

# Healthcare

Case Study



Building Services Design  
Consulting Engineers



## Cliftonville Secure Men's Unit, St Andrew's Hospital, Northampton

### The Requirements

This new build medium-secure facility for adult males incorporates 128 en-suite bedrooms and is due for completion at the end of 2010. The new facility will be the largest building project ever undertaken by St Andrew's, a mental health charity. Off ward facilities include a swimming pool, therapy and education centre, activity hall, physiotherapy, industry centre, arts and crafts, dentist, doctors, barbers and a second floor administration space for 86 staff.

### The Solution

BSD provided detailed designs for mechanical services. To ensure the sustainability of the building, whilst taking comfort into consideration, BSD incorporated 26 Air Handling Units, extensive VRF air conditioning, a biomass boiler to provide all of the heating and domestic hot water requirements, CHP, and a rainwater collection tank into the overall design. The rainwater will be circulated around the building to service all WCs and it is estimated that this installation will provide the majority of the water for these appliances.

### Total Project Value

£45,000,000

### Design Team

Architect: Oxford Architects  
Main Contractor: GB Building Solutions Ltd

“ BSD has been instrumental in ensuring we are creating a building with the future in mind. BSD has developed the design taking Part L compliance into consideration. The results have gone over and above our expectations through the renewable and low energy systems incorporated into the project. ”

Paul Edis.  
Building Services Manager, GB Building Solutions.

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Project Experience



**Building Services Design**  
Consulting Engineers



**Customer:** Medicinq – ProCure21, Kettering General Hospital  
**Total Project Value:** £10,000,000  
**The Requirements:** Refurbishment of a third floor general ward with formation of three bed bays and en-suite facilities, circulation spaces, nurse stations, consultation rooms, isolation rooms, offices, stores, and medication preparation areas  
**The Solution:**

- Strip-out and enabling of existing electrical and medical services
- LV distribution • Data and telephone installation • General and emergency lighting • Trunking of the vertical bed-head services and nurse call installation including a pager facility • Fire alarm installation, access control and CCTV
- Hot water domestic services fed from direct fired steam heat exchangers
- Gas installation incorporating oxygen, medical gas (ma4) and vacuum, and natural ventilation to the wards bays designed with the aid of a full thermal model



**Customer:** Kettering General Hospital NHS Trust - Pathology Laboratory  
**Total Project Value:** £1,300,000  
**The Requirements:** Conversion of the existing basement linen store to a new state-of-the-art pathology laboratory  
**The Solution:**

- M&E design • VRV comfort cooling • Fume extract systems
- Piped medical gases • New lighting and emergency lighting power
- Fire alarms • Communications



**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, and comfort cooling systems



**Customer:** Peterborough Hospital NHS Trust – Endoscopy Suite  
**Total Project Value:** £1,000,000  
**The Requirements:** New build Endoscopy Suite with three theatres on the existing hospital site  
**The Solution:**

- Project management and M&E design • Site-enabling works
- Connections to the existing hospital infrastructure