



Joseph Lookup
Senior Thesis 2005
Wegmans Fairfax

Section 0.0

Building Information



Joseph Lookup
Senior Thesis 2005
Wegmans Fairfax

0.0 Building Information

0.1 Background

Primarily Wegmans Fairfax functions as a food market but also it includes an open-market café and shops, a five-star restaurant, meeting/conference rooms for parties or business gatherings, a cooking school and Wine Cellar (Which acts a Wine Shop!). The architecture and atmosphere of Wegmans Fairfax feels more like a European open-air market than a supermarket. Wegmans offers “stores within a store” including different store offerings like the Market café, bakery, Patisserie, Deli, Cheese Shop, Old Fashioned Sub Shop, Sushi, Nature’s Marketplace, Food from around the world, Pharmacy, Complements, Floral Shop, Greetings cards and Gift Shop, Cosmetics, and much much more!!!

0.2 Electrical

Power is provided by Dominion Virginia Power Company through a 10-way ductbank entering at the rear of the building on the southeast corner below grade. The service transformer is also located on the southeast rear corner of the building. A radial system is used to distribute incoming power from the utility. The primary transformer transforms power from 34.5Δ KV to 480Y/277 which is the building system voltage. The primary transformer feeds the main switchboard (MDP) (480Y/277V, 3-Phase, 4-Wire, 3000A) located in the electrical room. The MDP feeds three large sub distribution switchboards downstream; PPA, PPB, and PPC. Each of these 3 large switchboards is sized at 480Y/277V, 3-Phase, 4-Wire, 800A. The electrical panels are distributed throughout the building in the various Electrical/Mechanical rooms and there are two electrical houses on the roof. The lighting and mechanical equipment operate at voltages of 480V and 277V. The distribution panels vary in size from 800A to 3000A. The branch panels for 480Y/277 volt and 208Y/120 volt panels range in size from 200A to 600A. A UPS system is also included in the electrical distribution system and is used to prevent critical computers from losing service during power outage.

0.3 Lighting

The building lighting incorporates 277 and 120 volt operations. Most of the shopping areas use a combination of high bay HID’s with fluorescent and halogen track lighting. The produce area also incorporates 2x4 fluorescent troffers into its lighting. The office spaces, kitchens, and restaurant space incorporate downlights or 2x4 fluorescent fixtures. Low voltage lighting can be found in some of the display areas and in the restaurant lighting scheme. The exterior façade and parking lot lighting are all 277V luminaries with metal halide lamps.



Joseph Lookup
Senior Thesis 2005
Wegmans Fairfax

0.4 Mechanical

The HVAC makes use of (11) Air Handling Units. The units are Variable Air Volume (VAV) units with electric reheat coils. The HVAC system also makes use of direct expansion cooling coils and indirect fired furnace sections. Extra heating was added in the bathrooms with the use of electric baseboard heaters. The exhaust ductwork throughout the building are equipped with twenty-one (21) retro-active VAV boxes that automatically balance the exhaust air amount. The mechanical system also makes great use of Air Curtains and Hood exhaust fans to control the heat and air quality of the different spaces in the building. There is ten (10) air curtains used to separate spaces. Then forty-one (41) Hood Exhaust Fans are used for ventilation from all the different cooking equipment. The exhaust ductwork throughout the building are equipped with retro-active VAV boxes that automatically balance the exhaust air amount.

0.5 Structural

The building makes use of light gage steel construction and the exterior walls are made of decorative CMU, stucco, and stone veneer. The roof uses composite steel decking as its base. The lower floor is a 6" slab on grade and the uppers floors make use of 4" light weight concrete with composite steel deck.

0.6 Telecommunications

Telephone and data outlets are located throughout the entire building. There are scanners and scale data jacks at all registers across the store and in the accounting office. The outlet boxes for power are provided in the ceiling in the main shopping areas and under the raised floors in the office locations. The wiring going in the shopping area is raised in the ceiling on large racks. Low voltage cable drops are used to lower the wiring from the high ceiling racks.

0.7 Special Systems

MATV coaxial television cable was run throughout the offices and through portions of the shopping areas. CCTV monitoring equipment was installed throughout all the shopping areas, in the accounting office, corridors, backroom storage area, and throughout the parking lot and entrances and exits outside. Access control equipment was installed for all entry doors. Tran logic tubes were installed across the building at so that money or other important documents could be sent back to the main accounting office without carrying money or important documents long distances.

0.8 Fire Protection

A pre-action automatic system is utilized for the entire building. Standard smoke detectors, strobes, pull stations, and horns can be found throughout the building as required to meet code and public safety in residences and public spaces. A fully addressable ADA compliant fire alarm system is installed throughout the building.



Joseph Lookup
Senior Thesis 2005
Wegmans Fairfax

0.9 Transportation

Elevators are located throughout the building. There are two (2) elevators in the front of the store that serve as the main elevators for customer traffic between the three levels of the building. Then there are two (2) elevators in the vestibule used for customer to travel to and from the 2 parking levels on the site. And then there are two (2) service elevators primarily used for transportation of supplies and employees between floors. One (1) service elevator is located in the between the kitchens and one (1) service elevator is located in the backroom storage facilities. There are also six (6) staircases for travel between all three stories and one (1) stair case that can be used for the two lower floors. The building contains three (3) large loading dock areas on the first floor for merchandise and supplies and one (1) loading dock area for armored car usage in money transfers.

0.10 Construction

The construction delivery method for this building was design-bid-build. Construction started in June of 2003 and was completed in February of 2005. The store opening of the store and restaurant are scheduled for February 20, 2005.

0.11 Zoning

Wegmans Fairfax is new construction on previously undeveloped site. The construction is zoned Mercantile Supermarket (Group M) with in inclusion of use Groups S-2 (restaurant) and S-3 (Wine Shop). The construction Classification for the project falls under type 1B for the food market and the open parking structure.

0.12 Site Plan



Figure 0.12.1: Rendered Site Plan