Financial Incentives and the Adaptive Reuse of Historic Interiors: Three Case Studies from Iowa

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Financial incentives and the adaptive reuse of historic interiors: Three case studies from Iowa

by

Chunyao Liu

A thesis submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

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Major: Architecture

Program of Study Committee:
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Ames, Iowa

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DEDICATION

I dedicate this dissertation to my parents, my mentors and all of my friends, without whom none of my success would be possible.
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ABSTRACT

Historic preservation is old enough to have a history: it is hardly a new phenomenon today. However, the preservation of historic interiors, which forms a significant component of historic preservation, is becoming a complicated aspect and receives much less emphasis in the academic literature. Given the situation that historic interiors are widely mistreated and less studied and considering the popularity of adaptive reuse in the United States, this paper will investigate how the procedures and outcomes of the preservation of historic interiors are impacted by different factors, especially the opportunities and constraints imposed by financial incentives. This paper first focuses on the theory and practice of historic preservation in the United States and then looks into three adaptive reuse case studies in Iowa. Compared to the often-idealized recommendations made in regulations and official preservation guidelines, this research provides more practical recommendations by looking at the compromises inherent in preservation projects and the sacrifices made by different actors in order to make historic interior spaces usable for today’s needs.

The findings reveal financial incentives’ positive influences on decision-making process, overall project quality, and interior treatments, the limitations and freedoms provided by regulatory processes and the interiors evaluation. Recommendations suggest a more flexible tax credits system should be adopted by providing a more flexible approach, a sliding scale to guide the rehabilitation process, which also takes into account the conflicts over aesthetics, energy-saving potential, and safety issues.
CHAPTER I
INTRODUCTION

Topic Description

“The basic purpose of preservation is not to arrest time, but to mediate sensitively ... the forces of change. It is to understand the present as a product of the past and a modifier of the future.” -- John Lawrence, former dean of Tulane’s School of Architecture

Background / Current Problems in the Preservation of Historic Interiors

Historic preservation is old enough to have a history: it is hardly a new phenomenon today. From the middle of the 19th Century through the present, a variety of individuals, organizations, and governmental agencies have spent considerable effort to “mediate the forces of change” and preserve historic buildings. However, the preservation of historic interiors, specifically, which forms a significant component of historic preservation, is much less emphasized. In the United States, the public benefits of preservation are stressed and as a result, preservation work often favors exteriors—the public face of most buildings. Today, with the growing appreciation of historic buildings and willingness to adaptively reuse them, we increasingly see problems related to historic interiors. The purpose of this thesis is to explore the current state of historic preservation and historic interiors.

Historic Interiors: A Complicated Aspect of Historic Preservation

The protection and preservation of historic interiors is a complicated and challenging aspect of historic preservation in countries around the world. In China, for example, many
historic buildings’ interior spaces lack management and oversight and are seriously damaged both through neglect and insensitive reuse. Some buildings are abandoned, while others are divided or improperly modified. Buildings change considerably through long-term use and valuable interior features are lost. Admittedly, there are several examples of iconic buildings and spaces, like those of the Forbidden City, which are well preserved in all aspects. However, those examples, which are of great historic value due to their old age and transcendent significance, are rare in number; they are iconic landmarks, superlative in most respects and oftentimes cherished by the local population.

However, many preservationists underestimate the value of the vast number of historic buildings built over the course of the 20th Century. Many cities in China had gone through a boom in urbanization from the end of 19th Century to the middle of 20th Century, when foreign merchants and traders started to accumulate in the foreign concessions of port cities. This produced historic buildings in decidedly western styles that evoked their homelands. European buildings in the Baroque, Neoclassical, and Art Deco styles can all be found in cities like Shanghai and Qingdao. Based on this author’s previous observation in the Bund of Shanghai, the Shamian Historic District of Guangzhou, and the historic districts of Harbin, a large number of historic buildings from the end of the 19th Century through the middle of the 20th Century are still in good condition both externally and structurally, but are in poor condition inside. It is this observation that led to the research described in this paper.

**Research Gap**

Historic preservation has tended to focus more on building façades than on interiors and thus the preservation of historic interiors is still a gap in the practice of preservation and in the
research. Through an analysis of core textbooks, laws and regulations in the United States, sources like the *Preservation of Historic Architecture* by the United State Department of the Interior, and the *Standards for Historic Preservation Projects with Guidelines for Applying the Standards* (the Secretary of the Interior’s *Standards*), it becomes apparent that research related to the preservation of historic interiors is a small percentage of the whole. There have been relatively little systematic studies on the preservation of historic interiors. In China, the preservation of historic buildings is even less well developed than the United States. The only relevant piece of legislation is *Regulation for the Implementation of the Cultural Relics Protection Law of the People's Republic of China*. In practice, these regulations are still limited and lack a consistent body of techniques and proper guidelines. This contributes to the low-quality design, damage, and improper modification of historic buildings in general, and historic interiors specifically.

**Emerging Trends**

Finally, the intersection of historic preservation and historic interiors is currently emerging as an important trend, as preservationists are starting to better understand the value of historic interiors as they relate to redevelopment and adaptive reuse.

The historic buildings of Shanghai might serve as an example of this. Before the 2010 EXPO, important historic buildings in the Bund district were revitalized under the supervision of the State Administration of Cultural Heritage. When it comes to iconic landmarks and other buildings of great significance, the government now provides professional value assessments and guidelines regarding specific interior elements. A similar concern about the preservation of historic interiors seems to be growing in the United States. In 1997, the National Trust for
Historic Preservation, the nationwide non-profit advocacy organization, founded the Cynthia Woods Mitchell Fund for Historic Interiors. The purpose of this fund is “to assist in the preservation, restoration, and interpretation of historic interiors” (Cynthia Woods Mitchell Fund for Historic Interiors). This fund represents one of the first and only of its kind in the United States. Moreover, an anecdotal example that reveals the growing concern for historic interiors can be found in a recent article in the New York Times named *Preservationists Worry About the Future of 2 Manhattan Spaces* (Barron, 2016). This article describes preservationists’ opposition to the proposed renovation of the mid-century Ambassador Grill and Lounge, a hotel restaurant in New York City, which would have compromised the integrity of this informal (that is not officially recognized) landmark. This piece of news brought the issue of the preservation of historic interiors to the attention of the public. Such examples suggest a growing concern about the preservation of historic interiors from the perspective of the government, the public, and the private sector.

**Research Questions**

The problems of the preservation of historic interiors are more serious in countries like China, where it is common to encounter historic buildings with good exteriors that are vacant or poorly maintained inside. In observing historic buildings in the United States, it is clear that similar problems are found to exist here. Nevertheless, preservation in this country provides a framework for rehabilitation that helps mitigate the severity of damage to historic interiors. In both countries, academic and professional literature on this topic is still lacking. In general, the adaptive reuse of historic buildings receives more attention in the United States due to its well-developed system of laws and policies, standards, regulations, and financial incentives. It is that
the contention of this research and this framework for preservation might be generally applicable to the context of China and serve as something of a model. Based on this hypothesis, this paper came up with the research questions as follows.

Based on the context of the United States, how do governmental agencies, architects and designers, developers, and others treat interior environments when it comes to the adaptive reuse of historic buildings? Specifically, what’s the influence of governmental policies and financial incentives on the rehabilitation and adaptive reuse of interiors? Also, what makes the American models of the preservation of historic interiors successful and what problems can be identified in the established rules and protocols?

After looking into a range of case studies in Iowa and analyzing what factors contribute to their success, as well as the design compromises that were made during their respective rehabilitation processes, this research offers recommendations based on the analysis and evaluations. Since historic preservation policies and practices in the United States derive in large part from Federal programs (e.g. those established through the National Historic Preservation Act of 1966), case studies from Iowa are as generally representative as those from any state. Finally, this paper will summarize the findings and recommendations, and briefly give a clue about what Chinese preservationists might learn about the treatment of historic interiors based on these American case studies.

**Research Themes**

This research project is shaped by five themes: the preservation of historic interiors; rehabilitation and adaptive reuse; the role of common (that is accessible or semi-public) interior
spaces; the context of the United States, and the financial incentives used to achieve this rehabilitation work. These are discussed briefly in the sections below.

**Preservation of Historic Interiors**

First, this research focuses on the preservation of historic interiors in buildings from the early 20\textsuperscript{th} Century, a topic that has not been systematically studied to the same extent as other aspects of historic buildings or buildings of older vintage. Interior spaces are an essential part of the whole historic building. Interiors include features such as internal spaces, wall surfaces, windows, doors, interior features, decorative embellishments, and so on. Compared with iconic landmarks, those buildings with of superlative historic significance, historic buildings built in the 20\textsuperscript{th} Century are large in number, but are widely mistreated and less studied. Instead of focusing on monumental landmarks like state capitols, the interior spaces of common or vernacular historic buildings are the research subjects included in this study. The focus here is two buildings in Des Moines, a library and a fire station, and an elementary school in Ames, which will be specifically discussed in Chapter IV.

**Rehabilitation and Adaptive Reuse**

Second, this research will focus on the process known as “rehabilitation” or “adaptive reuse.” These terms have been described in this way: “the function [of a building] is the most obvious change, but other alterations may be made to the building itself such as the circulation route, the orientation, the relationships between spaces; additions may be built and other areas may be demolished” (Plevoets & Cleempoel, 2011, p.1) (Brooker and Stone, 2004). Similarly, the Australian government notes that “The adaptive reuse of a historic building should have
minimal impact on the heritage significance of the building and its setting ... Adaptive reuse is self-defeating if it fails to protect the building’s heritage values” (Dept. of the Environment and Heritage, 2004, p.3). The City of Los Angeles defines adaptive reuse as the process of “adapting an existing economically obsolete building for a new more productive purpose,” (City of Los Angeles Adaptive Reuse Program, 2006, p.9) while nearby Long Beach similarly notes that “adaptive reuse refers to a construction or remodeling project that reconfigures a site to accommodate a new use or a purpose other than for what it was originally designed” (LBDS, 2015, p.1). Unlike other preservation treatments, which focus solely on building exteriors or on the creation of museum-quality interior spaces (so-called “preservation in amber”), adaptive reuse—also commonly known in the United States as “rehabilitation”—is widely recognized as a better way to make use of existing historic buildings and materials and ensuring longevity in a building’s use.

Common Interior Spaces

A third focus of this research is common interior spaces, what might also be described as public (or semi-public) spaces. As James Mensch noted, “‘Public space’ is the space where individuals see and are seen by others as they engage in public affairs” (Mensch, 2007, p.1). When it comes to interiors, common public spaces are those that have visual or physical accessibility to the public, such as shopping spaces in commercial buildings, reading spaces in libraries, lobbies, and staircases and corridors in a hotel or an office building. According to Maurice Harteveld, “Interiors are public when they open themselves to the knowledge of a community. A shopping mall, for example, unlike a home or private club, issues an invitation to the general public” (Harteveld and Brown, 2007, p.65). To allow for the study of residential
buildings, common spaces here are defined as those that are accessible by right (as owners) and by invitation (as visitors). Thus, the corridor and meeting spaces in the case study Roosevelt School are considered “common.”

This research contends that a growth in interest in the preservation of historic interiors has coincided with a growth in interest in preservation in general. As Norman Tyler noted, “individuals and organizations have supported historic preservation activities for over a century, but in the last three decades interest on the part of the general public has increased markedly” (Tyler, 2000, p.12). Historic preservation has long held a fascination with the general public, which has played an important role from the beginning in historic preservation movements. The growing interest in historic architecture—perhaps a reflection of a decline of the assumption that ‘new is automatically better’—has grown from an appreciation of the public view of a building’s exterior on the street level to include its spaces within.

Context of United States

The buildings that serve as case studies in this research were erected in the early 20th Century. This was also an era in which many cities in China went through a boom in urbanization and construction activities increased dramatically. The buildings constructed during this era were strongly influenced by Western culture, especially those built in the foreign concessions of port cities like Shanghai, Guangzhou, Wuhan, and Qingdao. These historic buildings in Western-style, compared with China’s ancient historic landmarks, are massive in number but are not well appreciated, studied, or understood. These buildings are comparable to the buildings erected in the same period in the United States as they sometimes share similar styles, building types, construction techniques, and materials. As for building styles, unlike in
Europe, China and the United States went through tremendous periods of development on empty areas with the influence of European culture. The building styles in China and in the United States both tend to follow the latest style trends. Urbanization and Industrial Revolution bring the building types that serve the public and adopted new technology like electric lights, elevators, and durable materials.

Financial Incentives

The influence of financial incentives on the process of rehabilitation represents the fifth and final focus of this research. In this respect, the United States serves as a model worth studying for several reasons. Although the United States doesn’t have as long of a built history as China or Europe, it achieved a high quality of historic preservation by stressing the importance of rehabilitation, which stresses reuse and utilizes financial incentives to promote rehabilitation.

Acknowledging the fundamental differences in the conceptualization of land use and property ownership between the two countries, American financial incentives and policies for preservation can nevertheless serve as a possible model for China to study.

Research Goals

By focusing on the theory and practice of historic preservation in the United States and looking into three adaptive reuse case studies, this paper will investigate how the procedures and outcomes of the preservation of historic interiors are impacted by different factors such as government policy, community involvement, the needs of architects, developers, and designers, dominant preservation theories and techniques, and especially, the opportunities and constraints imposed by financial incentives. Not every rehabilitated project can be meticulous in every
respect. Rather, it is valuable to look at the compromises inherent in preservation projects and the sacrifices made by different actors in order to make historic interior spaces usable. This flexibility is the essence of adaptive reuse and rehabilitation in the United States. This research will provide more practical recommendations than the often-idealized recommendations made in regulations and official preservation guidelines.

Overview of Chapters

Informed by the research design described above, this thesis consists of five major chapters (Figure 1). The current chapter provides an introduction to the background and problems of historic preservation and interiors and describes the overarching research topic. Chapter two, the literature review, explores the research area from an academic perspective. Chapters three and four are the main body of this paper. The former stresses theoretical research and the latter operationalizes these theories by focusing on a series of case studies. As for the theoretical part, chapter three briefly describes the development of historic preservation, its current regulations and financial incentives, and specifically focuses on the interior spaces. As for the practical part, chapter four explores three different levels of adaptive reuse through three case studies, focusing on the aspects of historic significance, financial incentives, and interior treatments. Finally, in chapter five, findings, recommendations, and possible future work are discussed.
Figure 1. Framework of this research, by author, 2016
CHAPTER II
LITERATURE REVIEW

Based on the above background on historic preservation, this chapter includes a review of relevant literature. Since the existing body of literature on historic preservation is extensive, this review focuses mainly on literature related to the preservation of interior spaces, which represents the research core of this thesis. This review then continues by evaluating the current state of literature related to various aspects of adaptive reuse and rehabilitation, as well as the financial incentives and instruments that often make it a feasible design alternative.

A Review of Existing Literature

Preservation and Historic Interiors

Compared to other aspects of historic buildings, the interiors of historic buildings have not been systematically studied to the same extent as other aspects. As discussed in the research background, literature focusing on the preservation of historic interiors is comparatively small in number and in depth. In major preservation books, the preservation of historic interiors represents only a small part of the entire text or goes unmentioned. For example, in *A Richer Heritage: Historic Preservation in the Twenty-First Century*, no chapter focuses exclusively on interior spaces (Stipe, 2003). Also, in *Historic Preservation: An Introduction to Its History, Principles, and Practice*, the topics related to interiors were not specifically introduced either. Only in the physical investigation and field survey chapter did the author recommend that attention needs to be paid to a “building’s historic significance from the exterior as well as the
interior” (Tyler, 2000, p.216). Based on a parameterized search of library and online materials (academic materials in Chinese or English from the period 1970 through the present), approximately twenty works of literature were uncovered that relate specifically to the preservation of historic interiors. These search results, while providing only a rough metric, nevertheless reveal the dearth of academic materials related to historic preservation and interiors.

These results can be broken down into three categories. First, a large number of these publications focus on preservation techniques and methods as they relate to a specific interior element. For example, one article focuses solely on wallpapers (Nylander, 1981), another on textiles (Erickson, 1982), windows (Trumpler, 1995) or energy-saving design (Glick, Clevenger and Watson, 2013). Other literature introduces multiple interior elements, including tools and techniques for reorganizing interior spaces to accommodate new uses, floors, walls, windows, doors, ceilings, textiles, lighting, furniture, energy-saving elements, accessible design, and so on. One representative example is *Rehabilitating Interiors in Historic Buildings: Identifying and Preserving Character-Defining Elements*, which is included in *The Preservation of Historic Architecture, The U.S. Government’s Official Guidelines for Preserving Historic Homes* (Jandl, 1988). Other examples include the book *Recreating the Historic House Interior*, by William Seale, which focuses on the treatment of different elements, especially furniture (Seale, 1979).

The audience for these types of literature appears to be the practitioner, as they provide utilitarian design principles and establish a general sense of how to treat different historic interior elements.

A second category of literature focuses more on interpretation of an interior style. In other words, these works aim at answering the question of how to return a historic room back to its original state, condition, and style so as to replicate a certain period. Examples include *Conserving the Historic Interior* (Gow, 1998), and *An Overview of the Historic Use of Textiles*
for Residential Interior Insulation (Erickson, 1982). This literature provides a more detailed level of information about textiles, motifs, and different ways to restore or replicate decoration, but does not offer much information regarding the utilization and function of historic rooms. These works could hardly be used for the specific purpose of guiding an adaptive reuse project.

The third kind of literature focuses on the interior design method in historic buildings, mostly through case studies. Many Chinese articles and essays fall into this category. Case studies include middle school in Shanghai (Jiang, 2009), old residential buildings (Zhao, 2007), the reuse of interior spaces (Guo, 2001), the reuse of industrial buildings (Zhang, 2012), corridors in office buildings (Henry, 1983), and so on. Most case studies are introduced from the perspective of architects and designers so they focus on interior treatments from the perspective of space reorganization and design, functional plans, and other architectural elements. The cases vary in scale and building type, but most studied above begin to stress the importance of adaptive reuse and the repurposing of the interior spaces.

Above all, among the existing literature and studies, scholars agree on the same idea that historic interiors are of great significance and sometimes they are as important as exteriors. Scholars stress different kinds of value in historic interiors including the value of history, culture, memory, education, economics, and sustainability.

Adaptive Reuse and Rehabilitation

The expression “adaptive reuse” is used to describe a building constructed for one particular purpose when it is retrofitted to serve another, different purpose. Also, in broader terms, adaptive reuse can sometimes also be called “rehabilitation.” While these expressions are used somewhat interchangeably in this research, primarily for stylistic reasons, it is worth noting
an importance difference between them. As Deathridge notes in her study of historic religious structures, “A building may be rehabilitated to its former purpose or adapted to a new use; therefore all adaptive reuse is rehabilitation, but not all rehabilitation is adaptive reuse” (Deathridge, 2012, p.5).

It is widely acknowledged that adaptive reuse is considered a popular form of intervention for historic buildings. Plevoets and Van Cleempoel noted that “[f]rom the 1970s onwards, adaptive reuse has been a key subject for many conferences on architecture and conservation as for scholarly literature” (Plevoets and Cleempoel, 2011, p.3). Bullen and Love summarized this form of reuse succinctly by noting that “[w]hen a building can no longer function with its original use, adaption is the only way that a building’s fabric heritage significance can be preserved and maintained (Bullen and Love, 2011, p.413).

Much of the literature on adaptive reuse approaches the topic from designer’s perspective, which stresses the appropriate methods and strategies for intervention adopted by architects when new functions are incorporated into an historic building. For example, interior design methods focus on how to utilize large, common spaces within a building (Gao, 2003). Similar articles stress architectural design and the reuse of interior spaces (Jiang, 2009) (Zhao, 2007) (Guo, 2001) (Zhang, 2012). Within the body of literature on adaptive reuse, studies of industrial buildings assume a large portion (Zhang 2012) (Stratton, 2000) (Henehan and Woodson, 2004). The process of “lofting” industrial buildings, or adaptively reusing them as residences and artists’ spaces, is well represented in not just the design-oriented literature, but in the social sciences as well (Zukin, 1982).

Adaptive reuse’s economic benefits and sustainability form a large part of the literature as well. Adaptive reuse makes a significant contribution to the goals of sustainability, both at the
scale of individual buildings and urban areas (Bullen and Love 2011) (Zhang and Lei, 2013) (Yung and Chan, 2012) (Bullen, 2007).

Financial Incentives

The financial benefits of historic preservation are broadly acknowledged. As Mason unequivocally acknowledges: “Historic preservation tends to yield significant benefits to the economy” (Mason, 2005, p.5). Moreover, it has been noted that historic preservation can provide economic and social benefits and give residents a sense of place. “In many cases,” Tyler notes, “rehabilitation costs can be significantly less than new construction costs” (Tyler, 2000, p.240). Because preservation’s economic impacts are deemed so significant, efforts have been made to encourage it. Perhaps the most successful means of doing this has been economic itself: financial incentives that spur the rehabilitation of historic buildings.

As historic preservation is becoming more and more an investment tool, research on economy factors and policies related to historic preservation is manifold, including analyses of related laws and regulations in different states and the evaluation of tax credits and their impacts, both primary and residual. From the perspective of economics, benefits brought by rehabilitation through the influence of financial incentives have been evaluated in different quantitative and qualitative ways.

Historic tax credits have proven to be a robust community revitalization tool (Srewart, 2013), an opportunity for corporate investors (Kennard, 2005), and a positive way to enhance the value of commercial spaces and residential facilities (Curran Jr, 1997). Another study on tax credits proves that rehabilitation tax credits for mills in North Carolina contribute to economic successes by using quantitative methods (Morton, 2014). At the same time, critiques about the
impacts of the tax credit program also exist. For example, in the article *With Heritage So Fragile: A Critique Of Tax Credit Program*, Paul H. Gleye discussed the ten shortcomings of the tax credits policy at that time, but still acknowledge the fact that “tax credit model is an effective generator of historic building rehabilitation” (Gleye, 1988, p.487).

In addition, statistical evaluations of the Tax Credit Program have been conducted in many states as a means of evaluating its impact (and worth as a public program). Using Iowa as an example, *Iowa’s Historic Preservation and Cultural and Entertainment District Tax Credit, Tax Credits Program Evaluation Study* by Zhong Jin of the Iowa Department of Revenue provides a cogent argument for the program (Jin, 2014).

**Conclusion**

Within the literature related to historic preservation, it is clear that most writers consider historic interiors as an important aspect of research, though scholars focus on different aspects of historic interiors. Also, there are still gaps in this area that need further research.

First, according to the existing literature of historic interiors, some scholars focus solely on design methods without considering practical limitations. Even though case studies are conducted, the “give and take” that is critical to the preservation process is underestimated. Other authors focus more on specific parts or elements of interiors but often neglect the importance of putting the preservation of historic interiors in a larger context. They fail to acknowledge that governmental policy, laws, and regulations play an influential role in the process, as does economics, public opinion and sentiment, and the roles of architects, interior designers, and other professionals.
Second, from the literature on adaptive reuse and financial incentives, scholars focus more on the effects of adaptive reuse and financial incentives through statistics, while underestimating the quality of the project outcomes. The actual environment recreated through the process of adaptive reuse or through the influence of financial incentives is insufficiently studied.

Considering the gaps (Figure 2) mentioned above, this paper focuses on the influence that financial incentives bring for interior treatments through the current laws and regulations in the United States. Therefore, the study will combine the ideal design theories with real practice, and evaluate the effects of written laws, regulations, and financial incentives not only through data, but also through a more qualitative and first-hand way.

Figure 2. Diagram of the related literature, by author, 2016
CHAPTER III
RELATED THEORY AND PRACTICE

This chapter addresses the theory and practice related to financial incentives and adaptive reuse of historic interiors. Through an overview of the American historic interior preservation’s development, regulations and related financial incentives, this chapter broaches several pertinent issues. First, it describes how adaptive reuse grew in popularity in the last half of the 20th century and how this influenced the preservation of historic interiors. Second, it explores current preservation regulations and government’s evolving role in historic preservation. Finally, it describes the various financial incentives available for historic buildings now and explores the effects of those incentives. This chapter will provide a better understanding of adaptive reuse, financial incentives, and historic interiors, which are the three interconnected themes that underlie this thesis.

Development of the Preservation of Historic Interiors in the USA

The evolution of historic preservation has been shaped by changes in society, culture and the economy. The following sections acknowledge this and discuss this evolution in two parts: history and the present. The former covers a time period from early preservation movement through the watershed year of 1976, when financial incentives were established through the Tax Reform Act of 1976.
A Brief Overview of American Historic Preservation

The period from the middle of 19th century to the second half of 20th century saw a huge leap forward in historic preservation in nearly all aspects. Three aspects of this important transitional period will be discussed in this section: the changing values and emphases of historic preservation, the emergence of historic interiors as a preservation issue, and the introduction of funding to the preservation paradigm: the incentivization of preservation. These three aspects correspond to the three themes of this thesis: adaptive reuse (determined by the value and emphases of historic preservation), historic interiors, and financial incentives. But before the introduction of the Tax Reform Act in 1976 (amended 1986) and subsequent legislation, which provided connections between adaptive reuse, interior treatments, and financial incentives through tax credits, design standards, and guidelines, these three aspects were not integrated. The history of values and emphases, historic interiors, and sources of funding is discussed separately in this section.

Values and emphases of historic preservation

The values and emphases of historic preservation have gone through a series of significant changes over time due to the social, cultural, political reasons. Casper notes that, “Like popular styles and cultural norms, what society values as significant changes over time”(Casper, 2007, p.7). Early preservation activity like the Mount Vernon Ladies’ Association’s effort to save George Washington’s house, stressed the historic value related to a historic significant figure or event, or “Use-historic” defined by Edward Hall in 1913 (Hosmer, 1965). At that time, preservation activities were led by the patriotism developed in the early days
of the nation and regionalism caused by the influx of immigrants to America. That is, American preservationists often stressed the monumental and educational meaning as much as the buildings themselves. Therefore the preserved objects are mainly the buildings related to historic figures or events and the way of treating these buildings is to preserve them as house museums.

In the 20th century, the focus of preservation in the United States shifted to the fabric of the architecture itself. An increasing awareness of American buildings styles and forms also emerged. Houses in colonial revival style, like the ones in Fairmount Park, are well preserved by preservationists. A book entitled *Domestic Architecture of the American Colonies and of the Early Republic* was published in 1922 and had a great influence on the society as well as academic circles.

In the late-1930s and 1940s, metropolitan areas in the United States began to change drastically. Governmental urban revitalization and renewal programs began to have impacts on urban spaces and the fabric of American cities, as well as their populations. City dwellers had been leaving cities for the suburbs since before World War II, but in much greater numbers afterwards. In late 1950s, the combined forces of large-scale urban renewal, suburbanization, and the intensification of auto usage caused a loss of vitality in central cities that were considered old, dangerous, poor, and non-white.

Such social and economic conditions, combined with the influence of global historic preservation trends, helped foster the enactment of the National Historic Preservation Act, which became law on October 15, 1966. This act helped established the legal basis, institutions, and framework of American historic preservation. Foremost among its impacts was perhaps the creation of the National Register of Historic Places (NRHP), the nation’s official inventory of historic buildings, archaeological sites, and historic districts.
The post-World War II era saw an expansion in what was considered historic as more and more buildings became eligible to be on the list of NRHP. The 1965 report With Heritage so Rich by U.S. Conference of Mayors, Special Committee on Historic Preservation was published in 1966. Preservationists then started to focus not only national historic monuments which were in relatively small number, but also a large number of common, but nonetheless significant, historic buildings, which helped recognize the contributions of women, minorities, the working class, and other groups typically overlooked in the telling of American history. During this era we also saw new value placed on two types of historic resources: vernacular architecture, which includes workers' housing, gas stations, and other mundane buildings; and historic districts, where the historic or aesthetic value was derived less from individual buildings but from the greater impact that is collectively created in the neighborhood or area. Also, as the society was becoming more secularized and materialistic, the object of historic preservation was no longer the monumental building in isolation, but the larger swathe of the built environment that involved all aspects of civil life in the United States.

After the Tax Reform Acts of 1976 and associated legislation, historic preservation shifted again and became more of an economic development tool. This important legislation made preservation financially attractive to property owners and developers and helped revalue neighborhoods across the US (Grevstad-Nordbrock 2015; Sutton, 2008). Under the new federal policy and latest social economic environment, preserving and reusing the historic buildings began attracting the attention of developers, who saw the potential of economic benefits of new real estate markets in old, and often historic, urban neighborhoods.
The Preservation of Historic Interiors

In terms of the preservation of historic interiors, which might logically be considered a subset of general historic preservation practice, the accepted treatments have varied along with changing social values and developing technologies. In the early preservation movement, the preservation of the interiors as museum-quality spaces was stressed over adaptive reuse. The principle of authenticity reflects preservationists’ emphasis on the monumental significance (Tyler, 2000). There are many examples of this type of house museum and perhaps the most representative and well-known one is Mount Vernon in Virginia. The interiors of Mount Vernon are preserved strictly as a museum to honor George Washington, but the stress on monumental meaning also led to subjective architectural interventions that supported the museum’s pedagogical goals.

In addition, the treatments of historic interiors are also influenced by changing technology. One of the most well known technologies is the historic paint analysis. During building restoration projects, great attention is paid to paint and wallpaper finishes, but it is often difficult to distinguish the original historic finishes from the current appearance because during the life of the building, new finishes might be applied and the original color might have gone through many physical and chemical changes. The difficulty of investigating the original paint colors became a limitation in the early restoration activities. The Colonial Williamsburg project of the early 20th century is a prime example. Though famous for the creation of outdoor historic museums as well as the emphases on authenticity, Colonial Williamsburg’s interiors were later proved to be simple in color and conceptual and later changes were fostered by advances in technology.
In the second half of 20th century, the functional use and reuse of historic interiors was increasingly stressed over museum-quality restorations (Tyler, 2000). In the 1960s, reusing buildings for commercial purposes became a popular means of intervention for historic industrial buildings. Projects like Quincy Market modified and reorganized large interior spaces to accommodate new commercial uses. But the complexity of the preservation of historic interiors and a lack of codified treatments and legislation made it hard for interiors to be properly reused when it came to a new and different function. It was not until the 1970s that historic interiors were supported through the creation of professional standards and relatively specific recommendations for interior treatments. The Secretary of the Interior's *Standards for Rehabilitation* in 1977 had a significant influence on the interior reutilization of historic properties across the United States.

### a.1.3 Funding for Historic Interiors

The ways of funding in historic preservation projects went through a series of changes due to the social, economic and political conditions. In early preservation movements, non-governmental organizations’ and citizens’ involvement played an essential role in collecting the funding. For example, in the Mount Vernon case, the Mount Vernon Ladies Association collected $200,000 from the public by giving promotional speeches and arousing the citizens’ enthusiasm for donating. Similar organizations included the Association for the Preservation of Virginia Antiquities, which helped purchase and preserve the 17th century buildings in Williamsburg. In the early 20th century, the conservative upper class started paying attention to historic preservation, which brought about individual supports in financing as well. For example,
John Rockefeller supported the financing of Colonial Williamsburg project. Similarly, Henry Ford helped fund the outdoor museum in Greenfield Village in Michigan.

After the Great Depression, the big investments like those at Colonial Williamsburg and Greenfield Village became rare and the eventually, the federal government became involved more in historic preservation programs including through the Historic Sites Act of 1935. After the National Historic Preservation Act in 1966, government as well as many historic preservation organizations and foundations pushed to give life to historic buildings in central cities. The 1970s saw a significant increase of private investment in historic rehabilitation programs, which is a direct reaction to the governmental policies conducive to historic preservation as well as the condition of social and economic development. The first Tax Reform Act in 1976 made historic preservation a profitable industry and market factors became the main force of reusing historic buildings for the first time. After the amendment of Tax Reform Act in 1986, preserving and reusing historic buildings attracted more attention of the developers, as more interest and operations are made possible. The subsequent creation of tax credit programs in many states further boosted interest in the rehabilitation of historic buildings.

Even though the values and emphases changed, the decisive role of economic factors has never significantly changed. Financing is always a fundamental step to make the project possible and a major problem to tackle in historic preservation projects as well.

**Current Situation of American Historic Interior Preservation**

This section will describe the current situation of American historic interior preservation from two aspects: the means of intervention and the objects themselves. As for the means of intervention, which is now widely accepted as preservation, rehabilitation, restoration, and
reconstruction, as defined by the National Park Service, the current era saw a continuing growth in popularity of rehabilitation, or adaptive reuse. As for the objects, or available building type, the vast number of common historic buildings is being focused on instead of iconic landmarks, which are small in number. Also, these buildings are more related to daily and civil life.

**Adaptive Reuse as a Popular Intervention**

Adaptive reuse as a preservation tactic emerged in the 1960s and has continued its growth in popularity in current society. The reasons for its popularity can be attributed to people’s changing values.

Firstly, residents are changing their notions in selecting an ideal place to live. The growing rediscovery of central cities and old neighborhoods as well as the shift away from suburbs and suburban living made preservation in older urban neighborhoods agreeable to many people. This trend began as early as the 1960s but didn't really take off until the 1990s. In essence, this is a shift in preference from the homogeneous, mass-produced, new suburbs to batch-produced, old but sometimes historic urban neighborhoods. Jane Jacobs’s *The Death and Life of Great American Cities*, which had a positive effect on the increasing awareness of the significance of old buildings, neighborhoods and their diversity, safety, and economic vitality, was key to this shift in perception. Historic preservation and adaptive reuse are now considered an effective tool for revitalizing the central city areas (Ryberg-Webster, 2014). In 1970s, the National Trust for Historic Preservation’s Main Street Program highlighted the untapped potential of smaller downtowns and contributed, in no small measure, to the return-to-the-city movement as well. Preservation and adaptive reuse specifically are a huge part of this shift.
Secondly, industrial development and environmental degradation aroused the consciousness of environmental protection in the 1960s. Basically, the rise of the movement of historic preservation and reuse coincides with the development of environmental protecting movement. Environmental laws in the United States that were roughly contemporaneous to the National Historic Preservation Act (NHPA) of 1966 includes:

- Clean Air Act (1963)
- National Historic Preservation Act (1966)
- NEPA enacted (1969)
- EPA created (1970)
- Endangered Species Act (1973)

These acts were not just about protecting “natural” areas, but also about fixing despoiled areas like postindustrial urban landscapes. They helped create environments that were suitable for historic preservation, as well as revitalization and adaptive reuse specifically.

Thirdly, the awareness of sustainable development arose as a social and economic consideration. After the Oil Crisis in 1973, Americans began to better understand the energy-wasting problem of new construction activities. Architects started paying attention to this while economists argued that existing buildings contained “embodied energy” and should be reused instead of demolished. As Tyler notes: “A government study found that rehabilitation construction uses 23 percent less energy than new construction, because the work is more labor intensive and less material intensive” (Tyler, 2000, p.240). Government policies began to reflect this environmental awareness by encouraging Americans to reuse existed buildings. Many of the preservation and environmental policies of today were created during this fertile era and amended on several occasions since.
Building Typology

As noted earlier, there has been a pronounced shift over the 20th century in terms of what preservationists consider significant, a shift from significant, iconic landmarks to mundane buildings. In the post-World War II era, when residents were drawn away to the suburbs, urban buildings that were built for a single purpose were being abandoned due to a lack of strategy or incentives for reuse. Buildings such as factories, government buildings, public buildings, and even entire urban neighborhoods faced demolition, which was the common, and easy, solution. But as preservation emerged it provided an alternative solution: adaptive reuse. Compared to the National Historic Landmarks, mundane buildings were often reused without adaptation. According to the National Historic Landmarks Office, 1,918 landmarks were designated between 1966 and 1979, 506 between 1980 and 1999, and 123 between 2000 and 2014 (National Historic Landmarks Program, 2015). Significant landmark projects are becoming fewer in number while mundane buildings, which have more chances to be reused as other functions are becoming large in quantity.

What’s more, due to the City Beautiful movement and urban revitalization in first half of the 20th century, many public buildings were erected at that time to help the cities’ development for public activities. Much construction activity took place during that time, including projects such as schools, public buildings, hospitals, waterpower and reclamation projects and infrastructures related to transportation, water systems, sewer systems, electric power and flood control are funded. Many of these public buildings served greatly as significant parts of urban life but are now outdated, and many that were left vacant were difficult to adaptively reuse. Governments have attempted to sell off theses historic properties to private buyers for new
development, which always brings about a switch of function, as property owners are more likely to utilize the buildings for a better development nowadays. This shift of property from public to private gives historic interiors a wider range of freedom to adapt to new functions. Taking Iowa as an example, many public buildings constructed at this time now serve different functions. The three case studies in this research are indicative of this: the Public Library of Des Moines is now reused as the World Food Prize, the Des Moines Fire Department Headquarters is now the Des Moines Social Club, and Roosevelt School in Ames is now reused as a market-rate residential building. Examples of this from Iowa and across the United States abound.

Adaptive Reuse and Interiors

Adaptive reuse is having a great impact on current historic interior treatments and leads to the growing necessity for research into historic interiors’ treatment. Instead of either preserving all the interior elements to one significant period as a museum or preserving only the facade, adaptive reuse projects often involve significant "give and take"--a tension between the need to preserve historic form and material and the need to ensure that a building continues to be a usable space. In order to deal with this challenge, architects and interior designers make decisions about how to treat different parts of the buildings and how to reuse the interior spaces for new functions while preserving the sense of historic place.

Summary

By going through the development of the preservation of historic interiors from the middle of 19th Century through the present, exploring the values and emphases of historic preservation, historic interiors, and sources of funding, it becomes clear that the changes of
values and emphases of historic preservation from historic and monumental to economic is making adaptive reuse a popular trend. Adaptive reuse is having a greater impact on the interiors of buildings compared to exteriors, as reuse focuses increasingly on the functional use of interior spaces: the “useable” portion of most buildings. Also, economic factors are becoming an essential part in current historic preservation projects, especially when it comes to the current adaptive reuse cases of vernacular buildings.

Considering the popularity of adaptive reuse, after the amendment of Tax Reform Act in 1986, the connections between adaptive reuse, interior treatments, and financial incentives started to be built up through the incentive of tax credits and influence of the standards and guideline (Figure 3).

![Diagram of link between adaptive reuse, interior treatments and financial incentives](image)

**Figure 3.** Diagram of link between adaptive reuse, interior treatments and financial incentives (after the amendment of Tax Reform Act in 1986)

In the following section, this thesis will discuss the link between the three aspects above: the regulations, standards and guidelines, and tax credit.
Regulations and Historic Interior Preservation

Though lacking a history as long as other parts of the world, the United States nevertheless has developed an robust system of historic preservation that spans all level of government and the private sector. This includes several programs that are relevant to this thesis: the National Register of Historic Places, the Secretary of the Interior’s Standards, and related guidelines that govern these programs. Studying these programs and their institutional frameworks is a fundamental step towards understanding the process of current interior adaptive reuse.

American Historic Preservation Institutions, Standards, and Practices

American Historic Preservation Institutions

As with the governmental system in United States, which has three level of government, federal, state, and local, the historic preservation system is also formed by the institutions from three levels (Figure 4), each of which is in charge of carrying out different duties in historic preservation.

![Diagram of Federal, State and Local Historic Preservation Institutions](image)

**Figure 4.** Diagram of Federal, State and Local Historic Preservation Institutions (taking Iowa as an example), by author, 2016
Federal Level

To be sure, historic preservation has existed in the United States in some form since the 19th Century. Nevertheless, the current structure of programs and institutions was established through the enactment of National Historic Preservation Act of 1966. Critically, this legislation states that

“the Federal Government authorizes the Secretary of the Interior to expand and maintain a National Register of Historic Places, to administer a program of direct grants for the preservation of properties included in the National Register, and to establish professional standards for the preservation of historic properties” (National Park Service).

At the same time, the Advisory Council on Historic Preservation was established. Its purpose is to promote “the preservation, enhancement, and sustainable use of our nation’s diverse historic resources, and [advise] the President and the Congress on national historic preservation policy” (Advisory Council on Historic Preservation).

At the federal level, there are two primary agencies that are in charge of historic preservation issues: the United States Department of the Interior (and nested within it the National Park Service) and the Advisory Council on Historic Preservation. The Department of the Interior is responsible for the National Register and most historic preservation programs and incentives. It also manages smaller preservation initiatives like the National Historic Landmarks program and oversees historic and archaeological resources in the National Park system. Importantly, the National Park Service, in conjunction with the Internal Revenue Service, also oversees the historic rehabilitation tax credit program.
State Level

At the state level, the primary governmental agencies that works in the area of historic preservation are the State Historic Preservation Offices, or SHPOs, which are located in each of the fifty states, District of Columbia, and the territories. (Many federally-recognized Indian tribes have Tribal Historic Preservation Offices (THPOs), as do federal agencies themselves.) The SHPOs were created under the National Historic Preservation Act and play an important role in the carrying out responsibilities regarding the preservation of historic properties statewide. Each SHPO typically engages in the surveying of historic properties and acts as a conduit between property owners and the National Park Service for National Register listing and tax credits. An umbrella group, the National Conference of State Historic Preservation Officers, or NCSHPO, acts as the “professional association of the State government officials who carry out the national historic preservation program as delegates of the Secretary of the Interior” (NCSHPO). While every SHPO has prescribed duties under the National Historic Preservation Act, each state deals with different types of historic resources and emphasizes different programs. As a result, each state differs to some degree from others.

Taking Iowa as an example, the Historic Preservation Agency, the designated SHPO, belongs to the State Historical Society of Iowa, which is part to Iowa Department of Cultural Affairs. As stated in the SHPO’s mission statement, the “SHPO of Iowa receives Federal financial assistance for identification and protection of historic properties” (SHSI, 2015) as well as reviews state and federally mandated laws and regulations relating to historic and archaeological work. Its parent organization, the State Historical Society of Iowa, or SHSI, coordinates the SHPO in Iowa:
“[It] has been a trustee of Iowa’s historical legacy since 1857. With a dual mission of preservation and education, it maintains a museum, research centers, preservation office, and eight historic sites. The society preserves and provides access to Iowa’s historical resources through a variety of statewide programs, exhibitions and projects while serving as an advocate for Iowa’s past and connector to the future” (SHSI, 2015).

The Iowa Department of Cultural Affairs, or IDCA, has primary responsibility for development of the state's interest in the areas of the arts, history, and other cultural matters (IDCA).

Local/City Level

At the local or municipal level, agencies with preservation responsibilities vary considerably from place to place. In the City of Ames, for example, a Historic Preservation Commission, or HPC, serves to promote the educational, cultural, and economic welfare of Ames by “preserving and protecting historic structures, sites, and neighborhoods that serve as visible reminders of its history and cultural heritage.” The Commission meets in the Ames City Hall monthly. The HPC’s role is acknowledged in their website,

“Historic preservation plays a role in encouraging civic pride, neighborhood identity, economic vitality, and community sustainability. Studies have shown that historic preservation stabilizes property values, contributes to quality of life, and encourages property investments by owners…. The HPC reviews applications for both new construction and changes to the exterior of proposed or designated landmarks and structures within the historic district. The HPC also provides information to owners of historic properties, boards, commissions, and the City Council on matters affecting historically and architecturally significant properties, structures, and areas” (City of Ames, HPC).

The regulations from the federal level come from the laws, which rarely change much over time. The regulations from state level are relatively fixed, though they vary among the fifty states. While shaped by state enabling regulations and certain federal requirements (for example
through the Certified Local Government program), local or city governments establish preservation regulations according to their own local conditions and needs, thus providing a flexibility of policies.

A fundamental idea behind the preservation in America is that programs like the National Register of Historic Places are honorific instead of regulatory, but that local preservation regulations are regulatory and have use of the police power to force the protection of historic buildings. One significant event in the history of historic preservation is the law case of 1972 Penn Central Transportation Company vs. City of New York. After that judgment, local government gained more power to restrict the inappropriate treatment of the privately owned properties.

The system of American historic preservation institutions appears to be complicated, but it is structured clearly as well. Incentives and constraints exist between different levels of institutions, which leads to the cooperation in preservation and restrictions as well.

National Register of Historic Places Program

The National Register of Historic Places, or NRHP, authorized by the National Historic Preservation Act of 1966, is the official list of historic places across the United States. The purpose of this program is to identify, evaluate, and protect America's historic and archeological resources by coordinating and supporting public and private efforts (NRHP).

The benefits of being on the NRHP list for the properties are primarily honorific—it is considered an honor to be included. Other benefits include the documentation of a property’s significance, having the opportunities for specific preservation incentives, tax benefit and grants, and having access to maintenance expertise and information. The most attractive benefit for
listing in NRHP is that it makes the property eligible for specific financial incentives. For example, through the National Park Service, rehabilitations of income-producing (that is, commercial) properties listed on the National Register of Historic Places are potentially eligible for a 20% tax credit if they meet the Secretary of the Interior’s *Standards for the Rehabilitation of Historic Buildings*.

**Standards and Guidelines**

In the 1966 National Historic Preservation Act, the Secretary of the Interior was authorized to “establish professional standards for the preservation of historic properties” (National Park Service). The standards are meant to be flexible and have gone through several changes through the present. The current version identifies four levels of treatment or architectural intervention: preservation, rehabilitation, restoration and reconstruction (National Park Service). These four treatment standards were established in 1992 and since then, the standards have gone through relatively small changes. The latest version is the *Secretary of the Interior’s Standards for the Treatment of Historic Properties & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings* was published in 2011.

Through the process of the development of the Secretary of the Interior’s *Standards*, adaptive reuse, or rehabilitation, went through a gradual increase of importance. In the 1973 the Grants-in-Aid program, adaptive reuse was not included in the three types of treatment, but it could be eligible for funding if it was used as a type of restoration treatment, stating that,

“The National Park Service recognizes adaptive use of historic properties as a useful means of preservation. An historic property is improved or restored for adaptive use when all or a portion (façade, for example) of the exterior is restored with interior adapted to a contemporary functional use. Adaptive restoration is the appropriate
treatment for structures that are visually important in the historic scene but do not otherwise qualify for exhibition purposes” (National Park Service).

In 1976, reflecting the popularity of rehabilitating old buildings, rehabilitation was listed as one of the seven treatments. The first NPS guidance specifically for rehabilitation, *Guidelines for Rehabilitating Old Buildings*, was developed. After the new tax policies, as the standards and guidelines were regarded as a prerequisite of getting the benefits. The NPS has revised the standards over ten times since they were first implemented.

The Secretary of the Interior's *Standards for Rehabilitation* are now the basic guidelines for applying for financial benefits including tax credit and other grant programs. To be sure: “The Standards and Guidelines also form the basis of 2,500 or so local preservation ordinances” (Dedek, 2014, p.279). Currently, as the historic buildings listed in the NRHP may be eligible for tax credits, when they come across rehabilitation, they will give priority to consider following the Secretary of the Interior's Standards for Rehabilitation [Appendix A].

**Features of American Historic Preservation Regulation**

The tiered governmental structure of preservation, the overarching impacts of the National Register of Historic Places, and Secretary of the Interior's *Standards* and its relationship to the historic rehabilitation tax credits arguably form the basis of the American historic preservation projects. Compared to other countries, historic preservation in the United States mainly has considerable public involvement. It is more honorific than regulatory (Section 106 being the key exception); the American model favors the proverbial “carrot” approach and not, as in other countries like China, the “stick.”
Public Involvement in Historic Preservation

The American public has a long history of engagement in historic preservation that dates back to early efforts like the protection of Mount Vernon. In the twentieth century, the creation of the National Register of Historic Places has provided Americans with a means to identity and recognize historic properties through a process that is, to a certain extent, bottom-up—a process of identification that is based on the public’s values rather solely on the top-down, “expert-driven” designation process instituted by government. What’s more, the process of applying for nominations on the National Register of Historic Places and all nomination forms are open to public, which helps increase public awareness and participation in historic preservation.

Compared to the countries that set up historic buildings lists through top-down designation like China, where preservation relies solely on governmental subsidies, in America, the policies and financial incentives emphasize economic benefits, which attract different ways of funding from the society. Non-governmental organizations also play a significant role in preservation in the United States and are foster public involvement in the process. For example, the National Trust for Historic Preservation, a nationwide non-profit organization, exists to draw attention to preservation efforts and activities and effectively increases the public participation in the protection and management of the historic built environment.

Honorific instead of Regulatory

Another feature of American historic preservation regulation is that, as private properties are respected and regarded as sacred, individuals’ rights of taking control of their own properties are stressed. From the federal level, when the property is listed on the National Register of Historic Places, private property owners can still make their own decisions about how to treat
their property, unless federal money is involved. This is the so-called Section 106 process.

After the Supreme Court case of 1972 Penn Central Transportation Company V. City of New York, which has been mentioned above, local government gained more control power to restrict the inappropriate treatment of privately owned properties. But in case property owners’ rights and benefits are restricted, they could get compensate as well. Also, differ from other countries’ designated list of historic buildings, in America, property owners have to approve their property to become nominated on the National Register of Historic Places.

Though many local governments have regulatory control over private properties through the operation of the police power, at the federal level preservation laws are more honorific than regulatory. The Standards for Rehabilitation and the Guidelines are advisory rather than regulatory as well. Unlike in China, where government has a strong control power over historic buildings, in the United States property owners have latitude in determining the appropriate use of their buildings and more opportunities to develop historic buildings when old functions are obsolete and new functions are needed. In other words, adaptive reuse and rehabilitation are actively supported. On the other hand, the lack of regulatory oversight can put historic buildings in a dangerous condition in the United States as they are at risk of alteration or demolition. The exception, again, is at the local level, where local landmarking can minimize change to a historic building or neighborhood.

**Government’s role**

In America, on the basis of respecting private properties, the federal government’s interventions in historic preservation could be described in two ways: The first way is to regulate and restrain the property owner through state governments and local laws. The other way is to
provide financial incentives to encourage proper treatments and to discourage the improper ones as well. These two ways of interventions are called “stick” and “carrot” approach in American governmental intervention.

The method of encouraging proper rehabilitation treatments is mainly through tax credits, which will be mainly discussed in the following part.

**Regulation and the Preservation of Historic Interiors**

These features of American historic preservation regulation relate to current historic interior preservation practices in several aspects.

First, regulations stress the functional utilization of interiors, which helps avoid the interior damage caused by abandonment. But at the same time, the need of utilization may cause inappropriate treatment in the process of reusing. This can sometimes cause damage to historic interiors when no mandatory regulations are in place to guide the reuse of these spaces.

Second, as in America, the polarization problems of preserving only the facades while wiping away all interior elements are not as serious as that in other countries. On the one hand, as the National Register of Historic Places is fundamentally honorific, owners have more freedom in choosing what to do to their buildings. But in other countries like China, where historic buildings are designated and the preservation is mandatory and regulatory, property owners or governmental members sometimes tend to spend most of the governmental funding on restoring the facades of the buildings instead of the inside, which causes a severe polarization. On the other hand, as government gives tax credit instead of directly pays the money, the property owners or developers have to follow the regulations and guidelines, which reduce the problem of polarization as well.
Third, the regulations provide historic interiors both freedom and limitations. The economic incentives provided by the federal government through the tax credit program combines the coercion from local government, which makes the program more flexible and applicable. In federal level, the freedom of interior treatment is provided by the advisory regulations. The standards and guidelines are universal rules; they indirectly guide the project instead of the direct force. Also, in federal government respects the private properties and help defend the rights of the property owners. At the same time, the limitations of interior treatment are provided by the regulations from the local government. In some states, the local government may follow the standards and guidelines more strictly and focus on more character-defining elements of the interiors as well as exteriors. As the local government is the main body of operation in preservation activities, the regulations that vary among different local governments can cause differences between historic interiors’ rehabilitation in different places. Some buildings preserve the original interior elements strictly in the adaptive reuse process while others choose to largely modify those elements to adapt to new uses.

Additionally, the society involvement has positive effect on historic interior preservation as well as the historic building as a whole. More society involvement leads to more public attention and supervision on the projects.

Financial Incentives

In this part, by researching a list of current financial incentives, especially the federal and state tax credits, this thesis will focus on how different financial incentives have an impact on historic interior treatments.
Tax Credits

Federal Tax Credits

In a market economy like that of the United States, tax policy has always been a powerful economic lever. Though in 1966, the National Historic Preservation Act set up significant basis of historic preservation activities, they were not effectively developed until the Tax Reform Act in 1976, when properly treating historic buildings could bring about economic benefits. In 1978, a ten percent rehabilitation tax credit was set up and in 1981, the rehabilitation tax credit was expanded to a three-tier credit: twenty-five percent credit for “historic rehabilitations,” twenty percent for buildings at least forty years old, and a fifteen percent credit for those at least thirty years old (Internal Revenue Service).

The current using tax credit was amended in the Tax Reform Act of 1986, twenty years after the establishment of National Register of Historic Places, when rehabilitation programs finally began to attract investment and achieved great success. According to National Park Service, “tax incentives program has leveraged over $78 billion in private investment to preserve 41,250 historic properties since 1976” (National Park Service, tax incentives).

Currently, the Federal Historic Preservation Tax Incentives Program is jointly administered by the National Park Service (NPS) and Internal Revenue Service (IRS), and administered locally by the SHPO of each state. Two levels of federal tax credits are provided as options: the twenty percent and ten percent tax credits created to encourage historic rehabilitation projects. The twenty percent investment tax credit is provided for the certified rehabilitation of a certified historic structure while the ten percent investment tax credit is provided for the rehabilitation of a pre-1936 building, which could be an old but not a certified historic building (National Park Service, tax incentives).
Generally, there are two main ways of financial support provided by the government: direct subsidy or indirect incentives through tax policies. The method of tax credits belongs to the latter, which do not necessarily take up the budget and is relatively easy to achieve through the political process. That is, it is a system whereby government encourages preservation through financial assistance programs and government does not simply pay for rehabilitation work directly.

**State Tax Credits**

As State Tax Credits programs slightly vary among the fifty states, as stated in the first chapter, this thesis will mainly focuses the examples in Iowa. In Iowa,

“the State Historic Preservation and Cultural & Entertainment District (HPCED) Tax Credit Program provides a state income tax credit for the sensitive, substantial rehabilitation of historic buildings. It ensures character-defining features and spaces of buildings are retained, which help revitalize surrounding neighborhoods” (IDCA, State tax credits, 2015).

Property owners can get twenty percent of tax credits from the federal program, while in Iowa state level, the income tax credit can be provided up to twenty-five percent of the qualified rehabilitation expenditures.

The application process of the tax credit program consists of the following six steps: Evaluating the property (Part 1), pre-application meeting (Part 1.5), evaluating if rehabilitation work meets the Standards for Rehabilitation, registration application and agreement with terms and conditions to meet (Part 2), evaluates the completed work (Part 3) (HPCED).

The review process includes a ninety-day review period from the date a complete application for each Part is received. Additionally,
“if the completed rehabilitation work does not meet the Secretary of the Interior’s Standards for Rehabilitation as determined by the State Historic Preservation Office, or if the applicant does not otherwise comply with the terms of the agreement, law, or regulations, tax credits will not be awarded. Awarded credits may also be subject to recapture as described in Iowa Code” (IDCA, State tax credits, 2015).

In addition, in Iowa, the Temporary Historic Property Tax Exemption provides a local property tax incentive for the sensitive, substantial rehabilitation of historic buildings. According to the Iowa government website, “the program provides a combination of four years full exemption from any increased valuation due to the rehabilitation, followed by four years of property tax increases (25% per year) up to the new valuation” (IDCA, property tax exemption, 2015).

**Other financial incentives;**

There are many other financial incentives that can be used to help rehabilitate an historic building. These are provided by different units of government and organizations, including the federal, state, and local government, as well as non-governmental organizations like National Trust of Historic Preservation. Oftentimes they provide “gap funding” that help make an expensive rehabilitation project more feasible. What is described as a “capital stack” is created and potentially involves a multitude of different funds with different required outcomes: the provision of affordable housing, to use one example.

According to the NPS, frequently used financial incentives include: Low Income Housing Tax Credit; façade improvement grant program; New Markets Tax Credit Program (NMTC); Tax Increment Financing (TIF); historic preservation easement; USDA Rural Development loan, grants or other assistance; local property tax; Brownfield Economic Incentive; Tax incentives for
hiring residents in a Renewal Community/Empowerment Zone/Enterprise Community; HUD program (e.g., Community Development Block Grant, HOME funds, Insured Loan Programs); and low interest loans (National Park Service, 2009). A list, by no means exhaustive, is included in the tables below (Table 1, Table 2).

**Table 1. A list of frequently used financial incentives that appeared in NPS questionnaire, 2009**

<table>
<thead>
<tr>
<th>Financial Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Income Housing Tax Credit</td>
</tr>
<tr>
<td>Façade Improvement Grant Program</td>
</tr>
<tr>
<td>New Markets Tax Credit Program (NMTC)</td>
</tr>
<tr>
<td>Tax Increment Financing (TIF)</td>
</tr>
<tr>
<td>Historic Preservation Easement</td>
</tr>
<tr>
<td>USDA Rural Development Loan/Grants</td>
</tr>
<tr>
<td>Local Property Tax</td>
</tr>
<tr>
<td>Brownfield Economic Incentive</td>
</tr>
<tr>
<td>Tax Incentives for Hiring Residents</td>
</tr>
<tr>
<td>HUD Program</td>
</tr>
<tr>
<td>Low Interest Loans</td>
</tr>
</tbody>
</table>

At the state level, different states have different historic preservation tax credit programs and state property tax exemption programs. The state tax credit varies from state to state in aspects of tax credit rate, minimum expenditure requirement, project award cap, ability to transfer and refund. Different departments from state government provide other grants as well.

For example, in Iowa, the State Historical Society of Iowa, a part of the Iowa Department of Cultural Affairs, provides grants as follows: Certified Local Government Grant Program, Country School Grant Program, Cultural Trust Stability Grant, Historical Resource Development
Program, Iowa Great Places (SHSI, History Grants). Other grants are provided by the Iowa Finance Authority (IFA); these deal with programs related to preservation, like affordable housing. The following grants are available: Community-Based Housing Revolving Loan Fund, Housing Tax Credit Program, State Housing Trust Fund, Main Street Loan Program and so on (IFA).

Also, from the non-governmental level, the National Trust of Historic Preservation provides different kinds of grants as the following table shows (Table 2).

**Table 2. A list of funds provided by National Trust, (NTHP, grants, 2015)**

<table>
<thead>
<tr>
<th>Fund Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartus Trew Providence Preservation Fund</td>
</tr>
<tr>
<td>Battlefield Preservation Fund</td>
</tr>
<tr>
<td>Cynthia Woods Mitchell Fund for Historic Interiors</td>
</tr>
<tr>
<td>Elizabeth R. and Robert A. Jeffe Preservation Fund for New York City</td>
</tr>
<tr>
<td>Emergency/Intervention Funding</td>
</tr>
<tr>
<td>Hart Family Fund for Small Towns</td>
</tr>
<tr>
<td>Henry A. Jordan, M.D., Preservation Excellence Fund</td>
</tr>
<tr>
<td>Johanna Favrot Fund for Historic Preservation</td>
</tr>
<tr>
<td>Louis J. Appell, Jr., Preservation Fund for Central Pennsylvania</td>
</tr>
<tr>
<td>Peter Grant Fund for Colorado</td>
</tr>
<tr>
<td>Peter H. Brink Leadership Fund</td>
</tr>
<tr>
<td>Southwest Intervention Fund</td>
</tr>
</tbody>
</table>

In addition, in local level, more specific grants are available. Taking Ames in Iowa as an example, grants includes Campustown Façade Grant, Downtown Façade Grant, Tax abatement Urban Revitalization Program and so on (City of Ames).
Summary

By enumerating the various types of financial incentives, including the founding time and eligible type for application, it becomes clear that there are many choices for historic buildings to get financial support. This reflects the growing popularity of historic buildings to seek for financial incentives for rehabilitation.

National Standards as Criteria

The Secretary of the Interior’s Standards for Rehabilitation forms the core of the various financial incentives including federal tax credits, some state tax credits and other non-governmental financial incentives as well. For example, in the state tax credits program in Iowa, the state government will not provide state tax credits if the project is found to be not listed on the National Register and in conformance with the Secretary of the Interior’s Standards for Rehabilitation. As for financial incentives from other organizations, for example, the conditions for applying Cynthia Woods Mitchell Fund for Historic Interiors, a fund that related to historic interior rehabilitation, includes “Any documents or plans for preservation work that result from the project must conform to the Secretary of the Interior’s Standards for the Treatment of Historic Properties” (Cynthia Woods Mitchell Fund for Historic Interiors). Data show that, “to ensure interventions are appropriate, 88% of funds adhere to the Secretary of the Interior’s Standards for Rehabilitation and 79% attach easements to properties that revolve through the fund” (Gunther, 2014, p.18). Actually, the Standards and Guidelines have already form the basis of 2,500 or so local preservation ordinances (Dedek, 2014). In addition, according to the

**Influence and Effects**

Comparing with the National Register of Historic Places, the tax credits programs played a more significant and effective role in improving the development of preserving and rehabilitating the historic buildings. The National Register of Historic Places helped preserve significant historic landmarks but only in a limited number, while the tax policies helped give life to large number of mundane historic building all around the states.

Different kinds of financial incentives provide more options for historic buildings to choose. Sometimes, developers could still choose to seek other financial incentives if they are not eligible for tax credits or unwilling to conform to their requirements. In reality, there’s not only a single approach to accomplish a project.
CHAPTER IV

CASE STUDIES

The previous chapters on financial incentives and the adaptive reuse of historic interiors focus more on the preservation’s theories, laws and regulations, and programs. This chapter will focus on financial incentives with particular attention paid to the treatment of interior spaces. Three case studies will be explored as three levels of intervention in the rehabilitation of historic interiors as a high-, medium-, or low-level intervention, and will be examined as a means to better understand the application of these policies and regulations.

Rationale for Selection

The three cases selected for this study are the Des Moines Public Library (now used as the headquarters for the World Food Prize Foundation), the Des Moines Fire Department Headquarters (now the Des Moines Social Club) and the Roosevelt School of Ames (now redeveloped as market-rate residential condominiums). These case studies were selected because of certain similar characteristics shared by all three and for their representative qualities. Their similarities are discussed in greater detail in the following section.

Similarities

The three case studies are, to be sure, officially designated historic buildings. All have been listed in the National Register of Historic Places. Each example originally served as a public building: as a library, a fire station and department headquarters, and an elementary school. Furthermore, they are all recently completed examples of adaptive reuse in Iowa. They
were all built in the early-20th Century and represent architectural forms and styles that were common in the era but fell out of favor (or use) as the century moved forward. Thus, the similarities of the buildings can be categorized in this way: they are all one-time public buildings with historic significance under the National Register, they all succumbed to changes in building and neighborhood needs and were rendered obsolete, Moreover, since they are all National Register-listed, they have available to them similar financial incentives, although it will be shown how each project used a different package of incentives to achieve somewhat different goals.

**Historic Significance**

Firstly, these three buildings have historic significance under the National Register of Historic Places. The Des Moines Public Library was listed in July 1977; the Des Moines Fire Department Headquarters was listed in February 2014; Roosevelt School was listed in December 2009, which can prove their historic significance. The Des Moines Public Library’s area of significance was marked as architecture; the Des Moines Fire Department Headquarters’ area of significance was marked as politics/government, architecture and communications from 1937-1963; the Roosevelt School’s area of significance was education and architecture in 1924-1959.

All of the three cases originally served as public buildings (which separately served as library, fire department and school), which are built in early 20th Century, following the trend of massive construction activities of City Beautiful Movement and urban revitalization. Compared to private buildings, which serve solely the private owners and users, these three public buildings all played a more important role in public activities and have greater influence on common life of the citizens.
Current Situation and Intervention

Secondly, these three cases all went through similar historic periods and events, which contribute to the current condition and the decision to embrace adaptive reuse and as design solution. Originally built in early 20th century, these public buildings were, by the mid-20th Century, facing the danger of demolition, as the original functions were gradually out of date and the rise of land value spurring massive commercial development. The emergence of governmental historic preservation and the National Historic Preservation Act of 1966 helped slow the trend of massive demolition of old buildings and therefore these three buildings survived demolition threats and persisted through to the present.

In the beginning of 21st Century, these three buildings no longer served their original functions, which allowed the buildings opportunities to be redeveloped and reused by new property owners. As for the three cases, the Public Library of Des Moines’ had their new Central Library opened at in April 8, 2006; the original Des Moines Fire Department Headquarters no longer served as fire department headquarters and sat vacant since August of 2012. The Ames Board of Education closed Roosevelt School in 2005 whereupon it, too, sat vacant. All three buildings went through the process of adaptive reuse, which helped save the historic buildings. Each accommodated a different function in the interior spaces.

Regulations and Incentives

Thirdly, the three cases selected are all from the State of Iowa, where they share same regulations by the SHPO of Iowa and equal opportunities of getting similar financial incentives like State Tax Credits Programs. Also, as the processes of rehabilitation of the three buildings are
all recently done, less than five years ago, and the policies that governed their rehabilitation are the same for each of the three buildings. The World Food Prize rehabilitation was completed in 2011; the Des Moines Social Club project was completed in 2014; and the residential units in the Roosevelt School were occupied in early 2015. In addition, since historic preservation policies and practices in the United States derive in large part from Federal programs, which are established through the National Historic Preservation Act of 1966, case studies from Iowa are as generally representative as those from any state.

**Differences**

The most important reason for selecting these three buildings as case studies is that they represent three different levels of adaptive reuse and three different solutions to the problem of an historic building that has outlived its original use.

Firstly, each of the buildings features a different adaptive reuse, with different design requirements and users. These differences are reflected in the costs of rehabilitation. The World Food Prize represents a highest level of the three adaptive reuse cases. Its rehabilitation costs are the highest and its users are the most diverse. The World Food Prize building attracts visitors from all over the world and was even used to host dignitaries like Chinese Vice President Xi Jinping. The Des Moines Social Club could be considered a step below this, a medium-level adaptive reuse that is municipally-focused. It is considered “the City's Cultural Centerpiece”, a space for the citizens of Des Moines. As for the Roosevelt School, the new residential function focuses on the residents themselves and has less outward influence than the other two buildings.

Secondly, the case study buildings follow different levels of regulations and adopt different financial incentives. For example, the World Food Prize uses a more varied funding
package to undertake its rehabilitation. This includes donations from private sources alongside a variety of public grants and credits; these will be specifically discussed later. Also, the World Food Prize and the Des Moines Social Club both applied for the State Tax Credits and followed the Secretary of Interior’s *Standards and Guidelines*, while the developers of the Roosevelt School considered these popular incentives but ultimately opted to forgo them. Without applying for State Tax Credits, Roosevelt School was provided with more freedom in interior rehabilitation. Nevertheless, the school’s developers successfully obtained tax abatement through the Urban Revitalization Program of the City of Ames.

As in practical, there are always many different ways to do one thing, the three adaptive reuse buildings represent three different levels of accomplishment by adopting three different levels of approaches to achieving the same goal, which is to save historic buildings from demolition and give new life to the historic interior spaces. These three different cases will provide us meaningful information to look into.

Case Study 1— from Des Moines Public Library to the World Food Prize Hall of Laureates

Among the three case studies in this paper, the World Food Prize Hall of Laureates, which followed the Secretary of Interior’s *Standards* and was supported by a variety of grants, represents a high level of adaptive reuse. This section of the thesis will explore the history and present state of this significant historic building and specifically look into the process of adaptive reuse by focusing on the related financial incentives and interior treatments.
Historic and Architectural Significance

History and significance

The World Food Prize Hall of Laureates is located at 100 Locust Street, on a prominent site along the riverfront (Figure 5) of downtown Des Moines. It is a contributing resource within the National Register of Historic Places-listed Civic Center Historic District (NRHP, 1988). The building is a Beaux-Arts style historic building, designed by local architect Frank A. Gutterson (1872-1901) and Oliver O. Smith (1868-1919). The building started construction in 1899 and the cornerstone was laid in 1900. Before being taken over by the World Food Prize Foundation, this building had served as the Public Library of Des Moines since its first opening in 1903. The construction of this building is regarded as part of the City Beautiful Movement in Des Moines, which adopted a “project-by-project approach in urban planning” (NRHP, 1988, p.2). The movement aimed at beautifying and improving the riverfront of Des Moines by building river walls, bridges, and a series of public buildings including the public library of Des Moines, former U.S. Post Office, Municipal Building, Municipal Court and Public Safety Building as well (NRHP, 1988). The public library of Des Moines is the one of these first riverfront

![Original Des Moines Public Library at the Riverfront, from the World Food Prize, Experience the History](image-url)
buildings, and stands as a witness to this special era of urban development and beautification in Des Moines.

This building has special meaning to the Des Moines library foundation. According to the National Register of Historic Places nomination, “the completion of this structure in 1903 marked the first time the collections of the Des Moines library had been housed in a building of their own.” (NRHP, 1977, p.3) Also, the building had positive impact on civil life after its opening not only because it created a public reading space with various books, but also because it supported all kinds of culture-related spaces including art galleries, a music club, and public meeting spaces. The area on the second floor (called mezzanine level now) initially devoted to these activities had been changed to staff offices by the 1970s. Other significant alterations before the latest rehabilitation occurred in 1928, 1937, and 1956.

Due to its significance, this building was listed individually in the Nation Register of Historic Places in 1977. It is considered significant for its architecture, under what would now be considered Criterion C of current National Park Service guidelines. The library was listed on the National Register again in 1988 as a contributing element with the Civic Center Historic District. It was identified as significant under Criteria A (historical events) and C (architecture).

Architectural and Interior Features

The World Food Prize Hall of Laureates reveals an influence of Beaux-Arts style while having details in the Neo-Palladian style as well. The exteriors of the World Food Prize Hall of Laureates are mainly made of pink Minnesota limestone and the three-stage elevations could be seen from the outside (Figure 6). The inside of the building contains three levels, which are
currently named by the World Food Prize as garden level (ground level), first level, and mezzanine level (second level).

![Image of the Original Des Moines Public Library exteriors]

_Figure 6. Original Des Moines Public Library exteriors, from the World Food Prize, Historic Preservation and Renovation_

The interior originally included a rotunda at the center of the plan, a mural room in the garden floor, reading room on the north side of first floor, a large, two-story stacks room on the first floor, and rooms that originally housed an art gallery and music department on the second floor. The rooms were mainly planned around the rotunda and those on the first floor were symmetrically organized. The rotunda originally housed the library card catalog, with a dramatic dome decorated with stained glass as its focus (Figure 7). The mural downstairs was originally painted in 1937, by Harry Donald Jones and twenty-one other researchers and artists as part of Federally-funded New Deal project. It shows the history of Des Moines in a 360-degree mural in vibrant colors (Figure 8). Other details in the room include oak wainscoting and arcades in a semicircular shape on the first level (the World Food Prize).
Adaptive Reuse Process

Background

After serving as a library and cultural center for public use for nearly one hundred years, the library outgrew the building and announced it would move to a new location. On April 8th, 2006, the Public Library of Des Moines’ new Central Library was opened at 1000 Grand Avenue. Because the original building held many significant historic meanings and memories among the citizens of Des Moines, demolition was considered a viable solution only after possibilities for adaptive reuse had been exhausted.

At the same time as the library moved out, the World Food Prize Foundation, which was seeking a publically-visible building at a prominent site, started thinking about transforming the library into the headquarters of the Prize. Nine years after businessman John Ruan III kicked off
this suggestion and made a donation in 2000 in support of the creation of a headquarters building for the foundation, World Food Prize officials signed a 100-year-lease with the City of Des Moines. This occurred on November 16, 2009.

The official website of the World Food Prize described in watershed year of 2009 in this way,

“Led by its president, Ambassador Kenneth M. Quinn, the World Food Prize Foundation began the transformation of this architectural gem in 2009, giving it a new purpose for the next hundred years - to carry on the legacy of Dr. Norman E. Borlaug and the World Food Prize laureates, and to fulfill the vision of John Ruan Sr. to make Iowa the hunger-fighting capital of the world” (the World Food Prize).

The Proposed Adaptive Reuse

The World Food Prize Hall of Laureates was restored and designed by Gensler Architecture, Design and Planning, RDG Planning and Design, and Hoerr Schaudt Landscape Architecture. The new functions shown in the proposed plans include office spaces, art galleries, educational exhibiting spaces, conference spaces, and other supported spaces. As described in the official website, the World Food Prize Hall of Laureates serves as:

“a world-class museum to recognize great achievements in agriculture and fighting hunger; a convocation center at which to hold events during the World Food Prize International Symposium -- the Borlaug Dialogue; a home for the expanding Global Youth Institute, which aims to inspire the next generation of leaders; an educational facility featuring interactive displays on hunger and food security; and a conference center and event space available to other groups and organizations for their meetings and other activities” (the World Food Prize).
Adaptive Reuse Process and Challenges

The rehabilitation project began on October 27, 2007 and schematic design revisions for SHPO, including the proposed plans (Figure 9) by Gensler, were submitted on February 27, 2008. After the city issued a certificate of appropriateness for the proposed alterations to the old library building on September 28, 2009, the actual construction work began one month later on October 20. As the building owners applied for a Save America’s Treasure Grant, which requires it to follow the Secretary of Interior’s Standards, it worked with SHPO and applied for State Tax Credits on July 2, 2010. With $16.8 million estimated for the cost of rehabilitation, forty-four rehabilitation and preservation interventions were proposed from the exterior walls to interior furniture and details. On October 28, 2010, the tax credits for the rehabilitation project were provisionally reserved in the amount of $4,200,000 with conditions that the developers and architects meet the Secretary of the Interior’s Standards.

To meet the Secretary of the Interior’s Standards, the architects worked with SHPO and a considerable degree of negotiation helped to bring about an agreement between the two sides. The timeline of events and major negotiation of the World Food Prize’s rehabilitation was attached in the end (Appendix B).

The biggest negotiation involved the issue of the glass material on the double-hung wood windows on found of each of the four facades. The SHPO suggested that the architects remove

![Figure 9. Proposed Plan of first floor, Gensler, 2008](image)
the installed Low-E glasses that appeared to have a non-historic tint, while the architects tried to prove the glass was translucent and met the requirements by conducting experiments and case studies. The architects, authorized by the World Food Prize Foundation, appealed SHPO’s decision to the Iowa Department of Cultural Affairs and in the end the SHPO’s decision was reversed due to the insufficient public notice of the policy change from discouraging to prohibiting the use of Low-E glass.

Also, during the process of construction, more rehabilitation and preservation work of the architectural features were amended and added. From the first amendments submitted on October 19, 2010 to the last one approved in May 18, 2011, this former library building requested twenty-five changes in architectural features compared to the previous proposal on July 2, 2010. Two of these changes were eventually denied, one was approved with conditions, and the remaining twenty-two changes were approved by both SHPO and National Park Service.

**Financial Issues**

When this project applied for the State Tax Credits in July 2010, the estimated the cost of rehabilitation was $16.8 million. On January 29, 2011, the Qualified Rehabilitation Cost Schedule was made and the estimated total qualified rehabilitation costs were $22,687,752. This included $13,922,702 total project costs, $48,971 total costs for other work on eligible property, $2,972,125 on other consultants, and $624,718 for miscellaneous costs (Table 3). According to the Historic Preservation Tax Credits Survey conducted by Iowa Department of Revenue on March 1, 2013, the total Qualified Rehabilitation Cost was $21,336,665, while Non-Qualified Projects Costs was $10,549,838. The qualified cost covered about 67% of the total rehabilitation cost (Figure 10).
Table 3. Predicted project costs details, data from SHPO

<table>
<thead>
<tr>
<th>Item</th>
<th>Qualified Cost</th>
<th>Ineligible Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building and acquisition</td>
<td>n/a</td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td><strong>Sitework</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site grading &amp; excavation</td>
<td>$393,440</td>
<td></td>
<td>$393,440</td>
</tr>
<tr>
<td>Landscaping, surface parking, roads and walks</td>
<td>n/a</td>
<td>$9,765</td>
<td>$9,765</td>
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<tr>
<td>Site utilities</td>
<td>n/a</td>
<td>$162,997</td>
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<tr>
<td><strong>Non-eligible buildings</strong></td>
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<tr>
<td>Demolition</td>
<td>n/a</td>
<td></td>
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</tr>
<tr>
<td>New construction</td>
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<td></td>
<td>$0</td>
</tr>
<tr>
<td><strong>Work on or in eligible property</strong></td>
<td></td>
<td></td>
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<tr>
<td>Demolition</td>
<td>$1,100,512</td>
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<tr>
<td>Addition: non-code required</td>
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<td></td>
<td>$0</td>
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<tr>
<td>Addition: code required</td>
<td></td>
<td></td>
<td>$0</td>
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<tr>
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<td>Masonry</td>
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<td>Metals</td>
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<td></td>
<td>$698,081</td>
</tr>
<tr>
<td>Wood</td>
<td>$567,310</td>
<td></td>
<td>$567,310</td>
</tr>
<tr>
<td>Thermal and moisture protection</td>
<td>$545,828</td>
<td></td>
<td>$545,828</td>
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<tr>
<td>Doors and windows</td>
<td>$574,743</td>
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<td>$574,743</td>
</tr>
<tr>
<td>Finishes (wall, ceiling, floor, etc)</td>
<td>$1,927,604</td>
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<td>$1,927,604</td>
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<tr>
<td>Equipment</td>
<td>$600,363</td>
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<td>$600,363</td>
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<tr>
<td>Furnishings</td>
<td>$186,235</td>
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<td>$186,235</td>
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<tr>
<td>Conveying system (elevators)</td>
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<td>Mechanical (plumbing, HVAC)</td>
<td>$2,423,781</td>
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<tr>
<td>Electrical</td>
<td>$2,983,546</td>
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<tr>
<td>Other special construction (specify on detail page)</td>
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<td></td>
<td>next page</td>
</tr>
<tr>
<td>Fees, Permits, and Soft Costs</td>
<td></td>
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<tr>
<td>Architect/Engineer/Design</td>
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<td>$1,020</td>
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<tr>
<td>Attorney/Accountant</td>
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<td>$9,240</td>
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<td>Other Consultants (specify on detail page)</td>
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<tr>
<td>Historic Tax Credit Fees</td>
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<td>Permits</td>
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<td>$514</td>
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<td>Other soft costs (specify on detail page)</td>
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<td>$0</td>
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<td><strong>Total Project Costs</strong></td>
<td>$13,922,702</td>
<td>$172,762</td>
<td>$14,095,464</td>
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Table 3-continue. Predicted project costs details, data from SHPO

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<tr>
<th>Other Work on Eligible Property</th>
<th>Qualified Cost</th>
<th>Ineligible Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean-up</td>
<td>$16,893</td>
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<td>$16,893</td>
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<tr>
<td>Temporary Heat</td>
<td>$2,151</td>
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<tr>
<td>Reproduction</td>
<td>$63</td>
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<td>$63</td>
</tr>
<tr>
<td>Mobilization</td>
<td>$25,562</td>
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<td>$25,562</td>
</tr>
<tr>
<td>Site Layout</td>
<td></td>
<td>$7,119</td>
<td>$7,119</td>
</tr>
<tr>
<td>Remove and Dispost of Chemicals</td>
<td>$3,058</td>
<td></td>
<td>$3,058</td>
</tr>
<tr>
<td>Fences and Barricades</td>
<td>$544</td>
<td></td>
<td>$544</td>
</tr>
<tr>
<td>Label and Store Material</td>
<td>$700</td>
<td></td>
<td>$700</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>$0</td>
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<tr>
<td></td>
<td></td>
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<td>$0</td>
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<tr>
<td><strong>Total Costs for Other Work on Eligible Property</strong></td>
<td><strong>$48,971</strong></td>
<td><strong>$7,119</strong></td>
<td><strong>$56,090</strong></td>
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<table>
<thead>
<tr>
<th>Other Consultants</th>
<th>Qualified Cost</th>
<th>Ineligible Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waldinger Mechanical</td>
<td>$7,228</td>
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<tr>
<td>Waldinger Electrical</td>
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<tr>
<td>HR Green Civil Engineering</td>
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<td>RDG Planning &amp; Design</td>
<td>$1,751,508</td>
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<td>Gensler Architectural</td>
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<tr>
<td>System Works</td>
<td>$34,368</td>
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<td>$34,368</td>
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<tr>
<td>Terracon</td>
<td>$28,966</td>
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<tr>
<td>Proenvironmental</td>
<td>$23,212</td>
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<td>$23,212</td>
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<tr>
<td><strong>Total Costs for Other Consultants</strong></td>
<td><strong>$2,972,125</strong></td>
<td><strong>$0</strong></td>
<td><strong>$2,972,125</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Fees</th>
<th>Qualified Cost</th>
<th>Ineligible Cost</th>
<th>Total Cost</th>
</tr>
</thead>
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<td>Payroll Tax</td>
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<tr>
<td>Small Tools</td>
<td>$28,506</td>
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<td>$28,506</td>
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<tr>
<td>Supervision</td>
<td>$58,351</td>
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<td>Project Manager</td>
<td>$13,733</td>
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<td>Project Engineer</td>
<td>$3,504</td>
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<td>$3,504</td>
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<td>GC Self Work Fee</td>
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<tr>
<td>GC Overhead</td>
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<tr>
<td>Bond</td>
<td>$94,770</td>
<td></td>
<td>$94,770</td>
</tr>
<tr>
<td><strong>Total Costs for Other Fee</strong></td>
<td><strong>$624,718</strong></td>
<td><strong>$0</strong></td>
<td><strong>$624,718</strong></td>
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</tbody>
</table>
The World Food Prize adopted the many kinds of financial incentives. According to the Historic Preservation Tax Credits Survey, the names and the amount of each financial incentive are shown in the following table (Table 4) and the pie chart (Figure 11), which reveals that financial incentives covered 41% of the total rehabilitation cost.

**Table 4. Financial Incentives adopted in the World Food Prize, from Historic Preservation Tax Credits Survey, Iowa Department of Revenue, 2013**

<table>
<thead>
<tr>
<th>Financial Incentive</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Qualified Rehabilitation Cost</td>
<td>$21,336,665</td>
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<tr>
<td>Other Non-Qualified Project Costs</td>
<td>$10,549,838</td>
</tr>
<tr>
<td>Internal Financing</td>
<td>$18,714,337</td>
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<tr>
<td>State Historic reservation Tax Credit</td>
<td>$5,334,166</td>
</tr>
<tr>
<td>Vision Iowa Grant</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>State Energy Grant</td>
<td>$500,000</td>
</tr>
<tr>
<td>Save America’s Treasures Grant</td>
<td>$238,000</td>
</tr>
<tr>
<td>Department of Cultural Affairs Grant</td>
<td>$100,000</td>
</tr>
<tr>
<td>Polk County Grant</td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>

**Figure 10. Pie chart of Qualified and Non-Qualified Costs of World Food Prize, by author, 2016**
Interior Treatment

Through March 1, 2013, the rehabilitation and preservation work of the library included forty-four architectural and interior features; nine new items are placed. (Appendix C) Generally speaking, the interior treatments were done in high-quality using latest techniques and with particular attention paid to the building’s rich details as well as the exteriors (Figure 12). Professional architects and artists were hired and the process of restoration significant for the interior treatments. The restored interior elements included the existing skylights, the layout of office and the gallery, conservation of murals, wood trim, marble wainscot, mosaic tile floor, plaster details and the columns. One significant restoration was the skylights in Rotunda, where all 10,000 panes of glass in the historic stained glass skylight were removed, cleaned, and repaired by local stained
glass artisans (Figure 13). Another significant restoration involved the New Deal-era murals in the lower level. Though worn and warped over time, they were conserved and repainted to authentically reproduce the original murals of the 1930s.

Figure 13. Rotunda after rehabilitation, photo taken by author, 05/17/2016

Other than restoring and preserving the original elements, the World Food Prize Foundation also implanted their new image inside the old library building by placing new items, which are harmonious with the original building style. One example is that they installed the new stained glass and framing system in front of the existing stained glass window at west wall of the second floor Rotunda space. A new image in honor of Dr. Norman E. Borlaug (a founder of the World Food Prize) is placed on the new stained glass (Figure 14, Figure 15) while the whole rotunda still remains the same style as it was.
Another example is that four new grain sculptures, which separately represent wheat, corn, rice, and beans, were mounted onto the columns at the four corners of Rotunda space. Above them are the four new lunette murals elements depicting Borlaug’s achievement glued on the existing plaster vault areas (Figure 16, 17). The new elements (Figure 18) are releasable.
adhesive so that these can be removed in the future if need be (continuation/amendment sheet from SHPO).

One room worth mentioning is the original library stacks room (Figure 19), which was transformed into the Borlaug Ballroom (Figure 20). It is said to be the most altered room in the whole project. Located on the south side of the Rotunda, this area served as the stacks room of the library and was a crowded space filled with bookcases. The original glass floor is partly preserved and now serves as a balcony. One thing about this room is that the proposal of the new stacks room ceiling was denied at least twice by the SHPO, regardless of the revisions. As the stacks room was a plain and functional space, the existing ceiling was made of flat plaster, painted solid white. On October 19, 2010, the request of decorating the new ceilings with large plaster medallions (Figure 21) and plaster details was denied. The architects were asked to remove the large plaster medallions and plaster details on December 20, 2010. Later, on February 3, 2011, the request of painting faux “plaster” elements onto the flat portions.
of the ceiling was withdrawn. In the end, the ceiling remains flat surface and white color, with the only allowed decorations to be the gold linear trim (Figure 22). Another special thing about this ballroom is the new wood floor. As the original placement of the bookshelves was considered a significant historic feature in this room, the wood floor is marked with a diagonal wood pattern (Figure 23), suggesting the original location of the bookshelves. This is a common solution in historic rehabilitation projects, wherein a reference to a removed design feature or architectural element is intentionally left as a memento of sorts.

The new HVAC (heating, ventilating and air conditioning) system is of high quality. It is worth mentioning that this building achieved a high level of energy efficiency. As mentioned on the World Food Prize website, “The Hall of Laureates has been awarded LEED Platinum certification by the U.S. Green Building Council, the highest possible rating for leadership in energy efficiency and environmental design” (the World Food Prize). As for the interior of the building, the related equipment such as pipes and vents are delicately designed and tactfully
placed inside walls and under windowsills. Special furniture like side tables is specifically designed to contain the equipment as well.

Case Study 2—from the Des Moines Fire Department Headquarters complex to the Des Moines Social Club

As a medium-level of adaptive reuse case, the Des Moines Fire Department Headquarters Fire Station and Shop Buildings were transformed into the Des Moines Social Club (hereafter Social Club) (Figure 24). The widely accepted success of the Social Club is based on how it was able to bring vitality back to the community, and how it was adaptively reused with the support of financial incentives and followed the Secretary of the Interior's Standards and Guidelines for Rehabilitating Historic Buildings. But unlike the previous case, the Social Club presents a more functional solution that reflects the building’s original function as a fire station and headquarters. Its adaptive reuse solution highlights its industrial forms and stripped Art Deco style.

Figure 24. Exterior of current Social Club, photo taken by author, 04/01/2016
Historic and Architectural Significance

History and significance

The Social Club is actually not one, but two, two historic buildings: the original Des Moines Fire Department Headquarters Fire Station No.1 (Figure 25) located in 900 Mulberry Street and the original Shop Building on 100 Ninth Street (Figure 26). According to the National Register nomination for this pair of buildings, “The building and headquarters complex were designed in a Streamline Moderne style with Art Deco motifs by the noted Des Moines architectural firm Proudford, Rawson, Brooks and Borg” (NRHP, 2014, p.13). Originally constructed from 1937 to 1941, these two buildings “have changed incrementally since the midcentury to meet the changing needs of administration and fire fighting techniques and technologies (NRHP, 2014, p.23).” They served in their original capacity as governmental buildings continuously until vacated in 2013.

![Image](http://example.com/image.png)

**Figure 25. Original exteriors of the fire station, from Public Buildings: A Survey of Architecture of Projects Constructed by Federal and Other Governmental Bodies Between the Years 1933 and 1939 with the Assistance of the Public Works Administration, Page 83, 1939.**

The construction of the Des Moines Fire Department Headquarters complex in 1937 was based on the changing needs in fire prevention at that time. The old Fire Headquarters’ facilities were obsolete and could no longer accommodate new technologies that were developing rapidly.
According to the National Register nomination, the 1930s found “the Des Moines Fire Department facing twentieth-century firefighting challenges while headquartered in a dark and dusty late-nineteenth-century building constructed to house horses and horse-drawn apparatus” (NRHP, 2014, p.26).

The construction of the Fire Department Headquarters between 1937 and 1941 occurred during a significant era in the history of American architecture. The era saw a boom in the construction of public works projects that was part of a nationwide plan to put Americans back to work during and after the Great Depression of the 1930s. Under the New Deal Public Works Administration (PWA) program, which attempted to stimulate economic recovery, public projects like buildings and infrastructure development were required to be completed in a short timeframe. The Fire Department Headquarters complex was “completed in January 1938 at a construction cost of $260,778 and a project cost of $281,700” (Short & Stanley-Brown, 1986, p.83). The Fire Department Headquarters complex is the one of the few buildings that successfully applied for the PWA Grants in Des Moines, thus making this building a significant witness of that special time period. The National Register nomination calls out this significance,

**Figure 26.** Site map that shows the location of two buildings, courtyard and radio tower, by author, 2016
“The Des Moines Fire Department Headquarters complex derives local significance for its association with Politics/Government due to its construction in 1937 using a grant from the federal Public Works Administration (PWA) program, the first nationwide federally funded public works undertaking that included local government buildings” (NRHP, 2014, p.23).

Architectural and Interior Features

This complex is locally significant because of its distinctive architectural style and form. Influenced by the trend of fire stations all around the United States in 1930s, the Des Moines Fire Department Headquarters complex adopted the prevailed elements of the Streamline Moderne style with Art Deco details (Figure 27) on the exterior of the buildings, while the interiors featured simple and functional elements in what might be described as a stripped modern style. The complex contains the Fire Station Shop Building, a brick courtyard, and a radio tower. The exterior walls of the Fire Department Headquarters Fire Station are of red brick and trimmed with stone as well as terra cotta. Similar materials and details are applied in the Shop Building as well, which together created a cohesive aesthetic feeling.

The two buildings were considered successful works and provided a model for buildings of similar scale and function. According to National Register nomination, “in 1939, the headquarters complex was highlighted in two PWA publications as a model project and an excellent example of modern fire station design” (NRHP, 2014, p.23). Also, the headquarters complex is

![Figure 27. Current Social Club exterior details, taken by the author, 04/01/2016](image)
considered significant because it was one of the featured works by the Des Moines architectural firm Proudfood, Rawson, Brooks and Borg, who took a big part of public buildings’ market domination in downtown Des Moines at that time.

The Fire Station was designed in an L-shape plan, with four levels: the basement, the first floor, the second floor and the upper storage room. The basement was mainly used for equipment and it was consisted of the Equipment Room, Signal Room, Boiler Room, Coal Room and Ash Room. On the first floor, the Apparatus Room remained largely original and occupied the largest area of the main building. The features here included the openings on the ceilings, steel fire poles, and four large garage doors. Rooms next to the garage doors included the original hose tower, chemical storage room and oil room. Other rooms in the first floor included the firemen’s’ boot and coat room, storage room and signal room. The second floor was designed as living quarters for the firefighters and included a kitchen, bedrooms, locker room, offices, and a hand ball court. The upper level was used as small storage area.

The one-story Shop Building to the rear of the main building was rectangular in plan. Its basement was used as a storeroom. The main floor was largely occupied by a repairing and operating workspace with a tool room, office space, and an upper-level store room.

Before the recent rehabilitation, during the period of long-term use between the 1950s and the 1990s, changes were continually made to the buildings due to the changing requirements of fire prevention (Appendix D). Nevertheless, the complex retained enough its integrity to be considered for inclusion in the National Register.
Adaptive Reuse Process

Background

After serving as the Fire Department’s Headquarter and Shop for more than seventy years, this complex finally became obsolete and was no longer capable of accommodating advanced firefighting technologies. After a new headquarters complex’s construction was completed, the 1930s complex was vacated in March of 2013.

After the National Register application process started in early 2012, the City Council selected the Des Moines Social Club (DMSC) selected as a preferred redeveloper of this property in June 25, 2012. The fire station was the third location that the Social Club chose to locate at after it first opened at 1408 Locust St. on March 9, 2009, and its second location on the corner of 4th and Walnut Street. The Social Club purchased the Fire Station in February 2013: “On October 22, 2012, the City approved the sale of the property at 900 Mulberry Street to the Des Moines Social Club for $600,000 plus interest” (City of Des Moines, 2013, p.56). The complex was listed in National Register of Historic Places on February 21, 2014. According to the National Register nomination,

“Recognizing the historic value of the fire department headquarters complex, the Des Moines City Council included contract conditions binding DMSC to nominate the property to the National Register of Historic Places, maintain the 1937 exteriors of the fire headquarters buildings in the ensuing rehabilitation, and consult with the City if the DMSC were to decide to sell the property within the next 10 years” (NRHP, 2014, p.41).

The Proposed Adaptive Reuse

With a goal of building a community cultural center through the intersection of theater, art, music, food, and other social gatherings, the rehabilitation of these two buildings, which was
undertaken by Slingshot Architecture of Des Moines, includes a variety of functions and spaces planned for different events.

The original proposed reuse of Fire Station No.1 involved mix-used retail and office space. The first floor includes gallery space, a firefighter memorial, and two for-profit tenants: a restaurant and a joint coffee house/comic bookstore. On the second floor (Figure 28), the firehouse’s former dormitory was planned to transform into a dance and movement room. Rooms including the firehouse’s old locker room were turned into a culinary loft that houses cooking classes, the handball court was redesigned as an aerial acrobatics room, and several non-profit office spaces were planned as well. The original Shop Building was converted into a theater, below which was a bar and related spaces in the basement.

![Figure 28. Proposed second floor plan, Slingshot, 2012](image)

**Adaptive Reuse Process and Challenges**

In the proposal to purchase the fire station, the Social Club suggested that it would nominate the property to National Register and use state historic tax credits. Thus, rehabilitation
work would need State Historic Preservation Office’s approval and signoff. After selected as redeveloper on June 25, 2012, the Social Club submitted the tax credit application on July 6, 2012. By working with SHPO, the rehabilitation followed the Secretary of the Interior’s Standards. Before the rehabilitation completed in June 1, 2014, the Fire Station and Shop complex was nominated on February 21, 2014.

From the start date of the project on June 1, 2013 until its completion, many negotiations were made between the project architects and the SHPO. The proposed rehabilitation of the Fire Station involved twenty-nine architectural and interior features of this building was submitted to SHPO on July 31, 2013 and was approved with conditions on October 8 2013. SHPO’s general concerns included the treatment of mortar, historic windows, interior finishes such as plaster walls, ceilings, historic trim, doors, and HVAC system, which, it was determined, should not damage the historic building material or cause visual loss of historic character. Seven other specific changes were denied, including changes to the site plan and to the interior space’s organization, and were discussed again in the meeting on October 14, 2013. As the buildings were being researched by historic preservation consultant retained for the project, some features such as steel fire poles and bed partitions were found to be non-historic and actually installed in 1990s; therefore, several of these changes were then allowed.

Another negotiation between the project architects and SHPO involved the issue of whether to keep a 1967 staircase on the northeast corner of the ground floor, since the original handrail and guardrail did not comply with current building and safety codes. However, this was considered significant by the SHPO. Though the architects argued the historic significance lay in the staircase’s location and configuration, and not in design itself, the staircase was considered a character-defining feature and SHPO required that it be kept as it originally was.
After the nearly continuous discussions and negotiations, on February 3, 2014, amendments to eight features were submitted and approved (Appendix E).

Financial Issues

Cost

It was clear to city leaders that the Fire Department Headquarters should be preserved and rehabilitated, if not for historical or sentimental reasons, then for financial ones. During the decision-making process on selecting a developer of this building, the Council stated that

“$600,000 as revenue to the City if the Des Moines Social Club proposal is selected…it is anticipated that a portion of the building will be subject to property taxes estimated to be in the $30,000 range annually and DMSC proposes an annual PILOT (Payment in Lieu of Taxes) of $10,000 for its non-profit space” (City of Des Moines, 2012, p.1).

On October 22, 2012, the City finally approved the sale of the former fire station to the non-profit Des Moines Social Club for $600,000 plus interest (City of Des Moines, 2013); at the time the estimated cost for the project’s rehabilitation was approximately $6.5 million.

The financial information from SHPO is provided separately as Fire Station No.1 and the Shop Building. As for the Fire Station No.1, the rehabilitation costs provided by SHPO are as follows (Table 5). Qualified Rehabilitation Expenditures cover 98% of the total cost (Figure 29), which is much higher than the World Food Prize (which is shown in the earlier pie chart as 67%). The financial incentives cover 24.52% of the total cost (Figure 30), lower than that of the World Food Prize (which is shown in the earlier pie chart as 41%).
Table 5. Financing and Expenditures of the DMSC Fire Station No.1, data from SHPO, 2016

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Total Qualified Rehabilitation Expenditures</td>
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<tr>
<td>Other Non-Qualified Project Expenditures</td>
<td>$63,520</td>
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<tr>
<td>Total Project Expenditures</td>
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<td>Private External Financing: Debt</td>
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<td>Private External Financing: Equity</td>
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<td>Internal Financing</td>
<td>$0</td>
</tr>
<tr>
<td>Expected State Historic Preservation Tax Credit</td>
<td>$812,173</td>
</tr>
</tbody>
</table>

Figure 29. Pie chart of Qualified and Non-Qualified Costs of DMSC, by author, 2016

Figure 30. Pie chart of Financial Sourcing of DMSC, by author, 2016
As more detailed data from SHPO shows (Table 6), for the Shop Building alone, the project investment was $1,987,760 and the estimated Qualified Rehabilitation Expenditures (QRE) was $1,934,479 before completion. The National Park Service defines QRE, as “those costs that are directly related to the repair or improvement of structural and architectural features of the historic building will qualify” (National Park Service).

Table 6. Expenditures of the DMSC Shop Building, data from SHPO, 2013

<table>
<thead>
<tr>
<th>Item</th>
<th>Qualified $$$</th>
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</tr>
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<td>Site work</td>
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<td></td>
</tr>
<tr>
<td>Site grading &amp; excavation</td>
<td>$7,439</td>
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<td>$7,439</td>
</tr>
<tr>
<td>Landscaping, surface parking, roads and walks</td>
<td>n/a</td>
<td>$32,722</td>
<td>$32,722</td>
</tr>
<tr>
<td>Site utilities</td>
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<td>$0</td>
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<tr>
<td>Non-eligible buildings</td>
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</tr>
<tr>
<td>Demolition</td>
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</tr>
<tr>
<td>New construction</td>
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<td>$0</td>
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<tr>
<td>Work on or in eligible property</td>
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</tr>
<tr>
<td>Demolition</td>
<td>$79,122</td>
<td></td>
<td>$79,122</td>
</tr>
<tr>
<td>Addition: non-code required</td>
<td>n/a</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Addition: code required</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete (footings, push piers)</td>
<td>$72,403</td>
<td>$26,622</td>
<td>$99,025</td>
</tr>
<tr>
<td>Masonry</td>
<td>$3,500</td>
<td>$41,400</td>
<td>$44,900</td>
</tr>
<tr>
<td>Metals</td>
<td>$235,163</td>
<td></td>
<td>$235,163</td>
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<tr>
<td>Wood</td>
<td>$14,648</td>
<td>$41,000</td>
<td>$55,648</td>
</tr>
<tr>
<td>Thermal and moisture protection (roofing, siding)</td>
<td>$62,334</td>
<td>$3,500</td>
<td>$65,834</td>
</tr>
<tr>
<td>Doors and windows</td>
<td>$95,931</td>
<td>$8,820</td>
<td>$104,551</td>
</tr>
<tr>
<td>Finishes (wall, ceiling, floor, etc)</td>
<td>$182,099</td>
<td>$3,000</td>
<td>$185,099</td>
</tr>
<tr>
<td>Equipment</td>
<td>$0</td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>Furnishings</td>
<td>$0</td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>Conveying system (elevators)</td>
<td>$42,667</td>
<td>$21,333</td>
<td>$64,000</td>
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<tr>
<td>Mechanical (plumbing, HVAC)</td>
<td>$290,070</td>
<td></td>
<td>$290,070</td>
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<tr>
<td>Electrical</td>
<td>$253,087</td>
<td></td>
<td>$253,087</td>
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<tr>
<td>Other &amp; special construction (specify on detail page)</td>
<td>$28,627</td>
<td></td>
<td>$28,627</td>
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<tr>
<td>Fees, Permits, and Soft Expenditures</td>
<td></td>
<td></td>
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<tr>
<td>Professional Fees</td>
<td>$287,295</td>
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<tr>
<td>Hazardous Material Survey</td>
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<td></td>
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<tr>
<td>Insurance</td>
<td>$122,740</td>
<td></td>
<td>$122,740</td>
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<tr>
<td>Total Project Expenditures</td>
<td>$1,779,498</td>
<td>$178,197</td>
<td>$1,957,695</td>
</tr>
</tbody>
</table>

According to SHPO’s financial information of the Shop Building, funding in amount of $3,146,523.89 was from private donation or equity and $3,750,000 was from a bridge loan. After
the completion of the rehabilitation of the Shop Building, a $9,072 application fee was tendered as part of the SHPO’s final review, indicating the final QRE to be $1,814,400.

Grant and Tax Credit

Both the Fire Station and Shop Building of the Social Club have applied for the State Tax Credits, and in October 2012 the Shop Building was awarded credits from the Small Projects Fund, which reserved ten percent of the tax credits for projects with final rehabilitation costs totaling $500,000 or less. The Social Club reapplied the State Tax Credits for the Fire Station Building in 2013 and received reserved tax credits of $752,234 for Taxable Calendar Year 2014 and $247,766 for 2015.

On February 25, 2013, the City of Des Moines proposes to supplement the rehabilitation of the Fire Station by providing “an economic development grant in the amount of $10,000 to be used by Des Moines Social Club exclusively for the payment or reimbursement of restoration and renovation costs to the Property” (City of Des Moines, 2013, p.1).

In sum, the rehabilitation of the Fire Station by the Des Moines Social Club was made possible through a varied of funding sources. These were “stacked” in a way that brought together enough capital to make the product feasible. Although the rehabilitated building serves a significant local non-profit organization, the Des Moines Social Club’s funding for rehabilitation is considerably smaller than that of the World Food Prize and its rehabilitation of its own headquarters spaces. In both cases, historic rehabilitation tax credits helped reduce the burden of rehabilitation and formed a significant part of the total financing package.
**Interior Treatment**

*Interior Style and Space*

The utilitarian interior spaces designed specifically for the Fire Department provided challenges as well as opportunities for the architects working on this rehabilitation project. In general, unlike the exterior of the building and its Streamlined Moderne style, with Art Deco motifs on several of the facades, the interior is extremely functional, conveying an almost industrial sense with a contrast of bold-colored wallpapers and surface treatments set against cold, grey-toned unadorned materials.

As for the organization of interior spaces, new functions were tactfully inserted to best utilize the existing historic spaces and to serve the Des Moines Social Club’s needs for a variety of functional community spaces. A prime example of this is the former handball court for firemen, which is a small room with 18-foot high ceilings. This has been transformed into an aerial acrobatics room—a creative solution to a rigid, purpose-built interior space.

*Interior walls, floors and ceilings*

As for the interior materials, with respect to the original materials of concrete, new finish and decorations are mostly light weight and reversible and the original interior materials are exposed as much as possible. For example, on the second floor of the Fire Station, partition walls are partially deconstructed (Figure 31) in a deliberate attempt to expose the hollow bricks beneath. The material on the original walls were also kept original as much as possible. New partitions were built to be reversible using lighter materials; this can easily be discerned by knocking on the walls. In some parts of the building, original materials are deliberately exposed:
inner wall layers and hollow bricks, for example (Figure 31). Historic markings on the walls—in essence, graffiti—are also preserved for posterity (Figure 31).

Another example is the lobby floor (Figure 32) on the first level, where the original materials were left with no new surface treatments; the division of the original rooms can be seen. Above on the second floor, tiles were left exposed and visible (Figure 32) and the fire poles that pierce the floors are all left revealed (Figure 32) and offer a playful remainder of the building’s original use. Moreover, the building’s innards—its pipes and wires and such—are exposed under the ceilings.

**Figure 31.** Current walls at DMSC, from left to the right is at lobby, the 2nd floor, and firemen memorial corner on the 1st floor, photos taken by author, 04/01/2016

**Figure 32.** Current floor at DMSC, from left to the right is lobby floor, floor materials on 2nd floor, tiles on 2nd floor and fire poles on 2nd floor, photos taken by author, 04/01/2016
Other Items and Fixtures

Most of the items that belong to the previous fire station have been preserved, such as original doors with new locks on, steel stairs, and a steel fire pole that was moved into the lobby. Fixtures were reused as much as possible. The lockers (Figure 33), which were used by fireman to store personal items for daily use, are now used in the offices on second floor. Some of the lockers have been repainted; others still retain their original patina. Also, lamps found in warehouse were reused though their placement has been changed.

**Figure 33. Original locker was reused in office, photo taken by author, 04/01/2016**

HVAC

The building's original fenestration was retained wherever possible, as required in the Standards. However, the rehabilitation architects working on this project faced energy efficiency issues with the original windows. As a solution to these energy issues, on the second floor, another layer of windows was built inside the façade of the current dining room. Nevertheless, the occupants of the building have indicated that this room still has issues with heating during the winter.

Such considerations are indicative of the attempts made by the architects and the Social Club to undertake a green rehabilitation project. During the rehabilitation process, Social Club officials mentioned that the building would “work for LEED certification so building is energy
efficient and its physical operations are sustainable on an environmental minimum impact basis.” (City of Des Moines, 2012, p.7) Architects from Slingshot Architecture commented that,

“Sustainability, historic preservation, economic practicality and flexible spaces were the drivers behind the design of the existing buildings. The plan needed to be divided into areas for classes, office space, theater, gallery, plus restaurant and cafe tenants. However, budget and structural constraints forced us to utilize the existing fabric as possible to achieve the desired outcome. The decision was to use a VRF mechanical system which operates efficiently, utilizes heat recovery, and requires little ductwork to accomplish energy efficiency, conservation, and historical guidelines” (Slingshot Architecture).

Case Study 3—Roosevelt School: From Classrooms Re-Imagined Condominiums

The third case study, Roosevelt School in Ames, adopted a different approach of adaptive reuse compared to the previous two cases. Without applying for State or Federal Tax Credits, or strictly following the Secretary of the Interior's *Standards and Guidelines for Rehabilitating Historic Buildings*, this case suggests an alternative solution to saving a historic building from demolition while still executing an economically sound project. This case also provides a different perspective from which we can learn how historic rehabilitation is accomplished spontaneously without top-down supervision from a government organization like the SHPO or National Park Service. Nevertheless, this project also reveals how the Secretary of the Interior’s *Standards* influences even those projects that are outside its purview.

**Historic and Architectural Significance**

**History and significance**

Roosevelt School is a former public elementary school located at 921 9th Street in Ames. The building (Figure 34) was constructed in 1923 and served as a Kindergarten through 6th grade school from 1924 until 2005. The building was significantly enlarged in 1968 through the
addition of a gymnasium on the building’s north side. During its long use as a neighborhood school, changes were continually made to address the evolving requirements of education, as well as changes in the surrounding neighborhood. In 2005, Roosevelt School was closed by the Ames Board of Education and left vacant, its future uncertain. It was nominated to the National Register of Historic Places on December 29, 2009. It was determined eligible for both its history (Criterion A) and its design (Criterion C).

Roosevelt School played a significant role in the educational and cultural life of the citizens in Ames and the immediate Old Town neighborhood. It had significant influence on the emergence of the surrounding neighborhood before its closure in 2005. When first built, this school was on the outskirts of Ames and the neighborhood effectively helped coalesce the neighborhood around it. As reported in the National Register nomination, the school “was the anchor for the development of the surrounding 1920s-1950s residential neighborhood, serving as an elementary school, community center, park, and playground… Roosevelt School acted as a beacon, attracting new residents, whose houses quickly filled the empty lots” (NRHP, 2010, p.8).
Roosevelt School is also a witness to the Progressive Era, when the educational reformers worked to modernize educational facilities at the local level. During this era, Ames was propelled “into state prominence as a center of higher education” (NRHP, 2010, p.6). In addition, the school was considered an important social tie between Iowa State College (now Iowa State University) and the community of Ames, since many faculties, staff, and administrators oversaw its construction and sent their children to the school. Some graduates of Roosevelt School still live in this area and recall it fondly. Its iconic status and meaning to residents of Old Town neighborhood should not be understated.

Architectural and Interior Features

Designed by the local architectural firm of Kimball, Bailie and Cowgill, Roosevelt School’s architectural style could be described as Beaux-Arts style due its massing, architectural details, and symmetrical layout along a central axis (Figure 35). It is considered a representative example of period school architecture in Iowa. The red brick exterior walls with stone ornamented along the pediment are still well preserved now. The building has three floors: a basement level, which is partially below grade, and two levels above. The T-shaped plan of these three levels showed a continuity of the function from 1923 through its last use in 2005, with the classrooms largely unaltered. The auditorium addition to the north was constructed in 1968; it was designed by local Architects Rudi and DeKovic of Ames.

According to the National Register nomination, Roosevelt School “embodies the distinctive features of influential Progressive-era schoolhouse architects” which “permitted ample sunlight, fresh air, and open space for the innovative subjects and learning conditions advocated by Progressive educators” (NRHP, 2010, p.5). This lead to the design of large-sized
windows on the east and west walls so that they could provide abundant natural light and, in an era before air-conditioning, fresh air. Other interior features that survived through to the present include the original varnished woodwork, large sash windows, and wood-paneled doors with brass hardware.

![Image of floor plan]

*Figure 35. Original plan of first floor, source: A Proposal to Designate Roosevelt School 1000 W. 9th Street, Ames, IA as a Local Historic Landmark, 2005, Page 18.*

**Adaptive Reuse Process**

**Background**

After serving as an elementary school for eighty years, population changes in the greater neighborhood forced the shutdown of Roosevelt School in 2005. Like many schools across the United States, changes in age structure in older neighborhoods created a shortage of enrolled students and a depleted budget for fixing and maintaining the old building and grounds. In addition, enrollment reconfigurations in Ames moved 6th grade children to the middle school, thereby creating an excess of space in Roosevelt and other local elementary schools.

As a part of efforts to save Roosevelt School, preservationists who were against demolishing this building made attempts to draw attention to its plight by proposing to designate
it as a local landmark in 2005 and applying for nomination to the National Register in 2009. The former effort was unsuccessful, but as for the latter, the Roosevelt School was successfully listed in March 2010. Nevertheless, though supporters who wanted to reopen the school made great efforts, the school was never reopened as a school and a bond referendum in 2011 to have it reopened also failed. In April 2012, the Ames School Board decided to put the school on a list of properties for sale to the highest bidder. The building’s fate was sealed. It would be either be demolished or adaptively reused: it would not continue to function as a school.

The Proposed Adaptive Reuse

In May 2013 the Ames School Board approved the proposed reuse plan to sell the Roosevelt School building for $25,000 to the Ames-based firm, RES Development Inc., and to sell the green space to the east of the school—the playgrounds—to the City of Ames. The developer proposed to reuse this school as condominiums, which would utilize the interior spaces while keeping the external appearance and the sense of history as well. The motivation for adaptive reuse of the school as a residential complex was supported by the school district, neighborhood associations, City of Ames, and private investors. According to developer Dean Jensen,

“The central theme that united the group was a desire to create a win-win solution. Obviously, there were pressures to demolish the structure and rebuild with a new use… the final solution of converting the school to private living emerged as a strong win-win for all. As an investor I was motivated because this type of housing is very rare and this opportunity represented a new product in the real estate market” (Questionnaire conducted by author, 2016, Appendix F).
The proposed adaptive reuse included twenty-three condominiums (later reduced to twenty condominiums) of varying size and layout, an additional garage and atrium at the rear of the building, storage units, and other common facilities that could be shared by the residents.

**Adaptive Reuse Process and Challenges**

As with many adaptive reuse projects involving historic buildings, there were negotiations between the developer, community, and prospective owners over the preservation of the historic features, removal and replacement of outdated facilities, and the sensitive introduction of new interior features and functions. Unlike the other two cases discussed above, this case did not involve collaboration with SHPO. Negotiations were less between the architects and the governmental staff in SHPO, but more between the developer and the neighborhood associations and individual residents involved, and to a lesser extent the city. For example, the Roosevelt supporters objected to the balconies proposed for the front façade of the school, to which the developer eventually acquiesced and removed them from the plans. Similarly, since residents who purchased units prior to the completion of the project preferred two and three bedrooms per unit instead of one, the number of condominiums was reduced changed from twenty-three to twenty. By most accounts, the developer of the Roosevelt School project was willing to hear the suggestions of community members and potential residents and shift his plans to meet their expectations.

Another negotiation involved the zoning of the school parcel and changes that would be required to allow its adaptive reuse as a residential complex. Before the rehabilitation, the school site was zoned as “government special” and surrounded by “urban core residential medium density” (Miller, 2013). As the developers needed the zoning designation to allow the
construction of new multi-unit housing, the city amended the text of the zoning ordinance to allow the redevelopment and then rezone the land. “A change in the text of the ordinance could change the what's allowed in all city land designated as urban core residential medium density” (Miller, 2013). Many opportunities are provided for public input, includes residents who were interested.

**Financial Issues**

**Cost**

In September 2011, residents within the Ames School District rejected a proposed rehabilitation plan that was expected to cost about $10 million. As mentioned above, this building was finally purchased at the price of $25,000 in February 2013. Before the final purchase, the developer offered a $50,000 to buy this building in early 2013 but was rejected at that time. Later in the auction, “two bids came in, one from Golden Nugget properties from Missouri for $15,100; the other, from Jensen, who this time bid $25,000” (Haws, 2015). During the rehabilitation, $1,000 was required for residents to hold a spot in the new Roosevelt condominiums and after several months another $9,000 was needed. After the construction was fully completed, due to the different sizes of the units, the prices of the condominiums ranged from $169,999 to $333,000. The final cost was approximately $5 million: “[P]roject developer Luke Jensen, who, like his father, works for Friedrich Iowa Realty, said the project represented an investment of about $5.5 million (Aronsen, 2015).” Furthermore, the project generated secondary economic benefits for the community, as more than “220 subcontractors and vendors were used during construction (Aronsen, 2015).” Some of benefits were passed along to the property owners. The developers noted that they “were able to pass on to the new owners an
energy tax rebate due to the geothermal heating and cooling system that was installed” (Aronsen, 2015).

**Grant and Tax Credit**

As for grants, the Roosevelt School rehabilitation did not apply for the State Tax Credit, though the building was already nominated on the National Register and would, therefore, likely eligible. As the proposed reuse of the school was as owner-occupied condominiums, the developer was precluded from using the Federal Rehabilitation Tax Credit, which is limited to income-producing properties. The developers of the Roosevelt School considered all kinds of popular incentives but ultimately decided to give them up. According to the questionnaire answered by the developer, the demand for homeowner-occupied units dictated the rehabilitation program:

“in the case of The Roosevelt, our intent from the beginning was to create private, owner occupied condominiums. Many of the resources only qualify if the owner keeps the property for a length of time and offers it for his or her own occupancy or as a property for lease to a third party. Therefore, we did not pursue alternate resources” (Appendix F).

Furthermore, without applying for State Tax Credits, the developers of the Roosevelt School were provided with more freedom and latitude in terms of the rehabilitation.

What’s more, the City of Ames granted an Urban Revitalization Tax Abatement that provided a three-year benefit to the new buyers of the condominiums, but not the developer. Still, the developer could indirectly benefit from this grant, as the developer noted, “the financial benefits for the new owners affected the rate of sale for the unit’s. This helped to reduce the holding time, which saved interest expense” (Appendix F). According to the Roosevelt School Area Urban Revitalization Program Tax Exemption Schedule (Table 7), “[a]ll qualified real
estate located in the designated Urban Revitalization Area is eligible to receive a partial exemption from taxation on the actual value added by the improvements” (City of Ames, 2014, p.4) and three options were provided. The Roosevelt residents selected the three-year-option, which provided them 100% exemption for each of the three years.

**Table 7. Urban Revitalization Program Tax Exemption Schedules in Ames, Roosevelt School adopted the 3-year-exemption, by author, 2016**

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<tr>
<th>Exemption Period (year)</th>
<th>Amount of 10 year exemption</th>
<th>Amount of 5 year exemption</th>
<th>Amount of 3 year exemption</th>
</tr>
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<tr>
<td>First</td>
<td>80%</td>
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<td>70%</td>
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<td>100%</td>
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<tr>
<td>Third</td>
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<td>60%</td>
<td>100%</td>
</tr>
<tr>
<td>Fourth</td>
<td>50%</td>
<td>40%</td>
<td>--</td>
</tr>
<tr>
<td>Fifth</td>
<td>40%</td>
<td>20%</td>
<td>--</td>
</tr>
<tr>
<td>Sixth</td>
<td>40%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Seventh</td>
<td>30%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Eighth</td>
<td>30%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Ninety</td>
<td>20%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Tenth</td>
<td>20%</td>
<td>--</td>
<td>--</td>
</tr>
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</table>

**Interior Treatment**

After the rehabilitation, the façades of the Roosevelt School (Figure 36) were largely preserved except for the addition of a large garage on the backside, the less public face of the building. However, the interiors went through substantial changes compared to the previous two cases. The

*Figure 36. Exteriors after rehabilitation, photos taken by author, 10/06/2015*
additions to the building and the original sections are clearly and intentionally distinguishable. Without the SHPO’s detailed requirements on the interior rehabilitation, lots of interior partitions were demolished, and the order and organization of the interior spaces are largely modified.

**Approaches to Keeping History**

Though the developers were not obliged to follow the Secretary of the Interior’s *Standards*, they still made efforts to keep as many of the historic features as possible or allude to their one-time presence in less formal ways.

Firstly, in order to successfully convert the old classrooms into dwelling spaces, many interior components were removed, but major parts of the building were kept original, including the exterior walls, the roof, the floors, the columns, and the stairways. The structural columns were left exposed (Figure 37), which make the raw material visible even inside the living spaces.

![Exposed structural columns](image)

*Figure 37. Exposed structural columns, photos taken by author, 10/06/2015*

Secondly, many of the building’s materials from the demolished parts were considered as architecturally significant features and were reused. For example, salvageable bricks were reused after they were removed from the original walls. As the developer noted, “Original bricks were
used as accent walls in the condo units as well as the common area space (Figure 38). This process takes a lot of time, but it is an environmentally conscious decision that will result in less waste and enhance the character of the building” (Roosevelt Re-Imagined). Another example is the original chalkboards, which were repurposed as a part of fireplace backings (Figure 39) and the original wood was used to match the trim on the new doors so that it could provide a sense of classroom doors (Figure 40). In addition, as the developer stated in questionnaire, “We also had the privilege of having some student made clay inserts that were embedded into the walls that we

**Figure 38.** Interior walls adopted original bricks, photos taken by author, 10/06/2015

**Figure 39.** (Left) Original chalkboards reused as a part of fireplace backings; **Figure 40.** (Right) Original wood trims reused for new doors. Both from Gallery Roosevelt Re-Imagined, http://rooseveltreimagined.weebly.com
were able to retain and incorporate into the new interiors” (Appendix F). These playful reminders of the buildings long-term occupants are found in several private and common spaces throughout the school. Thirdly, though new windows were added, each of them was opened to the size of four feet by eight feet, the same dimensions as the original ones. Before the rehabilitation, the windows were largely filled with styrofoam, which did harm to the historic sense of the original Roosevelt. A Roosevelt homeowner noted that “[t]he new windows brought the Roosevelt back to looking like it did when it opened almost 100 years ago” (Haws, 2015).

Finally, the new materials the architects chose to use tried to blend unobtrusively with the historic features. The developers noted that “[c]onstruction, carefully tailored to match new bricks and limestone to the old materials that remained, lasted through most of 2014” (Aronsen, 2015).

Adherence to Modern Codes

On the other hand, more freedom was provided since the rehabilitation didn’t need to follow the Secretary of the Interior’s Standards. This made it easier for the building to achieve modern goals of safety, accessibility, energy saving, and the introduction of modern mechanical equipment.

As for the safety codes and accessibility, though in the common space of the building, where changes were always not allowed in modifying the original staircases, the staircases in the Roosevelt School were able to have additional modern railings that could meet the safety codes. LED lights were installed inside the hallway as well as the elevator. In addition, as the interior floors were of inconsistent height and depth on the floor surface; during construction the architects poured new concrete and flattened the floor.
As for the energy saving and equipment, the geothermal system was built during the rehabilitation with “55 holes, each 225 feet deep, and 15 feet apart, drilled on the east side of the Roosevelt” (Haws, 2015). In addition, “walls were laced with plumbing pipes and drains, electrical wire, sprinkler lines and duct. Geothermal wells, plumbing, HVAC, electrical, fire sprinkler are all installed” as well as “extensive trenching of new storm, water, and sanitary lines” (Roosevelt Re-Imagined). This adherence to modern codes were made possible by the freedom that this rehabilitation project enjoyed in not adhering the Secretary of the Interior’s Standards.

**Synthesis**

This thesis has explored historic preservation and the process of rehabilitation using three different case studies, and focused on issues likes historic significance, the differences between the architectural fabric as constructed and altered through rehabilitation, financial incentives, and interior treatments. This section will summarize these three cases by comparing the basic information, financial incentives, and interior treatments.

**General Comparisons**

The following table (Table 8) summarizes the three case studies used in this thesis to explore the related issues of the preservation of historic interiors. This table reveals how the three cases were all originally public buildings that were converted into different uses during approximately the same time period. All were built with a thirty-year period at the beginning of the 20th Century and all rehabilitation work was undertaken within a span of approximately five years. The three cases are all listed in National Register and are all are located in Iowa. Thus, the
owners of these properties all have subject to the same rules and regulations governing preservation and have roughly the same financial tools at their disposal. However, as the case studies make clear, the rehabilitation trajectory of each project differs in certain ways. This speaks to the inherent flexibility of historic preservation in the context of the United States.

**Table 8. Basic Information Comparison Table, by author, 2016**

<table>
<thead>
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<th>World Food Prize</th>
<th>Des Moines Social Club</th>
<th>Roosevelt School</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Historic Significance (Criteria)</strong></td>
<td>A,C</td>
<td>A,C</td>
<td>A,C</td>
</tr>
<tr>
<td><strong>Built Year</strong></td>
<td>1903</td>
<td>1937</td>
<td>1923</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Des Moines, Iowa</td>
<td>Des Moines, Iowa</td>
<td>Ames, Iowa</td>
</tr>
<tr>
<td><strong>Style</strong></td>
<td>Beaux-Arts</td>
<td>Streamlined Moderne</td>
<td>Beaux-Arts</td>
</tr>
<tr>
<td><strong>Historic Use</strong></td>
<td>Public Library</td>
<td>Fire Headquater</td>
<td>Elementary School</td>
</tr>
<tr>
<td><strong>Current Use</strong></td>
<td>Education</td>
<td>Mix-use</td>
<td>Residential</td>
</tr>
<tr>
<td><strong>Date Rehabilitation Completed</strong></td>
<td>2011</td>
<td>2014</td>
<td>2015</td>
</tr>
<tr>
<td><strong>Rehabilitation Length</strong></td>
<td>14 months</td>
<td>12 months</td>
<td>12-14 months</td>
</tr>
<tr>
<td><strong>Rehabilitation Cost</strong></td>
<td>$31.9 million</td>
<td>$6.5 million</td>
<td>$5.5 million</td>
</tr>
<tr>
<td><strong>Tax Credit (Federal/State/None)</strong></td>
<td>State</td>
<td>State</td>
<td>None</td>
</tr>
<tr>
<td><strong>Other Financial Incentives</strong></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Percentage of habilitation cost granted</strong></td>
<td>25 percent</td>
<td>25 percent</td>
<td>0 percent</td>
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<tr>
<td><strong>Secretary of Interior’s Standards (Y/N)</strong></td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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</tbody>
</table>

**Specific Comparisons**

As discussed before, these three case studies represented three different levels of adaptive reuse, especially when comparing the financial incentives and interior treatments.
Financial Issue Comparisons

The three buildings spent different amounts on rehabilitation and created financial packages with different elements (Figure 41). The World Food Prize cost $31,886,503.00, which is the most among the three projects. The total cost of the rehabilitation of the Des Moines Social Club and the Roosevelt School were similar in cost, as the former was about $6.5 million and latter was about $5.5 million.

![Figure 41. Comparison of three buildings’ rehabilitation costs, by author, 2016](image)

As for the comparison of the financial incentives the three buildings adopted (Figure 42), the World Food Prize has the most coverage of the total rehabilitation cost including the State Tax Credits as well as other grants, the percentage financial incentives versus whole cost is 41 percent; the Des Moines Social Club didn’t have rehabilitation funds from other sources other than the State Tax Credits, which covers 24.5 percent of the total cost. The Roosevelt School’s tax abatement grant didn’t directly benefit the process of rehabilitation, which is broad in its application and does not address historic preservation or rehabilitation directly, the least of the three cases.
Interior Treatment Comparisons

As for the treatment of historic interiors in each of the case study buildings, the similarities and differences can be summarized in the following ways.

Firstly, the World Food Prize and the Des Moines Social Club both strictly preserved a large portion of its original interior features, from the organization of internal spaces to architectural details. In so doing, most elements of the project met the Secretary of the Interior’s Standards. In contrast, developers of the Roosevelt School focused mainly on preserving the building’s exteriors and massing—in part at the request of the neighborhood’s resident who considered the school a cherished landmark. Though materials were reused and repurposed throughout the building’s interior, the interior spaces as they exist today, post-rehabilitation, are the least original among the three case studies.

Secondly, though under the guidance of SHPO and following the Secretary of the Interior’s Standards, the ways of approaching the issue of interior treatments differs between the
World Food Prize and Des Moines Social Club. The original interiors had different levels of aesthetics; the former had more architectural detail and was lavishly decorated, while the latter was more purely functional. Furthermore, although both preserved a large number of their interior features, as was required a condition of the tax credits, the focuses are nevertheless different. The World Food Prize approached the problem of rehabilitation by attempting to preserve an overall historic style, even though this meant that details and architectural features needed to be recreated anew. In contrast, the Des Moines Social Club preserved many original features and details. Instead of preserving the original items such as original furniture and interior surface materials as the Des Moines Social Club, the World Food Prize utilized the original interior style and did not limit itself to preserving the original items, but integrated new food-related images and symbols that reflect its new use as the home of a non-profit that promotes “the achievements of individuals who have advanced human development by improving the quality, quantity or availability of food in the world” (the World Food Prize). The World Food Prize designed new murals, stain glass, and sculpture, which represent the mission and culture of the new organization but cope with the original building’s historic integrity and overall style.

Thirdly, in each case, more original interior features and details were preserved in common places more so than other, distinctly private spaces, thereby allowing access to the public. For example, the lobbies of the World Food Prize and Des Moines Social Club are both the most original places in each of the these buildings. Both floors in lobbies retained the original materials and are left exposed. In the Roosevelt School, walls in common areas were constructed, in part, with original bricks from demolished sections of the building and the decorative clay tiles made by former elementary students, while not preserved in situ, were saved by embedding them
in common spaces as well. Although not overtly discussed in such terms, the preservation of decorative elements tied to each building’s historic significance seems to have been undertaken as a nod to each building’s unique history. In the case of the two Des Moines buildings, this would have been a requirement of the tax credits. Yet in Ames, with the Roosevelt School, this was done initiatively in the absence of any such requirement.

Finally, the three buildings show different approaches and solutions with respect to the meeting of modern safety codes, the installing of modern HVAC equipment, and achieving the goal of sustainable design. Guided by the SHPO, the World Food Prize and Des Moines Social Club both encountered challenges in meeting the safety codes while preserving the original architectural features. The original railings’ height in the atrium in the World Food Prize and the original staircase in Des Moines Social Club failed to meet the safety requirement, but they are both kept as they were and subject to historic authenticity. The Roosevelt, on the other hand, added new railings to the original staircase. As for the HVAC system and sustainable design, the World Food Prize installed the HVAC system in the highest quality among the three cases and achieved LEED Platinum certification in the process, which is the highest level of energy efficiency. The architects went to great length to conceal the ductwork or disguising it. The Des Moines Social Club still has an issue with heating and air conditioning in some parts of the interior, such as culinary loft, where large openings with original windows on the two sides of the room leak both heat and cooled air. In contrast to the World Food Prize, budgets at the Social Club were relatively limited and initial plans to install high-quality air-conditioning facilities in that room were eventually removed. The Roosevelt School had fewer problems in this respect and the architects installed a geothermal system at the request of early purchasers of condominiums in the structure.
CHAPTER V
CONCLUSION

This thesis concludes its exploration of the preservation of historic interiors by summarizing its findings based on the previous research and three different adaptive reuse cases of historic interiors. Also, this chapter will include policy recommendations on the current historic interior preservation situation, as in practice not every rehabilitated project can be meticulous in every respect.

Findings

The findings section will be divided into three summaries. The first deals with the influences that are brought about by financial incentives; the second focuses on the preservation regulations from the governmental perspective; and finally, the third examines the treatment of interior features specifically.

The Influence of Financial Incentives

In the context of the United States, financial incentives for historic preservation typically include Federal and State Tax Credits, as well as other types of grants that encourage adaptive reuse projects. Funding is both available from both government and non-governmental organizations. The section below summarizes the influences of these financial incentives on historic rehabilitation, with particular attention paid to interiors.
Financial Incentives and the Decision-Making Process

Firstly, financial incentives influence the decision-making process of adaptive reuse projects. Their availability serves as one of the primary motivations for the rehabilitation of historic buildings. Conversations and questionnaires with government officials, tour-guides, and developers, as well as other supporting documentation (websites, newspapers, etc.), reveal the motivations for choosing to adaptively reuse a historic building. It can be concluded that a building’s sense of history is often a driving motivation, as is the merits of a favorable location, often downtown, and its unique architectural style and handcrafted aesthetics. Rehabilitation projects allow developers and property owners to improve a building that, because of its rarity and one-of-a-kind design, is already an asset.

Secondly, the data collected for this research reveal that it is possible to get a significant amount of investment capital through tax credits and other kinds of grants, which often cover a portion of the total rehabilitation costs that cannot be ignored. It is assumed that rehabilitation costs, particularly to the Secretary of the Interior’s Standards, are generally higher than those of a non-historic rehabilitation or new construction. The ratios suggest that developers should not give up applying for tax credits if they have the possibility to meet the requirements and own the property for a certain length, since many grants won’t be provided if the property owner resells the property within a certain length of time following the grant of the incentive (typically five years).

Thirdly, different kinds of grants tend to use the Secretary of the Interior’s Standards and Guidelines, even when tax credits are not involved in the rehabilitation and thus not required. In the case of the World Food Prize, they successfully applied for Save America’s Treasure grant from the National Park Service. The Grant required the project to follow the Secretary of the
Interior’s *Standards for the Treatment of Historic Properties*, which is the same with the Federal and State Tax Credit Programs. As discussed in Chapter III, grants provided by other non-governmental organizations follow the Secretary of the Interior’s *Standards* as well. By meeting the same requirements, the project is possible to have several kinds of financial incentives, which makes applying for tax credits and other grants even more appealing to the developers.

**Financial Incentives and Overall Project Quality**

To meet the requirements provided by different kinds financial incentives, rehabilitation is more strictly regulated. Most of the application process involves the oversight of the SHPO and, eventually, the National Park Service. SHPO follows the rules and standards established by the federal government. By involving these professional agencies in the supervision of rehabilitation projects, practical guidance and feedback are provided during the rehabilitation process.

Also, the funds provided by the grants and the tax credits solve the problem of higher rehabilitation costs by offsetting these costs and allowing a project to be completed to rigorous standards. Funding is always a major issue to deal with in historic preservation practice. Though the strict regulations and requirements of the tax credit program and other grants may limit the freedom of modifying the exterior and the interior spaces, securing financial aid could reduce the limitations caused by a lack of budget, which does more harm to the overall project quality.

**Financial Incentives and Historic Interiors**

As SHPO is involved in supervising a rehabilitation project to ensure that the Secretary of the Interior’s *Standards and Guidelines are met*, the details of interior spaces are largely
influenced during the process of the negotiations between architects and SHPO. Compared to exterior work, SHPO’s requirements on interiors are often less strict and less limited to issues of authenticity. The fundamental reason for this is that change is in interior spaces are often necessary to ensure that a historic building—one built, for example, in the early-20th century and reflecting the needs of that era—can continue to be used in the present day under modern needs and requirements. However, compared to those projects that didn’t apply for tax credits or other financial incentives related to the process of rehabilitation, the interior spaces assisted by financial incentives (especially tax credits) appear to preserve a greater number of historic features, from the spatial organization of a building to its architectural details, thus keeping higher levels of authenticity in the interior spaces.

In addition, many interior problems could be solved if the rehabilitation budget was sufficient. The quality of interior mechanical equipment and facilities largely depend on the financial situation. For example, regardless of funding issue, current technologies are able to solve most of the problems related to HVAC systems. Therefore, getting funding is still a major issue for rehabilitation. Also, when a budget is sufficient, new items can be more appropriately and designed for subtle integration into the existing, historic fabric of the building.

In summary, though financial incentives may force limitations onto a property owner by the requiring his or her building to follow certain standards, they also help ensure, though the oversight of governmental experts, that the quality of interior work will be high. In other words, if there are no financial incentives, a rehabilitation project will be less constrained but more invasive, thus potentially compromising more of the building’s historic integrity.
Regulations

Historic Preservation and Modern Codes

In the three case studies, conflicts between different codes were evident in the process of rehabilitation. Changing the original function of the historic building and meeting the new requirements of improving the interior environment brings about difficulties and contradictions while preserving historic features. As for new items added to the interior spaces, new safety and energy equipment such as elevators, water pipes, electrical wiring, and air conditioners will have an impact on the integrity of the building and its original historic features and style. As for the existing historic components like staircases and railings, these are often not suitable for current needs and cannot meet the safety codes, as in the World Food Prize case and Des Moines Social Club case. The new energy-saving materials that would increase energy efficiency are not recommended by SHPO. For example, SHPO required that the World Food Prize to replace the proposed low-e glass with clear glass, while completely clear glass would not comply with the International Building Code. Such contradictions are common in historic rehabilitation projects.

Subjectivity in the Regulatory Process

As for the projects that applied for tax credits or other financial incentives that require adherence to the Secretary of the Interior’s Standards, the certification relies heavily on the determinations of the SHPO (and by extension, the National Park Service). Though the Secretary of the Interior’s Standards were written for all types of projects to reference, in practice, requirements made by SHPO may vary between projects. As no codified, quantitative evaluation system has been established, tolerance for changes is different when it comes to different cases. The subjective nature of this regulative process is an inevitable problem in historic preservation.
and reuse projects all around the world. Nevertheless, codifying the process to would benefit developers and architects working on tight time schedules and help avoid “surprise” project requirements, not to mention endless back-and-forth between these SHPO and its clients.

Regulation versus Free Choice

The regulatory framework within the context of United States provides property owners and developers an alternative of not following the Standards by forgoing the use of federal or state tax credits and related grants. Sometimes the original function of the building was not able to remain the same and new functions and limited budgets make it hard to follow all the official standards. As stated by a resident of the rehabilitated Roosevelt School, “I'm still of the opinion that school buildings are best used as schools. But, in a pinch, condominiums aren't such a bad alternative — as long as they're done the right way” (Haws, 2015). Instead of demolishing or leaving the buildings vacant, which does more harm to the interior environment, developers can still choose to not follow the Standards and make it possible to get the project done, though many modifications will be made during the rehabilitation.

Interior Treatment Evaluations

Interior Treatment and Aesthetics

From the theoretical research and case studies, it is clear that many rehabilitation projects have accomplished the goal of preserving historic features, incorporating a new use, and creating high aesthetic quality at the same time. However, contradictions are found between the preservation of historic interiors and aesthetics in some functional historic buildings.
In many historic rehabilitation cases, preservationists often base their work on the assumption that historic buildings are uniformly valuable in all aspects. They assess historic buildings using criteria like historic value, art value, economic value, and so on. Admittedly, many historic buildings are more decorative and are of higher aesthetic value and by preserving or restoring as much as can be done, a harmony of interior aesthetics as well as historic sense is reached. Also in many cases, the failure of an adaptive reuse project is largely based on the situation when developers eliminate too much of the original decorative elements as a new function is incorporated into old buildings. Though in most historic buildings, the interior’s authenticity can go well with their aesthetics, there are still buildings whose interior spaces are extremely functional and lack aesthetics, like the Des Moines Social Club.

Interior design has a close relationship with aesthetics from the following aspects. Firstly, compared with architecture design, interior design stresses aesthetics, as interior design is the art or process of designing to ensure that the users can work, live, and learn in an environment that is also aesthetically pleasing. Secondly, major heritage systems value aesthetics. For example, the UNESCO World Heritage Convention “addresses cultural sites of outstanding universal value, from an historical, aesthetic, scientific, ethnological or anthropological perspective, and highlights the need for authenticity” (UNESCO & World Heritage Center, 2012, p.13). But there’s comparatively little consideration given to interior aesthetics in current standards and guidelines. Thirdly, interior aesthetics are not necessarily “high art”, that can only be understood by elites. Rather, it can also be judged or simply felt by every user. With the absence of ample historic background knowledge, average users and professionals have gaps in interior vision and evaluation. As in the process of Social Club rehabilitation project, the developers and architects actually knew that the interior was not perfectly done from the user’s perspective. But in order to
get tax credits, they had to follow a strict rehabilitation regime and kept many parts of the
original fabric, though it might have deficiencies in aesthetic effect.

**Interior Authenticity**

In contrast to exteriors, where authenticity is considered of great significant, in the
interior of the rehabilitation projects, new items are given more tolerance and the materials are
allowed (in some circumstances) to imitate the original ones when it helps create an overall sense
of history and integrity. But from a broadened perspective of preservation, imitation is not
always considered acceptable. It is essential for rehabilitation projects to be tolerant to interior
features and avoid rigidly pursuing the authenticity.

In addition, abstract and symbolic ways of expression are often used in interior
rehabilitation. For example, in the case of the World Food Prize and the Des Moines Social Club,
each has incorporated didactic marks on the floor that represent the location of the original
features.

Finally, when it comes to the preservation of historic interiors, focusing on creating the
overall style by utilizing historic features is more acceptable than preserving the original items
themselves. When utilizing and inheriting the original style, the building will be able to implant
new a sense that relates to its new functions while respecting the original building’s history.

**Policy Recommendations**

Negotiations and compromises are inherent in the projects of adaptive reuse of historic
buildings and sacrifices are inevitable in order to make historic interior spaces usable. Still, in
response to the findings, there are several recommendations in terms of the existing financial
incentives, standards, and regulations.
Currently, two levels of federal tax credits are provided: twenty percent for certified rehabilitation of certified historic structures and ten percent for non-historic, non-residential buildings built before 1936. Also, in Iowa, the state tax credits program can provide up to twenty-five percent of the qualified rehabilitation expenditures. Some buildings choose to forgo applying for tax credits because it presents challenges to architects to strictly meet the Standards, which might lead to examples where historic buildings eliminate more historic features than they could have saved if they were supported with a lower level of tax credits and partially meet the requirements.

Also, the amount of tax credits provided is decided by the evaluation of the buildings before the rehabilitation. As for the evaluation after the rehabilitation, there are only two outcomes: either it is approved by SHPO or rejected. Instead of these two extremes, a scoring system—a sliding scale—might be rigorously adopted to encourage the project to follow the Secretary of the Interior’s Standards as best as they can but still be tolerant of minor deficiencies from the historic preservation perspective. The amount of tax credits might change due to the final score, which reflects the degree of completion of the rehabilitation.

The Secretary of the Interior’s Standards now stress historic significance but fails to take other aspects into consideration, things like as aesthetics, energy-saving potential, and safety issues. A recommendation would be to reflect these conflicts in a scored system as well. Therefore, more tolerance could be provided, and all the previous scored cases could be officially copied and could be accessed by the public as a reference for future applications. While “best practices” materials already exist, they are fairly limited in scope. And while there always exists a danger that such materials might encourage slavish adherence to accepted
practices, thereby squelching innovative solutions, or the perpetuation of bad practices based on previous bad models, the benefits would still likely outweigh these concerns.

Future Work

The overarching goal of this research was to investigate how the preservation of historic interiors is impacted by different factors, including the availability of various financial incentives, the adoption of different preservation theories and influence of different policies and regulations, and the work of architects and designers, governmental agencies, and members of the public. After researching the history and evolving theories of historic preservation in the United States, and studying the related regulations and financial incentives, this paper explored three different approaches to adaptive reuse using three case study buildings: the World Food Prize, the Des Moines Fire Station, and Roosevelt School. The findings of this project bring about several new lines of research, which could help shape future studies. Several possible avenues for future research are described below.

Firstly, this paper specifically focused on only three cases. This number might easily be expanded. Future research might include additional case studies because as time passes, different solutions to the challenges of rehabilitation will emerge along with changes in technology and in response to the evolving nature of government rules and regulations at the federal, state, and local levels. The geographic scope of this research might also be expanded beyond the focus of Iowa. While federal preservation policies and programs vary little across the United States, state and local programs do. Future research might continue this current project’s exploration of historic interiors and adaptive reuse in other states and different types of urban real estate markets.
Secondly, this research project mentions—albeit only in passing—the emergent issue of energy-efficient design and its frequent conflicts with historic preservation and its mandates, particularly with respect to interior rehabilitation work. Future work could treat the rehabilitation of historic buildings as more of an energy-saving problem and better introduce energy-efficient design to the historic preservation evaluation system, and to explore how to feasibly combine energy-efficient design to preserving historic interior features and spaces.

Thirdly, due to the subjectivity witnessed in the three case studies of this project, a standardized system, or model, for evaluating historic interiors might be a desirable direction for future research. The aim of this would be to provide a way to evaluate the quality of historic interiors before and after rehabilitation work is undertaken. Future work might include a more codified and criteria-based means for conducting such evaluations.

Lastly, as this research project was motivated by the poor situation of current preservation of historic interiors in China, future work might explore how the American model could be adapted for use in the context of China. Historic preservation is often a balancing act between protecting important architectural features while allowing change that permits the continued and productive use of the historic building. This is the essence of adaptive reuse and something relevant to the rapidly changing context of China’s built environment today.
REFERENCES


City of Des Moines, Council Communication, Office of the City Manager. (2012). Resolution to select redeveloper for Central Fire Station property located at 900 Mulberry Street.


APPENDIX A

SECRETARY OF THE INTERIOR’S STANDARDS FOR REHABILITATION

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.
APPENDIX B

THE TIMELINE OF THE WORLD FOOD PRIZE’S REHABILITATION

World Food Prize Hall of Laureates

2007.10.27 Commencement date on which project rehabilitation began


2008.05.08 Email: Save America’s Treasures Grant no adverse effect with conditions.

2009.09.28 Certificate of Appropriateness, resolution issuing a landmark Certificate of Appropriateness.

2009.10.20 Actual construction work began.

2010.07.02 Historic Preservation and Cultural and Entertainment District Tax Credit Certification Application Part 2

2010.07.02 Historic Preservation and Cultural and Entertainment District Tax Credit Certification Application Part 1

2010.07.15 Deadline of submitting the application form

2010.07.16 Email: discussion about whether the arched windows trims are original or not.

2010.08.12 Reply to Jack about Save America’s Treasures Grant, SHPO’s decision about window problem.

2010.09.03 Test on low-e glass; Email: decision for glass.

2010.10.04 Email: condition statement in process

2010.10.19 Continuation / amendment sheet: Stacks Room Ceiling #1; Photovoltaic Panels #2; Clock (new item in the Reference/Reading Room) #3; Cistern #4; High Roof Coping #5.
2010.10.19 Email: condition statement and concerns, silver along the edge of glazing, windows.

2010.10.28 Part 2 approved with conditions.

2010.11.20 Appeal SHPO’s decision made by Jack Porter to Cyndi Pederson about window glass.

2010.12.20 Email: #1 is disapproved; large plaster medallions and plaster details should be removed; #2-5 approved.

2011.01.20 Continuation / amendment sheet: Stacks Room Ceiling #1 Lunettes #7; Grain Sculptures #8; Stained glass window at west wall of second floor Rotunda space #6;

2011.01.25 Continuation / amendment sheet: Text on the east exterior stair #6

2011.01.25 #6 approved

2011.01.29 Project Commencement report; Qualified Rehabilitation Cost Schedule

2011.01.30 drawings WFP details RDG proposed request

2011.02.03 Continuation / amendment sheet: Stacks Room Ceiling #9 withdrawn

2011.03.11 Continuation / amendment sheet: Third Floor Studio Work Room #10; Lettering on the East and West Exterior Stairs #11.

2011.03.03 Drawing: Iowa Room Finish Diagram 2011.03.15 email #6-#8 approved

2011.03.18 Email: remove all exterior windows; replace with clear glass. 2011.03.18 email: Appeal SHPO’s decisions about glasses; (Save America’s Treasures Grant); accepted the appeal

2011.04.12 Continuation / amendment sheet: Fabric Panels in Iowa Room 2105 #12; letter: Fabric Panels in Iowa Room #12
2011.05.05 Continuation / amendment sheet: Candle Sconces installed on walls at
Borlauq Stacks Room #21; Gold Leaf Trim at Borlauq Stacks Room Ceiling #23.

2011.05.11 Continuation / amendment sheet: Donor Recognition element at Rotunda
space #24; Ground Floor Exhibits #25.

2011.05.18 Continuation / amendment sheet: Elements at East and West Building
Entrances #13 Artwork applied to Laureate Alcove Squinches #14 Names / Ornament applied to
Ruan Founders Room Squinches #15 Names / Ornament applied to Laureates Reading Room
Squinches #16 Gold Leaf quote applied to frieze in Rotunda area #17 Gold Leaf quote applied to
frieze are above picture rail in Iowa Gallery Room #18 Educational Kiosk (new item in the
Ground Floor Exhibit Hall) #19 Candle Sconces installed on walls at Boardroom space #20;
Email #10-#24 approved #25 subject to NPS. Ground Floor Exhibits #25 approved except for
covering windows. Continuation Sheets / 106 review info (Form of the approved/denied...)

2011.06.28 Email: Will have expended a total of $17,568,515 on Qualified Rehabilitation
Cost estimated total Qualified Rehabilitation Cost for entire project when it is completed will be
$22,687,752

2011.12.31 Project Completion

2013.03.01 HP Tax Credits Survey — Iowa Department of Revenue. Total Qualified
Rehabilitation Cost is $21,336,665 Non-Qualified Rehabilitation Cost $10,549,838.

2013.03.01 Email: complete Part 3 Tax Credit Application

Historic Preservation and Cultural and Entertainment District Tax Credit Certification
Application; Historic Preservation and Cultural and Entertainment District Tax Credit
Certification Application, Request for Certification of Completed Work for Part 3; Historic
Preservation Tax Credits Survey.
2013.03.12 Email: Survey completed— The information will be used to inform the members of legislature and policy-makers on the economic impact of projects aided by HP tax credits.

2014.12.05 Email: tax credits have been approved $4,200,000 for 2012; $1,134,166 for 2015.
APPENDIX C

A LIST OF PROPOSED TREATMENTS OF THE WORLD FOOD PRIZE’S REHABILITATION

Number 1: Masonry Exterior Walls: Exterior masonry was evaluated by an architectural conservator, masonry was cleaned.

Number 2: Wood Windows: Many of the windows were in poor condition, but historic material was saved as much as possible. Jambs and heads were repaired where possible; most sashes were rebuilt. Insulation was added to the cavity that was once used for the chains. New glazing was installed—the clearest glass feasible was selected. [No tinted glass was used.]

Number 3: East Stair: The new exterior stair on the east side of the building was designed to resemble the original stair that was in this location until the mid-1950’s. Some details, due to code and a changing river level/site conditions are different, but the overall design is similar to the original. The stone used for the stair was recovered from an abandoned bridge abutment that was quarried from the same quarry that the building’s stone was quarried from approximately the same time.

Number 4: West Stair and Portico: The west stair, in its current condition [prior to the start of the project] was not in its original configuration. During this project, this area was revised to meet current code. The existing stone was reused and the columns were retained. New stone used was stone reclaimed from an abandoned bridge abutment that had been built around the same time this project, with stone from the same quarry. The existing steps were removed.

Number 5: Roof and Skylights: The existing roof was replaced and covered with a white TPO membrane. All of the existing skylights were retained and repaired. The two largest
skylights (over the stained glass dome and over the art gallery) were removed and replaced with new skylights that are similar in shape and profile as the original design.

Number 6: Terracotta Details: The terracotta details were cleaned, repaired and replaced as needed.

Number 7: West Garden: The original use of the area west of the building was an alley and various buildings. At the beginning of the project, this space was used as a parking lot with a portion reserved as a green space. These parking lots were removed and new gardens and walks were installed.

Number 8: East Garden: The United States Army Corps of Engineers and the City of Des Moines have installed the Des Moines River walk between the building and the Des Moines River, See also item #3

Number 9: Ground Floor Entrance: The single occupant restroom in this space was removed, as well as other partitions that broke up the space. An accessible entrance was installed here for both public and service use.

Number 10: Ground Floor Office Space: The layout of the space remained unchanged.

Number 11: WPA Murals: These murals were cleaned; a barrier layer was placed over the surface, and were then in-painted in areas that needed repair by a fine arts conservator.

Number 12: Elevator/Stairs: The existing non-original stairs and elevator were removed to room for the new stairs and elevator to comply with current building code. The new elevator will also provide access for a stretcher for emergency purpose. Materials used are complimentary to the rest of the building.

Number 13: 1899 Engine Room: Existing, non-original casework and partitions were removed and new partitions were installed. Plumbing fixtures were installed to create men’s and
women’s restrooms as well as a small lobby for the drinking fountains. Window layout was not altered. DOORS Savaged from other locations were used for these rooms.

Number 14: West Entrance: As originally designed, this entrance will serve as a secondary entrance. The vestibule was expanded and a duplicate set of stairs leading to the rotunda space was installed. Original marble tiles salvaged from other locations were used to patch the expanded vestibule space.

Number 15: East Vestibule: To open up this space to closer resemble the original layout, the 1956 fire stair was removed. The existing, original column that was encased in a wall was rebuilt. A glass door was installed between this space and the rotunda to provide the necessary separation.

Number 16: Wood Trim-First Floor, North End: The wood trim was refinished and protected during construction. Damaged areas were repaired.

Number 17: Marble Wainscot: The marble wainscot in the rotunda spaces was cleaned and maintained. No marble was found to match the original marble used, so in locations where new marble was needed, an artist recreated faux marble, painted to match the original marble. We reused the relocated marble wainscot in the east vestibule that was relocated in the 1950’s for the exit stair; we took tis and place the marble back into the original location.

Number 18: Wood doors & Hardware: All doors that were deem, original to the building were either reused or have been put in storage. Glass was removed so that safety glass could be installed. Due to code requirements, original doorknobs were replaced with complimentary levers. New escutcheon plates that were needed to accommodate new door hardware were created from the original pattern. Original door hardware has been placed in storage by the Owner.
Number 19: Mosaic Tile Floor & Marble Floor: The mosaic tile floor found in the rotunda space was left largely intact. Areas needing repair were repaired and the entire floor was cleaned. The Carthage Gray marble floor found in the west vestibule was left intact. The area that was expanded in this space was covered with original Carthage Gray marble that was salvaged from other areas of the building. The marble floor in the east vestibule was selected to be compatible with the existing materials.

Number 20: Plaster Details: Existing plaster details throughout the building were repaired and missing pieces were replaced by an ornamental plaster sub-contractor. Missing pieces were created from molds made from existing plaster.

Number 21: Stacks: The shelving system was dismantled and placed into a climate controlled storage area.

Number 22: Vault: The vault has been left as is. The shelving inside the vault was removed.

Number 23: Sidewalk Lite: The broken glass pieces of the sidewalk lite in the rotunda were removed and repaired. The unit was also cleaned.

Number 24: South exit Stair: A new fire stair was installed to accommodate the current code. Removal of the floors of these areas was required to install the new stair. A new exterior exit was required to gain emergency. Finishes used are complimentary to the original finishes of the building. Windows were not altered, and doors remained unchanged as much as possible.

Number 25: Rotunda: The changes in the rotunda space were mostly limited to cosmetic ones. The historic color palette was used. Existing, original hexagonal tile was cleaned and repaired as necessary. Existing, original marble wainscot was also retained and repaired as needed.
Number 26: Assembly Room: The layout of this room remained relatively unchanged. Because the columns in the stacks room directly below were removed, the floor of this space was removed and reinstalled after new reinforcing was built. The large cove was retained in place and the wood wainscot was reinstalled.

Number 27: Women’s Club: The layout of this space remained relatively unchanged. Because the columns in the stacks room directly below were removed, the floor of this space was removed and reinstalled after new reinforcing was built. The extensive, decorative plaster coves were retained in place and the wood wainscot was reinstalled. Non-original partitions were not re-installed. This area is now an office space and is now separated from the ‘Assembly room.’ As was the original design, this space is now separated by a partition into two large spaces. The existing toilet room was refurbished into a storage area.

Number 28: Art Gallery: The layout of this room remained unchanged. The non-original openings on the east side were infilled. The shelving units were removed and the skylights were cleaned and repaired. Red, fabric- wrapped panels were installed similar to the red burlap that once covered the original art gallery walls.

Number 29: Trustees’ Room: A non-original partition was removed; the original design of the window was restored to a single glazing unit.

Number 30: East Hall: The three bays on the east side of the rotunda on second floor were opened up to complete the building’s original design connection to the river.

Number 31: Grand Stair Window: The existing window lites were reglazed to address thermal issues. A new stained glass storytelling element was attached to the adjacent wall surface in front of the existing window on the interior side.
Number 32: Grand Stair: A new flight of steps was added on the south half of the Grand Stair (between the west vestibule level and the first floor level) to create symmetry. The existing men’s toile was removed. Tile that was removed was reused where missing tiles were needed.

Number 33: Third Floor Shelves: Standard shelving units were taken to other libraries in the area to be reused. Those not needed were taken to recycling locations for their steel content. The historic rolling shelves found in the gallery space on third floor were dismantled and placed in storage.

Number 34: Third Floor Studio Space: The third floor continues to be used as storage space, just as it was while the building was used as the library. New flooring was installed.

Number 35: Interior Paint Scheme: An architectural conservator surveyed the building to create a report of the original 1899 paint scheme and stencil patterns. This information was used for the rotunda space on both the first and second levels. The remaining rooms were painted a neutral white.

Number 36: Columns: A conservator and RDG analyzed the existing conditions of the columns. Many pieces were required to be completely recreated; cracks were infilled and new protective coating was applied. The column in the east vestibule that was encased in a non-original partition was rebuilt.

Number 37: Stacks Restroom: This non-original restroom was removed.

Number 38: Cataloging Room: This non-original mezzanine floor was removed. A partition was built in the room to create a catering kitchen.

Number 39: 1956 Fire Stair: The existing, This non-original fire stair will be removed to open up the east entry vestibule area.
Number 40: First Floor Men’s Restroom: This room was removed to allow for the second stair from the west vestibule to the rotunda room, as described in item #12.

Number 41: Second Floor Restroom: This room was converted into a janitor’s closet. Plumbing fixtures were removed. The 12”*12” Carthage Gray marble tile was salvaged and reused in the west main entrance.

Number 42: 1899 Medical Library: Few changes were made in this space. The non-original openings on the west wall were infilled and the non-original wood floor was replaced. Period-sensitive light fixtures were installed.

Number 43: 1899 Children’s Room: Restrooms were created in this space: men’s, women’s, and a small lobby with drinking fountain. Plumbing access was needed, and plumbing fixtures and partitions were installed. Ceramic tile was also installed. Window layout remains the same.

Number 44: Boiler Room: A new ground source heat pup system will be installed in the original space.

New Items:

Number 01: Acroterium: A Cast stone acroterium was designed and installed to replace the acroterium that was originally on the building. Size and details were contrived from original documents and photographs.

Number 02: East Exterior Stair: See Number 3, above.

Number 03: Fountain: The original fountain (discovered years ago, buried in the ground) was reinstalled.
Number 04: New Restrooms: All restrooms in the building are new. The ground floor public restrooms were installed in the southeast corner of the building. Finishes are minimal compared to other restrooms to reflect the more utilitarian functions of the ground floor. The second floor public restrooms were installed in the northwest corner of the building (original children’s room). The finishes in these restrooms are more sophisticated to compliment the finishes on the second floor. The private restroom (original Women’s Club Kitchen) is also sophisticated to reflect the new use of this area (Executive Director’s Office).

Number 05: Exhibits: New exhibits are displayed in the ground floor-in the original Exhibit Hall. These exhibits include touch screens that display the building’s green features, display boards, and freestanding displays.

Number 06: Light Fixtures: New light fixtures were designed to complement the original light fixture designs and the style of the building.

Number 07: Millwork: New millwork is found throughout the building in the FCU cabinets, as well as the projection screen housing found in the original Stacks Room (Borlaug Ballroom) and Reading Room (Ruan Laureates Room).

Number 08: Wood Floors: New wood floor inlays were installed in the original Reading Room (Ruan Laureates Room) and Stacks Room(Borlaug Ballroom). Special inlays were designed for the Stacks Room to mark the location of the original stacks.

Number 09: New Emergency Door: A new opening was created on the ground floor to allow emergency access to the exterior per code requirements for the fire stair on the east side of the building.
APPENDIX D

THE TIMELINE OF THE DES MOINES SOCIAL CLUB’S REHABILITATION

Des Moines Fire Department Headquarters Fire Station No.1

2012.06.25 DMSC selected by City Council as the preferred redeveloper; Resolution to select redeveloper

2012.07.06 Part 1 submitted

2012.07.12 Application for State of Iowa Historical Tax Credit

2012.07.16 Iowa State Inventory Form for fire station

2012.08.03 Vacant; assessment of omitted property

2012.09.19 Part 1 approved

2012.09.27 Unable to fund this State Fiscal Year, recommend applying next year

2013.06.01 Project start

2013.07.31 Part 2 Application; Historic Preservation and Cultural and Entertainment District Tax Credit Certification Application Part 2

2013.08.08 Tree locations proposed

2013.08.30 Email: Discussion on 1967 Stairs retain or not. (Handrail and guardrail do not comply with current code, what’s the real significance.)

2013.09.06 Email: 1967 staircase is proved to be of historic significance; SHPO was seeking for approval to retain this staircase.

2013.10.08 Part 2 approved with conditions

2013.10.14 SHPO meeting; several changes are not approved

2013.10.16 Concern about whether Roof and HQ storefront will be approved by NPS

2013.11.13 SHPO meeting with Jack, the applicant
2013.12.04 Email: Steve King’s suggestions including Apparatus Bay window; boot and coat; exterior signage; and radio tower.

2014.01.06 Email: Steve King’s update suggestions from Steve King including Apparatus Bay window; boot and coat; exterior signage.

2014.01.15 Email: Steve King’s suggestions, wall removal acceptable.

2014.02.03 Continuation / amendment sheet: Amendment #1; Historic Preservation and Cultural and Entertainment District Tax Credit Certification Application Part 2 with amendment.

2014.02.21 National Register of Historic Places Form

2014.04.03 Certificate of occupancy

2014.04.05 Email: Steve King’s suggestions on the hose tower pole

2014.06.01 Project complete

2014.07.14 First amendment and joinder to agreement for payment in lieu of taxes

**Shop Buildings**

2013.08.11 Shop building’s Part 1 application; Shop building’s Part 1 application Form

2013.08.30 Shop building’s Part 1 approved 2015.01.15 Shop building’s Part 2 application

Date Unknown: Shop building’s Part 2B Form; Shop building’s Part 3 Form; Iowa State Inventory Form for Shop Building; DMSC Shop QRE Schedule; DMSC Shop Financing Sources Tool

2015.04.20 Part 3 drawings photo key and photos
APPENDIX E
A LIST OF PROPOSED TREATMENTS OF THE DES MOINES SOCIAL CLUB’S REHABILITATION

Proposed Architecture Features:

<table>
<thead>
<tr>
<th>Number</th>
<th>Architectural Features</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>No.1</td>
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<td>No.2</td>
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<td>Basement Floor Plan</td>
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<td>No.5</td>
<td>First Floor Plan</td>
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<td>Second Floor Plan</td>
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<td>Upper Storage Room</td>
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<td>No.8</td>
<td>Main Roof</td>
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<td>No.9</td>
<td>Upper Storage / Handball Roof</td>
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<td>No.16</td>
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<td>Perimeter Walls – Apparatus Room</td>
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<td>Perimeter Walls – Other Spaces</td>
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<td>28</td>
<td>Electrical</td>
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<td>29</td>
<td>Other Interior Features. (Hose Tower, Slide Poles, Steel Post Dorm Partitions, Marble Door Thresholds, Door, Hand Ball Court Flooring, Millwork)</td>
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</tr>
<tr>
<td>30</td>
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<td>First Floor Tenant</td>
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</table>
APPENDIX F

FINANCIAL INCENTIVES AND THE ADAPTIVE REUSE OF HISTORIC INTERIORS:

QUESTIONNAIRE (ROOSEVELT SCHOOL)

Answered by: Dean Jensen, the developer.

To help me better understand the motivations behind the rehabilitation of the buildings in question, please answer as many of the questions below as you can, focusing on the building with which you are familiar.

1. How was the building rehabilitation funded and what kind of financial incentives did this building adopt?

(Ways of funding could be different kinds of donations, government support; public funding sources; investment... Financial incentives includes Federal tax credit; State tax credit; Low Income Housing Tax Credit; facade improvement grant program; New Markets Tax Credit Program (NMTC); Tax Increment Financing (TIF), historic preservation easement; local property tax; Urban Revitalization Tax Abatement; etc.)

You have accurately listed a number of possible sources, however in the case of The Roosevelt, our intent from the beginning was to create private, owner occupied condominiums. Many of the resources that you suggested only qualify if the owner keeps the property for a length of time and offers it for his or her own occupancy or as a property for lease to a third party. Therefore, we did not pursue alternate resources. Fortunately for the new buyers of the condominiums, the City of Ames did grant Urban Revitalization Tax Abatement that has a three-year benefit to the owners not to the developer.
2. What was the total cost of the project and (if tax credits were used) what was total in qualified rehabilitation expenditures?

The total cost of the project exceeded $5,000,000. We were able to pass on to the new owners an energy tax rebate due to the geothermal heating and cooling system that was installed.

3. Why did the parties involved in these project choose the rehabilitation of an historic building? What were the motivations?

Several layers of motivation prompted the initiative. The school district, neighborhood associations, City of Ames, and private investors all had separate motives. The central theme that united the group was a desire to create a win-win solution. Obviously, there were pressures to demolish the structure and rebuild with a new use. After many efforts by many quality people and organizations, the final solution of converting the school to private living emerged as a strong win-win for all. As an investor I was motivated because this type of housing is very rare and this opportunity represented a new product in the real estate market.

4. Would you have undertaken this project if the financial incentives (such as tax credit) had not been available? Did the financial incentives have some influence the success of this project?
The financial benefits for the new owners affected the rate of sale for the unit's. This helped to reduce the holding time, which saved interest expense.

5. Historic rehabilitation projects often involve significant "give and take"--a tension between the need to preserve historic form and material (as guided by the Secretary of the Interior's Standards) and the need to ensure that a building continues to be a usable space. **In terms of the physical fabric of the historic buildings themselves, what were the challenges encountered during the process of rehabilitation? How were these challenges overcome** (if they were, in fact, overcome)? **What sort of unique opportunities did the interiors offer?**

This element of adaptive reuse proved to be most rewarding. When approached from a sculptural point of view, the material (building), was encountered and discovered as demolition and a general plan started to take shape. The process revealed many pleasant elements that could then be featured and emphasized as we went. Through discovery, edits, samples, etc. the project began to evolve into its new footprint and it's new function. The former classrooms became living spaces and the "climate" of the building slowly transformed.

6. The preservation of historic interiors is central to my thesis research. **Is there anything specific to the interior of the historic buildings in question that are noteworthy or interesting in any way?**
The interior bones of The Roosevelt presented several unique elements that set the stage for outcomes. Some of the big ones included window sizes. Most openings are 8'x20', also ceiling heights of 12' to 18', vertical structural columns that we choose to expose. Concrete floor to floor decks and full masonry staircases. We also had the privilege of having some student made clay inserts that were embedded into the walls that we were able to retain and incorporate into the new interiors.

7. If need be, would you be willing to field follow-up questions from me?

As always, I am available for additional questions. I am very pleased you have chosen this topic to explore.