

# **Legacy Buildings: Analysis & Strategic Choices**

**University of Massachusetts  
Amherst**



# *Legacy Buildings: Analysis and Strategic Choices*

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## ***Acknowledgements***

The analysis and recommendations of this report were developed by a task force comprised of the following individuals:

Joyce Hatch      *Vice-Chancellor of Administration & Finance*

Robert Francis    *Associate Vice-Chancellor for Facilities & Campus Services*

James Cahill      *Director of Facilities & Campus Planning*

Patrick Daly      *Director of Physical Plant*

Donald Robinson *Director of Environmental Health & Safety*

Daniel McCarthy *Assistant Director, Physical Plant*

Edward Mientka   *Manager of Campus Safety & Fire Prevention, Environmental Health & Safety*

Clifford Resnick *Assistant Director, Facilities & Campus Planning*

The task force acknowledges the work of Clifford Resnick for organizing and presenting the information in a clear and concise manner.

The Historical Building Survey report (Appendix A) was developed by Cynthia Arbour, Physical Planner, Facilities & Campus Planning.

The task force also acknowledges the assistance of staff in all of their departments and the work of outside consultants involved in developing the building reports and other background data.

## *Executive Summary*

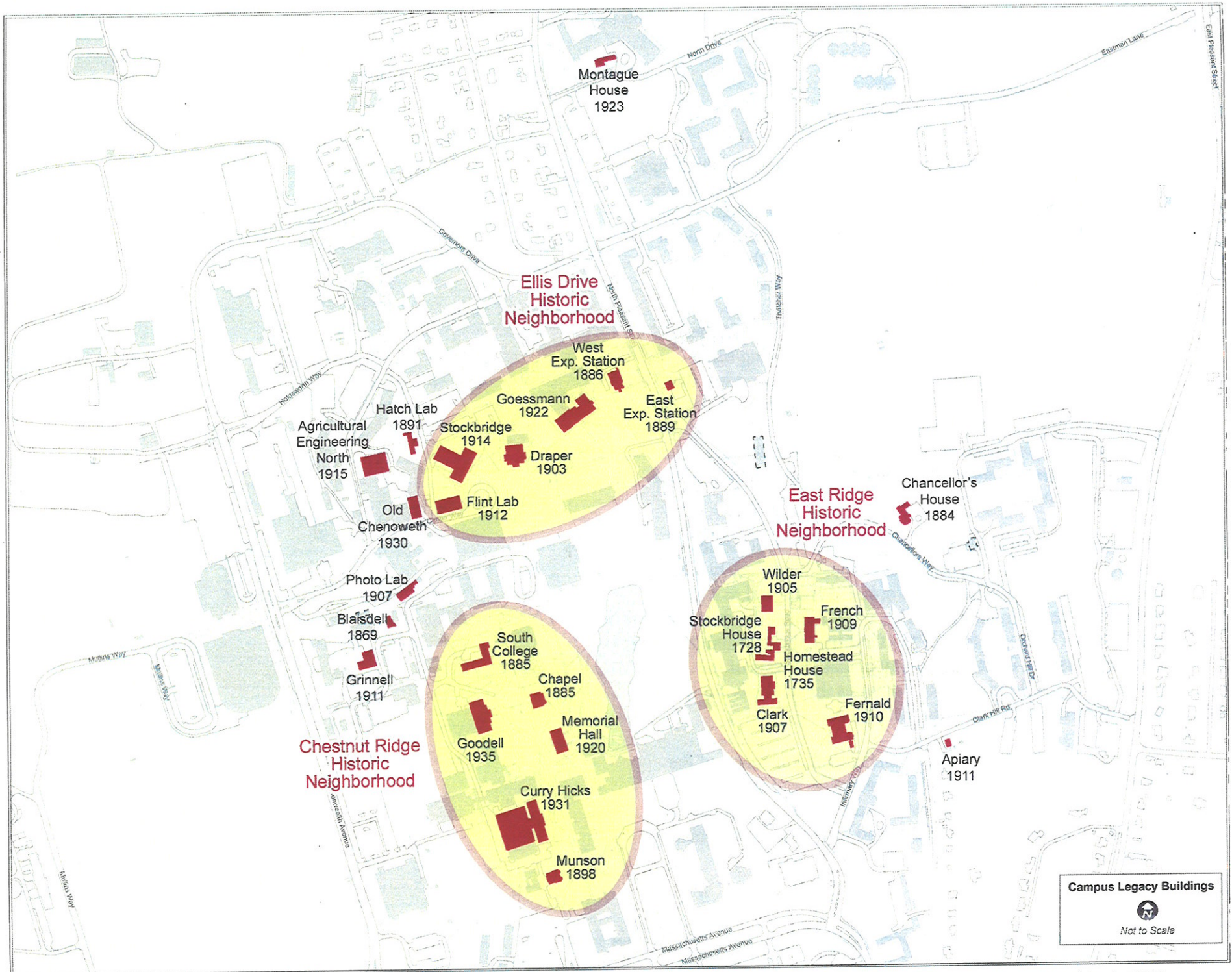
The UMass campus has a number of older, “legacy” buildings. Some of these buildings have significant historic importance for the campus while others may have less pure historical value but may be fine examples of the architecture of their time or occupy a significant location on campus. Together they represent the University’s early years, its physical “roots”.

With the deterioration that has occurred over time in these buildings and the challenges presented by keeping these buildings in conformance with modern building codes, the University is now at a decision point. The combined cost for the renovation of all the core legacy buildings is approximately \$200 million. Unfortunately, the continuing deterioration in these buildings requires that actions be taken and some tough decisions be made.

In response to this challenge, a task force of senior staff responsible for facilities and campus health and safety was charged with developing the information required to support thoughtful decision making. This work included completing assessments of the history of the facilities, the key maintenance and safety issues in each, and a financial analysis of the options. The following report includes the analysis completed along with strategic choices for action.

The choices focus on maintaining as many of the buildings as possible, protecting the health and safety of the occupants, and conducting further analysis on key building systems in order to better understand how to preserve them for future generations.





**Campus Legacy Buildings**

⬆

Not to Scale

## ***Introduction***

The UMass campus has a number of older, “legacy” buildings. Some of these buildings have significant historic importance for the campus while others may have less pure historical value but may be fine examples of the architecture of their time or occupy a significant location on campus. Together they represent the University’s early years, its physical “roots”.

Unfortunately, due to their age as well as a historical lack of funding and attention, each has a significant backlog of deferred maintenance and none is in full compliance with current building codes, especially accessibility requirements. This report includes an assessment of each of these structures in regard to their liabilities. Many are quite small by current building standards, presenting a significant challenge for reuse in terms of both function and economics.

The University now faces the question of what to do with each of these individually as well as how to approach the common issues presented by all of them as a group. This analysis has been compiled to support this decision-making process and includes documents which provide a brief introduction to the legacy buildings, summarizes the positive attributes and liabilities of each, and proposes strategic choices for the disposition of each structure – whether it should be renovated (and for what), continued to be operated in its current condition, be “mothballed”, or be demolished. Also included are the Historical Building Survey developed in June 2005, and “order of magnitude” estimated costs for major renovations, all in current dollars to allow for side-by-side

comparisons of buildings. Any actual construction project will occur at some point in the future and the estimates should therefore be escalated, using an appropriate factor, to the mid-point of construction.

In almost all cases, the value of a complete renovation exceeds the Commonwealth’s “replacement value” as listed in CAMIS (Capital Asset Management Information System). While this may suggest that renovation is not a viable option, it should be noted that these buildings are typically undervalued, given the materials and detailing used which are no longer economically feasible. In addition, the inherent value these older structures have for the campus is significant even if it is difficult to quantify.

Some of the legacy buildings, most notably Old Chapel, may qualify for inclusion on the National or Massachusetts State Register of Historic Places. Designation as a “partially preserved building” could afford the University some flexibility by permitting the replacement of individual components of existing systems without conforming to current code and exempting the facility from meeting energy code requirements. Typically this latitude will facilitate the preservation of the quality and integrity of the buildings, not necessarily reduce total project cost.

## *Process*

### Historical Assessment

The first step in the University's comprehensive assessment of its legacy buildings was the development of a historical survey of campus and building development (see Appendix B).

This study begins by tracing the growth of the campus from its origins as Massachusetts Agricultural College in the late 1860's through its years in the 1930's and 40's as Massachusetts State College to the present-day University of nearly 10 million square feet. It then focuses on three distinct areas of early development – Chestnut Ridge (west of the Campus Pond), East Ridge (along Stockbridge Road) and Ellis Drive (specifically that area north of the Campus Center) – and the legacy buildings that exist today in each of these areas. The report documents the architects and construction dates for each of these buildings as well as a brief assessment of the building's significance, architecturally, historically, and within the physical context of the campus. The study includes period photographs showing each building as it was originally used and in the context of the campus at the time it was constructed.

This study provided an essential basis for the further evaluation of each building and a clear picture of the role each building played in the overall development of the campus.

### Evaluation of Existing Conditions

The University collected and analyzed data on each facility in order to understand its use, its physical deficiencies, and the specific challenges and opportunities each presented for continued use. The tables on pages 7-8 summarize the basic information about the facilities, including original use, current users and uses, and building area.

The base information on the physical deficiencies was gathered as part of an overall campus assessment of facilities conducted by Sightlines, LLC in 2006, which was an updating of previous assessment work conducted over the past 10 years. (See Appendix A for the detailed data).

In-depth building studies have been developed as well for some of the legacy buildings, including Old Chapel, South College, and West Experiment Station. These documents, developed by architectural and engineering consultants working with Facilities & Campus Planning, provide both detailed analysis, design proposals, and cost estimates for the possible adaptation and reuse of these buildings.

In addition to the reports noted above, Physical Plant and Environmental Health & Safety have conducted reviews of specific repairs and safety concerns in the legacy buildings. These provided significant information on those structures not covered by in-depth studies.

**Legacy Buildings - Summary Data**

<b>Chestnut Ridge Historical Area</b>							
<i>Building</i>	<i>Year Built</i>	<i>Architect</i>	<i>Original Use</i>	<i>Current Uses</i>	<i>Current Users</i>	<i>Assignable Area (NASF)</i>	<i>Gross Area (GSF)</i>
<b>South College</b>	1885	William Brocklesby	Dormitory	Video studio/editing, Classroom, Offices, Service/support	Linguistics, Dean of Humanities & Fine Arts, Communications, Mass Review, Anthropology, Mail Services, Library	19,646	31,093
<b>Chapel</b>	1886	Stephen Earle	Campus library and assembly space	Vacant	None	NA	14,208
<b>Munson Hall</b>	1898	Emory A. Ellsworth	Veterinary lab	Offices	Community Relations, News Office, Creative Services, UMass Magazine, Communications & Marketing	8,332	13,425
<b>Memorial Hall</b>	1921	James H. Ritchie	Student center	Offices	Development Office, Alumni Association	12,822	19,226
<b>Hicks Physical Education Bldg.</b>	1931	Morse & Dickinson	Physical education	Gymnasium, Pool, Locker Rooms, Offices	Fine Arts Center Administration, Athletics	16,050	23,460
<b>Goodell Hall</b>	1935	Morse & Dickinson	Campus library	Offices, Computer Lab, Assembly	Graduate Dean, Career Network, Undergrad. Advising & Academic Support VC of Student Affairs & Campus Life	20,489	34,323
<b>East Ridge Historical Area</b>							
<i>Building</i>	<i>Year Built</i>	<i>Architect</i>	<i>Original Use</i>	<i>Current Uses</i>	<i>Current Users</i>	<i>Assignable Area (NASF)</i>	<i>Gross Area (GSF)</i>
<b>Wilder Hall</b>	1905	Walter R. B. Willcox	Landscape Arch program.	Offices	Bilingual Collegiate Program, Everywoman's Center	6,774	10,534
<b>Clark Hall</b>	1907	Cooper & Bailey	Botany classes	Offices, Research Labs, Art Studios	Plant, Soil, & Insect Science, Biology, Art	11,858	20,203
<b>French Hall</b>	1909	James H. Ritchie	Horticultural research	Classrooms, Offices, Class & Research Labs	Plant, Soil, & Insect Science	13,015	20,293
<b>Fernald Hall</b>	1910	Clarence P. Hoyt	Entomology program	Classrooms, Offices, Class & Research Labs	Plant, Soil, & Insect Science	21,382	37,774
<b>Stockbridge &amp; Homestead Houses</b>	1728/ 1731	NA	Residences	Restaurant	University Club	6,744	8,748



## Legacy Buildings - Summary Data

<b>Ellis Drive Historical Area</b>							
<i>Building</i>	<i>Year Built</i>	<i>Architect</i>	<i>Original Use</i>	<i>Current Uses</i>	<i>Current Users</i>	<i>Assign. Area (NASF)</i>	<i>Gross Area (GSF)</i>
<b>West Exp Station</b>	1887	Emory A. Ellsworth	Agricultural Experiment Station	Soil Testing Labs, Offices	Umass Extension	9,336	14,229
<b>East Exp Station</b>	1890	Emory A. Ellsworth	Agricultural Experiment Station	Offices	University Press	2,882	5,863
<b>Draper Hall</b>	1903	Emory A. Ellsworth	Dormitory, Dining Commons	Offices, Classroom	Environmental Health & Safety, Art, Social & Behavioral Science Dean, Natural Resources Conservation	17,501	31,731
<b>Flint Laboratory</b>	1912	James H. Ritchie	Dairy processing research	Classrooms, Offices, Classroom Lab	Hospitality & Tourism Management	18,375	29,851
<b>Stockbridge Hall</b>	1914	James H. Ritchie	Agricultural Department, Assembly Space	Classrooms, Offices, Research Labs, Assembly	Natural Resources & the Environment Dean, Resource Economics, Vet. & Animal Science, Plant, Soil & Insect Science, Fine Arts Center	44,686	70,929
<b>Goessmann Laboratory</b>	1922	James H. Ritchie	Chemistry Department	Classrooms, Offices, Class & Research Labs	Chemistry, Chemical Engineering, Environmental Institute	27,750	57,140

## Discussion of Key Issues

In a series of meetings, the task force reviewed the accumulated data on each building and discussed each in terms of the following criteria:

- Architectural significance
- Historical & emotional significance
- Safety issues
- Maintenance concerns
- Current status of the roof (fundamental to the structure, regardless of what other work may be required)

The *Assessment & Strategic Choices* table on pages 10-13 highlights the most important information on each building for each of the above criteria.. In addition the *Summary of Deficiencies and Attributes* table on pages 14-15 graphically summarizes data about deficiencies and building attributes that are relevant to determining the future disposition of each facility.

In addition to those legacy buildings outlined in the Historical Building Survey, this discussion and analysis process was expanded to include other older structures on the campus that either did not reside within the confines of one of the historical areas or were of lesser historical significance.

## Legacy Buildings - Assessment & Strategic Choices

### Chestnut Ridge Area

<b>Building</b>	<b>Architectural significance</b>	<b>Historical/emotional significance</b>	<b>Safety choices</b>	<b>Maintenance choices</b>	<b>Roofing status</b>
<b>South College</b>	No	Yes; one of the oldest campus buildings	Being assessed. Consider addition of a sprinkler and/or fire alarm system	Repair roof.. Do not expend maintenance dollars beyond those required for health & safety.	Shingles have split; not leaking yet. Priority to address. \$400K.
<b>Chapel</b>	Yes	Yes; icon of the campus; one of the oldest buildings on campus; first library.	Maintain security.	Keep painted and maintain envelope.	Roof good for at least 10 years.
<b>Munson Hall</b>	Yes	Yes	Update fire alarm system.	Repair or remove chimney. Abate lead paint & asbestos.	Roof needs to be replaced. \$300K
<b>Memorial Hall</b>	Yes	Yes; war memorial, gift of alumni	Evaluate electrical system and add a fire alarm system. Consider adding sprinklers.	Preserve envelope. Address basement ventilation/IAQ issues.	Replace roof within next 5 years.
<b>Hicks Physical Education Building</b>	No	No; support space for cage which does have continuing value	No significant issues at this time	Abate asbestos. Upgrade building systems.	Roof good for 15 years.
<b>Goodell Hall (not incl. addition)</b>	Yes	Yes; 2nd campus library; prominent location	Add sprinkler system.	Replace roof. Address mechanical issues in attic.	Top priority to replace roof.

## Legacy Buildings - Assessment & Strategic Choices

### East Ridge Area

<b>Building</b>	<b>Architectural significance</b>	<b>Historical/emotional significance</b>	<b>Safety choices</b>	<b>Maintenance choices</b>	<b>Roofing status</b>
<b>Wilder Hall</b>	Yes	Yes, 1st building in US built specifically for Landscape Architecture program	Upgrade fire alarm system; review means of egress.	Renovate restrooms; electrical system OK; no major issues.	Roof surface is sound, supporting structure requires repair and reinforcement.
<b>Clark Hall</b>	Yes	Yes, part of Stockbridge Road building cluster	Keep 3rd floor closed; consider upgrade of smoke detectors.	Replace windows.	Roof needs to be replaced within 2 years. \$200K.
<b>French Hall</b>	Yes	Yes, part of Stockbridge Road building cluster	Review viability of continued lab use; consider fire alarm upgrade and sprinkler system	No major issues.	Roof is less than 10 years old and is in good condition
<b>Fernald Hall</b>	Yes	Yes, part of Stockbridge Road building cluster	Review viability of continued lab use; provide make up air for hoods if they are to remain. Fire alarm upgrade complete; review means of egress issues.	Improve electrical distribution (building has significant electrical capacity). Replace 1-pipe heating system.	Roof is less than 10 years old and is in good condition
<b>Stockbridge &amp; Homestead Houses (not incl. Shade Tree Lab)</b>	Yes	Stockbridge is oldest house in Amherst; home to University Club	No major issues. Has fire alarm and dry-pipe sprinkler systems.	Address electrical distribution problems and structural issues on west side of Stockbridge. Abate asbestos.	Roof needs to be replaced within 5 years.

## Legacy Buildings - Assessment & Strategic Choices

### Ellis Drive Area

<b>Building</b>	<b>Architectural significance</b>	<b>Historical/emotional significance</b>	<b>Safety choices</b>	<b>Maintenance choices</b>	<b>Roofing status</b>
<b>West Experiment Station</b>	Yes	Yes	Replace fire alarm system; add smoke detection.	Replace roof and damaged portions of ceiling. Upgrade electrical system.	Roof has failed.
<b>East Experiment Station</b>	Yes	Yes	Fire alarm system was recently upgraded. Maintain very low occupancy on 2nd floor.	Review ventilation in basement related to steam tunnel. No other major problems.	Roof is good for 10 years
<b>Draper Hall</b>	No	1st women's dormitory on campus	Upgrade fire alarm system; add smoke detection. Abate mold problems at basement wall failures.	Architectural maintenance needed; replace front steps. Upgrade mechanical ventilation and electrical distribution system. Address basement moisture infiltration.	Roof needs replacement within 10 years
<b>Flint Hall</b>	No	No	Add fire alarm system and emergency lighting.	Replace 1-pipe heating system and roof. Other systems OK.	Roof needs replacement now, \$430K
<b>Stockbridge Hall</b>	Yes	Physical/emotional home of agriculturally-based programs, now College of Natural Resources & the Environment	Address inadequate fire separation between auditorium and research labs below. Add fire suppression system.	Replace windows.	Good condition, recently replaced.
<b>Goessmann Laboratory (original building)</b>	No	No	Address fire separation at stair doors. Building has new fire alarm system, install fire suppression system.	Renovate auditorium; upgrade ventilation system. Hood exhaust system was recently upgraded.	Roof is good for 10 years

## Legacy Buildings - Assessment & Strategic Choices

### Other Buildings

<b>Building</b>	<b>Architectural significance</b>	<b>Historical/emotional significance</b>	<b>Safety choices</b>	<b>Maintenance choices</b>	<b>Roofing status</b>
<b>Chancellor's House (Hillside)</b>	Yes	Yes	Replace fire alarm system.	None at this time.	Roof is good for at least 5 years.
<b>Apiary</b>	No	No	Keep fume hood out of service. Address water infiltration/mold, ventilation. Close off 2nd floor except restroom.	Repipe plumbing; upgrade electrical service; apply finish to walls.	Roof is good for 5 years.
<b>Hatch Lab</b>	No	No	Keep basement closed, review means of egress.	Replace windows; upgrade electrical system.	Slate roof needs replacement.
<b>Chenoweth (original building only)</b>	No	No	Provide eyewash stations and safety showers in labs where chemicals are used.	Upgrade electrical; replace windows and doors; address ventilation concerns.	Roof is good for at least 5 years.
<b>Agricultural Engineering North</b>	No	No	Address ventilation concerns; install additional firestopping.	Replace windows and doors.	Roof is good for 5 years.
<b>Blaisdell House</b>	No	No	Review means of egress.	Re-sided a few years ago. No significant problems	Roof good for 15 years.
<b>Montague House</b>	No	No	Review means of egress.	Upgrade electrical system.	Roof needs replacement.
<b>Grinnell Arena</b>	No	No	Good condition except for Abattoir, which should be removed.	Good condition except for Abattoir, which should be removed.	Roof is good for at least 5 years.
<b>Photography Laboratory</b>	No	No	Upgrade fire alarm system; add smoke detection. Close off 2nd floor.	Remedy flooding problem. Review electrical system.	Roof needs to be replaced within 5 years.



## Legacy Buildings -- Summary of Deficiencies and Attributes

		Major Building Deficiencies															Major Building Attributes										
		Bldg. Code/Use								Envelope/Interior					Systems		Historical Value	Significant Location	Architectural Distinction	Notable Space	Compatible Use As Is	Integral to other buildings					
Building Name	Building egress	Fire Alarm	Auto Fire Suppression	Emergency Power/Light	Inappropriate Use	Accessible Entrance	Accessible Toilets	Elevator	Roof	Exterior Masonry/ Struct	Windows & Doors	Foundation Drainage	Interior Finishes	Ventilation & Exhaust	Water & San. Waste	Electrical Service/ Light							HVAC & Controls	Fixtures & Equipment	Asbestos Pipe/ VAT		
Chestnut Ridge	South College	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	
	Chapel	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	Munson Hall	X	X	X	X		X	X	X	X	X	X	X	X	X	X				X			X	X		X	
	Memorial Hall	X		X	X				X	X	X	X	X	X	X		X	X		X		X	X	X	X		
	Curry Hicks	X	X	X	X		X	X	X	X	X	X	X	X	X	X			X	X			X			X	
	Goodell Hall			X		X				X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
East Ridge	Wilder Hall	X	X		X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		
	Clark Hall	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
	French Hall	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X				
	Fernald Hall	X		X		X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X				
	Stockbridge/Homestead Houses	X	X		X	X		X	X	X	X	X	X	X	X	X	X	X		X		X	X	X			X
Ellis Drive	West Experiment Station	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	East Experiment Station	X	X	X			X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X		X		
	Draper Hall	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X		
	Flint Hall	X	X	X	X		X	X	X	X	X	X	X	X			X	X	X	X		X			X		
	Stockbridge Hall	X		X		X					X	X	X	X	X	X		X	X	X	X	X	X	X	X		
	Goessmann Laboratory	X	X		X	X			X	X	X	X	X	X	X	X	X	X	X	X		X				X	

See the following sheet for definitions of each of the above terms

**Deficiency and Attribute Definitions:**

<b>Bldg. Code/Use</b>	<i>Building Egress</i>	Current exit corridors, stairs and doors do not provide egress as per requirements of the MA State Building Code.
	<i>Fire Alarm</i>	Fire alarm does not meet code requirements for zoning, smoke detectors, audio/visual alarm units &/or pull stations
	<i>Auto Fire Suppression</i>	A new building of this use and construction would require sprinkler protection, which is currently lacking.
	<i>Emergency Power/Light</i>	Emergency power supply, signage and/or lighting is inadequate and/or does not meet code requirements.
	<i>Inappropriate Use</i>	Although current use may be allowed given building history, existing systems no longer support hazardous uses
	<i>Accessible Entrance</i>	Building entrance does not meet requirements of the Architectural Access Board.
	<i>Accessible Toilets</i>	There are no toilets that allow access according to the requirements of the Architectural Access Board.
	<i>Elevator</i>	The building does not have an elevator that is either functional or accessible.

<b>Envelope/Interior</b>	<i>Roof</i>	Roofing materials, flashings, gutters, leaders and/or chimneys leak and are in need of repair or replacement
	<i>Exterior Masonry/ Struct</i>	Masonry walls, bldg/roof structure and/or stairs require re-pointing, structural repair, levelling and/or joint repair.
	<i>Windows &amp; Doors</i>	Existing windows, doors and hardware are damaged, aged, need repainting, don't close properly and/or leak air
	<i>Foundation Drainage</i>	Ground or storm water penetration of the building through foundation walls and/or along interior walls
	<i>Interior Finishes</i>	Deteriorated areas of finish on wall, ceiling and floor such as plaster, wood, ceramic tile, ACT, VAT or other finishes

<b>Systems</b>	<i>Ventilation &amp; Exhaust</i>	Inadequate quantity of outdoor air, exhaust air, failing unit ventilators and/or other HVAC and lab equipment
	<i>Water &amp; San. Waste</i>	Failing water and sanitary waste piping, equipment, and/or non-compliant comingling of potable and lab service
	<i>Electrical Service/ Light</i>	Building electrical service, distribution, panelboards, transformers and/or lighting are inadequate.
	<i>HVAC &amp; Controls</i>	Existing heating, ventilating or A/C systems are inadequate and/or lack temperature controls
	<i>Fixtures &amp; Equipment</i>	Toilets, lavatories, sinks and other building and/or lab service equipment are at the end of their economic life.
	<i>Asbestos Pipe/ VAT</i>	Damaged and/or deteriorated asbestos pipe covering and/or vinyl asbestos tile

<b>Attributes</b>	<i>Historical Value</i>	The age, original use, name, or funding provides a significant memorial to the University's history.
	<i>Significant Location</i>	The building's location is critical to the fabric of the campus and the environs.
	<i>Architectural Distinction</i>	The design or materials used in construction make the building unique to the campus or the region.
	<i>Notable Space</i>	One or more interior spaces have unique or otherwise special features.
	<i>Compatible Use As Is</i>	The existing use is compatible with the building's highest and best use.
	<i>Integral to other buildings</i>	The building is physically connected to another University building such that its removal would be problematic.

## ***Strategic Choices***

Based on these discussions and data, the Task Force developed strategic choices for action for of each building, addressing, in some cases, both short-term and long-term solutions. The resulting analysis is included on pages 18-21, *Strategic Choices for Action*.

The choices for action on each building were developed in a series of steps. The first step was assessing whether or not it was in the best interests of the University to keep the building for the long term. This involved considering the significance of the building to the campus, the current deficiencies and safety concerns, the capital requirements of repair and renovation, and what the asset offered the institution in terms of usable space, both as is and if renovated. Defining a building as “not a keeper” was only done when the consensus view, based on the available data and analysis, was that the required investment exceeded the value, financial and otherwise, of the asset.

The next step was suggesting choices for action for each building, whether to continue to use as is or to close immediately or in the near future. Finally, there was consideration of relative priority, both financially and in terms of health and safety, in order to determine what the most pressing needs were and how to fund the choices. For example, the Task Force suggests for choices that South College be depopulated immediately, made safer with minimal investment, restricted in use, and ultimately demolished in favor of a new structure; that Old Chapel be preserved until

such time as it can be renovated utilizing private funds; and, that Goessmann Laboratory continue to be used but be converted to less system-intensive uses over time.

The categories used in *Strategic Choices for Action* are taken from the campus-wide building-by-building condition assessment, of which this report is an appendix. The six categories are defined as follows (not all apply to the legacy buildings):

1. Keep Up – Little or no deferred maintenance; no modernization required.
2. Catch Up & Keep Up – Some maintenance has been deferred but the spaces and building systems are not yet in need of renewal..
3. Keep & Renew – Significant maintenance has been deferred and space or systems need significant renewal.
4. Defer & Do Not Reinvest -- Significant maintenance has been deferred and both space and systems need significant renewal. Buildings on a disposal cycle.
5. Secure & Protect – Significant maintenance has been deferred and both space and systems need significant renewal. Building has significance worth protecting until renewal and modernization is possible.
6. Dispose & Replace – Qualitative considerations do not outweigh the impracticality of further investment in the asset.

In order to more clearly define the choices facing the University take each building, specific short-term action steps were developed. These can provide the campus with the roadmap to continue to protect both the buildings and their occupants. In most cases, the actions to be taken would provide needed information and make necessary repairs to keep the buildings functioning in the short-term so that the university can engage in the capital planning and fundraising required to achieve the longer-term goals for these structures.

## Legacy Buildings - Assessment & Strategic Choices

### Chestnut Ridge Area

<b>Building</b>	<b>Proposed category</b>	<b>Strategic Choices</b>	<b>Short-term Actions</b>
<b>South College</b>	Dispose & replace	Relocate current occupants and demolish within next 7-10 years. Provide minimal repairs to maintain occupancy. Review requirements for occupant safety and implement required improvements. Library loading dock and access to it must be maintained.	<ul style="list-style-type: none"> <li>▪ Investigate current electrical system..</li> <li>▪ Investigate upgrade of current fire alarm/exit and emergency lights.</li> <li>▪ Remove combustible materials.</li> <li>▪ Clear Egress paths.</li> <li>▪ Evaluate existing FA system.</li> <li>▪ Relocate occupants in basement to existing campus space.</li> <li>▪ Investigate relocating teaching laboratories to existing campus space.</li> <li>▪ Install fire doors in library tunnel. Limit use to floors 1-3.</li> </ul>
<b>Chapel</b>	Secure & protect	Remain unoccupied at this time. Renovate for public use & assembly when private funding is available.	<ul style="list-style-type: none"> <li>▪ Preserve Asset</li> <li>▪ Maintain security</li> </ul>
<b>Munson Hall</b>	Keep & renew	Continue to use as is. Renovate/restore when private funding is available.	<ul style="list-style-type: none"> <li>▪ Remove or repair chimney</li> <li>▪ Replace roof</li> <li>▪ Install new fire alarm system (funded on supplemental plan)</li> </ul>
<b>Memorial Hall</b>	Keep & renew	Continue to use as is. In the long term, restore main 2nd floor space to major public assembly use. Renovate/restore building when private funding is available.	<ul style="list-style-type: none"> <li>▪ Study occupancy of second floor</li> <li>▪ Review use of basement with focus on air quality and egress</li> <li>▪ Evaluate electrical system</li> <li>▪ Replace FA system emergency lights and exit lights (funded on supplemental plan)</li> <li>▪ Replace roof in five years</li> </ul>
<b>Hicks Physical Education Building</b>	Defer maint. & do not reinvest	Relocate occupants and demolish within ten years. In long term, construct larger structure on the site. Continue to use the Cage.	<ul style="list-style-type: none"> <li>▪ EH&amp;S to review</li> <li>▪ Maintain as is and keep safe.</li> </ul>
<b>Goodell Hall (not incl. addition)</b>	Keep & renew	Conduct feasibility study re: recapturing significant quantity of space occupied by unused stack areas. Renovate when funding is available.	<ul style="list-style-type: none"> <li>▪ Conduct chapter 34 code study and feasibility study regarding the recapturing of significant s.f. currently occupied by unused stack areas.</li> </ul>

## Legacy Buildings - Assessment & Strategic Choices

### East Ridge Area

<b>Building</b>	<b>Proposed category</b>	<b>Strategic Choices</b>	<b>Short-term Actions</b>
<b>Wilder Hall</b>	Keep & renew	Renovate when funding is available	<ul style="list-style-type: none"> <li>▪ Study possibility of rest room upgrade</li> <li>▪ Upgrade FA system</li> <li>▪ Repair roof soffit (funded on supplemental plan)</li> </ul>
<b>Clark Hall</b>	Keep & renew, with restrictions on current use.	Relocate art instructional lab functions. Renovate if private funding is available; otherwise utilize as office space. Reduce occupancy. Restrict use.	<ul style="list-style-type: none"> <li>▪ Secure vacated third floor</li> <li>▪ Vacate second floor art lab space when new art building is complete and return space to CAB</li> <li>▪ Evaluate egress from occupied areas</li> <li>▪ Evaluate electrical system</li> <li>▪ Rebuild central stair</li> <li>▪ Install FA system and egress/emergency lighting</li> <li>▪ Study accessibility including ramp and toilets</li> <li>▪ Replace roof and windows in 4-6 years</li> <li>▪ Enclose steam service entrance in room 5.</li> <li>▪ Limit art materials in faculty studios.</li> </ul>
<b>French Hall</b>	Keep & renew	Continue as is in short-term. Relocate research labs and limit use to office/classroom functions.	<ul style="list-style-type: none"> <li>▪ Relocate certain research labs.</li> </ul>
<b>Fernald Hall</b>	Keep & renew	Continue as is in short-term. Relocate research labs and limit use to office/classroom functions.	<ul style="list-style-type: none"> <li>▪ Complete chapter 34 study</li> <li>▪ Secure third floor from occupancy and use</li> <li>▪ Evaluate electrical distribution.</li> <li>▪ Relocate certain research labs.</li> </ul>
<b>Stockbridge &amp; Homestead Houses (not incl. Shade Tree Lab)</b>	Keep & renew	Continue use as is with required investment for health and safety. Provide health & safety and building envelope upgrades as required.	<ul style="list-style-type: none"> <li>▪ Update structural analysis and repair structure</li> <li>▪ Repair building envelope</li> <li>▪ Replace roof within five years</li> </ul>



## Legacy Buildings - Assessment & Strategic Choices

### Ellis Drive Area

<b>Building</b>	<b>Proposed category</b>	<b>Strategic Choices</b>	<b>Short-term Actions</b>
<b>West Experiment Station</b>	Dispose & replace.	Relocate occupants as soon as possible. Close and demolish.	<ul style="list-style-type: none"> <li>▪ Relocate occupants</li> <li>▪ Complete haz mat assessment</li> <li>▪ Demolish</li> </ul>
<b>East Experiment Station</b>	Defer maint. & do not reinvest	Continue to use as is.	<ul style="list-style-type: none"> <li>▪ Assess ventilation problems in basement</li> </ul>
<b>Draper Hall</b>	Defer maint. & do not reinvest	Assess & document issues. Identify plan for long term. Conduct a study to analyze floor deflection and structural issues as well as water penetration. Utilize basement for storage only once occupants can be relocated. Add smoke detection.	<ul style="list-style-type: none"> <li>▪ Conduct a study to analyze floor deflection and structural issues as well as water penetration.</li> <li>▪ Add smoke detection. Reduce occupancy in the basement.</li> <li>Conduct an electrical system review.</li> </ul>
<b>Flint Hall</b>	Defer maint. & do not reinvest	Maintain as is. Study impact of heating system upgrade.	Replace roof. Install fire alarm and emergency lighting systems. Study heating system.
<b>Stockbridge Hall</b>	Catch up & keep up on maintenance	Remove labs from lower level; otherwise maintain as is and address outstanding issues when funding is available.	Study need for fire suppression system. Correct inspector-mandated code deficiencies. Relocate labs from lower level. Replace windows.
<b>Goessmann Laboratory (original building)</b>	Keep & renew.	Conduct financial analysis to determine viability of any lab renovations. Upgrade systems as required.	Review need for supply air/ventilation system upgrade. Structural study for roof underway. Remedy fire separation issues at stairwells.

## Legacy Buildings - Assessment & Strategic Choices

### Other Buildings

<b>Building</b>	<b>Proposed category</b>	<b>Strategic Choices</b>	<b>Short-term Actions</b>
<b>Chancellor's House (Hillside)</b>	Keep & renew.	Only address safety issues	Install fire alarm system. Review building safety.
<b>Apiary</b>	Defer maint. & do not reinvest	Limit occupancy to 1st floor and to current types of research.	Decommission basement and 2nd floor, except for restroom. Mitigate mold; add dehumidification in basement. Utilize 1st floor only. Connect fire alarm system to central monitoring station. EH&S to monitor change of use.
<b>Hatch Lab</b>	Dispose & replace.	Relocate current occupants, demolish.	Identify location(s) to relocate current occupants. Close building and demolish.
<b>Chenoweth (original building only)</b>	Dispose & replace	Conduct further review. Determine trigger and timeline for vacating.	Review egress issues for this building in relationship to Chenoweth Addition and Cold Storage. Review safety of electrical system.
<b>Agricultural Engineering North</b>	Defer maint. & do not reinvest	Determine a phase-out plan.	Install eyewash and safety shower in room 115. Assess need for window replacement. Monitor use. Develop a phase-out plan for the building.
<b>Blaisdell House</b>	Defer maint. & do not reinvest	Maintain as is.	Clean out combustible materials from attic. Lock off attic and basement.
<b>Montague House</b>	Dispose & replace.	Relocate Nursing staff & demolish.	Develop plans to demolish.
<b>Grinnell Arena</b>	Catch up & keep up on maintenance	Demolish Abattoir. Maintain rest of building as is.	Identify funding to demolish Abattoir.
<b>Photography Laboratory</b>	Dispose & replace.	Restrict occupancy to 3rd floor (grade level on south side). Relocate Art studios when new building complete. Develop a plan and timeline for relocating Video Services and demolishing building.	Clean out combustible materials from attic and other spaces. Lock off all but the 3rd floor.

## Legacy Buildings -- Projected Renovation Costs (2007 dollars)

	Building Name	Building Area in Gross Square Feet	Est. Total Project Cost/sf *	Order-of-Magnitude Cost Estimate of Full Renovation**	Building Condition Category
<b>Chestnut Ridge</b>	South College	31,100	\$500	<b>\$15,600,000</b>	Dispose & Replace
	Chapel	14,200	\$600	<b>\$10,000,000</b>	Secure & Protect
	Munson Hall	13,400	\$450	<b>\$6,000,000</b>	Keep & Renew
	Memorial Hall	19,200	\$500	<b>\$9,600,000</b>	Keep & Renew
	Curry Hicks	23,500	\$400	<b>\$9,400,000</b>	Defer & Do Not Reinvest
	Goodell Hall	34,300	\$500	<b>\$17,200,000</b>	Keep & Renew
<b>East Ridge</b>	Wilder Hall	10,500	\$450	<b>\$4,700,000</b>	Keep & Renew
	Clark Hall	20,200	\$450	<b>\$9,100,000</b>	Keep & Renew
	French Hall	20,300	\$450	<b>\$9,100,000</b>	Keep & Renew
	Fernald Hall	37,800	\$500	<b>\$18,900,000</b>	Keep & Renew
	Stockbridge/Homestead Houses	8,750	\$300	<b>\$2,600,000</b>	Keep & Renew
<b>Ellis Drive</b>	West Experiment Station	14,200	\$600	<b>\$8,500,000</b>	Dispose & Replace
	East Experiment Station	5,860	\$600	<b>\$3,500,000</b>	Defer & Do Not Reinvest
	Draper Hall	31,700	\$400	<b>\$12,700,000</b>	Defer & Do Not Reinvest
	Flint Hall	29,900	\$400	<b>\$12,000,000</b>	Defer & Do Not Reinvest
	Stockbridge Hall	70,900	\$300	<b>\$21,300,000</b>	Catch Up & Keep Up
	Goessmann Laboratory	57,100	\$500	<b>\$28,600,000</b>	Keep & Renew
		442,910		\$198,800,000	

\* Order-of magnitude cost estimate in 2007 dollars based on extrapolation from some previously-completed individual building studies and an assessment of current construction costs

\*\* Cost of full renovation may differ from the cost of accumulated deferred maintenance and recommended modernization due to the comprehensive nature of complete renovation as