



HMS Collingwood, Hants

Photography courtesy of Jason Layfield, Gifford UK



THE ROYAL NAVY HAS RECENTLY CONSTRUCTED A NEW JUNIOR RATINGS GALLEY AND DINING HALL NAMED HOWE BUILDING AT THE ROYAL NAVY'S TRAINING BASE HMS COLLINGWOOD, FAREHAM, HANTS. THE FACILITY IS ALMOST CERTAINLY THE MOST SUSTAINABLE AND ENERGY EFFICIENT DINING AND KITCHEN FACILITY OF ITS KIND IN THE UK.



A combination of through-life costing and efficiency exercises in conjunction with equipment manufacturers has contributed to a facility that measurably cuts the energy requirement per meal served. To cap it all, a conventional kitchen was originally budgeted for the site but the new 'more sustainable' kitchen was built at no extra cost!

Howe Galley achieved a Defence Estates DREAM (Defence Related Environmental Assessment Methodology) rating of 'excellent' and was constructed to support the new Ministry of Defence 'Pay As You Dine' initiative where personnel benefit from a wider range of catering options, rather than paying a set monthly

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food charge.

In addition to improved food, the front of house provides a multi activity area including a retail shop, coffee bar, internet facility, hairdresser and licensed bar, which meets with the MoD vision of a ‘three in one’ facility that achieves maximum usage from the built environment.

In charge of this construction project was Commander Bob White of Royal Naval Estate Organisation. RNEO’s mission was to provide a sustainable estate of the right size, quality and location to support Royal Navy’s (RN) operational capability and the needs of RN personnel.

RNEO has a strong partnering relationship with VT Flagship, established six years ago under a Prime Contracting Enabling Arrangement to provide construction services. VT Flagship had responsibility for the design, construction and management of Howe Galley, together with RNEO, to select the design and construction supply chain members.

The Royal Navy and VT Flagship take full account of the Government’s commitment to sustainable development and of the economic, environmental and social impacts of their decisions.

“HMS Collingwood is the largest facility of its kind in Europe,” says Commander White. “We train more than 10% of the Royal Navy and aim to create the very best facilities and training environment so that when our sailors go to sea, they will be ideally prepared to do their job. Our motto is ‘train hard, fight easy.’”

Commander White describes his role as that of project ‘sponsor’ – overseeing Prime Contractor VT Flagship and the supply chain partners which included kitchen design consultant Dave Clarke FCSI and his team from CDIS-KARM, M&E consultants Gifford Ltd., Mansells Construction Services Ltd. and

SMC Charter Architects.

In the early stage of the project, contractors were taken on visits to naval warships to witness at first hand conditions for sailors on board and thus influence their design considerations for Howe Galley.

The 3,300m² Howe Galley took just over a year to build.

“It was very much a partnering ethos and this was a key tenet that we were keen to establish from the beginning,” adds Commander White.

“By instilling a friendly, convivial, professional atmosphere we ensured that all stakeholders had an input and were equal partners around the table. I was delighted with the strong working relationships that developed among the team. As a result the design and construction progressed relatively smoothly but importantly, when faced with problems they were addressed collectively and overcome very quickly.

“Our deadline was the Royal opening by HRH Princess Anne and we included all of our design and build team at the ceremony to share in the culmination of a successful project.”

Howe Galley feeds a maximum of 1200 per mealtime, seating 300 plus a further 80 in the bar area and 20 in the coffee lounge.

“Its success is measured by the fact that it is popular among the target audience but is also becoming increasingly used by the wider civilian community on the base and benefits from having a very relaxed atmosphere,” says Commander White.

“CDIS and Dave Clarke’s role was pivotal. I was delighted to see the highest levels of commitment, professionalism and honesty. I genuinely felt that Dave had the interests of the client central to his objectives and would readily recommend CDIS to others.”

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Above left
Howe Galley’s front of house includes an internet café as well as a licensed bar

Above right
HRH Princess Anne attends the Royal opening

Right
The design and build team at the opening ceremony with Commander Bob White



Collingwood Savings

ENERGY SAVED

You cannot monitor and make savings if you cannot measure the performance. To enable the energy and water being used to be measured against the number of meals being produced, the kitchen electrical, gas and water services have been separately metered. The benchmark published by Chartered Institution of Building Services Engineers (CIBSE) for this style of facility is 3.9kWh per meal for the building, broken down as 2.5kWh of fossil fuel and 1.4kWh of electricity. The estimated benchmark for the kitchen and servery is 2.3kWh broken down as 1.5kWh of fossil fuel and 0.8kWh of electricity.

PROOF OF DISHWASHING PERFORMANCE

With 1200 covers per session, the dishwasher could be a major point of failure and a 'failsafe' system incorporating two dishwashers was originally budgeted. "Evidential proof of performance was provided by the manufacturer working with Dave Clarke and we decided what we really needed was not necessarily two dishwashers but one very good one backed up by a good support contract," says Commander White.

"We saved 30 sq metres and the cost of one machine - a good example of reasoned, well researched value engineering."

VENTILATION

This is the first government building with 'demand-based ventilation' in the UK. The system adjusts to the volume of cooking, giving a 40% energy saving.

WASTE DISPOSAL

Howe Galley also has one of the first UK installations of a vacuum food waste disposal system, which takes waste from the kitchen and dishwash areas, reduces it to liquid pulp and transports it into a large, sealed storage vessel for collection by truck. In through-life costing, the system pays for itself in six and a half years by saving on collection costs and landfill tax.

"This pushed the boundaries but we were always looking for sustainable and environmental gains," says Commander White. "The waste collected goes for composting rather than landfill. In time to come, it will be used to create renewable energy."

LIGHTING

"Innovative use of energy efficient lighting combined with maximised natural lighting meant we got the very best value. Sustainability and value for money assessments went hand in hand and money was spent where there was a clear, discernable benefit."

REFRIGERATION

A Glycol secondary refrigeration system runs a number of different appliances, chilled areas and cold rooms on one system. It reduces the primary refrigeration gas used within a commercial kitchen by up to 72% which brings with it the obvious benefits for the environment. It also reduces energy usage by up to 25%.

PRIME COOKING

Combination ovens are used to significantly reduce the energy used by up to 46% compared with conventional cooking methods. They incorporate a high performance heat exchanger which shows a further saving of up to 16% on energy and as much as 42% on water when compared to similar products. Deep fat fryers incorporate the latest heat exchangers, pre-mix burners and filtration systems, providing a healthier working environment and using less energy with a higher output and faster recovery time. In addition the fryers use up to 38% less oil which is reflected in the food served. Chips cooked in the fryer have 25% less fat overall and up to 40% less saturated fat.

SERVERY

All overhead gantries are fitted with high frequency fluorescent display lighting and in the case of the heated units this is in addition to quartz heat lamps. By using the fluorescent lights instead of the heat lamps for display purposes the energy savings can be as high as 80%. This also reduces maintenance and replacement costs as the heat lamps last up to 60% longer.

FAT, OIL & GREASE MANAGEMENT

Cooking oils are disposed of in bulk by licensed contractors. But light oils from preparing food, washing pots, utensils, crockery, cutlery and surrounding surfaces are discharged to drain.

Legislation dictates that drainage serving the kitchens in commercial hot food premises must have a means of grease removal in place to prevent grease building up in the sewers and causing blockages.

Dave Clarke chose to use an eco friendly, biotechnology solution to treat light fat, oil and grease that is washed down the drains rather than a mechanical grease trap. The system is installed discretely on the kitchen wall. It doses the drains at three locations and is compliant with Part H of the Building Regulations as a standalone grease removal system.

WATER CONSERVATION

Knee operated taps with automatic shut off devices have been used on all hand wash basins and low flow energy efficient pre rinse spray units have been installed on vegetable preparation, pot wash and wash up sinks.

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