

SAVAC GARAGE

IV A1



Feasibility Study for the

SAVAC Ambulance Garage (#L10708)

4/20/2007



**FOIT-ALBERT ASSOCIATES**  
 Architecture, Engineering and Surveying, PC  
 Hanover Squares, 435 New Karner Road  
 Albany, New York 12205



**Lacey-Convertino Architects LLP**  
 459 State Street  
 Albany, New York 12203

## Table of Contents

- I. Program Statement & Goal
- II. Site Explorations
- III. Building Code Issues
- IV. Preliminary Building Program
- V. Conceptual Drawings
- VI. Estimate of Probable Costs
- VII. SAVAC Base Exploration

## Part I - Program Statement & Goal

This study will examine the issues and costs related to the construction of a new Student Association Volunteer Ambulance Corp (SAVAC) Ambulance Garage.

The existing SAVAC Ambulance Garage was built in 1988 as a temporary structure to house the SAVAC ambulance. It is a 14' x 28' unheated garage located to the east of Moreland Hall alongside Sixth Avenue. The existing garage is of wood construction on a pressure treated skid with partially earth embanked walls. Although temporary repairs have been made to the sidewalls, rotting and deterioration has continued. The existing garage also does not provide adequate space for the required use, as movement around the vehicle inside the garage is severely restricted and water for cleaning is not provided. The existing garage should be demolished and a new garage constructed.

The following will explore several site locations, list building code issues, develop a preliminary building program including an analysis of different construction methodologies, illustrate conceptual designs and assemble an estimate of probable costs for a new, larger, drive-thru SAVAC Ambulance Garage.

An issue related to the SAVAC Ambulance Garage is the disposition of the SAVAC Base. The SAVAC Base is comprised of living quarters, office space and training facilities. Base facilities must be located in close proximity to the ambulance garage. The existing Base facilities are undersized and do not provide separate facilities for male and female SAVAC members. A brief exploration into a possible solution for these spaces is also included in this study (Part VII).



Front  
Elevation of  
Existing SAVAC  
Garage from  
Sixth Street



Side Elevation  
of Existing  
SAVAC Garage  
from Sixth  
Street

## Part II - Site Explorations

Three sites were investigated for the new SAVAC Ambulance Garage: a location near Walker Health Center, a location within Building 20 (making use the buildings existing garage bays) and the garage's existing location near Moreland Hall (see Site Location Map).

Walker Health Center can provide a location for the SAVAC Garage along the west side of the parking lot driving lane. This location would not negatively impact the flow of traffic nor would it detract from the current number of parking spots at this location. Location of the SAVAC program within close proximity to the campus health center also makes this a desirable location. At this time there is no available space within the Walker Health Center for the SAVAC Base; Base operations would need to remain at Moreland Hall. This type of physical disassociation of the Base from the Garage is not acceptable. Until there is appropriate space available near or inside Walker Health Center, this site should not be considered.

Building 20 would be able to provide adequate garage facilities; though the desired drive-thru capability would not be available. More prohibitive is the fact that conversion of the lower level of the building to house SAVAC Base spaces is not possible. The livable spaces included in the SAVAC Base require exterior windows. Due to the grade conditions on three sides of the building, there would not be sufficient exposed exterior wall to receive the required windows. Building 20 is not an appropriate location for the SAVAC program.

The garage's existing location near Moreland Hall provides the most desirable location for the new SAVAC Ambulance Garage. It is in close proximity to the existing SAVAC Base facilities (possible expansion discussed in Part VI of this study). There is ample space available at this location for a larger garage. A drive-thru arrangement could be facilitated by erecting the new garage parallel to Sixth Avenue with access from the Mackin Hall service drive and discharge onto Sixth Avenue south of the existing garage driveway (see Proposed Site Plan). One parking space in the Mackin Hall service drive would be eliminated. Parking spaces along Sixth Avenue would be relocated, but no spaces would be lost.

The garage does not need to remain in service while a new garage is constructed, thus allowing the new garage to be sited on the same spot as the existing. The SAVAC program does not operate during the summer months and the ambulance can be housed at the campus maintenance facility during construction.

All SAVAC facilities may be moved to another location within five years. New housing accommodations are being planned for the western end of campus. There is a possibility of relocating the SAVAC facilities into the new apartment community, but that project is still in the early design stages. If SAVAC vacates the garage it could be used for other campus storage needs. Ultimate disposition of Moreland Hall is uncertain; if it is razed, a structure of this size would most likely be razed as well. Several methods of building construction are examined in this study to help assist in the long-term planning for the garage.



Site Location Map  
SAVAC Ambulance Garage - SUNY Oswego



Existing SAVAC  
Garage Site  
from Sixth  
Street

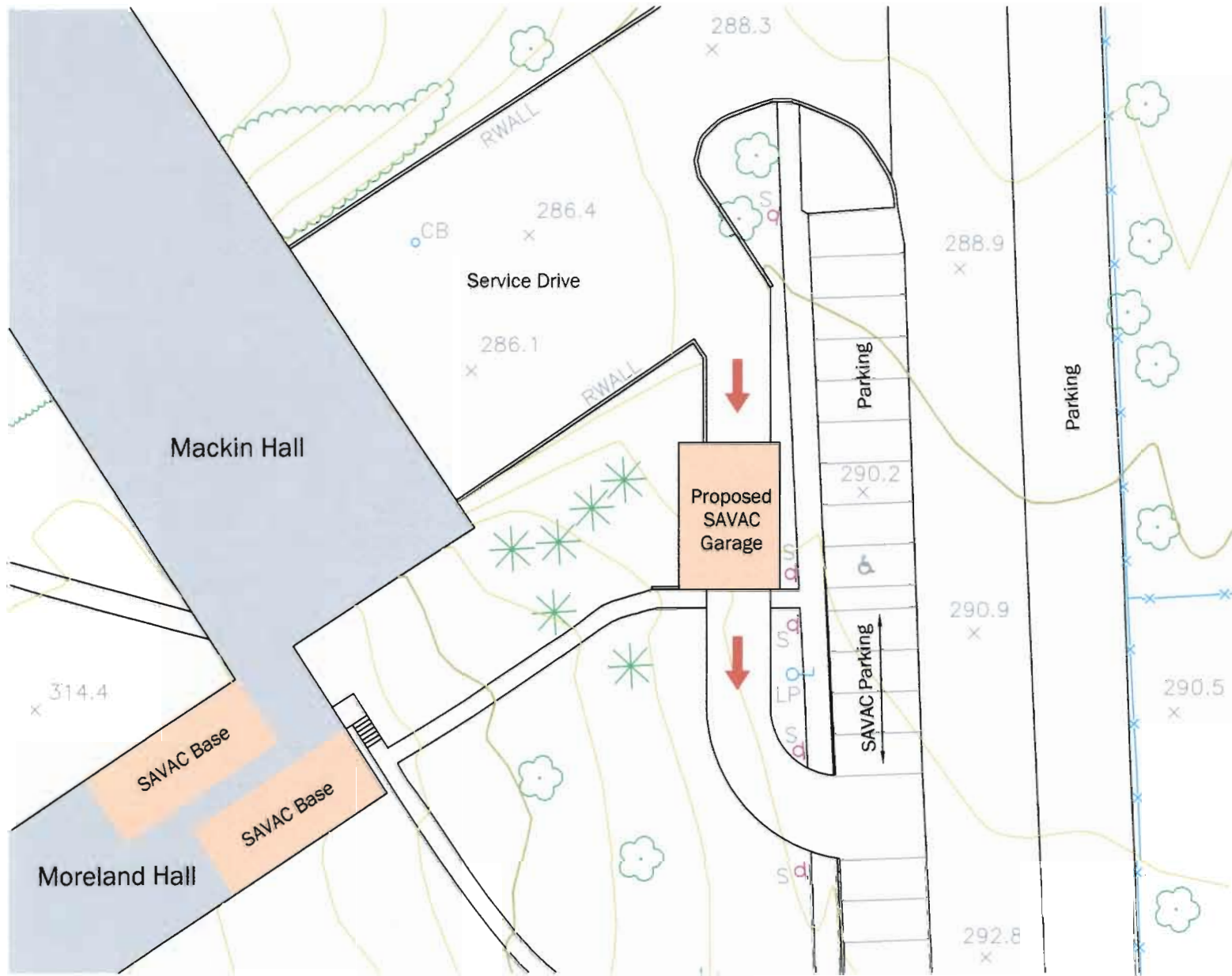


Existing SAVAC  
Garage Site  
from Service  
Drive



Existing Site Plan  
 SAVAC Ambulance Garage - SUNY Oswego





1/32" = 1' - 0"

# Proposed Site Plan SAVAC Ambulance Garage - SUNY Oswego

### Part III - Building Code Issues

Listed below are pertinent excerpts from the Building Code of New York State that apply to the new SAVAC Garage. Because of the garage's small size, there are very few code restrictions that will affect its design.

**312 UTILITY AND MISCELLANEOUS GROUP U**  
Private garages

**406 MOTOR-VEHICLE-RELATED OCCUPANCIES**

**406.1 Private garages and carports.**

**406.1.1 Classification.** Buildings or parts of buildings classed as Group U occupancies because of the use or character of the occupancy shall not exceed 1,000 square feet (93 m<sup>2</sup>) in area or one story in height.

**406.1.3 Garages and carports.** The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

**TABLE 503 ALLOWABLE HEIGHT AND BUILDING AREAS**

Most restrictive limit is Type 5B construction (1 story and 5000sf max. limits)

**TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)**

Type 5B requires no fire-resistive elements in the design

**TABLE 803.4 INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY**

For U occupancy – no restrictions

**903 AUTOMATIC SPRINKLER SYSTEMS**

No automatic sprinkler system is required

**906 PORTABLE FIRE EXTINGUISHERS**

**906.1 General.** Portable fire extinguishers shall be provided in occupancies and locations as required by the Fire Code of New York State. – not required for U occupancy – but suggested by architect.

**907 FIRE ALARM AND DETECTION SYSTEMS**

No fire alarms or detectors are required

**1003 GENERAL MEANS OF EGRESS**

**TABLE 1003.2.2.2 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

Parking garages 200sf gross/person

**1003.2.10 Exit signs**

Exit signs are not required in rooms or areas which require only one exit or exit access.

**1003.2.11 Means of egress illumination.**

Occupancies in Group U are not required to provide egress illumination.

**1004 EXIT ACCESS**

**TABLE 1004.2.1 SPACES WITH ONE MEANS OF EGRESS**

U occupancies with less than 50 people

**TABLE 1005.2.2 BUILDINGS WITH ONE EXIT**

U occupancies of 1 story with less than 50 people and less than 75 feet travel distance

**1103 ACCESSIBILITY - SCOPING REQUIREMENTS**

**1103.2.5 Utility buildings.** Occupancies in Group U are exempt from the requirements of this chapter.

## Part IV - Preliminary Building Program

The new 704sf SAVAC Ambulance Garage would be 1½ bays in size to allow for one full drive-thru ambulance bay, service space around all sides of the vehicle and space for sinks and vehicle related storage.

The 22'w x 32'd garage would have a poured concrete footing, foundation wall and low height concrete stub walls around the perimeter of the garage. These stub walls would increase the durability of the garage and allow for the side nearest Moreland Hall to have an earth embanked condition to allow for building on a slope without introducing the rotting and deterioration that the existing garage has experienced. A concrete slab-on-grade floor would be sloped in the direction of both overhead doors. Any accumulated water in the garage will flow towards the doors and can be pushed out. We feel that floor or trench drains would add complexity and cost for minimal benefit.

Several materials and construction options were considered. Each option has its benefits and drawbacks. Each option is considered in Part VI - Estimate of Probable Costs.

**Wood frame** - The garage walls would be framed traditionally with dimensional lumber and finished with fiber cement siding. The roof would be framed with wood trusses and finished with good quality asphalt shingles. Wood framed structures are easy and inexpensive to build although they typically have a shorter life span than the other two options.

**Pre-engineered metal** - The garage walls and roof would be framed with structural steel. The walls and roof would be finished with painted metal panels. Pre-engineered metal buildings are quick to erect and can be designed to be relocated to a new site in the future. Metal wall panels are more susceptible to visible denting and damage is more difficult to repair.

**Masonry** - The garage walls would be built of split-face concrete block in a color complementary to the yellow brick of campus. The roof would be framed with wood trusses and finished with factory painted metal roof panels. Masonry construction allows for a long life span with low maintenance costs, but typically requires a longer construction period.

The new garage would be equipped with two motor operated 12'w x 10'h insulated garage doors at either end of the vehicle bay. An insulated 3' x 7' steel personal access door would be provided into the service area. If financially possible, a row of glass lights should be added to each garage door to allow some natural light into the garage.

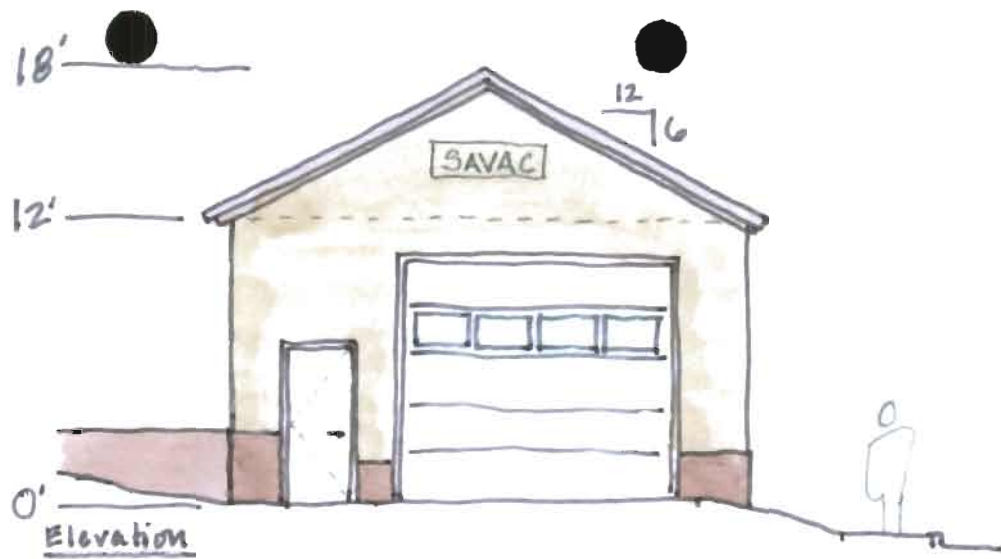
A floor mounted service sink would be provided and equipped with a hose in order for personnel to wash out the ambulance after an emergency call or to clean and maintain equipment.

Exterior vehicle washing capabilities will not be included in this program. A light vehicle rinse can be done using the provided hose. Any significant exterior vehicle washing should be done outside the garage. Exterior vehicle washing is currently taking place at the campus maintenance facility; this practice should continue after a new garage is built.

The garage would be fully insulated and heated to approximately 45° to keep water piping and any water on the floor from freezing. The easiest method for providing heat at this remote garage would be the use of an electric unit heater. There are more energy efficient methods, but all of them would include much more substantial equipment and distribution costs. Heat tape on the water lines would assure that the supply lines to the service sink would not freeze. The garage would also have a full electrical and lighting system. A dedicated outlet would be provided to plug the ambulance in and keep all electronic equipment charged during non-use.

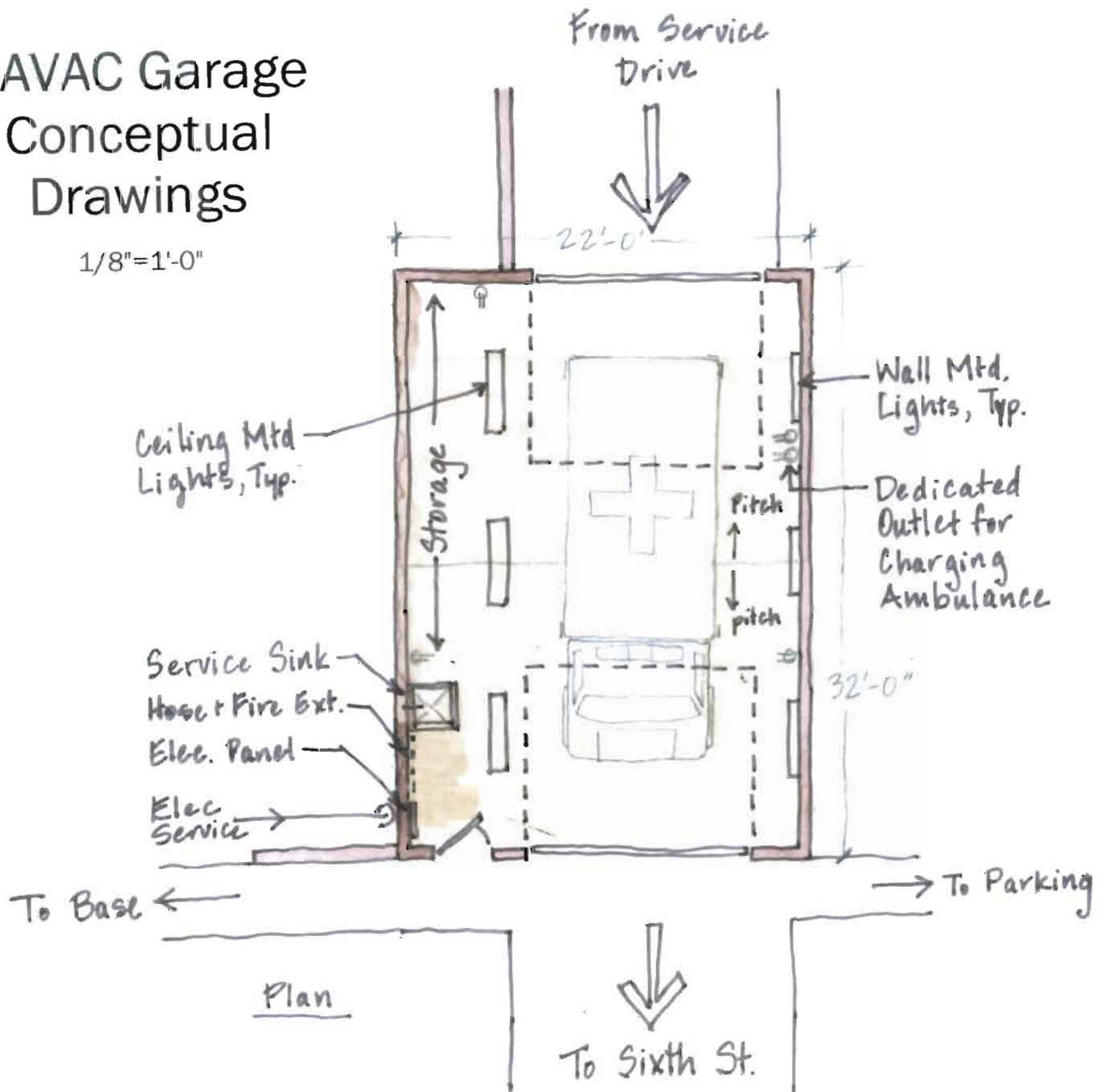
It is our understanding that the ambulance is not idled in the garage with the overhead door closed. If this is a planned practice, an additional vehicle exhaust system should be installed.

The original proposal for the garage requested for storage space for files and equipment that were currently stored in the Base. Possible modifications in the Base would allow that type of storage to remain inside the Base facilities, as is more appropriate (see Part VII).



# SAVAC Garage Conceptual Drawings

1/8" = 1'-0"



**Part VI - Estimate of Probable Costs**

	<b>Option 1 - Wood frame</b>	<b>Option 2 - Pre-engineered Metal</b>	<b>Option 3 - Masonry</b>
<b>Building Construction Cost:</b>	\$125 - 130/sf \$88,000 - 91,500	\$160 - 165/sf \$112,500 - 116,200	\$175 - 180/sf \$123,200 - 126,700
<b>Demolition</b>	\$1,500	\$1,500	\$1,500
<b>Site Costs (Moreland Hall):</b>	\$6,500	\$6,500	\$6,500
<b>Insulated Overhead Doors: Motorized operators Glazing Increase = \$100/door</b>	\$5,000	\$5,000	\$5,000
<b>Contingency (10%):</b>	Approx \$10,100	Approx \$12,600	Approx. \$13,600
<b>Total Construction Cost:</b>	\$111,000 - 114,800	\$138,000 - 142,000	\$150,000 - 153,500
<b>Professional Design Fees (10%):</b>	Approx. \$11,300	Approx. \$13,900	Approx. \$15,200
<b>Total Project Cost:</b>	\$122,000 - 126,300	\$150,200 - 154,500	\$164,600 - 168,900

**Building Construction Costs:**

Includes the programmatic elements detailed in Part IV – Preliminary Building Program for a 22’ x 32’ (704 sf) building.

**Demolition:**

Includes the removal and disposal of the existing SAVAC Garage and driveway ramp.

**Site Costs:**

Includes tree and partial concrete retaining wall removal, building site work and grading, new concrete retaining walls and curb cuts, disturbed parking area repair and re-stripping. Extensive roadway and parking area re-paving is not included. Sixth Avenue and its associated parking are currently in poor repair. There is existing electrical service to the existing garage; it is assumed that that service is adequate. Costs associated with bringing water and sewer service to the site have not been included. Campus facilities can estimate the additional costs associated with those services.

**Part VII - SAVAC Base Exploration**

As mentioned earlier, the SAVAC Base is comprised of living quarters, office space and training facilities. The existing Base facilities are located on the basement level of Moreland Hall. All of the existing spaces are undersized. The existing arrangement of spaces does not provide separate sleeping and bathing facilities for male and female SAVAC members, nor does it provide laundry facilities. The existing training room and office do not have any exterior windows and are overheated by the building heating pipes that run through the spaces.

**SAVAC Base Requirements:**

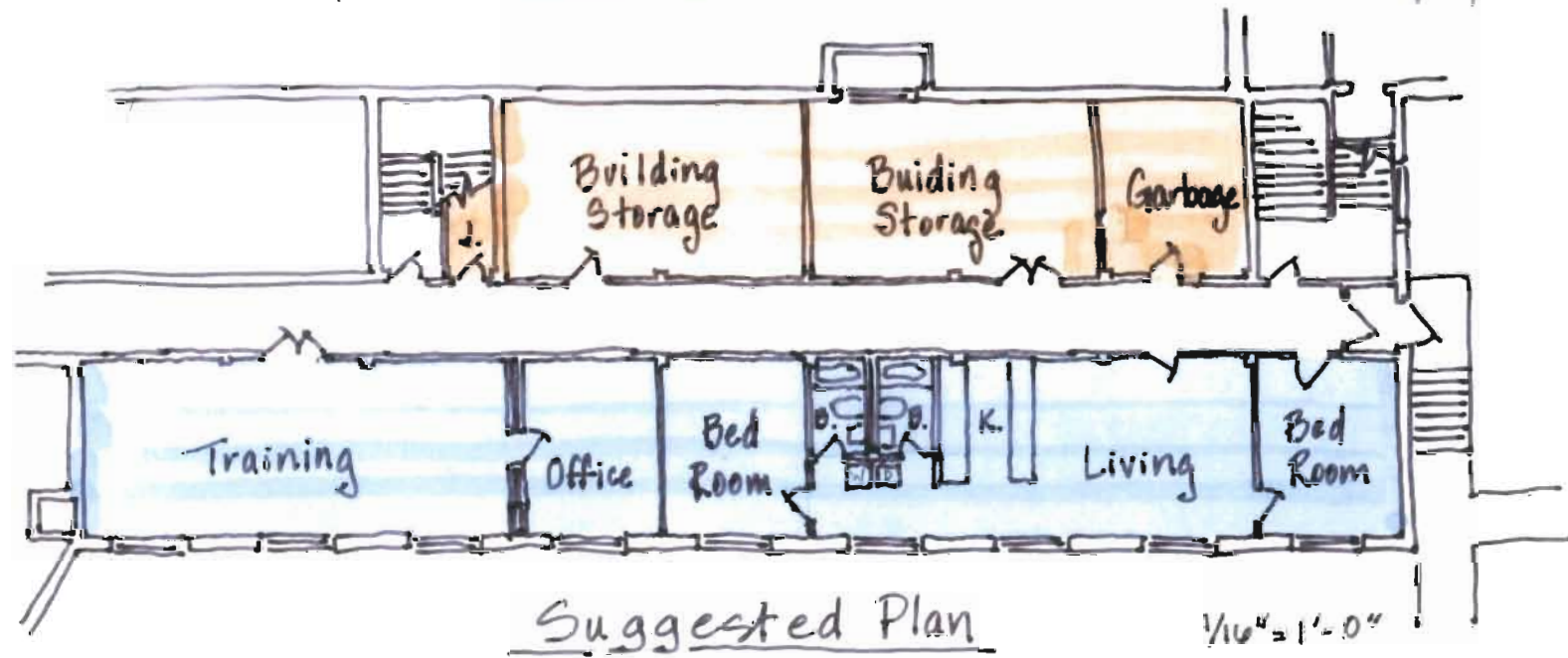
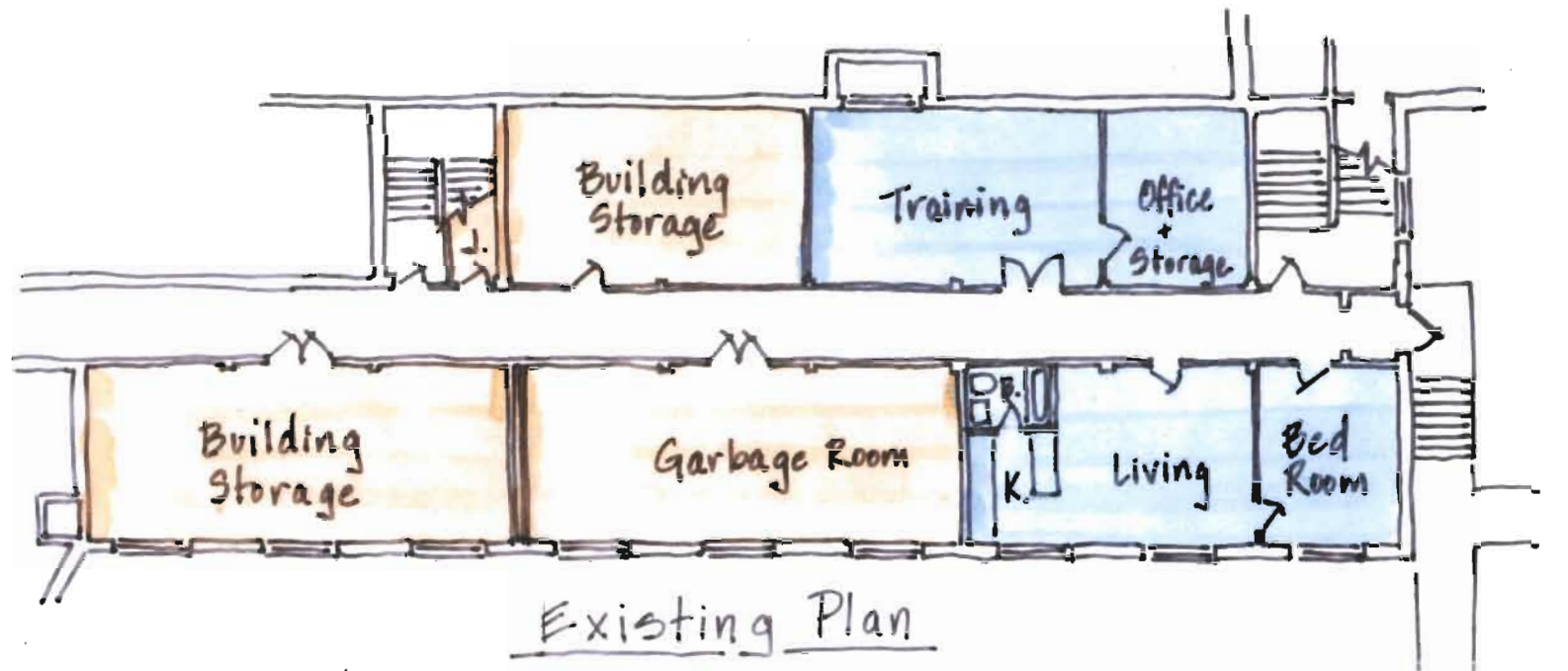
- Training room – space for 20-25 people on average for weekly training
- Office – two people
- Storage – files and equipment
- Living Room – approx. 20 members gather every evening
- Kitchen
- 2 Bunk Rooms – 4 beds in each
- 2 Bath Rooms - separate for male and female members
- Laundry facilities

The two rooms that adjoin the SAVAC Base living spaces are currently very under utilized garbage and storage rooms. These rooms are each 570sf and have three operable windows; they previously functioned as student lounges for the building. The sketch on the following page shows a possible reconfiguration of space that would better utilize the spaces on the basement level of Moreland Hall. Assuming that major building systems would not have to be altered, the probable building construction costs associated with this reconfiguration would be:

Kitchen & Bathrooms	\$150/sf	\$33,000
All other spaces <i>(basic finishes – paint &amp; VCT)</i> <i>(no furnishings included)</i>	\$10/sf	\$14,900
New walls & doors		\$7,750
Demolition <i>(no asbestos removal fees inc.)</i>		\$2,000
		\$54,650
Contingency (20%)		\$10,930
<hr/>		
Total Construction Cost		\$65,580

As mentioned in the site exploration section of this study, there is a possibility of the entire SAVAC facility (Base and Garage) being moved to the new residential development currently being planned for the western portion of campus. If the SAVAC facility was built into that development on a single floor plate with masonry wall, wood roof truss and asphalt shingle construction, the probable building construction costs associated would be:

SAVAC Base:			
Living	1000 sf	\$250/sf	\$250,000
Training	800 sf	\$225/sf	\$180,000
SAVAC Garage	800 sf	\$180/sf	\$180,000
<hr/>			
Total SAVAC	2600 sf		\$574,000



SAVAC Base Facilities - Moreland Hall - SUNY Oswego



**Subject:** SUNY Oswego - SAVAC Garage Feasibility Study - DRAFT

**From:** Beth Lacey <beth@LCArchs.com>

**Date:** Wed, 18 Apr 2007 12:38:57 -0400

**To:** rlloyd@oswego.edu

**CC:** jrobson@foit-albert.com, simmonds@oswego.edu

Bob-

Attached are 7 PDF's that make up the draft of the SAVAC Garage Feasibility Study. From my side, the study is complete. Only the Conceptual Drawings scan is quality bothers me, so I will fuss with it a bit. I will format the entire thing into one comprehensive PDF after any required changes are made.

I included the planning numbers regarding the SAVAC facilities moving to the western campus apartments that are currently in planning stages on page 13. Please let me know if you want that discussion included in the formal report.

Please let me know what you think.

**Beth Lacey, R.A.**

Principal

**LCA**

Lacey - Convertino Architects, LLP  
459 State Street  
Albany, NY 12203

T: 518.375.1485

F: 518.375.1486

C: 518.322.9035

[www.LCArchs.com](http://www.LCArchs.com)

**SAVAC Feasibility Study-Cover & Title.pdf**    **Content-Type:**    application/pdf  
**Content-Encoding:** base64

**SAVAC Feasibility Study-Main Body.pdf**    **Content-Type:**    application/pdf  
**Content-Encoding:** base64

**Site Location Map - Page 4.pdf**    **Content-Type:**    application/pdf  
**Content-Encoding:** base64

**Existing Site Plan - Page 6.pdf**    **Content-Type:**    application/pdf  
**Content-Encoding:** base64

**Proposed Site Plan - Page 7.pdf**

**Content-Type:** application/pdf

**Content-Encoding:** base64

**Conceptual Drawings - Page 11.pdf**

**Content-Type:** application/pdf

**Content-Encoding:** base64

**SAVAC Base Facilities - Page 14.pdf**

**Content-Type:** application/pdf

**Content-Encoding:** base64