

*University of Massachusetts
Amherst Historic Building
Inventory*

Final Survey Report

Amherst, Massachusetts

Prepared for **University of Massachusetts Facilities Department
Amherst, Massachusetts**

Prepared by **Einhorn Yaffee Prescott
Vanasse Hangen Brustlin, Inc.
Pressley Associates**

*University of Massachusetts
Amherst*

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Prepared for **University of Massachusetts Amherst**
Facilities and Campus Planning Division
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Amherst, MA 01003

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Survey Final Report

Introduction

The University of Massachusetts Facilities Department (University) contracted Einhorn Yaffee Prescott and team (Vanasse Hangen Brustlin, Inc. (VHB) and Pressley Associates) to prepare a historic resources inventory and National Register eligibility recommendations for the buildings over 50 years old on the University of Massachusetts Amherst campus. The survey was conducted in the fall of 2008 and the entire report completed in August 2009.

Copies of the inventory forms and Final Survey Report are on file and available to the public at the UMass-A facilities office, special collections, and at the Massachusetts Historical Commission in Boston.

Abstract

This final survey report summarizes the methodology, outcome, and recommendations for the University of Massachusetts Historic Building Inventory.

The University of Massachusetts Facilities Department (University) contracted Einhorn Yaffee Prescott (EYP) and team (Vanasse Hangen Brustlin, Inc. (VHB) and Pressley Associates) to prepare a historic resources inventory and National Register eligibility recommendations all structures over 50 years old on the University of Massachusetts Amherst campus. The survey was conducted in the fall of 2008 and the entire report completed in August 2009. The approximately 1,348-acre campus contains 112 institution-listed properties that have been determined to date prior to 1959.

The survey was conducted to comply with Stipulation 4. Campus Cultural Resources Survey and Master Planning in the Memorandum of Agreement finalized between

the University of Massachusetts Building Authority, UMass-A, and the Massachusetts Historical Commission on March 25, 2009.

The major purpose of the historic resources survey was to prepare inventory forms for all of the pre-1959 structures on the campus. The Historic Building Inventory resulted in the preparation of individual inventory forms (MHC Form B) for those buildings that are over 50 years old on the campus. The 112 individually listed properties within the University records included additions and outbuildings. Following analysis by the survey team, the 112 properties were recorded by 103 Form Bs.

Several elevations and details of all buildings were photographed, taken with a digital camera. The UMass-A Facilities database, which contains dates of construction served as the initial base for determining which buildings to survey. Additional research was performed, as needed, to ascertain construction and alteration dates. A list of the inventoried buildings, which includes their assigned University building number, name, address, date of construction and/or acquisition by the University, and National Register recommendation is in **Appendix B**.

The updated and expanded inventory also provides the basis for a formal assessment of the eligibility of the neighborhood for the National Register of Historic Places. As a result of the study, certain buildings within the campus were recommended eligible for the National Register of Historic Places as part of a historic district. **Appendix D** shows the location of these buildings within the campus.

The recommended University of Massachusetts Amherst historic district meets Criterion A for its association with the ongoing mission of this state university to meet the educational requirements of a rapidly changing world. From the inception of the University in 1863 as the Massachusetts Agricultural College, through the current day, the Trustees have sought to provide educational programming and facilities that would enable students to advance the practice of agriculture and a steadily increasing host of other fields, meet the needs of a rapidly-industrializing world, and succeed in leading a post-industrial information and technology-based economy.

The historic district also meets Criterion C for its stock of buildings and landscape features whose forms and functions reflect the evolving and expanding mission of the University in the 95 years between its 1863 founding and 1959 (1959 being the 50 year cut-off for National Register consideration). A number of architects, landscape architects and planners of local, regional and/or national prominence were involved in the design of the individual buildings and the overall plan of the current University of Massachusetts Amherst campus. The aggregate efforts of these design professionals produced a distinctive public university campus landscape, primarily of the mid-19th to mid-20th century, which is unique in Massachusetts.

Despite the loss of certain buildings and landscape features up to the present time in 2009 and incremental physical changes seen in modifications such as new window, door and roofing replacements, as well as siding replacements in a small number of buildings, the district retains integrity of location, setting, design, feeling, association, workmanship, and materials.

Methodology

The major purpose of the historic resources survey was to document all buildings over 50 years old on the University of Massachusetts Amherst campus. Survey work included (1) identifying buildings that had been documented previously on Massachusetts Historical Commission (MHC) inventory forms, (2) more thoroughly documenting these buildings and producing updated MHC inventory forms and (3) creating new MHC inventory forms for any building over 50 years old that had not previously been documented on these forms. The updated and expanded inventory also provides the basis for a formal assessment of the National Register eligibility of these buildings on the University of Massachusetts Amherst campus.

Previous survey efforts (23 buildings)

Twenty-three properties within the University of Massachusetts Amherst campus were the subject of survey efforts using MHC forms in 1973, 1988 and 1994. Twenty of these previously inventoried properties were documented in 1988 by the Pioneer Valley Planning Commission for the Amherst Historical Commission. The other three properties were documented by individuals for the Amherst Historical Commission. The level of survey documentation includes MHC Individual Building Forms (Form B).

The Massachusetts Historical Commission rendered an opinion in 2007 concerning the eligibility of the University of Massachusetts Amherst campus for the National Register of Historic Places. This MHC opinion states that the University of Massachusetts Amherst retains a significant collection of buildings dating from its first period of operation as the Massachusetts Agricultural College (1863-1931). The MHC opinion also states that although the campus has expanded significantly in and around the Massachusetts Agricultural College core, both individual buildings and groups of buildings that still convey their relationship to each other as part of the Agricultural College core campus plan are eligible for the National Register. The MHC opinion concludes with the statement that additional buildings postdating 1931 from the Massachusetts State College (1931-1947) and post-1947 University of Massachusetts eras are also likely eligible.

Present Survey and Inventory

The current survey/preservation plan effort represents the most comprehensive and focused study of the historical and architectural significance of the University of Massachusetts Amherst campus. Two major tasks required of this project were to

prepare an inventory of buildings over 50 years old on the campus through recordation on a Massachusetts Historical Commission Individual Building Form and to provide recommendations on these buildings as far as their eligibility for the National Register of Historic Places.

The initial tasks in the inventory involved coordination with the University of Massachusetts Amherst facilities department to obtain listings of all extant buildings on the campus that are believed by the University to be over 50 years old, along with GIS data that showed the location and University of Massachusetts building number for each of these structures. This information was then mapped by GIS technicians at VHB to provide the identified locations of these buildings. A series of six 11" by 17" figures locating all inventoried buildings by their University of Massachusetts Amherst building number is included in **Appendix E**.

An intensive inventory of the buildings within the University of Massachusetts Amherst campus began in August 2008. All buildings over 50 years old were documented on Individual Building Forms (Form B) located in **Appendix G**. Fieldwork included digital color photography of individual buildings and an indication of the photograph locations. Each structure was individually photographed as a result of this effort. At least one 4" by 6" color print of each building is attached to its Individual Building Form.

Documentation for the Individual Building Forms and the historic context included extensive research at several repositories, including Special Collections and Archives, W.E.B Du Bois Library, University of Massachusetts Amherst and Special Collections, Jones Library, Amherst; the examination of numerous websites; and the review of information about the University, the campus and specific buildings that was provided by University staff, faculty and interested parties. These interested parties included University alumnae, professors emeriti, representatives of the Amherst Historical Commission and representatives of Preserve UMass Amherst (PUMA).

Research and documentation was conducted to record the historic context of the University of Massachusetts as an institution, the evolution of the campus tract in prehistory and in historic periods, the conditions that shaped the university's decisions to develop specific campus buildings and campus plans, the architects and planners who worked on the buildings and campus layout, and the significant individuals for whom specific buildings and landscapes were named at the campus.

Nearly 120 historic photographs in the collection of Special Collections and Archives, W.E.B Du Bois Library, University of Massachusetts Amherst and four Historic American Buildings Survey photographs in the collection of the National Park Service were copied for use in the Individual Building Form documentation and analysis. In addition, a number of maps and plans for the area were retrieved and used in the analysis of the campus's physical development. These maps and plans are listed in the bibliography.

Research was also conducted for landscape assessment and landscape design analysis by the Cambridge firm of Pressley Associates. Campus landscape data was gathered during a three day on-site recognizance survey in early October 2008. In addition to extensive digital photographic documentation of existing landscape conditions, the field surveyor used a customized survey form to identify and assess landscape organizational elements and character-defining features based on landscape characteristics identified in The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996). Following the field survey, current ortho-photographic imagery from the Massachusetts Geographic Information System (MassGIS) database was used to confirm field observations and reveal landscape characteristics obscured from view on site. Historic plans and photographs from the University of Massachusetts, Amherst Department of Special Collections, Facilities Department Archive and University Archives, and the Frederick Law Olmsted National Historic Site Archives in Brookline, MA were used to assess alterations to the landscapes since their construction and to compare current landscape conditions with historic conditions. Largely, historic plans revealed changes to campus spatial organization, land patterns and circulation patterns, while historic photographs documented changes in vegetation and small-scale features. A diagram of historic circulation and landscapes is provided in **Appendix E**.

The archaeological component of the study was restricted to a background and literature review and walkover of the campus core. The background and literature review included an examination of the site files at the Massachusetts Historical Commission (MHC), available files at the UMass Amherst Library, historic maps (as referenced in the Historic Context section of this report), and professional literature. The resultant data were used to develop preliminary statements of archaeological sensitivity. The campus core was subsequently walked in order to assess existing conditions. The goal of the walkover was to determine the degree to which pre-campus settings had been subjected to development during the campus era. Statements concerning archaeological sensitivity are presented in the Historic Context section.

List of Inventoried Properties

A list of the 112 buildings inventoried for the UMASS-A Historic Building Inventory is contained in **Appendix B**. The list includes the building name, assigned University address; date of construction; architect or builder, if known; and condition.

Historic Resources Survey

■ Historic Context

1.0 Introduction

The University of Massachusetts, Amherst (UMass-A) was chartered in 1863 but did not accept its first class until 1867. As one of two land grant universities in Massachusetts, the university's original mission was agricultural education. Its mission, however, evolved within the first 20 years in response to the changing needs of the United States. While agriculture remains, even today, a mainstay of the university's mission, the University now also supports engineering, science, education, and liberal arts colleges and departments. As the mission evolved, so did the university's approach to its facilities and its landscape. In the following sections of this context, the cultural landscape of UMass-A is discussed, with a particular focus on the period from the institution's founding to 1959.

Because the focus of the current study is on the historic significance of campus structures, buildings, and landscapes, this context particularly emphasizes the decisions made by campus administrators regarding building types, their siting, and their function. Historic maps which illustrate proposed and existing campus buildings and their siting are referenced through the document.

The historic context provides the general background for the documentation of structures and select landscapes according to Massachusetts Historic Commission (MHC) Standards. Building- and structure-specific information also is presented on the MHC forms, but is not necessarily duplicated herein. The discussion which follows is divided into five numbered sections: 2.0, Before the Campus; 3.0, Education and Public Colleges; 4.0, Massachusetts Agricultural College 1863-1931; Massachusetts State College, 1931-1947; and 6.0, University of Massachusetts 1947-present. References cited are presented in **Appendix C**.

2.0 Before the Campus

The UMass-A campus lies in the Connecticut River valley immediately northwest of Amherst, south of North Amherst, east of Plainville and Hadley, and north of Mill Valley. The campus occupies a series of west-facing slope benches which terminate on the east side of Mill River. Mill River, running north-south along the foot of the benched slope, turns abruptly westward near the present-day campus sewage disposal plant to begin its westward meander across the greater Connecticut River floodplain. Mill River flows into Lake Warner about two miles west of State Route (SR) 116, eventually joining the Connecticut River at North Hadley.

Four principal topographic settings are subsumed within the campus footprint: ridge crest, slope benches, river valley, and floodplain. Before the campus plant was established, the settings were initially covered in forest or riparian wetlands (French 1866:25). In the post-Colonial period, the forest cover was largely removed and the riparian wetlands drained. Both covers were replaced by pasture and agricultural fields and these held sway until the establishment of the campus between 1863 and 1867 (French 1866:25; Anonymous 1920). Even after campus building began, however, the campus setting was rural and dominated by agricultural and horticultural fields (Anonymous 1870; Beers 1873; Manning 1919; USGS 1893, 1901). The agrarian image of the setting remained effectively unchanged into the 1930s. It was only in the post-World War II era that much of the “agricultural” look of the campus disappeared, overtaken by the physical needs of a mid-twentieth century university.

The eras that preceded the college included use of the setting by Native Americans and Euro-Americans. Both were engaged in non-industrial enterprises within the campus. Both occupations are briefly characterized below.

2.1 Native American

There are few data available about the Native American occupation and/or utilization of the current UMass-A grounds. Beginning about 1977, small survey projects were completed within the towns of Amherst and Plainville. The Massachusetts Historical Commission (MHC) report file contains reference to 20 surveys beginning about 1977 and continuing to present day. Most of these projects, however, were outside of the current campus boundary, though persons associated with the UMass-A Anthropology program did conduct some of the work (Dincauze 1988, 1990a, 1990b, 1991, 1992, 1993; Holmes and Mulholland 1990). The single exception was a locational survey conducted in 1994 of a proposed electrical distribution line. The line extended from the Podick substation to UMass-A (Holmes and Hertz 1984). No significant sites were identified.

A summary of the known Native American archaeological sites within one mile of the campus core is presented on Table 1. The Native American archaeological sites are discussed in this section (2.1) and historic era sites are detailed in Section 2.2 which follows.

2.1.1 *Cultural Sequence*

Although only one of the previously reported sites within a mile of the campus yielded temporally diagnostic artifacts, investigations of Native American sites elsewhere in Hampshire County have produced artifacts indicative of the three pre-Contact eras recognized in the New England region. These eras are Paleoindian, Archaic, and Woodland. The Archaic and Woodland eras are subdivided into Early, Middle, and Late periods; the Archaic includes a fourth period, the Transitional Archaic.

Table 1. Previously Reported Native American Archaeological Sites Within One-Mile of the UMass-A Campus			
Site Designation	Site Name	Temporal Affiliation	Comments
19HS166 (UMass # MT-TB/61)	Auction Barn	Ancient Native American - Early, Middle Woodland periods	Lithic scatter with a Greene or Lagoon projectile point. Site originally recorded by L. Derry May 24, 1977.
19HS188 (UMass # MT-TB-53)	None	Ancient Native American - unknown affiliation	Projectile points (unspecified types) recovered from agricultural field. Site originally recorded by L. Derry May 24, 1977.
19HS192 (UMass #MT-TB-63)	None	Ancient Native American - unknown affiliation	Biface and bone noted on form. Site originally recorded by L. Derry May 24, 1977.
19HS194 (UMass #MT-TB-73)	None	Ancient Native American - unknown affiliation	"A great variety of materials" noted on form. The materials, however, are not specified. Site originally recorded by L. Derry May 24, 1977.
19HS298	None	Ancient Native American - unknown affiliation	Projectile points (unspecified types) recovered from agricultural field. Site originally recorded by S. Hight June 6, 1984 based on informant interview data.
19HS302	Katherine Cole	Ancient Native American - unknown affiliation	"11 flakes...fire cracked rock noted." Site originally recorded by Eric Johnson June 26, 1985.
19HS320	Wildwood	Ancient Native American - unknown affiliation	"7 small (less than 2cm) fragments of chert biface-thinning flakes. 2-3 bifaces represented. Found no biface fragments, assume area collected when plowed." Site originally recorded by Dena Dincauze, September 2, 1991.

Each of the eras and periods are distinguished by particular artifact types. The most time sensitive of these types are projectile points. In the Woodland era, earthenware ceramics also are time sensitive. The eras and periods are briefly summarized below as the potential exists that archaeological sites from each era and period are present within the campus and its immediate vicinity.

Evidence for human occupation of the Northeast in general dates to about 14,000 years before present (B.P.) Surface finds in the form of fluted points have been recovered from the middle Connecticut River valley but are rare in upland settings in western Massachusetts. The Paleoindian points are manufactured of both local chert and quartz and trade stone including varieties from the Hudson River valley.

Subsequent Early, Middle, Late, and Transitional Archaic occupations span the years from about 10,000 B.P. to about 3000 B.P. Archaic are present in the Connecticut River valley on the river margins, along river terraces and in selected upland settings. The latter include broad upland benches, ridge noses and swales, and, more occasionally, ridge crests. The lowland Archaic era sites are typically multicomponent, though the occupation loci are horizontally discrete. Excavations conducted at the Archaic sites have been limited but it is known that feature types include hearths and postmolds. While the artifact assemblage is dominated in the archaeological record by chipped stone objects, evidence of groundstone (for milling) and basketry (for containers) is known. In Transitional Archaic times, both steatite groundstone and earthenware ceramics were in use in western Massachusetts though the steatite incidence is lower than along the Massachusetts coast.

As such, there is no Mississippian fluorescence in Massachusetts. Rather, the Woodland periods herald the establishment of formal villages, an increasing variety of ceramic wares and types, and expanding groundstone industries. Limited agricultural production also was in force through the era though it never replaces hunting and gathering as the preferred subsistence mainstay. By terminal Late Woodland, the Connecticut River valley is home to Iroquois and Mohawk. Native American presence in the Hampshire County vicinity was negligible after about 1700.

2.1.2 Previously Reported Archaeological Sites

The previously reported archaeological sites provide virtually no information about site function or temporal affiliation. At least half of the sites were not professionally investigated but were reported by landowners or other non-professionals. Thus, the site collections are biased toward projectile points which are commonly collected as curios. The artifact collections recovered from sites 19HS192, 19HS302, and 19HS320 contain artifact types which provide some data on possible site functions. The presence of a biface and bone at site 19HS192 suggests animal butchering; the biface can be used as a knife or as a flesher. At Site 19HS302, fire cracked rock (FCR) was recovered in conjunction with chipped stone flakes. The FCR is considered indicative of fire while the flakes are interpreted as the residue of chipped stone tool manufacturing or maintenance activities. Finally, at Site 19HS320, the small collection of flakes was interpreted as the residue of the manufacture of two or three bifaces. Little other functional data can be gleaned from the reported artifact assemblages.

The mere presence of the archaeological materials does provide some data on site distribution. First, prior archaeological surveys in the towns of Amherst and Plainville have examined parts of the four common landforms (ridge, benches, valley, and floodplain). The investigations, though non-systematic and restricted in area, resulted in the identification of archaeological sites only in certain settings. All but one of the previously reported sites is located in the Mill River valley, on the floodplain of the Connecticut River/Mill Rivers, or in an upland valley proximate to a stream. Second, the remaining archaeological site was found in an upland swale which likely is/was crossed by a game trail. Third, the high percentage of sites in alluvial settings suggests that deeply buried sites also might be present.

2.1.3 Archaeological Sensitivity – Native American Sites

The available data on Native American sites in Hampshire County suggest that the UMass-A campus locale is archaeological sensitive. The Mill River valley, which coincides with Commonwealth Avenue would be expected to contain archaeological sites both at surface and deeply buried. However, landscape modifications to the valley floodplain and terrace have included ditching, tiling, and grading (Clark 1871).

The slope benches east of Commonwealth Avenue are considered to retain low sensitivity primarily because of historic era development. If settings have been minimally disturbed and are in proximity to springs, like that at the President's

House, then the archaeological sensitivity increases to high. Similarly, upland settings such as swales, ridge crests, or those with exposed rock outcrops suitable for rockshelters, are considered spot specific settings of high sensitivity. Otherwise, the upland slope benches and the ridge top are not likely to yield evidence of Native American occupation though occasional chipped stone tools or small clusters of chipped stone debris might be recovered. The exception to the low upland sensitivity is related to rock outcrops including both bedrock exposures and erratic, free standing boulders. These settings can host rockshelters, caches, and petroglyph panels and they should be carefully inspected prior to development.

2.2 Colonial and Statehood Eras

2.2.1 *Early Euro-American Settlement*

The MHC Amherst Town Report (MHC 1982) divides the town's early history into three periods: Contact (1500-1620), Plantation (1620-1675) and Colonial (1675-1775). The Contact and early Plantation periods are effectively time markers only. No substantive EuroAmerican presence occurred in the Town of Amherst (Town) during these periods though European influence in the form of trade goods did occur. The preferred trade items included beads, iron tools, and metal pails and buckets. The iron tools and metal containers are of note as both were quickly adopted by the Native Americans.

MHC (1982) notes that permanent EuroAmerican settlements in the region were not established until the mid 1600s. Hampshire County was created to support the EuroAmerican population in 1662 though the Town of Hadley was incorporated in 1661 (Larson 2009). The intensity of EuroAmerican settlement remained low, however, even after the Native Americans left the region. Hampshire County was not subdivided until 1761 when Berkshire County was carved from its western margin. Franklin and Hampden counties were pulled from the parent county in 1811 and 1812 respectively (Hitchcock 1894:84). The subdivisions all were in response to increased populations at satellite nodes that were primarily growing because of mill operations or as points of transportations intersection (Friedberg and Kelleher 1991).

2.2.2 *Town Centers*

Larson (2009) provided additional background on early settlement of the Town of Hadley and, subsequently, the Town of Amherst. The Town of Hadley was incorporated in 1661 with EuroAmerican settlement of its area beginning about 1659. According to Larson (2009 from Rand [1958]), early settlers referred to the Amherst area as Norwottuck. That name was applied specific to South Amherst in later years (Larson 2009).

Amherst was created as the second precinct in the Town of Hadley on February 13, 1759 (Larson 2009). The Town of Amherst was characterized in 1894 as including "...about 28 ³/₄ square miles and included the villages of Amherst, North Amherst, North Amherst 'city,' East Amherst, or East Street, and South Amherst" (Hitchcock

1894:48). Not unexpectedly, these villages and the Town configuration were little changed from the inception of the Town.

Unlike Hampshire County, the Town was not subjected to subdivision but rather, maintained its cohesiveness as a political entity through its history. The greatest threat to that cohesiveness actually resulted from pressures brought to bear on Town services by the increasing student populations at both Amherst College, beginning in 1821, and the nascent Massachusetts Agricultural College (MAC) after 1867 (Hitchcock 1894). Amherst College was literally surrounded by the village proper and its campus, historically, blended with the surrounding village. In contrast, UMass-A has overwhelmed the western margin of the village and its campus is distinct from the village. The campus, however, at least through the 1930s relied on village services including fire protection (AR 1925). Significant effort was expended to ensure that water lines connected to the village system were sufficient for campus potable, waste water, and emergency response needs (AR 1925).

2.2.3 *Agriculture and Industry*

2.2.3.1 1661 – 1830

The town’s background, from its inception, was agrarian (Anonymous 1982). There was a gradual shift to a broader spectrum economy after the Revolutionary War and statehood but agrarian enterprises were not supplanted until well into the twentieth century. The census summary in Hitchcock (1894:52; Table 2 below) from 1776 through 1820 shows a normal progression in terms of population growth until the period between 1810 and 1820. During this decade, there was unexpected growth. It appears to be related to the opening of mills in the valley (Hitchcock 1894).

Table 2. Census Data 1776 to 1830 (Hitchcock 1894:52-53)

Year	Population	Page reference
1776	915	:52
1790	1,233	:52
1800	1,358	:52
1810	1,469	:52
1820	1,917	:52
1830	2,631	:52, :53

2.2.3.2 1830 – 1863

The MHC Town Report (Anonymous 1982) divides the period between 1830 and World War I into the Early (1830-1870) and Late Industrial (1870-1915) periods. Our discussion of these periods is intentionally truncated at the establishment of the Massachusetts Agriculture College in 1863.

In the period between 1830 and the college’s opening, the associated villages of Amherst continued to focus on supporting their farmers, their students, and their mill workers. As shown on Table 3, there was little change in the size of Amherst’s population.

Year	Population	Page reference
1840	2,550	:53
1850	3,057	:53
1860	3,206	:53

The advent of railroad service in the 1830s facilitated transportation of goods and the New London Northern Railroad made stops at South Amherst (Norwottuck), Amherst, and North Amherst ‘city’ (Hitchcock 1894: 51; Friedberg and Kelleher 1991). Eventually, a second railroad, the Massachusetts Central Railroad, serviced the area as well. This did not occur, however, until 1888 with service to South Amherst (Norwottuck) and Amherst (Hitchcock 1894:51).

Regarding transportation trends, the continued expansion of the regional railroad system in the late 1800s prompted development of street railways and increased suburban development in the first decades of the 20th century. In 1897, the Amherst Board of Trade constructed a street railway between Amherst Center and North Amherst (Larson 2009). This operation, eventually known as the Amherst & Sunderland Street Railway, was extended to Sunderland in 1900; then, to Holyoke and Orient Springs in 1902. The Amherst and Sunderland routing corresponded with Route 116.

Streetcars provided mobility that enabled workers to reach their factory jobs while living further than walking distance from their places of employment. They simultaneously enabled growth of suburbs while promoting commercial growth in city centers. Ultimately, the success of the automobile industry contributed to the downfall of the streetcar lines. Paved roads and affordable autos sent workers and often jobs further from town centers such as Amherst.

Infrastructure services, in the form of water or waste lines, were slow in coming to Amherst and the surrounding hamlets. No standard services were in place in the early 1880s [when water piping was constructed in Amherst by the private Amherst Water Company (Larson 2009). According to Larson (2009) the water service began in 1880 though Hitchcock (1894) notes the date as 1881. The town service was some 10 years after a gravity system was put in operation on the MAC campus (Clark 1871). The water piped to the village of Amherst originated at Amethyst Brook, about four miles northeast of Amherst near Pelham. Piped water allowed for a sewerage system as well and Hitchcock (1894:52) reported that system “now consists of three divisions emptying into running brooks in different parts of the village...”

2.2.4 Archaeological Sensitivity – Colonial and Statehood Eras

Except for the farmsteads present at the time of purchase, there is no evidence to support the presence of archaeological sites dating to the Colonial or Statehood Eras on the UMass-A campus. Certainly sites dating to these periods exist in the villages of Amherst and North Amherst (Friedberg and Kelleher 1991) though outside of the

Site Designation	Site Name	Temporal Affiliation	Comments
AMH-HA-1	Station Road II	18 th through 20 th centuries	Surface scatter with associated foundation. Site reported by Ellen Savulis (UMass Archaeological Services), 1993.
AMH-HA-2	Aldrich Residence	20 th century	Historic dump consisting of broken grave stones. Stones are remnants from the nearby Dorsey Memorials.
AMH-HA-3	Carpenter Block	Early 20 th century	Stone and brick foundation, concrete bulkhead entrance, brick cistern, interior brick well, and artifact scatter. Recorded during survey for the Boltwood Walk Parking Garage.
AMH-HA-4	Boltwood outbuilding	Late 19 th century	Dry laid foundation and privy pit associated with Amherst Record Building site.
AMH-HA-5	Amherst Record Building	Late 19 th century	Stone, dry laid foundation representing the southern side of original building.
AMH-HA-6	Boltwood foundation site	19 th century fill and early 20 th century foundation	Dry laid foundation and artifact scatter.
AMH-HA-7	The Evergreens	19 th and 20 th centuries	Stratified historic midden deposits

study area radius. Table 4 lists the previously reported historic archaeological sites within two miles of the campus center.

Except for the grave stone dump, all of the site remnants are associated with residential or commercial events. It is likely that features such as privies, cisterns, or wall remnants initially remained on the UMass-Amherst campus. However, the subsequent decades of development likely have eradicated such traces except as they might be directly related to specific historic building footprints.

There is likelihood, however, that building remnants related to the initial periods of campus growth (1863-1916) do remain. As will be discussed later, several early campus buildings burned. Included among these were the Crouch Barn (1872), plant house (1883), South College (1885), station barn (1891), ridge barn (1894), dairy building (1906), and the new dairy barn (1908) (Rand 1933:205-211). In many instances, the replacement buildings were built atop or immediately adjacent to the original building footprints. It is likely that archaeological remains of original buildings exist or, at the very least, evidence of the fires remain. Further, sanitary features, such as interior shaft privies, basement cisterns, and exterior privies or cisterns also are considered likely to be encountered in the older campus sections such as those near the pond, in the North and South College areas, and near the original Experimental Station location.

3.0 Education and Public Colleges

The Town would be an influence upon the University from the school's inception as would the general approach to agricultural education. To understand the growth of the University and the decisions made by its administration and trustees regarding buildings and facility layout, some background to agricultural education is warranted.

3.1 General Approaches

Agricultural education in the United States is, after 1852, inexorably linked to the Land Grant movement and the development of the Land Grant colleges (Andrews 1918; Cary 1962; Songe 1962; Stimson and Lathrop 1942). Prior to the Land Grant Movement in the 1850s, it had been recognized that the natural resources of the young United States were not inexhaustible. As noted by Charles Dabney in 1890 (as cited by Stimson and Lathrop 1942:1-2):

So long as land was so abundant, no attention was paid to the conservation of the fertility of the soil. America was such a vast and fertile country that it took the people over a century to find out that was any limit to its productiveness...It was not until the close of the eighteenth century that the attention of practical men commenced to be directed to the discoveries of science, and hopes were excited that immediate benefits would accrue from them to agriculture as they had to the other arts...

Although George Washington recognized the importance of educating farmers in modern agrarian practices, his and subsequent Federal efforts were very restricted. The initial impetus for formal agricultural education programs came from agricultural societies. As early as 1794, the Philadelphia Society for the Promotion of Agriculture was advocating "...the education of youth in the knowledge of that most important art [agriculture]" (Stimson and Lathrop 1942:3). The Philadelphia Society recommended that State common schools integrate agricultural education as part of their curricula (Stimson and Lathrop 1942:3-4).

The Federal government did not become actively involved in such efforts however until well into the 1800s though they did support the Seed program. The Seed program, administered by the United States Patent Office, originated in the Department of State. It was designed to distribute seeds secured by consuls abroad to American farmers in order to diversify the crop base. The program began during the John Quincy Adams administration and it is recognized as a foundation element of the eventual Department of Agriculture (Andrews 1918; Stimson and Lathrop 1942). The Department of Agriculture (DOA) was enacted in 1862 under a bill created by Justin S. Morrill. The DOA, however, was not made an executive department until 1889. It was the roles of the agricultural societies, the state agricultural commissions, and the so-called Agricultural Colleges to educate the farmers of America beyond common school levels.

3.2 The Massachusetts Approach

Agriculture was one of the four mainstays of New England's economy during the Plantation, Colonial, and Federal periods. The other underpinnings were fishing/whaling, millworks of various types, and quarrying (Anonymous 1982; Friedberg and Kelleher 1991). Initially, agrarian education was managed at the society level; as early as 1797, the Massachusetts Society for the Promotion of Agriculture began publishing agricultural bulletins. The Norfolk, Massachusetts, Agricultural Society started formal exhibits in 1849 to help livestock farmers better manage their stock.

By 1851, the various Massachusetts agricultural societies called upon state government to formally create a board of agriculture. The board was enacted by the legislature in 1852 and its first commissioner began his job in 1853. The same year, Edward Hitchcock, the President of Amherst College, proposed the establishment of a farmer's institute comprised of "agricultural chemists, scientific farmers, practical farmers, botanists, vegetable and animal physiologists, geologists, meteorologists abundantly qualified [and] willing to go into different districts of the State, and instruct the farmers..." (Stimson and Lathrop 1942:181).

In Massachusetts, the farmer's institutes continued to operate until 1919. By that time, their role had been overtaken by the Cooperative Extension Services. Both the farmer's institutes and the board of agriculture published bulletins were used in the common schools. In 1861, the board even published a Manual of Agriculture to be used in public schools (Andrews 1918, Stimson and Lathrop 1942).

At the local level, towns in Massachusetts had developed agricultural schools as early as the 1830s. The schools focused on instruction in best practices covering most of the agricultural and horticultural products produced in the state. They also had vocational training in equipment maintenance, home economics, and related tasks. In the early 1850s, following Hitchcock's 1852 address, a movement was afoot to create a state-level college that would provide intensive training and which would serve as an experimental station. The Massachusetts Agricultural College was chartered in 1856 "but never opened; the land grant endowment put new life [to it]" (Andrews 1918).

3.3 Land Grant Colleges

Justin S. Morrill was a member of the U.S. House of Representatives from the State of Vermont. He argued forcefully that the United States had to better prepare its farmers and scientists and that preparation was going to be possible only if publically funded colleges and schools were available. In 1862, the U.S. Congress passed the Morrill Land Grant Act. The act was a wonder of funding simplicity. Each state was granted acres of undeveloped land in the U.S. West. The amount of land granted was based on the number of legislators the state had in Congress: one legislator equaled 30,000 acres. In 1862, Massachusetts had 12 members in Congress

and the Act provided that 360,000 acres of western lands be granted to Massachusetts.

Once a state accepted the land grant, it could do what it wanted with the property. Massachusetts accepted its grant on April 18, 1863. The state legislation determined that they were going to use the monies to support both the Massachusetts Institute of Technology (MIT) and the Massachusetts Agricultural College (MAC). MIT had been chartered in 1861; it received one-third of the income from the grant. MAC, chartered in 1856, received the remaining two-thirds as an endowment less 1/10th of the proceeds. The 1/10th proceeds were to be used for the purchase of a founding 'farm' (Anonymous 1865; Andrews 1918).

3.4 Facility Layouts and Building Types

There was no accepted plan for the layout of the college. It was the intent of the Trustees to use the buildings acquired during the purchase of the property. Almost all of these were envisioned as "laboratories" for the various agricultural classes (French 1866). In addition, a small suite of buildings would be erected specifically as administration, dormitory, and classroom buildings.

4.0 Massachusetts Agricultural College: 1863-1931

Because Massachusetts already had its agricultural college chartered, "the Massachusetts Agricultural College was one of the first institutions of its kind to be founded in the United States" (Hitchcock 1894:161). Although chartered in 1856, the school had suffered from a lack of funding and a lack of direction. It was referred to initially as the Massachusetts School of Agriculture but the name was changed in 1861 to the Trustees of the MAC. This name more accurately reflected its situation. Until the land grant monies were accepted by the state the college literally consisted only of the Trustees.

4.1 1863-1867: Administration and Initial Campus Layout

The Trustees of the MAC were incorporated by a legislative act of April 29, 1863. The original trustees were Governor Andrew as president, A.W. Dodge, Esq., vice-president, and Charles L. Flint, secretary. These gentlemen were the college from inception to the group's incorporation in 1863. In 1864, the legal name of the school was codified as Massachusetts Agricultural College and the Honorable Henry E. French was elected president. The same year, 10% of the land scrip was sold to purchase the site of the college (French et al. 1864).

While the sale garnered \$29,778.40 (Andrews 1918:23), the actual college site was in contention. As late as 1865, five towns were still vying for the right to host the college. According to the petition from the Town of Amherst (Anonymous 1865), the four other towns were Chicopee, Lexington, Northampton, and Springfield (French et al. 1865 [Annual Report]). The Trustees had effectively opened the siting to

bidders asking the contenders to provide \$75,000 in what was effectively earnest money. Amherst elected to raise its \$75,000 through taxation (\$50,000) and subscription (\$25,000). On May 25, 1864, the MAC Trustees voted to locate the college in Amherst (Anonymous 1865:4).

“Who can estimate the importance of having, in the midst of an agricultural community, a model farm of four hundred acres, where model farm-buildings, implements, domestic animals, orchards, field crops and garden, and all the processes of the most enlightened agriculture, are continually upon exhibition. The College will also furnish a superior education, of an eminently practical character, to the young men of Amherst, either gratis or at a very small expense.” (Anonymous 1865:7)

The glowing statement above seems to accurately reflect the original vision for the college grounds. It does not necessarily reflect however the actual conditions. First, the “four hundred” acres was not correct. The original purchase subsumed parts or all of six farms and parcels totaling 310.55 acres (ac). The holdings were purchased from D.K. Bangs (29.69 ac), Henry Cobb (43.73 ac), Chester Cowls (60.93 ac), L.D. Cowls (144.13 ac), J.S. Crouch (23.44 ac), and John Donahue (9.63 ac) and included unimproved and improved land and buildings (French et al. 1865:5-6). Second, the vision of bucolic agrarian fields was tempered by French’s actual characterization of the property as “...much of it is wood, rough pasture and swamp” though he went on to note that it was “...a judicious investment” (French 1866:25).

Thus, by the 3rd day of October, 1864, the college had grounds, buildings, and high expectations. It also soon had an additional 73 acres which were purchased by Dr. Nathan Durfee. Durfee was a Trustee and also the Trustee Treasurer. The acreage adjoined that already purchased and it had been used by two of the farms acquired by MAC. In total, the college had expended \$34,999.50 for its 310 acres; Durfee spent another \$8,000 for the 73 acres (French et al. 1865; Anonymous 1948:10).

Between 1864 and 1867, the Trustees and then French, as the first president, were faced with the tasks of assembling a physical plant of sufficient character to sustain the first class. That class was scheduled to enter as freshman in the fall of 1867. According to the 1866 Annual Report, the initial work on the property involved “a careful and elaborate survey” which resulted in a map “showing accurately every building, fence, road, stream, spring and other principal object on the estate...” (French 1866:26). The 1865 survey and map were completed by J. Herbert Shield (C.E., Boston) (Clark 1871:13).

In 1870, a map entitled “Estate of the Mass. Agricultural College Amherst” was prepared and included in the 1871 Annual Report (Clark 1871:25). The 1870 map was apparently based on Shield’s 1865 effort and the 1870 map shows the roads, walks, and buildings constructed after 1866. The additions to the Shield map were done by S.F. Maynard who, at the time, was a junior at MAC. Maynard’s father, Professor Samuel T. Maynard, was a faculty member and his subsequent planning

and existing conditions maps are present in the documentary record for the next three decades.

By the time the college opened in 1867 to its first class, there were seven or eight buildings on campus. These included the Stockbridge House, the Horticultural Superintendent's House (commonly abbreviated as the Hort. Supt's. House), the Homestead House, the Experimental Station Agricultural Barns, the Chemistry Laboratory, a Physics Laboratory, and the Durfee plant house (Anonymous 1916). Of this grouping, at least the Homestead House, the Stockbridge House and the associated agricultural barns were buildings that had been purchased along with the land in 1863 and 1864.

Two other structural additions also were made. A public highway crossed the "estate, leaving about one-quarter of its territory on the upper, or east side, and the rest on the west or lower side." A petition was filed in December, 1865, to alter the location of the road and the petition was granted in January, 1866 (French 1866:25-26). And, a reservoir was constructed. As described by French (1866:25), the structure was:

"A reservoir upon the highest land where water appears, has been constructed, ten feet in diameter and ten feet deep, which has been full for many weeks, with a pipe laid low enough to draw it to the bottom. It was deemed important early to test the supply of water from the springs, and the one in question, two hundred and twenty-five feet above the lowest point on the estate, although not at any time a copious spring, has been found to yield five hundred gallons per day in the driest part of the very dry summer of 1865" (French 1866:25).

Some attention was being paid to the layout of the grounds though the lack of a definitive campus plan was hindering that activity. French (1866:25) noted that landscaping in 1865 had been limited to "planting a few hundred evergreens, of six to eight feet height, for a screen on our easterly line, and in setting, in nurseries, some three thousand small trees for future use."

4.2 1867: Initial MAC Layout

Komarukul (1951) presents a detailed discussion of campus plans in his thesis entitled "A Master Plan: The University of Massachusetts." In it, he details the campus planning that preceded the 1867 opening of the school for classes. In 1864, the Trustees hired Vaux and Richards of New York, to develop a site assessment and plan for building location. Komarakul (1951:8-9) summarized their siting recommendations and used 1951 landmarks when describing the proposed locations. The Vaux and Richards siting recommendations were:

- All farm buildings be located southward and westward in the Mill River valley;
- The campus' central building be located near today's French Hall;

- The president's house be "placed near the site of the present [1951] Mathematics Building;" and
- That the student dormitories and professor residences be sited on the ridge "where the president's house now [in 1951] stands."

The recommendations were not well received. In 1866, Frederick Law Olmsted was engaged to provide his opinion of the college layout that had been created by Vaux and Richards. Olmsted took the assignment to heart and actually developed a detailed plan for effectively recreating a New England village. The center of the campus was a village green and the major buildings of the college would form a row facing the green. Radiating out from the green were streets lined with cottages for the professors and the students.

Olmsted's plan was a vision and the Trustees were no happier with it than with the original Vaux and Richard's plan. The only person who was pleased with the Olmsted plan was President French and in light of the Trustees' rejection of the plan, French resigned. French was succeeded in 1866 by the Honorable Paul A. Chadbourne whose tenure lasted only into 1867 (Hitchcock 1894:161). In 1867, the first President to serve over an actual campus was elected. President William S. Clark, Ph.D, LL.D, would serve in that capacity for the next decade. Komarakul (1951:13) attributes Clark with the first important growth period on campus.

4.3 1867-1916: The Early Growth

President Clark's campus in 1871 is shown on Figure A-1. The campus' 383 acres formed a large rectangle which stretched from a ridge on the east to the Mill River valley on the west. Starting on the eastern edge, the ridge dropped rapidly some 100 feet before leveling into a broad upland bench and valley. This broad bench ultimately became the focus of the campus and it today hosts the Library, Student Union, Chapel, and most the older buildings.

A row of campus buildings aligned with the western edge of the north-south trending bench. By 1871, there were seven buildings tightly aligned on the bench and an eighth to the north at the bench terminus near the vegetable garden. Moving west from the broad upland bench, the topography again dropped rapidly to eventually even out in a series of broader valley benches and terraces. In 1871, there were no developments west of the broad upland bench. However, the eastern third of the campus contained an orchard, botanic garden, vegetable garden and buildings including several farm buildings left from previous occupants.

The following buildings, listed chronologically, were erected in the 10 years of Clark's administration (Chadbourne 1867; Hitchcock 1894:173-174, 177-178, 181) though three building contracts were let by Chadbourne:

- Laboratory Building [Chemistry] (1867; \$10,360): reported as 46 x 57 feet and two stories high. The building contained a room for chemical analysis, 2 furnace rooms, 4 apparatus rooms, a balance room and a large lecture room which could also be used as a chapel (Chadbourne 1867:9; Clark 1868:6) [no longer extant].
- South College Dormitory (1867; \$86,280): 100 x 50 feet, 4 stories high. 48 student rooms, recitation rooms, a cabinet and library room (Chadbourne 1867:9; Clark 1868:6). Designed by George Hathorne, Esq., New York (Clark 1869:9) [rebuilt, no longer extant].
- Boarding House (1868; \$8,180): house up to 50 students (Chadbourne 1867:9; Clark 1868:6) [no longer extant].
- Botanic Museum (1868; \$5,180): 31 x 45 feet, 2 stories. Contains president's office, lecture room, and exhibit spaces (Clark 1868:6) [no longer extant].
- Durfee Plant Houses (1868; \$12,000 donated by Nathan Durfee): 5,000 square feet in a cluster of glass buildings (Clark 1868:6-7) designed by F. A. Lord, Syracuse, NY [rebuilt, no longer extant].
- North College Dormitory (1868) [no longer extant].
- College Barn (1869; \$7,000 appropriated in 1868, final cost \$10,000): designed to be 100 x 50 feet with 28 foot high posts (Clark 1868:7-8; Clark 1870:1-2) [no longer extant].
- College Hall (1869): 60 x 97 feet, 4 stories, designed by George Hathorne, New York (Clark 1870:12) [no longer extant].
- Drill Hall (1869, proposed 1868; \$6,500) [no longer extant].
- Farm Superintendent House (1869; \$4,000) [no longer extant].
- President's House (1869).

During Clark's tenure the college was organized into departments. This was standard at any college but at MAC the grouping of buildings and activity areas by department was a focus of planning at least up until World War I. Clark's 1871 Annual Report identified two departments (Agriculture and Horticulture) and the Agricultural Experiments section. The Horticulture Department included the Durfee Plant House, the vineyard, the orchard, and the nursery. The department members also were actively engaged in the development of the plan for a Botanic Garden and Arboretum. I.A. Pilat, Central Park's chief gardener, was hired to develop the plan for the garden complex and his rendition is included in the 1871 report. The complex was never built and area to be used for it was given over to other uses (Komarakul (1951:11)).

Between the purchase of the farms and about 1867, the original owners continued to use their properties for production. They paid rent to the College and these monies were used for College expenses. According to the 1868 Annual Report, during 1867, Levi Stockbridge, the college Farm superintendent began preparation for various experimental fields. Included in the preparations was the tiling of some 10 acres of land.

This is the first mention of subsurface field preparations and these activities would eventually be carried out across the Mill River valley campus lands (Clark 1868:9; 1890 Annual Report: 15; 1915 Annual Report: 15-16) and through the MAC Farm and grounds (Clark 1870:6). Tile and ditch work were completed by each freshman class; in 1889, for example, 27,900 feet of tile drains were implanted into 31 acres between August and December (AR 1890:15). The tiles were laid at a depth of 3 ½ feet below present ground surface; thus, they were at depths greater than the thickness of the average plowzone (AR 1890:15).

By 1868, Stockbridge began to establish apple, pear, and peach orchards and a vineyard on the east ridge (Clark 1869:10). The same year he presented the Trustees and Clark with a plan for the management of the Agricultural Department which included the MAC Farm. Stockbridge's plan divided the Farm, and effectively the college grounds, into woodland, pasture, permanent mowing fields, and tillage plots. The tillage fields would also include fields devoted to crop rotation and experimental plots (Clark 1869:12). Much of Stockbridge's plan is seen in subsequent maps of the campus area and the general layout of the experimental plots remains basically unchanged up until about 1919 (Manning 1919; see also Figure A-2).

MAC's emphasis on agriculture was consolidated with the location of the Massachusetts Agricultural Experiment Station in 1882. The Station was independent until 1887 when separate legislation established the Hatch Experiment Station on campus also. The two stations were consolidated in 1895, and from 1907 to present the combined units were referred to as either the Massachusetts Agricultural Experiment Station or the East Experiment Station. In 1896, an agricultural chemistry laboratory was constructed as a complement to the Experiment Station. This unit is now referred to as the West Experiment Station (Larson 2009).

In addition the buildings, infrastructure improvements also were planned. Clark (1869) requested \$5,000 for the construction of another reservoir on Mt. Pleasant ridge. This reservoir would supply potable water to the buildings on the central bench. Clark apparently had a Worcester Civil Engineer, Phineas Ball, draw up the plans for the reservoir and supply lines and it was built in 1869 for a cost of only \$2,000. Clark (1870:12) reported that the reservoir was constructed southeast of the Durfee Plant houses and that about 2,100 feet of supply pipe was laid from it to the central building complex.

The damming of an existing water course on the site for creation of a campus pond occurred in 1892 Meeting minutes from the Massachusetts Agricultural College Board of Trustees meeting on June 21, 1892 documented the proposal to construct the pond,

“Construction of a Dam – Voted – that W. Wheeler [William Wheeler], E.W. Wood, and H.H. Goodell [Henry Hill Goodell] be a committee to construct a dam for an artificial pond on the College grounds in accordance with a vote

of the Trustees at the June meeting in 1890. The work to be commenced when there are funds available for the purpose and the cost not to exceed one thousand dollars" (Anonymous 1892).

A report by the Board of Trustees the following year, in January 1893, indicated that the dam was complete,

"Report of Committee on Dam – The Committee to construct a dam on the college grounds, Wm. Wheeler, Chairman, reported verbally that the dam had been built but that more work was needed to put it in proper shape *to be an ornament to the grounds* [emphasis added]. That on account of errors in [levels] made by students, upon which estimates of the cost of the structure would exceed the estimate and the sum authorized to be expended and the Committee ask[s] for an additional appropriation of \$1,750. Voted, to postpone action on this Report until the adjourned meeting, [action postponed]" (Anonymous January 3rd 1893).

Later that month, an additional \$1,750 was appropriated to complete the work on the dam. Although previously referenced as "an ornament to the grounds," the "Report of the Horticultural Department" in the "Thirtieth Annual Report of the Massachusetts Agricultural College" indicated that the additional motivation for the creation of the Campus Pond was easy access to ice for dairy and orchard activities:

"The necessity for large quantities of ice for dairy purposes, and in the cold storage room for the preservation of fruit, led to the construction of a dam across the little stream flowing through the college grounds at a point midway between the botanic museum and the north dormitory...This has been satisfactorily completed under the supervision of a graduate of our first class, Mr. William Wheeler [Class of 1871], and has resulted in the flowing of a considerable area. Looking at it simply in the light of ornamentation, it is a great addition to the college grounds, and furnishes the one thing needful to make the landscape perfect—a water view" (Anonymous 1893: 14).

Although the campus pond is first shown on a reconstructed drawing of Frederick Law Olmsted's 1866 design for the campus grounds (prepared by Frank Waugh in 1911), the 1901 plan of the "Estate of the Massachusetts Agricultural College" is the earliest document to show the Campus Pond as constructed. The 1901 plan shows an island located at the southern end of the pond, no vegetation surrounding the pond, and no buildings in the vicinity of the pond. A road, known as Olmsted Road and later Ellis Drive, ran near the southern end of the pond and formed an arc along the west side of the pond, defining a grassy area labeled Front Slope.

In 1911 landscape architect Warren Manning prepared a report and accompanying plan that recommended site improvements and new building locations as the campus expanded. Given his prior experience with the Olmsted firm, Manning was

well suited to continue the campus planning work initiated by Frederick Law Olmsted in 1866. Manning was retained by the University for over four years to work on the campus (Anonymous 1912: 213). His plan “provide[d] for keeping the central portion of the campus forever open. The pond [was] to be preserved and eventually extended” (Anonymous 1912: 213). However, there is no evidence that the pond was ever expanded.

The facilities improvements begun by Clark continued through the subsequent administrations up to World War I. Clark was followed in the presidency by Charles Louis Flint (1879-1880), the Hon. Levi Stockbridge (1880-1882), the Hon. Paul Ansel Chadbourne (second term; 1882-1883); and James Carruthers Greenough (1883-1886). President Henry Hill Goodell was acting president for six months in 1883 and then assumed the post in 1886. By 1916, a campus map depicted 59 buildings built in clusters which corresponded loosely to departments and focus areas (Anonymous 1916).

As the MAC mission expanded, it began to acquire both contiguous and non-contiguous parcels. L. B. Caswell (1917:71-72) summarized the growth of the campus between 1892 and 1917 when he wrote his treatise entitled *Brief History of the Massachusetts Agricultural College Semiscentennial, 1917*. By 1916, the campus holdings had grown from the original 383 acres to about 630 non-contiguous acres. The expansion in the immediate campus area was through the acquisition of adjacent farms and lots. Table 5 summarizes the parcels acquired beginning with the William Banger house and lot in 1892.

Plans developed as part of five and 10-year initiatives were directing the placement of buildings and the acquisition of land. The most definitive of the plans appears to have been Manning’s 1910 effort which divided the campus into three sections (Figure A-3):

- The Upland Section: Horticultural Services Group, Womens Group, Faculty Group, road line marked “To be left always open as a possible future road”.
- The Midland Section: The Research Group, Administration Group, Science Group, The East and West Campus Greens, two unnamed ponds (one to either side of Main); the west of the ponds was the Agricultural Group, The Student Group, The Athletic Group, Dining Hall. Running through the Midland Section was an electric car line which basically looped the north, east, and west sides of the Section.
- The Lowland Section: included the Poultry Group, The Farm Group, and the Sewage Disposal Field.

Table 5. Holdings Acquired Through Purchase, 1892-1917 (from Caswell 1917:71)			
Year Acquired	Description	Acres Acquired	Comments
1892	Wm. Banger lot and house	Unspecified	
1896	President Clark lot	20	Based on the 1919 Map: Two irregular-shape parcels marked Clark Estate, which extended both north and south of Clark Hill Road, bounded by East Pleasant Street on the east and the site of Greenough House at 124 Orchard Hill Drive (UMass Building #24) on the west.
1909	Baker parcel	5	Located on Plainville Road.
1910	Harlow farm	30	Probably the parcel containing Harlow Barn at 512 East Pleasant Street (UMass Building #180)
1910	"the old creamery lot and buildings where the college apiary now stands" (1917:71)	Unspecified	Probably the parcel containing the Apiary Laboratory at 149 Clark Hill Road (UMass Building #074)
1910	Nash parcel	60	South of the Durfee lot Based on the 1919 Map: Two irregular-shape parcels marked Nash West and Nash East, located on the north and south sides of North Hadley Road in the vicinity of Mullins Way.
1910	Kellogg farm	18	"on the west end of which a large part of the athletic field is located..." Based on the 1919 Map: Probably the parcel marked Athletic Field, which included all the land on the north side of Massachusetts Avenue where President's Drive is located, extending west to the vicinity of County Circle and including the land under Whitmore Hall at 181 Presidents Drive (UMass Building #388).
1910	Cranberry bog, surrounding uplands with pumping plant and sheds	15	In Wareham
1915	Owen orchard and part of Owen property west of East Pleasant Street	27	Based on 1919 Map: Probably the various orchard parcels marked on the map along the west side of East Pleasant Street, generally between Orchard Hill Drive on the north and Clark Hill Drive on the south, with some portions extending north of Orchard Hill Drive.
1915	Tillson farm	70	On East Pleasant Street. Initially rented with option to buy; bought in 1922 (AR 1923). Based on the 1919 Map: Parcel at the southeast corner of East Pleasant Street and Tillson Farm Road, with overlap on the north side of Tillson Farm Road.

To a great extent, Manning's plan was implemented though it took two decades of concentrated effort. The only major element that was never constructed was the second pond. Apparently this idea was dropped when new underground water lines were laid in the 1920s (Waugh 1920; also Manning 1919). The buildings and facilities listed below were constructed between the end of Clark's administration and World War I (Hitchcock 1894; AR 1885, 1890, 1895, 1900, 1905, 1910, 1915).

The buildings and facilities listed below in chronological order were constructed between the end of Clark's administration and World War I (Hitchcock 1894; AR 1885, 1890, 1895, 1900, 1905, 1910, 1915).

- Massachusetts State Agricultural Experiment Station (1882): 48 ½ acres leased from the College Hitchcock (1894:166, 169).
- Chemical Laboratory of the State Experiment Station (1883): based plans completed by E.A. Ellsworth [no longer extant].
- North College Dormitory (repaired 1884): \$6,000 dollars allotted for these repairs and for work on other college buildings (AR 1885:1). The repairs to North College included removal and replacement most woodwork on

building interior; 4th story rooms repainted; new floors where needed; 12 new windows (AR 1885:2) [no longer extant].

- College Chapel (1886; \$31,000): housed the college library on its first floor along with the President's office. The second floor, capable of holding 600 persons, was the scene of Sunday services (Hitchcock 1894:174). Stephen C. Earle, Worcester, was the architect for the building (AR 1885:2)
- Feeding stable and wing (1886): added to the Experimental Station barn. Another wing was added to the barn sometime between 1886 and 1894 (Hitchcock 1894:178, 181) [no longer extant].
- South College Dormitory (re-built 1886): new building brick, 3 stories, and it contained student suites, recitation rooms, and the biology department museum. The Hatch Experiment Station office was in the building tower along with the meteorological observatory (Hitchcock 1894:174).
- Creamery (1887): added to the Experimental Station barn (Hitchcock (1894:178, 181) [no longer extant].
- Hatch Experiment Station (1887): following the enactment of the Hatch Act. The "act established experiment stations in all the States and Territories of the Union..." Hitchcock (1894:170). In 1894, Hatch and the Massachusetts Experiment Station were consolidated and made a College department.
- College pastor's house (unknown date, before 1894): "across the ravine [from the new barns, stables, and dairy school]" (Hitchcock 1894:178) [no longer extant].
- Greenhouse, Hatch Experiment Station (1888): based on plans developed by Professor S.T. Maynard. Hitchcock (1894:187) [no longer extant].
- Barn Sheds (1889): the south shed was cut into two parts and the shorter part has been appended to the main barn. Original small engine room, in turn, has been to the end of the moved barn shed (AR 1890:12). The remaining half of the south shed has been moved west and a new basement constructed under it (AR 1890:13) [no longer extant].
- Dairy Room (1889 redone): existing dairy re-silled, wood floors replaced by concrete, and new sewer connections added to take waste water away from the facility (AR 1890:12) [no longer extant].
- Hatch Experiment Station barn (1889): located behind the Boarding House. The barn burned in 1891 and was rebuilt the same year (Hitchcock 1894:178).
- Insectary (1889): entomology department of the Hatch Experiment Station (Hitchcock 1894:188) [no longer extant].
- Silos (1889): two silos occupy the space once used for roots and sand storage (AR 1890:14) [no longer extant].
- Agricultural and Physiology Laboratory (1890): Hitchcock (1894:181) [no longer extant].
- Dairy School with barns, stables (1893, 1894): erected near the center of the college "estate and at the foot of the slope west of the campus..." (Hitchcock 1894:177) [no longer extant].
- Laboratory building (modified 1894): expanded to three stories. The first floor housed the chapel, the zoology department laboratory, and a section of the chemical department. The second floor hosted the mathematical,

physical, and chemical departments. Japanese agricultural implements were housed on the third floor; earlier it had been used as a drill hall for the cadet battalion (Hitchcock 1894:177) [no longer extant].

- Agricultural Building, later named Stockbridge Hall (1912; \$210,000): completed in October 1916 with 3 stories and basement, contains auditorium seating 900 (AR 1915:17, 19; AR 1916:17)
- Athletic Field (1914): 7 acres, with five thousand feet of ditch and tile (AR 1915:15-16)
- Department of Rural Engineering Shops (begun 1914): (AR 1915:19) [no longer extant].
- Fraternity, Phi Sigma Kappa House (1914): on Pleasant Street at South College Entrance. MAC coordinated water and heating services (AR 1915:17).
- French Hall addition (1914): (AR 1914:18-19).
- Infirmary (1914, \$15,000): two buildings, one with wings for patients and matron/nurses and the other for isolation (AR 1915:19) [no longer extant].
- Piggery and poultry buildings (1914): poultry buildings was added to an existing building (AR 1914:18) [no longer extant].

Figure A-2 shows the buildings and general campus layout superimposed on the existing aerial coverage of the campus. Although Manning's Upland, Midland, and Lowland sections are not fully realized, it is apparent that discipline specific groupings were developed. Building clusters, especially those related to Agriculture, Administration, and the hard and earth sciences (physics, chemistry, and geology) continued to expand. The idea of clustering student housing also appears to be well-rooted and this would continue to be true thorough the current period.

4.4 1916-1931: World War I and the Transition Years

The war did not stop growth on the campus. The need to apply annually to the Massachusetts Legislature for building appropriations, however, was wearing on the administration. Long range building programs were developed beginning with Professor Waugh's 1919 plan (Komarakul 1951:15-18). Like Manning's 1911 plan, the Waugh 1919 work emphasized building groups in order to maintain the "proper balance between buildings, cultivated fields, meadows and lawns, forests and trees (Komarakul 1951:18). Waugh's plan influenced subsequent building siting but it was never implemented. A 10-year program, neatly outlined on a 3-page summary with handwritten notations (Anonymous 1921), lists 34 buildings ranging in type from a beef cattle barn (estimated at \$2,500) to a proposed Administration central building for a projected cost of \$875,000. The latter was proposed to include administrative space, an auditorium, and house Humanities and Rural Social Science. In total, the building program was estimated to cost \$4,082,750.

The annual reports through the 1920s and the yearly campus guides provide the most information on the building program for the college. As in years past, each year's annual report summarized what was needed, what has been appropriated,

and what buildings were underway or finished during the reporting cycle. By the 1920s, the reports also identified long range building needs and planning programs (see AR 1930:11 for 5-year plan).

The unrelenting plea through the war years and until 1923 was for a new Chemistry building. Chemistry had been housed in one of the earliest buildings constructed on campus known as "College Hall", and by the first decade of the 20th century, the original building was virtually unusable (AR 1917:8). It is likely that the original Chemistry building would have remained in use were it not for a fire on September 6, 1922 (AR 1923:7; Rand 1933:211). The monies for a new building were appropriated in 1923 and the new Chemistry facility was erected in 1925 (AR 1923:7; AR 1925:6).

The demise of the original Chemistry building, though through accidental loss, was symptomatic of a campus-wide deterioration of building and facility stock. Each administration beginning with Clark had noted that new buildings and routine maintenance were necessary. By World War I and continuing through the 1920s, there was constant reference to the inadequacy of the physical plant; the lack of class room space; the lack of properly ventilated and lighted spaces; and the danger of having to cancel classes because of a lack of appropriate facilities (see in particular AR 1917, 1920, 1923).

A report prepared by Professor Frank Waugh in 1920 both documented the area of the "south campus" and made further recommendations for improvements to landscape features of the campus, including the campus pond. In documenting the existing campus pond landscape, Waugh wrote,

"The most prominent portion of the grounds is that section lying between Clark Hall and the Chapel and between the Athletic Field and the cross-walk. This area consists of a concave sloping meadow with the pond in its center. The quality of the meadow, with its bordering trees, is very pronounced. These introduce a distinctively rural character into the college picture at the very entrance to the grounds, but they add also a most agreeable feeling of breadth and dignity" (Waugh 1922:11).

In his report, Waugh went on to make recommendations, which included protecting the pond from siltation and planting. He wrote, "Extend and improve marginal plantings using great care to secure accurately naturalistic effects. These plantings would be mainly of shrubs and herbaceous species and should occupy two-thirds to three-fourths of the periphery of the pond" (Waugh 1922: 12). Additional recommendations related to keeping large trees out the center of the area, maintaining vistas and "preserving the meadow-like character of the area by keeping up a good sod. This area should not be mowed with a lawn mower, but should be kept for hay. A proper alternative would be to pasture it with sheep" (Waugh 1922: 12). Photographs from the 1920s are the first to show the extensive scrub growth and

Year Acquired	Description	Acres Acquired	Comments
1917	Land for Market Garden Experiment Station	12	In Lexington
1917	Mt. Toby tract	755	In Sunderland and Leverett
1917	Angus lot (E. Pleasant Street)	8	E. Pleasant Street
1917	Kappa Sigma lot (Lincoln Ave.)	Unspecified	Lincoln Ave.
1922	Brooks farm (north of campus)	60	Based on the 1922 Annual Report: A 60-acre parcel where the Brooks Tobacco Barn at 101 Brooks Way (UMass Building #209) is now located
1923	Waltham land	55	In Waltham, MA
1928	Q T V lot (Lincoln Ave)	Unspecified	Lincoln Ave.

planting along the pond edge consistent with the recommendations of Waugh's 1920 report.

Two foci came to define the administrative focus of the era: more land and more buildings. The campus could not 'grow' without additional land. As noted by Caswell (1917) and Rand (1933), if the land was not available adjacent to the core campus, the Administration was willing to acquire extramural parcels. The biggest of these acquisitions was made in 1917 with the purchase of the so-called Mt. Toby tract which encompassed about 755 acres (Table 6).

The appropriations, however, were slow in coming and the Administration simply persisted with their requests. The 1920s, however, had the fewest buildings constructed of any decade in the campus history to that point. The list below, presented in chronological order, summarizes the buildings, facilities, and landscape modifications completed from about 1917 to 1930.

- Abigail Adams House (1919): women's dormitory (Anonymous, Campus Guide 1926) [no longer extant].
- Market Garden Field Station (1919, 1921): complex consisted of 2 greenhouses, a boiler house, and a farmers' cottage. An administrative building was added in 1921 (AR 1920:20; AR 1922:16) [no longer extant].
- Turbine building (1919): begun in 1918 (AR 1920:16).
- Live stock barn addition (1921; AR 1922:16) [no longer extant].
- Power plant improvements (1922; AR 1923:7).
- Goessmann Laboratory (1923): as of 1926, the largest building of its type [laboratory] to be erected on campus (Anonymous, Campus Guide 1926)
- Horticulture building service building addition (1923; AR 1924:4) [no longer extant].
- Olmsted Road from Pleasant Street entrance (1923): 1,300 feet long (AR 1924:4) [no longer extant].
- Tillson farm building additions (1923): buildings not specified (AR 1924:4)
- Agronomy greenhouse headhouse (1924; AR 1925:6) [no longer extant].
- Rural Engineering addition (1924; AR 1925:6) [no longer extant].
- Tobacco barn (1924): cost \$3,000 (AR 1925:6).
- Calvary Stable (1925): (Anonymous, Campus Guide 1926) [no longer extant].

- *Abattoir* [meats laboratory] (1929): was an addition to Grinnell Arena (AR 1930:5).
- Car garage (1929): 6-car facility built from concrete (AR 1930:5) [no longer extant].
- Horticulture Manufacturers Building (1929): 2-story, brick, measuring 112 by 50 feet and located just west of Flint Laboratory (AR 1930:5) [no longer extant].
- Poultry house and hot water brooder (1929; AR 1930:5) [no longer extant].
- Road (1929): from North/South Colleges to Power plant (AR 1930:5).

To a large extent, the buildings that were approved were additions to existing structures, facilities designed for specific agricultural tasks (brooder for example) or infrastructure designed to accommodate a growing number of cars on campus. According to various campus guides for the decade, there were five educational divisions at MAC in addition to Administration, the Office of the President, and two general departments (Military Science and Tactics; Physical Education and Hygiene). The divisions were Agriculture, Horticulture, Science, Humanities, and Rural Social Science. The Humanities Division was confined to French Hall. Rural Social Science consisted of agricultural economics and education. Classes in these disciplines were conducted in South College and Stockbridge Hall.

Stockbridge Hall also hosted the Division of Agriculture and most of its associated sections. However, that Division's Agricultural Engineering classes were held in the Engineering Building and its Animal & Dairy Husbandry classes were conducted at the Flint Laboratory. The Division of Horticulture classes were held in Wilder and French halls; the Division administration was seated in Wilder Hall.

The Division of Science included Botany, Chemistry, Entomology, Mathematics and Civil Engineering, Microbiology, Physics, Veterinary Science and Animal Pathology, and Zoology and Geology. These disciplines, in order, occupied space in Clark Hall, Goessmann Laboratory, Fernald Hall (Entomology, Zoology, and Geology), the Mathematics Building, the Microbiology Laboratory, the Physics Laboratory, and Paige Laboratory (Anonymous, Campus Guide 1926). The core campus was still little changed from that present before World War I.

5.0 Massachusetts State College: 1931-1947

The change in campus orientation wrought by the expansion of the school's mission began in the 1930s with its name change to Massachusetts State College. With that program expansion there was a concerted effort to modernize and expand the campus facilities. Yet, outside events in the form of the Great Depression, its resultant New Deal programs (Hawley 1933, September 30), and World War II, affected the implementation of changes and turned the college in directions it might not have anticipated.

5.1 1931-1941: Great Depression, New Deal

The early years of the Depression were stressful but campus committees continued to operate. The Campus Plan committee, including Messrs. Gordon, Mackimmie, Rice, Sievers, and Waugh and Miss Skinner met through 1932 and 1933 to develop what was effectively a building plan (Hawley 1932, Anonymous 1932, Van Meter 1933, Hawley 1933). During the course of their meetings, they initially grappled with two questions: 1) what duration should the plan encompass; and 2) how many students should be accommodated by the plan (Hawley 1932, January 25). The surviving notes indicate they decided on a five-year projection. No estimate of the number of students is presented in the archived notes from 1932; however, the "Final Report of Campus Planning Committee" states "...the student population at the Massachusetts State College may easily become five or six times its present size within the next fifteen to twenty years" (Sievers et al. 1933, November 24).

In early March, 1932, the committee developed a list of eight buildings that would be needed in the next five years. These included Women's Dormitory, Men's Dormitory, Library, Administration Building, Physics Buildings, Landscape Architecture Building, Home Economics Building, and Additional Dining Hall facilities (Anonymous 1932, March 2). A year later, the list was reformed and it then included Administration, Boy's Dormitory, Girl's Dormitory, Home Economics, Library, Physics, and Social Science buildings (Van Meter 1933, March 27). The need for the buildings was attributed to the fact that present facilities were "becoming obsolete or inadequate" and to provide provisions for the development of long-term programs including a women's college and engineering school (Anonymous 1932, March 2).

Again, the planning was thwarted by events outside of the Administration's control. The onset of the Great Depression with its wide-ranging consequences effectively restricted funding to the bare minimum needed to operate. In 1933, President Baker reported to the committee that some monies might be available for the women's and men's dormitories "in the immediate future" (Hawley 1933, June 24). To this end, the committee, at Baker's urging, recommended that the Clark Estate be used as the site for the women's dormitory and the "region north of the present Infirmary for the development of a men's dormitory unit" (Hawley 1933, 24 June).

The campus population had grown steadily during the 1920s. In 1933, the campus was hosting about 1,200 students in its graduate and undergraduate sections (Rand 1933:212). By 1935, there were 1,300 students enrolled representing a "53 percent increase in five years and of 80 percent in ten years. Recently it has become necessary to limit the freshman class to 300 students due to the inadequacy of facilities and staff to care for a greater number" (Anonymous 1935). This student population was putting extreme pressure on basic resources such as the library.

The Campus Planning Committee spent much of 1932 and 1933 focused on where to site a new library building. Hawley (1932, March 8) noted that the committee

avored “erection of an entirely new Library building...and suggests the best location [is] the site north of the present Athletic Field with the building facing the college pond.” There was some urgency to the decision of where to site a library. In late September, 1933, President Baker had notified the committee that National Recovery Act funds were available for the construction of the library, a new Administration building, and “other buildings” (Hawley 1933, September 30).

On October 2, 1933, the committee visited five locations and they voted to recommend the location east of the Physical Education building and north of the athletic field (Hawley 1933, October 2). None of these sites, however, had been vetted by the head librarian or the head of the library committee and they met with the Campus Planning Committee on October 11 to voice their opinions. According to Sievers’ notes of October 11, 1933, two sites for the new library were then in play: 1) east of the Physical Education building and south of Memorial Hall; or 2) south of South College and west of the present library.

The library was eventually sited according to the librarians’ preference for the location south of South College. The Campus Planning Committee, in their November 24, 1933, ‘final’ report recommended:

1. That the general organization and building program on the campus be planned so as not to interfere with the sightliness [sic] and beauty of the present central open space.
2. That buildings of such a general service nature that they affect the entire student body be located in the first zone immediately adjacent to the central open space - *Library, Dining Hall, etc.*
3. That buildings dealing with services more specialized, and therefore affecting only certain groups of students, occupy the second zone - *Agriculture, Home Economics, etc.*
4. That buildings used by students, but not directly contributing to organized instruction, occupy the third zone - *Dormitories.*
5. That buildings dealing with problems of general maintenance and physical service occupy the outer or fourth zone - *Heating Plant, Carpenter Shop, Horse Barn, etc.*

The committee went on to note that with these five recommendations in mind, they would site newly proposed buildings according to the defined zones. These zones were basically the ones that Professor Waugh had recommended in his 1907 and 1919 planning reports and Manning had proposed in his 1911 plan. The zones or sections were designed to focus significant elements of the college’s mission to its physical core which was defined as the broad, central bench with its hallmark pond

(Anonymous 1935). Everything that supported these core elements were dispatched to outer zones.

Despite documents entitled “Final Report of the Campus Planning Committee,” the group operated in one form or another as the primary planning unit on campus for the next 15 years. The committee continued to focus on where buildings and facilities would be best sited relative to the campus missions. In their role, they continued to police the campus layout. In 1935, for example, they noted the proposed Central Garage and General Services building should be located within the existing service area and that “under no conditions should it be permitted to encroach upon the site of the old chemistry building or upon any other area considered suitable for some future Class A building” (Sievers 1935, March 13).

The committee’s role also included coordinating various planning requests from the President’s Office to various Divisions. The five campus divisions defined in the 1920s had evolved into six by 1935: Social Sciences, Physical and Biological Sciences, Agriculture, Horticulture, Home Economics and Physical Education (Anonymous 1935). Military Science was a separate department “required of all able-bodied men during their first two years of College” (Anonymous 1935). Examples of the President’s Office requests included a landscape plan for the Homestead and also a plan for a kitchen vegetable garden. Both requests were sent by the committee to the Department of Landscape Architecture (Sievers 1935, March 27). Professor Blundell of the landscape department also produced landscape plans for the new library and for the vicinity of Thatcher dormitory (Sievers 1935, March 27; Waugh 1936, April 13).

The University of Massachusetts State College Building Association was proposed by a group of involved alumni in 1933. The group’s focus was to provide student housing due to lack of adequate lodging within the town of Amherst. Due to the timing of available Federal “New Deal” funding, the organization was advised to postpone their formation. Federal funding was subsequently secured for construction of both Goodell Library (1934) and Thatcher Hall (1935). The idea lay dormant until 1938, when the alumni board reconstituted itself and was formally enacted by the Massachusetts state legislature in 1939. Based on the model of other state institution’s, the Association established a self-liquidating construction program whereby all building projects were leased by the association to the college at rentals sufficient to pay off bonds and associated costs, with property turnover at the end of debt service. Immediate projects included Lewis Hall (1939) constructed for \$192,000 and Butterfield House (1940) constructed for \$258,000.

A wide range of campus design projects was initiated by professors of the college and other employees. Blundell produced tree planting plans and other landscape layouts through the 1930s and into the 1940s. In 1938, for example, Blundell created a parking plan for areas near Stockbridge, Goessmann and Draper halls (Waugh 1938, September 22). The plan was detailed and focused on issues like the separation

of automobile and pedestrian traffic on routes between Stockbridge Hall and Abigail Adams dormitory.

5.2 1941-1947: World War II and the Post-War Responses

The Campus Planning Committee gave way to the Campus Planning Council in 1941 (Otto 1942, February 6). The council seems to have continued to focus its attention on all matters pertaining to campus layout and facilities siting. Although they repeatedly attempted to stay current with who held sway over the various Division allotments, mistakes were made. A single example illustrates the complexity of their job. On February 6, 1942, the council recommended that the "area north of the engineering shop...could be used by the poultry department for runs and temporary buildings" (Otto 1942, February 6). A rejoinder to this decision was issued six days later by Professor E.F. Gaskill. Gaskill notified the council that the field north of the engineering shop was under the management of the Experiment Station and that the field, after five years of preparation, was to be used as an experimental plot for tobacco brown root-rot studies (Gaskill 1942, February 12).

Such planning miscues were seemingly rare and this rarity was undoubtedly the result of the protracted discussions that ensued on siting proposals. For example, discussion of the Home Economics building site extended from November 2, 1943, to May 15, 1944 (Burke 1943, November 2; Burke 1944, April 8; Burke 1944, April 15; Burke 1944, April 29; Burke 1944, May 15). As was the case with the library siting years before, it was not until the May 15th session that the council asked the Home Economics head what site she preferred. It was not the site selected by the council.

The council's focus beginning at least by 1943 also involved what facilities would be needed to accommodate the returning veterans. The Federal government's Emergency Public Works Commission had requested that all land grant colleges and universities prepare for a large influx of veteran students following war's end. To facilitate the process, every school submitted a list of basic needs to the Commission. The list included buildings, infrastructure updates, roads, and any facility needed to respond to the educational needs of both male and female veterans and their spouses. The list appended to the November 2, 1943 Campus Planning Council minutes (Burke 1943) included items ranging from a fire protection system to an Educational Radio building.

The scope of the effort needed seems to have overwhelmed even the tireless council. In 1945, the Trustee Committee on Buildings and Grounds solicited Charles P. Halligan of the Michigan State College Department of Landscape Architecture to participate in a two-day conference on long-range plans for the UMass-Amherst campus. The Trustee Committee had asked the Campus Planning Council for similar advice in June, 1945 (Armstrong et al. 1945, June 29; Anonymous 1950).

The conference was to address the "desire to group buildings according to related functional activities" (Anonymous, memorandum October 13-14 conference).

Halligan took this desire to heart and in his recommendations noted that both scale and spacing should be considered so that views were not obstructed. Others during the conference also spoke to issues concerning campus traffic patterns, building groups, and the need to acquire additional land (Alumni Committee, October 16, 1945).

The full report entitled “Massachusetts State College Report from Alumni Advisory Committee on Campus Development” is of particular interest because it questions the need to maintain such a large, open space core around the pond (Alumni Committee 1945:7). The report, however, does advocate a continuation of building groups by discipline. It also recommends closing the north-south North Pleasant Street to non-campus traffic and routing this traffic to bypasses around the campus. The Alumni Committee report recommendations were met with lukewarm response and one of the least understood elements was the reduction of the central core space. In late 1945, L. L. Blundell, who had been so instrumental in various landscape plans, prepared a detailed summary of the planning efforts on the campus as a rejoinder to the Alumni Committee report.

6.0 University of Massachusetts: 1947-present

In a 1922 memo to President Butterfield, Professor Charles Fernald presented three expansion scenarios to create a comprehensive state university: 1) create one *de novo*, “starting with nothing already in existence”, 2) select certain schools already established and bring them under a single heading; or 3) develop MAC as the nucleus of a larger institution. In 1947, the decision was ultimately reached to organize a state institution based on the third option with the facility hereafter known as the University of Massachusetts Amherst (UMass-A).

6.1 1947-1960: New Directions

Between 1945 and 1949, the campus building program focused on meeting the recommendations made by both the Campus Planning Council and the Alumni Advisory Committee. According to a typewritten listing dated 1949 and entitled “University of Massachusetts Amherst Massachusetts Campus Development Since 1940”, the following buildings and facilities were constructed between 1940 and 1948:

- Northeast Residential Area (1935-1959) including: Lewis Hall (1940) dormitory housing 160 persons.
- Central Residential Area (1941-63) including: Butterfield House (1941) dormitory designed to house 146 persons; Chadbourne and Greenough Houses (1946-1947) dormitories located between Fisher Laboratory and Butterfield House, west of the orchard.
- “Federal Circle” (1946): 13 war surplus barracks modified to accommodate 94 married veterans and their families. Located along Lincoln Avenue south of Paige Laboratory [no longer extant].

- “Commonwealth Circle” (1946): five war surplus barracks located behind Draper Hall. Barracks were being used to temporarily house 241 single veterans [no longer extant].
- Draper Hall addition (1947): temporary structure attached to the rear of Draper Hall.
- Engineering Laboratory (1947-48): located about 700 feet north of Draper Hall [no longer extant].
- Golf putting greens (1948): west of Stockbridge Hall [no longer extant].
- Hockey Rink (1947-48): located east of Fernald Hall [no longer extant]
- Liberal Arts Annex (1947): structure located west of South College [no longer extant].
- Marshall Hall addition (1947): addition extending to the north [no longer extant].
- Parking areas (1947, 1948): One lot across from Hicks Building and north of alumni field and a second lot south of Clark Hall.
- Physics Building later named Hasbrouck Laboratory (1947-49): south of Goessmann between Ellis Drive and North Pleasant Street.
- Skinner Hall (1947-48): Home Economics building located between North Pleasant Street and Stockbridge Road, northwest of the house once occupied by Professor Waugh.
- “County Circle” (1948): five concrete block housing units designed to handle 150 persons or 30 families each. Structures located just east of the old cavalry stables [two structures no longer extant].

The 1949 list also noted several proposed buildings - four of which were related to housing, one to dining, and four to classes. In addition, an expansion of the power plant was proposed “north of the present plant in ravine” (Anonymous 1949).

By this time, the institution’s land holdings amounted to 700 acres. In contrast to the growth in real estate, strains to the campus facilities persisted, particularly the 3,220 student body dining in Draper Commons, originally designed to accommodate 300 (Anonymous 1948, October 15). In addition, the overflow of students forced housing in the schools early agricultural structures, and even the cage and library.

Such conditions supported the state authorization of President Van Meter’s \$7-million building program, initiated in 1948 and intended to double student capacity on the campus within three years. However, all dormitory construction would be financed through the UMass-A Alumni Corporation, which grew to match the level of state financial contributions (Anonymous 1948, July 25).

Following on the early campus zoning principles, the plans of the 1930s employed the pre-dominant convention of separating student housing districts according to sex. Although the first graduate degrees were given to female students in 1892, their percentage of the student population had remained relatively low through the first decades of the nineteenth century. Therefore, their accommodation was largely supported by the private boarding houses of Amherst. The first significant

enrollment of female students at the institution occurred during World War I, as the male student body was diverted to military service. This trend repeated again during WWII. To some extent, this physical division of the co-educational environment was mirrored in the institution's academic divisions. Since the initial enrolment of female students, a curriculum had been focused on education, nursing, and home economics, the later being a required course of instruction until at least 1919.

The initial plans for post-World War II campus development designated the Central residential district for female dormitories. Formerly associated with the Clark family estate, the first development of this steep site had been the "Female Dormitory" constructed in 1940 and later named Butterfield House. The plan ultimately proposed the Home Economics Department be located on the slope between Butterfield and Stockbridge Road. However, by the mid-1940s, this proposal had reversed to designate the Northeast residential district for women's dormitories. This decision may have been prompted by the existing location of Abigail Adams House (1920), which prior to the planning of the 1940s, was the first and only all-female dormitory. The change also influenced the prior planned locations for the schools of home economics, nursing, and education.

The North Pleasant Street University Apartments were the first housing provided for faculty. Meanwhile, the growing demand for married student housing led to the construction in the southwest portion of campus, five apartment buildings for young married couples.

This inter-war and immediate post-war period of campus development produced notable modernizations of academic facilities. For example, the \$518,000 Hasbrouck Laboratory replaced the "ancient wooden-framed house" which previously housed the physics department (*Anonymous Springfield Daily News* 1948:10). The building can be considered the first significant modern structure on the institution's campus. Although there are virtually no distinctions in the building's construction technology from other projects of the period (concrete and steel frame) the exterior form was a clear departure from the Georgian Revival style which defined the dormitory construction. Such a distinction was not uncommon to this period of post-WWII campus architecture, when science facilities often embraced the symbolic connotations of modern design, while residential construction adopted the historic.

The building was also the first major structure to be built within the campus center-then known as the "central park" - bounded by Stockbridge Road on the east and Ellis (formerly Olmsted) Drive on the west. The site was located along North Pleasant and adjacent to the concentration of buildings extending west from Goessmann Laboratory. Ultimately, construction at this site represented a shift in the policy of the institution's Campus Planning Committee, first established in 1932 by President Thatcher. The principle of an inner zone of "general use" buildings had been followed since the early 1900s; however, the central lowlands of this development had been cultivated as a pastoral landscape. Although records of the site selection process have not been located, it may be assumed that the choice of

such a prominent location was intended to showcase the institution's scientific advancement.

This issue of preserving versus developing the central park resurfaced during the site location study for a new Student Union. Immediately following World War II, a proposal had emerged to create and dedicate a student union as a memorial to the alumni veterans and casualties. Initially, the structure was proposed as an addition to the existing Memorial Hall. The concept proceeded through a series of designs by faculty and alumni until 1953 when it was determined the intended building program would necessitate its own site. After the consideration of four alternatives by the Campus Planning Council, the "central park" site adjacent to the campus pond was chosen based on its comparable distance between the Central and Northeast residential districts.

As with most U.S. institutions, the University's greatest expansion of science and laboratory facilities occurred during the 1950s. Following the construction of Stockbridge Hall, the former agricultural fields to the north of Draper Hall were redeveloped as a quadrangle for the departments of engineering and the physical sciences. Similar to the prior construction of Guinness, the buildings of the 1950s were utilitarian in nature, albeit with classically-styled entrances and façade details. These included a new Main Engineering Building, (later named Marston Hall) constructed in two phases between 1950 and 1954; Paige Laboratory constructed in 1950; the Animal Isolation Laboratory (1953), and Thayer Animal Disease Laboratory (1957).

Although the Hasbrouck Laboratory had been planned for a major expansion, this did not occur until 1963 during which time the central park site experienced no further infill. Instead, the University chose to develop adjacent and notably less prominent sites for expansion of the science facilities. In 1958 Goessmann Hall was significantly expanded at its rear north elevation. However, largest concentration of science facilities was sited on the east side of North Pleasant Street. The 350,000 square-foot Morrill Science Center was constructed in 4 phases from 1959-66. Although the chosen site for the complex did relieve further densification of the central park landscape, the height and length of the Morrill buildings created a substantial separation between the 19th and early 20th-century facilities and their original spatial relationship to the campus center.

New facilities, particular those with mechanical systems and laboratory equipment, created new demands for electrical and heat capacity. In the early 1950s, a new Boiler House was constructed in the ravine and the turbine house was more than doubled in size. By the end of the decade, the Boiler house also doubled in size.

As the institution approached its centennial anniversary, the demand for facility modernizations placed increased pressures on the 19th and early 20th-century building stock. In 1958, the Victorian wood-framed Drill Hall was demolished to allow construction of the Thompson Liberal Arts Building. In contrast to the adjacent

Blaisdell House and farm structures at the west, the new building expressed the modern construction techniques and style of its neighbor to the east, Machmer Hall. The circumstance of demolishing a pre-existing structure for replacement with higher-density, modern construction describes the emerging mid-century character of the campus. Other structures survived the period as the University through interior renovations, such as Stockbridge and Draper Halls (1958). Notably, the 1948 Planning Council originally opposed renovation of Draper in support of its demolition. The University's most visible act of preservation was the 18th-century residential structure, known as the Homestead. The structure pre-existed the formation of the campus and was adapted for practical training by the Home Economics Department.

A notable exception to the campus trend towards modern infill is Johnson House. Constructed in 1959, the dormitory completed a formal Beaux-Arts quadrangle initiated in 1935. The building was sited as a mirror-image to Thatcher House, but in the 24 intervening years of construction practice, a great deal had changed in regards to materials, labor, and cost. Notably, the Georgian Revival brickwork and detailing of Johnson House is far less refined.

By 1954, enrollment had slowly expanded to 4,407 students. In that same year, the institution contracted Shurcliff, Shurcliff, Merrill (SSM) in cooperation with the Olmsted Brothers firm, for development of a comprehensive campus master plan to address postwar growth and campus inadequacies. However, in the intervening years, a Preliminary Plan, developed in 1955 by architect Niels H. Larsen and Professors Raymond H. Otto, Lyle Blundell and Paul Procopio was used to guide the location of new facilities. In addition, throughout this period, Louis Warren Ross remained a campus consultant and determined sites for all new housing to achieve 10,000 student population.

6.2 1960 – present: The Modern Era

By the 1960s, the campus mission had evolved into that of a major undergraduate/graduate facility with emphases in agriculture, engineering, and general liberal arts. As a principal in the larger University of Massachusetts system, UMass-Amherst also is considered a pre-eminent member of the Five Colleges, Incorporated, along with Amherst, Smith, Mount Holyoke and Hampshire colleges.

The concentration on the campus physical organization greatly increased in the 1960s as the somewhat *ad hoc* planning committees of the early decades of the 20th century was fully replaced by professional consultants (Galehouse 1962). The growth in enrollment had negated the SSM plan 7 years after its adoption. A series of campus planning studies, mostly performed by Sasaki, Walker and Associates, proposed a program of development which largely defines the institution's current appearance. The objectives were to maximize site density, to divert vehicular traffic via a new campus loop road, and to enhance pedestrian circulation within the central campus.

The planning proposals included the following features:

- Wayfinding system of building and street markers
- Construction of administrative high-rise tower
- New open spaces, north and south of campus pond
- Straightening campus roads and elimination of Ellis Drive
- Creation of southern boulevard and mall
- Distinction of accessible and restricted vehicular zones

Perhaps for the first time in the campus' history, large land tracts owned by the campus were not proposed for agricultural use. The Sasaki, Walker & Associates (Galehouse 1962) "Site Analysis, Program and Proposed Site Plan for the Football Facilities Area" study details the development of some 165 acres. The proposed site encompassed an area almost half of the original campus size; 52 acres of the 165 total would be used for parking.

■ Recommendations for Areas and Properties for the National Register of Historic Places

As a result of the study, 53 buildings on the campus are recommended eligible for the National Register of Historic Places (NRHP) as part of a potential historic district. Only the Old Chapel Building is recommended individually eligible as well. These buildings are graphically noted in Appendix F.

The recommended University of Massachusetts Amherst historic district meets Criterion A for its association with the ongoing mission of this state university to meet the educational requirements of a rapidly changing world. From the inception of the University in 1863 as the Massachusetts Agricultural College, through the current day, the Trustees have sought to provide educational programming and facilities that would enable students to advance the practice of agriculture and a steadily increasing host of other fields, meet the needs of a rapidly-industrializing world, and succeed in leading a post-industrial information and technology-based economy.

The historic district also meets Criterion C for its stock of buildings and landscape features whose forms and functions reflect the evolving and expanding mission of the University in the 95 years between its 1863 founding and 1959 (1959 being the 50 year cut-off for National Register consideration). A number of architects, landscape architects and planners of local, regional and/or national prominence were involved in the design of the individual buildings and the overall plan of the current University of Massachusetts Amherst campus. The aggregate efforts of these design professionals produced a distinctive public university campus landscape, primarily of the mid-19th to mid-20th century, which is unique in Massachusetts.

Despite the loss of certain buildings and landscape features up to the present time in 2009 and incremental physical changes seen in new window, door and roofing replacements, as well as siding replacements in a small number of buildings, the district retains integrity of location, setting, design, feeling, association, workmanship, and materials.

■ Further Study Recommendations

Archaeology

Previously reported archaeological sites are present on UMass Amherst property. Systematic survey of the campus holdings, however, has not been completed. The archaeological background and literature review and initial walkover results suggest that archaeologically sensitive settings still exist within the campus core and in the peripheral parcels.

For planning purposes, it is recommended that UMass Amherst conduct a Phase Ia reconnaissance survey of the campus holdings. The goal of this work will be the completion of a campus-wide map of archaeological sensitivity. The resultant survey report and accompanying map should meet MHC standards for Phase Ia reports and be submitted to MHC for review. Assuming the report is accepted by MHC, the sensitivity mapping will serve as planning guidance in the event that UMass Amherst proposes projects requiring state or federal level permits or uses state or federal funding requiring environmental review.

As noted in the Historic Context, the possibility exists that archaeological deposits remain in the campus core that are related to specific campus buildings. While it is recommended that archaeological investigations be conducted in the vicinity of these building locations prior to any future development, such investigation would be at the discretion of UMass Amherst unless state or federal monies or permits were required for the proposed action.

The current assignment focused on buildings over 50 years old on the UMASS-A campus, but several other areas within the campus deserve further attention and documentation. Recommended areas for future study and documentation are:

Presidents' Woods

Presidents' Woods is a 24-acre urban old growth forest located on a steep slope to the east of Thatcher Way south of Eastman Lane. Historically, the area was also known as Prexy's Ridge Forest and Chestnut Woods. The forest is of both scientific and historical importance to the University. Further research and evaluation is necessary to establish the history and significance of the area.

Campus-wide Landscape Documentation

Comprehensive documentation of the entire campus landscape is needed to record existing landscape conditions. Particular attention should be paid to circulation patterns and vegetation, including the specimen plants that comprise the Waugh Arboretum, which was last completely documented in a 1974. Graphically integrated into a GIS database, this information will be valuable for future planning and design initiatives, as well as for educational purposes.

Bibliography

An extensive collection of books, articles, maps, photographs, records, and other archival sources aided this historic building inventory and is provided in **Appendix C** of this report