide catering support to the UK armed forces on operations, exercises and in barracks.

The building has been named Alexis Soyer House in honour of the famous French cook that improved food provided to British soldiers in the Crimean War.

The two storey facility at Worthy Down, which was originally an MOD computer centre, has been redeveloped to provide 14 large commercial kitchens requiring a total of 84 ventilation canopies, all installed in a 15 week programme.

DFSS is widely reported as one of the largest UV kitchen ventilation projects in the world.

Britannia were contracted through catering facilities specialist Portable Kitchens Limited (PKL) who advised minimising fire risk was a key objective to be achieved. Britannia, working closely with PKL, incorporated Ultrastream UV filtration, which provides secondary grease and odour removal, reducing the whole life costs through lower maintenance and also reducing the fire risk, protecting the asset.

Incorporating UV filtration also allowed the use of a heat recovery system by protecting the heat exhangers from grease contamination.

The UV lamps located within each canopy break down organic matter within the grease and odours by a combination of photolysis and ozonolysis. The system works automatically when the extract plant is switched on.

ultrastream
UV Filtration System

DFSS is widely reported as one of the largest UV kitchen ventilation projects in the world

Drawing of UV tubes within the canopy extract plenum

During the design process it became apparent that the existing roof structure would not support the weight of large ventilation canopies, this problem was solved by the use of structural ground support frames, designed and installed by Britannia. All the canopies stand on their own legs, removing the need to reinforce the fragile roof structure.

Replacement air is introduced through perforated diffusers on each canopy, which also has personal spot cooling nozzles to provide operator comfort.

With so much cooking equipment on one project, the routing of services to equipment needed to be addressed. Britannia designed and installed services distribution units that safely route the gas and electrical services to the appliances, working around structural columns to retain an easily cleanable surface.

Some canopies on the project, were also protected with fire suppression systems. At the request of the project architect, Britannia manufactured special housings for the manual pull activation systems, to ensure an easily cleanable hygienic kitchen.

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