



Orleans Police Station Building Committee

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Basement vs. No Basement

The new Orleans Police Station Facility has been designed as a one-story building with no basement. This was a decision made by the Police Station Building Committee in consultation with its Architect and Owner's Project Manager and based on experience with designs of similar Public Safety Facilities in other towns with similar needs and site conditions. Three separate architectural firms all concluded that a building without a basement was the correct solution. The following arguments for a basement and the issues associated with these arguments were taken into consideration in this decision.

Providing a basement will reduce the footprint and lower the costs of the building.

1. Taking into account that residential foundations are typically constructed using 8' forms, 8" thick with minimal steel reinforcing, typical commercial foundation, similar to that for a Police Station would use a 10' form with 12" thick walls and reinforcing steel usually a double mat of 12" on center each way and each face. (Ron Collins 2016) Comparing costs for a residential basement with that required for a Police Station is not a realistic comparison.
2. The first floor above the basement must be a structural system capable of carrying masonry partitions and other first floor loading conditions. (The Carell Group, Inc.-2008). This would require extended steel columns with a metal deck to receive the concrete. Even without a second floor, the basement dictates a "whole second layer" of a concrete slab for the first floor (Ron Collins 2016).

3. The basement would require two means of egress (stairwells), an elevator machine room, elevator shaft and wall assemblies; in addition to a code compliant ventilation system. (The Carell Group, Inc. and Ron Collins).

Basement space could be used safely and efficiently for programmatic and personnel functions.

1. Basements are naturally cooled by adjacent earth, resulting in the precipitation of moisture from humid summer air. This intrinsic dampness must be addressed by additional air conditioning, if the space is to be used for record storage, technology or staff occupancy. (The Carell Group).
2. A review of necessary programmatic needs indicates that a vast majority of space is necessary for grade level access to function properly and afford necessary safety precautions. (Jacunski Humes Architects-2015). Basement space is generally “unattractive” space with limited natural light making it inappropriate for office or other personnel functions (The Carell Group). Therefore, the only functions that would be appropriate for a basement would be utilities, quartermaster, armory and storage.

Basement Analysis (Pomroy Associates/KBA Architects 2016)

1. Basement to consist of 14’ clear height and 6000+ sq. ft.
2. Added 3,700 cu. yds. of excavation.
3. Basement walls require waterproofing.
4. Internal piers outside of basement area need to be extended.
5. Internal columns/piers within basement area need to be extended.
6. 3’x3’ sump pit with pumps and plumbing required.
7. Cast in place concrete 8.5’x 10’ elevator pit required.
8. Two sets of concrete pan, steel stairs (with handrails) to go down to basement-added area to first floor.
9. A two- stop elevator with ventilated masonry shaft from basement to attic required-added area to first floor.
10. Additional HVAC requirements- electrical, lighting, fire/smoke alarms, fire sprinkler system, heat and ventilation system.

Cost Analysis (Pomroy Associates)

- Estimated cost for basement \$1,600,000 (bottoms-up)
- - \$50,000 reduced first floor space required
- -\$82,000 reduced space required in auxiliary building
- **\$1,468,000 net cost added to project for a basement**

- Estimated cost for auxiliary building
 - \$609,000 (RLB) Net savings = \$859,000
 - \$788,000 (Daedalus) Net savings = \$680,000
 - **Average auxiliary building cost = \$698,500**

Net savings = \$769,500

CONCLUSION.

1. An auxiliary building is less expensive than a basement and offers more flexible use.
2. The newly designed Police Facility has an auxiliary building that satisfies the need for storage of items, such as cones, barricades and abandoned property, in addition to space for Police vehicles and impounded vehicles and large items, such as boats. In many ways, the auxiliary building is the basement, at less cost. (Police Station Building Committee, 2016).

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Police Station Building Committee**