



# FEASIBILITY STUDY

# FOR NEW FIRE STATION

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## P R O G R A M

Brame Heck Architects is pleased to present this programming, conceptual design, and preliminary budget analysis for a new fire station for the City of Lake City, FL. This study includes review of a selected site and studies how a fire station of the programmed size could fit onto that site. We used information based on previous experience in designing and developing fire stations. The station would include private bunk space for six crew members, plus a lieutenant. Other spaces include a day room, kitchen, laundry, turnout gear lockers, decontamination room, and two apparatus bays. We would anticipate refining this program further, while maintaining use requirements, operational efficiency, and aesthetic goals. The building's primary functions are to provide storage and access to fire trucks and rescue vehicles, and providing a living quarters for fire/rescue personnel while on duty.

The proposed satellite station can be staffed with a crew of up to six plus a lieutenant per shift. It does not require a dispatch or training area within the building or space for a fire marshal or any other additional fire service offices. The living space is an open "Day Room" with living area, dining space, and kitchen all in one space. An outdoor covered area is usually desired and recommended off the living space for rest and relaxation while on duty. A semi-private six bunk room is provided in the program and does not need to be separated by gender. Each bunk area is planned to have a bed, desk and shift lockers for personal items. The walls of each bunk do not extend to the ceiling, but each space has a door for privacy. Two single individual restrooms with showers will be provided for use along with a required ADA restroom and accessible shower. The lieutenant in charge of the station will have a separate space for sleeping and working, with a private bath.

The apparatus bay is currently sized to hold fifty-foot trucks with circulation or a combination thereof and can be adjusted once truck and vehicles sizes for this location are selected and known. Quick response doors are assumed. Contaminated turnout gear and other equipment can be isolated and contained within the decontamination room that will be accessible directly from the apparatus bay. That space will contain a utility sink, a shower and a washer with a drying cabinet for "hot" items. This space will provide a transition space and will aid in helping keep containments out of the living areas of the station. Turnout gear lockers, laundry room, and custodial space is also accessed directly from the apparatus bays. A maintenance shop is recommended as part of the program to provide an area for repair of any air breathing apparatus (SCBAs) and other equipment. As this is a separated occupancy building, a 2-hour fire wall will be provided to separate Group S Storage areas (Apparatus Bays) from the Group R Residential areas of the building.

With multiple points of entry and exit, securing the station while away is a priority in the event of an emergency. Security systems are to be installed that keep out unauthorized individuals and will be discussed during the schematic design phase.

#### SITE STUDY

We arranged a simple rectilinear footprint representing the program area to scale on the site located at 435 NW Hall of Fame Drive adjacent to the West Branch Library. The site is approximately one acre with the northern borders somewhat flexible due to being carved out already owned property by the city. The site slopes from southeast to the northwest. The site currently has a large paved area that would be removed along with a concrete walk, dirt driveway, powerline and fire hydrant. Access onto the site is envisioned to be from the adjacent parking lot on the west side. Two layouts were developed to test fit the building footprint of approximately 6,300 SF onto the site within the zoning setbacks requirements along with reasonably configured circulation for rescue vehicles utilizing that access point. It would also allow for onsite employee parking.

*Option 1* shows the building parallel on the southern property line with the apparatus bay to the south side. The building is roughly centered on the southern end and provides a loop one-way drive that goes around the entire building. The building front would face west. Angled crew parking is located on the north side off the drive with rear access to the building. A proposed bypass lane has been shown to the south of the apparatus bay to allow for passage. Visitor and handicapped parking are shown offsite at the existing parking area of the library.

*Option 2* shows the building parallel to the west parking lot with the front facing southwest toward the library. This has a loop drive, but doesn't allow for room for a bypass lane. Crew parking is located at the northside with entry into the building at the northside. Visitor parking is

located at the side as you enter the property from the proposed access point with accessible parking located at the front.

The actual footprint and location of the building are of course subject to revision and will be developed further during the schematic design phase. We believe retention areas can be incorporated into the site in available landscaped areas, but these won't be confirmed until further site analysis and geo-technical reports are obtained. The site would be landscaped according to city codes and standards and care given to the wetlands to the north of the property.

### M A T E R I A L S

Fire stations are typically built for durability and longevity in the public interest. They are manned around clock once they are opened and put into service. Exterior Envelope can be styled to meet the adjacent buildings and aesthetic goals. Selections of materials for the project will be discussed during the design phases of the project.

### C O D E   S U M M A R Y

This section lists some of the applicable codes that would apply to this project, along with some discussion of the code sections that we have used in the decision-making process during this conceptual phase. This list is not comprehensive. The 7<sup>th</sup> Edition of the code is tentatively set to take effect on December 31<sup>st</sup>, 2020 which may or may not impact the project depending on when it gets permitted and project is started.

### A P P L I C A B L E   C O D E S

Florida Building Code – Building 6<sup>th</sup> Edition 2017

Florida Building Code – Energy Conservation 6<sup>th</sup> Edition 2017

Florida Building Code – Plumbing 6<sup>th</sup> Edition 2017

Florida Building Code – Mechanical 6<sup>th</sup> Edition 2017

Florida Building Code – Fuel Gas 6<sup>th</sup> Edition 2017

Florida Building Code – Accessibility 6<sup>th</sup> Edition 2017

Florida Fire Prevention Code 6<sup>th</sup> Edition

NFPA 70 National Electrical Code

NFPA 72 National Fire Alarm Code

NFPA 90A Standard for the installation of Air Conditioning Systems

City of Lake City Land Development Code (currently not available for review)

Florida Building Code (FBC)

**Occupancy Classification** is **Mixed Use** between **Residential R-2** and **Storage S-1**.

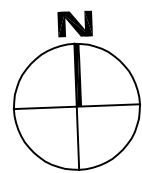
A 2-hour wall shall be provided for separation between the classifications. (Table 508.4) However if sprinklered, the rating can be reduced to 1 hour. Automatic fire sprinklers are required in New Fire Stations per NFPA 1 (13.3.2.3)

**Building Height and Area Limitations** - Construction Type V-B (FBC Maximum is 60'/3 Stories and 12,000 sq. ft)

**Construction Type V-B** would accommodate the required height and area for R-2 and recommend using **Type V-B** to cover any type of construction. Construction types are defined in the FBC Chapter 6. (Table 601 is included in the appendix.)



Division	Room Name	Unit NSF	Staff	Quantity	Subtotal	COMMENTS
<b>Residence Area</b>						
1.1	Lobby/Entry	60	0	1	60	
1.2	Living Room/Dining	450	0	1	450	Space for 6 recliners around TV
1.3	Kitchen	300	0	1	300	Provide separate Ref/Pantry per shift (3); adjacent patio/grille area
1.4	Storage	100	0	1	100	
1.5	Restrooms	65	0	2	130	Single user with a large shower
1.6	ADA Restroom	85	0	1	85	Single user with a ADA shower and compliant rest room
1.7	Lieutenant Bunk/Office	120	1	1	120	Space for a desk and bed and shift lockers
1.8	LT Private Bathroom	60	0	1	60	
1.9	Bunk Room (Crew)	480	6	1	480	6 Semi-private bunks spaces with bed, desk and 3 shift lockers; egress window
1.1	Custodial	50	0	1	50	Janitor sink and shelving of supplies
1.11	Laundry Room	100	0	1	100	Washer and Dryer w/ folding top
			0		0	
			0		0	
<b>Subtotals (NSF)</b>					1,935	
<b>Subtotal Division Gross Sq Feet x 1.3 (DGSF)</b>					2,516	
<b>Subtotal (Staff)</b>			7			
<b>Storage Area</b>						
2.1	Appartus Bay	2230	0	1	2230	2 long bays for +/- 50' fire trucks; Trench drains; Provide Ice machine in or nearby
2.2	Decon	120	0	1	120	Provide a shower and sink to rinse off containiments; Decon cab or washer
2.3	Equipment Lockers	200	0	1	200	18 lockers for gear & Turn out for clean gear
2.4	Shop	120	0	1	120	Provide a work top in space for air pack maintenance
			0		0	
<b>Subtotals (NSF)</b>					2,670	
<b>Subtotal Division Gross Sq Feet x 1.3 (DGSF)</b>					3,471	
<b>Subtotal (Staff)</b>			0			
Station to be equipped with a stand by generator in the event of a power outage						
<b>Total Staff</b>			7			
<b>Total Net Square Feet</b>					4,605	
<b>Subtotal Gross Square Feet</b>					5,987	
<b>Mechanical / Electrical at 5% of Gross</b>					299	
<b>Total Gross Square Feet</b>					<b>6,286</b>	



# ARCHITECTURAL CONCEPT SITE PLAN For City of Lake City Fire Department

SCALE: 1" = 30'

Zoning CHI

Approx 6,500 sq ft Building

1.02 ACRES

4.15.6 Min Lot Requirements - Bldg 5,000-10,000sq ft = 20 sq ft, min lot width: 125 ft

4.15.7 Min Setback Requirements - Front: 20ft, Sides: None (Unless provided, then min of 5 ft), Rear: 15 ft

Special Provision: No less than 15' of the depth of the required front yard shall be maintained as a landscaped area. The depth of this landscaped area shall be measured at right angles to the property lines & shall be established along the entire length and contiguous to the designated property line or lines. This landscaped area may be penetrated at right angles by driveways. The remainder of the required yard maybe used for off-street parking, but not for buildings.

4.15.9 Max Lot Coverage by All Buildings: 35%, No structure shall exceed a 1.0 floor area ratio.

4.15.13 Min Off-street Parking Requirements - One Space for each 500 sq ft of floor area.



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