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# SECTION ONE

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## EXECUTIVE SUMMARY

### Introduction

The S/L/A/M Collaborative was engaged by the University at Albany to conduct a feasibility study for a new on-campus residence hall, that would include recommendations for building program, site evaluation and selection, and project delivery strategy.

This work included:

- A series of interviews with all pertinent stakeholders on the campus to gain insight into the unique facility resources.
- Comprehensive benchmarking and “right-sizing” of new proposed facilities.
- Analysis of current trends in residential life facilities, including data collection from peer institutions.
- Site investigations and fit studies to determine optimal site(s) for new proposed facilities.
- Cost analyses including comparisons with peer institutions.
- Intermediate presentations with the Senior Level Advisory Committee for Facilities Site Planning to review the content and gain direction on the site selection.

This document will help to serve as the overall Residential Life Campus Plan for the Uptown Campus facilities for the next 15 years. It should be recognized that this Plan is a living document and will be subject to revision and adjustment as the University moves forward.

In addition, S/L/A/M was asked to evaluate privatized project development strategies for a potential off-campus residential facility. This facility would replace the 400-bed Freedom Apartments, in the event that this site is repurposed and transferred to the adjacent research park.

### Building and Site Recommendations

#### Initial Recommendation

S/L/A/M’s first step was to analyze the impact of the residence hall renovation program already underway with respect to the University’s future goals. The significant findings were:

- Future demand for approximately 7,293 beds based on:
  - Maintaining the 57.5% current capture rate. The current capture rate is appropriate and in alignment with peer Institutions. A higher capture rate may be difficult to achieve with the current level of commuter students and convenient, affordable private off campus housing.
  - Increasing enrollment by +/- 2%
- Future bed deficit of approximately 916 beds, based on future demand and:
  - 611 beds lost due to accessibility upgrades and reconfiguration of Alumni Quad.

- Potential 396 beds lost to repurposing of Freedom Apartments.
- University’s desire to add 100 beds on-campus for graduate students.

Once this analysis was accomplished, the following objectives were identified to be achieved by the proposed building program:

1. Provide sufficient swing space to allow for a more aggressive renovation program of the existing residence halls.
2. Replace beds lost permanently due to scheduled residence hall accessibility upgrades.
3. Add beds in order to allow the University to increase enrollment while maintaining the current undergraduate housing capture rate of approximately 58%.
4. Add beds in order to provide 100 new beds for graduate students.

S/L/A/M determined that a 500-bed residential complex would satisfy the stated objectives of accommodating an enrollment increase, swing space, replacement beds, and more graduate student beds on-campus.

The 400-bed Freedom Quad Apartments replacement is envisioned as a stand-alone project. The new facility should be timed for completion before the Freedom Quad Apartments are closed and ownership transferred. As a result, at no time would there be a need to temporarily house displaced students, nor would the new housing be available as surplus space.

#### Site Selection for the 500-Bed Housing Project

A primary objective of the housing study was to develop a space program and find a site location suitable to accommodate 500 new beds within the Uptown Campus limits that would satisfy the following criteria:

1. Provide all 500 beds in a single contiguous location
2. Respect the existing campus organization and architecture. The original campus is a landmark designed by Edward Durrell Stone.
3. Provide an economical approach to development. This was further defined as follows:
  - Standard Institutional grade that would meet typical DASNY construction standards, generally meant to achieve a 50-year life cycle for shell, core and primary building systems.
  - A financially self-sustaining complex.
4. Maintain existing parking spaces, while also adding 100-250 new spaces.

### PROJECT TEAM

#### UNIVERSITY AT ALBANY

##### **Finance & Business:**

John Giarrusso, *Associate Vice President*

##### **Office of Campus Planning:**

Errol Millington, RA, *Director*

Michael J. Beaton, *Assistant Campus Planner*

##### **Architecture, Engineering & Construction Management:**

Randall Olocki, RA, *Director*

Diana Delp, RA, *Staff Architect*

Robert Morawski, *Construction Manager/Estimator*

John Baldwin, *Staff Engineer*

##### **Residential Life:**

Laurie M. Garafola, *Director*

Carol A. Perrin, *Associate Director*

##### **Physical Plant:**

Kerry Csontos, *Director*

Indu Lnu, *Energy Manager*

##### **Office of Environmental Health & Safety:**

Bill Dosch, *Director of Code Administration*

##### **Architect**

**S/L/A/M Architects, P.C.**

Robert F. Pulito, AIA, *Principal-In-Charge*

Scott Rich, *Project Manager*

Mary Jo Olenick, AIA, *Programming*

Steve Keller, *Architect*

Heather Van Deusen, *Architect*

Ian M. O. Witschy, *Staff Accountant*

##### **Landscape Architecture/Site Planning**

**S/L/A/M Architects, P.C.**

Kyle C. Slocum, ASLA, *Planner/Landscape Architect*

Ian Dann, *Landscape Architect*

##### **Engineering/Other**

Mark Dempf, PE, *Civil Engineer Stantec, Inc*

Robert Abromitis, PE, *MEP Engineer, ME Engineering*

Manual Cunard, Res. Life Consult., *Campus Life Concepts*

Robert Blakey, *Financial Analyst, Strategic Equity Associates*



Seven sites were initially selected, in collaboration with the University, for evaluation. S/L/A/M tested these sites for amount of developable area, proximity to utility infrastructure, relationship to the campus center, height restrictions, circulation, and parking issues. At the conclusion of this initial phase, the field of seven sites was narrowed down to three "optimal" sites: Dutch Quad West, State Quad East, and Southeast Corner.

After a round of more detailed site planning studies, S/L/A/M concluded that the Southeast Corner site met all of the critical criteria identified at the initiation of the study and would provide the optimal delivery of the proposed 500-bed housing program, based on these findings:

- The site is large enough to accommodate the 500-bed complex and provide for future expansion.
- It was the only site that did not displace a large quantity of existing parking spaces.
- The site development costs for this site were lower than all of the other sites studied.
- The site is located on the east side of the campus, which has less vehicular traffic concerns than the west side.

Southeast Corner is also adjacent to a residential neighborhood and will require careful site planning to ensure that the new complex is appropriately buffered with respect to the adjacent properties.

Underground parking was considered for this site, but will not be pursued at this time on the basis of cost. Average cost per subsurface parking space is 5x that of the average surface parking space – \$4,000/space v. \$20,000/space.

The runner-up sites - Dutch Quad West and State Quad West, will be held as optional sites to Southeast Corner should the development of Southeast Corner become problematic for any reason in the future.

With the final site selection accomplished, refined site planning options were explored to maximize open space and to minimize disturbance to the existing wooded areas and suspected wetlands, and to ensure that the site could accommodate all of the desired program elements.

The next step for the University in the investigation of the site would include subsurface soils analysis and environmental and wetlands investigation to determine the exact limits of wetland soils, if any. Existing information and mapping was used for this initial study. More refined and detailed site information will be required for the final site planning.

**Site for the 400-Bed Freedom Apartments Replacement**

It was proposed early in the study that the 400-bed Freedom Quad Apartments replacement project would be located off-campus on nearby land, perhaps as part of the proposed Harriman State Office Campus redevelopment. The Harriman State Office Campus site was not investigated for specific site locations or planning vignettes; rather, it was assumed the redevelopment proposals for the office park campus could accommodate the 400 bed replacement project in a similar configuration to the existing Freedom Quad Apartments. If the Harriman Campus or other nearby land is not available, the University would solicit a site from the private sector within convenient commuting distance from the Uptown Campus.

**Programming the New Residential Complexes**

A major percentage of the investment in campus housing is currently driven by an increased awareness of student needs, expectations and priorities related to lifestyle decision-making. To develop the preliminary space program for the new residences, S/L/A/M collected benchmarking data from a range of recent housing projects at peer institutions in order to identify and compare trends in residence style, room size, number of occupants, and amenities. The following were identified as optimal features for attracting students to the proposed 500-bed on-campus facility:

1. Suites or apartments for upperclassmen with single occupancy bedrooms and private baths (this unit type is underrepresented on the University's Uptown Campus).
2. Smaller, decentralized residential units to build a greater sense of community.
3. Amenities such as exercise rooms, seminar rooms, computer rooms, game rooms, bike storage, and laundry facilities.

S/L/A/M recommends an apartment-style facility configuration with a building that had a maximum of five occupied levels, with 4- and 6-bedroom apartments and an array of amenity spaces, such as seminar rooms and a wellness center, that manifest the idea of a residence as a living/learning community. Recommended unit sizes are 1010 square feet for 4 bedroom apartments and 1450 square feet for 6 bedroom apartments, just slightly above average for benchmarked housing facilities. The five level limit is both cost effective and will be compatible with the Master Plan height guidelines. The complex would have a predominance of four bedroom units (75%),. This is the most desirable and manageable unit size, a configuration that is currently very desirable on campus. The four bedroom unit is also cost effective in that the minor additional square footage generated by a four bedroom verses a six bedroom complex is mitigated by the reduced cost of having less bath and kitchen space.

The recommendation for the 400-bed facility is similar to that for the 500-bed facility except that S/L/A/M recommends programming 2- and 4-bedroom apartments, in order to provide a level of flexibility for future marketability to the developer.

**Project Delivery Recommendations**

**Project Delivery Methods**

S/L/A/M studied three project delivery methods for the purpose of providing a clear understanding of the advantages and disadvantages of each.

**Project Schedules**

The conceptual project delivery schedules developed for each project delivery method assume an October 2008 project start as a base line, and strive to achieve move-in dates that align with the standard academic calendar year. Changes to the project start date, design review and approval periods and contractual award time requirements will increase the schedule, resulting in occupancy dates that when aligned with the academic calendar, may move out a minimum of 4 to 8 months.

Project delivery methods and associated project times are summarized in Table 5-1 below. S/L/A/M is not making a recommendation at this time, as the University will need to select the project delivery method after setting its own priorities with respect to the new residence hall.

Project Delivery Summary			
	Design-Bid-Build	Design-Build	Privatized
Pros	• Maximum level of control over project design	• High level of control over project design	• Developer provides expertise in student housing design and marketing
	• DASNY requirements assure a known level of quality is written into the final Bid Documents	• DASNY requirements assure a known level of quality	• Option to outsource financing to private developer
		• Reduced delivery time due to overlapping design/construction sequence	• Option to outsource operations to private developer
	• Maximum level of oversight is possible during construction	• Reduced cost with respect to design-bid-build delivery, due to increased and early cooperation between designer and contractor	• Reduced delivery time due to overlapping design/construction sequence and exemption from DASNY procurement process
Cons		• More flexibility for substitutions during construction	• Financing can be structured to reduce or eliminate University debt service
	• Low bid process has the potential for contentious construction process, quality of bidders and subcontractors is difficult to control	• Potential to compromise quality to meet budget, due to early cost commitment	• Potential for less control over project quality - University must carefully spell out all requirements in development contract
	• Financing is dependant upon bonding and state statutory encumbrances	• Financing is dependant upon bonding and state statutory encumbrances	• More complex project structure
	• Longest delivery time		• Potential for shortest delivery

NOTE: The Project Time shown here includes all phases of pre-design, design, and construction.

## EXECUTIVE SUMMARY

### Cost Estimate

S/L/A/M prepared an initial summary cost estimate for the 500-bed, on-campus residential complex, assuming typical DASNY Institutional grade facility and a general design-bid-build delivery. The two 5-story buildings, as proposed elsewhere in this study, comprise approximately 203,000 GSF.

The estimate is based on local prevailing wage rates, and a competitive bid process with a minimum of three qualified bids. The estimate is based on a construction schedule of 28 months for site development and construction of the two buildings. The construction will be phased, but phases will run concurrently.

Based on a building assembly utilizing concrete plank construction with load-bearing concrete masonry (CMU) walls and brick veneer, **the total construction cost is estimated at \$57,080,669, with cost per bed @ \$110,441 and cost per square foot @ \$280.**

S/L/A/M evaluated several additional building assembly types for this building configuration in terms of cost, with the following results:

<b>Structural Steel Frame (w/ CMU infill)</b>	<b>\$54,347,722</b> (cost per bed: \$104,975) (cost per s.f.: \$267)
<b>Light Gauge Steel Stud Framing w/ Brick Veneer</b>	<b>\$50,820,183</b> (cost per bed: \$97,920) (cost per s.f.: \$249)
<b>Modular Steel/Concrete</b>	<b>\$51,841,661</b> (cost per bed: \$99,963) (cost per s.f.: \$254)

In addition, S/L/A/M compiled construction cost data for nine relatively recent East Coast university housing projects including the University's Empire Commons. The construction costs, per bed costs, and square foot costs were escalated to year 2010 in order to make a meaningful comparison with the proposed 500-bed facility. This cost data is shown in Table 5-3; the results in brief:

•The escalated cost per bed range is \$56,000 - \$124,000, with a majority falling between \$71,000 and \$97,000.

•The escalated cost per square foot range is \$150 - \$316, with a majority falling between \$260 and \$285.

Its \$110,441 bed cost is above the middle range, although still falling within the overall range shown in Table 5-3 on Page 5-9. The 500-bed residence hall's \$280 square foot cost is within the middle range, although skewed towards the higher end.

Items driving costs at the higher end include the apartment-style configuration, the more expensive and more durable materials, and the fact that the project is essentially two buildings, which would likely result in some redundancies.

The level of cost for a typical DASNY Institutional grade facility can not be supported by the current University at Albany room rate; to finance this project would require a substantial and unrealistic increase in the room rates. The increase would need to be distributed over the entire housing stock to make the increase per person reasonable. For additional information, please refer to the Financial Cost Analysis at the end of this section.

It was determined that the complex should strive to achieve financially self-sustainability and alternative solutions should be developed to study that possibility. S/L/A/M studied options to the standard DASNY institutional grade facility that could reduce the construction cost. The cost reduction analysis can be found later in this section.

### Privatized Housing

#### University Involvement

In the more detailed discussion of privatized housing in Section Six, S/L/A/M outlines options for "Low," "Medium," and "High" levels of involvement with a private developer for three different scenarios: privatized on-campus housing, privatized housing at the Harriman Campus, and privatized housing at an off-campus, privately owned site.

These options are described for a number of different issues:

- Financial Commitment
- Program Requirements
- Security
- Maintenance Standards
- Facility Management and Operations
- Quality Assurance and Construction Oversight
- Site and Location

In most cases, S/L/A/M recommends at least a medium level of involvement, in order for the University to balance its need to retain control over the facility and protect its interests, with the benefits gained by transferring a degree of operating responsibility to the developer.

The on-campus and Harriman Campus locations should include a higher level of involvement from the University. These locations, because they are on or directly adjacent to the campus, should provide a very similar residential life experience as the existing on-campus complexes. These facilities will be directly associated with the University, therefore the University's involvement needs to be comprehensive, in order to minimize problems and assure that the residential life environment is provided in accordance with University standards.

The recommendations also acknowledge that the developer will have particular expertise in the area of designing cost-effective and marketable student housing, and should thus have some leeway.

In a few notable areas, a high level of involvement is recommended:

**Financial Commitment:** It is in the University's best interest to make the project as attractive as possible to potential development partners.

**Security:** The University has a vested interest in protecting its students as well as its liability.

**Facility Management: (privatized housing on a private off-campus site)** The appearance and functioning of the facility over time is a highly visible reflection of the University, and as such, it is in the University's best interest to maintain close control in this area.

**Site Location:** The University's primary concern is to assure a fair, competitive selection process, resulting in an ideal location and building solution. The most effective way to achieve that result is to select a site and make it available to all developers.



**Cost Reduction Project Analysis**

The new on-campus 500 bed residential complex has an estimated construction cost of approximately \$57,000,000.00. This cost represents a mid range of cost for institutional grade apartment style housing that will generally range in cost from \$250 to \$350 per square foot. The University's student apartment room rent rate per year is currently \$8,800 with an anticipated escalation of 2-3% a year; those rates cannot sustain the projected \$57,000,000.00 construction cost and the \$70 - 80,000,000.00 project cost for a standard DASNY delivery process. The following are alternative approaches to reducing costs to bring the project closer to being financially self sufficient.

Project and construction costs can be reduced by the following four methods: 1. Reduce total project gross square footage; 2. change construction type, reduce construction quality; 3. compress delivery schedule; 4. use alternate delivery methods that result in reduced soft costs.

**1. Reduce gross square footage:**

- Convert from apartment-style configuration to standard, traditional doubles rooms. This is not recommended, as peer institutions are providing apartment-style housing for upper class students. The University at Albany currently has an adequate quantity of traditional double-units building. More may result in vacancies.
- Convert from singles to double bed apartment units. The trend is to single bed rooms, and the University does not have a sufficient quantity of single bed rooms. If possible, this amenity should be maintained.
- Reduce common use and recreational amenities and living-learning program functions. Program functions should be reduced to minimal requirements.
- Reduce gross square footage by changing configuration to town house style housing; thus eliminating common use corridors, stairs and elevators. This low-rise configuration will require additional site square footage to accommodate the multiple low-rise buildings.

**2. Reduce construction quality:**

- Convert from steel frame and masonry bearing wall and plank construction to metal stud construction. This is feasible assuming that institutional grade construction is provided.
- Minimize use of masonry in exterior enclosure and interior partitions. This is feasible assuming that abuse resistant institutional grade construction is provided.

- Reduce quality of MEP systems; eliminate air conditioning; project must be compliant with executive Order 111, and quality of systems should be maintained to minimize future operational and maintenance costs. Life cycle analysis must be performed to evaluate various options and energy and O&M costs must be considered before selecting a specific system.

**3. Compress Delivery Schedule:**

- Reducing the delivery schedule will reduce inflation costs and general conditions costs. This can be accomplished by utilizing a design / build delivery method and by compressing the design approval and construction phases.

**4. Alternate delivery methods:**

- Reduction in soft costs could be achieved by converting the delivery process from the standard DASNY design-bid-build process; alternatives include developer-supplied housing and design-build delivery.

**Conclusion**

Maintaining the single bedrooms and the apartment style housing format is important to the success of the project. This style of housing is compatible with nationwide trends, and is currently under-supplied on campus, and apartment-style housing will be competitive with off-campus housing options.

Program reductions should be considered by minimizing common use amenity space such as fitness and recreational space, and conference space; use existing facilities to provide those functions. Minimizing the gross square footage can be achieved by considering town house apartments that do not require internal stairs, corridors and elevators.

Converting from masonry and steel construction to a metal stud construction system should be considered, providing abuse resistant institutional grade systems are maintained. The quality and functionality of MEP systems should be maintained to assure compliance with Executive Order 111 and to minimize future operating costs.

Schedule and soft costs can be reduced by converting to a design build or developer delivery model. Both models will reduce the length of the design and construction schedule by reducing design time and approval process.

In the Summary Recommendation (immediately following), there is a detailed description of the option developed from the above recommendations that seeks to be financially self-sustaining.



# UNIVERSITY AT ALBANY

State University of New York



## EXECUTIVE SUMMARY

### Summary Recommendation

The following recommendations for the 500-bed on campus housing complex are based upon our understanding that the new complex should strive to be financially self-sufficient; the University's student rent rate per year is currently \$8,800 with an anticipated escalation of 2-3% a year.

S/L/A/M studied a variety of approaches to the development of the on campus 500-bed facility and have the following recommendations:

**Housing Type:** The national trend is towards single occupancy rooms and apartment style housing on campus. Maintaining the single bed rooms and the apartment style housing format is important to the success of the project. These are important features that will enable this new complex to successfully compete with off campus housing options. The new housing is for upper class students, it is important to be able to offer them a housing type that provides an independent lifestyle. Students prefer to be on campus in apartment style housing and are willing to spend more for this benefit. The higher rental rate will help to offset the additional construction costs.

**Amenities and Academic Program Space:** The on-campus location affords convenient access to campus amenities, including recreational and fitness facilities. This adjacency minimizes the need for similar common space within the residential complex. The living space within the apartments also offers space for small group gathering for recreational activities. The single occupancy rooms provide quiet space for students to study alone or in small groups, eliminating the need for general use study rooms. Community space is important to the success of any residential complex so it is important to dedicate a minimal amount of space for critical and highly utilized functions, such as a fitness area, conference and larger group gathering spaces.

**Location:** The Southeast Corner site is ideal due to its size and location. As it does not require relocation of existing parking facilities, it is the most cost effective. The location on the east side helps distribute the student housing more equitably throughout the campus and locates a pedestrian traffic generating facility on the side of the campus with the lesser amount of vehicular traffic. The size of the parcel is able to accommodate a variety of planning concepts from a two to six building scenario and a townhouse or Empire Commons-like condition. Please refer to section 4 for a detailed look at the site fit studies.

**Right: Building fit study showing a townhouse solution similar to Empire Commons. Building height restricted to two stories.**



Use	PROPOSED PROGRAM Area (NSF)				TOTAL AREA	notes
	Occ	NSF/ unit	rm NSF	# rms		
<b>COMMON AREA</b>					<b>7,120</b>	
<b>Central Commons</b>					<b>3,900</b>	
lobby			800	1	800	
mailroom			200	1	200	
multi-purpose recreation room	32	25	800	1	800	
wellness/fitness center			800	1	800	
main custodial			400	1	400	
support/general storage			400	1	400	
satellite office	3	100	300	1	300	1 staff, work area for 2 RA's
main trash/recycle			200	1	200	
<b>Building Commons</b>					<b>3,220</b>	
vestibule			85	4	340	
vending			60	4	240	
laundry			240	4	960	10 st/w&d
recycling stations			50	16	800	
public toilets			50	8	400	1 pair/bldg
custodial closets			30	16	480	
<b>STAFF ACCOMMODATIONS</b>					<b>1,180</b>	1/complex (1:500 beds)
<b>Resident Director's Apartment</b>					<b>1,180</b>	1:400 beds @ Empire Commons
Master Bedroom		180	180			
Second Bedroom		120	120			
Closet		15	75			
Bathrooms	2	70	140			
Living/Dining		250	250			
Kitchen		125	125			
Coat Closet/Hall		200	200			
Interior partitions			90			
<b>STUDENT ACCOMMODATIONS</b>					<b>124,950</b>	
<b>Apartments</b>					<b>124,950</b>	
Six Bedroom Units (sgls)	6	242	1,450	20	29,000	
Four Bedroom Units (sgls)	4	253	1,010	95	95,950	reduce size per benchmark
<b>Total Program Area (nsf)</b>					<b>133,250</b>	
<b>Building Support Areas</b>					<b>64,157</b>	
<b>Total Building Area (gsf)</b>					<b>197,407</b>	assumes 67.5% efficiency
<b>Total Beds</b>					<b>500</b>	
<b>GSF/Bed</b>					<b>394.81</b>	inc RA's

*Construction Type and Configuration:* We have studied several different types of facilities including:

- Traditional Institutional masonry bearing and plank – Highly durable and dependable institutional grade facility is designed for 50-75 year life and is the most expensive option. Construction cost ranges between \$250-350 per square foot.

- Townhouse – Stick built style low-rise facility, although not as durable as the traditional masonry facility, is less expensive. The overall gross square footage is minimized as there are no common lobbies, corridors, stairs and elevators. However, this is a moderate cost solution because the low scale (two floors) generates a significant quantity of foundations, roof and exterior wall. It also has the disadvantage of poor site utilization due to the low-rise configuration. Construction cost ranges between \$225-275 per square foot.

- Empire Commons model – Was studied as the lowest cost solution to understand its applicability as a solution for the new 500 bed complex. The Empire Commons model has several disadvantages: operationally, because of the quality of the systems and materials durability, is an issue; maintenance cost for repair and system replacement is high. The quality of the construction of the exterior shell and MEP systems is not compliant with current energy code and would need to be upgraded to meet current standards. The facility would also need to be upgraded to meet current handicap accessibility code requirements, including elevators, to provide access to upper floors. Construction cost for a upgraded version of the Empire Commons model would range between \$150-200 per square foot, with the low end meeting basic code requirements with minimal quality enhancements.

- Medium -rise – This option includes a complex of four buildings each with 4 floors. The buildings would be built in a similar style as Empire Commons with stick/metal stud bearing wall construction; however the systems would be upgraded for additional durability, energy efficiency and life expectancy. Although not as durable as traditional masonry facility, this facility would be a significant improvement over Empire Commons. The metal stud construction has a significant cost advantage over masonry construction. Construction cost ranges between \$175-250 per square foot.

**Medium-rise Program**

The revised program is based upon the approved program for the Two Building Option and is modified to accommodate four buildings and minimal common space. The 197,407 gross square foot program includes 500 beds in 4 and 6 bed apartments with support space. S/L/A/M worked with the residential life office to identify the minimum common space needed to support their program. Expanded common space could be provided later in a separate building, if funds become available.



# UNIVERSITY AT ALBANY

State University of New York



## EXECUTIVE SUMMARY

### Summary Recommendation (continued)

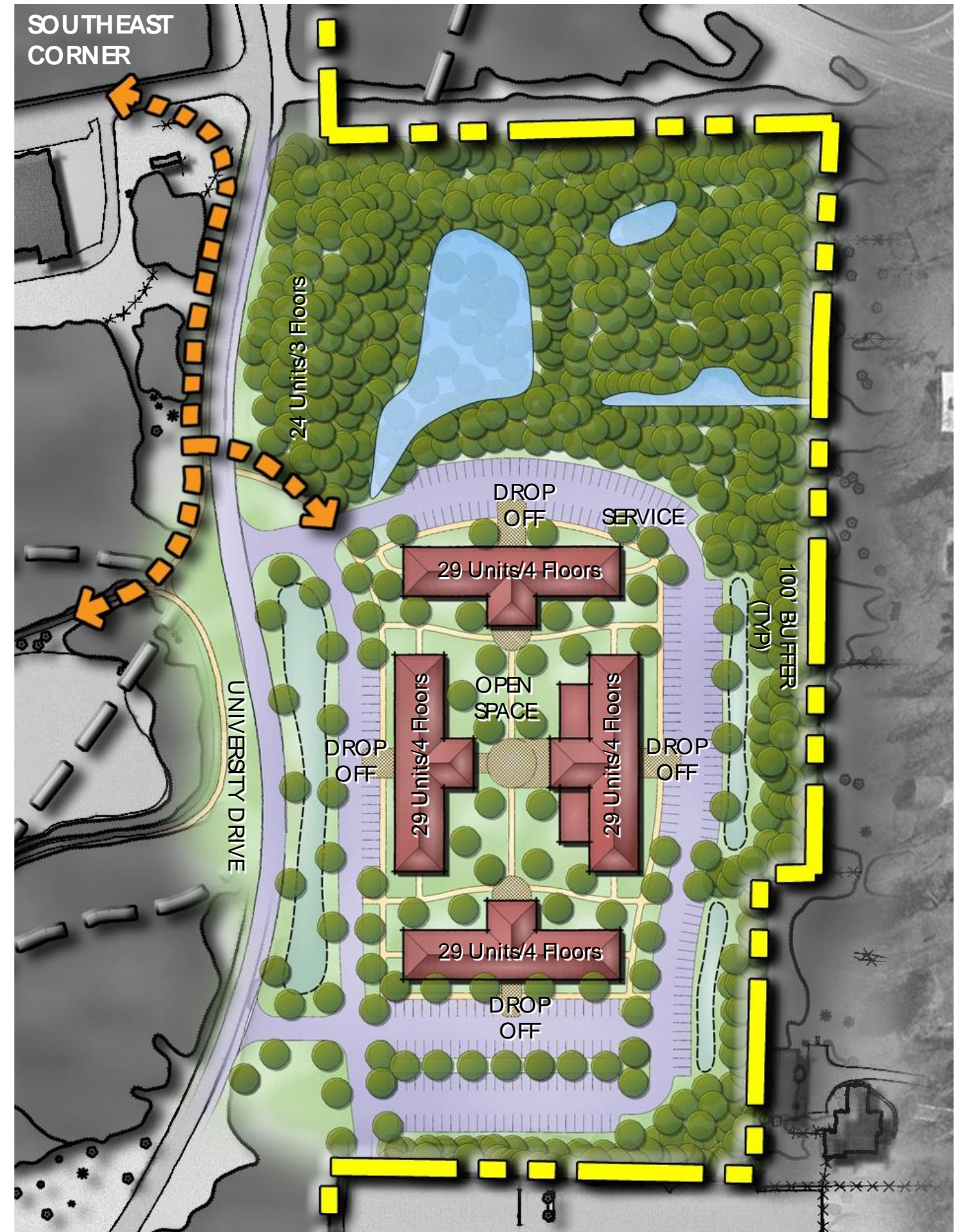
The Medium-rise configuration and construction type offers the University a cost effective solution that has the potential of being financially self sufficient. This system has a cost and schedule advantage since it does not require steel frame or precast plank which have significant lead times. The reduced reliance on masonry will also have the additional advantage of less winter conditions construction costs. This four to six building complex has an estimated construction cost of approximately \$38,511,939 without site costs and \$40,371,705 with the site. This represents a mid-range of cost for this grade apartment style housing.

Depending on the delivery method, the total project costs will be \$52 - 59,000,000. The medium-range option effectively reduces costs and brings the project closer to being financially self-sufficient. The University's student apartment room rent rate per year is currently \$8,800 with an anticipated escalation of 2-3% a year. This will need to be increased or escalated by approximately 6% per year until occupancy and then return to the 2-3% a year after occupancy. Please note that the escalation for the student rent rate is based upon a total project cost that includes 10% for A/E and Consultant fees and 16% for finance costs. Additional owner-required project soft costs have not been included in the analysis. If the room rates are to be the same as with Empire Commons the combined rent rate escalation for both complexes would be less than 3.5% until the occupancy of the new facility.

*Delivery:* The estimate for the Medium-rise option is based upon standard design-bid-build delivery. This standard delivery process will allow the University to refine the program, building and system design during the process and also be involved in the monitoring the construction process. The University could consider a design-build delivery system that may save approximately 5% of the construction cost. The design-build delivery will require a comprehensive and specific Basis of Design report that delineates all the design criteria and requirements to be successful. Special effort should be taken to develop a design-build Request for Proposal that will assure that the University at Albany receives the quality of facility it requires.

### Conclusion

The Medium-rise Option, although not financially self-sustaining, does come close to that goal while satisfying code compliance requirements and offers the University an enhanced quality of construction that will help reduce future operating and maintenance costs. The additional initial cost for the higher quality and more durable systems is a good value when considering the impact they can have on reducing these long term future operational and maintenance costs



**EXECUTIVE SUMMARY**

<b>University at Albany</b>		<b>S/L/A/M Collaborative</b>		
Estimate: Feasibility Study		<b>Construction Services</b>		
Drawings: Conceptual		Prepared <i>DH</i>	7/24/08	
Dated: July-08		<b>Construction Cost Summary</b>		
<b>Opinion of Construction Costs</b>				
	Program	GSF	Average cost/ gsf	New SF <b>203,719</b> New Residence Hall
				Block & Plank
<b>Trade Costs</b>				
Division	Description			New Residence Hall
02000	Sitework	Site Development	\$ 9.13	3.26% \$ 1,859,948
02000	Sitework	Building	\$ 5.01	1.79% \$ 1,020,733
03000	Concrete Work		\$ 22.13	7.90% \$ 4,508,080
04000	Masonry		\$ 47.26	16.87% \$ 9,628,596
05000	Metals		\$ 7.17	2.56% \$ 1,461,576
06000	Woods & Plastics		\$ 5.92	2.11% \$ 1,205,486
07000	Moisture and Thermal Protection		\$ 7.94	2.83% \$ 1,617,911
08000	Doors and Windows		\$ 12.98	4.63% \$ 2,644,216
09000	Finishes		\$ 16.19	5.78% \$ 3,297,729
10000	Specialties		\$ 2.73	0.97% \$ 555,968
11000	Equipment		\$ -	0.00% \$ -
12000	Furnishings		\$ 0.05	0.02% \$ 10,368
13000	Special Construction		\$ -	0.00% \$ -
14000	Conveying Systems		\$ 2.06	0.74% \$ 420,000
15300	Fire Protection Systems		\$ 3.89	1.39% \$ 793,318
15400	Plumbing Systems		\$ 12.43	4.44% \$ 2,532,137
15500	HVAC Systems & Equipment		\$ 29.39	10.49% \$ 5,987,634
16000	Electrical Systems		\$ 18.50	6.60% \$ 3,768,700
<b>Trade Subtotal</b>			<b>\$ 202.79</b>	<b>72.38%</b> <b>\$ 41,312,400</b>
<b>Escalation from 2007 to 2008</b>			\$ -	0.00% N/A - 2008 pricing
<b>Subcontracted</b>		<b>Subtotal</b>		
		<b>Ave. Cost / sqft</b>	\$ 202.79	72.38% \$ 41,312,400
<b>Construction Contingencies and Fees</b>				
10.0%	Estimating & Design Contingency		\$ 20.28	7.24% \$ 4,131,240
28 Months	General Conditions		\$ 10.80	3.86% \$ 2,200,496
1.1%	Permits & Fees		\$ 2.45	0.88% \$ 499,880
1.2%	Bonding		\$ 2.69	0.96% \$ 547,908
1.0%	General Insurance		\$ 2.34	0.83% \$ 476,441
7.50%	Escalation / year 2011		\$ 17.72	6.33% \$ 3,610,801
3.0%	Contractor Fee	GC / CM	\$ 7.77	2.77% \$ 1,583,375
5.0%	Bid Contingency		\$ 13.34	4.76% \$ 2,718,127
		<b>Subtotal</b>	<b>\$ 77.40</b>	<b>27.62%</b> <b>\$ 15,768,269</b>
<b>Total Construction Costs (including site development)</b>				<b>\$ 57,080,669</b>
		<b>cost / sqft</b>	<b>\$ 280.19</b>	<b>100.00%</b>

<b>University at Albany - Medium - Rise Program</b>			
<b>Construction Cost Summary</b>			
	Average cost/ gsf	New SF <b>197,407</b> New Residence Hall	
			Block & Plank
<b>Trade Costs</b>			
			New Residence Hall
	\$ 9.42	4.61%	\$ 1,859,766
	\$ 10.24	5.01%	\$ 2,021,468
	\$ 19.39	9.48%	\$ 3,827,168
	\$ 2.05	1.00%	\$ 403,710
	\$ 5.73	2.80%	\$ 1,130,387
	\$ 7.16	3.50%	\$ 1,412,984
	\$ 11.25	5.50%	\$ 2,220,404
	\$ 12.78	6.25%	\$ 2,523,186
	\$ 14.06	6.88%	\$ 2,775,895
	\$ 1.98	0.97%	\$ 391,598
	\$ -	0.00%	\$ -
	\$ 0.41	0.20%	\$ 80,742
	\$ -	0.00%	\$ -
	\$ 2.05	1.00%	\$ 403,710
	\$ 3.89	1.90%	\$ 767,048
	\$ 10.23	5.00%	\$ 2,018,549
	\$ 25.54	12.49%	\$ 5,042,335
	\$ 15.85	7.75%	\$ 3,128,750
	<b>\$ 152.01</b>	<b>74.33%</b>	<b>\$ 30,007,699</b>
	\$ -	0.00%	\$ -
	\$ 152.01	74.33%	\$ 30,007,699
	\$ 15.20	7.43%	\$ 3,000,770
	\$ 4.26	2.08%	\$ 840,000
	\$ 1.67	0.82%	\$ 330,085
	\$ 1.75	0.85%	\$ 345,089
	\$ 1.67	0.82%	\$ 330,085
	\$ 12.54	6.13%	\$ 2,475,635
	\$ 5.67	2.77%	\$ 1,119,881
	\$ 9.74	4.76%	\$ 1,922,462
	<b>\$ 52.50</b>	<b>25.67%</b>	<b>\$ 10,364,006</b>
	\$ 204.51	100.00%	\$ 40,371,705

<b>University at Albany - Town House Option</b>			
<b>Buildings &amp; Commons - 173,000 sqft + 12,000</b>			
<b>Construction Cost Summary</b>			
	Average cost/ gsf	New SF <b>185,000</b> Town House Option Including Site	
			Town Houses
	\$ 10.05	3.72%	\$ 1,859,948
	\$ 4.62	1.71%	\$ 855,240
	\$ 8.52	3.15%	\$ 1,575,465
	\$ -	0.00%	\$ -
	\$ 0.32	0.12%	\$ 59,553
	\$ 29.00	10.73%	\$ 5,365,162
	\$ 27.39	10.13%	\$ 5,066,236
	\$ 14.20	5.25%	\$ 2,626,632
	\$ 22.33	8.26%	\$ 4,130,866
	\$ 0.94	0.35%	\$ 174,168
	\$ 1.49	0.55%	\$ 274,978
	\$ -	0.00%	\$ -
	\$ -	0.00%	\$ -
	\$ -	0.00%	\$ -
	\$ 5.67	2.10%	\$ 1,048,108
	\$ 18.14	6.71%	\$ 3,355,414
	\$ 24.38	9.02%	\$ 4,511,198
	\$ 28.31	10.48%	\$ 5,237,075
	<b>\$ -</b>	<b>0.00%</b>	<b>\$ -</b>
	\$ 195.35	72.29%	\$ 36,140,044
	\$ 19.54	7.23%	\$ 3,614,004
	\$ 11.89	4.40%	\$ 2,200,496
	\$ 2.36	0.87%	\$ 437,295
	\$ 2.47	0.91%	\$ 457,172
	\$ 2.15	0.80%	\$ 397,540
	\$ 16.12	5.96%	\$ 2,981,554
	\$ 7.50	2.77%	\$ 1,386,843
	\$ 12.87	4.76%	\$ 2,380,747
	<b>\$ 74.90</b>	<b>27.71%</b>	<b>\$ 13,855,652</b>
	\$ 270.25	100.00%	\$ 49,995,696

Executive Summary

**EXECUTIVE SUMMARY**

**Financial Cost Analysis**

Options considered in cost analysis :

- Medium Rise Program  
This estimate is based on the Empire Commons project as adjusted for inflation and project size. Additions have been made to the cost to account for the additions to the project to meet the requirements of Executive Order 111, to meet ADA requirements, and to provide improved durability.
- Town Homes (No Common Areas)  
This estimate is based on the Vassar Town Homes project with no allowance for building "common area" facilities (meeting rooms, etc.).
- Town Homes + Common Areas  
This estimate is based on the Vassar Town Homes project with an allowance for building "common area" facilities (meeting rooms, etc.).
- 2 Buildings, as proposed  
This estimate is based on the original study proposal for 2 buildings on the site, each with 250 beds, and common areas.

Assumptions:

- Desired Bed Rate Increases – U at Albany provided an estimate of current Bed Rates and proposed that annual increases approximate 2 percent. This was used as a baseline to compare each option's financial performance against.
- Operating expenses were assumed to increase at 4% per year per data provided. If operating expenses increase more rapidly it will effect the financial outcome significantly.
- All project costs are as detailed elsewhere in this document.

Table – Bed Rate (\$) by Option:

- The data in this table was developed utilizing the existing bed rate for the 2008-2009 Academic Year.
- Occupancy was anticipated at the beginning of the 2012-2013 Academic Year. Purchase of project was anticipated at occupancy.
- An annual escalation rate of the Academic Year Bed Rate was then estimated based on debt service requirements and operating expenses starting from occupancy.
- The Bed Rate Escalation thus displays the annual rate of escalation required to achieve financial self-sufficiency for each project option at occupancy in 2012-2013.
- Each Academic Year column shows the annual steps in Bed Rate projected towards the 2012-2013 Bed Rate at occupancy.

Chart – Bed Rate (\$) by Option if Self-sufficient:

- This chart assumes that the Bed Rate would only be applied to the 500 new beds.
- The black line represents the Desired Bed Rate Increases (2 percent per year) as proposed by University at Albany staff.
- Occupancy was anticipated at the beginning of the 2012-2013 Academic Year. Purchase of project was anticipated at occupancy.
- Column values in 2012-2013 represent what the Bed Rate required would be to make each option self-sufficient, assuming no reserves from prior year rate increases and no reserves from rate increases on other beds in the U at A housing system.

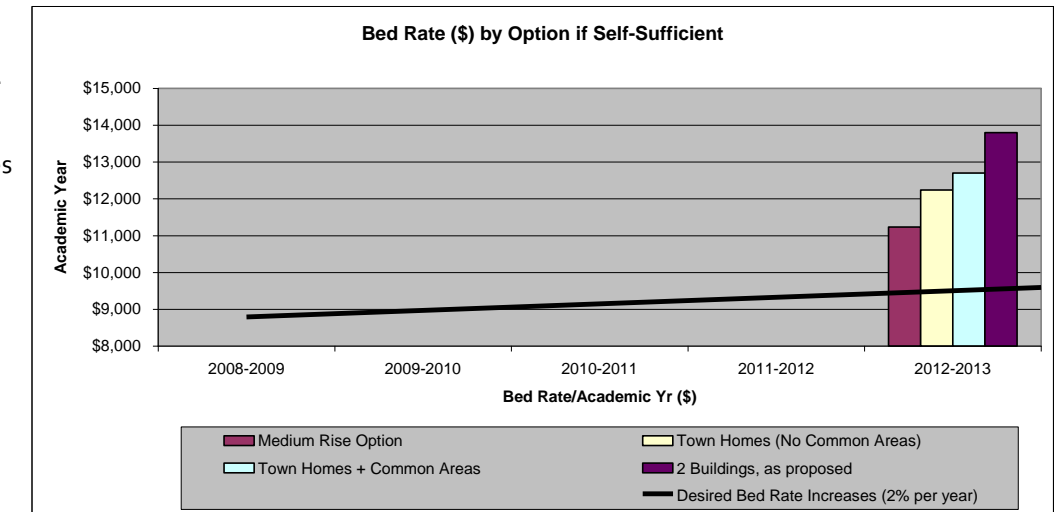
Chart – Bed Rate (\$) by Option if all 6500 U @ A Beds

- This chart assumes that the Bed Rate would be applied to the 500 new beds and also to the 6000 beds (excluding Empire Commons) that are directly owned by the U at A..
- The black line represents the Desired Bed Rate Increases (2 percent per year) as proposed by University at Albany staff.
- Cost increase to provide debt service on the project would be shared by an equal percentage increase on all 6500 beds.

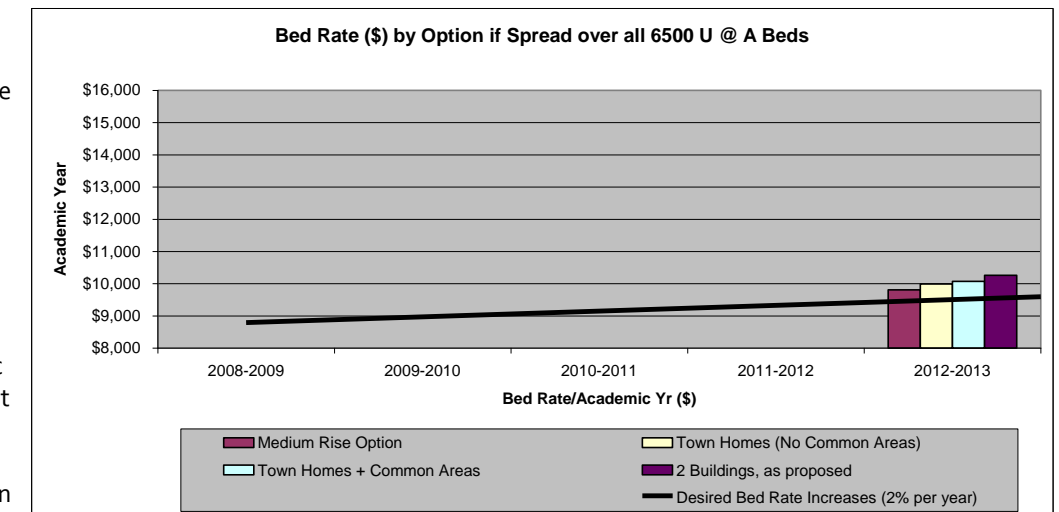
**Observations**

- Both the Town Homes options and the 2 Buildings options would not be financially self-sufficient at or near the desired U at A Bed Rates. However, Bed Rate increases on other beds in the U at A system may make these projects feasible.
- A Medium Rise Program based on Empire Commons with additions for ADA, LEED and durability is closest to economic self-sufficiency. Bed rate increases on other beds in the U at A system could make this project feasible with only modest increases above the desired Bed Rate increase rate of 2 percent.
- Analysis is based on traditional delivery. Schedule and soft costs can be reduced by converting to a design build or developer delivery model, both models will reduce the length of the design and construction schedule by reducing design time and approval process.

Bed Rate (\$) by Option	Bed Rate Escalation per Year	Operating Expense Rate Escalation	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	Total Increase as a % of Current Bed Rate
Desired Bed Rate Increases	2.0%	4%	\$ 8,800	\$ 8,968	\$ 9,142	\$ 9,323	\$ 9,511	8%
Medium Rise Option	6.3%	4%	\$ 8,800	\$ 9,354	\$ 9,944	\$ 10,570	\$ 11,236	25%
Town Homes (No Common Areas)	8.6%	4%	\$ 8,800	\$ 9,557	\$ 10,379	\$ 11,271	\$ 12,241	34%
Town Homes + Common Areas	9.6%	4%	\$ 8,800	\$ 9,645	\$ 10,571	\$ 11,585	\$ 12,698	38%
2 Buildings, as proposed	11.9%	4%	\$ 8,800	\$ 9,847	\$ 11,019	\$ 12,330	\$ 13,798	48%



Bed Rate (\$) by Option	Bed Rate Escalation per Year	Operating Expense Rate Escalation	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	Total Increase as a % of Current Bed Rate
Desired Bed Rate Increases	2.0%	4%	\$ 8,800	\$ 8,968	\$ 9,142	\$ 9,323	\$ 9,511	8%
Medium Rise Option	2.9%	4%	\$ 8,800	\$ 9,041	\$ 9,289	\$ 9,545	\$ 9,810	11%
Town Homes (No Common Areas)	3.4%	4%	\$ 8,800	\$ 9,083	\$ 9,375	\$ 9,677	\$ 9,990	14%
Town Homes + Common Areas	3.6%	4%	\$ 8,800	\$ 9,101	\$ 9,413	\$ 9,736	\$ 10,070	14%
2 Buildings, as proposed	4.2%	4%	\$ 8,800	\$ 9,145	\$ 9,503	\$ 9,875	\$ 10,261	17%



Options considered in cost analysis :

- Medium Rise Program  
This estimate is based on a modification of the Empire Commons project as adjusted for inflation and project size. Additions have been made to the cost to account for the additions to the project to meet the requirements of Executive Order 111, to meet ADA requirements, and to provide improved durability.

Town Homes (No Common Areas)

This estimate is based on the Vassar Town Homes project with no allowance for building "common area" facilities (meeting rooms, etc.).

- Town Homes + Common Areas

This estimate is based on the Vassar Town Homes project *with* an allowance for building "common area" facilities (meeting rooms, etc.).

- 2 Buildings, as proposed

This estimate is based on the original study proposal for 2 buildings on the site, each with 250 beds, and common areas.

Assumptions:

- Baseline, Medium Rise Program – Of the four options being considered, this is the least costly to build. As such, it is the baseline option.
- The total Life Cycle of the study is 60 years. This is the estimated life before replacement of the option with the longest useful life Option 3 (the 2 Building option).
- As currently described, it is believed that there are variations in the useful life of each option, before requiring facility replacement. The Medium Rise Program is estimated at 40 years, the Town Home Options at 40 years, and the 2 Building option at 60 Years.
- Operating costs for the 2 Building option are estimated at 10 percent less than for the other options due to the centralized nature of the facility and increased quality of construction.
- All project costs are as detailed elsewhere in this document.

Table – Life Cycle Costing:

- Initial/Collateral Costs detail the initial construction costs in year 2012-2013 of each option. Since they occur in the initial year, their actual costs equal their present value.
- Replacement costs for Baseline, Option 1 and Option 2 are shown as occurring in year 40. These costs are escalated at 5% to the year in which they occur, and then discounted to the initial year at 10%.
- Annual Costs detail the anticipated operating costs each year escalated at 4% annually and then discounted back to the initial year at 10%.

Observations

- None of the options with a longer useful life generate a positive Life Cycle Cost Present Worth difference when compared to the Baseline option (Medium Rise Program).
- None of the options with a longer useful life generate a lower Annualized Life Cycle Cost than the Baseline option (Medium Rise Program).

Life Cycle Costing - General Purpose Worksheet  
Summation of Costs

					Baseline Medium Rise Program		Option 1 Town House No Common Areas		Option 2 Town House With Common Areas		Option 3 2 Buildings As Proposed	
Study Title: University at Albany 500 Bed Housing Study					Estimated Costs	Present Worth	Estimated Costs	Present Worth	Estimated Costs	Present Worth	Estimated Costs	Present Worth
Discount Rate : 10.0%		Date: October 27, 2008										
Life Cycle (Yrs.): 60 Hurdle Rate: 16.0%												
INITIAL / COLLATERAL COSTS	<b>Initial/Collateral Costs</b>											
	A.	Total Construction Cost			40,371,705	40,371,705	47,066,054	47,066,054	49,995,696	49,995,696	57,080,669	57,080,669
	B.	Architectural/engineering/admin			7,670,624	7,670,624	8,942,550	8,942,550	9,499,182	9,499,182	10,845,327	10,845,327
	C.											
	D.											
	E.											
	F.											
	G.											
	H.											
	I.											
J.												
Total Initial/Collateral Costs					48,042,329	48,042,329	56,008,604	56,008,604	59,494,878	59,494,878	67,925,996	67,925,996
Difference								(7,966,275)		(11,452,549)		(19,883,667)
REPLACEMENT / SALVAGE	<b>Replacement/Salvage (Single Expenditures)</b>											
	A.	Total Construction Cost	Occurance Year -or- Cycle	Inflation/ Escal. Rate	PW Factor	40	5%	0.156	40,371,705	6,279,740		
	B.	Architectural/engineering/admin	40	5%	0.156	7,670,624	1,193,151					
	C.	Salvage Value (Year 60)	60	5%	0.061	(24,021,165)	(1,473,638)					
	D.	Total Construction Cost	40	5%	0.156			47,066,054	7,321,033	49,995,696	7,776,733	
	E.	Architectural/engineering/admin	40	5%	0.156			8,942,550	1,390,996	9,499,182	1,477,579	
	F.	Salvage Value (Year 60)	60	5%	0.061			(28,004,302)	(1,717,994)	(29,747,439)	(1,824,931)	
	G.											
	H.											
	I.											
J.												
Total Replacement/Salvage Costs						5,999,252		6,994,035		7,429,381		
ANNUAL COSTS	<b>Annual Costs (Benefits)</b>											
	A.	Maintenance		Inflation/ Escal. Rate	PW Factor		4%	16.477	2,327,000	38,342,726	2,327,000	38,342,726
	B.											
	C.											
	D.											
	E.											
	F.											
	G.											
	H.											
	I.											
J.												
Total Annual Costs					2,327,000	38,342,726	2,327,000	38,342,726	2,327,000	38,342,726	2,094,300	34,508,453
Sub-Total Replacement/Salvage + Annual Costs (Present Worth)						44,341,978		45,336,761		45,772,107		34,508,453
Difference								(994,783)		(1,430,129)		9,833,525
LIFE CYCLE COSTS	<b>Total Life Cycle Costs (Present Worth)</b>					92,384,307		101,345,365		105,266,985		102,434,449
	Life Cycle Cost PW Difference							(8,961,058)		(12,882,678)		(10,050,142)
	Simple Payback (Years)							N/A		N/A		N/A
	IRR							N/A		N/A		N/A
	MIRR							N/A		N/A		N/A
Total Life Cycle Costs - Annualized					Per Year:	9,268,872	Per Year:	10,167,931	Per Year:	10,561,385	Per Year:	10,277,198

Executive Summary