

System-wide Academic, Residential and Hospital Facilities Profile

The total capacity of all University State-operated campus academic, residential, and hospital facilities exceeds 79 million gross square feet of space, a physical infrastructure equivalent to that of a small city. This supports the daily activities of approximately 218,600 students and more than 61,000 faculty and supporting staff, and contains nearly 2,300 separate buildings, hundreds of miles of roads, millions of square yards of walks and plazas, more than 75,000 residential beds and approximately 1,275 licensed hospital and clinic beds.

Maintaining these assets has become increasingly costly as a result of the age of most facilities. Currently, about 70% of all facilities on State-operated campuses are more than 30 years old, with the average building age exceeding 40 years. The table below profiles State-operated facilities by the total number of buildings, and by the percentage of total gross square feet of space involved in each age category. Data on residential facilities is provided for comparative purposes.

**State University of New York
State Operated Campuses
Profile of Facility Age as of 2008**

	Number of Buildings								TOTAL
	5 years	5-10 years	10-15 years	10-20 years	20-30 years	30-40 years	40-50 years	50+ years	
Academic	73	101	74	100	194	314	467	505	1,828
Hospital	1	2	2	3	1	1	2	1	13
Residential	42	19	1	39	45	101	185	35	467
TOTAL	116	122	77	142	240	416	654	541	2,308

	% age of Gross Square Feet								TOTAL
	5 years	5-10 years	10-15 years	10-20 years	20-30 years	30-40 years	40-50 years	50+ years	
Academic	4%	6%	4%	5%	11%	17%	26%	28%	100%
Hospital	8%	15%	15%	23%	8%	8%	15%	8%	100%
Residential	9%	4%	0%	8%	10%	22%	40%	7%	100%
TOTAL	5%	5%	3%	6%	10%	18%	28%	23%	100%

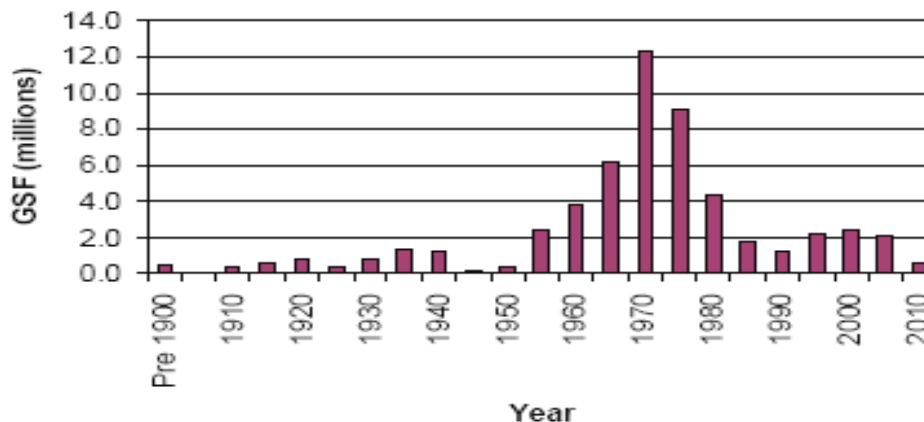
The current estimated replacement value of all State-operated academic facilities – and the vast network of utility systems for water supply, waste removal, electrical, power, heating and cooling distribution that must be maintained in working order for daily operations – was estimated in 2007 to be \$ 25.7 billion. Moreover, the fixed asset value of the University’s total land and building investments to date represents approximately 25% of all State-owned assets, excluding roads and bridges. Given the median age of facilities, combined with the sheer size of and cost to replace the University’s physical plant and infrastructure, sizeable and sustained levels of capital investment are required each year to ensure facilities remain in good repair.

General Background on SUNY Facilities

SUNY's senior colleges consist of 29 State-operated campuses, two contract colleges (Cornell and Alfred Ceramics), and System Administration. The magnitude of the statewide network of facilities comprised by these campuses is substantial, and their educational facilities alone are housed in more than 1,800 major buildings.

The Educational Facilities capital program is the largest of four main capital programs and supports capital improvements for nearly 75 percent of all facilities on SUNY State-operated campuses, involving more than 56 million gross square feet of academic space and its supporting infrastructure, such as underground utilities and power distribution systems.

Most of these structures – some 75 percent – were constructed in a relatively brief span of time during the 1960's and 1970's, as shown in the graph immediately below.



The contemporary impact of this historical growth trend on the University's existing facility network and supporting infrastructure is an accelerating need for renovation and renewal as many of the basic structural components of facilities (e.g. systems for heating and cooling, electrical and plumbing, water and power distribution) in a majority of facilities all reach the end of their useful lives at the same time.

These demographics, allied with the concomitant need for the University to remain competitive by maintaining and selectively upgrading the scope and quality of its facilities, has resulted in the current need for substantial and sustained levels of capital re-investment – often termed “critical maintenance” during the coming decade.

Preparation for 2008-13 Capital Program Plan and Future Years: Identification of Critical Maintenance Capital Needs

In 2007, to prepare for development of a new 5-Year 2008-13 Educational Facilities Capital Plan request, the University, in conjunction with the State University Construction Fund (SUCF), launched several intensive planning efforts simultaneously. A major goal of these efforts was to improve the University's ability to forecast future capital investment needs to more proactively manage its portfolio of facilities. These efforts included:

- 1) **Updating statewide academic facility condition assessments** to ascertain current critical maintenance backlogs (facility components already in need of repair or replacement) and to quantify future capital renewal needs to avoid additional backlogs;
- 2) Commissioning **an independent study** to help quantify appropriate capital investment levels to address backlogs and improve methods for projecting future cyclical capital renewal needs; and
- 3) **Develop prioritized critical maintenance project plans for each campus** using the information obtained from the condition assessments and relevant need indicators derived from the special study cited above.

Each of these efforts is described in more detail below, highlighting their respective contributions to development of the critical maintenance portion of the new 2008-2013 Educational Facilities Capital Plan.

1) Building Condition Assessment Survey (BCAS)

In the spring of 2007, a multi-disciplinary team of SUCF staff collaborated on the design of a standardized instrument for assessing the condition of buildings and their supporting infrastructure systems, and developed a comprehensive set of procedures for conducting the assessment reviews. Armed with these tools, additional teams composed of SUCF staff and campus facility management professionals surveyed the condition of all major academic buildings on State-operated campuses. In this process, trained staff assigned “poor”, “fair”, “good” and “excellent” ratings to more than 55 discrete building, site and infrastructure components; these efforts captured up-to-date information on the state of repair of nearly 98% of the total educational facility space.

A main objective of the BCAS effort was to quantify the most urgent capital critical maintenance needs of the University's State-operated academic facilities, with a primary emphasis on identifying the outstanding backlog of critical maintenance needs requiring priority attention.

The primary benefits accruing from the BCAS include:

- assisting SUNY administration and campus managers in the process of developing and prioritizing discrete critical maintenance project plans for the next 5-10 years;
- establishing a common methodology for updating condition assessments in future; and
- providing a core database of current facility condition and related cost information to support improvements in the University's ability to forecast future capital needs.

In addition, the 2007 BCAS effort provided information integral to successful completion of the capital needs study performed by the Pacific Partners Consulting Group, Inc. under the direction of the Rockefeller Institute of Government, described in the following section.

2) Study: "Analyzing SUNY Facility Renewal and Backlog Needs"

With very few external benchmarks to guide planning, an ongoing challenge has been to quantify the size, nature and timing of capital investments needed to keep SUNY's aging facilities in a state of good repair.

To meet this challenge, in June 2007 the University, in conjunction with SUCF, commissioned the Nelson A. Rockefeller Institute of Government to secure and coordinate an independent analysis of the ongoing capital renewal needs of its State-operated campus educational facilities, and at the same time, to provide additional benchmarking information to compare SUNY's experience and capital needs estimates with those of other major public higher education systems.

The Institute secured the services of the Pacific Partners Consulting Group, Inc. (PPCG) to perform this study and to issue a final report of findings and recommendations in time to inform the development of the new 5-Year Capital Financing Plan.

The basic purposes of this study included:

- An assessment of capital reinvestment methodologies and their application for public higher education systems;
- Use of current SUNY/SUCF data to assess backlog and capital facility renewal needs;
- Analysis of higher education industry standards for annual capital reinvestment and deferred maintenance;
- Benchmarking of SUNY capital needs against its public higher education system peers; and
- Providing an independent analysis and objective measures to determine appropriate levels of ongoing capital reinvestment requirements for SUNY's academic facilities.

The study examined the strengths and weaknesses of several different models for determining capital reinvestment levels and chose “*The Life Cycle Model Based on Current Replacement Value (CRV)*” to conduct the analysis. This model has been used to assess the capital needs of several other major public higher education systems, and generates a high-level statistical overview of current facility renewal needs and any accumulated backlogs based on institution-specific information, including: the age and type of building and its current condition; average building sub-system life cycles; related infrastructure support needs; and the current cost of replacement, adjusted to control for regional cost differences within the State. Ultimately, the model produces estimates of current capital maintenance backlogs and provides forecasts of further capital renewal needs over a minimum 5-10 year renewal schedule.

(Full copies of this study are available from the Construction Fund upon request.)

Key findings and recommendations flowing from this study include:

- **SUNY Asset Value.** SUNY State-operated educational facilities, including buildings and supporting infrastructure, carry a current replacement value of \$25.7 billion as of 2007 – by far the most extensive system of five other peer systems evaluated by PPCG;
- **Capital Needs Factors.** Two prominent factors which drive higher renewal costs and create backlogs are 1) the percentage of buildings with complex systems (such as science or research lab facilities) and 2) the overall age of facilities. Two key findings from this study are important for future capital investments in SUNY academic facilities: compared to other public higher education systems, *SUNY is currently at the lower end of the complexity scale*, but at the higher end with regard to facility age. Moreover, with 73% of its facilities more than 30 years old, and an average building age in excess of 40 years, the SUNY system rivals only the University of California (75% of facilities are 30+ years) for age of facilities;
- **Backlog Assessment.** As of 2007, SUNY facilities are faced with a deferred capital maintenance backlog of \$3.2 billion and additional sizeable annual capital renewal needs in order to avoid the accumulation of additional backlogs. To address both backlog and renewal, the study recommended an annual investment level of \$400 to \$700 million depending on how quickly the backlog is to be reduced. These substantial levels of aging capital investment needs are understandable given the fact that most of the University’s State-operated facilities were built in a brief period of time during the late 1960’s and 1970’s and currently the vast majority (77% of total gross square footage) of facilities now exceed 30-years of age. *(Important note: all cost estimates contained in the study are expressed in 2007 dollars for ease of comparison; they do not include adjustments for out-year project cost escalation.)*
- **Infrastructure Concerns.** Of the total backlog, some \$695 million is specifically related to poor conditions in the infrastructure subsystems supporting facility operations. This area of need was the most serious concern identified by the study – especially that of aging underground distribution systems – because persisting problems in this area could lead to even more extensive and expensive emergency repairs occasioned by major system failures;
- **Achieving a State of Good Repair.** Based on experiences with other public higher education systems, the study recommends that, to consider a system to be in reasonably good condition, its total deferred maintenance backlog should be less than 5% of its current replacement value. Because SUNY’s current backlog of \$3.2 billion represents about 11% of its CRV, the study recommends that the University and the State develop a long-range capital investment strategy with the dual (and highly inter-related) goals of reducing current backlogs within a reasonable timeframe and preventing the accumulation of additional backlogs by re-investing in facility renewal on a timely basis.

3). Development of Multi-year Campus Critical Maintenance Project Priorities

At the same time that SUCF and campus facility staff were involved in comprehensive on-site facility condition assessments, they were also working on the development of specific project inventories that would form the basis for the next 5-year program of critical maintenance activities.

A primary objective was to address the facilities or facility components in greatest need of attention. This could include nearly all building and infrastructure elements deemed to be in poor condition, and/or those building fixtures or systems which, because of their relative importance to keeping buildings open and functioning, should not be allowed to fall much below a “fair” condition rating.

The cost of each project was estimated based on detailed historical information maintained by the SUCF, and project priorities were then assigned by campuses based not only on relative conditions, but also with consideration for campus-specific circumstances affecting project implementation and sequencing, such as the availability of surge space to accommodate students and faculty during the conduct of major space renovations or wholesale building rehabilitation efforts.

A total of \$6.5 billion in critical maintenance projects was identified, addressing both backlog and annual renewal requirements that could be reasonably estimated for the next 5 to 10 years. Of this amount, after accounting for about \$500 million in capital funding authorizations available from prior authorizations to improve conditions rated as poor, the University received a net total of \$2.75 billion in new critical maintenance funding under the new 5-year Capital Plan. Under the provisions of the Plan enacted in 2008, this amount will be provided in annual installments of \$550 million per year with the intention to address the highest priority need areas assigned by campuses and identified in recent condition surveys and the CRV study, such that, with substantial funding augmentations over the subsequent two 5-year Plans, SUNY can gradually reduce existing critical maintenance backlogs by an estimated 50% over the next 15 years.