

## Building Design Background

Building A of the Meadowlands Xanadu complex is designated as the sports district. All sports related retail stores and activities will be housed in this building. Building A has essentially two sections; the south side of Building A will contain all retail stores while the north side of the building will house the Snowdome indoor ski resort.

The retail section of Building A will contain a wide variety of sporting goods stores, a restaurant, and night clubs. The majority of leasable space will be used for retail sales; however, these retail spaces are not included in the current contract. Therefore, for these types of spaces an analysis will not be applicable. All work in retail spaces, night clubs, the ski resort lodge, and the restaurant will be fit out by the tenant near the end of construction.

The north section of Building A will house The United States' first indoor ski resort named the Snowdome. During normal operation the slopes will be comprised of snow laying flat over the distance of the run. However, during special events the slopes can be made into quarter pipes, and jumps can be added for competitions. Aside from skiing and snowboarding competitions the Snowdome is planned to be used for concerts, fashion shows, and parties with a wintery touch. The Snowdome will house 160,000 square feet of cold side space and will include a novice ski slope at 330 feet long by 120 feet wide and an advanced ski slope at 780 feet long and 150 feet wide. During times of normal operation the peak occupancy load is expected to be 300; while during special events the space is designed to provide enough fresh air for 999 people.

Figure 1 below shows the occupancy categories break down for the building.

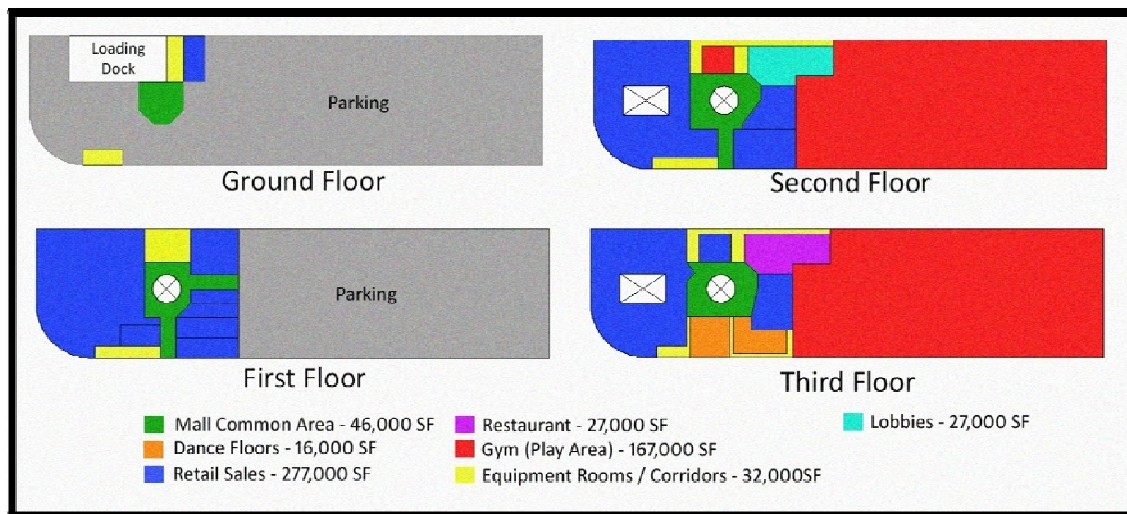


Figure 1: Building A Occupancy Category Distributions

### **Electrical System Background**

The complex is powered from existing high voltage electrical lines that run parallel to the adjacent New Jersey Turnpike. The high voltage lines feed a set of transformers on the west side of the building that will supply power to that side of the building, while another set of transformers are located on the east side to provide power to the east side of the building. These transformers will step the 26.4 Kilovolt service to a 480/277 Volt, three phase, four wire service that will run to various electrical rooms on the ground floor. The electrical service covered in the current contract will provide power to the air handling units and will be stepped down by 480 to 280/120 Volt transformers to power the lighting in the common areas. There will also be unfinished electrical rooms that will provide a place for the individual tenants 480 to 280/120 Volt transformers which will be added at the tenant's expense towards the end of construction.

Also located on the west side of the building next to the transformers is a backup generator. This emergency generator is rated at 1000 Kilowatts, three phase, four wire, 277/480 volts and will provide electricity to building A in the event of a power failure.

### **Lighting System Background**

The majority of retail section's lighting is comprised of recessed metal halide down lights with 150 Watt T6 Cool White lamps. The only lighting fixtures included in this contract are those in the common areas and back of house rooms. All lighting in leasable spaces will be provided by the tenants near the end of construction.

The Snowdome indoor ski resort's lighting is comprised of pendant mounted weatherproof metal halide globe fixtures with a 250 Watt lamp. It is important for the ski resort to be very well lit since skiers need to make split decisions at fast speeds. For this reason, a power outage and consequently lighting failure can result in injuries. To assure the safety of skiers, the ski resort lighting is connected to an uninterrupted power supply.

### **Structural System Background**

The foundation consists of 30 foot concrete piles on the east side of the building while 60 foot piles are used on the west side to anchor the building. The large piles are necessary due to the fact that the surrounds are classified as wetlands and can create swampy conditions. The skeleton of the building is comprised of a wide range of W-shape steel beams, columns, and girders. All floors are composed of poured concrete slabs on composite metal decking. From the metal decking the load is carried to the beams located directly below the decking, then to the girders that direct the load to the columns and then eventually to the concrete piles.

**Fire Protection System Background**

The entire Xanadu Sports Complex will be fully equipped with a fire alarm and sprinkler system. Throughout Building A wall mounted pull boxes, audible alarms, and strobe lights are located in easy to see areas. At the sound of the alarm guests will be directed to fire exit stairways that will only be used in the event of an emergency. There are three of these dedicated exit stairways in the retail section of the building and there is one more located at the top of the slope in the indoor ski resort. In addition to the fire protection system all floors, exit stairways, mechanical shafts, exit corridors, and columns have a two hour fire rating.

**Transportation System Background**

For the retail section of Building A, two sets of escalators located on every floor in the central atrium will be the means of vertical transportation. Not far from the escalators are a set of elevators that will also provided access to every floor of stores. As mentioned in the fire protection section there are also exit stairways, however they will only be used in the event of an emergency. In the Snowdome, a roof mounted chair lift will provide quick access to the top of the main slope while a rope pull will provide access to the top of the smaller slope.