Engineering Consultants

Hangar 76, Trenchard Lines

Description

- Hangar 76 is an existing 3,224m2 facility which formed part of a regeneration programme to the existing military airfield at Trenchard Lines, Upavon
- Services Design Solution was appointed to undertake the detailed design of the Building Services associated with the reinstatement of the Hangar.

Benefits Delivered

- We designed a suitable distribution system incorporating metering of electrical services in accordance with the requirements of Part L of the Building Regulations including centralised monitoring of the metering results
- There was insufficient power to meet the electrical load to the Hangar, therefore new site mains including the upgrade of the HV network, was designed and installed under the Contract
- Throughout the project we were in dialogue with the Client, Building Surveyor, Structural Engineer, CDMC and Fire Officer to enable us to agree a fully compliant and cost effective design package including the preparation of final layouts, sizing of Building Services and the production of full specification and drawings including Designers Risk Assessments
- This lighting proposal has now been adopted for all future developments on the site.

Aircraft hangar with associated offices forming part of the regeneration programme at RAP Upavon

Involvement

- A survey of existing Hangar lighting verified that the existing lighting was beyond its serviceable life and a complete replacement was necessary
- We designed a new lighting scheme incorporating high efficiency T5 fluorescent luminaires, incorporating lighting controls with presence detection dimming and daylight savings
- By adopting this strategy, we were able to reduce installation costs by £30K, with reduced operational cost over the life of the designed lighting system. Enhanced fire risk due to the storage of aircraft in the building requiring an increased level of detection of a fire alarm system to satisfy the Client Insurers and the site Fire Office
- Key aspects of the design in the Hangar requiring particular attention included:
- High level aspiration system linked to localised flame detection devices protecting high risk areas within the Hangar. The Hangar fire alarm system was also linked to a conventional fire alarm system serving the Office accommodation areas
- Fire alarm Cause and Effect Schedule was presented to the Client and the Fire Officer for approval prior to completing the design
- Specialist ventilation systems were designed to facilitate the repair of aircraft within the Hangar including combustion fume and paint fumes extract, including carbon monoxide detection and alarm systems
- A dedicated sprinkler system was designed to meet the requirements of the risk assessment ensuring that a minimum of two hour fire protection was achieved between the Hangar space and the Office accommodation
- New earthing network and lightning protection system, including dedicated aircraft earthing systems
- Provision of supplies to electronic winches and overhead cranage to enable the safe mobilisation of the aircraft and aircraft components within the Hangar
- Provision of compressed air distribution system.