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# Dearington Parking Garage

## Code Research

Hill Studio Project # 2105

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The following code research was compiled from the **2015 Virginia Construction Code** for the new construction of parking garage and gymnasium in Dearington, Lynchburg. The building would consist of 4 tiers of open parking in the rear with classrooms and lockers rooms along the front facing Jefferson Park. The top level will be a multi-purpose gymnasium with an additional entrance bridging to York Street.

Community Planning

### Use Groups:

S-2 Open Parking Garage  
Assembly Group A-4

**Construction Type:** Open parking garages shall be of Type I, II or IV construction.

### 406.4 Public Parking Garages General Requirements:

Architecture

Preservation

- Minimum clear height of each floor is 7 feet
- Vehicle ramps are not considered required exits until pedestrian routes are provided.
- Vehicle ramps used for both vertical circulation and parking must not exceed a slope of 1:15 (6.67 percent)
- Parking surface must be concrete or a similar noncombustible and nonabsorbent material and slope to facilitate drainage
- Parking garages shall be separated from other occupancies (i.e. Assembly Group) according to Section 510.7.1 Fire Separation
  - According to Table 508.4, S-2 and Assembly Groups require a 1 hour fire-resistance separation if non-sprinkler and do not have a separation requirement if sprinklered.
  - Means of egress for the Assembly Group must be separated from the parking occupancy by fire barriers with a 2-hour fire-resistance rating

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### **406.5 Open Parking Garages:**

A parking garage is considered open if it meets the following requirements outlined in **Section 406.5.2:**

- The exterior side of the structure shall have uniformly distributed openings on two or more sides
- The area of these exterior openings shall be at least 20% of the total perimeter wall area of each tier
- The aggregate length of the openings shall be at least 40% of the perimeter of the tier (*Exception: Not required if openings are uniformly distributed over two opposing sides of the structure*)

If these requirements are met, the “open” parking garage is naturally ventilated. If they are not, the garage is considered “closed” and required to be mechanically ventilated.

**Section 406.5.2.1** requires that openings providing natural ventilation below grade meet the following:

- The outside horizontal clear space must be 1.5 times the depth of the opening
- The width of the clear space must be maintained from grade down to the bottom of the lowest required opening.

End of Code Research

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**Dearington Gymnasium Estimate (4/1/21)**

Floor Description	SF	cost	totals
G entry lobby, 2 smaller group-fitness classrms.	2480	\$300	\$744,000
2 2 medium-sized group-fitness classrooms	2480	\$250	\$620,000
3 a gym	2480	\$250	\$620,000
4 men's and women's locker rooms	2480	\$275	\$682,000
5 two basketball courts.	20000	\$200	\$4,000,000
	pkg spaces		
Parking Spaces	200	\$22,200	\$4,440,000
Construction Cost			\$11,106,000
Soft Costs: Surveying, A/E Fees, Geotechnical, Construction Management, bonding and contingency,			\$2,776,500
Total Construction and Soft Costs			\$13,882,500

Here is the conceptual program we had put together:

Each floor is approximately 20,000 square feet (including both conditioned space and nonconditioned parking).

The ground floor would have 2,480 square feet of conditioned space, including the entry lobby and 2 smaller group-fitness classrooms (approximately 20x30ft each).

The second floor would have 2,480 square feet of conditioned space, including 2 medium-sized group-fitness classrooms (approximately 20x50ft each).

The third floor would have 2,480 square feet of conditioned space, with a gym (approximately 20x100ft).

The fourth floor would have 2,480 square feet of conditioned space, with men's and women's locker rooms (approximately 1,000 sf each).

The fifth floor would have 20,000 square feet of conditioned space, with two basketball courts.

There would be restrooms, elevators, and a stairwell at the front corner of each floor, with another stair and elevator tower along the York Street entrance.