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A New Focus for the Future

Historic Preservation Practices and Vocational
High School Curriculum
(A Massachusetts Concentration)

Duane D. Houghton, BAS Historic Preservation

School of Architecture, Art and Historic Preservation

Roger Williams University

A Thesis Submitted in
Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Historic Preservation

April 2014

Roger Williams University
School of Architecture, Art and Historic Preservation

A New Focus for the Future
Historic Preservation Practices and Vocational High School Curriculum
(A Massachusetts Concentration)

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Lastly, I would like to thank my family, especially my mother, who has been unselfishly supporting me through my entire college career. And my son, whom can't wait to start the next phase of our lives together. Without them none of this would have been possible.

Thesis Statement

Vocational Schools in Massachusetts have been on the forefront of trade technology education for over a century. Moving into the 21st century and with rising human populations, diminishing natural resources, and an uncertain energy future, trade technologies are experiencing a shift from new construction to more sustainable one harnessing existing resources of the built environment. This idea is now the favored economical option for all municipalities in Massachusetts. Historic Preservation is on the forefront of these techniques and this thesis examines the benefit of teaching preservation practices to students enrolled in Vocational high schools due to its close ties to the green movement, job creation due to labor intensive projects coupled with use of incentive programs all affecting the economic sustainability of the community.

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(Source: Ogle, Robert. "Historic Preservation Craft Education Leads the Way: The Colorado Story." <<http://www.iptw.org/rogle-ites07.htm>>)

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Abstract

Graduates of vocational high schools account for the largest group of trade professionals in the construction and remodeling industry. The various concentrations provide prospective graduates with the skills, knowledge and education they need to succeed in the industry. After graduation former students are prepared to hold several different jobs in the industrial, commercial and residential areas; some work as independent contractors for various clients and projects, while others may be hired by firms on an ongoing basis.

The issue exists that although these types of vocational schools are producing valuable assets to the community they seem to promote construction and operation of only new buildings and demolition of historic buildings and sites. This accounts for 48% the United States' greenhouse gas emissions. Reusing and retrofitting our existing buildings can reduce these emissions dramatically while enhancing the community. In fact, our existing buildings are one of our greatest renewable resources and are responsible for a large number of trade related jobs. The graduates, although skilled in their individual trades retain very little knowledge of the concept and practices of Historic Preservation.

Within our communities, individuals that retain the basic knowledge of Historic Preservation practices play a critical role in creating a unique sense of place that adds value to our cities, towns and countryside. Students may develop skills, both vocational and academic, that will give them the strategic labor market advantages needed to compete for good jobs. The importance of recognizing historic resources also guides us as we move forward into the future, for without them we have no measure by which to gauge our progress. Remember, historic preservation is not only economical, sustainable and a good practice...its law!

Introduction

The claims that Massachusetts vocational high schools are on the cutting edge of trade technologies is an opinionated statement. These schools may be up to speed on new materials, techniques, and technologies but what they lack is the realization of employment trends and what is required of students to be successful in their perspective fields after graduation.

My reason for choosing this thesis topic is simple. Vocational schools do not teach historic preservation.

I attended Greater New Bedford Regional Vocational Technical High School from 1990-1994 majoring in Carpentry. During this time I feel I gained a well-rounded skill set through the curriculum set by the Massachusetts Board of Education for all Massachusetts Vocational High Schools. Freshman year started with basic skills and then we moved on to more skilled real-world projects to senior year actually building a new house in the city of New Bedford.

We had 2 weeks in the shop and two weeks learning academic skills of which 3 hours a day these academic skills were related to our prospective major which was carpentry.

I graduated with a full skill-set ready to enter the workforce as a viable carpenter. I went on to join the U.S. Navy as a SeaBee and did construction all over the world. Later my own successful construction company and then back to college to pursue a Masters in Historic Preservation.

I became a substitute teacher at my alma mater, Greater New Bedford Regional Vocational-technical High School. I was just beginning in the field of historic preservation and realized that in areas like New Bedford, the new construction techniques that were being taught at Voc we're not coinciding with what construction companies were focused on in the area. A majority of New Bedford's building stock is 75 years or older. This makes steel stud framing and prefabricated roof trusses of little use. So I started

asking questions and a majority of the responses that I received were that “there’s no room for new curriculum” and “these kids have time to learn the basics and that’s it!”

For this thesis, I decided to start from the beginning. Vocational education, especially in Massachusetts where it all began, has a long and rich history. From the ages of apprenticeship training of blacksmiths, woodwrights, shipbuilders, and glass blowers to the training of factory workers to produce products that sustained communities for many years. Vocational schools have a history of constantly moving forward and look into the future. That future, is historic preservation.

The practice of Historic Preservation can be dated back to when Ann Pamela Cunningham founded the Mount Vernon Ladies’ Association, and began an unprecedented national campaign to purchase Mount Vernon and preserve it as an icon of American history in 1853. It wasn’t until the passage of the National Historic Preservation Act of 1966 that historic preservation became a subject of education and also law. Today, just about every town America has some sort of preservation ordinance, guidelines or laws that require special knowledge and training before any type of construction can begin.

The goal of this thesis is not to ascertain exactly what used to be taught to vocational students as far as historic preservation practices, that is better left up to trained education in historic preservation professionals. What this thesis aims to do is to create an awareness and to foster the idea that it’s time once again for vocational schools in Massachusetts to move forward.

Opinion

When the idea of this Thesis came about, I started talking a lot with fellow faculty about the chance of Historic Preservation practices being included into today's curriculum. It was met with much friction.

During my Thesis Prep I was able to gather opinions of teachers at a few Vocational high schools. According to them, the average student in today's Vocational system doesn't get the same amount of trade education as prior years due to:

MCAS- Massachusetts Comprehensive Assessment System, commonly shortened to MCAS. The Commonwealth's statewide standards-based assessment program developed in 1993, in response to the Massachusetts Education Reform Act of the same year. The MCAS has been criticized for being too narrow in nature and for pressuring teachers into restricting the curriculum to material covered by the tests.

College Prep- The increase in high school students seeking a college degree has increased in recent years causing Vocational curriculum to follow suite. One teacher tells me, "We behave as though nobody needs to learn to work. Students think as if somehow education alone will launch you into a career. Almost everyone student is planning two or four-year colleges because they want to get a job. The curriculum caters to this and these kids are probably getting about 1.5 to 2 years of actual trade education, the rest is getting ready for college...where does that leave the trades"?

"These kids are probably getting 2 years of trades training and the rest is college prep and MCAS. We are sending them out there with half the knowledge needed to succeed in the trades"

"There's no room in the curriculum for anything new, we are cut thin as it is!"

These views on the Vocational High School education in Massachusetts are indeed negative and whose opinions they are, I will keep secret to protect the individuals. I have concentrated on the problems with these schools but there are also many positive aspects. This is an entire other subject, although related will someday warrant a follow up to this thesis.

Chapter 1

History of Vocational Schools

Vocational education in Massachusetts is the result of a long and interesting course of development.

Economic, educational, and legal issues paired with a constantly evolving trade curriculum, have repeatedly made an influence on what vocational education in Massachusetts.

For the purpose of this thesis, vocational education is defined as a practical illustrated trade-based job or career skill instruction. As such, a variety of components fall under the historic preservation affected umbrella. These are, but are not limited to, agricultural education, technical education, and trade and industrial education. The vocational curriculum affected should be identified as a combination of classroom instruction, hands-on laboratory work and on-the-job training, amplified by an active network of student organizations. Vocational preparation must always be viewed against the backdrop of the needs of the community and of the individual student. While meeting the demands of this growing field, the abilities of individuals must be realized to the fullest.

The first vocational education system started right here in Massachusetts and is the basis for the beginning movements in America and the apprenticeships of colonial times. The first education law passed in America, the Old Deluder Satan Act of the Massachusetts Bay Colony (Appendix E), set specific requirements for masters to teach apprentices academic as well as vocational skills. During the colonial period the colonies frequently cared for orphans, poor children, and delinquents by indenturing them to serve apprenticeships. As apprenticeship declined, other institutions developed to care for these

youngsters. By the mid-1880s vocational education in the form of industrial education was synonymous with institutional programs for these youth. ¹

After the Civil War, Samuel Chapman Armstrong, the founder of Hampton Institute and the ideological father of African-American vocational education, tried to address the racial aspects of the social and economic relations between the former slaves and education. His vocational education programs emphasized the need for African Americans to be viable for trade-based jobs. The prominent educator Booker T. Washington, Armstrong's prize student, took the same values and theoretical views as his former mentor and pushed for vocational education with the idea that this was the ideal route for most minorities. ²

The first land-grant provisions for trade-based schools centered on this movement were known as the First Morrill Act (Appendix F) and was enacted by the U.S. Congress in 1862. The statute expressed the appointment of public lands to the states with the intention that they would provide educational opportunity for all students.

Early in the twentieth century and with the escalation of industrialization, vocational education was a major topic of discussion among American educators as schools struggled to meet the labor force needs consistent with the shift from an agrarian to an industrial economic base. In his 1907 address to Congress, President Theodore Roosevelt urged major school reform that would provide industrial education in urban centers and agriculture education in rural areas.

¹ Howard R. D. Gordon, The Gale Group, Inc. 2009

² Ibid

Vocational Schools in Massachusetts

In Massachusetts, Vocational Technical Education (VTE), also known as Career and Technical Education (CTE), is over a century old. The educational reform movement in the state began in the late 1800s and was realized when Massachusetts Governor William L. Douglas, approved a legislative resolution on May 24, 1905, establishing a commission to examine the nature and the need for industrial education and to make recommendations on its implementation. The Massachusetts Commission on Industrial and Technical Education submitted its report in April 1906 and filed a Senate Bill that same year, An Act to Provide Further for Industrial Education. Enacted in June 1906 and amended in 1911 and 1921, this law established Massachusetts as the first state to provide publicly funded industrial education, making it 'the Grandfather of Vocational Education.' In 1908, the Smith Vocational and Agricultural High School in Northampton was the first Vocational Technical School to open, followed a month later by New Bedford Independent Industrial School. A hundred years later, these two schools are still in operation, serving students who want their high school education to include both academics and occupational skills acquisition.³

Legislative History and Reforms

Federal support for vocational education began with the Smith-Hughes Act of 1917 (Appendix G) which established vocational education, particularly agricultural education, as a federal program. The act firmly supported the notion of a separate vocational education system and supported courses offered by vocational schools. The act called for specific skill training, focused on entry-level skills, and helped establish separate state boards for vocational education. The Smith-Hughes Act and its successors until 1963 were largely designed to expand these separate vocational education programs, in an effort to

³ Alison L. Fraser, Vocational-Technical Education in Massachusetts, A Pioneer Institute White Paper, 2008

retain more students in secondary education, and to provide trained workers for a growing number of semiskilled occupations.⁴

By the 1960s, the vocational education system had been firmly established, and Congress recognized the need for a new focus. As a result, the 1963 Vocational Education Act⁵, while still supporting the separate system approach by funding the construction of area vocational schools, broadened the definition of vocational education to include occupational programs in comprehensive high schools, such as business and commerce. The act also included the improvement of vocational education programs and the provision of programs and services for disadvantaged and disabled students.⁵

The Vocational Education Act of 1963 authorized a major expansion and redirection of vocational education. Its goals were to enroll a larger proportion of the baby boom generation that was moving through the educational system and to improve the kinds and quality of training available to them. It also directed funds to the retraining of adult workers who were displaced by technological change. It partially accomplished these goals. Subsequent reauthorizations of this act placed increased emphasis on serving handicapped and economically disadvantaged students and increasing the integration of academic and technical instruction.⁶

The Carl D. Perkins Vocational Education Act of 1984, known as the Perkins Act, (Appendix J) continued the declaration of Congress that effective vocational education programs are essential to the nation's future as a free and democratic society. The act had two unified goals, one economic and one social. The economic goal was to improve the skills of the labor force and prepare adults for job opportunities - a long-standing goal traceable to the Smith-Hughes Act. The social goal was to provide equal opportunities for individuals in vocational education. In the late summer of 1990, Congress passed the

⁴ The Federal Role in Education, U.S. Department of Education 2012

⁵ Ibid

⁶ Ibid

Carl D. Perkins Vocational and Applied Technology Education Act which amended and extended the Carl D. Perkins Vocational Act of 1984.⁷

Trends and Issues

In the Commonwealth of Massachusetts today, vocational education has entered a new era. There is an increasing trend of vocational educational institutions focused on college-bound youth. Greater attention needs to be focused on work-bound youth, particularly those who will require less than baccalaureate education. There is increasing concern that the United States is not adequately preparing a growing pool of new workers including women, minorities, and immigrants - for productive, successful roles in the workforce. Education is being urged to change the way it is preparing youth and adults to function in a global economy. All of these trends are bringing new importance to vocational education.

Generally, research has shown that obtaining workers with a good work ethic and appropriate social behavior has been a priority for employers. Employers complain about the attitude and character of workers - particularly about absenteeism, an inability to adapt, a lack of discipline, and negative work behaviors compiled with minimal trade knowledge. In response to criticism about the general employability of the workforce, the Secretary's Commission on Achieving Necessary Skills published in 1991 a range of skills that all workforce participants should have.⁸ These include the following:

Basic Skills

Reading, writing, mathematics, listening skills, speaking

Thinking skills

⁷ The Federal Role in Education, U.S. Department of Education 2012

⁸ What Work Requires of Schools: A SCANS Report for America 2000. The Secretary's Commission on Achieving Necessary Skills, a publication of the US Department of Labor, June 1991.

Creative thinking, decision-making, problem solving, knowing how to learn, reasoning skills

Personal qualities

Responsibility, self esteem, sociability, self management, integrity/honesty

6 The Secretary's Commission on Achieving Necessary Skills (SCANS) was appointed by the Secretary of Labor to determine the skills our young people need to succeed in the world of work. The Commission's fundamental purpose is to encourage a high-performance economy characterized by high-skill, high-wage employment.

If the United States is to remain at the forefront in the high-tech global marketplace, the workforce must possess the requisite technological competencies and academic skills. As technology continues to influence vocational education, new and innovative educational approaches must be established to provide vocational education students with the enhanced skills and knowledge they will need to participate in the international marketplace.

Vocationalism

Vocationalism is defined by the Department of Vocational Education as the method used by schools, particularly high schools, to organize their curricula so the students may develop skills, both vocational and academic, that will give them the strategic labor market advantages needed to compete for good jobs. Traditionally, vocational schools have been geared toward immediate entry into specific occupations, however, new programs and course sequences are intended to prepare students for both colleges and careers, by combining a challenging academic curriculum with development of work-related knowledge skill. The new combination aims to keep students' options open after high school. Upon graduation they are prepared to go to a two-year or four-year college and then work, go to work

full-time and then back to college, or engage in paid employment and further education simultaneously.⁹

What does the integration of academic and vocational curricula entail? Research has shown that schools bring academic and vocational education together in a number of different ways, which comprise eight different models of integration at the secondary level. These models are summarized as follows:

1. More academic content is incorporated in vocational courses.
2. Academic courses are made more vocationally relevant.
3. Academic and vocational teachers cooperate to incorporate academic content into vocational programs.
4. Curricular alignment is accomplished by modifying or coordinating both academic and vocational curricula across courses.
5. Seminar projects are done in lieu of elective courses and require students to complete a project that integrates knowledge and skills learned in both academic and vocational courses.
6. The academy model is a school-within-a-school that aligns courses with each other and to an occupational focus.
7. Vocational high schools and magnet schools align courses with each other and to an occupational focus for all students.
8. Occupational clusters, career paths, and occupational majors feature a coherent sequence of courses and alignment among courses within clusters.¹⁰

⁹ Howard R. D. Gordon, The Gale Group, Inc. 2009

¹⁰ Ibid

New Vocationalism

"In high schools, the vocational arts have all but vanished. We've elevated the importance of "higher education" to such a lofty perch that all other forms of knowledge are now labeled "alternative." Millions of parents and kids see apprenticeships and on-the-job-training opportunities as "vocational consolation prizes," best suited for those not cut out for a four-year degree. And still, we talk about millions of "shovel ready" jobs for a society that doesn't encourage people to pick up a shovel." Mike Rowe of Dirty Jobs

New vocationalism is the newest shift in Massachusetts vocational education in the subject of an entire other thesis. New vocationalism is the shift of vocational high schools preparing kids for college instead of preparing them as qualified trades-people so needed in today's society.

According to the Massachusetts Department of Education, Massachusetts is one of 10 award recipients in the federal Race to the Top competition and will receive \$250 million over the next four years to implement landmark reforms in public education.

"Despite Massachusetts students' strong academic performance overall, too many students graduate inadequately prepared for college. As a part of this initiative, the state plans to dramatically increase college and career readiness by strengthening curriculum and instruction in low income, high minority schools, and improving alignment between high school and college."¹¹

9 High Schools that Work (Massachusetts) is a part of the nation's first large scale effort to combine challenging academic courses and modern vocational technical studies to raise the achievement of career bound high school students.

¹¹ High Schools that Work (Massachusetts) is a part of the nation's first large scale effort to combine challenging academic courses and modern vocational technical studies to raise the achievement of career bound high school students.

Summary

Vocational education in general is trying to move on from its past. Educators no longer want it viewed, as one puts it, as "shop class for boys with cigarettes rolled up in their sleeves" a lesser diploma aimed at failing students.

It is not even called vocational education anymore; now the official term is career and technical education, or CTE for short. The curriculum focuses on newer careers, such as computers and "information technology." Students must get hands-on experience and pass certification exams devised at least partly by the industries that will employ them.

Today's career education faces a challenge that never confronted the old-fashioned vocational education programs of the 1950s and 1960s. At the same time that they help students learn a career, the schools must give students the academic background they need to pass the exams now required for graduation in Massachusetts.

How is there enough time in the day for both? And how can schools set strict academic standards and still serve the very students most likely to be attracted to vocational programs in the first place?

Chapter 2 A Brief History of Historic Preservation Education in the U.S.

Preservation Education Beginnings

Historic preservation curricula developed in the United States as the result of three influential events.

First, the passage of the National Historic Preservation Act of 1966 created an environment where professional historic preservationists were called upon to determine and document historic significance and gauge potential effects of federally funded projects on historic resources. As a result, preservation projects needed to comply with prescriptive methodology administered by the National Park Service and state historic preservation offices.¹²

Second, the National Trust for Historic Preservation approved The Whitehill Report on Professional and Public Education for Historic Preservation in October, 1968. The research and report findings were “rigidly limited to architecture and the building crafts, for it is only by continued practical use of some kind that most buildings can or should [emphasis author] be preserved.” The Whitehill committee concluded that specialization in historic preservation education would be most effective at the graduate level in schools of architecture. This narrow view discounted any contribution to historic preservation professional development from other academic disciplines such as public history, geography, historic archaeology, and anthropology. Ironically, the elitist approach effectively created an insurmountable barrier to entry for those practicing in the historic building trades despite the findings.¹³

The third event contributing to the development of historic preservation pedagogy was the founding of the National Council for Preservation Education (NCPE) in 1978. This independent group of academics was formed to develop academic standards and core course work for graduate level historic

¹² Christopher J. Duerken et al., *A Handbook on Historic Preservation Law*, edited by Christopher J. Duerken (Washington D.C.: Conservation Foundation: National Center for Preservation Law, 1983),

¹³ Why the Trades Matter for Preservation: A Half-Century of Promoting Traditional Building Skills for Preservation Lisa Sasser, *Forum Journal* Summer 2005, Vol.19, No. 4

preservation programs. NCPE became the de-facto accrediting body for historic preservation programs and maintains this status today. Unlike the Whitehall researchers, NCPE officials and members recognized the necessity for interdisciplinary contribution to a new academic specialty. NCPE also became more progressive by adopting standards and accepting membership from baccalaureate, associate and certificate programs during the 1990's. Today, just over 50 Institutions meet the standards and are accredited by the NCPE.¹⁴

The NCPE standards¹⁵

Historic preservation degree graduate & undergraduate programs standards for evaluating NCPE associated members.

1.0. Philosophy:

1.1. The purpose of the standards is to foster the attainment and maintenance of excellence in preservation education, while recognizing the importance of program diversity, and the plurality of disciplines and skills demanded in the field. Every program should provide experience in and engender respect for this interdisciplinary nature and the recognition that preservation focuses on cooperative work.

1.2. Each program should develop a Mission Statement identifying its purpose and objectives, and describing the means used to achieve them. Programs with special emphasis in archeology, architecture, heritage education, history, landscape architecture, planning, etc., shall clearly identify this focus.

¹⁴ The Early Years: Founding the National Council for Preservation Education, Michael A. Tomlan; 2010

¹⁵ The NCPE standards for historic preservation degree granting graduate & undergraduate programs with protocols for evaluating NCPE associate members 2012

1.3. The Council believes that self-evaluation, rather than regulation, provides the most effective assurance of quality of student preparation.

1.4. It is expected that each program should undertake a review of its Mission Statement and resources (faculty, space, financial support, computer capabilities, etc.) on a regular basis.

2.0. Program Organization

2.1. The program must have a director or coordinator.

2.2. The program shall be supported by an identifiable faculty, full-time and adjunct, whose educational preparation and professional experience qualify them to teach preservation.

2.3. Completion of the program should contribute to the award of a university degree at the graduate or undergraduate level.

3.0. Program Content

Consistent with the Council's belief in diversity, it should be noted that these elements or suggested standards are intended as minimum guidelines for preservation programs that lead to a graduate or undergraduate degree, and are not intended as a curriculum model.

3.1. *Fundamental Components*

Recognizing the diversity of approach and expertise required in the field of preservation, the Council expects that all programs will develop specialities in one or more of the following areas of knowledge. The objective of such instruction will vary in response to the goals of the individual program as identified in the Mission Statement, and may extend from awareness of the issues in a particular topic, through understanding, to the development of expertise.

The Council expects that all programs will provide instruction in, or require as a prerequisite, the following skills and knowledge deemed common and essential in the field of historic preservation:

3.1.1. Instruction equivalent to at least two (2) courses in the history of the designed environment, (including, for example, the history of architecture, urban development, landscape architecture, archeology, or material culture.)

3.1.2. Instruction equivalent to at least one (1) course devoted to the history and theory of preservation.

3.1.3. Instruction equivalent to at least one (1) course devoted to documentation and recording techniques used in preservation and archeology.

3.1.4. Since preservation required the field application of knowledge, including communication skills, the program should encourage a significant period of practical experience, equivalent to an internship, practicum, or apprenticeship.

3.2. Specialized Components:

3.2.1. Design Issues

Issues of appropriateness, restoration rehabilitation, in-fill, exterior and interior concerns at a variety of scales, and their effect on buildings, neighborhoods, communities and landscapes.

3.2.2. Technological Issues

History, evaluation and conversation in the normal range of building materials and systems.

3.2.3. Economics Issues

Marketing principles, private and public finance, property management, and budget preparation.

3.2.4. Legal Issues

Constitutional law, preservation case law, federal, state and local regulatory legislation and administration.

3.2.5. Planning Issues

Fundamentals of zoning, strategic planning, housing, and the social aspects of real estate development, archeology and cultural landscapes.

3.2.6. Curatorial Issues:

Site development, interpretation and management.

Beyond a skew in learning level, the subject of study reveals the true crises in historic preservation education in the United States. There are only a handful of educational institutions that confer degrees with an emphasis in historic preservation building arts, craft, and construction related skills. Only one is at the high school level which is the Brooklyn High School of Arts, the others are four at the Associates level, two at the Bachelors level and most at the graduate level.

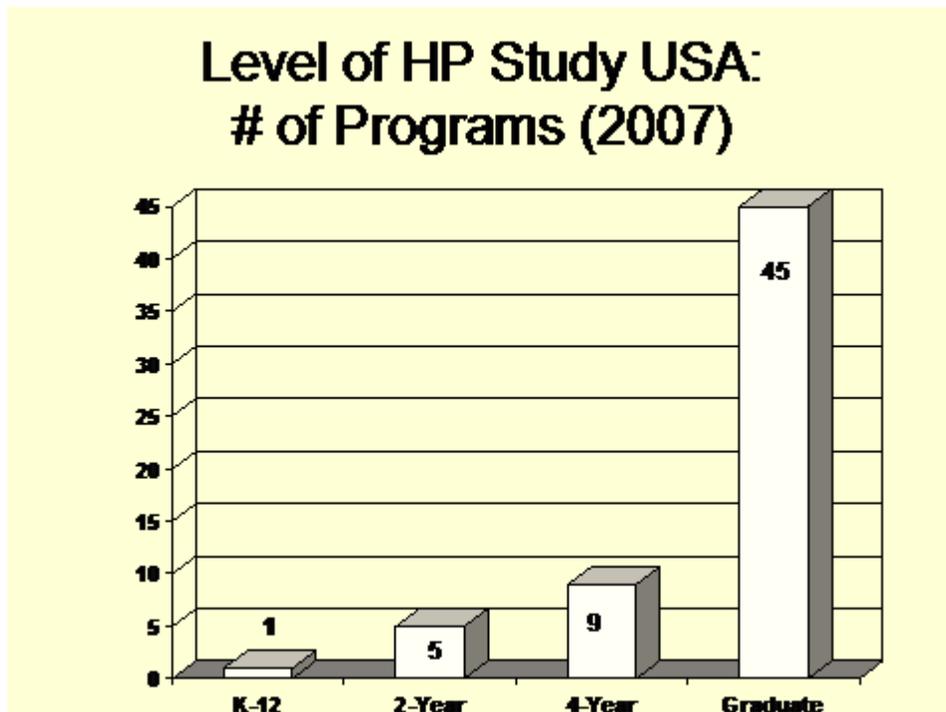


Fig. 1. Historic Preservation education programs in the U.S.

(Source: Ogle, Robert. "Historic Preservation Craft Education Leads the Way: The Colorado Story." <<http://www.iptw.org/rogle-ites07.htm>>)

Summary

NCPE acknowledged the need to foster historic preservation education in public primary, secondary, and technical schools (K-12). However, their organizational infrastructure comprised exclusively of post-secondary educators limiting their practical contribution to the development of curricula at these

“primary” levels. As a result, the number of graduate schools offering historic preservation curricula is disproportionate to the number of programs offered at feeder levels of education.

Chapter 3

Preservation at Work

Historic preservation as an economic activity is one of the few fields that appeals to people of virtually every political and social point of view. Because of Massachusetts aging and unique building stock, depleted open space and renewed urban areas, it is the underlying factor for all trade related construction within the state. Historic preservation reflects a commitment to protecting this open space from over development, saving historically important architecture, promoting urban quality of life and cultural heritage. To investors, it represents an opportunity to generate high rates of return on capital. To contractors employing specialized craft professionals can mean additional work and profits.

In Massachusetts, historic preservation creates more jobs per \$1 million of economic activity than does the same amount in other major industries:

Preservation on the rise!

U.S. has seen its lowest number of new houses built since 1984

Congressional Budget Office

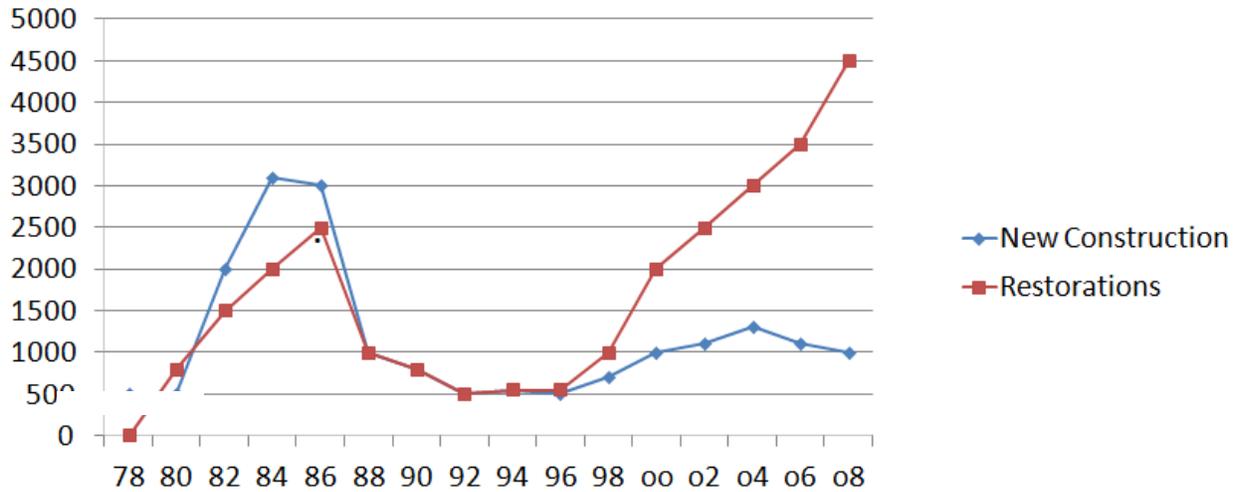


Fig. 2: Preservation on the Rise!; Congressional Budget Office, 2008

Preservation continues to move forward and is steadily becoming a viable aspect of many trades, due to its close ties to the green movement, job creation due to incentive programs, economic impacts on community, and heritage awareness. More consumers are fighting for landmark buildings to be protected and for fewer materials to be discarded in landfills.

Sustainability

Historic buildings are inherently sustainable. Preservation maximizes the use of existing materials and infrastructure, reduces waste, and preserves the historic character of older towns and cities. The energy embedded in an existing building can be 39% of the embedded energy of maintenance and operations for the entire life of the building. Sustainability begins with preservation.

Historic buildings were traditionally designed with many sustainable features that responded to climate and site. When effectively restored and reused, these features can bring about substantial energy savings. Taking into account historic buildings' original climatic adaptations, today's sustainable technology can supplement inherent sustainable features without compromising unique historic character.

Given the influence of the sustainability movement, it is likely that historic preservation will represent a growing source of construction spending going forward. For example, in 2006, the Oregon National Guard Armory became the first building on the National Register of Historic Places to be awarded LEED Platinum certification. The restorers maintained the historic appeal of the structure while using modern construction techniques to improve the lighting, air quality and energy efficiency.¹⁶

Leadership in Energy and Environmental Design, is an internationally-recognized green building certification system. Developed by the U.S. Green Building Council (USGBC) in March 2000, LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

¹⁶ Leadership in Energy and Environmental Design, is an internationally-recognized green building certification system. Developed by the U.S. Green Building Council (USGBC) in March 2000, LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

Preservation Massachusetts, Massachusetts Historic Rehabilitation Tax Credit

<http://preservationmass.org/programs/mhrtc/>

Tax credits and other incentives available from various levels of government are boosting preservation work as well. For instance, in 2004 the Massachusetts legislature passed a bill creating tax credits for the rehabilitation of the state's historic properties. During the course of its first eight years, the Massachusetts Historic Preservation Tax Credit Program led to a four-fold increase in annual rehabilitation activity—creating jobs, increasing the local tax base, and encouraging reinvestment in areas already served by infrastructure and public services. Nearly 30 percent of all the projects utilizing the tax credits cost less than \$100,000, and slightly more than a quarter exceeded \$2 million in size. Many of the projects in Massachusetts have occurred in and around major municipalities, but studies also show that the tax credit prompted historic buildings to be brought back to life in every corner of the state.¹⁷

Similarly, the Massachusetts Historic Rehabilitation Tax Credit offers a 20 percent credit toward the expense of certified rehabilitation of income-producing properties. The tax credit has been utilized in support of a number of state commercial restoration projects. In 2008, the National Park Service reports that Massachusetts ranks number 2 in the country with a total of \$324,940,381 in certified expenses from 58 projects.¹⁸

13 Ibid

14 Lahr, Mike L. & Listokin, David; Economic Impact of Historic Preservation in Massachusetts; Center for Urban Policy Research, Rutgers University.

¹⁷ Preservation Massachusetts, Massachusetts Historic Rehabilitation Tax Credit
<http://preservationmass.org/programs/mhrtc/>

¹⁸ Ibid

The current demand is 293.8 million, which could leverage development investment of 1.7738 billion.

With this investment, 25,729 jobs would be created.¹⁴

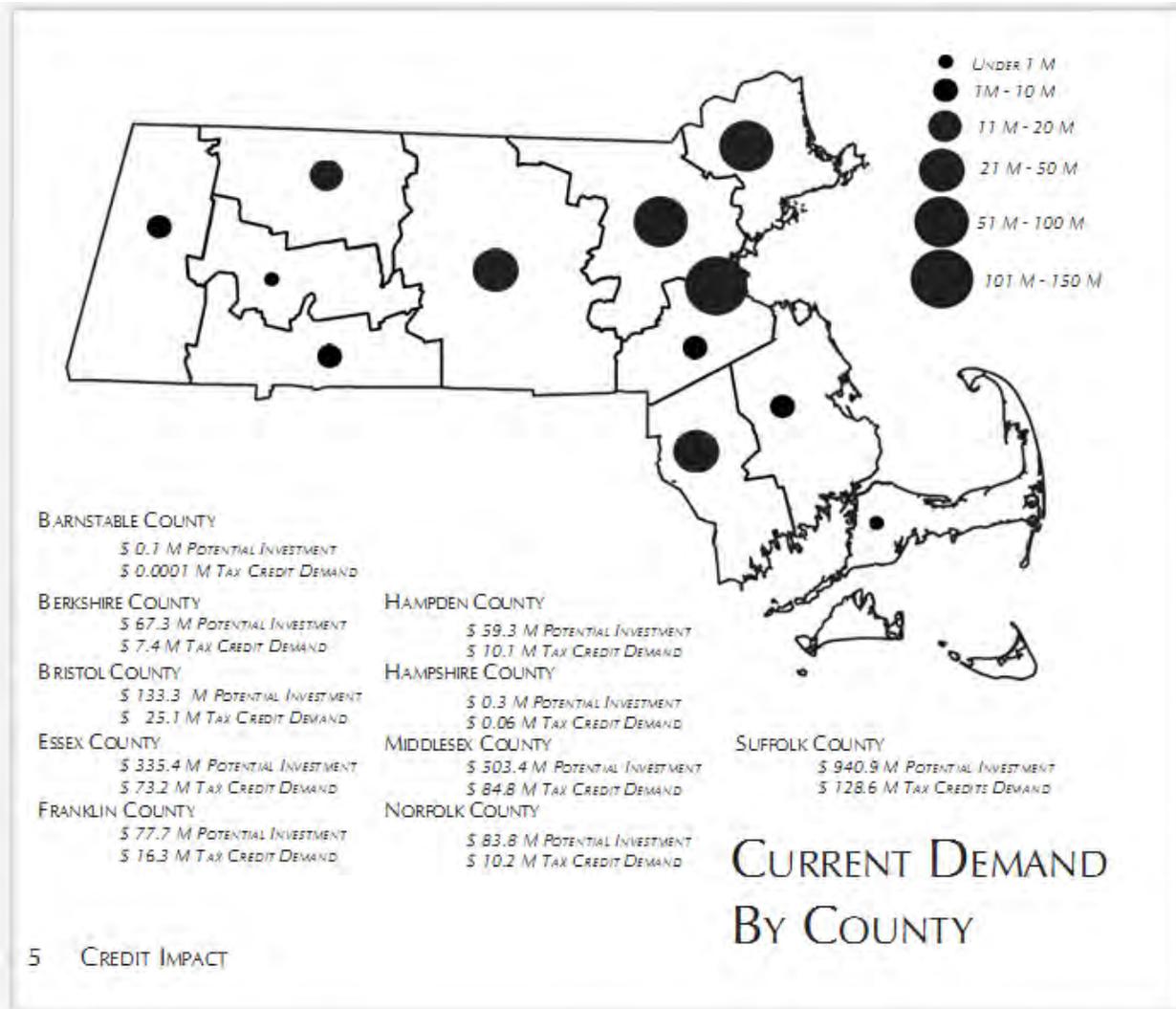


Fig 3: Current demand of rehabilitation in Massachusetts (Rutgers University study 2008)

Preserving Heritage

Preserving rural heritage is another state priority, with Massachusetts displaying strong leadership in retaining historic farmland and structures. State programs encompass more than \$17 million in easement purchases on agricultural land, and offer increased funding for the promotion of tourism in rural communities. As of 2010 the Massachusetts APR program has permanently protected almost 800

farms and a total land area of over 66,000 acres.¹⁵ Historic preservation represents precisely the type of economic activity most industry needs. It helps the nation conserve energy, shortens commutes, preserves the tax base of historic cities, and creates high-wage and specialized jobs in largely urban contexts.

15 Massachusetts Department of Agricultural Recourses

16 Patrice Frey, *Making the Case: Historic Preservation as Sustainable Development*, 2007

Embodied Energy

In the 1970s, the National Trust and the Advisory Council on Historic Preservation developed calculations for measuring the embodied energy in buildings based on square footage and building types. While embodied energy have not been updated, they remain a useful tool for calculating the considerable energy embodied in existing buildings.

Embodied energy is defined as the amount of energy associated with extracting, processing, manufacturing, transporting and assembling building materials. During the energy crisis of the late 1970s and early 1980s, preservationists promoted the idea that preserving buildings is inherently energy efficient, because it reduces demand for new resources, reduces waste from 20 demolition and construction, and preserves the energy embodied in an existing building. To aid in this effort, the Advisory Council on Historic Preservation commissioned a study on the subject of energy conservation and historic preservation. The Council commissioned a study of the following:

1. Energy already existing in structures to be rehabilitated;
2. Energy needed for construction and rehabilitation;
3. Energy needed for demolition and preparation of a construction site; and

4. Energy needed to operate a rehabilitated or newly constructed buildings.

The goal of the study was to produce formulas for each of the four requirements outlined above so that these calculations could be applied to any project to quantify the energy saved by building conservation and rehabilitation. The Consulting firm of Booz, Allen & Hamilton was selected to perform the research.

Three case studies were included in the final report, including Grand Central Arcade in Seattle's

Pioneer Square. The report concluded that that the Arcade embodied 17 billion BTUs (British Thermal Units of energy), and that a new building of equivalent size would require 109 billion BTUs to construct.

Preserving the Arcade would result in an energy savings of 92 billion BTUs, or 730,000 gallons of gasoline – “enough to power 250 automobiles for 60,000 miles.”

17 Advisory Council on Historic Preservation, *Assessing the Energy Conservation Benefits of Historic Preservation: Methods and Examples* (Washington, DC: 1979). Jackson 21

If a building were demolished and partially salvaged and replaced with a new energy efficient building, it would take 65 years to recover the energy lost in demolishing a building and reconstructing a new structure in its place. That is longer than many modern buildings survive.¹⁹

19 Franklin Associates, *Characterization of Building-Related Construction and Demolition Debris in the United*

States (Washington, D.C: U.S. Environmental Protection Agency,[1998]),

<http://www.epa.gov/epaoswer/hazwaste/sqg/c&d-rpt.pdf> (accessed October 12, 2007), pg. 2-6 and 2-7.

20 Ibid

Waste Generation

Tremendous waste is generated as a result of building demolition. The EPA estimates that 136 million tons of building-related construction and demolition (C & D) debris was generated in the United States in 1996. By 2003, C & D waste was estimated to be 325 million tons – almost a 250% increase in just seven years. Annual construction and demolition debris accounts for roughly 24% of the municipal solid waste stream.¹⁹

The EPA estimates that 115 lbs of waste is generated per square foot for residential demolition,

¹⁹ Mike Jackson, "Embodied Energy and Historic Preservation: A Needed Reassessment," (2005), 45-52

and the demolition of non-residential buildings results in approximately 155 lbs of waste per square foot. Thus, the demolition of a 2000 square foot home would result in 230,000 lbs of waste. Since approximately 245,000 homes are demolished each year, it is estimated that 19.7 million tons of waste is generated by the demolition of these homes. The EPA estimates that the demolition of commercial buildings generated 45.1 million tons of waste in 1994.^{20 22}

Renewed Pride in Community

The history of a community contributes to its personality. Preserving the history of a place through its significant historic resources gives a community its unique character. Historic preservation provides a link to the roots of the community and its people. Overall, historic preservation adds to the quality of life making for a more livable community. Historic preservation involves much more than simply saving and restoring old buildings and sites of historic importance; there are economic, cultural, environmental, and educational benefits of historic preservation, all of which are inextricably connected to one another and to the living memory of involved communities.

Historic preservation is beneficial to the community in the following ways:

- **Culturally** a community is richer for having the tangible presence of past eras and historic styles.
- **Economically** a community benefits from increased property values and tax revenues when historic buildings are protected and made the focal point of revitalization and when the community is attractive to visitors seeking heritage tourism opportunities.
- **Socially** a community benefits when citizens take pride in its history and mutual concern for the protection of the historic building fabric.
- **Developmentally** a community benefits from having a concerted and well-defined planning approach for the protection of historic buildings while accommodating healthy growth.

•**Environmentally** a community benefits when historic buildings are restored or rehabilitated rather than demolished and disposed of in the community landfill.

•**Educationally** a community benefits through teaching local heritage and the understanding of the past and the resultant cultural respect by its citizens.

Summary

Historic preservation is an important investment in the present and future. For many preservationists, safeguarding the past through its physical remains is reason enough to justify preservation efforts. It is also a powerful economic engine. In an overwhelming number of economic development studies, historic preservation is a demonstrated tool for increasing household income, increasing the tax base and increasing tourism dollars. Most importantly, Preservation creates jobs. Because rehabilitation and restoration activities work with existing materials, projects are labor intensive and create more jobs than new construction. While the overall cost of projects is often comparable to building new, the economic benefit is much greater from preservation activities through the creation of well-paying local jobs.

Chapter 4

Economic Impact and Job Creation Analysis of Massachusetts FY2000

Rutgers University, Center for Urban Policy Research, 2002.

Summary of the Annual Economic Impacts of Historic Preservation in Massachusetts

	I	II	
MASSACHUSETTS DIRECT EFFECTS	<i>Historic Rehabilitation</i> \$2.3 billion historic rehabilitation results in:	<i>Heritage Tourism</i> \$2.5 billion travel-attributed spending, results in:	<i>Total Examined Economic Impacts (Sum I-II)</i>
↓	National Total (Direct and Multiplier) Impacts		
NATIONAL TOTAL IMPACTS (DIRECT AND MULTIPLIER)	Jobs	67,233	67,121
	Income	\$2,196 million	\$ 1,631 million
	GDP*	\$2,919 million	\$ 2,433 million
	Taxes: <i>Federal</i>	\$395 million	\$ 330 million
	<i>Local/State</i>	\$310 million	\$ 371 million
	Tax subtotal	\$705 million	\$ 701 million
↓	In-State Massachusetts Total (Direct and Multiplier) Impacts		
MASSACHUSETTS PORTION OF NATIONAL TOTAL IMPACTS	Jobs	33,361	53,217
	Income	\$1,333million	\$1,224 million
	GSP*	\$1,651 million	\$1,803 million
	Taxes: <i>Federal</i>	\$223 million	\$258 million
	<i>Local/State</i>	\$162 million	\$301 million
	Tax subtotal	\$385 million	\$559 million
	In-state wealth*	\$1,428 million	\$1,545 million

Source: Rutgers University, Center for Urban Policy Research, 2002.

*GDP=Gross Domestic Product; GSP = Gross State Product; In-state wealth = GSP less federal taxes.

Note: Totals may differ from indicated subtotals because of rounding.

Economic impacts

- An estimated average total of \$6.9 billion was spent per year on the rehabilitation of existing residential and nonresidential buildings in Massachusetts.²⁰
- Of the \$6.9 billion spent on rehabilitation, an *estimated* \$2.29 billion, or about one third of the total, was spent on historic properties (older properties that were on, or might qualify for, national, state,

²⁰ Rutgers University, Center for Urban Policy Research, 2002.

and/or local registers of historic sites). An additional *estimated* \$10 million was spent on rehabilitating historic public buildings, resulting in an *estimated* \$2.3 billion in total historic rehabilitation.²¹

- The direct effects of historic rehabilitation are translated into multiplier effects, which encompass, as noted, such dimensions as *jobs* (employment by place of work), *income* (total wages, salaries, and proprietor's income), *gross domestic product* or GDP (total wealth accumulated, referred to at the state level as gross state product or GSP), *taxes* (federal, state, and local), and *in-state wealth* (GSP less "leakage" in the form of federal taxes).²²

- The total national economic impacts from the \$2.3 billion spent on statewide historic rehabilitation included the following: 67,233 new jobs; \$2.2 billion in income; \$2.9 billion in gross domestic product; and \$704 million in taxes. Massachusetts garnered slightly more than half of these economic benefits and, as a result, captured 33,361 jobs; \$1.4 billion in income; \$1.7 billion in gross state product; \$385 million in taxes (including \$162 million in state-local taxes); and \$1.4 billion in in-state wealth. The other effects were distributed outside Massachusetts.²³

²¹ Ibid

²² Ibid

²³ Ibid

Total Economic Impacts of the Annual Massachusetts Historic Building Rehabilitation (\$2.3 Billion)

	In Massachusetts	Total (U.S.)
Jobs (person years)	33,361	67,233
Income (\$millions)	1,333	2,196
GDP/GSP ^a (\$millions)	1,651	2,919
Total taxes (\$millions)	385	705
Federal (\$millions)	223	395
State/Local (\$millions)	162	310
In-State wealth (\$millions) (GSP minus federal taxes)	1,428	

^aGDP/GSP = Gross Domestic Product/Gross State Product.

Renewed Investment

America's economic success was built on smart investments in public buildings and infrastructure, and our future depends upon dealing with the deferred maintenance and disinvestment of these assets. In turn this means job creation for qualified workers. The National Trust for Historic Preservation proposes a stimulus plan that would fund an immediate renewal program for the following:

-Federal Building Improvements – Many of America's federal buildings such as courthouses, post offices and transportation facilities are in need of rehabilitation and reinvestment, and the stimulus plan should provide for improvements to this inventory. In addition, deferred maintenance and lack of attention have seriously compromised certain federal buildings' viability. The Smithsonian Institution, for example, suffers from an estimated \$2.5 billion in deferred maintenance needs.

-State and Local Public Building Grants – States and localities chronically lack the funds they need for improvements to their public buildings. The stimulus plan should establish a grant program to the states

for immediate assistance to state and local public buildings such as schools, libraries, courthouses, municipal centers and transportation facilities.

-Grants for Existing Infrastructure – The stimulus plan should establish a grant program to the states for immediate improvements to neighborhood-serving existing infrastructure such as roads, sidewalks, bike paths, pedestrian amenities, public transit, water lines, sewers and utilities.

America in the 1960s faced many challenges to its basic value systems as change affected every aspect of American life. Cities were abandoned for sprawling suburbs, and a sense of rootlessness became pervasive. It was in this climate that in 1966, a Special Committee on Historic Preservation published "With Heritage So Rich," a collection of essays that defined the state of historic preservation in the nation. By studying private preservation efforts, European landmark legislation and U.S. government policy to date, the committee sought to define a direction and create a plan to secure the future conservation of America's historic places.

Renewed Historic Preservation Programs

During the 1950s and 1960s people saw a negative change in their cities such as urban sprawl and blighted downtowns which developed a concern for their "quality of life that reflected their identity." As a response to the nationwide destruction brought about by federally initiated programs, a report coordinated by Lady Bird Johnson analyzed the country and the effects of urban renewal. *With Heritage So Rich*,²³ an accumulation of essays, wrote an "an expansive inventory of properties reflecting the nation's heritage, a mechanism to protect those properties from unnecessary harm caused by federal activities, a program of financial incentives, and an independent federal preservation body to coordinate the actions of federal agencies affecting historic preservation." The book triggered public awareness of the issue and offered a proposition to handle the situation through the National Historic Preservation Act.

Main Street Programs

This report released by the National Trust of Historic Preservation in 2010 in shows the importance of programs such as Main Street.

As President Obama and Congress develop strategies to address this serious recession, the National Trust for Historic Preservation applauds their leadership in calling for investment in public buildings and infrastructure. We support the principle that short-term stimulus proposals must have long-term benefits for our economy, environment, and society.

Much of the national dialog surrounding relief for the country's ailing financial markets, businesses, lending institutions and industries refers to the larger implications for "Main Street." Given the substantial role the National Trust for Historic Preservation and the preservation community play in supporting Main Street jobs, revitalization and economic development, we have been encouraged by this critical emphasis on the country's historic core – its communities and the people who make them work.

We propose stimulus plans that will rebuild Main Street communities in urban and rural areas across America. Existing infrastructure, including public buildings, roads, sidewalks, water lines, sewers and utilities, have been neglected for far too long. Significant reinvestment at the state and local levels creates jobs, supports businesses, and generates immediate and tangible economic results. In fact, providing assistance to Main Streets through the stimulus programs the President-Elect and Congress develop is a long-term investment in the very "bricks and mortar" that leverages private dollars and improves the viability of places desperately in need of federal resources. And stewardship that emphasizes reusing and rehabilitating the existing buildings, infrastructure, communities and places we already have is inherently more efficient and sustainable.

For example, the reuse of older and historic buildings itself is a powerful tool for job creation and employment retention. Rehabilitation generally uses about 20 percent more labor and, in turn, produces

a greater number of jobs than new construction. As compared to new construction, every \$1 million spent to rehabilitate a building results in:

- *\$120,000 more dollars initially remaining in the community;*
- *Five to nine more construction jobs created;*
- *An average of 4.7 more new permanent jobs created;*
- *Household incomes in the community increasing by \$107 more than through new construction;*
- *Retail sales in the community increasing by \$142,000 – \$34,000 more than through new construction; and*
- *Real estate companies, lending institutions, service vendors, and restaurants receiving more direct monetary benefits.*

National Trust for Historic Preservation 2010

Economic Impacts of Historic Preservation in Massachusetts, 2002

Massachusetts Center for Public Policy, 2007

Tax Incentives

One of the most effective ways of promoting jobs per tax dollar spent are historic preservation projects. They also are effective in doing so in the construction sector, which remains in the economic doldrums. Another plus is that more of this money stays in the local economy of the project than other types of stimulus money. This focus on the economic benefits of historic preservation is one of the main tenants of Massachusetts Preservation.

The incredibly effective Massachusetts tax credit results in 8,060 in-state jobs each year--including 3,590 jobs in construction, 1,291 service jobs, and 1,062 retail jobs--for each \$346 million spent annually on

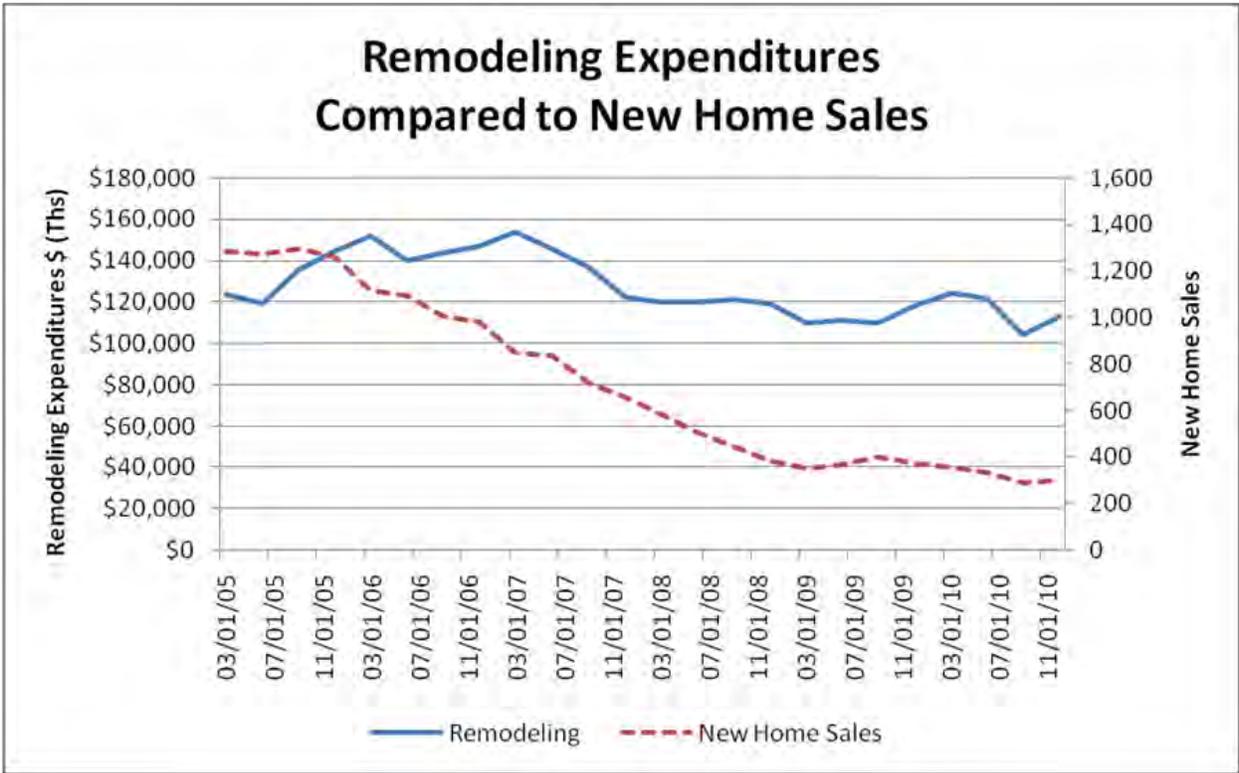
the rehabilitation of historic buildings.²⁵ A recent study of Massachusetts tax credit program showed that it has created 10,769 full and part-time jobs from direct employment and indirect employment in other sectors of the economy.

Summary

So what do all these figures mean? Compared to the total economic scale of national or state levels, historic preservation is rather small. But while comparing historic preservation to total economic activity at both the state and national levels is somewhat instructive, it is also misleading. Indeed, nearly any well-defined economic activity will not appear large against the sum of all activities.

Since April, 1994, the Massachusetts Historic Rehabilitation Tax Credit program (MHRTC) has been catalyzing the rehabilitation, reuse and revitalization of historic properties across the Commonwealth. These historic structures have been rehabilitated to create quality affordable and market rate housing, community centers, commercial and office space, performing arts venues, restaurants and more, creating jobs and benefiting our communities in numerous ways.

As seen in the charts below, a split has occurred in the sales of new homes compared to the sales of older homes and in the remodeling of older homes compared to buying new.



Recognition that historic preservation often is associated with economic successes is an important reason this split is happening, as is the fact that many see the preservation of historic districts, sites, buildings, structures, and objects as enhancing their quality of life, adding variety and texture to the cultural landscape in which they live and work. Largely because of such highly personal responses, public support for historic preservation has flowed from the bottom up, making it in the truest sense a grassroots movement, not just another Government program.

Chapter 5

Academic Overlay

Due to the Massachusetts Department of Education's complex curriculum I believe suggesting the proper preservation curriculum to overlay over existing vocational curriculum is beyond the scope of this thesis. The research in this section is based on Vocational Schools in the state of Massachusetts and may be adapted for use in other states. National averages and models from other states are reviewed and used in the study.

The State Director of Career/Vocational Technical Education understands that schools must make program curricula changes in approved programs in order to keep them current. It is not the intent to penalize programs (by virtue of state aid) for positive change.

"A substantial curricula change in an approved program is when more than twenty-five percent of the total skills to be taught are modified. A substantial curricula change of more than twenty-five percent of the skills to be taught in an approved program would require the written approval of the State Director of Career/Vocational Technical Education. A substantial curricula change of more than fifty-percent of the skills to be taught in an approved program would require the program to be approved as a new program by the State Director of Career/Vocational Technical Education. A substantial change in an approved program that involves the other seven approval criteria, such as the admission policy, facilities, and cooperative education must receive the approval of the State Director of Career/Vocational Technical Education prior to implementation."

"These are difficult times on Capitol Hill, in the statehouses, and in city halls all across the country. In response, some want to wipe away government support in areas they don't see as essential. We can argue about what caused our economic problems of the past few years, but I believe we can all agree

that in town after town and state after state, we've been able to show that Historic Preservation is a force for sustainable community development — a force that creates jobs, grows local economies, and allows us to successfully live and work in a way that recognizes our responsibilities toward passing on a healthy environment to our children.”

The change required for an effective preservation program overlay will easily fit into these guidelines.

Recommendations

Vocational curriculum today is narrowed compared to 20 years ago due to Massachusetts Comprehensive Assessment System testing (MCAS), college preparation courses and other new academic endeavors not traditionally seen in vocational studies. A preservation-based academic overlay should focus on the preservation and interpretation of historic structures and their components and not take away from the already diminished trade-based curricula. Working as a team, students and teachers in core academic subject areas such as history and social studies, English, math, and science, are able to organize their lessons around a common architectural theme. In trade classes students are able to gain hands-on experience while working with preservation professionals, trade teachers, and their local community. Real world projects should be incorporated into the curriculum and should be selected based on how well they correspond with the periods and topics covered in the history class. As a result of this overlap, students and teachers find their work integrated, reapplied, and reinforced throughout the curriculum. 33

For example, at the Brooklyn High School of the Arts, the history of transportation and industrial development is taught through the Brooklyn Bridge and its historic context. The study of the bridge and the engineering principles behind it offers lessons in applied mathematics and science, including analyses of the natural forces, such as wind, waves, and erosion that have informed or continue to inform the bridge's design, construction, and preservation. Students gain a contextual understanding of the period in which the bridge was built by reading the major literary works of day, specifically the works of Whitman, Douglas, and Wharton. Historic preservation thus functions as the "bridge," figuratively speaking, that links seemingly disparate academic subjects across disciplines and illuminates their relevance to contemporary preservation practice.

Historic preservation is an avenue for examining, valuing, and retaining our existing assets. As we move farther into the 21st century, the field is growing more important. Rising human populations, diminishing natural resources, and an uncertain energy future call for new development strategies, widely referred to today as 'smart growth.' According to a recent piece by Donovan Rykema, a nationally known consultant on historic preservation economics, it turns out that smart growth's biggest ally is – you guessed it – historic preservation.

Incorporating Historic Preservation into Vocational Studies in Massachusetts will not only prepare graduates for a growing job market it will also instill in them a sense of history and also pride in community.

My recommendations are:

1. Integrate historic preservation into all aspects of curriculum as an overlay, this includes planning, land use, zoning, housing, green and sustainable practices, park and trails, and transportation planning.
2. Encourage development of student's ability to identify and evaluate historic and cultural resources.
3. Encourage development of student's awareness to designate, preserve, and protect historic and cultural fabric and resources.
4. Encourage development of internships with local restoration companies to encourage the preservation of historic and cultural resources.
5. Encourage development of relationships with local preservation non-profits and governmental organizations to promote educational opportunities.
6. Encourage development of materials to evaluate and educate students about historic and cultural resources and the practice of historic preservation.

Massachusetts DOE Vocational Education Framework

This section is my recommendations for effected clusters in the Massachusetts Vocational System. The last update to the Vocational Education Technical Framework was in 2007.

Chapter 74-approved vocational technical education programs are programs that meet the definition of vocational technical education contained in Massachusetts General Law Chapter 74, and are approved by the Department of Elementary and Secondary Education pursuant to Chapter 74 and the Vocational Technical Education Regulations. Note that all Chapter 74-approved vocational technical education programs meet the federal Perkins Act definition of career and technical education.

Not all trade concentrations are examined in this section and Historic Preservation practices are by no means limited to just these fields.

• Architectural Drafting/ Drafting Technology

Architectural Drafting Technicians are on the cutting edge of historic preservation, infill design and construction, and they are in high demand. Many exciting careers are open in the field including restoration, drafting, estimating, building inspection, electrical, on-site measured drawing, documentation, mechanical and structural engineering, construction computer rendering, and computer-aided drawing. Architectural Technicians assist the architect in defining, creating, and organizing historic buildings, urban and rural spaces. They participate in the development models that parallel finished buildings, as well as design studies, maintenance forecasting, materials testing, facilities management, sales and marketing.

- **Environmental Science and Technology**

Although historic preservation and environmental science are very distinct fields, they both share common interests, values, and goals. There are many overlapping elements philosophically, although there have been some clashing of agenda between the two parties in the public arena. Simply put, both areas have the common goal of protecting and preserving what is valuable to humans. Specifically, historic preservation deals with the built environment and environmental protection deals with the natural environment. Both deal with valuable resources and act as proactively to meet their objectives.

- **HVAC-R/Appliance Technology**

Making the most of a building's original, passive climate control features can reduce system requirements and the impact of the installation on historically significant spaces. HVAC technicians should have detailed guidance for integrating HVAC sensitively into historic buildings- for example, thoughtful routing, configuration and concealment of duct-work plays a major role in the aesthetic success of HVAC retrofitting projects at historic buildings. Also, energy reduction and climate control needs can be met while preserving historic spatial volumes and materials. Mechanical upgrades and interior renovation projects often provide opportunities to restore compromised spaces and make historic buildings more comfortable and marketable.

- **Carpentry**

The demand for carpenters is rapidly growing, and the need for special skills in the area of restoration and renovation is growing even faster. After learning the basic skills for carpentry, carpenters should learn the unique skills required for the more rigorous tasks used in renovations and the preservation of

historic buildings- for example, how to identify existing structural issues, use recycled materials, repair existing fabric, and frame a roof or stairs without using pre-made units. Quality and craftsmanship should be the cornerstones of the program.

- **Legal and Protective Services**

The curriculum will provide a wide array of legal service education to the students, which includes litigation and legal advocacy relating to the preservation of historic properties; providing general in-house legal assistance to the various operating divisions of the National Trust; providing advice – both within the organization and to the public – on matters relating to federal, state and local preservation laws; and coordinating with government agencies and other non-profit organizations involved in historic preservation.

- **Machine Technology**

In the restoration of historic structures engineers and preservationists are often confronted with the decision to repair or replace historic metals. The preservation of historic iron and steel parts that are no longer available or manufactured is a key component for preservation projects. Students will be demonstrating an understanding for and finding an alternative to the destruction of important elements while addressing the urgent need for greater awareness of a more widespread expertise in preservation techniques for historic metals.

- **Plumbing and Pipe Fitting**

Prior to initiating a plumbing upgrade in a historic structure, it is important for students to ascertain whether these traditionally utilitarian spaces are in fact historic and must be preserved. If they are not historic, then rehabilitate them with sensitivity to the surrounding historic building materials, finishes, and features. However, if plumbing elements are historic, then take care to preserve them:

- Retain and preserve historically significant configuration, layout, and plumbing elements, such as bathroom and kitchen fixtures and features.

- When repairing/replacing existing pipes, do not damage adjacent finish materials, such as floor and wall tiles.

- If new pipes must be installed and are visible, they should be located inconspicuously and they should complement adjacent finishes.

- Use existing pipe runs in their original location. Otherwise, install them in closets, service rooms, and wall cavities.

- Avoid primary façades and rooms if pipes must be affixed to the interior or exterior of a building.

- Do not cut through character defining features, such as moldings, wainscoting, etc.

- Ensure that the addition of plumbing systems and other repairs will not corrupt the building's structural integrity.

- **Steam Engineering**

Boilers and radiators are not often installed in new homes, but most historic structures feature this type of heating system. Furthermore, because this type of heating works well for many years, steam heating

and hot-water heating are still common in many historic houses, apartment buildings, multi-family dwellings, and older business buildings. Steam and hot-water heating systems have several benefits that aren't often discussed in preservation planning. They have few moving parts, making them more reliable and durable if maintained than newer, more complicated heating systems. They also provide clean and dust-free heat, a huge plus for homeowners who react negatively to the dust and other allergens that can be stirred up by forced air and other modern heating systems in historic homes. Finally, they fit the bill when it comes to staying true to older structures and historic homes, making it easy to see why some homeowners choose to overlook, and put up with, some of the quirks that have made steam heating systems lose popularity as a residential heating option over the years.

- **Electrical Technology**

Historic electrical systems may not be appropriate for current or planned use of a historic building and the installation of new systems may be necessary. The lighting levels and equipment should be appropriate to the building's current or planned use while respecting the original fabric. Students should know how to:

- Preserve and reuse historically significant light fixtures. This rehabilitation project reused the architect's original lighting scheme and extant fixtures. Photos courtesy National Park Service 39
- Retain as much original fabric as possible when installing new systems (i.e., do not needlessly puncture a decorative plaster ceiling or molding, when it may be as feasible to relocate a fixture or junction box).
- Retrofit existing light fixtures with reflectors to increase light output.
- Conserve and rewire existing fixtures and accessories. Even if original fixtures will not be electrified and/or used, they should be retained and preserved *in situ*.

-If original fixtures cannot produce the amount of light required, use alternate light sources from removable fixtures, such as task lighting and torchières. Inconspicuous sconces or unobtrusive perimeter ceiling lighting are preferable to eye-catching modern fixtures.

-Retain and reuse original, character defining switch plates and other accessories.

-Use existing electrical chases or install new chases within or behind walls or vertically in secondary or tertiary spaces.

-If using historically sensitive replacements that are wired for modern energy loads and light output use replicas of original lighting fixtures can be designed to accommodate energy efficiency and multiple light sources.

-Incorporate the original light color in new lighting plans.

-Ensure that the addition of interior lighting systems and other repairs will not corrupt the building's structural integrity.

- **Residential Remodeling**

Renovating a historic building well is a special skill that requires a keen attention to detail. Students all have to understand ways to find historical data to support correct choices in remodeling historic structures. They will need to explore proper materials to be used and learn the theory of repair rather than replace.

Using early American pattern books and the “Secretary of Interior’s Standards for Rehabilitation,” students can avoid many common mistakes that are made when repairing elements on a period home.

An education of proper historic colors, plaster repair, epoxy use, and methods for working with a local Historic District Commissions should be included.

- **Metal Fabrication & Joining**

“Historic wrought iron and steel truss bridges that were fabricated between 1850 and 1950 are rapidly being replaced today with new concrete or steel bridges, primarily because of the lack of knowledge in the restoration of historic metals,” Vern Mesler

Repairing and restoring historic metalwork can be one of the most important parts of an historic preservation or restoration project. Whether it’s wrought iron, cast iron, sheetmetal, or metal roofing the basic approach for students is to first assess the condition and then move forward with cleaning and repairing it or replicating elements as needed. Students should work with experienced metalwork professionals and architects or other design professional on real world projects involving restoration, reproduction or repair of historically significant metalwork. Regrettably, many good and well-intentioned metal shops do more harm than good if they are not given the appropriate guidance in advance.

- **Engineering Technology**

Retaining historic fabric is a basic tenet of historic preservation, so wholesale replacement is usually not a viable option. An engineer is one of the first people consulted when a project involves a historic building. The engineer is asked whether the structure is sound and can withstand the planned preservation work and possibly additional loads. Students learn to address the unique problems

inherent in historic buildings and come up with solutions that meet both engineering and historic preservation needs.

Most historic buildings are exempt from the newer federal building codes, but if the building owner wishes to change the use of the historic building, such as opening it up to public access or running a business from inside the historic building, certain building code requirements must be fulfilled. This most often results in calling in a structural engineer to assist with the retrofitting or alteration of the historic building.

- **Hospitality Management**

Cultural heritage tourism is a special form of tourism related to historic preservation that takes place in numerous venues including tours, festivals, cruises, reenactments, theme parks and the like. Cultural tourism includes museums, art galleries, concerts, and plays, whereas heritage tourism embraces the culture of an ethnic groups-whether it is Native American, Euro-American, African-American, or any of the myriad other ethnic backgrounds present in a region or destination. Cultural heritage tourism professionals frequently work with communities, helping them interpret, express and preserve their special history for visitors. These professionals may be involved in developing cultural heritage sites as well as planning and implementing interpretative programs. Cultural heritage tourism professionals may work with public agencies or non-profit organizations, such as museums and foundations that are interested in promoting cultural heritage preservation through domestic and international tourism.

Because hospitality management is so closely related to tourism it is important for hospitality professionals to have the knowledge and skills related to the historic preservation field as well as the business environment, with particular emphasis on marketing. There are also non-profit organizations in communities throughout the world, and particularly museums, which look to specialists in cultural

heritage tourism and hospitality management to better manage and market their products and services. Large travel companies as well as non-profits in travel, also have a need for expertise in cultural heritage experts and hospitality management professionals to develop and market cultural heritage tour programs.

- **Natural Recourse Management**

Natural resources and individual historic and cultural resources must be preserved and appreciated within their larger geographic, social and historical contexts. Protecting whole landscapes, then, is vital for retaining their natural and cultural meaning and significance. In addition, natural and cultural landscapes areas whose constituent resources are closely related to one another are inextricably linked because environment shapes human societies and people, in turn, affect their environments. Thus, the same treasured landscapes can have both natural and cultural significance. Treasured landscapes also reflect a wealth of locations, resources, histories and voices whose interpretations help all Americans celebrate our shared earth and heritage. By recognizing and preserving treasured landscapes, we can ensure that the scenery, people, cultures and events that shape our history are remembered and celebrated for generations to come.

- **Horticulture and Landscaping**

Students should engage in a multitude of activities related to the protection and presentation of historic landscapes. Students will learn about historic landscapes, their values, threats and ways to preserve their important characteristics. Students will be involved in a wide range of projects in restoration, rehabilitation and conservation including:

- preparation of heritage landscape inventories and assessments
- master planning for historic sites
- historic cemetery and battlefield conservation
- study of industrial, agricultural, heritage conservation districts
- development of rural protection strategies 44
- development of vegetation management strategies and study of native plant communities
- accessing sources of material for historic structures
- writing of histories of landscapes and creators/designers of these landscapes

Students will learn to teach, write, develop policies, and advocate for the preservation of historic landscapes. Many will be involved in management, from standards to on-site activities including implementation.

Summary

Integrating preservation practices and philosophies into already established curriculum encourages the development of student's ability to identify and evaluate historic and cultural resources by increasing the development of student's awareness to designate, preserve, and protect historic and cultural fabric and resources.

Conclusion

Preservation trades are a loosely defined categorization of building trades who actively practice their craft in respect of historic preservation, heritage conservation, or the conserving and maintenance of the existing built environment. Though graduates of vocational schools may at times be involved in new construction, the emphasis of the categorization is toward work on existing structures, regardless of their age or their historic value, with a specific interest in replication or conservation of the original results and craft techniques.

These new skills gained by students will include masonry, timber framing, log building, traditional roofing, carpentry and joinery, plasterwork, painting, blacksmithing, and ornamental metal working. In addition to "hands-on" skills and knowledge of building processes, students will retain a basic working knowledge of historic preservation, materials science, historic architecture, and procuring replacement materials mixed with modern technologies, current materials science, and 21st century construction project management.

The work performed by these students will not only be essential to the maintenance of the historic built environment, but also to the preservation of the traditional trade skills and knowledge that is so quickly becoming extinct.

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also contains excellent information about buildings of historic significance in Illinois.
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http://preservapedia.org/Main_Page

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Appendix A:

Massachusetts General Education Law Chapter 74

Overview - Chapter 74 Law Chapter 74 is the Chapter in the Massachusetts General Laws that addresses vocational technical education. Chapter 74 may be also be appropriately referred to as Massachusetts General Law Chapter 74 or M.G.L.c. 74 for short. The Sections of Chapter 74 that are reprinted in this appendix are those that are pertinent to this thesis.

Chapter 74 Section 2

Commissioner of Education: Powers and Duties

The commissioner, under the direction of the state board, shall investigate and promote vocational technical schools, and initiate and superintend the establishment of schools for the aforesaid form of education and shall supervise and approve such schools as provided in sections one to thirty-seven, inclusive.

The commissioner, under the direction of the state board, shall approve or disapprove vocational technical programs in accordance with regulations published by the board; provided, however, that said regulations shall more heavily favor an outcome-oriented approach for approval of such programs over a quantitative approach which solely measures time spent on lab instruction; provided, further, that said regulations shall consider a program's intention to integrate vocational and academic instruction and to train students in all aspects of a chosen industry. *Amended by St.1938, c.446, s.2; St.1952, c.630, s3; St.1957, c599, s.1; St.1978, c.475, s.1; St.1987, c.731, s.1; St.1993, c.71, s.57.*

Chapter 74 Section 2A

Employment of Vocational Technical Students

The commissioner shall establish rules and regulations to promote the employment of vocational technical students during their studies by the city or town in which said students attend school, or in the case of a regional or county agricultural school district, the cities and towns comprising said district. Students shall not be permitted to perform work on projects which are outside such city or town unless said projects have exceptional value as determined by the commissioner. *Added by St.1972, c.263; amended by St.1978, c.475, s.1; St.1987, c.731, s.1.*

Chapter 74 Section 3

Establishment of Schools by Towns

Towns may, through school committees or boards of trustees elected for not more than five years, and known as local trustees for vocational technical education, establish and maintain independent or vocational technical schools. *Amended by St.1938, c.446, s.3; St.1957 c.599, s.2; St.1978, c.475, s1; St.1987, c.731, s.1.*

Chapter 74 Section 4

Establishment by Two or More Towns

Independent vocational technical schools may be established and maintained by districts composed of two or more towns, through boards to be known as district trustees for vocational technical education, consisting either of the chairman and two other members of the school committees of each town, to be appointed by such committees, or of three residents of each, to be elected by the town. *Amended by St.1938, c.446 s.4; St.1957, c.599. s,3; St.1978, c.475, s.1; St.1987, c.731, s.1.*

Chapter 74 Section 5

District Trustees; Powers and Duties 55

District trustees under the preceding section shall adopt, for one year or more, plans or organization, administration and support of such schools, which shall be binding on the towns made parties thereto, and shall not be altered or annulled except by two-thirds votes of such trustees, with the consent of the commissioner under the direction of the state board. *Amended by St.1952, c.630, s.4; St. 1987 c.731. s.1.*

Chapter 74 Section 5A

Establishment of Vocational Technical Schools by Regional School Districts

Independent vocational technical schools maybe established under sections fourteen and fifteen of chapter seventy-one, if the agreement for the establishment of the regional school district, either as originally adopted or as subsequently amended, so provides, and for that purpose the regional district school committee shall have the powers and perform the duties conferred or imposed by law upon local trustees for vocational technical education, and may be known as a board of regional school district trustees for vocational technical education. *Added by St. 1952, c.471, s.3; amended by St.1978, c.475, s.2; St.1987, c.731, s.1.*

Chapter 74 Section 5B

Vocational Education in Collaboratives

Regional school districts or cities and towns which are not members of vocational technical regional school districts, may through educational collaboratives formed under the provisions of section four E of chapter forty, conduct vocational technical education programs approved under the provision of this chapter. *Added by St.1979, c.342, s.14; amended by St.1987, c.731, s.1.*

Chapter 74 Section 6

Advisory Committees

Each school district, county agricultural school, collaborative or municipality operating an approved vocational technical program shall, under a plan approved by the commissioner under the direction of the state board, appoint advisory committees composed of representatives of local business and industry related to the program, organized labor, parents and students, which shall consult with and advise the trustees and other school officials managing and supervising such schools. *Amended by St.1938, c.446 s.5; St.1952, c.630, s.5; St.1957, c.599, s.4; St.1978, c.476, s.3; St.1987 c.731, s.1.*

Chapter 74 Section 7B

Vocational Technical Apprentices

An apprentice, as defined in section eleven H of chapter twenty-three shall, upon the concurrence of the commissioner of labor and industries, be approved by the commissioner under the direction of the state board for related vocational technical training in any city, town, regional district, or independent school, regardless of residential qualification. Related classes for an approved apprenticeship program shall be conducted in a single school system, unless the commissioner, in agreement with the commissioner of labor and industries, determines that it would be in the best interest of said program to conduct such classes in more than one such school system. *Added by St.1972. c.760; amended by St.1987 c731, s.2.*

Chapter 74 Section 13

Scheduling of Classes; Age Restriction

Independent industrial, agricultural, vocational home economics and allied health occupations schools may offer instruction in day, part time and evening classes. Independent distributive occupations schools may offer instruction in part time and evening classes only. Attendance upon such day or part time classes shall be restricted to those over fourteen years of age; and upon such evening classes, to those over sixteen years of age. *Amended by St.1938, c.446. s8; St.1957, c.599, s.7; St.1978, c.475, s.6.*

Chapter 74 Section 14

Practical Art Classes; Age Restriction 56

Towns may, through school committees or trustees for vocational education, establish and maintain practical art classes. Such classes shall be open to persons over sixteen years of age, and maybe established and maintained as approved state aided practical art classes under sections one to twenty-two, inclusive, so far as not inconsistent therewith. Regional school districts established under sections fourteen and fifteen of chapter seventy-one, if the agreement for the establishment of the district, either as originally adopted or as subsequently amended, so provides, may through the regional district school committee establish and maintain such practical art classes.

School committees or trustees for vocational education may in addition to the courses approved by the department of education establish and maintain such evening practical art courses as in their opinion they deem expedient and necessary, and may upon request to the state board and with its approval, hire provisionally in the absence of certified evening practical arts teachers such teachers who may not be certified but are qualified through experience to teach such practical arts courses until such time as such teachers are certified or certified evening practical arts teachers are available. *Amended by St. 1943, c.540; St.1952, c.471, s.6; St. 1969, c.364; St.1978, c.475, s.7.*

Chapter 74 Section 14A

Federal Funding for Practical Art Classes

The commissioner under the direction of the state board, in the name and on behalf of the commonwealth, may apply for and receive, and there after expend for any or all of the purposes of section fourteen any funds received for any of such purposes from the federal government or any of its agencies. *Added by St.1943, c.540; amended by St.1952, c.630, s.9.*

Chapter 74 Section 14B

Revolving Funds for Culinary Arts and Other Vocational Technical Programs

In any city or town which accepts the provisions of this section, any income received in a fiscal year not exceeding, in the aggregate, fifteen thousand dollars derived from the purchase and sale of products produced in the culinary arts subject area of the home economics program, or any other vocational technical program conducted in any public vocational technical high school shall be deposited in a special fund by the school committee in any banking institution in the commonwealth. Expenditures may be made from said fund by the school committee for purposes needs for the culinary arts subject area or in the case of a fund established for any other program, such finds may be expended for the purposes of such program area without further appropriation, notwithstanding the provisions of section fifty-three of chapter forty-four; provided, however, that said special fund shall not be used to pay the salary of any employee, and in any fiscal year no more than five thousand dollars from said fund shall be used in the purchase of equipment. Three years from the year a city or town accepts the provisions of this section, and every third year thereafter said city or town may act to rescind its original acceptance. The superintendent of a school district with such a fund shall submit annually a report of said fund to the mayor, city council, city manager, board of selectmen or town manager of each city and town in said district and a copy of said report shall be submitted to the director of the bureau of accounts. The provisions of this section shall be effective in any regional school district upon its acceptance by the school committee of said district and a majority of the towns and cities and said district by vote of the board of selectmen or city council of said cities and towns. *Added by St.1978. c.546; amended by St.1987, c.731, s.3.*

Chapter 74 Section 15

Classes in Agriculture and Horticulture

Cities may establish maintain schools for instructing families and individuals in day, part time or evening classes in gardening, fruit growing, floriculture, poultry raising, animal husbandry, and other branches of agriculture and horticulture. The location and organization thereof and the instruction given therein shall be subject to the approval of the commissioner. *Ter. Ed.*

Chapter 74 Section 16

Agricultural Classes; Notice 57

Before action taken under the preceding section, school committees shall circulate a description of the purposes and scope of the instruction to be given thereunder, and request applications for such instruction. *Ter. Ed.*

Chapter 74 Section 17

Land for Agricultural Classes

Boards or officers having power to take land for school purposes in cities may take, by eminent domain under chapter seventy-nine, land therein not already appropriated to public use, or lease or purchase land either within or without the city limits, for the purpose of section fifteen. A school committee may erect suitable building on land so acquired, and provide, on terms not involving loss to the city, for the use of plots of ground and for the temporary housing of pupils complying with its regulations and not having access to other land suitable for proper instruction. *Amended by St.1987, c.731. s.4.*

Chapter 74 Section 18

Standards for Training of Vocational Technical Instructors

The state board shall establish basic competency-based vocational technical teacher training standards which shall serve as the fundamental, pedagogical requirements for beginning vocational technical instructors. The board shall further require that all persons seeking to meet the board's requirements shall have successfully passed performance and written tests in areas as determined by the board and shall have successfully completed an approved seminar on teaching skills and methods.

Chapter 74 Section 20

Custodian of Federal Funds

The state treasurer shall be the custodian of federal funds allocated to the commonwealth for vocational technical education. The funds so allocated from the federal government shall be expended with specific appropriation under the direction of the state board. *Amended by St.1947, c.652, s.9; St.1955, c.700, s.2; St.1956, c.602, s.7 St.1965, c.572, s.21; St.1978, c.475, s.8; St.1987, c.731, s.5.*

Chapter 74 Section 21

Expenditure of Federal Funds

Subject to section twenty, the funds received under the act of Congress may be paid out, on requisition of the state board, as reimbursement for expenses already incurred, to approved schools. *Amended by St.1938, c.446, s.10; St.1946, C.552, s.2; St.1947 c.652, s.10; St.1956, c.602, s.8; St.1965, c.572, s.22; St.1987, c.731, s.5.*

Chapter 74 Section 22

Federal Funds; Authority of State Board

The state board may use the funds received under the act of Congress mentioned in section twenty as supplementary to state aid for salaries of teachers of vocational technical subjects in schools complying therewith. It may also use such funds (1), for salaries of teachers giving types of training selected by it as especially needing stimulus; or (2), for competency-base programs for the pedagogical preparation of teachers of vocations selected by it; or (3), to arrange with schools and colleges to give the training to teachers of vocations under its supervision; or (4), to enable local school authorities to conduct, under its supervision, inservice training of vocational technical teachers; or (5), for travel as provided for under said act of Congress. Such payments shall be subject to conditions prescribed by said board. *Amended by St.1938, c.446, s.11; St.1947, c.652, s.11; St. 1956 c.602, s.9; St.1965, c.572, s.23; St.1987, c.731, s.5.*

Chapter 74 Section 24

Smith Agricultural School; Governance

Smith Agricultural School, established under chapter one hundred and fifty-one of the Special Acts of nineteen hundred and eighteen, shall be maintained by the city of Northampton as a state-aided 58 approved vocational technical school under and subject to sections one to twenty-two, inclusive; provided, however, that the superintendents of said school shall consist of the mayor and superintendent of schools of said city, ex-officios, and three other superintendents to be elected at its city election by ballot, as provided in the will of Oliver Smith, and that said superintendents shall have

the powers of local trustees elected under section three. Upon the death or resignation of an elected superintendent of said school his successor shall be chosen by the city council and the remaining superintendents in joint convention, who shall serve until the next city election. *Amended by St.1963, c.24; St.1987, c.731, s.6.*

Chapter 74 Section 24B

Coordination of Secondary Vocational Technical Programs and Higher Education

The state board and the board of regents shall encourage the coordination of programs between public secondary vocational technical school districts and public institutions of higher education. Said boards shall establish policies and procedures for the standardization of articulation agreements between the aforementioned institutions and that said boards shall meet annually to review the implementation of such policies and procedures. *Added by St.1987, c.73), s.6A.*

Chapter 74 Section 37A

Technical Institutes

If a school committee or the board of trustees of any industrial, technical, agricultural or vocational school subject to this chapter determines that sufficient need exists in such school for a course or courses beyond secondary school level and designed to prepare students for greater opportunities for employment in industrial, agricultural and technical occupations, it may submit in writing its plans for such course or courses to the board of higher education. Upon the written approval of said plans by said board, such school committee or board of trustees may establish and maintain such extended courses of instruction on a technical institute level, and public funds may be appropriated for said purpose; provided, that such courses of instruction conform to such standards as said board may establish, and are maintained by said school committee or said trustees under the general regulations of the board. Any such school may use the designation "technical institute" with respect to the maintenance of such courses at such school, and the school committee or trustees of such school may, subject to the approval of the state board and the board of higher education, grant the degree of Associate in Applied Science to persons who complete such course or courses of instruction. Tuition fees in an amount approved by the commissioner of education may be charged to students enrolled in a program leading to the degree of Associate in Applied Science offered by any such school. This section shall not be applicable to the board of regional community colleges, or any action of said board under section twenty-seven of chapter fifteen, or to any regional community college. *Added by St. 1963. c.562, s.1; amended by St.1965, c.572. s.26; St.1967, c.268, s.3; 1979, c.660.*

Chapter 74 Section 37B

Approval of Postsecondary Programs by Commissioner; Tuition

The commissioner under the direction of the state board may approve nondegree granting vocational education programs at the post-secondary level. In making his decision, the commissioner shall take into consideration the availability of similar training opportunities at the secondary and public regional community college levels.

[Second paragraph as amended by 1991, 138, Sec. 147. Governor's purported disapproval was invalid. See Opinion of the Justices, 411 Mass. 1201 (1991).]

Upon the vote of the school committee or board of trustees of any industrial, technical, or vocational school, tuition and other related fees may be charged to students residing in its city, town or regional school district admitted to approved post-secondary vocational education programs for the full amount of the average per pupil cost of such program. *Added by St.1984, c.424. s.2; amended by St.1991, c.138, s.147.*

<http://www.mass.gov/legis/laws/mgl/gl-74-toc.htm>. 59

Appendix B: Qualified Vocational High Schools in Massachusetts

1. Assabet Valley Regional Vocational School District, Marlborough, MA
2. Attleboro High School, Attleboro, MA
3. Bay Path Regional Vocational Technical High School, Charlton, MA
4. Blackstone Valley Regional Vocational Technical High School, Upton, MA
5. Blue Hills Regional Technical High School, Canton, MA
6. Bristol County Agricultural High School, Dighton, MA
7. Bristol-Plymouth Regional Technical School District, Taunton, MA
8. Brockton High School, Brockton, MA
9. Cape Cod Regional Technical High School, Harwich, MA
10. Center for Technical Education at Leominster High School, Leominster, MA
11. Dighton-Rehoboth Regional Vocational High School, North Dighton, MA
12. Diman Regional Vocational Technical High School, Fall River, MA
13. Durfee High School, Fall River, MA
14. Essex Agricultural and Technical Regional High School, Hathorne, MA
15. Everett High School, Everett, MA
16. Franklin County Technical School, Turners Falls, MA
17. Greater Lawrence Technical School, Andover, MA
18. Greater Lowell Technical High School, Tyngsboro, MA
19. Greater New Bedford Regional Vocational Technical High School, New Bedford, MA
20. J. P. Keefe Technical School, Framingham, MA
21. Lower Pioneer Valley Career and Technical Education Center, West Springfield, MA
22. Lynn Vocational Technical Technical Institute, Lynn, MA
23. Madison Park Technical Vocational High School, Roxbury, MA
24. Martha's Vineyard Regional High School, Oak Bluffs, MA
25. McCann Technical School, North Adams, MA
26. Medford Vocational Technical High School, Medford, MA
27. Minuteman Technical High School, Lexington, MA
28. Montachusett Regional Vocational Technical School, Fitchburg, MA

29. Nashoba Valley Technical High School, Westford, MA
30. Newton Public School, Newtonville, MA
31. Norfolk County Agricultural High School, Walpole, MA
32. Northeast Metropolitan Regional Vocational School, Wakefield, MA
33. North Shore Technical High School, Middleton, MA
34. Old Colony Regional Vocational Technical High School, Rochester, MA
35. Pathfinder Regional Vocational Technical High School, Palmer, MA
36. Peabody Vocational High School, Peabody, MA
37. Pittsfield Vocational Technical High School, Pittsfield, MA
38. Plymouth South High School, Plymouth, MA
39. Quincy Public School/Career and Technical Education, Quincy, MA
40. Rindge School of Technical Arts, Cambridge, MA
41. Roger L. Putnam Vocational Technical High School, Springfield, MA
42. Salem High School, Salem, MA
43. Silver Lake Senior High School, Kingston, MA
44. Shawsheen Valley Technical High School. Billerica, MA
45. Smith Vocational and Agricultural High School, Northampton, MA
46. Somerville High School, Somerville, MA
47. South Shore Regional Vocational-Technical High School District, MA
48. Southeastern Regional Vocational-Technical High School, MA
49. Tantasqua Technical School, Fiskdale, MA
50. Tri-County Regional Vocational Technical School District, Franklin, MA
51. Upper Cape Cod Regional Technical School, Bourne, MA
52. Waltham High School, Waltham, MA
53. Westfield Vocational Technical High School, Westfield, MA
54. Weymouth H. S./V.T. High School, Weymouth, MA
55. William J. Dean Technical High School, Holyoke, MA
56. Whittier Regional Vocational Technical High School, Haverhill, MA
57. Worcester Technical High School, Worcester, MA

Appendix C:

The National Historic Preservation Act

AN ACT to Establish a Program for the Preservation of Additional Historic Properties throughout the Nation, and for Other Purposes, Approved October 15, 1966 (Public Law 89-665; 80 STAT.915; 16 U.S.C. 470) as amended by Public Law 91-243, Public Law 93-54, Public Law 94-422, Public Law 94-458, Public Law 96-199, Public Law 96-244, Public Law 96-515, Public Law 98-483, Public Law 99-514, Public Law 100-127, and Public Law 102-575).

Section 1 (16 U.S.C. 470)

(a) This Act may be cited as the "National Historic Preservation Act."

(b) The Congress finds and declares that-

- (1) the spirit and direction of the Nation are founded upon and reflected in its historic heritage;
- (2) the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people;
- (3) historic properties significant to the Nation's heritage are being lost or substantially altered, often inadvertently, with increasing frequency;
- (4) the preservation of this irreplaceable heritage is in the public interest so that its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans;
- (5) in the face of ever-increasing extensions of urban centers, highways, and residential, commercial, and industrial developments, the present governmental and nongovernmental historic preservation programs and activities are inadequate to insure future generations a genuine opportunity to appreciate and enjoy the rich heritage of our Nation;
- (6) the increased knowledge of our historic resources, the establishment of better means of identifying and administering them, and the encouragement of their preservation will improve the planning and execution of federal and federally assisted projects and will assist economic growth and development; and
- (7) although the major burdens of historic preservation have been borne and major efforts initiated by private agencies and individuals, and both should continue to play a vital role, it is nevertheless necessary and appropriate for the Federal Government to accelerate its historic preservation programs and activities, to give maximum encouragement to agencies and individuals undertaking preservation by private means, and to assist State and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

Section 2 (16 U.S.C. 470-1) 63

It shall be the policy of the Federal Government, in cooperation with other nations and in partnership with the States, local governments, Indian tribes, and private organizations and individuals to-

- (1) use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations;
- (2) provide leadership in the preservation of the prehistoric and historic resources of the United States and of the international community of nations and in the administration of the national preservation program in partnership with States, Indian tribes, Native Hawaiians, and local governments;
- (3) administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations;
- (4) contribute to the preservation of nonfederally owned prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means;
- (5) encourage the public and private preservation and utilization of all usable elements of the Nation's historic built environment; and
- (6) assist State and local governments, Indian tribes and Native Hawaiian organizations and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

www.nps.gov/history/local-law/nhpa1966.htm

Appendix D:

The Whitehill Report on Professional and Public Education for Historic Preservation

The Whitehill Report on Professional and Public Education for Historic Preservation was submitted 15 April 1968 to the Trustees of the National Trust for Historic Preservation by the Committee on Professional and Public Education for Historic Preservation, Walter Muir Whitehill, Chairman. *Note: This copy of the Report was scanned from a manuscript provided by John Fugelso of the Pennsylvania Historical and Museum Commission. It is used with permission of the National Trust for Historic Preservation.*

Introduction In January 1967 the Chairman of the National Trust for Historic Preservation appointed a Committee on Professional and Public Education for Historic Preservation and Restoration consisting of:

Walter Muir Whitehill, Director and Librarian of the Boston Athenaeum, Chairman Francis L. Berkeley, Jr., Assistant to the President, University of Virginia, Vice Chairman John Otis Brew, Director, Peabody Museum of Archaeology and Ethnology, Harvard University Leonard Carmichael, Vice President for Research and Exploration, National Geographic Society (former President of Tufts University and Secretary of the Smithsonian Institution) John Peterson Elder, Dean of the Graduate School of Arts and Sciences, Harvard University Ronald F. Lee, Special Assistant to the Director, National Park Service Ralph G. Schwarz, Director of Operations, Ford Foundation Charles van Ravenswaay, Director, Henry Francis du Pont Winterthur Museum

Of the, committee, half (Messrs. Whitehill, Carmichael, Lee, and van Ravenswaay) were Trustees of the National Trust

Aided by a grant from the Ford Foundation, the committee spent some five months upon its investigation. William G. Wing of Englewood, New Jersey, an experienced journalist (formerly on the New York Herald Tribune) who has long been concerned with the conservation of natural areas, was engaged to do the necessary staff work for the committee.

The committee met at the Boston Athenaeum on 3-4 February, at Winterthur on 26-27 February, at Williamsburg (by invitation of Carlisle H. Humelsine, president of Colonial Williamsburg) on 5-7 May, and in New York City on 9 June. Messrs. Berkeley, Brew and Elder were appointed as a Sub-Committee on Architectural Curricula, and Messrs. van Ravenswaay and Lee as a Sub-Committee on the Conservation of the Traditional Building Crafts. Both sub-committees met on various occasions in New York, Charlottesville, and elsewhere. Mr. Wing traveled throughout the United States, visiting architectural schools and preservation organizations to gather information required by the committee and report opinions obtained during his visits. The committee is indebted to Mr. Wing for his willingness to undertake this assignment on the 65

shortest of notice, and for the efficient manner in which he carried out much of the fact-finding involved in the committee's work. The Chairman, Hon. Gordon Gray, and former Executive Director, Robert R. Garvey, of the National Trust were unfailingly helpful to the committee. By invitation, they attended its four formal meetings, and throughout the period of its investigation assisted in every way possible. By assigning Mrs. Jane Coughlin to act as secretary to Mr. Wing at the National Trust Headquarters, they made it possible for the widely scattered members of the committee to keep abreast of each other's activities and investigations.

Although the original investigative mission of the committee was completed in June 1967, its members were glad to comply with the request of the Executive Committee of the National Trust, made at its meeting on 12 June 1967, that they continue in being as a permanent Standing Committee of Professional Consultants.

The report that follows was, in slightly different form, approved by the Trustees of the National Trust at the annual meeting in St. Louis on 19 October 1967. Since he assumed the presidency of the National Trust in January 1968, James Biddle has worked closely with the committee which met in New York City on 6 February 1968 with representatives of Columbia University, Cornell University and the University of Virginia to discuss proposals made by these institutions for the possible establishment of graduate programs in historic preservation. Although the committee is still working to perfect feasible specific programs for which the National Trust might seek financial support, the report is now published as a statement of purpose and direction for the activities of the National Trust in professional and public education.

The findings and recommendations of the two sub-committees are given in substantially the form in which they were submitted by their chairmen, Messrs. Berkeley and van Ravenswaay.

Walter Muir Whitehill

Boston Athenaeum 15 April 1968

<http://www.iptw.org/whitehill-home.htm>

Appendix E:

Old Deluder Satan Act (1647)

Historical Background of Document:

The old Deluder Satan act was passed in Massachusetts in 1647. It was one of America's first education acts, and required that old towns of 50 more families provide an elementary school where teachers were applied to teach no reading and writing of the bible as well. Towns that held 100 or more families were required to have grammar schools. This was a school where students focused mostly on Latin and Greek. The pure and believed that if their children read and studied the bible enough than they would be able to resist evil temptations, and avoid sinners.

This act was a way from the local community to ensure that education was passed for one generation to the next. Puritans, also want to avoid having a generation of poor in unintelligent people, and in order to keep that from happening, then made sure that every citizen got enough education to read so that they can understand the laws and read the bible. Life in the 1600s was based on religion and the laws came from a bible.

Text of document:

It being one chief project of that old deluder, Satan, to keep men from the knowledge of the Scriptures, as in former times by keeping them in an unknown tongue, so in these latter times by persuading from the use of tongues, that so that at least the true sense and meaning of the original might be clouded and corrupted with false glosses of saint-seeming deceivers; and to the end that learning may not be buried in the grave of our forefathers, in church and commonwealth, the Lord assisting our endeavors.

It is therefore ordered that every township in this jurisdiction, after the Lord hath increased them to fifty households shall forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint; provided those that send their children be not oppressed by paying much more than they can have them taught for in other towns.

And it is further ordered, that when any town shall increase to the number of one hundred families or householders, they shall set up a grammar school, the master thereof being able to instruct youth so far as they may be fitted for the university, provided that if any town neglect the performance hereof above one year that every such town shall pay 5 pounds to the next school till they shall perform this order. 67

[http://www.americareclaimed.org/elements/docs/documents/Old%20Deluder%20Satan%20Law\(1647\)p.pdf](http://www.americareclaimed.org/elements/docs/documents/Old%20Deluder%20Satan%20Law(1647)p.pdf) 68

Appendix F:

The First Morrill Act, 1862

Be it enacted by, the Senate and House of Representatives of the United States of America, in Congress assembled, That there be granted to the several States, for the purposes hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of 1860; Provided, That no mineral lands shall be selected or purchased under the provisions of this act.

Sec. 2. And be it further enacted, That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections, not less than one-quarter of a section; and wherever there are public lands in a State, subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands, within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States, in which there is not the quantity of public lands subject to sale at private entry, at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this act, land scrip to the amount in acres for the deficiency of its distributive share; said scrip to be sold by said States, and the proceeds thereof applied to the uses and purposes prescribed in this act, and for no other purpose whatsoever: Provided, That in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State or of any territory of the United States; but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents. or less, an acre: And provided further, That not more than one million acres shall be located by such assignees in any one of the States: And provided.further, That no such location shall be made before one year from the passage of this act.

Sec. 3. And be it fiirther enacted, That all the expenses of management, superintendence, and taxes from date of selection of said lands, previous to their sales, and all expenses incurred in the management and disbursement of moneys which may be received therefrom, shall be paid by the States to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied, without any diminution whatever, to the purposes hereinafter mentioned.

Sec. 4. (as amended April 13, 1926, 44 Stat. L. 247). That all moneys derived from the sale of lands aforesaid by the States to which lands are apportioned and from the sales of land scrip hereinbefore provided for shall be invested in bonds of the United States or of the States or some other safe bonds; or the same may be invested by the States having no State bonds in any manner after the legislatures of such States shall have assented thereto and engaged that such funds shall yield a fair and reasonable rate of return, to be fixed by the State legislatures, and that the 69

Principal thereof shall forever remain unimpaired: Provided, That the moneys so invested or loaned shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in section 5 of this act), and the interest of which shall be inviolably appropriated, by each State which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and

the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

Sec. 5. *And be it further enacted*, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts:

First. If any portion of the fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall, by any action or contingency, be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth section of this act, except that a sum, not exceeding 10 per centum upon the amount received by any State under the provisions of this act, may be expended for the purchase of lands for sites or experimental farms, whenever authorized by the respective legislatures of said States;

Second. No portion of said fund, nor the interest thereon, shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation, or repair of any building or buildings;

Third. Any State which may take and claim the benefit of the provisions of this act shall provide, within five years, at least not less than one college, as prescribed in the fourth section of this act, or the grant to such State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and that the title to purchasers under the State shall be valid;

Fourth. An annual report shall be made regarding the progress of each college, recording any improvements and experiments made, with their costs and results, and such other matters, including State industrial and economical statistics, as may be supposed useful; one copy of which shall be transmitted by mail free, by each, to all the other colleges which may be endowed under the provisions of this act, and also one copy to the Secretary of the Interior;

Fifth. When lands shall be selected from those which have been raised to double the minimum price in consequence of railroad grants, they shall be computed to the States at the maximum price, and the number of acres proportionally diminished, 70

Sixth. No State, while in a condition of rebellion or insurrection against the Government of the United States, shall be entitled to the benefit of this act;

Seventh. No state shall be entitled to the benefits of this act unless it shall express its acceptance thereof by its legislature within two years from the date of its approval by the President.

Sec. 6. *And be it further enacted*, That land scrip issued under the provisions of this act shall not be subject to location until after the first day of January, 1863.

Sec. 7. *And be it further enacted*, That land officers shall receive the same fees for locating land scrip issued under the provisions of this act as is now allowed for the location of military bounty land warrants under existing laws: *Provided*, That maximum compensation shall not be thereby increased.

Sec. 8. *And be it further enacted*, That the governors of the several States to which scrip shall be issued under this act shall be required to report annually to Congress all sales made of such scrip until the

whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved, July 2, 1862. (12 Stat. 503.)

www.cals.ncsu.edu/agexed/aee501/morrill.html

Appendix G:

The National Vocational Education (Smith-Hughes) Act

(Public Law No. 347, Sixty-fourth Congress-S. 703)

AN ACT to provide for the promotion of vocational education; to provide for cooperation with the States in the promotion of such education in agriculture and the trades and industries; to provide for cooperation with the States in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure.

BE IT ENACTED BY THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA IN CONGRESS ASSEMBLED, That there is hereby annually appropriated out of any money in the Treasury not otherwise appropriated, the sums provided in sections two, three, and four of this act, to be paid to the respective States for the purpose of cooperating with the States in paying the salaries of teachers, supervisors, and directors of agricultural subjects, and teachers of trade, home economics and industrial subjects, and in the preparation of teachers of agriculture, trade, industrial, and home economics subjects; and the sum provided for in section seven for the use of the Federal Board for Vocational Education for the administration of this act and for the purpose of making studies, investigations, and reports to aid in the organization and conduct of vocational education, which sums shall be expended as hereinafter provided.

(Sections 2-5 are mainly about teacher salary and are somewhat irrelevant to this thesis.)

SEC. 6. That a Federal Board for Vocational Education is hereby created, to consist of the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the United States Commissioner of Education, and three citizens of the United States to be appointed by the President, by and with the advice and consent of the Senate. One of said three citizens shall be a representative of the manufacturing and commercial interests, one a representative of the agricultural interests, and one a representative of labor. The board shall elect annually one of its members as chairman. In the first instance, one of the citizen members shall be appointed for one year, one for two years, and one for three years, and thereafter for three years each. The members of the board other than the members of the Cabinet and the United States Commissioner of Education shall receive a salary of \$5,000 per annum.

The board shall have power to cooperate with State boards in carrying out the provisions of this act. It shall be the duty of the Federal Board for Vocational Education to make, or cause to have made, studies, investigations, and reports, with particular reference to their use in aiding the States in the establishment of vocational schools and classes and in giving instruction in agriculture, trades, and industries, commerce and commercial pursuits, and home economics. Such studies, investigations, and reports shall include agriculture and agricultural processes and requirements upon agricultural workers; trades, industries, and apprenticeships, trade and 72

industrial requirements upon industrial workers, and classification of industrial processes and pursuits; commerce and commercial pursuits and requirements upon commercial workers; home management, domestic science, and the study of related facts and principles; and problems of administration of vocational schools and of courses of study and instruction in vocational subjects.

When the Board deems it advisable such studies, investigations, and reports concerning agriculture, for the purposes of agricultural education, may be made in cooperation with or through the Department of Agriculture; such studies, investigations, and reports, concerning trades and industries for the purposes of trades and reports concerning commerce and commercial pursuits, for the purposes of commercial education, may be made in cooperation with or through the Department of Commerce; such studies, investigations, and reports concerning the administration of vocational schools, courses of study, and instruction in vocational subjects may be made in cooperation with or through the Bureau of Education.

The Commissioner of Education may make such recommendations to the Board relative to the administration of this act as he may from time to time deem advisable. It shall be the duty of the chairman of the board to carry out the rules, regulations, and decisions which the board may adopt. The Federal Board for Vocational Education shall have power to employ such assistants as may be necessary to carry out the provisions of this act.

SEC. 7. That there is hereby appropriated to the Federal Board for Vocational Education the sum of \$200,000 annually, to be available from and after the passage of this act, for the purpose of making or cooperating in making the studies, investigations, and reports provided for in section six of this act, and for the purpose of paying the salaries of the officers, the assistants, and such office and other expenses as the board may deem necessary to the execution and administration of this act.

SEC. 8. That in order to secure the benefits of the appropriation for any purpose specified in this act, the State board shall prepare plans, showing the kinds of vocational education for which it is proposed that the appropriation shall be used; the kinds of schools and equipment; courses of study; methods of instruction; qualifications of teachers; and, in the case of agricultural subjects, the qualifications of supervisors or directors; plans for the training of teachers; and, in the case of agricultural subjects, plans for the supervision of agricultural education, as provided for in section ten. Such plans shall be submitted by the State board to the Federal Board for Vocational Education, and if the Federal Board finds the same to be in conformity with the provisions and purposes of this act, the same shall be approved. The State board shall make an annual report to the Federal Board for Vocational Education, on or before September first of each year, and on the work done in the State and the receipts and expenditures of money under the provisions of this act.

SEC. 9. That the appropriation for the salaries of teachers, supervisors, or directors of agricultural subjects and of teachers of trade, home economics, and industrial subjects shall be 73

devoted exclusively to the payment of salaries of such teachers, supervisors, or directors having the minimum qualifications set up for the State by the State board, with the approval of the Federal Board for Vocational Education. The cost of instruction supplementary to the instruction in agriculture and in trade, home economics, and industrial subjects provided for in this act, necessary to build a well-rounded course of training, shall be borne by the State and local communities, and no part of the cost thereof shall be borne out of the appropriations herein made. The moneys expended under the provisions of this act, in cooperation with the States, for the salaries of teachers, supervisors, or directors of agricultural subjects, or for the salaries of teachers of trade, home economics, and industrial subjects shall be conditioned that for each dollar of Federal money expended for such salaries, the State or local community, or both, shall expend an equal amount for such salaries; and that appropriations for the training of teachers of vocational subjects, as herein provided, shall be conditioned that such money be expended for maintenance of such training, and for each dollar of Federal money so expended for

maintenance, the State or local community or both shall expend an equal amount for the maintenance of such training.

SEC. 10. That any State may use the appropriations for agricultural purposes, or any part thereof allotted to it, under the provisions of this act, for the salaries of teachers, supervisors, or directors of agricultural subjects, either for the salaries of teachers of such subjects in schools or classes or for the salaries of supervisors or directors of such subjects under a plan of supervision for the State to be set up by the State board, with the approval of the Federal Board for Vocational Education. That in order to receive the benefits of such appropriations for the salaries of teachers, supervisors, or directors of agricultural education such education shall be that which is under public supervision or control; that the controlling purpose of such education shall be to fit for useful employment; that such education shall be of less than college grade and be designated to meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter upon the work of the farm or of the farm home; that the State or local community, or both, shall provide the necessary plant and equipment determined upon by the State board, with the approval of the Federal Board for Vocational Education, as the minimum requirement for such education in schools and classes in the State; that the amount expended for the maintenance of such education in any school or class receiving the benefit of such appropriation shall not be less annually than the amount fixed by the State board, with the approval of the Federal Board, as the minimum for such schools or classes in the State; that such schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year; that the teachers, supervisors, or directors of agricultural subjects shall have at least the minimum qualifications determined for' the State by the State board, with the approval of the Federal Board for Vocational Education.

SEC. 11. That in order to receive the benefits of the appropriation for the salaries of teachers of trade, home economics, and industrial subjects the State board of any State shall provide in its plan for trade, home economics, and industrial education that such education shall be given in 74

schools or classes under public supervision or control; that the controlling purpose of such education shall be to fit for useful employment; that such education shall be of less than college grade and shall be designed to meet the needs of persons over fourteen years of age who are preparing for a trade or industrial pursuit or who have entered upon the work of a trade or industrial pursuit; that the State or local community, or both, shall provide the necessary plant and equipment determined upon by the State board, with the approval of the Federal Board for Vocational Education, as the minimum requirement in such State for education for any given trade or industrial pursuit; that the total amount expended for the maintenance of such education in any school or class receiving the benefit of such appropriation shall be not less annually than the amount fixed by the State board, with the approval of the Federal Board, as the minimum for such schools or classes in the State; that such schools or classes giving instruction to persons who have not entered upon employment shall require that at least half of the time of such instruction be given to practical work on a useful or productive basis, such instruction to extend over not less than nine months per year and not less than thirty hours per week; that at least one-third of the sum appropriated to any State for the salaries to teachers of trade, home economics, and industrial subjects shall, if expended, be applied to part-time schools or classes for workers over fourteen years of age who have entered upon employment, and such subjects in a part-time school or class may mean any subject given to enlarge the civic or vocational intelligence of such workers over fourteen and less than eighteen years of age; that such part-time schools or classes shall provide for not

less than one hundred and forty-four hours of classroom instruction per year; that evening industrial schools shall fix the age of sixteen years as a minimum entrance requirement and shall confine instruction to that which is supplemental to the daily employment; that the teachers of any trade or industrial subject in any State shall have at least the minimum qualifications for teachers of such subject determined upon for such State by the State board, with the approval of the Federal Board for Vocational Education: *Provided*, That for cities and towns of less than twenty-five thousand population, according to the last preceding United States census, the State board, with the approval of the Federal Board for Vocational Education, may modify the conditions as to the length of course and hours of instruction per week for schools and classes giving instruction to these who have not entered upon employment, in order to meet the particular needs of such cities and towns.

SEC. 12. That in order for any State to receive the benefits of the appropriation in this act for the training of teachers, supervisors, or directors of agricultural subjects, or of teachers of trade, industrial, or home economics subjects, the State board of such State shall provide in its plan for such training that the same shall be carried out under the supervision of the State board; that such training shall be given in schools or classes under public supervision or control; that such training shall be given only to persons who have had adequate vocational experience or contact in the line of work for which they are preparing themselves as teachers, supervisors, or directors, or who are acquiring such experience or contact as a part of their training; and that the State board, with the approval of the Federal Board, shall establish minimum requirements for such experience or contact for teachers, supervisors, or directors of agricultural subjects and for 75

teachers of trade, industrial, and home economics subjects; that no more than sixty per centum nor less than twenty per centum of the money appropriated under this act for the training of teachers of Vocational subjects to any State for any year shall be expended for any one of the following purposes: For the preparation of teachers, supervisors, or directors of agricultural subjects, or the preparation of teachers of trade and industrial subjects, or the preparation of teachers of home economics subjects.

SEC. 13. That in order to secure the benefits of the appropriations for the salaries of teachers, supervisors, or directors of agricultural subjects, or for the salaries of teachers of trade, home economics, and industrial subjects, or for the training of teachers as herein provided, any State shall, through the legislative authority thereof, appoint as custodian for said appropriations its State treasurer, who shall receive and provide for the proper custody and disbursements of all money paid to the State from said appropriations.

SEC. 14. That the Federal Board for Vocational Education shall annually ascertain whether the several States are using, or are prepared to use, the money received by them in accordance with the provisions of this act. On or before the first day of January of each year the Federal Board for Vocational Education shall certify to the Secretary of the Treasury each State which has accepted the provisions of this act and complied therewith, certifying the amounts which each State is entitled to receive under the provisions of this act. Upon such certification the Secretary of the Treasury shall pay quarterly to the custodian for vocational education of each State the moneys to which it is entitled under the provisions of this act. The moneys so received by the custodian for vocational education for any State shall be paid out on the requisition of the State board as reimbursement for expenditures already incurred to such schools as are approved by said State board and are entitled to receive such moneys under the provisions of this act.

SEC. 15. That whenever any portion of the fund annually allotted to any State has not been expended for the purpose provided for in this act, a sum equal to such portion shall be deducted by the Federal Board from the next succeeding annual allotment from such fund to such State.

SEC. 16. That the Federal Board for Vocational Education may withhold the allotment of moneys to any State whenever it shall be determined that such moneys are not being expended for the purposes and under the conditions of this act. If any allotment is withheld from any State, the State board of such State may appeal to the Congress of the United States, and if the Congress shall not direct such sum to be paid, it shall be covered into the Treasury.

SEC. 17. That if any portion of the moneys received by the custodian for vocational education of any State under this act, for any given purpose named in this act, shall, by any action or contingency, be diminished or lost, it shall be replaced by such State, and until so replaced no subsequent appropriation for such education shall be paid to such State. No portion of any moneys appropriated under this act for the benefit of the States shall be applied, directly or indirectly, to the purchase, erection, preservation, or repair of any building or buildings or 76

equipment, or for the purchase or rental of lands, or for the support of any religious or privately owned or conducted school or college.

SEC. 18. That the Federal Board for Vocational Education shall make an annual report to Congress, on or before December first, on the administration of this act and shall include in such report the reports made by the State boards on the administration of this act by each State and the expenditure of the money allowed to each State. Approved, February 23, 1917.

jschell.myweb.uga.edu/history/legis/smithughes.htm 77

Appendix H:

A Heritage at Risk

A Report on Heritage Education Submitted to the National Council for Preservation Education by the Ad Hoc Committee on Elementary Secondary Education in 1989. Since its founding in 1978, the National Council for Preservation Education, a consortium of preservation education programs at universities across the country, has developed standards for undergraduate and graduate preservation education, guidelines for promotion and tenure of preservation faculty, and has worked with numerous local, state, national, and international organizations to foster and improve historic preservation education at the university level.

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As it nears its second decade, the Council is turning its attention to another critical area of preservation education, the inclusion of built environmental literacy in the nation's primary and secondary schools. As an initial step, at its 1986 annual meeting in Kansas City, Missouri, the Council appointed a committee comprised of some of the nation's leading heritage educators at the primary and secondary level to help guide its activities in this important aspect of preservation education.

At several meetings in New York City the Ad Hoc Committee on Elementary/Secondary Education explored the many applications for using the everyday landscape to improve and 78

enrich American education in the postindustrial age. It concluded that serious consideration must be given to the intellectual precepts and public policy implications of heritage education rather than resorting to the short-term, formulaic approaches that have plagued the preservation field

over the past decade.

A Heritage At Risk represents the findings of the committee and is designed to point up the issues that it feels are essential for mapping future policy in heritage education. It is hoped that *A Heritage At Risk* will spark discussion and lively debate around the country that will assist the committee with its next task the framing of long range recommendations to guide the course of heritage education well into the 21st century.

<http://www.ncpe.us/hered.pdf>

Appendix I:

Ethics in Preservation

Lectures Presented at the Annual Meeting of the National Council for Preservation Education
Indianapolis, Indiana October 23, 1993

In 1989 the Board of the National Council for Preservation Education decided to follow the suggestion of one of its directors, Richard Longstreth, and hold future annual meetings at one of its member institutions. The discussion at these meetings has focused on the need to meet curriculum deficiencies in such areas as preservation law, building materials conservation, and the evaluation of the landscape. More at the heart of the historic preservation curriculum, regardless of the discipline or level of the audience, are the ethical concerns in the field. Curiously, although a variety of charters, standards and guidelines have been issued, comparatively little published material exists regarding the application of these principles.

To help fill this void, the National Council sought the support of the National Park Service and selected three prominent preservationists to address those assembled at the annual meeting in Indianapolis, Indiana. Professor Richard Striner is perhaps best known as an advocate in the District of Columbia, where he served as the President of the Art Deco Society of Washington. Prof. W. Brown Morton III, former Chair of the Historic Preservation Department at Mary Washington College, was the coauthor of the Secretary of the Interior's Standards. Dr. De Teel Patterson Tiller, Chief, Preservation Planning Branch, National Park Service, offers his thoughts from his nearly unique position in the federal government with a keen eye toward educating the tomorrow's preservationists. It is hoped that those who did not have the opportunity to attend the 80

Indianapolis meeting nevertheless learn from and enjoy these perspectives.

<http://www.ncpe.us/ethics.pdf>

Appendix J:

The Carl D. Perkins Vocational and Technical Education Act

The Carl D. Perkins Vocational and Technical Education Act was first authorized by the federal government in 1984 and reauthorized in 1998. Named for Carl D. Perkins, the act aims to increase the quality of technical education within the United States in order to help the economy.

On August 12, 2006 President George W Bush signed into law the reauthorization of the Act of 1998. The new law, the Carl D. Perkins Career and Technical Education Improvement Act of 2006, was passed almost unanimously by Congress in late July, 2006.

The new law includes three major areas of revision:

- ☐ 1) Using the term "career and technical education" instead of "vocational education"
- ☐ 2) Maintaining the Tech Prep program as a separate federal funding stream within the legislation
- ☐ 3) Maintaining state administrative funding at 5 percent of a state's allocation

The new law also includes new requirements for "programs of study" that link academic and technical content across secondary and postsecondary education, and strengthened local accountability provisions that will ensure continuous program improvement.

The Perkins Act provides almost \$1.3 billion in federal support for career and technical education programs in all 50 States, including support for integrated career pathways programs. The law will extend through 2012.

www.napcse.org/specialeducationlaw/perkinsvocational.php 82