



## Building Information

### Building Background

Duques Hall is an addition to an existing building on The George Washington University Campus in downtown Washington DC. Fungler Hall, the existing building housing the school of business and public management, is a 200,000 sq ft. building structure. This addition was commissioned to be built in order to accommodate the growing needs of the university. Duques Hall provides six floors of additional, totalling 180,000 sq ft for the college of business. Because this is an educational facility, the bulk of the area is occupied by classroom spaces with additional areas provided for faculty and graduate student offices.

The architectural design for Duques Hall was provided by The Smith Group, and the MEP systems for the building were also commissioned by The Smith Group. SK&A Engineering provided structural design, and Whiting Turner oversaw the construction process. Construction of the building was undertaken using a design-build process. Ground break for construction began in January 2004, and the building was completed in December 2005.

Duques Hall contains a variety of significant architectural features that sets the building apart from the other buildings in the area. The most prominent feature to the building is the tower placed on the southeaster façade. During the day it appears as simple steel and glass construction, but at nighttime the corner glows from the interior light. This feature sets the building apart from others. Other features include the building entrance, and a glass wall on ground level that allows passer by to view what is occurring inside the room. The last significant feature is the set back in the façade of the building directly above the entrance. This set back adds a level of depth to the façade of the building and creates yet another point of interest.

An overall theme for the building would be the advancement of business. A classroom has even been designed to help represent a business type atmosphere. The system design, particularly the lighting design, was designed to help relay these themes and create a building that truly represents the world of business.

### Electrical System

The electrical power for the new George Washington School of Business and Public Management is fed from an existing system. The utility is run in at 13200 – 120V and split so it runs to an existing substation at Fungler Hall, an existing substation at Tompkin Hall and to the new Business School. The system can be described as a primary selective radial distribution system. The building utilizes two separate types of utility voltage, a 480/277 system and a 208/120 system. The 480/277 system feeds the majority of the mechanical equipment and most of the electrical lights for the building. The 208/120 system feeds some of the lights and the receptacles. There are two separate panels for the receptacles, as one has been designated isolated ground for computer loads.



Loads for the building are distributed from three switchboards. Switchboard HDP is 4000 Amp, 480/277 Volt, 3 phase, and 4 wire. It feeds the H panels which provide power to the lighting systems along with the motor control center and the elevator loads. Switchboard CDP is a 1600 Amp, 208/120 volt, 3 phase, and 4 wire. It provides power to the C panels which are the isolated ground receptacles. The last switchboard is the NDP one, it is rated at 800 Amps, 208/120 Volt, 3 phase, and 4 wires. It provides power to the H panels, which provide power to the normal receptacle loads. Emergency power is provided by a diesel generator found in the penthouse of the building. It is connected by automatic switches which will throw in case of power lose and send emergency power to the elevators and the Emergency panels. Otherwise, the elevator power is provided by HDP Switchboard.

### *Mechanical System*

The mechanical systems equipment for the mechanical system are primarily located in the two below grade levels and up on the penthouse above the sixth floor. Hot water is fed to the building from an existing boiler located in the adjacent Fungler Hall. AHU terminals on the various floors distribute the hot water throughout the building. Primary cooling is provided from two separate 3 ton screw chillers which are located in the refrigeration plant in the penthouse. There is an air handling unit in the mechanical room on each of the floors to help with air distribution. The capital market classroom located on the first floor is supplied from the floor below it by two blowing coil units.