Virginia Advanced Shipbuilding and Carrier Integration Center

Newport News, Virginia

Project Team

A/E/M/S: Clark Nexsen Architecture and Engineering

Building Statistics

Occupancy: Shipbuilding/Office
Size: 241000 sqft
Levels: 8 Max
Construction: 1999-2002
Delivery: Design-Bid-Build
Cost: $58 Million

Alyson Larimer
lighting / electrical
www.engr.psu.edu/ae/thesis/portfolios/2011/azl5017

Architecture

The VASCIC Facility consists of two main building components; the laboratory with integrated parking garage, and the office Tower. The laboratory forms the backbone for the VASCIC facility, which was designed to house assembly and integration of electronics and power systems for aircraft carriers.

Mechanical

The primary air provided to the Laboratory is served from 4 VAV roof top air handling units with galvanized ducts. The Office is conditioned from the Tower Penthouse. The Penthouse contains 3 VAV air handling units utiliizing oval and rectangular duct.

Structural

The entire facility was built with a precast, prestressed concrete foundation system. The framing system utilizes precast concrete load bearing wall panels and interior columns, or a wide-flange structural steel system integrating braced frames and shear walls.

Electrical

Virginia Power provided four 5MVA pad mounted transformers with secondary voltage of 13800V. Electrical service to the facility enters at the Laboratory wing and is then connected to the Office Tower. The service entrance consists of four seperate switchgear set in main-tie-main configuration. Three 5MVA transformers suppy power to the Laboratory Power Lab and one 5MVA transformer supplies the rest of the VASCIC facility. Normally the tie breaker will be open but may need to be closed to perform laboratory experiments requiring over 15MVA. The fifth 5 MVA transformer is designated specifically for the fire pump station.

Lighting

Within the facilities' buildings, there are multiple functions in a single building. The Office Tower utilizes a task/ambient lighting system. In the conference rooms and display areas, recessed and accent lighting is used. The Laboratory wing contains an auditorium which also utilizes a task/ambient lighting design and adjustable accent lighting. Throughout the main laboratory space, a high bay metal halide system is used. Daylighting was also a consideration in the design process due to the facade materials chosen.