

# Ministry of Defence

Case Study



Building Services Design  
Consulting Engineers



## DACI Shrivenham Phase 1



### The Requirements

DACI Shrivenham needed two new build accommodation blocks, the refurbishment of the sergeants' mess facilities, the full refurbishment of a Grade II listed building to provide administration and library facilities, as well as a new build display hall and training centre housing a variety of military vehicles.

### The Solution

BSD carried out the full M&E design services for the new buildings and the refurbishment on behalf of Lorne Stewart PLC. The display space is heated via high level gas fired radiant panel heaters. It is ventilated via a mechanical ventilation system comprising of high level extract fans and low level make-up air louvres. Beckett House, built in 1837, was used as the library of the college as well as various offices throughout the upper floors. New large supply and extract ductwork was designed to serve a newly constructed commercial grade kitchen located on the ground floor of the building.

The replacement lighting had to be sympathetic to the aesthetics of the building but still complying with all current requirements in terms of lighting levels, glare and efficiency.

**Total Project Value** £10,000,000 M&E

### Design Team

Architect: Watkins Gray International  
Project Management: Faithful & Gould  
Main Contractor: Costain

“ The three-year project at DACI Shrivenham included complex refurbishment work, as well as the construction of a number of new buildings. It was impressive that BSD managed to keep to a stringent budget and keep the same team of people working on the project throughout. ”

John White,  
Senior Project Manager, Lorne Stewart.

# Ministry of Defence

Project Experience



**Building Services Design**  
Consulting Engineers



**Customer:** RAF Lakenheath – Combined Hospital  
**Total Project Value:** £6,500,000  
**The Requirements:** Refurbishment of the Paediatrics, Physical Therapy, Immunisation, Labour and Delivery, and Optometry departments within the USAF military hospital at the USAF/RAF base  
**The Solution:**

- Full M&E design
- Lighting
- LV distribution
- Nurse call systems
- General ventilation, heating and hot water services
- Comfort cooling systems



**Customer:** RAF Molesworth  
**Total Project Value:** £1,000,000  
**The Requirements:** Refurbishment of the Control & Communications Centre used by the USAF  
**The Solution:**

- M&E design
- Computer room close control air conditioning units for the server room
- VRF comfort cooling system throughout the facility (phased installation)
- New heat recovery fresh air ventilation system



**Customer:** RAF Lakenheath – Cargo Deployment Facility  
**Total Project Value:** £3,500,000  
**The Requirements:** New build facility used by the USAF Cargo Deployment Facility comprising of storage, a transport maintenance unit and two storey offices with rest and command areas, the extension of the aircraft taxi way lighting, and local infrastructure modification  
**The Solution:**

- Energy efficient VRV system for the offices
- Smoke control via actuated roof lights, sprinkler protection, and an L1 analogue addressable fire alarm system
- Compressed air to specialist equipment
- Detailed design of security services with public address, CCTV, a black-out facility and telecommunication services
- Local HV infrastructure including substation and HV relay modification to allow future expansion to serve further development



**Customer:** DACI Shrivenham Phase 2  
**Total Project Value:** £8,000,000 M&E  
**The Requirements:** Two new build 240-bed accommodation blocks, a new build lecture theatre, and refurbishment of an existing 160-bed accommodation unit  
**The Solution:**

- Detailed design of M&E services
- Air conditioning
- Audio visual facilities for the lecture theatre
- Independent plant rooms to service the heating, hot water and ventilation requirements for each facility
- Natural ventilation