

SUSTAINABLE HISTORIC PRESERVATION: A REHABILITATION PLAN FOR
THE JEFF. SMITH'S PARLOR MUSEUM IN SKAGWAY, ALASKA

by

TARA L. IKENOUE

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Donald L. Peting, Chair of the Examining Committee

1 June 2009

Date

Committee in Charge: Donald L. Peting, Chair
Grant Crosby, NPS Historical Architect

Accepted by:

Dean of the Graduate School

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In an effort to confront global warming and the increasing scarcity of resources, the preservation community began several years ago to adopt sustainable and green building practices and metrics for historic rehabilitation projects. As a result, there is an ever growing number of rehabilitated historic buildings in the United States not only incorporating sustainable building designs but also achieving Leadership in Energy and Environmental Design (LEED) certification. Most of these are large, architect-designed buildings in urban settings rehabilitated for cultural and commercial uses. This thesis explores the application of the LEED 2009 New Construction and Major Renovation Rating System for the development of a sustainable rehabilitation plan for the modest vernacular 1897 Jeff. Smith's Parlor Museum in Skagway, Alaska. The goal of this research is to demonstrate how the LEED rating system might be applied to the rehabilitation of this building and other historic vernacular buildings.

CURRICULUM VITAE

NAME OF AUTHOR: Tara L. Ikenouye

PLACE OF BIRTH: Greeley, Colorado

DATE OF BIRTH: February 5, 1975

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene, Oregon
Pacific Northwest College of Art, Portland, Oregon
Oberlin College, Oberlin, Ohio

DEGREES AWARDED:

Master of Science, Historic Preservation, June 2009, University of Oregon
Bachelor of Arts, Biology major, Chemistry minor, 1998, Oberlin College

PROFESSIONAL EXPERIENCE:

Graduate Teaching Fellow, University of Oregon, September 2007 – June 2009

Historic Preservation Intern, National Park Service, June 2008 – September 2008

Program Coordinator, Legacy Health System, January 2002 – September 2007

Care Manager, Legacy Health System, November 2000 – December 2001

Legislative Assistant, Oregon Senator Laurie Monnes-Anderson,
January 2001 – July 2001

GRANTS, AWARDS AND HONORS:

The Betty Peting Traveling Fellowship Recipient, University of Oregon, 2009

Vice President, Associated Students for Historic Preservation, University of
Oregon, 2008-2009

Bus Shelter Design, Tri-County Metropolitan Transportation District of Oregon
(TriMet) Portland, Oregon, 2003

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CHAPTER I

INTRODUCTION

We cannot build our way to sustainability; we must conserve our way to it.
Carl Elefante, AIA, LEED AP, 2007

As preservationists we seek to preserve the physical fabric that makes up our built environment and informs our cultural history. We are concerned with the fate of the resources we protect and in discussing sustainability and how best to reduce our carbon footprint, we along with Anthony Veerkamp, of the National Trust for Historic Preservation ask “instead of building new, why not take care of what we already have?”¹

In recent years, green has become a call to action, “*go green!*” as the nation and the world confront rising oil prices, rising oceans, melting ice packs and increasing scarcity of resources. Without deliberate action by all industries, sectors and citizens toward sustainability and conservation to reduce carbon and greenhouse gas emissions this trend will continue. The preservation community must continue to lead the way in conservation.

Sustainability and conservation have always been central tenets of the preservation movement. During the energy crisis of the 1970s, the preservation community advocated building reuse as an energy efficiency strategy. Reuse of an existing building is the reuse of its embodied energy; the energy already invested from

¹ Veerkamp, Anthony. "A Preservation Response to Global Warming: Jumping on the Bandwagon or Leading Our Own Parade?" *Forum Journal* v. 23, no. 01 (Fall 2008), 35.

extraction, transport, manufacture, assembly, installation, disassembly, deconstruction and/or decomposition. In 1979, The Advisory Council on Historic Preservation commissioned a report, "Assessing the Energy Conservation Benefits of Historic Preservation: Methods and Examples," to study the correlation between historic preservation and energy conservation. This report (which is currently being revisited) established methods to calculate the amount of energy embodied in a building based on materials and methods used to construct the building. For example, the energy embodied in 1 cubic yard of concrete or enough concrete for a 6'x9' foot 6" inch thick slab is equivalent to approximately 22.5 gallons of gasoline.² Or, 10 board feet or a 12' long 1" x 6" piece of hardwood flooring embodies 142,830 Btus which is equivalent to 1 and a quarter gallon of gasoline.³ This report established some of the core arguments that are used today to promote preservation and building reuse as sustainable practices:

- Once energy is embodied in a building, it cannot be recovered or used for another purpose
- Preservation saves energy by taking advantage of the nonrecoverable energy embodied in an existing building and extending the use of it.
- Publicizing the energy conservation benefits of preservation can increase public awareness of this hidden benefit of preservation.⁴

² This data is updated from the 1979 calculations to include 114,500 Btu/gallon of gasoline estimates based on the 2007 EPA Fuel Economy Impact Analysis of Reformulated Gasoline for summer months.

³ Ibid.

⁴ Advisory Council on Historic Preservation, "Assessing the Energy Conservation Benefits of Historic Preservation: Methods and Examples," Washington, D.C., 1979, p. 15.

Thirty years later the preservation community is still promoting building reuse as a responsible practice and more recently began advocating for the integration of green building technologies in the rehabilitation treatments of historic buildings. As a result there is an ever growing number of rehabilitated historic buildings in the United States incorporating not only sustainable building designs but also achieving Leadership in Energy and Environmental Design (LEED) certification. Developed by the US Green Building Council (USGBC) in 2000, LEED is a rating system that provides a framework for “identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.”⁵ LEED is the most widely recognized standard for green building in the United States and is often used to demonstrate a building’s sustainability. Aside from the environmental benefits of a high performing LEED-certified building like energy use reduction, improved air quality and use of rapidly renewable materials; there are economic benefits of a LEED building. For example, in Maryland the state rehabilitation tax credit is 20% for regular projects and 25% if LEED Gold certification can be achieved.⁶ According to the USGBC as of January 2009 there were 17,450 registered and 2,122 certified LEED buildings in the United States. These numbers include many historic buildings; however, most historic buildings achieving LEED-certification are large, architect-designed buildings in urban settings that have been rehabilitated for cultural and commercial uses. This thesis

⁵ U.S. Green Building Council, *USGBC: Intro - What LEED is*. 2008, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1988> (accessed March 15, 2009).

⁶ National Trust for Historic Preservation, *PreservationNation » Blog Archive » It’s Official! LEED Gold for President Lincoln’s Cottage Visitor Education Center*, April 6, 2009 <http://blogs.nationaltrust.org/preservationnation/?p=3848> (accessed April 7, 2009).

explores the application of the LEED rating system to the sustainable rehabilitation of The Jeff. Smith's Parlor Museum, a historic vernacular building in Skagway, Alaska.

Vernacular buildings, situated in common by materials, style, time and location, constitute a significant proportion of the historic building stock in the United States. Vernacular buildings like the Jeff. Smith's Parlor Museum were constructed by builders who used whatever materials were available and with whatever skills they possessed and are found throughout the United States.⁷ However, there is little discussion about sustainable or LEED-based rehabilitations of historic vernacular buildings.⁸ Often constructed with limited resources and long before the concept of high performance buildings or those that are considered green or sustainable by emphasizing technology to reduce environmental impacts and control building comfort measures began to influence design; the builders of these vernacular buildings relied on local materials, building location, operable windows, natural daylight and other sustainable design concepts to construct a building for their time and now ours. When rehabilitated there is the potential that alterations could be inconsistent with the building's sustainable legacy.

The Jeff. Smith's Parlor Museum in Skagway, Alaska represents this challenge. Built in 1897, the museum is a Klondike Gold Rush-era building that is a contributing

⁷ Dell Upton and John Michael Vlach, *Common Places: Readings in American Vernacular Architecture* (Athens: The University of Georgia Press, 1986), xvii.

⁸ Sophie Lambert, Director Neighborhood Development with USGBC and Barbara A. Campagna, FAIA, LEED AP, Graham Gund Architect of the National Trust, Stewardship of Historic Sites National Trust for Historic Preservation confirmed via email correspondence with author that there are no historic vernacular buildings registered or LEED certified at this point May 6, 2009.

resource to the Skagway Historic District and White Pass National Historic Landmark.⁹

The National Park Service owns the museum and plans an extensive rehabilitation on this modest, wood plank building, to house a collection of artifacts related to the history of the building, Skagway and the Klondike Gold Rush.

This thesis provides a discussion of the newest version of LEED for New Construction and Major Renovations (LEED-NC) released in April 2009 as applied to the rehabilitation of the museum. The intent with this research is to indicate the LEED-NC credits that are useful, appropriate and attainable for the rehabilitation of the Jeff. Smith's Parlor Museum and explore whether or not LEED-certification is necessary or beneficial to meet the sustainability goals of the rehabilitation project. Included in this project is a synthesis of findings from previous research related to LEED-certification for historic buildings with the intent to further common strategies and outcomes, and identify areas where additional research is necessary.

⁹ United States Department of the Interior, National Park Service. *National Historic Landmark Nomination: Skagway and White Pass District*. Washington, D.C.: United State Department of the Interior, National Park Service, 1999, 12.

CHAPTER II

LEED AND HISTORIC PRESERVATION

LEED 2009

Established in 1998 by the U. S. Green Building Council, Leadership in Energy and Environmental Design (LEED) is

a voluntary, consensus-based national rating system for developing high-performance, sustainable buildings that addresses all building types and emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials and resources selection, and indoor environmental quality. LEED is a practical rating tool for green building design and construction that provides immediate and measurable results for building owners and occupants.¹

LEED has undergone several revisions and in April 2009 version 3.0 was released with a new weighted point system for credits tied to strategies with the greatest impact. The new LEED 2009 rating system is concerned most with climate change and credits related to reducing a building's carbon footprint are worth more points. The point distribution in LEED 2009 changed but the credits did not. Previous versions of LEED were critiqued by preservationists for overlooking the importance of preserving buildings for cultural value; not effectively considering the performance, longer service lives, and embodied energy of historic materials and assemblies; and being overly focused on future

¹ *U.S. Green Building Council*, November 10, 2008, <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1816&> (accessed November 11, 2008).

technologies, neglecting the advantages of many traditional building practices.² In 2006, the National Trust for Historic Preservation created a Sustainable Preservation Coalition to work with the USGBC to revise the LEED rating system. Throughout 2008 the Coalition and the USGBC have worked to incorporate more social and cultural metrics in the LEED 2009 version.

The rehabilitation of the Jeff. Smith's Parlor Museum will adhere to the Secretary of the Interior's Standards for Rehabilitation of Historic Buildings and possibly LEED for New Construction and Major Renovation (LEED-NC) 2009. The treatment plan for the museum includes rehabilitating the building as a museum to house a collection of artifacts related to the history of Skagway, Alaska and the Klondike Gold Rush. The poor condition of the building necessitates a significant rehabilitation to the building envelope, foundation and interior finishes. This rehabilitation will serve as an early test application of the LEED-NC rating system for a historic building in Alaska, but also the first building in the Skagway District of the Klondike Gold Rush National Historical Park in Skagway, Alaska that is LEED certified.

Rehabilitation of the Jeff. Smith's Parlor Museum

History of the Jeff. Smith's Parlor Museum

The Jeff. Smith's Parlor Museum is significant not only for its association with the Klondike Gold Rush phenomenon but also for the post gold rush individuals who owned and maintained the building to keep the story of Skagway in the mind of the

² Campagna, Barbara A., "How Changes to LEED Will Benefit Existing And Historic Buildings," *Forum News*, November/December 2008, 2.

touring public for over a hundred years. Many visitors today still visit the Parlor Museum even though its doors have been closed to the public for over twenty years. Given its close proximity to the Klondike Gold Rush Historical Park Headquarters and the popular Red Onion Saloon that is across the street, many visitors walk to the museum for pictures or as part of a tour. In the nineteenth century, the Klondike Gold Rush attracted international attention to Skagway as stampeders, merchants, photographers, entrepreneurs and con men all sought fortunes in the mountains beyond. Today the city of Skagway continues to host international visitors as part of the city's thriving tourist and cruise industry. Many of these visitors are attracted to the story of Jefferson "Soapy" Smith; a story made vibrant through the work of Martin Itjen and George Rapuzzi, and the existence of the Parlor Museum.

First Bank of Skagway: 1897

Like many buildings in Skagway, the museum building was moved several times to accommodate the needs of whomever the present owner happens to be at the time. Most buildings in Skagway were moved to Broadway after the boom years of the 1897 gold rush-era to create an easily accessible business district for the fewer and fewer visitors that were coming to Skagway. The museum was moved in 1916 and again in 1963 to its present location on Second Avenue one block east of Broadway (see Figure 1). Originally constructed in 1897 (exact date is not known) on the north side of Sixth Avenue between Broadway and State streets, the museum building was most likely the First Bank of Skaguay (see Figure 2). After the First Bank of Skaguay [*sic*] moved

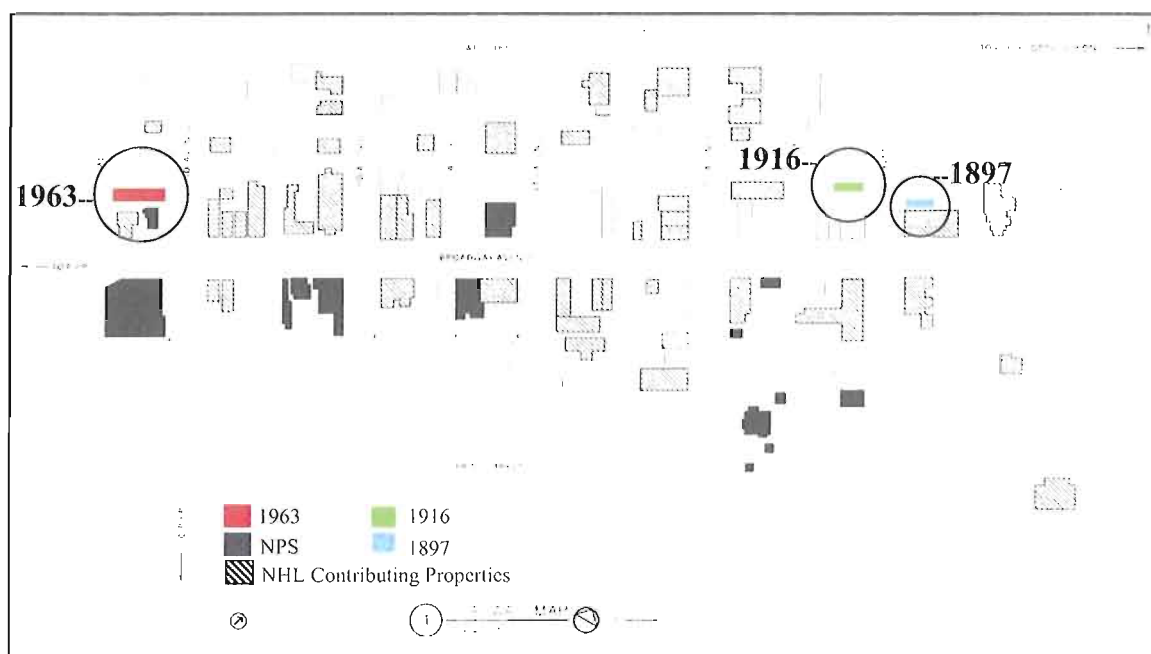


Figure 1. Map of Skagway based on 1999 National Historical Landmark Nomination form indicating the historical locations of the Jeff. Smith's Parlor Museum building.

ownership of the building transferred to Frank Clancy in partnership with Jefferson Randolph "Soapy" Smith.³

Jeff. Smith's Parlor: 1897-1898

Born in Georgia, Smith arrived in Skagway in 1897 along with his gang of thieves and con men. Smith earned the moniker "Soapy" in Denver, Colorado, from one of his con games in which he sold soap wrapped in paper money ranging from one to hundreds of dollars. Smith would auction these bars of soap wrapped in the money and bagged, to an audience of fortune seekers. Inevitably Smith would sell all of his bars of soap but

³ Karl Gurcke, NPS Historian Klondike Gold Rush National Historical Park unpublished history of the Jeff. Smith's Parlor Museum, July 2008.

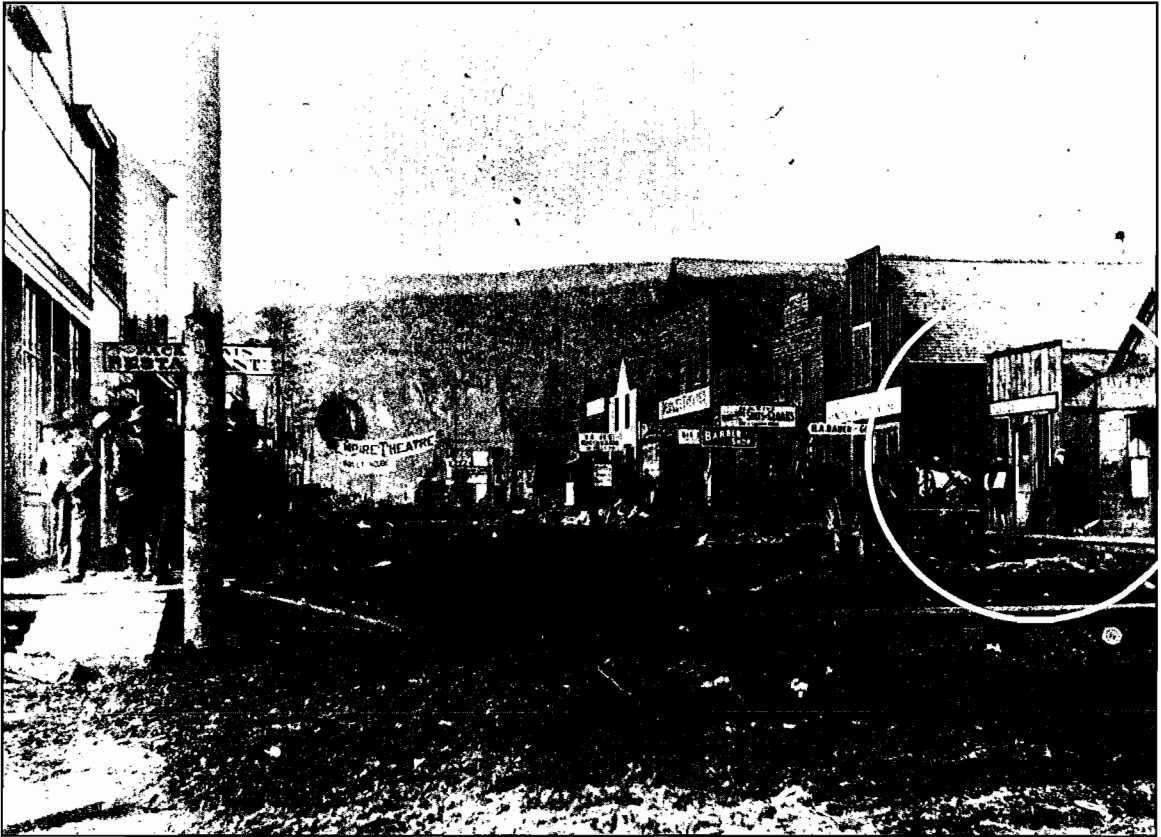


Figure 2. The First Bank of Skaguay, ca. 1897 (circled). *Source:* Image courtesy of Alaska State Library, print P258-III-85-795A Robert DeArmond Photograph Collection; Klondike Gold Rush National Historical Park (KLG0) 6th-19-1103.

those wrapped in hundreds of dollars would only land in the hands of his gang members disguised in the audience. Smith ran cons like this through Denver and other mining boom towns in Colorado in the 1890s before following the gold rush north to Alaska. Smith's tenure in Skagway was short but notable. Upon arrival in 1897 he set up shop in the museum building and commenced with his cons and deleterious activities. The following is a description of the operation Smith ran from the "Jeff. Smith's Parlors" (see Figure 3):

It looked innocent enough, with its polished mahogany bar, its fretwork screens, and its artificial palm trees, but into Jeff's Parlor the suckers were lured like so many flies....Behind the main restaurant and bar was a pretty back parlor, as cozy as a lady's boudoir, and it was here the unwary were cheated or robbed of their money. Behind this was a small yard enclosed by a high board fence especially constructed with a secret exit through which Smith's gang could disappear with their loot. The enrage[d] victim, rushing after his vanishing bankroll, would burst out the back door only to be baffled by an empty lot and a blank wall. This was the place where the innocents were sometimes taken for a look at 'the eagle' only to be slugged and robbed while they were admiring the bird, a stuffed specimen of uncertain age.⁴

Not four days after Smith served as the grand marshal of the July 4th parade in Skagway was he dead at the hands of vigilante Frank Reid. Earlier this week in 1898 members of Smith's gang robbed the gold of a miner just returned from the gold fields. Enraged and fed up by Smith and his gang some of the citizens of Skagway banded together to enact mob justice. Smith died in a shootout with Reid when Smith went to confront this mob. Reid was also shot in this exchange died several days later.

Hook and Ladder Company: ca. 1900-1924

After Smith's death the museum building appears to have passed through several owners and functions between 1899 and 1900 (see Figures 4 - 6). In 1900 the museum building owner Lee Guthrie granted the building to the City of Skagway to use for the Hook and Ladder Company Number 1.⁵ As indicated in the 1898 Sans Souci advertisement the museum building (then the restaurant) was adjacent to Hose Co. No. 1

⁴ Robertson, Frank C. and Beth Kay Harris, *Soapy Smith: King of the Frontier Con Men*, (New York: Hastings House Publishers, 1961), p. 191-192.

⁵ Karl Gurcke, NPS Historian Klondike Gold Rush National Historical Park unpublished history of the Jeff. Smith's Parlor Museum, July 2008.

(see Figure 7). Together these two buildings housed the volunteer fire department through the 1920s and 30s. During this time though the building was altered with the rearrangement of the front door and windows to accommodate the double bay doors necessary for the Hook and Ladder truck. The museum was also moved to the other south side of Sixth Avenue in 1916.



Figure 3. Jeff. Smith's Parlor ca. 1897. *Source:* Image ZZ-95359 courtesy of Royal BC Museum, BC Archives; KLG0 6th-50-5600.

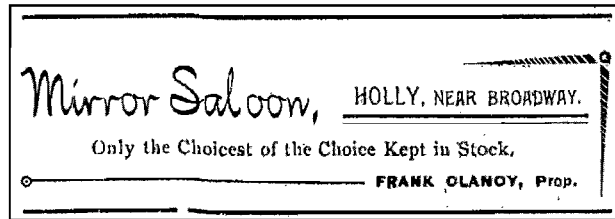


Figure 4. "Mirror Saloon," Sept. 23, 1898 *Skagway News* advertisement. Digitally enhanced.



Figure 5. "Clancy's," Jan. 16, 1898, *Daily Alaskan* advertisement. Digitally enhanced.

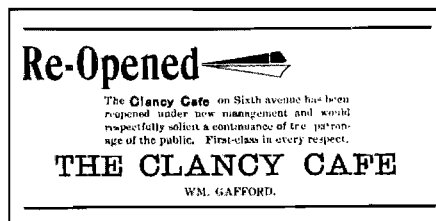


Figure 6. "Re-Opened Clancy's," Jan. 16, 1898, *Daily Alaskan* advertisement. Digitally enhanced.

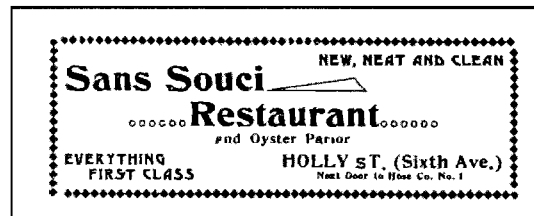


Figure 7. "Sans Souci," Jan. 16, 1898, *Daily Alaskan* advertisement. Digitally enhanced.

The Bank of Alaska purchased the museum building's original lot on the north side of Sixth Avenue and to make way for the new bank, the fire department buildings were moved. The *Daily Alaskan* reported at the time that Fire Hall No. 2, which was directly adjacent to the Hook and Ladder Shed (the museum building), was moved to accommodate the new bank.

Fire Hall No. 2 [sic] is being moved across the street from its former location on Sixth Ave. Workmen have been busily engaged for the last two days rolling the big wooden frame building to its new location.

It will be located on property owned by Mr. Guthrie, located on the same street as formerly, only on the south side of the street. Solid foundations will be placed under the building and it will be in excellent condition in its new found home.⁶

While the Hook and Ladder Shed is not mentioned specifically, based on period photographs and its close proximity and association with the Fire Hall No. 2 it is accepted that both buildings were moved in 1916 (see Figure 8) to the south side of Sixth Avenue.⁷

Martin Itjen and Jeff. Smiths Parlor Museum: ca. 1935 – 1963

The museum building remained under city ownership until 1935 when it was sold former stamper Martin Itjen. Itjen was an early Skagway tourism advocate who “restored” the building and opened it as Jeff Smith’s Parlor Museum.⁸ Itjen, born January 24, 1870, was a true son of Skagway despite being an immigrant from Germany

⁶ “Fire Hall No. 2 [sic] Moved Across Street,” *Daily Alaskan*, April 26, 1916, 4.

⁷ Karl Gurcke, NPS Historian Klondike Gold Rush National Historical Park unpublished history of the Jeff. Smith’s Parlor Museum, July 2008.

⁸ Allen, Lois Hudson, “He Takes ‘Em for a Ride,” *The Alaskan Sportsman*, September 1940, p. 14-27.

who found his way to Alaska from Florida with his wife Lucille in the 1890s.⁹ He worked at several professions while in Skagway. He served as town undertaker, operated the local Bay View Hotel; opened the first Ford dealership in town; and ran the *Skaguay Street Car Company*. Most notably, he was a tireless promoter of Skagway tourism until his death in 1942.

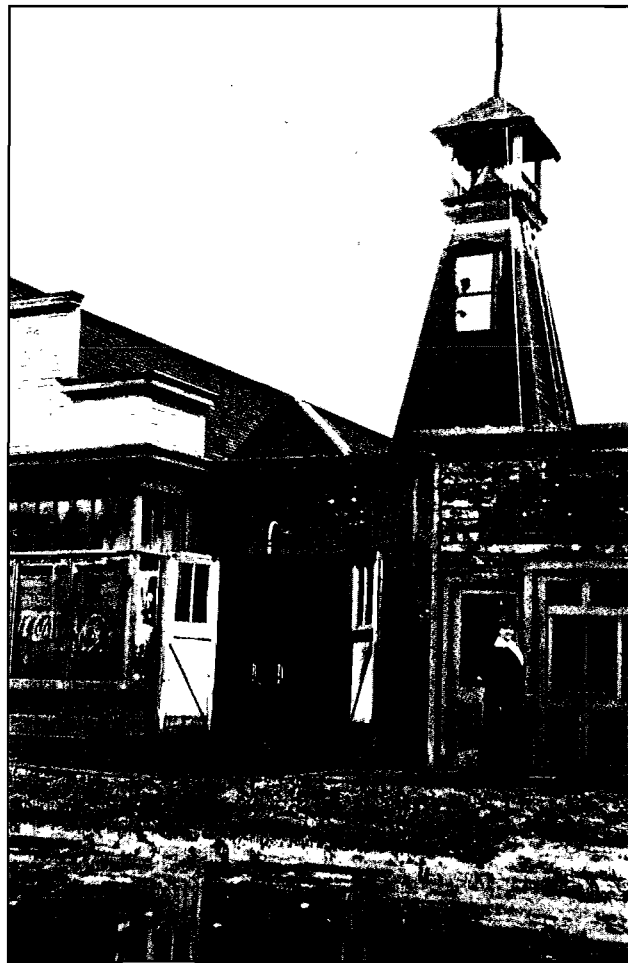


Figure 8. Hook and Ladder Shed (museum building) on the right with female figure standing in front, ca. 1915. *Source:* Library of Congress, image LC-DIG-ppmsc-02008 of the Frank and Frances Carpenter collection; KLGO 6th-69-9049.

⁹ Allen, Lois Hudson, "He Takes 'Em for a Ride," *The Alaskan Sportsman*, September 1940, p. 14-27.

In 1935, Itjen went on a well-documented road tour in one of his famous Skaguay [sic] Alaska Street Cars along the west coast to bolster interest and travel to Skagway.¹⁰ On this trip, he met with Mae West and invited her to “come up and see him sometime” in Skagway. The story of Itjen and West made the cover of many national newspapers earning him and Skagway much notoriety. Itjen’s agent, Don Mills, booked him up and down the west coast to tell tales of Skagway and Alaska as a former stamper and to showcase his street car. Itjen performed at almost any venue that would host him including Ford dealerships and theatres like the Paramount in Seattle, WA.¹¹ He completed his tour that year and returned to Lucille and the task of restoring the Parlor Museum.

Throughout his life Itjen continued to promote himself, his tours and Skagway. In 1940, two years before Martin Itjen died, his name appears on the manifest of the S. S. City of San Francisco bound to New York City from San Francisco. Itjen would have been seventy years old at this time and while the purpose of his travel is not known he most likely was talking up Skagway coast to coast.¹²

¹⁰ Itjen built his street cars on Ford chassis and outfitted his fleet of four cars with electronic manikins. One car had a bear attached to the front of the car that signaled with its arm left or right as the car turned. Another car was equipped with an effigy of Soapy Smith. Itjen’s Skaguay Street Car tours were very popular with tourists arriving in Skagway – Itjen met all ships at the dock driving one his cars and selling tours for fifty cents a person. (Allen, Lois Hudson, “He Takes ‘Em for a Ride,” *The Alaskan Sportsman*, September 1940, p. 14-27, p. 14.)

¹¹ Wieking, Henry Charles and Robert Henry Wieking, *Martin Itjen: A Collection of Memorabilia*, Wieking: Ellensburg, WA, 1997, document on file in Klondike Gold Rush National Historical Park Headquarters Library.

¹² S. S. City of San Francisco, Passenger List, Passenger and Crew Lists of Vessels Arriving at New York, 1897-1957; National Archives Microfilm Publication T715, roll 6447, line 5, 1940, http://search.ancestry.com/cgi-bin/sse.dll?rank=1&new=1&MSAV=0&msT=1&gss=angs-g&_80004000=martin+itjen&pcat=ROOT_CATEGORY&recid=35354046&recoff=1+2&db=nyp1&indiv=1 [accessed on July 16, 2008].

When Itjen acquired the Parlor he restored it from the Hook and Ladder Company building to a version of Jeff. Smith's Parlor which he likely based on historical photographs given his restoration treatments. Itjen's restoration though was not a true restoration but more an interpretation of how the building looked based on historical photographs. For example, Itjen could have used photographs from Decoration Day in 1898, when a banner was draped over the false front, obscuring the apostrophe leading Itjen to name his building "Jeff. Smiths Parlors" rather than the "Jeff. Smith's Parlors" that was the historical name of the building during Jefferson Smith's era. Itjen replaced the double doors installed by the fire department with the pair of windows and a door and aligned the head trim of the windows and door, though this treatment is not consistent with historical photographs of the building during Smith's time. The windows are similar to those in historical photographs from the First Bank of Skaguay [*sic*] and Jefferson Smith eras and could be original but the front door is different. City of Skagway tax records indicate that by 1939 Itjen was paying taxes on this lot with improvements noted as being worth \$200.

Itjen's museum included a mechanical effigy of Soapy Smith that stood at the bar and greeted visitors by turning and raising his beer glass. Itjen papered the interior walls with newspapers dating from the gold rush to the 1930s that highlighted stories about Skagway, gold rush events and Itjen's meeting with Mae West. He also pasted receipts, ship manifests, signs and advertisements related to gold rush era Skagway on the walls. Many of these documents are originals and still present in the museum but their condition is quite poor.

The Jeff. Smith's Parlor Museum was an important part of Itjen's Skagway tours until his death in 1942. After World War II, Itjen's friends Jack Greisbach and George Rapuzzi assisted Itjen's wife Lucy in keeping the museum open. Tax records indicate that Rapuzzi took over paying taxes on the lot in 1945.¹³ Lucy Itjen died in 1946 and when Griesbach could no longer assist with museum operations after 1950 (he died in 1952), Rapuzzi assumed sole responsibility for the museum and Itjen's collections.

George Rapuzzi and The Jeff. Smith's Parlor Museum: 1963 – ca. 1980s

When George Rapuzzi took over the Parlor Museum after World War II, he was still working as a machinist for the White Pass and Yukon Railroad (WP & YR). Born December 18, 1899 to Theresa "Ma" and George Sr. Rapuzzi, George was the youngest of five children and the only one to live his entire life in Skagway. Like Itjen, Rapuzzi was a loyal promoter of Skagway history. He was one of three who climbed a mountain (later named Mount Harding) outside the city to raise an American flag on the summit when President Warren G. Harding visited in 1923.¹⁴ Rapuzzi and his wife, Edna, kept the museum closed during the 1950s for lack of time and money to repair the building. However, in 1963, two years before he retired from the WP & YR, they moved the museum from Sixth Avenue to the south side of Second Avenue, near Broadway where it stands today.

¹³ Assessment and Tax Rolls of the City of Skagway, Alaska, 1900-1970; Historical Records of the City of Skagway, Alaska, Vols. 36-80

¹⁴ Clifford, Howard, *The Skagway Story*, (Anchorage: Alaska Northwest Publishing Company, 1975), 99.

According to longtime Skagway resident and news writer, Barbara Kalen in the *Alaska Sportsman* from November 1963, after moving the structure to Second Avenue, Rapuzzi planned to put in a new foundation, replace the floor in the back room, put on new corrugated galvanized “tin” roofing, and replace the siding with vertical rough planking (board and batten) just as it was during the gold rush.¹⁵

Photographs taken by the Rapuzzi’s of the 1963 move illustrate two small buildings attached to the back of the historic building after the building was moved to Second Avenue. These additions to the rear of the museum appear to have been separate historic buildings, however, their original location and functions are unknown. The 1948 Sanborn Fire Insurance Map illustrates several unattached buildings to the rear of the museum and the roof flashing of the building with the tall ridgeline appears to match that of the building being attached to the back of the museum on Second Avenue. It seems likely therefore that both additions to the museum were vacant historic structures that were either moved to Itjen’s lot in the mid-to-late 1930s to support his museum or were there already. The additions may have been associated with Itjen’s museum operations but were separate on his lot and likely joined to the main building after its move (see Figures 9 and 10). Thus having repaired, expanded and restored the building, the Rapuzzi’s once again opened the building to visitors as the Jeff. Smith’s Parlor Museum in 1964.

¹⁵ Barbara D. Kalen notes in “This Month in History,” in the *Alaska Sportsman* from November 1963, that the adjacent fire hall “which had been a landmark on the lot just next to Jeff’s Parlor, was so far gone it had to be torn down.”



Figure 9. Jeff. Smith's Parlor Museum, 1979 (NW). *Source:* Klondike Gold Rush National Historic Park photographer Richard Frear; KLGO D-1970 2nd 6-1863.



Figure 10. Jeff. Smith's Parlor Museum, 1979 (NE). *Source:* Klondike Gold Rush National Historic Park photographer Richard Frear; KLGO D-1970 2nd 6-1862.

Following George's death in 1986, Edna Rapuzzi continued to open the museum to visitors, but by appointment only. When her health began to fail, the museum was closed, and the doors and windows were boarded over. Edna died in 1988 and having no children of their own, the Rapuzzi's estate passed to niece Phyllis Brown. In April 2007, Brown sold the Rapuzzi collection of artifacts (including one of Itjen's original street cars), memorabilia and historic buildings including the museum, to the Alaska-based Rasmuson Foundation. The Rasmuson Foundation donated the museum to the National Park Service Klondike Gold Rush National Historical Park in early 2009. The museum will undergo a rehabilitation to house the collection of Itjen and Rapuzzi and once again tell the colorful story of Skagway, her citizens and this time that of sustainable historic preservation (see Figure 11).



Figure 11. The Jeff. Smith's Parlor Museum, July 2008. *Source:* National Park Service/Alaska Regional Office, July 2008.

Building Description

Built in 1897, and after several alterations and additions, The Jeff. Smith's Parlor Museum measures 12'6" x 83'. The building is largely wood plank or box construction; however room B is stud-wall construction. Room B and C had been freestanding buildings that were attached to the rear of the historic parlor section A in 1963. The gable roof has three distinct sections (A, B and C) that are sheathed with cedar shingles and corrugated metal. A deteriorating masonry chimney is situated along the ridge of the longest roof section A (see Figure 12). Board and batten siding is common to all exterior sides of the museum save the principle north façade which is horizontal beveled shiplap. See Appendix A for Historic American Building Survey drawings for detailed drawings and diagrams of the museum building.

The main entrance to the museum is on the north façade facing Second Avenue. There is also a door on the west elevation. There are three windows in the museum— two windows adjacent to front door, and one small fixed window on the east elevation.

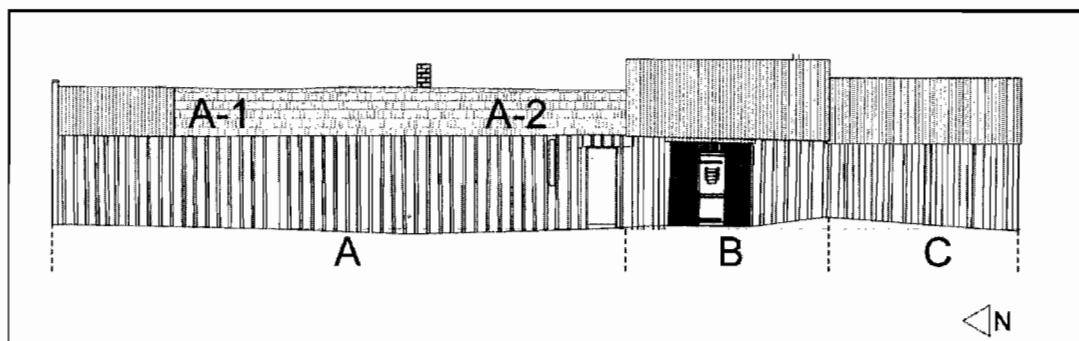


Figure 12. The Jeff. Smith's Parlor Museum west elevation with section labels.

Site

The museum is located in Skagway, Alaska within the Klondike Gold Rush National Historical Park. Situated in the middle of lot 2 on block 3, the museum is on Second Avenue, one block west of Broadway Street. The White Pass and Yukon Railroad (WP & YR) tracks run behind the museum to the south. Adjacent to the east is the Martin Itjen house, and to the west of the museum is the WWII Commissary building.

Set back ten feet from the street, the museum property is enclosed by a chain link fence with grass, roses and bushes immediately surrounding the building (see Figure 13). There are a variety of objects such as rusting wheels, pulleys, cast iron stove, trash cans, and a wooden ladder discarded around the site, mostly in the large grassy area to the west of the building.



Figure 13. The Jeff. Smith's Parlor Museum northeast corner and surrounding site. *Source:* National Park Service/Alaska Regional Office, July 2008.

Building

For the purpose of this report, the sections of the building will be referred to as sections A, B and C (see Figure 145. The museum building is rectangular in plan, measuring 12'6" x 83' and is a one-story, wood building. The roof is oriented north-south and is clad with cedar shingles and galvanized metal. The interior plan is organized into four rectangular rooms (A-1, A-2, B and C) and one bathroom in room A-1.

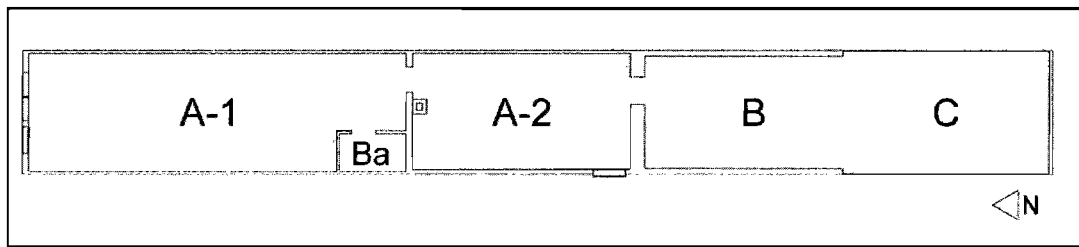


Figure 14. The Jeff. Smith's Parlor Museum plan with room labels.

Foundation

The single story building has at least three distinct foundation types. Beneath section A-1 the building sill rests on two logs running parallel to the length of the building (see Figure 16). These logs rest on stacked piers that consist of log cuts, stacked on stone and chunks of concrete. This foundation is visible from a small crawl space that is accessible by a trap door in the floor of room A-1.

Under section A-2 is the second foundation type which has a deeper cellar (see figure 16). Here the building sits on logs resting atop two sides of the concrete walls of the cellar. A 5'2" tall 1 1/2" diameter post supports the floor joists in the center of the cellar. There is a large opening and cave-in exposing the west side of the cellar to the outside.



Figure 15. Log foundation along east wall of section A-1. *Source:* National Park Service/Alaska Regional Office, The Jeff. Smith's Parlor Museum Historic Structures Report, 2008.



Figure 16. Log foundation along west wall of section A-2. *Source:* National Park Service/Alaska Regional Office, July 2008.

The third foundation under sections B and C and appears to be simple sill on grade and is not accessible from the cellar or through a crawl space. The entire building is sinking noticeably toward the northwest corner and along the west foundation.¹⁶

Walls

The 7'2" feet high walls are largely wood plank or box construction; a construction method that is common to many gold rush era buildings in Skagway. plank/box construction was quick and required few materials. Section B is stud wall construction and not plank but is sheathed with board and batten. In Section C the vertical supporting planks are not siding but battened structure of plank construction. The board and batten siding covers the east, south and west sides of the museum (see Figure 17). The batten widths on the south elevation are wider than those on the east and west elevations. The principle north false-fronted façade consists of horizontal shiplap siding. All of the walls show signs of weathering with graying wood and chipping/flaking white or light colored paint.

¹⁶ "Like most of the earliest buildings in Skagway, this one [Jeff. Smith's Parlor Museum] had been built right on the ground. The boomtown carpenters of the early days didn't waste time setting in foundation posts or rock or concrete pads. They just laid the stringers directly on the dirt and slapped the buildings up fast. Buildings and homes that have been in continuous use since then all have had foundations put under them. The old ones that have not been taken care of really are falling apart." Barbara D. Klein, *Alaska Sportsman*, November 1963, 32.



Figure 17. East elevation with board and batten siding. *Source:* National Park Service/Alaska Regional Office, July 2008.

Windows and Doors

Only two doors and three windows provide egress and light to the museum. The main doorway on the north facade opens directly into original parlor/bar section of the building that dates to 1897 (see Figure 18). This doorway is framed with painted trim boards on the interior and exterior. The wooden door is three paneled on the bottom half and has a fixed window on top that is presently covered with plywood. Three strap hinges connect the door to what appears to be a rod fixed in the door frame. There are large gaps between the door and door frame.

The second doorway is on the west elevation and consists of two doors. The external batten door is constructed of five wood planks held together by diagonal, top, and bottom braces. The internal door opens into room A-2 and is a simple four panel wooden door.

The most prominent windows of the museum are adjacent to the front door. These 2'4" x 4' windows are double hung wooden sash windows. They are two over two with large vertical lights. Like the front door light, these windows are also presently covered by plywood. The sashes are nailed shut on the inside and are inoperable. The only other window in the building is located on the east elevation in section B. The light of this small 2'2" x 1'7" fixed sash window is covered with plywood on the inside of room B (see Figure 19). Externally the window is simply trimmed in wood with three horizontal iron bars protecting the light.



Figure 18. Windows and main doorway on north elevation. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 19. Window and metal bars on east elevation. *Source:* National Park Service/Alaska Regional Office, July 2008.

Roof

The gable roof with false front has three distinct sections differentiated by pitch and cladding. The pitch of section A is 7:12 and is clad with cedar shingles. Corrugated metal covers a portion of these shingles on the northwest end of this section.

The most steeply pitched section of the museum roof is section B, where the pitch is 11:12. This section is covered entirely in corrugated and sheet metal. Here the gable faces extend above the ridges of roof sections A and B, and are faced with sheet metal. At the southern end of the building, roof section C has a pitch of 8:12 and is also clad in corrugated metal (see Figure 20). The false front of the museum is on the north end of roof section A and is clad in horizontal shiplap with a simple wood plank coping.



Figure 20. Metal gable roof of section B and C southwest elevation.
Source: National Park Service/Alaska Regional Office, July 2008.

The building has four different attic spaces despite only having three roof sections; roof section A covers two attic spaces. In attic A-1 and A-2 the rafters meet end to end at the ridge, with skip sheathing tying them together (see Figure 21). These rafters are saddle cut to rest directly on the top plate. There is a vertical plank partition wall, with a rectangular opening, between attics A-1 and A-2. The 1'2" x 1'5" masonry chimney is in attic A-2.

Attic B is constructed with a ridge board, rafters, collar ties and skip sheathing. The north partition wall consists of horizontal planks and separates this attic from attic A-2. To the south a similar partition wall separates attic B and C but there is a rectangular wall opening to access attic C. On the north end of this attic A near the peak, the ridge board, rafters and skip sheathing show charring from an unknown fire.

Like attics A-1 and A-2, the construction of attic C consists of rafters that connect end to end at the ridge. Unique to attic C is the cathedral ceiling just below the collar

ties. This attic/ceiling is above room C where the life size animal diorama is on display (see Figure 25).



Figure 21. Attic A-1 rafters at ridgeline. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 22. Attic B ridgeboard, rafters and collar ties. *Source:* National Park Service/Alaska Regional Office, July 2008.

Furnishings

The museum is sparsely furnished and the furnishings that are present appear to be mostly remnants of the Itjen/Rapuzzi collection once housed in this building. There are wood chairs, and boxes of miscellaneous items in rooms A-1, A-2 and B. In room A-1 is a long bar that is similar to the one in historical photos from the Soapy Smith era; however, this bar is most likely not the 1897/98 bar. There is a desktop hung from the wall in the southwest corner of this room. Presently, there are two temporary 2" x 4" stud stabilizing walls in room A-1 that will be removed following the rehabilitation (see Figure 23).



Figure 23. Room A-1 looking north. *Source:* National Park Service/Alaska Regional Office, July 2008.

In room A-2 is a painted wood bench, a free standing wood shelf and a cast iron stove (see Figure 24). There are a variety of objects--small tanks, lamps, boxes, etc. on the floor around the periphery of both rooms A-1 and A-2. Many of the walls in room A-

1 and A-2 are clad in historic newspapers, signs, ship manifest, receipts and other paper memorabilia related to Skagway and the Klondike Gold Rush. There are no furnishings in room B.

The most unusual furnishings in the museum are the preserved animals that are part of the life size diorama in the back of room C. This diorama is a grouping of animals collected by Martin Itjen as part of one of his museum exhibits. The animals were preserved with arsenic that was commonly used by taxidermists in the 1920/30s. The centerpiece of this life size diorama is two bull moose with interlocked antlers. According to local oral history, Mr. Itjen purchased the skeletons of these two bull moose that died of starvation after locking their antlers. Mr. Itjen then commissioned a hunter to shoot two moose for their hides that were then stretched around the skeletons restoring the moose to a more lifelike representation. Other mounted animals included in this diorama are a timber wolf, ram, deer, two white furred varmints situated in a branch, and a moose skull with deformed antlers (see Figure 25).



Figure 24. Room A-2 looking toward northeast corner. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 25. Room C wildlife diorama. *Source:* National Park Service/Alaska Regional Office, July 2008.

Mechanical and Electrical

The mechanical systems in the museum represent the technology that was available in the decades that this building was used and occupied. While electricity to the building is currently not connected, there are remnants of knob and tube wiring in the attic and more contemporary overhead florescent and incandescent lighting in all of the rooms (see Figure 26). In the small bathroom (in the southwest corner of room A-1), is a corner sink and toilet flange, though there is no toilet (see Figure 27). There is no running water within the museum.

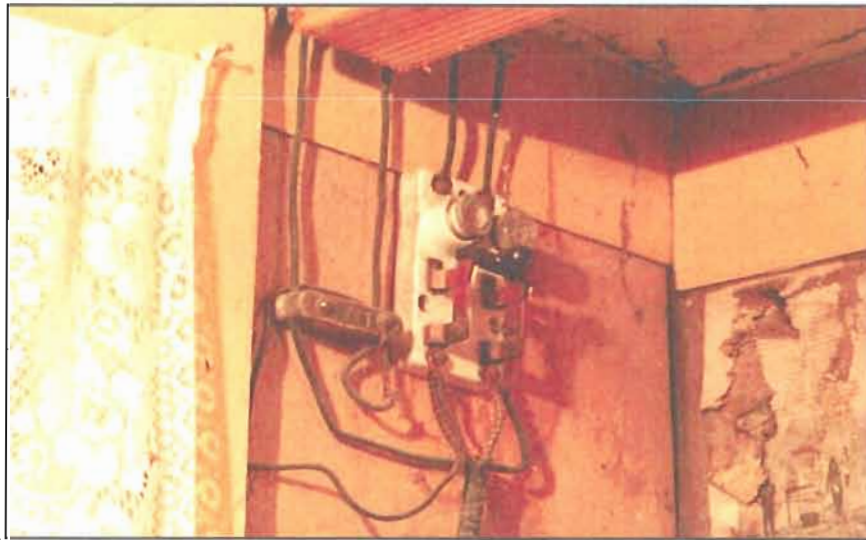


Figure 26. Knob and tube electric wiring in northeast corner of Room A-1. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 27. Sink and plumbing in bathroom. *Source:* National Park Service/Alaska Regional Office, July 2008.

National Park Service Rehabilitation Plan

The Jeff. Smith Museum is a contributing resource to the Skagway and White Pass District National Historic Landmark at risk for loss if not treated. After years of neglect, multiple moves, and remodels, the building is deteriorated and the structural integrity compromised. The following is a discussion of the rehabilitation of the museum based on the condition assessment conducted in July and August 2008 (see Appendix B) and the Secretary for the Interior's Standards for the Treatment of Historic Properties and in particular the Standards for the Rehabilitation of Historic Properties. Chapter III includes a discussion of the LEED for New Construction and Major Renovation 2009 credits that may benefit the rehabilitation. Refer to Appendix A: Historic American Building Survey Drawings and Appendix B: Condition Assessment for related drawings and images.

The planned rehabilitation will reestablish the building as a museum reminiscent of the eras of Martin Itjen and George Rapuzzi, but with modern curatorial amenities. Following this treatment, the building would retain its historic use as a public museum showcasing the story of “Soapy” Smith, Skagway, Itjen and Rapuzzi. Much of the historic building fabric from these eras remain and are well documented in photographs, newspapers and city records. Rehabilitation of the building as The Jeff. Smith Museum affords the Klondike Gold Rush Historical Park curator(s) with a venue to exhibit artifacts and objects associated with Itjen, Rapuzzi and the early years of Skagway following the Gold Rush. Given the potential exhibit space within the building and the breadth of the Rapuzzi Collection, rehabilitation of the museum provides ample space for a rotating exhibit of items from this collection. Rehabilitation of this building protects a valuable resource to the history of Skagway and the Klondike Gold Rush National Historical Park. The rehabilitation treatment requires the following:

- A new concrete foundation.
- Structural upgrades to the building envelope to accommodate load bearing members and weatherization.
- Cedar shingle and corrugated metal roofing improvements.
- Site improvements.
- Installation of a new mechanical and electrical system to accommodate environmental systems appropriate to maintain curatorial objects.
- Preservation or replacement of news clippings, articles, photographs and other paper ephemera on the interior walls.
- Painting and weatherizing the building exterior.

This rehabilitation would be conducted in at least three phases. All work will be accomplished by Klondike Gold Rush National Historical Park (KLGON) Maintenance and Curatorial staff.

Phase 1: Preparation of the Building for Work in Phase 2

The purpose of this phase is to prepare the building for work accomplished during Phase 2 which will include substantial structural repairs and the construction of a new foundation. Phase 1 includes the removal of all salvageable and historical items for reuse reinstallation and/or curation as part of the building restoration. All environmental concerns such as lead, mold and other potential hazardous materials documented in the *September 2004 Hart Crowser, Inc Environmental Site Assessment* report will be abated.

Work in Phase 1 will include the following:

- Site tasks include the removal and curation of objects in and around the building prior to perimeter excavation.
- Exterior tasks include the removal of historic windows and doors for rehabilitation and reinstallation by KLGON NPS.
- Archeological compliance work.
- Interior tasks include stabilization of walls to prevent damage to news clippings, signs, receipts, and other paper documents attached to interior walls. These items in some place may need to be removed and/or reproduced for installation during the rehabilitation phase.
- Abatement of lead paint on exterior siding and trim as well as on interior walls.

Crawl Space

- Remove artifacts from all accessible crawl spaces, particularly under section A.
- Remove exterior siding to provide access to structure for improvements.

Room A-1

- Remove windows and door for treatment and reinstallation following Phase 2. (Treatment of the window may include repair, re-glazing, or replacing missing elements in kind. It may also include the removal or encasement of lead paint.)
- Remove flooring where necessary to access crawl space and foundation and as required to reinforce floor structure.
- Remove or stabilize and protect all news clippings, signs, receipts and paper documents on walls.
- Remove historical wood bar and other artifacts still present.
- Abate lead paint, mold, dust and vermin droppings.

Room A-2

- Remove doors for rehabilitation and reinstallation following Phase 2.
- Remove flooring where necessary to access crawl space and foundation and as required to reinforce floor structure.
- Stabilize masonry flue in anticipation of building shift associated with the installation of a new foundation.
- Remove or stabilize and protect all news clippings, signs, receipts and paper documents on walls.
- Remove cast iron stove, wood bench and other artifacts still present for curation and/or storage.
- Abate lead paint, mold, dust and vermin droppings.

Room B

- Remove window for rehabilitation and reinstallation following Phase 2.
- Remove flooring where necessary to access crawl space and foundation and as required to reinforce floor structure.
- Remove large panes of glass and other artifacts still present.
- Inspect electrical systems.
- Abate lead paint, mold, dust and vermin droppings.

Room C

- Remove or stabilize and protect the wildlife diorama during rehabilitation. Abate the arsenic present in these preserved animals.
- Remove flooring where necessary to access crawl space and foundation and as required to reinforce floor structure.
- Remove picture, mirror and other artifacts still present.
- Inspect electrical system.
- Abate lead paint, mold, dust and vermin droppings.

Bathroom

- Inspect plumbing and electrical systems to ensure no items are connected.

Attic

- Reinforce and stabilize masonry chimney flue in attic section A-2.
- Inspect electrical system.
- Remove any artifacts still present.
- Abate mold, dust and vermin droppings.

Phase 2: Construct New Foundation, Structurally Reinforce and Insulate Exterior Walls and Repair Roof Structure

Phase 1 will be completed prior to Phase 2. Work under Phase 2 will include construction of a new poured concrete foundation under the perimeter of the building. This phase will also include structural upgrades, insulation of exterior walls and leveling the grade across the site. Phase 2 will involve raising the entire building to access the crawl space for the new foundation. All archaeological compliance work must be completed prior to any excavation associated with Phase 2 and an archeologist should be present during activities of Phase 2.

Work under Phase 2 will include:

- Raise entire building to provide access for new foundation.
- Construct a new continuous concrete footing and concrete stem wall foundation.
- Inspect and repair and/or replace in kind deteriorated wall framing.
- Insulate exterior walls.
- Re-wire electrical system and upgrade plumbing.
- Inspect and repair roof structure.
- Repair to the overall structure to return it to a structurally sound condition.

Crawl Space

- Remove earth in section A and C to maintain 36” minimum clearance throughout crawl space.
- Construct a continuous concrete footing and concrete stem wall foundation.

Room A-1, A-2, B, C and Bathroom

- Plumb and level door jambs and window openings.
- Realign internal and external walls – removing 2”x4” stud wall stabilizers in room A-1.
- Insulate and structurally reinforce exterior walls.
- Introduce electrical and mechanical systems as necessary within exterior and interior walls and ceilings.

Attic

- Reinforce attic structure per engineer’s recommendations.
- Replace loose insulation material.

Roof

- Replace cedar roof shingles and corrugated metal roofing.

Phase 3: Exterior Restoration

Phases 1 and 2 will be completed before Phase 3. Work under Phase 3 will include the rehabilitation of the exterior of the building and site to an appearance that is consistent with building characteristics during the Martin Itjen and George Rapuzzi eras of 1935 to mid-1960s.

Work under Phase 3 will include:

- Rehabilitation and replacement of exterior siding and trim that was removed during Phase 1.
- Reinstallation of rehabilitated doors and windows.
- Paint exterior of building with color of paint as determined by paint analysis.
- Restore surrounding site by planting and removing vegetation consistent with the planned Museum program and based on historical photographs.

Phase 4: Interior Restoration

Phases 1 and 2 will be completed before Phase 4. Phases 3 and 4 may take place concurrently. Work under Phase 4 will include the rehabilitation of the interior of The Jeff. Smith's Museum consistent with the historic character of the museum during the eras of Martin Itjen and George Rapuzzi. Work under Phase 4 will be done in close collaboration with the Klondike Gold Rush National Historical Park Curator.

Work under Phase 4 will include:

- Restoration, replacement and/or reinstallation of flooring and trim.
- Restoration, replacement and/or reinstallation of news clippings, signs, receipts and other paper ephemera on interior walls.
- Rehabilitation of interior room furnishings per photographic documentation.
- Modify doorways per accessibility standards.

Room A-1, A-2 and B

- Restore, replace, and/or reinstall flooring and trim removed during Phase 1.
- Restore, replace, and/or reinstall the news clippings, signs, receipts and paper documents on walls.
- Reinstall the wood bar and shelf behind the bar in room A-1.
- Reinstall artifacts consistent with photographic documentation and agreed upon exhibit design.
- Paint walls and floor as necessary per paint analysis and historical photographs.
- Reconcile lighting fixtures per exhibit design and based on historical photographs.
- Install museum exhibits and artifacts per agreed upon program.

Room C

- Restore, replace or reinstall wildlife diorama.
- Restore, replace and/or reinstall flooring and trim removed during Phase 1.
- Reinstall pictures, mirror and other artifacts.
- Reconcile lighting fixtures per exhibit design and based on historical photographs.
- Paint walls and floor as necessary per paint analysis and historical photographs.

Bathroom

- Paint walls and floor as necessary per paint analysis and based on historical photographs.

CHAPTER III
PROPOSED LEED-NC 2009 REHABILITATION PLAN FOR THE JEFF.
SMITH'S PARLOR MUSEUM

LEED 2009 for New Construction and Major Renovation– Overview

Credits for LEED 2009 for New Construction and Major Renovation (LEED – NC) certification are divided into seven topic areas that promote environmentally sound construction and major renovation practices. These topics areas are as follows:

- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy and Atmosphere (EA)
- Materials and Resources (MR)
- Indoor Environmental Quality (IEQ)
- Innovation in Design (ID)
- Regional Priority (RP)

Certification under LEED 2009 for New Construction and Major Renovations is awarded according to the following scale:

- Certified 40–49 points
- Silver 50–59 points
- Gold 60–79 points
- Platinum 80 points and above

In addition to these points there are eight prerequisite credits that are required of all certified LEED-NC projects and up to four Regional Priority bonus points.

The rehabilitation of the Jeff. Smith's Parlor Museum is eligible for LEED-Silver certification and could potentially achieve a LEED-Gold certification if maximum points

are earned for most of credits applicable to project. The following is a discussion of only the prerequisites and LEED-NC credits in the seven topic areas that are attainable for the rehabilitation of the museum not all LEED-NC credits. The intent of each credit is described based on information from the USGBC LEED 2009 for New Construction and Major Renovations Rating Guide and the Reference Guide. For a complete list of all USGBC LEED 2009 for New Construction and Major Renovations credits see Appendix C. This document focuses only on the credits that are applicable to the rehabilitation of the Jeff. Smith's Parlor Museum and provides a brief description of point requirements for each credit. The objective of this section is to introduce specific LEED-NC credits that appear to apply to the museum rehabilitation and note any potential conflicts, challenges and/or synergies.

Sustainable Sites (SS) Credits – Overview

LEED-NC Sustainable Sites (SS) credits address issues of site selection and development, construction activities, transportation and pollution from storm water runoff, heat island effects and site lighting. There are 26 possible points in the LEED-NC Sustainable Sites category of which 17 are applicable to the rehabilitation of the Jeff. Smith's Parlor Museum.

SS Prerequisite: Construction Activity Pollution Prevention (Required)

This required prerequisite intends to “reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation.” The

loss of topsoil from on-site construction activities can not only reduce the quality of soil to support healthy vegetation but off-site erosion can lead to water quality issues like eutrophication and sedimentation.¹ To meet this prerequisite the project team must create an erosion and sedimentation control (ESC) plan in the design phase of the project. This ESC plan must meet the requirements of the 2003 EPA Construction General Permit² or local standards and codes whichever is more stringent.

The project team should prevent the loss of soil from storm water runoff and wind erosion by employing strategies such as temporary and permanent seeding, mulching, earthen dikes, silt fencing, sediment traps and sediment basins.³ It is advisable to reserve topsoil for reuse in the final landscaping phase. This is a Construction Submittal prerequisite.

SS Credit 1: Site Selection (1 point)

The intent of this credit is to “avoid the development of inappropriate sites and reduce the environmental impact from the location of a building on a site.”⁴ This project involves an existing historic building on a developed site thus minimizing development

¹ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 1st ed., Washington, D.C.: U.S. Green Building Council, 2008, 1.

² EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation). US EPA, Region 10, NPDES Stormwater Program, 1200 6th Ave (OW-130), Seattle, WA 98101-1128, Phone: (206) 553-6650 Permit No. Areas of coverage/where EPA is Permitting Authority: AKR100000 The State of Alaska, except Indian country.

³ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 1

⁴ *Ibid.*, 2.

impacts from new construction in the Skagway, AK community. This is a Design Submittal credit.

SS Credit 2: Development Density and Community Connectivity (5 points)

This credit awards 5 points to projects like the museum rehabilitation that channel development within existing communities and infrastructure to minimize sprawl. There are two ways to achieve this credit either by meeting the development density requirement of 60,000 square feet per square acre or through community connectivity. The community connectivity option requires the building site to be located on a previously developed site, within 1/2 mile of a residential area or neighborhood with an average density of 10 units per acre net, within 1/2 mile of at least 10 basic services and have pedestrian access between the building and the services (see Figure 1). This is a Design Submittal credit.

SS Credit 4.1: Alternative Transportation—Public Transportation Access (6 Points)

The museum rehabilitation qualifies for this credit's 6 points because there are several Skagway Municipal and Regional Transit (SMART) bus stops within the required 1/4 mile of the main building entrance (see Figure 2). The credits in the SS Credit 4 series (4.1 – 4.4) are intended to “reduce pollution and land development impacts from automobile use.”⁵ KLGO park staff and visitors walk to and from the museum but access

⁵ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 6.

to this bus line further minimizes the environmental impacts of automobile travel to and from this site. This is a Design Submittal credit.

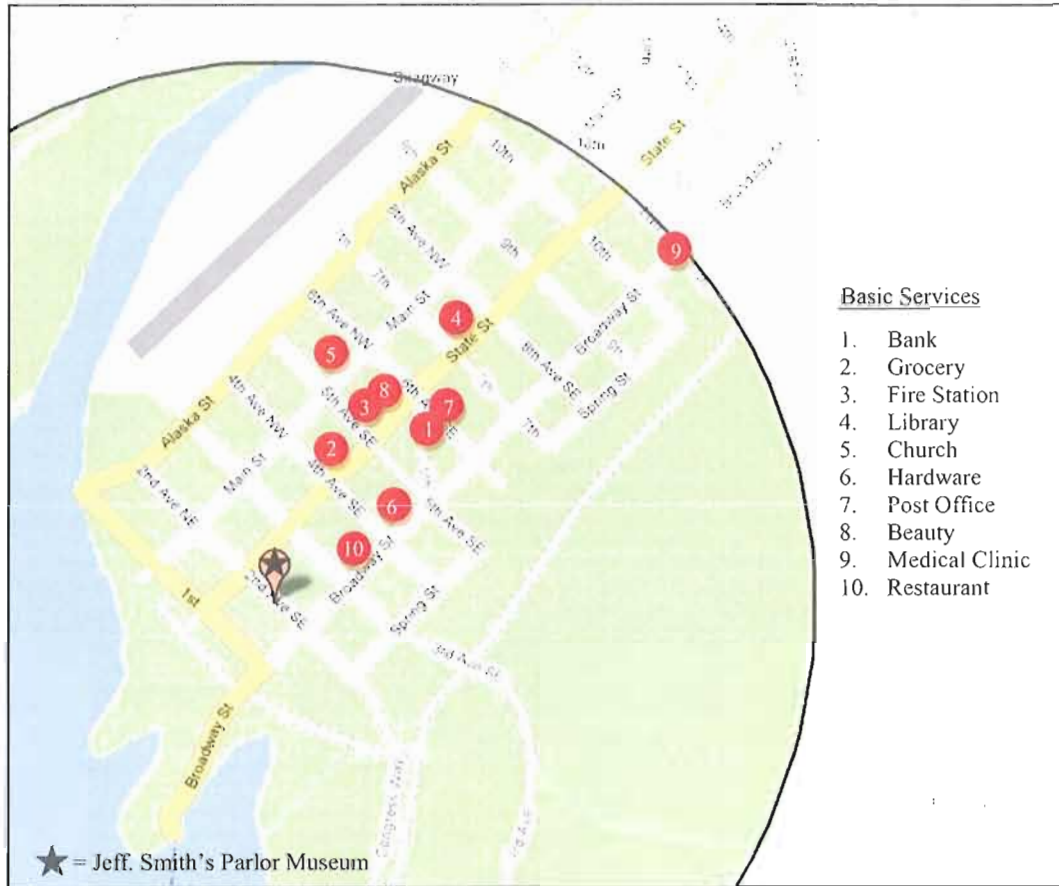


Figure 1. Basic services within 1/2 mile radius of the Jeff. Smith's Parlor Museum – SS Credit 2.

SS Credit 4.4: Alternative Transportation—Parking Capacity (2 Points)

Like SS Credit 4.1 this credit encourages the use of alternative means of transportation like the biking and walking that is common in Skagway, Alaska. The museum qualifies for this credit as it is a Case 1: Non-Residential project that does not

provide any new parking spaces. All parking associated with the museum and site is existing street parking. This is a Design Submittal credit.

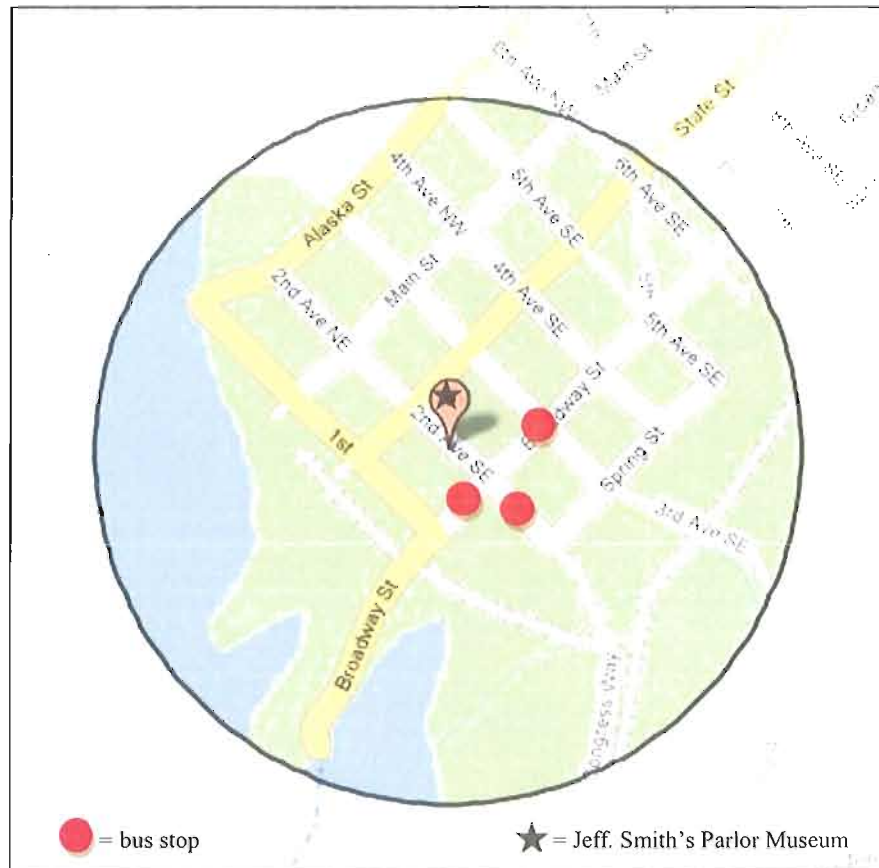


Figure 2. Public transportation within 1/4 mile radius of The Jeff. Smith's Parlor Museum – SS Credit 4.1.

SS Credit 5.1: Site Development—Protect or Restore Habitat (1 Point)

The intent of this credit is to “conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.”⁶ To achieve these points and because this is a previously developed site, at least 50% of the site (excluding the building

⁶ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 12.

footprint) or 20% of the site (including building footprint) must be restored with native vegetation. Given that close to half of the museum site is open green space with at least one mature tree, if construction zones are well marked and activities confined to these zones the character defining features of this landscape can be protected. Site protection requirements like delineated disposal and recycling areas as well as protected vegetation should be included in construction documents and discussed with all personnel associated with construction activities.⁷ This is a Construction Submittal credit.

SS Credit 5.2: Site Development—Maximize Open Space (1 Point)

Like the other Site Development credits the intent of SS Credit 5.2 is to preserve open space and promote biodiversity. The museum rehabilitation and site restoration must preserve at least 979 square feet of vegetated open space that equals 20% of the building site (see Figure 3). The documentation necessary for this credit requires a copy of drawings detailing the site and landscaped area(s) reserved for vegetated open space. Excluding the building (1038 sq. ft.) there is currently approximately 3860 sq. ft of open space around the site. This is a Design Submittal credit.

SS Credit 8: Light Pollution Reduction (1 Point)

SS Credit 8 is designed to “minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare

⁷ U.S. Green Building Council, *LEED-NC for New Construction Reference Guide Version 2.2*. 1st ed., Washington, D.C.: U.S. Green Building Council, October 2005, 68.

reduction and reduce development impact from lighting on nocturnal environments.”⁸ To achieve this point the museum must reduce the amount of interior lighting that escapes the building during nighttime hours and meet the requirements of Outdoor Lighting Zone 1(LZ1). This lighting zone includes places with a population density of less than 200 people per square mile according to the U.S. Census and developed areas in state and national parks. From the 2000 census, the population of Skagway was 862 people with a population density of 1.9 people per square mile.⁹

To reduce interior light trespass there are two options available under this credit and the project must satisfy at least one. Option 1 involves the reduction of the input power (by automatic device) of all nonemergency interior luminaires with a direct line of sight to any openings in the envelope (translucent or transparent) by at least 50% between 11 p.m. and 5 a.m. After-hours override may be provided by a manual or occupant-sensing device provided the override lasts no more than 30 minutes. Option 2 requires that all openings in the envelope (translucent or transparent) with a direct line of sight to any nonemergency luminaires must have shielding (controlled/closed by automatic device for a resultant transmittance of less than 10% between 11 p.m. and 5 a.m.).¹⁰

To avoid significant building alteration and given that the museum only has two windows and two doors Option 1 seems the most appropriate for this credit.

⁸ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 19.

⁹ U.S. Census Bureau, *U.S. Census Bureau Fact Finder*, March 24, 2009, <http://factfinder.census.gov/home> (accessed April 22, 2009).

¹⁰ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 19.

For exterior lighting in LZ1 all site and building-mounted luminaires must have an initial illuminance value no greater than 0.01 horizontal and vertical footcandles at site boundary and beyond. And none of the external luminaires may emit lumens at an angle of 90 degree or higher from straight down. This is a Design Submittal credit.

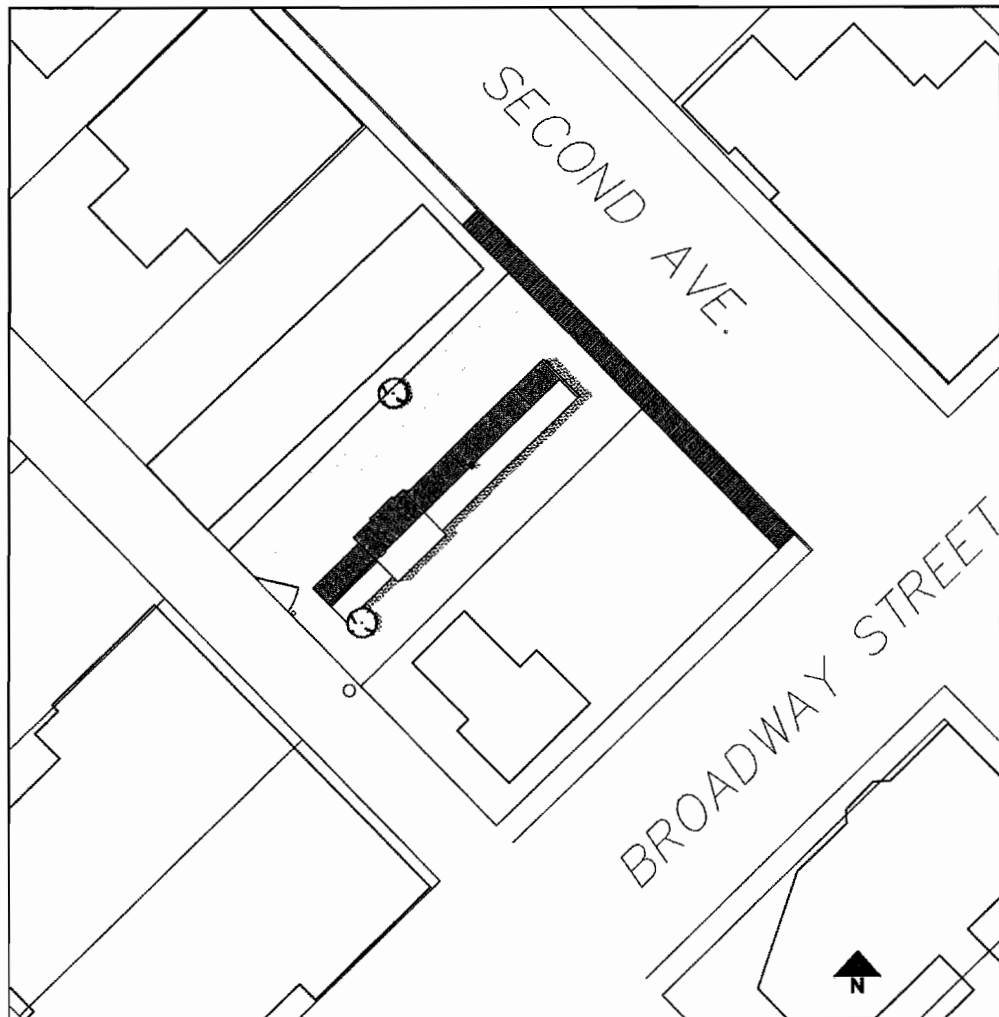


Figure 3. Site Restoration - gray shaded area represents approximately 20% of site square footage.

Water Efficiency (WE) Credits – Overview

LEED-NC 2009 Water Efficiency Credits address water use and reduction through efficient choices in landscaping, potable water use, wastewater technologies and overall water use reduction. There is one required prerequisite and 10 possible points in this category of which the museum is eligible for 6-8 points.

WE Prerequisite 1: Water Use Reduction (Required)

This is a new prerequisite for LEED-NC 2009 and is intended to increase water efficiency overall within the building thus reducing demand on the municipal water supply and wastewater systems.¹¹ This prerequisite requires that in aggregate the building use 20% less water than the water use baseline calculated as follows for commercial buildings:

Toilets:	1.6 gallons per flush (gpf), except blow-out fixtures: 3.5 (gpf)
Urinals:	1.0 (gpf)
Restroom faucets:	0.5 gallons per minute (gpm) at 60 (psi) ¹²

There are several strategies to meet the requirements of this prerequisite, the simplest and most appropriate for the museum will be to use and install WaterSense-certified fixtures and fixture fittings.¹³ To meet the 20% efficiency mark the museum toilet must use 1.28 gpf or less and the faucet rating of 0.4 gpm at 60 psi.

¹¹ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 21.

¹² *Ibid.*, 21.

¹³ WaterSense is a partnership program sponsored by the U.S. Environmental Protection Agency. A list of toilets and sinks that meet the WaterSense criteria for efficiency is available at the website <http://www.epa.gov/WaterSense/index.htm>.

WE Credit 1: Water Efficient Landscaping (2–4 Points)

WE Credit 1 intends to reduce the use of potable water for landscaping. Two points are awarded to projects that reduce potable water use for landscaping by at least 50%. The museum can achieve all four points by installing landscaping that does not require permanent irrigation systems and relies only on natural precipitation. Restoring the surrounding site with native plant species not only maximizes natural on-site water resources and reduces the need for potable water for irrigation but also contributes to the historicity of the site. The museum must earn at least 2 points in this category to achieve a Silver rating but four points are included in the 53 point total. This is a Design Submittal credit.

WE Credit 2: Innovative Wastewater Technologies (2 Points)

The intent of WE Credit 2 is to “reduce wastewater generation and potable water demand while increasing the local aquifer recharge.”¹⁴ There are two options for achieving points in this category. Option 1 is to reduce potable water use for building sewage conveyance by 50% through the use of water-conserving fixtures (e.g., water closets, urinals) or nonpotable water (e.g., captured rainwater, recycled graywater, on-site or municipally treated wastewater). The second option requires treatment of 50% of wastewater on-site to tertiary standards. Treated water must be infiltrated or used on-site.¹⁵

¹⁴ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 25

¹⁵ *Ibid.*, 25.

Given that the museum will only have one bathroom (toilet and sink) most likely restricted for staff use only and not equipment to treat wastewater on site; option 1 and the installation of water-conserving fixtures seems the most economical for this project. The museum must use fixtures that are at least 20% more efficient to fulfill WE Prerequisite 1 and by selecting a toilet and sink with 30% more efficiency the project team can earn 2 points for this credit. An ultra low-flow toilet that uses 0.8 gpf or less and a faucet with a rating of 0.25 gpm at 60 psi would meet the 50% reduction criteria. This is a Design Submittal credit.

WE Credit 3: Water Use Reduction (2–4 Points)

Similar to WE Credit 2 the points for this credit are achieved by exceeding the prerequisite 20% reduction in overall water use in the building. The available points (2-4) for WE Credit 3 are based on the percent water savings as follows:

- 30% percent reduction = 2 points – toilet 1.12 gpf; faucet 0.35 gpm at 60 psi
- 35% percent reduction = 3 points – toilet 1.04 gpf; faucet 0.325 gpm at 60 psi
- 40% percent reduction = 4 points – toilet 0.96 gpf; faucet 0.3 gpm at 60 psi

By selecting a toilet with a 0.96 gpf or less and a faucet with a 0.3 gpm at 60 psi or less the museum can demonstrate a 40% reduction in water use and achieve 4 points. The museum rehabilitation must earn all 4 points for this credit (as well as maximum points in other credits) to reach the LEED-Gold certification level. This is a Design Submittal credit.

Energy and Atmosphere (EA) Credits – Overview

LEED-NC 2009 Energy and Atmosphere Credits address issues related to building commissioning, refrigerant management, on-site renewable energy, measurement, verification and green power. The EA credits are fundamental to the core values of sustainable and green building design and focus on energy reduction and the use of alternative energy sources. According to the U.S. Energy Information Agency, homes and commercial buildings use 71% of the electricity in the United States and this number will rise to 75% by 2025.¹⁶ Overall, these credits seek to reduce the building's energy consumption, improve performance efficiency and assess efficacy of building operations. There are 35 points and 3 required prerequisites in the Energy and Atmosphere credit category. The museum appears to be eligible for 7 points in this category. This point total is based on a minimum design for the final museum program, however if to achieve the LEED-Gold certification level the project must earn 9 points in this category.

EA Prerequisite 1: Fundamental Commissioning of Building Energy Systems (Required)

EA Prerequisite 1 requires the commissioning of a building to verify that the building's energy-related systems are installed and calibrated to perform according to the project requirements, basis of design and construction documents. A commissioning authority must be appointed to the project and it is the responsibility of the

¹⁶National Renewable Energy Laboratory, *NREL: Buildings Research Home Page*, March 10, 2009, <http://www.nrel.gov/buildings/> (accessed May 1, 2009).

commissioning authority to “lead, review and oversee the completion of the commissioning process activities.”¹⁷ The commissioning authority is there to ensure the building is performing as designed and must be an individual with experience in at least two building projects. Given the size of the museum project (less than 50,000 gross square feet) the commissioning authority can be a member of the project team, i.e. Klondike Gold Rush National Historical Park Maintenance Crew.

There are three major components that the project team needs to develop to meet the requirements for this prerequisite. First, the project team must develop what the USGBC refers to as the Owner’s Project Requirements (OPR). The OPR must be completed prior to approval of contractor submittals of any commissioned equipment or systems. The OPR must address the following as applicable to the museum project:

- Owner and User Requirements – primary purpose, program, building use and pertinent history.
- Environmental and Sustainability Goals
- Energy Efficiency Goals
- Indoor Environmental Quality Requirements
- Equipment and System Expectations
- Buildings Occupant and Operations and Maintenance (O & M) Personnel Requirements¹⁸

The second component required by this prerequisite is Basis of Design (BOD) documentation that includes the following:

- Primary Design Assumptions – space use, redundancy, diversity, climatic design conditions, space zoning, occupancy, operations and space environmental requirements.

¹⁷ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 29.

¹⁸ U.S. Green Building Council, *LEED-NC for New Construction Reference Guide Version 2.2.*, 154-155

- Standards – all applicable codes, guidelines, regulations, and other references that will be followed.
- Narrative Descriptions for all systems to be commissioned.¹⁹

Thirdly, the project team must develop a Commissioning Plan that “identifies the strategies, aspects and responsibilities within the commissioning process for each phase of the project.”²⁰

In June 2009, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) will begin offering a certification exam for Commissioning Process Management Professionals (commissioning authorities).²¹ Because this is the first LEED-certified rehabilitation for the KLGO park it might be cost-effective and time-efficient to contract with an experienced or ASHRAE-certified commissioning authority. This is a Construction Submittal prerequisite.

EA Prerequisite 2: Minimum Energy Performance (required)

The intent of this prerequisite is to “establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.”²² There are three options to meet this prerequisite. Option 1 – Whole Building Energy Simulation requires a 5% improvement in the proposed building performance rating for major renovations to existing buildings,

¹⁹ U.S. Green Building Council, *LEED-NC for New Construction Reference Guide Version 2.2.*, 155.

²⁰ *Ibid.*, 156

²¹ The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), *ASHRAE Publishes Thermal Comfort Standard*, 2004, <http://www.ashrae.org/pressroom/detail/13394> (accessed April 29, 2009).

²² U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 31.

compared with the baseline building performance rating. Option 2 – Prescriptive Compliance Path is based on the ASHRAE Advanced Energy Design Guide. This option requires the project to follow the prescriptive measures of the ASHRAE Advanced Energy Design Guide appropriate to the project scope. The museum however does not appear to meet the criteria for this option as it requires the building to be a small office building, small retail building, small warehouse or self storage building. Option 3 – Prescriptive Compliance Path is based on the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute.²³

The project team in consultation with the commissioning agent should decide if Option 1 or Option 3 is the most feasible for the project. The options for this prerequisite correspond to the options under EA Credit 1: Optimize Energy Performance. The available credits (1-19) associated with EA Credit 1 Option 1 are based on the percentage improvement in the proposed building performance and there are 1-3 points available for the prescriptive Option 3 path.²⁴ This is a Design Submittal prerequisite.

EA Prerequisite 3: Fundamental Refrigerant Management (Required)

This prerequisite is a straightforward approach to reducing stratospheric ozone depletion from chlorofluorocarbon (CFC) emissions. EA Prerequisite 3 requires zero use of CFC-based refrigerants in new base building heating, ventilating, air conditioning and

²³ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 32. The Advanced Buildings Core Performance Guide book is available for purchase from <http://www.advancedbuildings.net/corePerf.htm>.

²⁴ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 35

refrigeration (HVAC&R) systems.²⁵ The new HVAC&R system for the museum program should utilize equipment that “minimizes or eliminates the emission of compounds like CFCs that contribute to ozone depletion and climate change or not include any CFC-based refrigerants.”²⁶ Designing the final HVAC&R system in the museum without refrigerants will fulfill the requirements of this prerequisite and satisfy EA Credit 4: Enhanced Refrigerant Management and earn two points (see below) for that credit. This is a Design Submittal prerequisite.

EA Credit 1: Optimize Energy Performance (1–19 Points)

The points available with EA Credit 1 are based on the percentage improvement in the proposed building performance. The intent of this credit is to “achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.”²⁷ The same three options available under EA Prerequisite 2: Minimum Energy Performance are available with this credit. The option that the project team selects for EA Prerequisite 2 and the overall building performance will determine the amount of points the project receives from this credit. Option 1 has 1-19 potential points and there are 1-3 points available with Option 2. To achieve a LEED-Gold certification the museum rehabilitation project must earn at least 2 points in this credit category. This is a Design Submittal credit.

²⁵ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 34.

²⁶ *Ibid.*, 41.

²⁷ *Ibid.*, 35.

EA Credit 3: Enhanced Commissioning (2 Points)

EA Credit 3 encourages commissioning early in the design process and execution of additional activities after systems performance verification is completed.²⁸ To earn this credit the project must have an independent contracted commissioning agent thus these two points are not available if the commissioning agent is part of the project team. However, these two points are included in the projected point totals for certification at the LEED-Silver and LEED-Gold levels. This is a Construction Submittal credit.

EA Credit 4: Enhanced Refrigerant Management (2 Points)

This credit corresponds with the intent of EA Prerequisite 3 to “reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to climate change.”²⁹ The museum rehabilitation project can earn two points for this credit and fulfill the EA Prerequisite 3 by not using any refrigerants (Option 1) in the final museum program. If refrigerants are necessary, to earn these two points, they must meet the criteria set forth in Option 2 of this credit. If the project does not use any refrigerants no analysis or calculations are required for submittal for this credit. This is a Design Submittal credit.

²⁸ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 39.

²⁹ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 41. The Montreal Protocol is an international treaty designed to minimize depletion of the ozone by advocating the reduction of ozone-depleting substances like CFCs.

EA Credit 6: Green Power (2 Points)

This credit encourages the “development and use of grid-source, renewable energy technologies on a net zero pollution basis.”³⁰ Electricity in Skagway, AK is hydro-electric provided by Goat Lake Hydro. To earn these two points the project must document that at least 35% of the museum’s electricity is coming from this hydro-electric source and not diesel generation. If this is not possible then the project team could consider purchasing renewable energy certificates (RECs), tradable renewable certificates (TRCs), green tags or other forms of green power.³¹ The project must engage in a 2-year contract with these renewable energy sources. This is a Construction Submittal credit.

Materials and Resources (MR) Credits – Overview

LEED-NC 2009 Materials and Resources Credits encourage the sustainable practice of building material conservation. The credits in this category award points for building and material reuse, construction waste management, recycling and use of regional and rapidly renewable materials. There is one required prerequisite and 14 possible points in this category of which the museum is eligible for 7 points and potential 9 points which is necessary for the point total to achieve LEED-Gold certification.

³⁰ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 41.

³¹ *Ibid.*, 45.

MR Prerequisite 1: Storage and Collection of Recyclables (Required)

The intent of MR Prerequisite 1 is to further the “reduction of waste generated by building occupants that is hauled to and disposed of in landfills.”³² This prerequisite requires that an area at the project site be dedicated for the collection of recyclable materials that at minimum must include paper, corrugated cardboard, glass, plastics and materials. This is a Design Submittal prerequisite.

MR Credit 1.2: Building Reuse—Maintain Interior Nonstructural Elements

(1 Point)

This is one of two credits and 2-3 points in the LEED-NC 2009 rating system that specifically rewards the reuse of historic/existing buildings. Based on the plan to replace the plank walls with stud walls the museum rehabilitation project is ineligible for the 1-3 points associated with MR Credit 1.1 Building Reuse because that credit requires a minimum reuse of 55% of existing walls, floors and the roof. However, MR. Credit 1.2 Building Reuse addresses the reuse of interior nonstructural elements such as interior walls, doors, floor coverings and ceiling systems by 50%. The project team may be able to conserve at least 50% of the museum interior and earn this point. This is a Construction Submittal credit.

³² U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 47.

MR Credit 2: Construction Waste Management (1–2 Points)

The intent of this credit is to “divert construction and demolition debris disposal in landfills and incineration facilities” and requires the recycling of 50% or 75% of qualified materials.³³ To meet this requirement the project team must develop and implement a construction waste management plan that identifies materials to be recycled and how these materials will be recycled. Recyclable materials include cardboard, metal, brick, mineral fiber panel, concrete, plastic, clean wood, glass, gypsum wallboard, carpet and insulation. Not all of these materials are present in the museum and given the poor condition of many of the materials to be removed and not reused in the museum rehabilitation, the project may not meet the minimum 50% requirement for this credit. Excluded from the recycled percentage is excavated soil and land-clearing debris. Volume or weight calculations of recycled materials will meet the requirements of this credit. To achieve a LEED-Gold certification the museum rehabilitation must demonstrate a 75% recycling rate and earn the corresponding 2 points for this credit. This is a Construction Submittal.

MR Credit 3: Materials Reuse (1–2 Points)

This credit encourages the use of salvaged, refurbished or reused materials to “reduce demand for virgin materials and reduce waste, thereby lessening impacts associated with the extraction and processing of virgin resources.”³⁴ Points for this credit

³³ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 50.

³⁴ *Ibid.*, 51.

are awarded based on the value of total material cost spent on non-virgin materials. The project earns 1 point for 5% and 2 points for 10% of the total value of material costs coming from non-virgin sources. Materials excluded from these calculations are mechanical, electrical and plumbing components. Furniture is allowable if it is also included in calculations for subsequent MR Credits 4-7. Note that materials qualifying for this credit cannot be applied to the other MR credits related to building reuse and recycled materials. The project team should designate particular buildings elements for each of the desired MR credits and eliminate overlap. The museum rehabilitation project must earn 2 points in this category to achieve a LEED-Gold certification and at least 1 point for LEED-Silver. This is a Construction Submittal credit.

MR Credit 4: Recycled Content (1–2 Points)

To increase demand for building products that incorporate recycled content materials LEED-NC 2009 awards 1-2 points for projects that meet the requirements of this credit.³⁵ A percentage of recycled content of the total value of the materials of the project determine points for this credit. The project earns 1 point for 10% recycled content and 2 points for 20% recycled content. To calculate the projects percent recycled content use the following formulas:

$$\begin{aligned} \text{Recycled Content Value (\$)} &= (\% \text{ post-consumer recycled content} \times \text{material cost}) \\ &\quad + 0.5 \times (\% \text{ pre-consumer recycled content} \times \text{material cost}) \\ \text{Percent Recycled Content} &= \frac{\text{Total Recycled Content Value (\$)}}{\text{Total Materials Cost (\$)}} \end{aligned}$$

³⁵ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 52.

Examples of materials often made from recycled materials include steel, gypsum board, carpet and ceramic tiles. Materials excluded from these calculations are mechanical, electrical and plumbing components. The museum rehabilitation project must earn 2 points in this category to achieve a LEED-Gold certification and at least 1 point for LEED-Silver. This is a Construction Submittal credit.

MR Credit 5: Regional Materials (1–2 Points)

MR Credit 5 awards 1-2 points to projects that utilize materials available within 500 miles of the project site. The intent of this credit is to “increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.”³⁶ To earn 1 point the project team must calculate that a minimum of 10% of total value of materials cost was extracted, harvested, recovered or manufactured within the 500 mile radius. To earn 2 points the percentage must be at least 20% total value of materials cost. Given the location of Skagway and the restrictions of the *Buy American Act*, points under this credit might be difficult to achieve if not impossible.³⁷ Figure 4 depicts a 500 mile radius around Skagway and shows that Juneau and Haines are included in this area. Excluded are Anchorage, AK and Seattle,

³⁶ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 53.

³⁷ “The Buy American Act of 1933 was passed to ensure that the federal government supports domestic companies and domestic workers by buying goods manufactured in the United States that are made from materials mined or produced in the United States. The law provides exceptions for items not commercially available in the United States or if the price is more than 6 percent higher than comparable foreign products. It also allows exceptions for purchases under \$100,000 or by department head waiver.” Fred B. Sollish, CPM and John Semanik, CPM, *The Procurement and Supply Manager’s Desk Reference* (Hoboken: John Wiley & Sons, Inc., 2007), 52

WA. When possible the project team should use materials manufactured or extracted in Juneau or Haines before ordering from Seattle, WA, such as lumber. The museum rehabilitation project must earn 2 points in this category to achieve a LEED-Gold certification and at least 1 point for LEED-Silver. This is a Construction Submittal credit.

MR Credit 6: Rapidly Renewable Materials (1 Point)

This credit encourages the use of rapidly renewable materials (plants harvested within a 10-year or shorter cycle) to “reduce the use and depletion of finite raw materials and long-cycle renewable materials.”³⁸ To earn this 1 point the project must use rapidly renewable materials for at least 2.5% of the total value cost of all building materials. Examples of rapidly renewable materials include bamboo, wool, cotton insulation, agrifiber, linoleum, wheatboard, strawboard, sunflowerboard and cork. There are many commercial insulation products that are made from rapidly renewable materials like Icynene and Soy Foam. Both are spray-in insulations that meet the requirements of this credit, enhance building energy performance (EA credits) and improve indoor air quality (Indoor Environmental Quality – IEQ credits) through low-VOCs. The project team should consider using rapidly renewable composite board products for exhibit display modules or wall paneling inside the museum when original material cannot be repaired and reused. The monetary and environmental cost of acquiring some of these materials may outweigh their benefit and the overall sustainability goals of the project. However,

³⁸ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 54.

this point is included in the total to achieve LEED-Silver and LEED-Gold certification.

This is a Construction Submittal credit.

MR Credit 7: Certified Wood (1 Point)

MR Credit 7 “encourages environmentally responsible forest management” by specifying that projects receiving 1 point in this category use a minimum of 50% (based on cost) of wood-based materials and products that are certified in accordance with the Forest Stewardship Council’s principles and criteria, for wood building components.”³⁹

The project team can include all structural framing, general dimensional framing, flooring, sub-flooring, wood doors, finishes and temporary formwork and bracing for the museum rehabilitation. This is a Construction Submittal credit.

Indoor Environmental Quality (IEQ) Credits – Overview

LEED-NC 2009 Indoor Environmental Quality Credits seek to improve indoor air quality. The EPA specifies two types of indoor air pollutants; particulate matter like dust, smoke, pollen, tobacco smoke, mites, molds, bacteria and viruses; and gaseous pollutants from combustion processes and building materials like adhesives, paints, varnishes, cleaning products and pesticides.⁴⁰ The credits in this category address building ventilation and require the use of low-emitting materials, encourage chemical and

³⁹ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 55.

⁴⁰ United States Environmental Protection Agency (EPA), *Guide to Air Cleaners in the Home, Publications, Indoor Air, Air, US EPA*, November 14, 2001, <http://www.epa.gov/iaq/pubs/airclean.html#Indoor%20Air%20Pollutants> (accessed April 30 2009).

pollutant control, and advocate occupant controllability of lighting and thermal comfort.

There are two required prerequisites and 15 potential points in the Indoor Environmental Quality Credit category of which the museum appears to be eligible for at least 11 points.

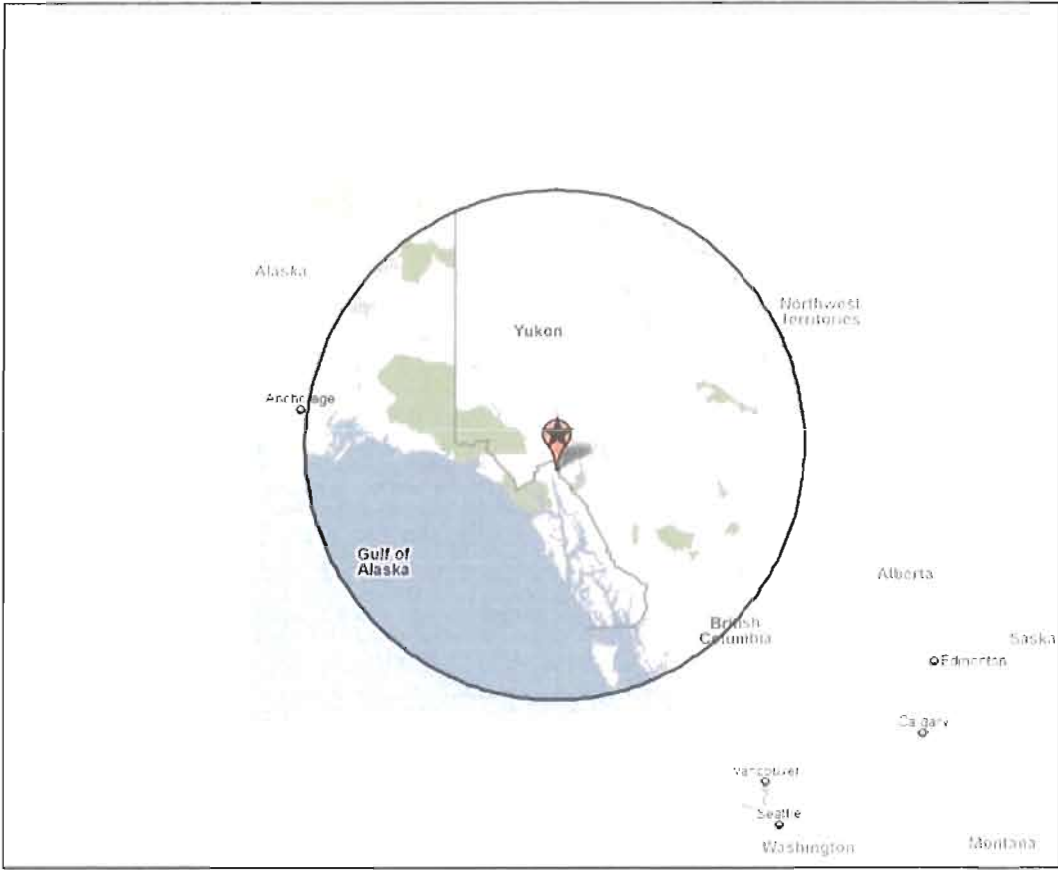


Figure 4. Regional Materials - 500 mile radius around Skagway, Alaska.

IEQ Prerequisite 1: Minimum Indoor Air Quality Performance (Required)

This prerequisite requires the project team to “establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in building, thus contributing to

the comfort and well-being of the occupants.”⁴¹ The museum will be a mechanically ventilated building to meet curatorial museum standards and as such must comply with Sections 4 through 7 of ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality (with errata but without addenda) to fulfill this prerequisite. The mechanical ventilation systems must be designed using the ventilation rate procedure or the applicable local code, whichever is more stringent. This is a Design Submittal prerequisite.

IEQ Prerequisite 2: Environmental Tobacco Smoke (ETS) Control (Required)

IEQ Prerequisite 2 addresses indoor air quality through the management of tobacco smoke that is classified by the EPA as both particulate matter and a gaseous pollutant. There are two applicable options for meeting the requirements of this prerequisite and the museum easily complies with option 1 that prohibits smoking in the building. This option allows the project team to designate an exterior smoking area at least 25 feet away from the building. All National Park Service facilities are smoke-free. This is a Design Submittal prerequisite.

IEQ Credit 1: Outdoor Air Delivery Monitoring (1 Point)

The intent of IEQ Credit 1 is to “provide capacity for ventilation system monitoring to help promote occupant comfort and well-being.”⁴² This credit requires the installation of permanent monitoring systems for airflow and carbon dioxide levels. The

⁴¹ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 57.

⁴² *Ibid.*, 60.

systems must have an alert should airflow or carbon dioxide levels vary by 10% or more than designed values. This alert must trigger an automated system that adjusts airflow appropriately or notify building personnel to take action. This is a Design Submittal credit.

IEQ Credit 2: Increased Ventilation (1 Point)

The intent of this credit is to “provide building occupants with superior indoor air quality by providing adequate ventilation rates.” Mechanically ventilated spaces must increase breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates as determined by IEQ Prerequisite 1: Minimum Indoor Air Quality Performance.⁴³ This is a Design Submittal credit.

IEQ Credit 3.1: Construction Indoor Air Quality Management Plan—During Construction (1 Point)

The Indoor Environmental Quality Credits address air quality during construction, pre-occupancy and occupancy. IEQ Credits 3.1 and 3.2 specifically “promote the comfort and well-being of construction workers and building occupants” in the construction and pre-occupancy phases.⁴⁴ To earn this 1 point under the IEQ Credit 3.1 the project team must develop and implement an indoor air quality (IAQ) management plan that meets the recommended control measures of the Sheet Metal and Air

⁴³ U.S. Green Building Council, *LEED-NC for New Construction Reference Guide Version 2.2.*, 309.

⁴⁴ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 63.

Conditioning National Contractors Association (SMACNA) IAQ Guidelines For Occupied Buildings Under Construction, 2nd Edition 2007; protects stored on-site and installed absorptive materials from moisture damage; and replace filters of any permanently installed air handlers used during construction immediately prior to occupancy.⁴⁵ This is a Construction Submittal credit.

IEQ Credit 3.2: Construction Indoor Air Quality Management Plan—Before Occupancy (1 Point)

The intent of IEQ Credit 3.2 is the same as IEQ 3.1 to eliminate IAQ problems that occur as a result of construction and there are two options to meet the requirements of this credit. Option 1 is a total building flush-out and option 2 requires air testing prior to occupancy. Either option is applicable to the museum rehabilitation project. Air testing must measure the following contaminants and not exceed the corresponding concentrations (see Table 1):

Table 1. Contaminant Concentration Limits for Indoor Air Quality Testing.

Contaminant	Limit
Formaldehyde	27 parts per billion
Particulates (PM10)	50 micrograms per cubic meter
Total volatile organic compounds (TVOCs)	500 micrograms per cubic meter
4-Phenylcyclohexene (4-PCH) (only required if carpets and fabrics with styrene butadiene rubber (SBR) latex backing are installed as part of the base building systems)	6.5 micrograms per cubic meter
Carbon monoxide (CO)	9 part per million and no greater than 2 parts per million above outdoor levels

Source: U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 63.

⁴⁵ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 63

The air testing must be conducted prior to occupancy when all construction and finishes are complete. The test must occur during normal operating hour and under normal operating conditions with testing sensors located 3 to 6 feet of the floor (occupant breathing zone) and run for at least 4 hours. This is a Construction Submittal credit.

IEQ Credit 4.1 through 4.4 – Overview

The intent of IEQ Credits 4.1 through 4.4 is to “reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.”⁴⁶ Each credit is worth one point and addresses particular sources of gaseous air pollutants. The project team must maintain and submit a list of all low-emitting materials. This list must include at minimum the manufacturer’s name, product name, specific VOC (Volatile Organic Compound) data for each product and the corresponding VOC limit per the related IEQ credit.

IEQ Credit 4.1: Low-Emitting Materials—Adhesives and Sealants (1 Point)

To earn this credit all adhesives and sealants used in the interior of the building must comply with the low-VOC standards in Table 2.⁴⁷

IEQ Credit 4.2: Low-Emitting Materials—Paints and Coatings (1 Point)

⁴⁶ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 66.

⁴⁷ *Ibid.*, 67

This credit relates to all interior architectural paints and coatings; anti-corrosive and anti-rust paints applied to ferrous metals; and clear wood finishes, floor coatings, stains, primers and shellacs. All paint and coatings used in the museum must meet these VOCs limits in Table 3. The Coatings Research Group, Incorporated (CRGI) is an active member of the USGBC and maintains a Green Wise list of certified paints, primers, coatings and finishes that meet or exceed these LEED standards. Included in this list (www.greenwisepaint.com) are several low-odor, zero-VOC emitting paints including the Southern Diversified Products American Pride and Mythic paints.⁴⁸ This is a Construction Submittal credit.

Table 2. VOC Limits for Adhesives and Sealants

Architectural Applications	VOC Limit	Specialty Applications	VOC Limit
Indoor carpet adhesives	50	PVC welding	510
Carpet pad adhesives	50	CPVC welding	490
Wood flooring adhesives	100	ABS welding	325
Rubber floor adhesives	60	Plastic cement welding	250
Subfloor adhesives	50	Adhesive primer for plastic	550
Ceramic tile adhesives	65	Contact adhesive	80
VCT and asphalt adhesives	50	Special purpose contact	250
Drywall and panel adhesives	50	Structural wood member	140
Cove base adhesives	50	Sheet applied rubber lining	850
Multipurpose construction	70	Top and trim adhesive	250
Structural glazing adhesives	100		
Substrate Specific		Sealants	
Metal to metal	30	Architectural	250
Plastic foams	50	Nonmembrane roof	300
Porous material (except	50	Roadway	250
Wood	30	Single-ply roof membrane	450
Fiberglass	80	Other	420

⁴⁸ Coatings Research Group, Incorporated, *Green Wise Paint*. 2008, <http://www.greenwisepaint.com/certified-products.aspx#inttop5> (accessed May 2, 2009).

Table 2. (continued)

Sealant Primers	VOC Limit	Aerosol Adhesives ⁴⁹	VOC Limit
Architectural, nonporous	250	General purpose mist spray	65% VOCs by weight
Architectural, porous	775	General purpose web spray	55% VOCs by weight
Other	750	Special purpose aerosol adhesives (all types)	70% VOCs by weight

Source: U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 66.

Table 3. VOC Limits for Paints and Coatings

Architectural Paint and Coatings ⁵⁰	VOC Limit (g/L less water)
Interior Coating – Non-Flat	150
Interior Coating – Flat	50
Anti-corrosive & Anti-rust Paints⁵¹	
Gloss	250
Semi-Gloss	250
Flat	250
Wood Finishes, Coatings, Stains, Primers, Shellacs	
Bond Breakers	350
Clear Wood Finishers	350
Varnish	550
Sanding Sealers	550
Lacquer	550
Clear Brushing Lacquer	680
Concrete-Curing Compounds	350
Dry-Fog Coatings	400
Fire-Proofing Exterior Coatings	350
Fire-Retardant Coatings – Clear	650
Fire-Retardant Coatings – Pigmented	350

⁴⁹ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 67. Aerosol Adhesives must comply with Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on October 19, 2000.

⁵⁰ Green Seal, *GS-11 Green Seal™ Environmental Standard for Paints*, May 20, 1993, http://www.greenseal.org/certification/standards/paints_GS_11.pdf (accessed April 29, 2009).

⁵¹ Green Seal, *GC-3 Green Seal™ Environmental Criteria for Anti-Corrosive Paints*, January 7, 1997, <http://www.greenseal.org/certification/standards/anti-corrosivepaints.pdf> (accessed April 29, 2009).

Table 3. (continued)

Wood Finishes, Coatings, Stains, Primers, Shellacs (continued)	VOC Limit (g/L less water)
Flats	100
Floor Coatings	100
Graphic Arts (Sign) Coatings	500
Japans/Faux Finishing Coatings	350
Magnesite Cement Coatings	450
Mastic Coatings	300
Metallic Pigmented Coatings	500
Multi-Color Coatings	250
Nonflat Coatings	150
Nonflat High Gloss	150
Pigmented Lacquer	550
Pre-Treatment Wash Primers	420
Primers, Sealers, and Undercoaters	200
Quick-Dry Enamels	250
Quick-Dry Primers, Sealers and Undercoaters	200
Recycled Coatings	250
Architectural Paint and Coatings⁵²	
Roof Coatings	250
Roof Coatings, Aluminum	250
Roof Primers, Bituminous	350
Rust Preventative Coatings	400
Shellac – Clear	730
Shellac – Pigmented	550
Specialty Primers	350
Stains	250
Stains – Interior	250
Waterproofing Sealers	250
Waterproofing Concrete/Masonry Sealers	400
Wood Preservatives – Below-Ground	350
Wood Preservatives – Other	350

Source: U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 65.

⁵² Green Seal, *GS-11 Green Seal™ Environmental Standard for Paints*, May 20, 1993, http://www.greenseal.org/certification/standards/paints_GS_11.pdf (accessed April 29, 2009).

IEQ Credit 4.3: Low-Emitting Materials—Flooring Systems (1 Point)

For this IEQ credit all flooring systems in the museum must comply with either individual standards (Option 1) or the California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda (Option 2).⁵³ Under Option 1 all hard surface flooring including vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring and wall base must be certified as compliant with the FloorScore standard.⁵⁴ All concrete and wood finishes, tile adhesives and grout must meet the VOC standards as specified in IEQ Credit 4.1 and 4.2 (see Table 2 and 3). This is a Construction Submittal credit.

IEQ Credit 4.4: Low-Emitting Materials—Composite Wood and Agrifiber Products (1 Point)

To meet the requirements of this credit all composite wood and agrifiber products used in the museum must not contain any urea-formaldehyde resins or laminating adhesives. This is a Construction Submittal credit.

IEQ Credit 6.1: Controllability of Systems—Lighting (1 Point)

The intent of this credit is to promote productivity, comfort and well-being of building occupants by providing lighting control systems to individuals. This credit

⁵³ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 70.

⁵⁴ Scientific Certification Systems, *Scientific Certification Systems - FloorScore*, March 9, 2009, <http://www.scscertified.com/ecoproducts/indoorairquality/floorscore.html> (accessed May 2, 2009).

requires individual lighting controls for 90% (minimum) of the building occupants to adjust lighting to suit individual task needs and preferences.⁵⁵ This is a Design Submittal credit.

IEQ Credit 7.1: Thermal Comfort—Design (1 Point)

IEQ Credit 7.1 addressed thermal comfort of occupants by requiring the project team to design a thermal system that “promotes occupant productivity and well-being.”⁵⁶ To earn this point the project team must design HVAC systems to meet ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy that assesses environmental factors like temperature, thermal radiation, humidity and air speed and personal factors like activity and clothing.⁵⁷ This is a Design Submittal credit.

IEQ Credit 7.2: Thermal Comfort—Verification (1 point)

Related to IEQ Credit 7.2 this credit measures the thermal comfort of building occupants over time and requires a permanent monitoring system and a survey of building occupants 6 to 18 months post-occupancy. The survey must assess overall satisfaction with thermal performance and identify thermal-related problems. The project

⁵⁵ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 73.

⁵⁶ *Ibid.*, 75.

⁵⁷ The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), *ASHRAE Publishes Thermal Comfort Standard, 2004*, <http://www.ashrae.org/pressroom/detail/13394> (accessed April 29, 2009).

team must also agree to take corrective actions, if necessary, based on this monitoring and survey findings.⁵⁸ This is a Design Submittal credit.

Innovation in Design (ID) Credits – Overview

LEED-NC 2009 Innovation in Design Credits allow the project team to earn points for designs, systems and/or strategies that exceed an existing LEED credit or are not addressed by the rating system. There are two credits and 6 possible points in this category. The museum is eligible for at least 1 point and perhaps additional points if the project team pursues ID points or exhibits exemplary performance in eligible LEED credits.

ID Credit 1: Innovation in Design (1–5 Points)

To earn ID points the project must do so through design or exemplary performance and “substantially exceed a LEED 2009 for New Construction and Major Renovations performance credit such as energy performance or water efficiency.”⁵⁹ There are 1-5 points available under the Innovation in Design Path 1 and projects may earn 1 point for each innovation. For the Exemplary Performance (EP) points (1-3) the project must double the requirements and/or achieve the next incremental percentage threshold of an existing credit. Table 4 lists the credits applicable to the museum rehabilitation that are eligible for EP points. This is a Design or Construction Submittal credit.

⁵⁸ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 76.

⁵⁹ *Ibid.*, 83

ID Credit 2: LEED Accredited Professional (1 Point)

The intent of this credit is to “support and encourage the design integration required by LEED to streamline the application and certification process” and requires that at least one principal participant of the project team be a LEED Accredited Professional (AP). The USGBC recommends assigning integrated design and construction process facilitation to the LEED AP.⁶⁰ The museum is eligible for this point because Grant Crosby, Historical Architect, National Park Service, Alaska Regional Office is a principal participant on this project and a LEED-AP. This is a Construction Submittal credit.

Table 4. Proposed Jeff. Smith's Parlor Museum LEED-NC Credits Eligible for Exemplary Points

Proposed LEED-NC Rehabilitation Credit	Exemplary Point Requirement
SS Credit 2: Development Density & Community Connectivity	Option 1
SS Credit 4.1: Alternative Transportation	For overall plan
SS Credit 5.1: Site Development	Protect or restore >30% of total site area
WE Credit 3: Water Use Reduction	Reduce by 45%
EA Credit 1: Optimize Energy Performance	Improve by 46% for Existing Building Renovations
EA Credit 3: Enhanced Commissioning	Complete
EA Credit 6: Green Power	100%
MR Credit 2: Construction Waste Management	95% Recycled or Salvaged
MR Credit 3: Materials Reuse	Reuse 15%
MR Credit 4: Recycled Content	30% of Content
MR Credit 5: Regional Materials	30% of Materials
MR Credit 6: Rapidly Renewable Materials	5%
MR Credit 7: Certified Wood	95%

⁶⁰ U.S. Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 84.

Regional Priority (RP) Credits – Overview

The Regional Priority Credits of LEED-NC 2009 are a new addition to the 10-year old LEED rating system and are meant to address and acknowledge specific regional environmental issues. These are existing LEED-NC 2009 Credits selected by USGBC regional chapters and affiliates where projects earning points under these credits can earn bonus Regional Priority points. Each LEED-NC 2009 project can earn up to 4 bonus points from 6 credits in this category. The USGBC website maintains a database of all Regional Priority Credits based on location.

RP Credit 1: Regional Priority (1–4 Points)

The Regional Priority Credits for Alaska are as follows:

WE Credit 3: Water Use Reductions by 30%

EA Credit 1: Optimize Energy Performance with an improvement by 12% for New Buildings or 8% for Existing Building Renovations

EA Credit 2: On-Site Renewable Energy at 1%

MR Credit 2: Construction Waste Management – 50% Recycled or Salvaged

MR Credit 3: Materials Reuse – 5%

MR Credit 5: Regional Materials – 10%

The proposed LEED-NC 2009 plan for the rehabilitation of the museum includes all of these RP credits save EA Credit 2. The museum rehabilitation project should be able to earn all 4 Regional Priority Credit points

Projected LEED-NC Certification

Based on these LEED-NC credits a rehabilitated Jeff. Smith's Parlor Museum appears eligible for at least 53 points and a LEED-Silver certification. This total does not include any of the 4 potential points for Innovation in Design. The museum has the potential to achieve a LEED-Gold certification with 60 points by earning the maximum points in all applicable LEED-NC credits and at least 2 points for EA Credit 1: Optimize Energy Performance. A comparison of points required for LEED-Silver and LEED-Gold certification for the museum is shown in Table 5.

Table 5. LEED-NC Certification Estimates for The Jeff. Smith's Parlor Museum

SILVER		GOLD		JEFF. SMITH'S PARLOR MUSEUM LEED-REHABILITATION	
				Certification Estimates	
53	60	Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points			
17	17	SUSTAINABLE SITES			Points
Required	Required	Prereq 1	Construction Activity Pollution Prevention		Required
1	1	Credit 1	Site Selection		1
5	5	Credit 2	Development Density and Community Connectivity		5
		Credit 3	Brownfield Redevelopment		1
6	6	Credit 4.1	Alternative Transportation - Public Transportation Access		6
		Credit 4.2	Alternative Transportation - Bicycle Storage and Changing Rooms		1
		Credit 4.3	Alternative Transportation - Low-Emitting and Fuel-Efficient Vehicles		3
2	2	Credit 4.4	Alternative Transportation - Parking Capacity		2
1	1	Credit 5.1	Site Development - Protect or Restore Habitat		1
1	1	Credit 5.2	Site Development - Maximize Open Space		1
		Credit 6.1	Stormwater Design - Quantity Control		1
		Credit 6.2	Stormwater Design - Quality Control		1
		Credit 7.1	Heat Island Effect - Nonroof		1
		Credit 7.2	Heat Island Effect - Roof		1
1	1	Credit 8	Light Pollution Reduction		1
6	8	WATER EFFICIENCY			Points
Required	Required	Prereq 1	Water Use Reduction		Required
		Credit 1	Water Efficient Landscaping		2 to 4
			Reduce by 50%		2
4	4		No Potable Water Use or Irrigation		4
		Credit 2	Innovative Wastewater Technologies		2
		Credit 3	Water Use Reduction		2 to 4
2			Reduce by 30%		2
			Reduce by 35%		3
	4		Reduce by 40%		4

Table 5. (continued)

7	8	ENERGY & ATMOSPHERE		Points
Required	Required	Prereq 1	Fundamental Commissioning of Building Energy Systems	Required
Required	Required	Prereq 2	Minimum Energy Performance	Required
Required	Required	Prereq 3	Fundamental Refrigerant Management	Required
		Credit 1	Optimize Energy Performance	1 to 19
1			Improve by 12% for New Bldgs or 8% for Existing Bldgs	1
	2		Improve by 14% for New Bldgs or 10% for Existing Bldgs	2
			Improve by 16% for New Bldgs or 12% for Existing Bldgs	3
			Improve by 18% for New Bldgs or 14% for Existing Bldgs	4
			Improve by 20% for New Bldgs or 16% for Existing Bldgs	5
			Improve by 22% for New Bldgs or 18% for Existing Bldgs	6
			Improve by 24% for New Bldgs or 20% for Existing Bldgs	7
			Improve by 26% for New Bldgs or 22% for Existing Bldgs	8
			Improve by 28% for New Bldgs or 24% for Existing Bldgs	9
			Improve by 30% for New Bldgs or 26% for Existing Bldgs	10
			Improve by 32% for New Bldgs or 28% for Existing Bldgs	11
			Improve by 34% for New Bldgs or 30% for Existing Bldgs	12
			Improve by 36% for New Bldgs or 32% for Existing Bldgs	13
			Improve by 38% for New Bldgs or 34% for Existing Bldgs	14
			Improve by 40% for New Bldgs or 36% for Existing Bldgs	15
			Improve by 42% for New Bldgs or 38% for Existing Bldgs	16
			Improve by 44% for New Bldgs or 40% for Existing Bldgs	17
			Improve by 46% for New Bldgs or 42% for Existing Bldgs	18
			Improve by 48%+ for New Bldgs or 44%+ for Existing Bldgs	19
		Credit 2	On-Site Renewable Energy	1 to 7
			1% Renewable Energy	1
			3% Renewable Energy	2
			5% Renewable Energy	3
			7% Renewable Energy	4
			9% Renewable Energy	5
			11% Renewable Energy	6
			13% Renewable Energy	7
2	2	Credit 3	Enhanced Commissioning	2
2	2	Credit 4	Enhanced Refrigerant Management	2
		Credit 5	Measurement and Verification	3
2	2	Credit 6	Green Power	2
7	11	MATERIALS & RESOURCES		Points
Required	Required	Prereq 1	Storage and Collection of Recyclables	Required
		Credit 1.1	Building Reuse - Maintain Existing Walls, Floors and Roof	1 to 3
			Reuse 55%	1
			Reuse 75%	2
			Reuse 95%	3
1	1	Credit 1.2	Building Reuse - Maintain Interior Nonstructural Elements	1
		Credit 2	Construction Waste Management	1 to 2
1			50% Recycled or Salvaged	1
	2		75% Recycled or Salvaged	2
		Credit 3	Materials Reuse	1 to 2
1			Reuse 5%	1
	2		Reuse 10%	2
		Credit 4	Recycled Content	1 to 2
1			10% of Content	1
	2		20% of Content	2
		Credit 5	Regional Materials	1 to 2
1			10% of Materials	1

Table 5. (continued)

			MATERIALS & RESOURCES (continued)	Points
	2		20% of Materials	2
1	1	Credit 6	Rapidly Renewable Materials	1
1	1	Credit 7	Certified Wood	1
11	11	INDOOR ENVIRONMENTAL QUALITY		Points
Required	Required	Prereq 1	Minimum Indoor Air Quality Performance	Required
Required	Required	Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
1	1	Credit 1	Outdoor Air Delivery Monitoring	1
1	1	Credit 2	Increased Ventilation	1
1	1	Credit 3.1	Construction Indoor Air Quality Management Plan - During Construction	1
1	1	Credit 3.2	Construction Indoor Air Quality Management Plan - Before Occupancy	1
1	1	Credit 4.1	Low-Emitting Materials - Adhesives and Sealants	1
1	1	Credit 4.2	Low-Emitting Materials - Paints and Coatings	1
1	1	Credit 4.3	Low-Emitting Materials - Flooring Systems	1
1	1	Credit 4.4	Low-Emitting Materials - Composite Wood & Agrifiber	1
		Credit 5	Indoor Chemical and Pollutant Source Control	1
1	1	Credit 6.1	Controllability of Systems - Lighting	1
		Credit 6.2	Controllability of Systems - Thermal Comfort	1
1	1	Credit 7.1	Thermal Comfort - Design	1
1	1	Credit 7.2	Thermal Comfort - Verification	1
		Credit 8.1	Daylight and Views - Daylight	1
		Credit 8.2	Daylight and Views - Views	1
1	1	INNOVATION IN DESIGN		Points
		Credit 1	Innovation in Design	1 to 5
			Innovation or Exemplary Performance	1
			Innovation or Exemplary Performance	1
			Innovation or Exemplary Performance	1
			Innovation	1
			Innovation	1
1	1	Credit 2	LEED® Accredited Professional	1
4	4	REGIONAL PRIORITY		Points
		Credit 1	Regional Priority	1 to 4
1	1		Regionally Defined Credit Achieved	1
1	1		Regionally Defined Credit Achieved	1
1	1		Regionally Defined Credit Achieved	1
1	1		Regionally Defined Credit Achieved	1
SILVER	GOLD	TOTAL		
53	60	Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points		

CHAPTER IV

ANAYLSIS AND CONCLUSION

Analysis

In the past two years there have been several inquiries into the compatibility of the LEED-NC rating system and historic rehabilitation projects. In 2007, Patrice Frey at the University of Pennsylvania published a thesis title *Measuring Up: The Performance of Historic Buildings Under the LEED-NC Green Building Rating System*, and found that historic buildings performed “stronger than expected.”¹ She analyzed each credit category in LEED-NC versions 2.0 and 2.1 and assessed how a historic building might perform under each category as compared with a newly constructed building. She assigned a historic building performance rating of strong, average or weak for each LEED-NC credit. In general, she was considering the performance of historic buildings that are much larger, more complex and urban than the Jeff. Smith’s Parlor Museum. For her case study she used the 11-story Cobb Building, 1910, in downtown Seattle, Washington; the 2-story Italianate Renaissance Revival-style Robert H. Smith Visitor Education Center (VEC) at President Lincoln’s Cottage, 1905, in Washington, D.C.; and Trinity Church, 1877, in Boston, Massachusetts. The Cobb Building is certified LEED-Silver and the Lincoln Cottage was recently certified LEED-Gold. The restoration of

¹ Frey, Patrice J, “Measuring Up: The Performance of Historic Buildings Under the LEED-NC Green Building Rating System” (master’s thesis, University of Pennsylvania, 2007), 155.

Trinity Church incorporated sustainable practices but the project team did not seek LEED certification.

In 2008, Gisèle Taylor Wells at The University of North Carolina at Greensboro furthered the work of Frey with her thesis, *The Greening of Historic Places: Finding Common Ground Between Historic Tax Credits and LEED Certification*.² The goal of Wells' study was to “determine if commonalities existed between [her case study buildings] that successfully combined LEED certification and federal preservation tax credits.”³ She used the federal preservation tax credits as a measure of whether or not the rehabilitated buildings met the Secretary of the Interior's Standards for Rehabilitation of Historic Buildings – something a preservationist would consider a successful rehabilitation. Again the buildings that Wells used for her research were not of the same scale as the museum. In addition to the Cobb Building from Frey's research, Wells included the following buildings listed in Table 1.⁴

Evident from this list is that the buildings Wells included in her study were in urban settings, approximately 20,000 sq. ft. or larger, and constructed from materials not common to the museum or other historic vernacular buildings in Skagway, AK. The findings from the Frey and Wells studies are compiled in Table 2 along with the proposed LEED-NC Silver plan for the Jeff. Smith's Parlor Museum.

² Wells, Gisèle Taylor, "The Greening of Historic Places: Finding Common Ground Between Historic Tax Credits and LEED Certification" (master's. thesis, The University of North Carolina at Greensboro, 2008).

³ Ibid, 53.

⁴ Ibid, 46, 61, 115.

Table 1. Wells 2008 Case Study Historic LEED-Certified Buildings.

Building	Original Construction Material	Total Square Footage	LEED-NC Certification
Balfour-Guthrie, 1913, Portland, OR	Reinforced concrete	19,500	Silver
The Armory/Gerding Theater, 1891, Portland, OR	Brick and stone	52,000	Platinum
Scowcroft Building, 1906, Ogden, UT	Brick and heavy timber	133,000	Silver
WP Fuller Paints/Big-D Construction, 1922, Salt Lake City, UT	Reinforced concrete/ block	67,900	Gold
The Cobb Building, 1910, Seattle, WA	Steel frame and masonry	128,930	Silver
Martineau Project, 1905, 1920, Grand Rapids, MI	Brick, steel frame with masonry and frame	47,932	Certified
Bazzanni Associates Headquarters, 1901, 1908, Grand Rapids, MI	Brick, reinforced concrete, block and frame	37,749	Silver
Kelsey Project Avenue for Arts, 1912, 1914, Grand Rapids, MI	Brick, block, frame	21,402	Certified
Moseley architects New Headquarters, 1938, Richmond, VA	Brick	170,000	Gold
109-119 Whitaker Street Project, 1890, Savannah, GA	Brick	10,800	Silver

Table 2. Comparison of proposed LEED-NC Silver certification plan for the Jeff. Smith's Parlor Museum with Wells and Frey.

LEED-NC 2009		LEED-NC v2.2 Equivalent	Jeff. Smith's Parlor Museum Projected LEED-NC Silver 2009 Pts	Wells Study No. of Historic Bldgs Earning LEED (10 total)	Frey Study Performance Probability Historic Bldgs vs. New Construction
Sustainable Sites					
Prereq 1	Construction Activity Pollution Prevention		Required		
Credit 1	Site Selection		1	10	Strong
Credit 2	Development Density and Community Connectivity		5	5	Strong
Credit 3	Brownfield Redevelopment			6	Strong
Credit 4.1	Alternative Transportation - Public Transportation Access		6	9	Average - Strong
Credit 4.2	Alternative Transportation - Bicycle Storage and Changing Rooms			9	Average - Strong
Credit 4.3	Alternative Transportation - Low-Emitting and Fuel-Efficient Vehicles			3	Average - Strong
Credit 4.4	Alternative Transportation - Parking Capacity		2	10	Average - Strong
Credit 5.1	Site Development - Protect or Restore Habitat		1	0	Weak
Credit 5.2	Site Development - Maximize Open Space		1	1	Weak
Credit 6.1	Stormwater Design - Quantity Control			3	Weak
Credit 6.2	Stormwater Design - Quality Control			2	Weak
Credit 7.1	Heat Island Effect - Nonroof			5	Weak
Credit 7.2	Heat Island Effect - Roof			8	Weak
Credit 8	Light Pollution Reduction		1	6	Average
Water Efficiency					
Prereq 1	Water Use Reduction		Required		
Credit 1	Water Efficient Landscaping				
	Reduce by 50%			9	Average
	No Potable Water Use or Irrigation		4	5	Average
Credit 2	Innovative Wastewater Technologies			1	Average
Credit 3	Water Use Reduction				Average
		Reduce by 20%		9	
	Reduce by 30%	Reduce by 30%		6	
	Reduce by 35%				
	Reduce by 40%		4		

Table 2. (continued)

LEED-NC 2009		LEED-NC v2.2 Equivalent	Jeff. Smith's Parlor Museum LEED- NC Silver	Wells Study	Frey Study
Energy & Atmosphere					
Prereq 1	Fundamental Commissioning of Building Energy Systems		Required		
Prereq 2	Minimum Energy Performance		Required		
Prereq 3	Fundamental Refrigerant Management		Required		
Credit 1	Optimize Energy Performance				Weak
	Improve by 12% for New Bldgs or 8% for Existing Bldg Renovations				
	14% for New Bldgs or 10% for Existing Bldg				
	16% for New Bldgs or 12% for Existing Bldg		3		
	18% for New Bldgs or 14% for Existing Bldg				
	20% for New Bldgs or 16% for Existing Bldg				
	22% for New Bldgs or 18% for Existing Bldg				
	24% for New Bldgs or 20% for Existing Bldg				
	26% for New Bldgs or 22% for Existing Bldg				
	28% for New Bldgs or 24% for Existing Bldg				
	30% for New Bldgs or 26% for Existing Bldg				
	32% for New Bldgs or 28% for Existing Bldg				
	34% for New Bldgs or 30% for Existing Bldg				
	36% for New Bldgs or 32% for Existing Bldg				
	38% for New Bldgs or 34% for Existing Bldg				
	40% for New Bldgs or 36% for Existing Bldg	40% / 30%		5	
	42% for New Bldgs or 38% for Existing Bldg				
	44% for New Bldgs or 40% for Existing Bldg				
	46% for New Bldgs or 42% for Existing Bldg				
	48%+ for New Bldgs or 44%+ for Existing Bldg				
		50% / 40%		1	
		60% / 50%		0	
Credit 2	On-Site Renewable Energy				
	1% Renewable Energy				
	3% Renewable Energy				
	5% Renewable Energy			0	Weak
	7% Renewable Energy				
	9% Renewable Energy				
	11% Renewable Energy	10% Renew		0	Weak
	13% Renewable Energy				
		15% Renew		0	Weak
Credit 3	Enhanced Commissioning		2	4	Average
Credit 4	Enhanced Refrigerant Management		2	7	Average
Credit 5	Measurement and Verification			3	Average
Credit 6	Green Power		2	3	Average

Table 2. (continued)

LEED-NC 2009		LEED-NC v2.2 Equivalent	<u>Jeff Smith's Parlor Museum</u> LEED- NC Silver	<u>Wells Study</u>	<u>Frey Study</u>
Materials & Resources					
Prereq 1	Storage and Collection of Recyclables				
Credit 1.1	Building Reuse - Maintain Existing Walls, Floors and Roof				
	Reuse 55%				
	Reuse 75%	Maintain 75% of Existing Shell		10	Strong
	Reuse 95%	Maintain 100% of Existing Shell & 50% non-Shell		4	Strong
Credit 1.2	Building Reuse - Maintain Interior Nonstructural Elements		1		Strong
Credit 2	Construction Waste Management				
	50% Recycled or Salvaged			9	Average
	75% Recycled or Salvaged		2	7	Average
Credit 3	Materials Reuse				
	Reuse 5%			1	Average
	Reuse 10%		2	0	Average
Credit 4	Recycled Content				Average
	10% of Content			5	
	20% of Content		2	3	
Credit 5	Regional Materials				Average
	10% of Materials				
	20% of Materials		2	9	
Credit 6	Rapidly Renewable Materials		1	1	Average
Credit 7	Certified Wood		1	3	Average

Table 2. (continued)

LEED-NC 2009		LEED-NC v2.2 Equivalent	Jeff. Smith's Parlor Museum LEED- NC Silver	Wells Study	Frey Study
Indoor Environmental Quality					
Prereq 1	Minimum Indoor Air Quality Performance		Required		
Prereq 2	Environmental Tobacco Smoke (ETS) Control		Required		
Credit 1	Outdoor Air Delivery Monitoring		1	4	Average
Credit 2	Increased Ventilation		1	4	Strong
Credit 3.1	Construction Indoor Air Quality Management Plan - During Construction		1	7	Average
Credit 3.2	Construction Indoor Air Quality Management Plan - Before Occupancy		1	6	Average
Credit 4.1	Low-Emitting Materials - Adhesives and Sealants		1	8	Average
Credit 4.2	Low-Emitting Materials - Paints and Coatings		1	9	Average
Credit 4.3	Low-Emitting Materials - Flooring Systems		1	8	Average
Credit 4.4	Low-Emitting Materials - Composite Wood and Agrifiber Products		1	6	Average
Credit 5	Indoor Chemical and Pollutant Source Control			5	Weak
Credit 6.1	Controllability of Systems - Lighting		1	4	Average - Strong
Credit 6.2	Controllability of Systems - Thermal Comfort			2	Average - Strong
Credit 7.1	Thermal Comfort - Design		1	6	Average
Credit 7.2	Thermal Comfort - Verification		1	5	Average
Credit 8.1	Daylight and Views - Daylight			6	Strong
Credit 8.2	Daylight and Views - Views			10	Strong
Innovation in Design					
Credit 1	Innovation in Design				
	Innovation or Exemplary Performance	3 points		8	Average
	Innovation or Exemplary Performance	Sustainability Education		8	Average
	Innovation or Exemplary Performance				
	Innovation				
	Innovation				
Credit 2	LEED® Accredited Professional		1	10	Average
Regional Priority					
Credit 1	Regional Priority				
	Regionally Defined Credit Achieved		1	N/A	N/A
	Regionally Defined Credit Achieved		1	N/A	N/A
	Regionally Defined Credit Achieved		1	N/A	N/A
	Regionally Defined Credit Achieved		1	N/A	N/A

Based on this comparison, the proposed LEED-NC Silver plan for the museum appears to be in agreement with other certified historic rehabilitation projects despite the differences in building type and location. In some instances, changes in the new LEED-NC 2009 rating system from the older versions used by Frey and Wells appear to benefit the museum project such as additional points for more water reduction (WE Credit 3) and the Regional Priority Credits. In other credit areas the comparison is mixed. For example, under Materials & Resources, Credit 1 included both exterior and interior building reuse in previous versions but is now divided into two credits; MR Credit 1.1: Building Reuse - Maintain Existing Walls, Floors and Roof and MR Credit 1.2: Building Reuse - Maintain Interior Nonstructural Elements in LEED-NC 2009. The museum is most likely not eligible for MR Credit 1.1. The plan to deconstruct the original plank-constructed walls and sandwich in stud walls limit the project from earning points for MR Credit 1.1. However, if enough interior structures and elements are preserved, points under MR Credit 1.2 are still possible.

The Jeff. Smith's Parlor Museum, like other historic rehabilitated buildings, could earn many points in the Sustainable Sites, Water Efficiency, Materials and Resources and Indoor Environmental Quality credit categories (see Figure 1).

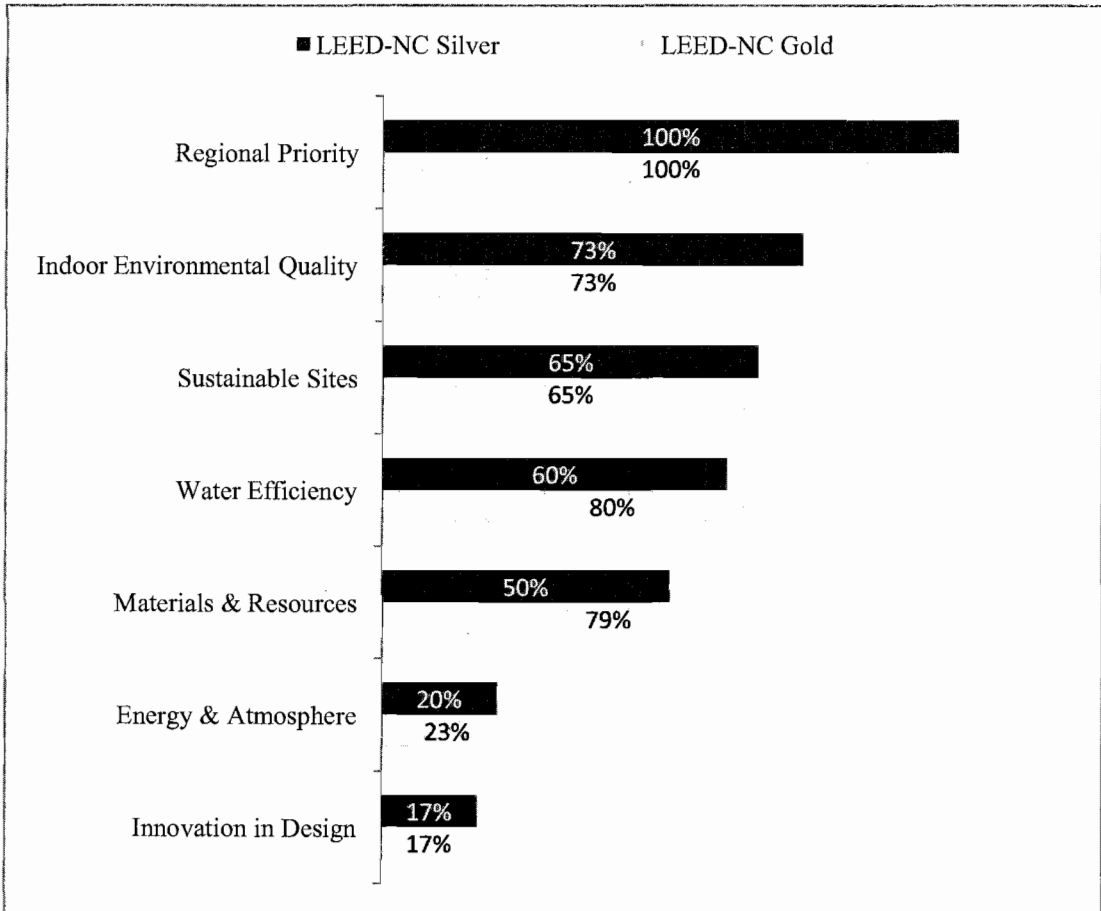


Figure 1. Percentage of total possible points in each credit category that the proposed LEED-NC Silver and Gold certifications for The Jeff. Smith's Parlor Museum earns.

In categories where the percentage of points earned is low, this appears due in large part to the vernacular nature of the building; the intended use and expected occupancy; and location. However, with this proposed LEED-NC Silver certification plan, the museum rehabilitation is earning at least 50% of the available points in five of the seven credit categories and earning all Regional Priority points available. To achieve LEED-NC Gold the project team would need to increase point percentages in the Water Efficiency, Materials and Resources and Energy and Atmosphere credit categories.

Conclusion

Achieving LEED-Silver certification under the new 2009 rating system would place The Jeff. Smith's Parlor Museum at the forefront of sustainable historic preservation in the United States. Not only would this project use the newest rating system which is relatively untested for historic rehabilitations, but because as Frey and Wells revealed and according to the National Trust for Historic Preservation (NTHP), the museum would be unique as a LEED-certified historic vernacular building.⁵ A successful LEED-certified rehabilitation of the museum that preserves the building's character defining features like the plank construction, floor plan, fenestration and cladding; and incorporates sustainable designs could guide future rehabilitation of other historic vernacular buildings in the Klondike Gold Rush National Historical Park in Skagway, Alaska and elsewhere. However, LEED should be seen as a "tool" and "for some buildings/projects it just doesn't make sense."⁶ Barbara A. Campagna, FAIA LEED AP with NTHP estimates that for some historic rehabilitation projects seeking LEED certification the cost for USGBC registration and hiring a LEED consultant alone may reach \$40,000.⁷ While a LEED-certified rehabilitation of the museum may not incur LEED -related expenses to this extent, the project team should expect additional costs for certification; hiring of a commissioning authority (related to EA Prerequisite 1) and other

⁵ Director of Architecture for the National Trust for Historic Preservation, Barbara A. Campagna, *FAIA, LEED AP, Graham Gund Architect of the National Trust, Stewardship of Historic Sites* confirmed that as of April 2009 there were no LEED-certified or registered historic vernacular buildings. May 6, 2009, e-mail message to author.

⁶ Barbara A. Campagna, FAIA, LEED AP, Graham Gund Architect of the National Trust, Stewardship of Historic Sites, May 6, 2009, e-mail message to author.

⁷ Ibid.

consultants to assist with particular credits; and salary for time spent by project team members on submittal paperwork alone. The sustainable goals set forth by the project team for the rehabilitation of the museum could be achieved without LEED. Free of the rating system, funding and time that would have been directed toward LEED- expenses could be directed toward interpretative and educational strategies to promote the National Park Service's commitment to historic preservation and its inherent sustainability.

Moreover the first priority for rehabilitation of any historic structure is to follow the Standards for Rehabilitation established by the Secretary of the Interior:

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 shall 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.⁸

Ultimately, pursuing LEED certification for the Jeff. Smith's Parlor Museum will be the decision of the Klondike Gold Rush National Historical Park Superintendent. Weighing the benefits versus cost will be a crucial component of making this decision. Economic benefits of LEED certification, such as state rehabilitation tax credits for privately owned buildings, are not available for buildings owned by the National Park Service. Thus, the economic benefits of LEED certification for publicly-owned and non-commercial buildings like the museum are limited. The costs associated with LEED certification for the museum will be expenses not directly recouped.

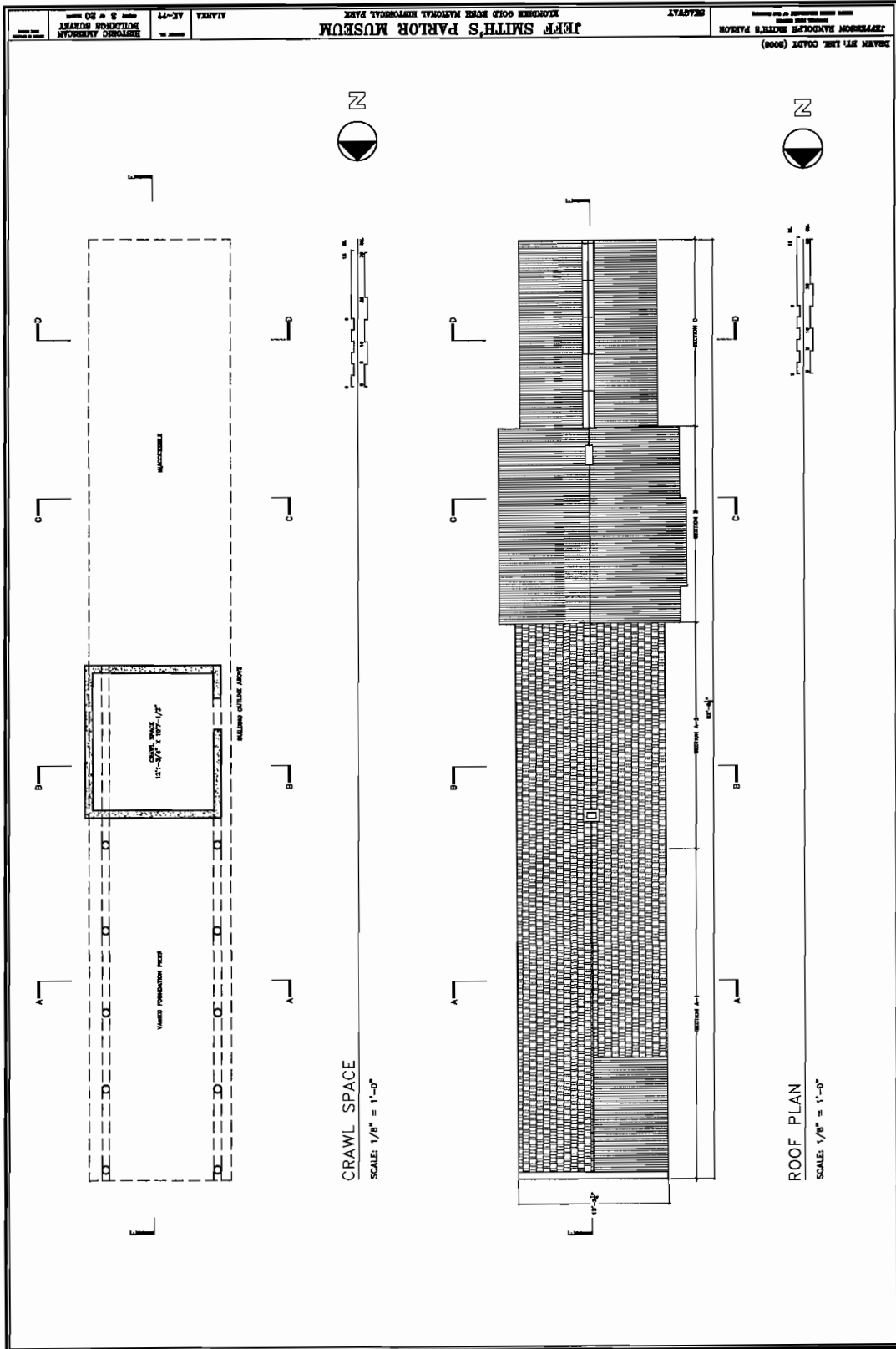
⁸ Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* (Washington D.C.:U.S. Department of the Interior, 1995), 62.

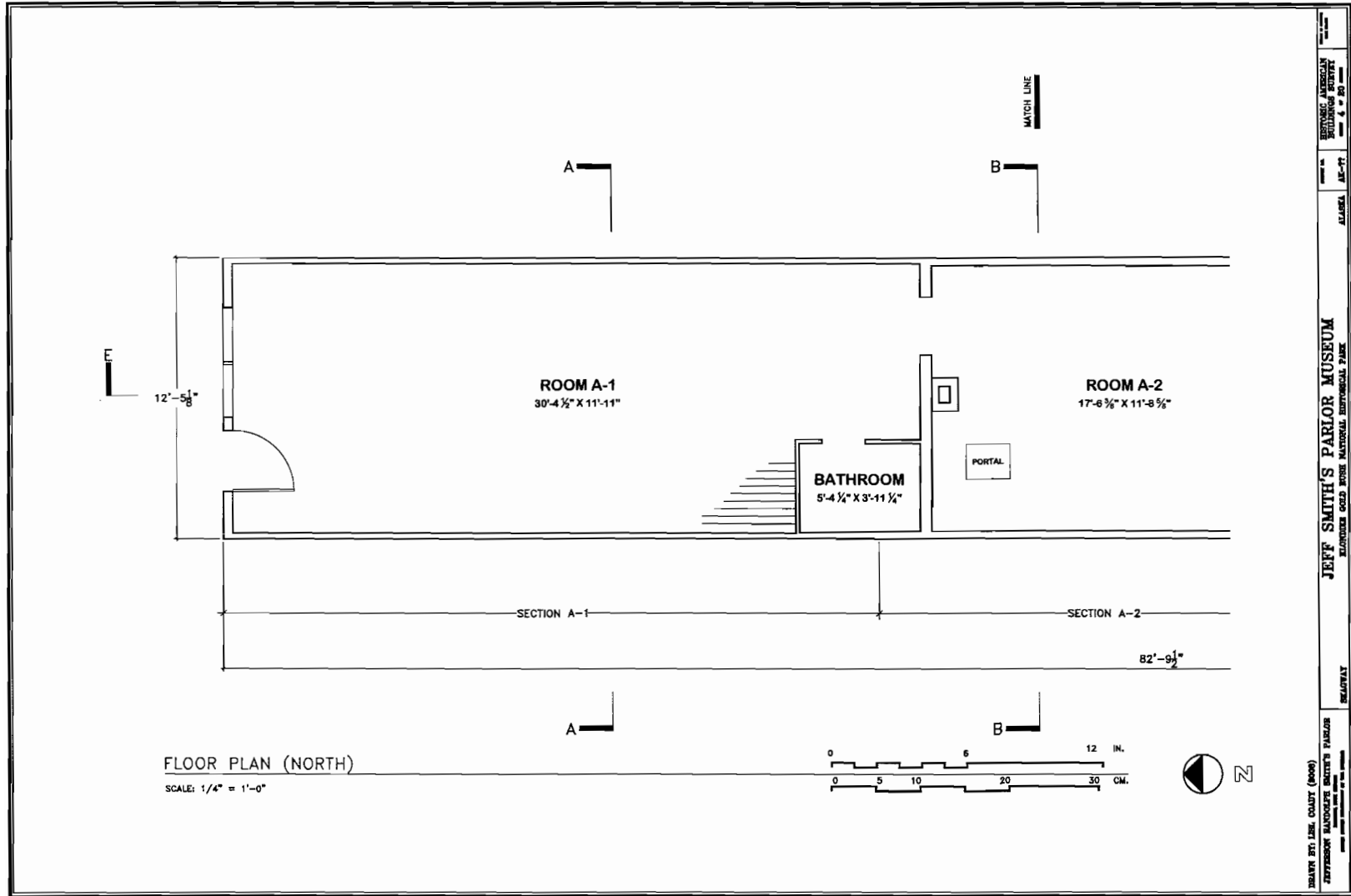
This thesis suggests that it certainly is possible to achieve LEED certification and earn a Silver or Gold rating with the rehabilitation of the museum. LEED-certification is desirable given its recognition in the United States as the standard for green building. The LEED rating system could be used as a tool to meet the sustainability goals of the project, but it should not be prescriptive nor push the rehabilitation beyond the Secretary of the Interior's Standards for the Rehabilitation of Historic Buildings. All successful rehabilitations of historic buildings listed on the National Register of Historic Places adhere to these standards and the Jeff. Smith's Parlor Museum – LEED or not LEED-certified should be no exception.

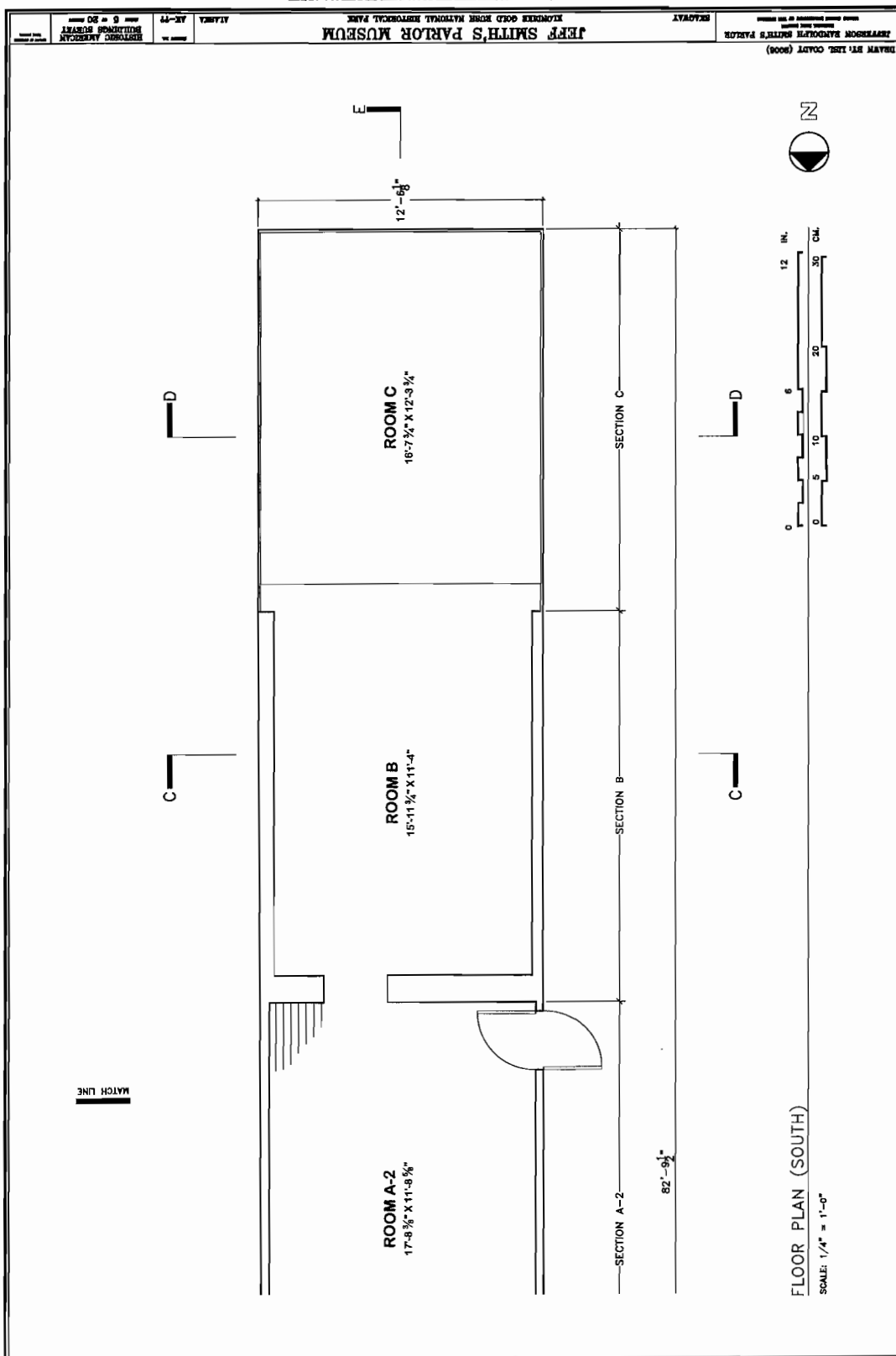
The National Park Service, in recognizing their responsibility as the governmental leader in preservation assists the general public through their example by following the Secretary of the Interior's Standards for the Treatment of Historic Properties and sustainably rehabilitating historic buildings. Vernacular buildings like the Jeff. Smith's Parlor Museum are common to all National and State Parks in the United States. Throughout the U.S., these modest historic buildings are being considered for reuse to meet the needs of the next generation that seemingly considers the future to be better than the past. Historic buildings should be sustainably rehabilitated with an eye to the future, sensitivity to the past and not at the expense of the resource – “change it but don't destroy it.”⁹

⁹ Lopate, Phillip, "Ada Louise Huxtable, the Dean of Architecture Critics, Discusses New York," *NYTimes.com*, November 7, 2008
http://www.nytimes.com/2008/11/09/nyregion/thecity/09huxt.html?_r=1&adxnnl=1&pagewanted=1&adxnnlx=1242015829-B1XEXN4IGeYQr4qDP4kzFA (accessed November 9, 2008). Ada Louise Huxtable on her preservation philosophy.

APPENDIX A
HISTORIC AMERICAN BUILDINGS SURVEY DRAWINGS



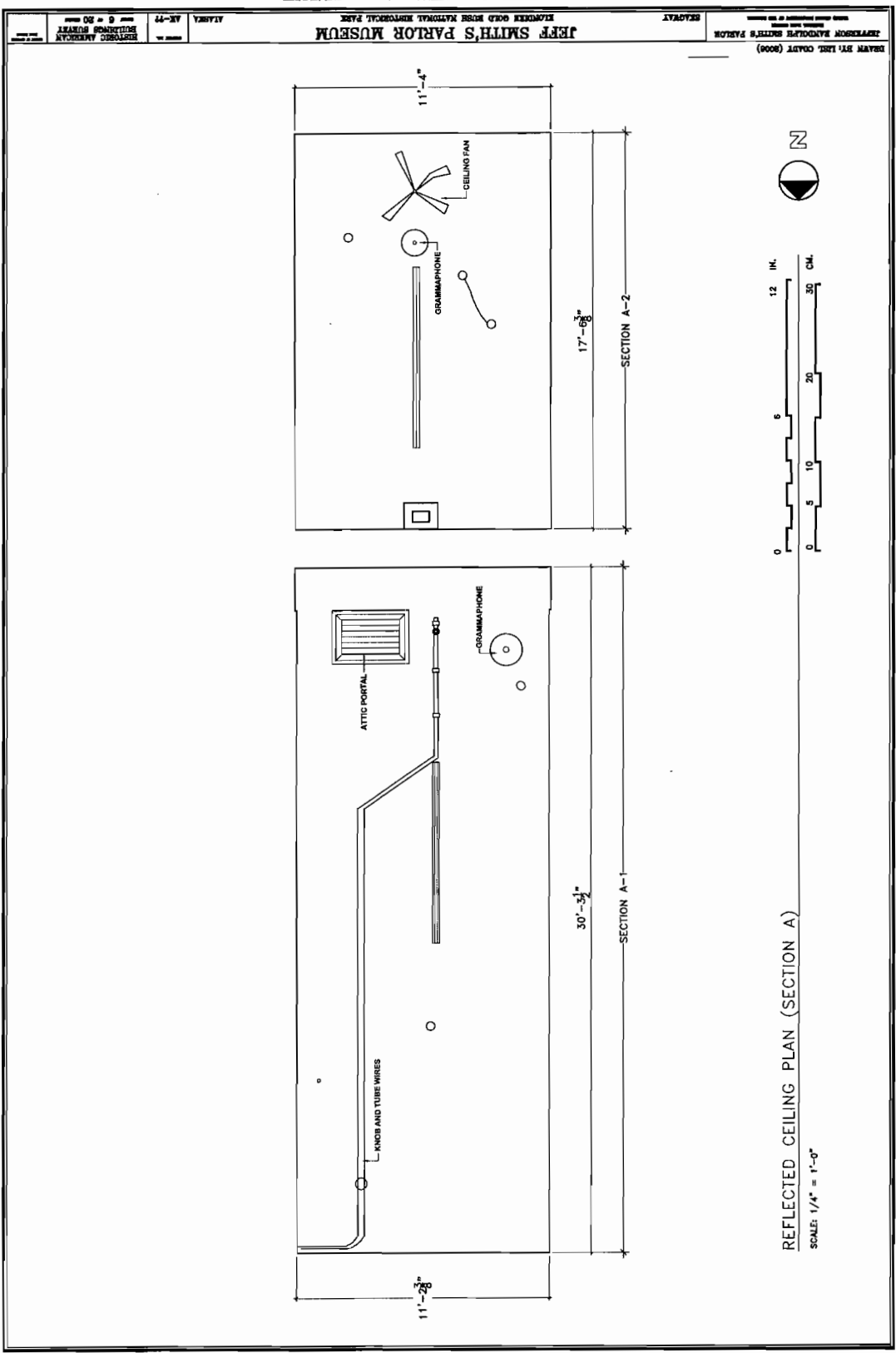


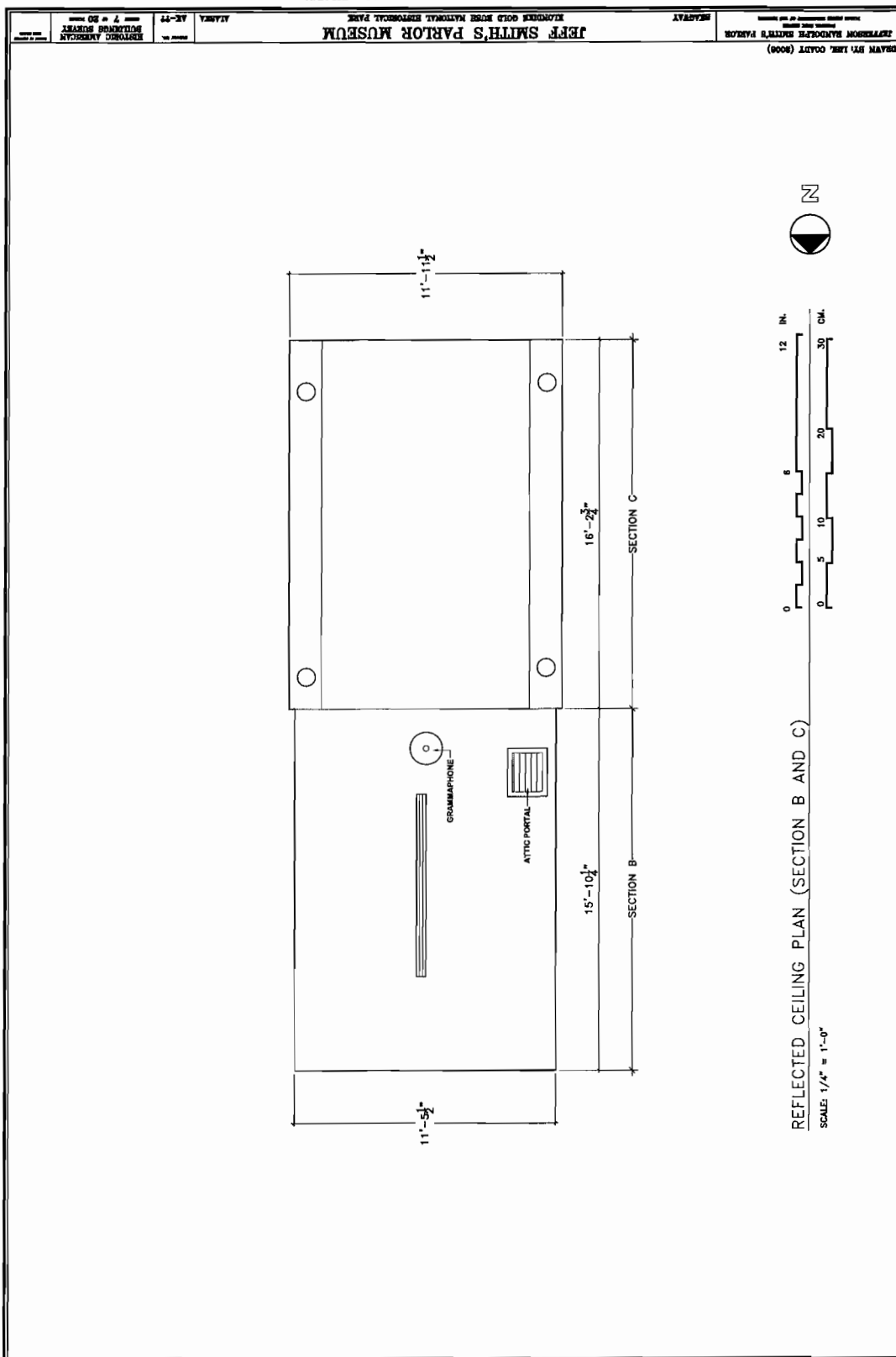


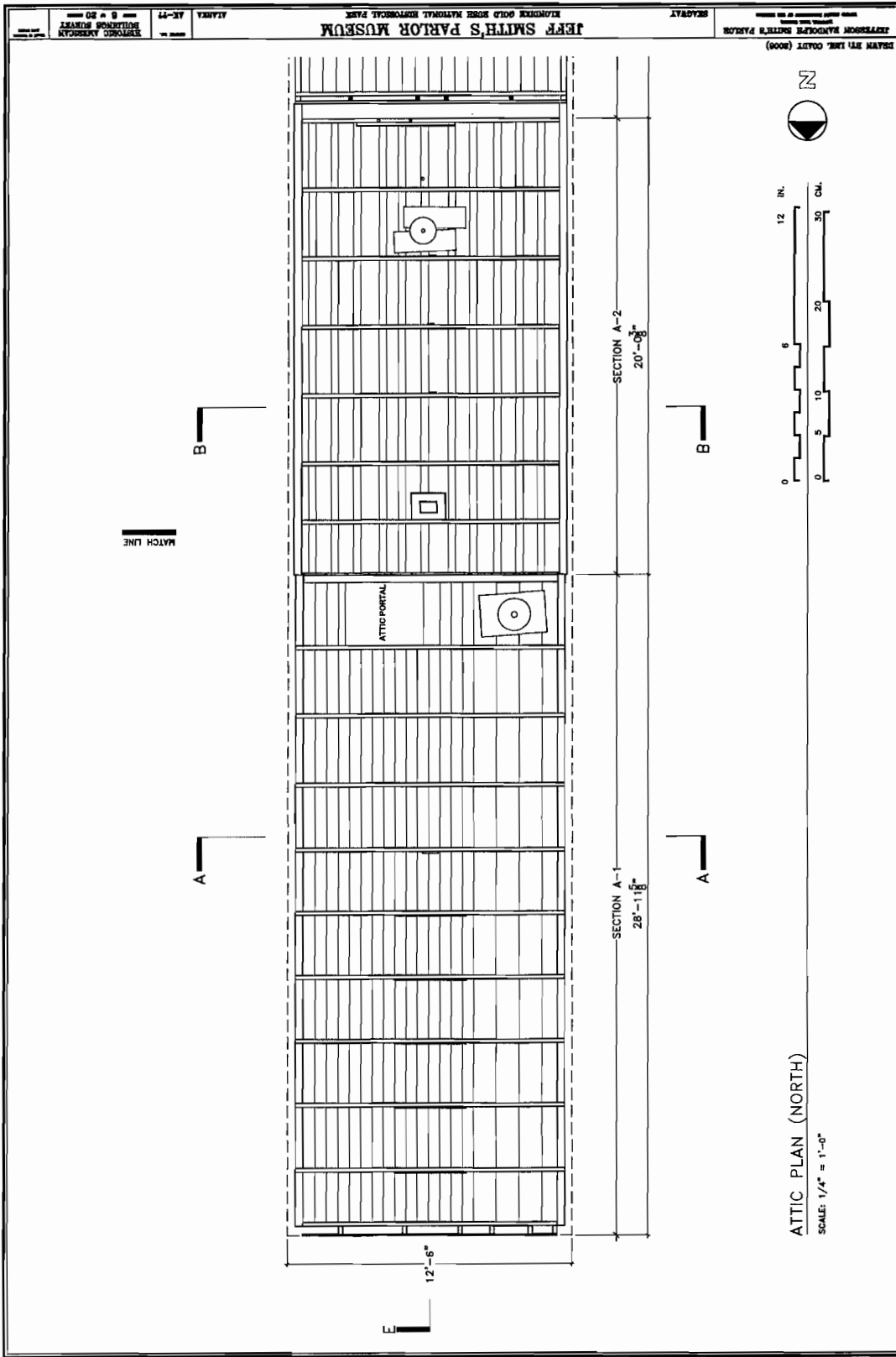
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COUNTY OF MOBILE
CIVIL ENGINEER
PROJECT NO. 10000
DATE: 10/15/10

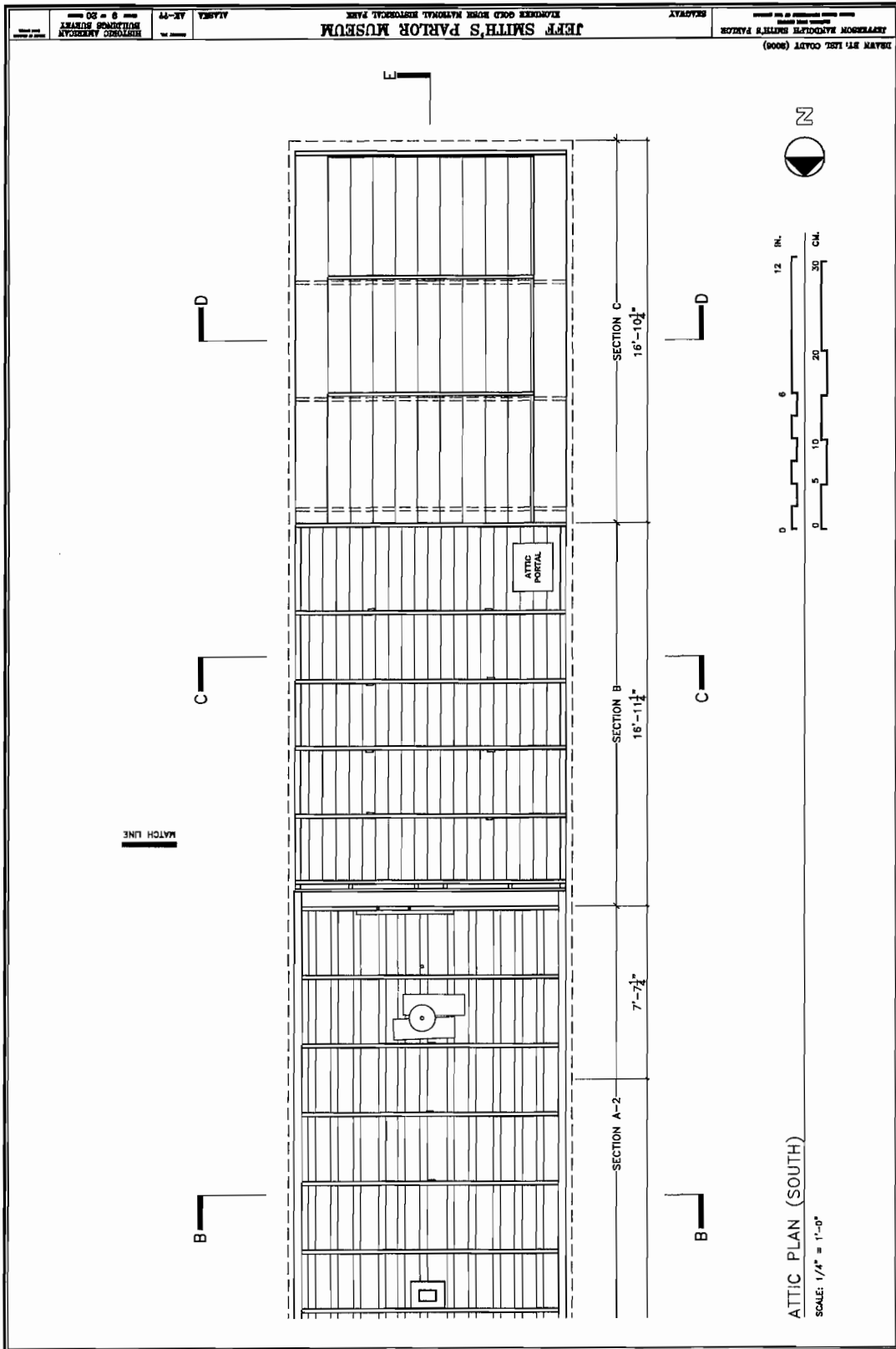
JEFF SMITH'S PARLOR MUSEUM
KIMONOKA GOLD BORN NATIONAL HISTORICAL PARK

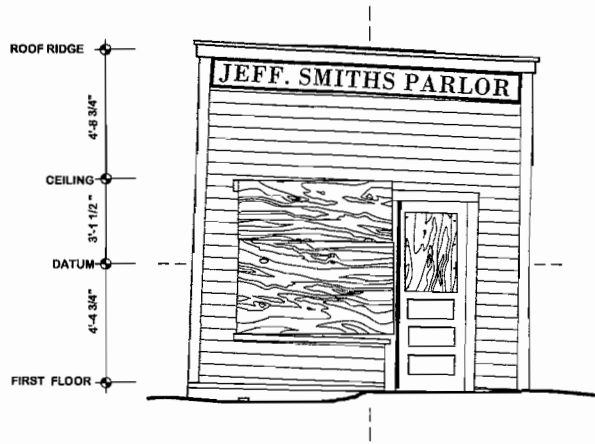
STATE OF ALABAMA
COUNTY OF MOBILE
CIVIL ENGINEER
PROJECT NO. 10000
DATE: 10/15/10



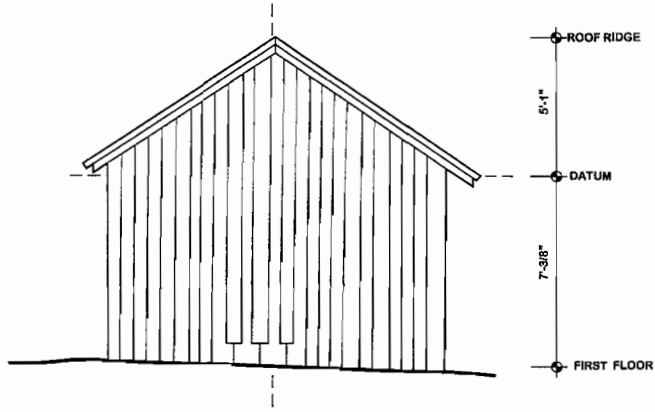




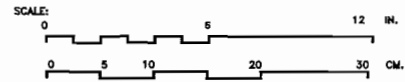




NORTH ELEVATION
SCALE: 1/4" = 1'-0"



SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



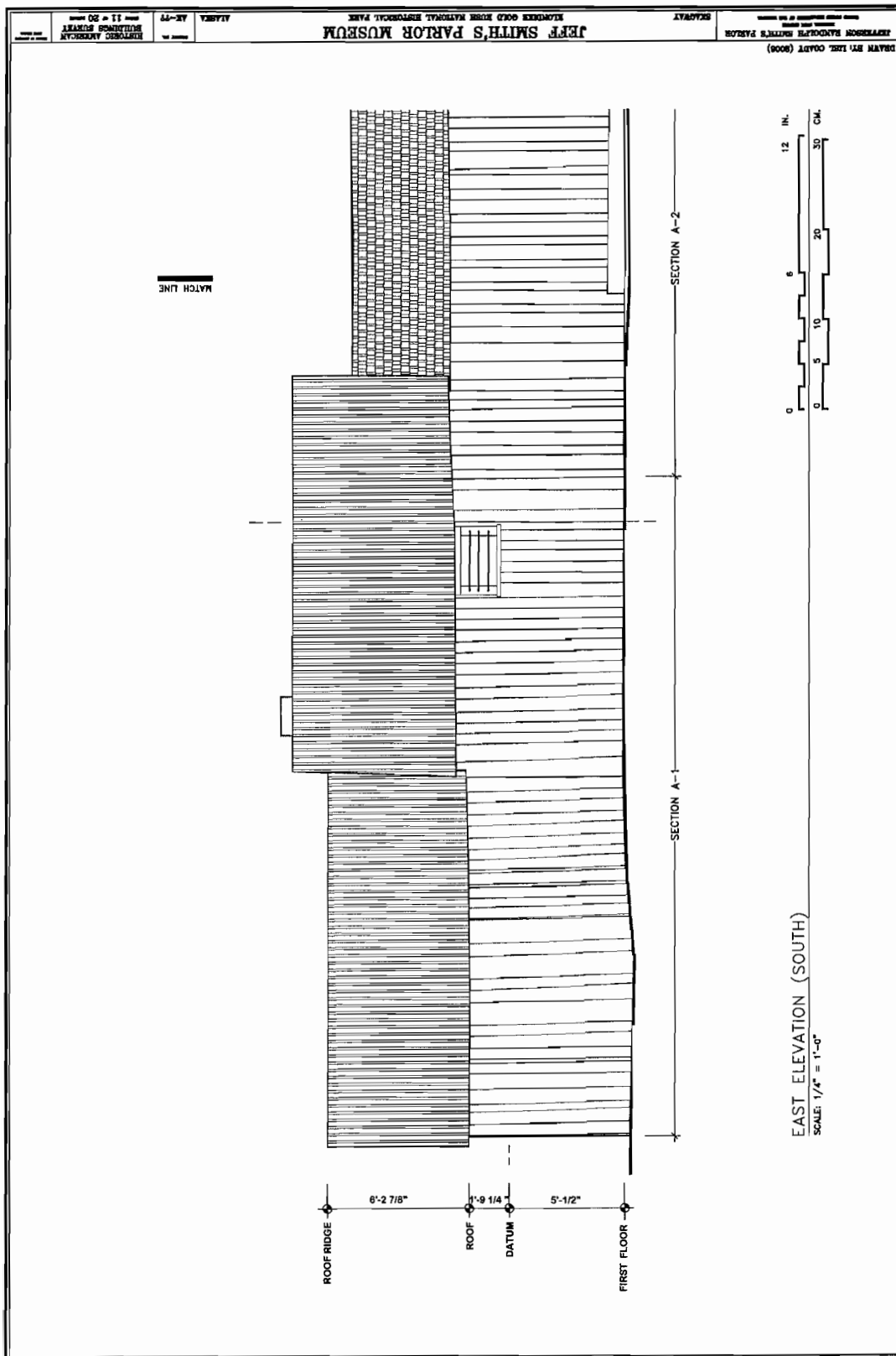
HEALTH HIST. SOC. COUNTY (2000)
JEFFERSON NATIONAL HERITAGE PARK
NORTH ELEVATION

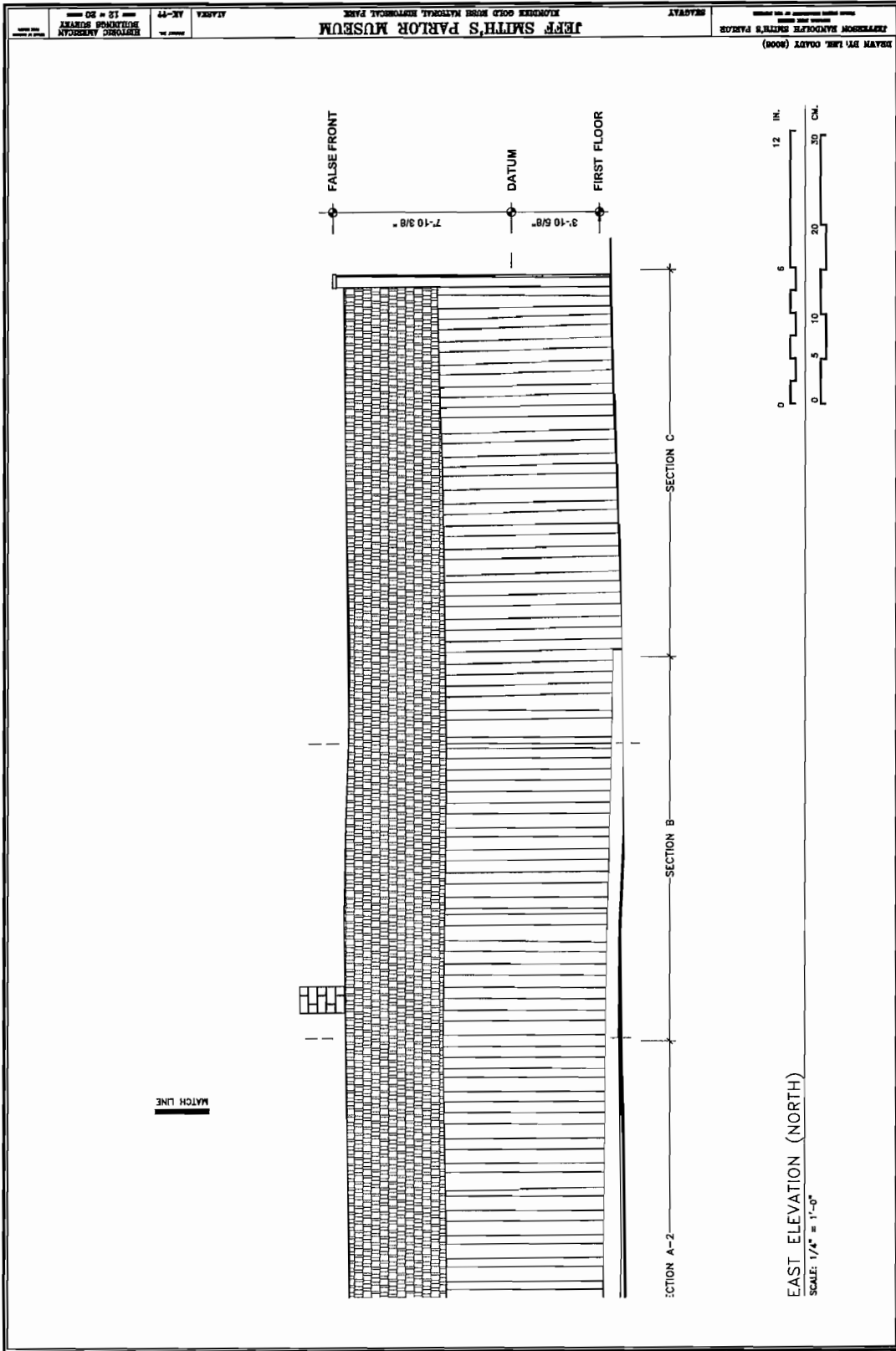
JEFF SMITH'S PARLOR MUSEUM
ELIZABETH GOLD BOISE NATIONAL HISTORICAL PARK

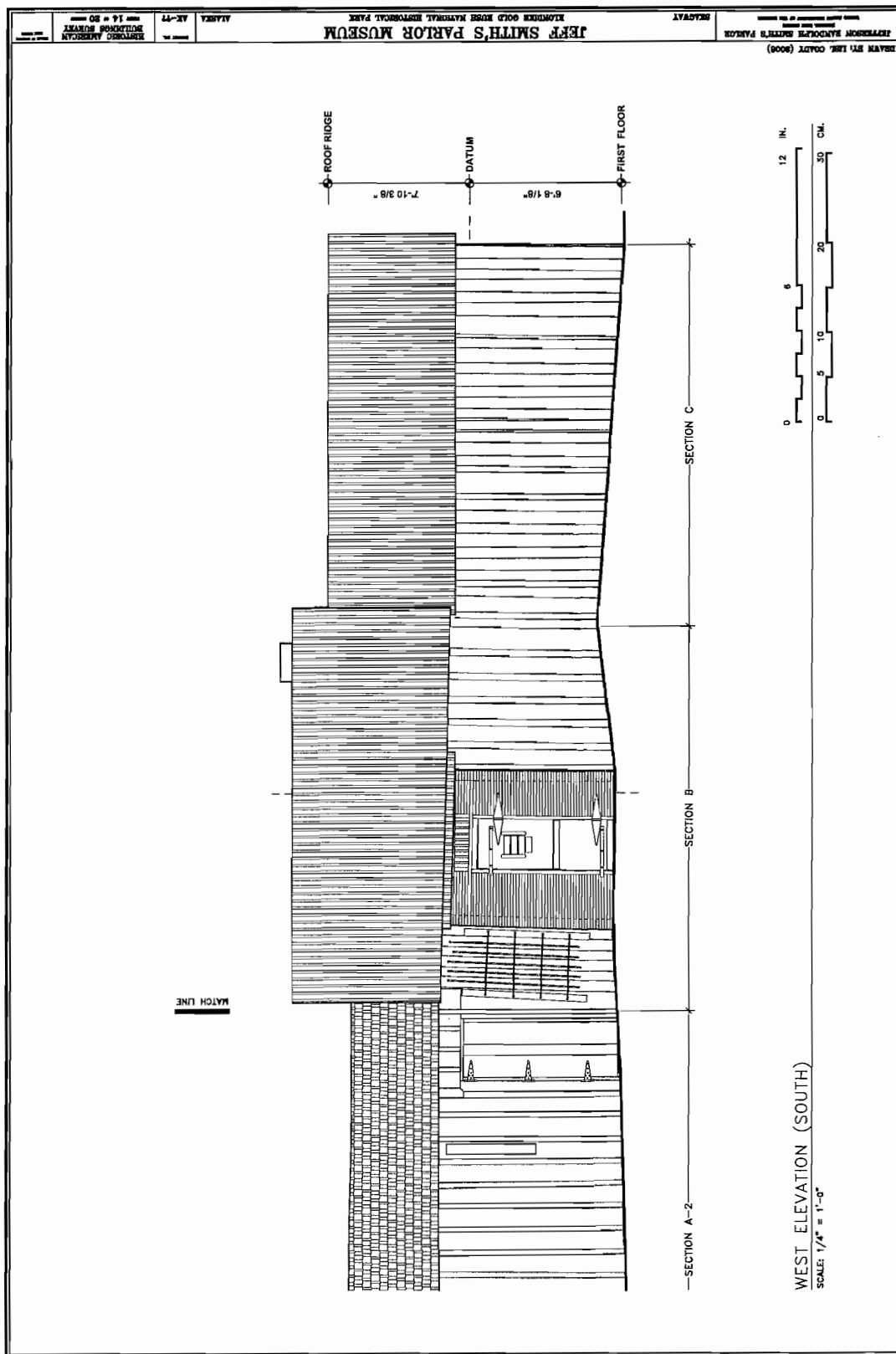
ALASKA
AS-47

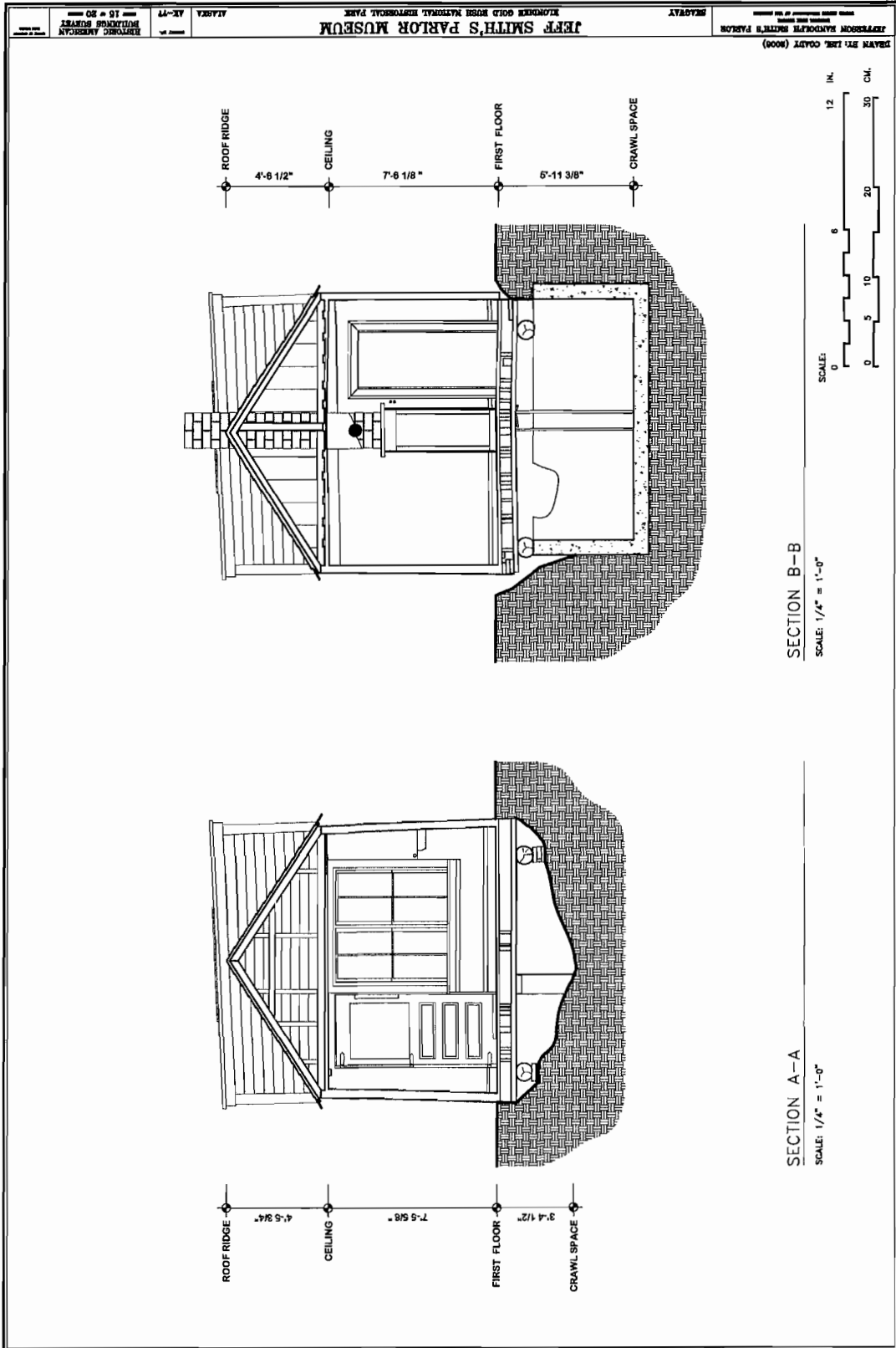
HERITAGE AMERICAN
BUILDINGS SURVEY
FORM 10 OF 20 (2000)

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MATERIALS LIST:

SECTION A-1

FOUNDATION:
10" DIAMETER ROUGH BAWN SPRUCE TREE
6" X VARIOUS SIZED FLOOR JOISTS

FLOOR:

1" X 12" SUBFLOOR
5 3/8" X 1/2" TONGUE AND GROOVE DOUGLAS FIR FLOOR

EXTERIOR WALLS:
BOARD AND BATTEN SIDING 1"X12" BOARD, 1" X 4" BATTEN
1" X 12" HORIZONTAL TONGUE AND GROOVE SIDING
BUILDING PAPER

2 1/2" X 4 1/2" ROUGH SAWN DOUGLAS FIR STUDS (NORTH END OF BUILDING)

ATTIC FRAMING:

2" X 4" TOP PLATE
2" X 3 1/2" CEILING JOIST
1" X 12" CEILING BOARDS
1" X 11 1/4" VERTICAL BOARDS
1" X 3 1/2" A.F. TONGUE AND GROOVE COLLAR TIES
2" X 3 1/2" RAFTERS
1" X 4" SKIP SHEATHING
CEDAR SHINGLES
CORRUGATED METAL ROOF PATCH

SECTION A-2

FOUNDATION:
10" DIAMETER ROUGH BAWN SPRUCE TREE
6" X VARIOUS SIZED FLOOR JOISTS

FLOOR:

1" X 12" SUBFLOOR
5/8" X 3/8" TONGUE AND GROOVE DOUGLAS FIR FLOOR

EXTERIOR WALLS:

BOARD AND BATTEN SIDING 1"X12" BOARD, 1" X 4" BATTEN
1" X 12" HORIZONTAL TONGUE AND GROOVE SIDING
1" X 12" VERTICAL BOARD SIDING
BUILDING PAPER

ATTIC FRAMING:

2" X 4" TOP PLATE
2" X 4" CEILING JOISTS
1" X 3" TONGUE AND GROOVE CEILING BOARD
1" X 12" CEILING BOARD PLANKS
BRICK CHIMNEY- 4 1/2" X 8" HANDPRESSED BRICK, MORTAR JOINTS APPROX. 1/4"
CEDAR SHINGLES
1" X 4" SKIP SHEATHING
7/8" X 3 7/8" KING POST

SECTION B:

FOUNDATION:

INACCESSIBLE

FLOOR:

SHEET LINOLEUM
EXTERIOR WALLS:
BOARD AND BATTEN SIDING 1"X12" BOARD, 1" X 4" BATTEN
BUILDING PAPER
2" X 4" STUDS

ATTIC FRAMING:

2" X 3" TOP PLATE
2" X 3" CEILING JOIST
1" X 4" VERTICAL AND DIAGONAL BRACING

2" X 3 1/2" ATTIC STUDS

1" X 7" SHIPLAP SIDING
1" X 7" CEILING BOARDS
1 1/2" X 2 1/2" RAFTERS
1" X 4" SKIP SHEATHING
3 1/2" X 1 1/2" COLLAR TIE
CORRUGATED METAL ROOF

SECTION C:

FOUNDATION:

INACCESSIBLE

FLOOR:

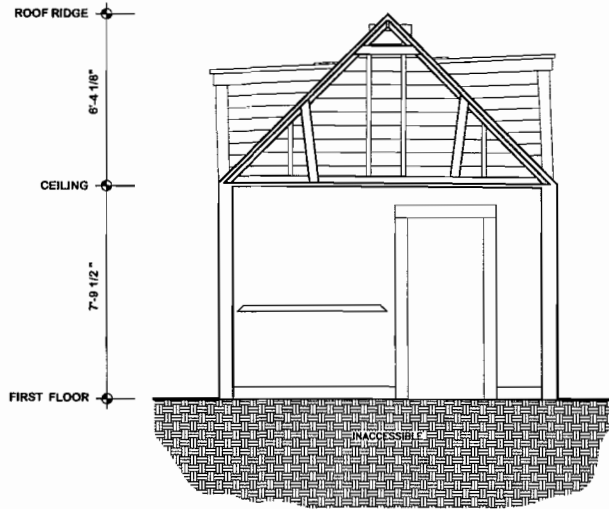
INACCESSIBLE

EXTERIOR WALLS:

BOARD AND BATTEN SIDING 1"X12" BOARD, 1" X 4" BATTEN
BUILDING PAPER

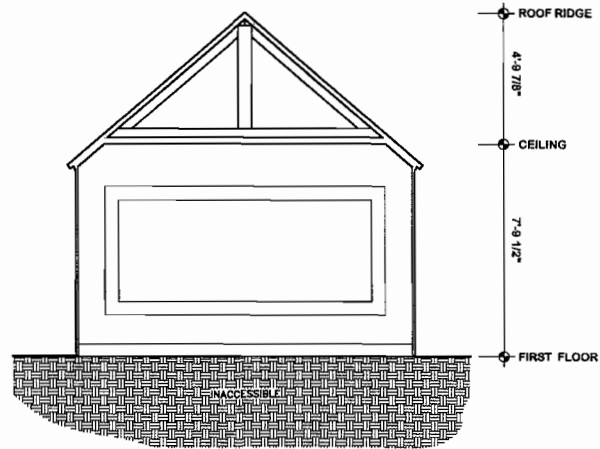
ATTIC FRAMING:

5/8" X 8 1/2" BEVELLED SHIPLAP BOARD
1" X 8" COLLAR TIE
1" X 12" CEILING BOARDS
1" X 8" CEILING JOIST
1" X 8" KING POST
1 1/2" X 4" ROUGH SAWN DOUGLAS FIR RAFTER
1" X 8" SKIP SHEATHING
1" X 11 1/4" SUB ROOFING
PLYWOOD PATCHES
CEDAR SHINGLES
CORRUGATED METAL ROOF



SECTION C-C

SCALE: 1/4" = 1'-0"

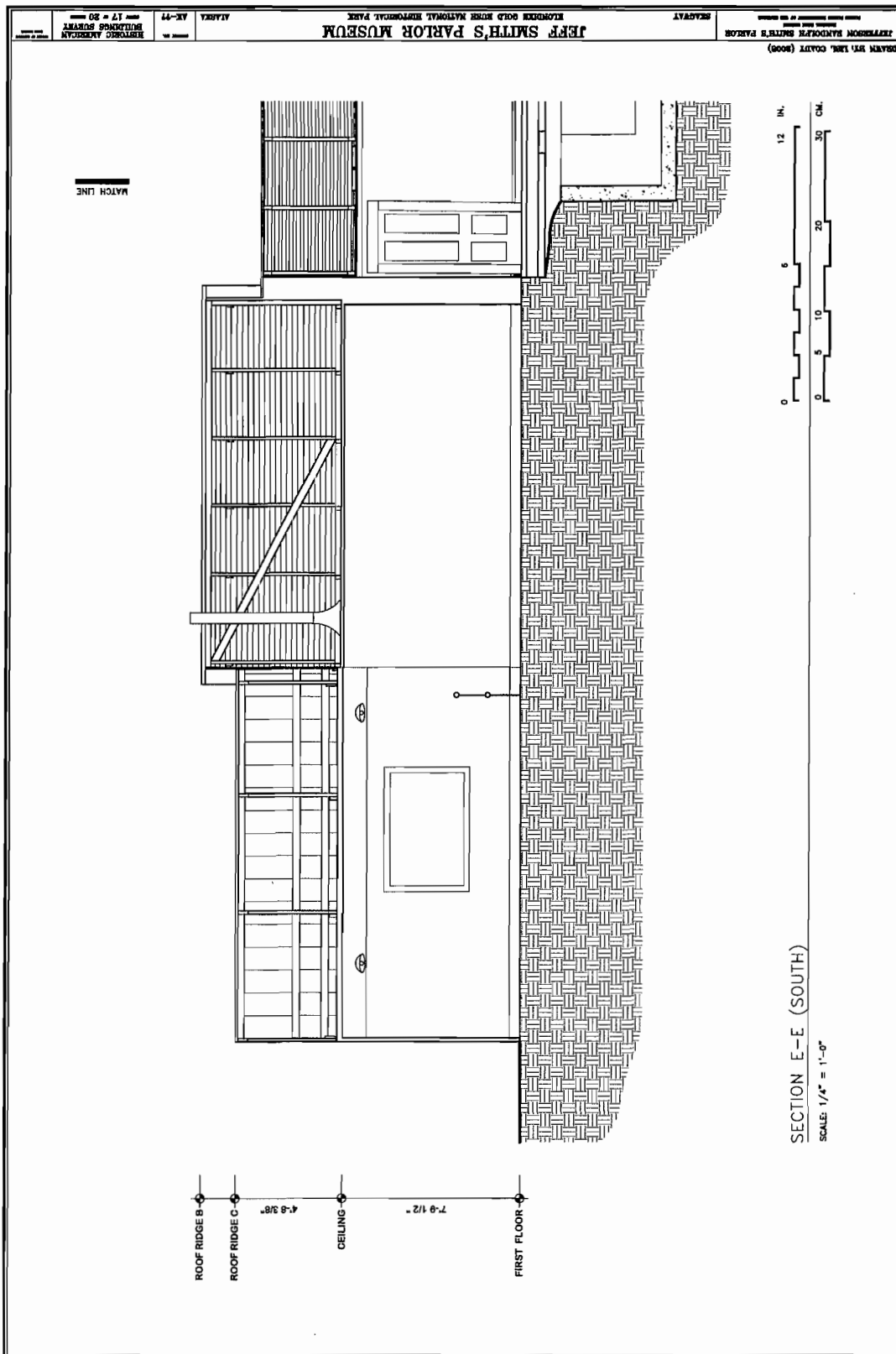


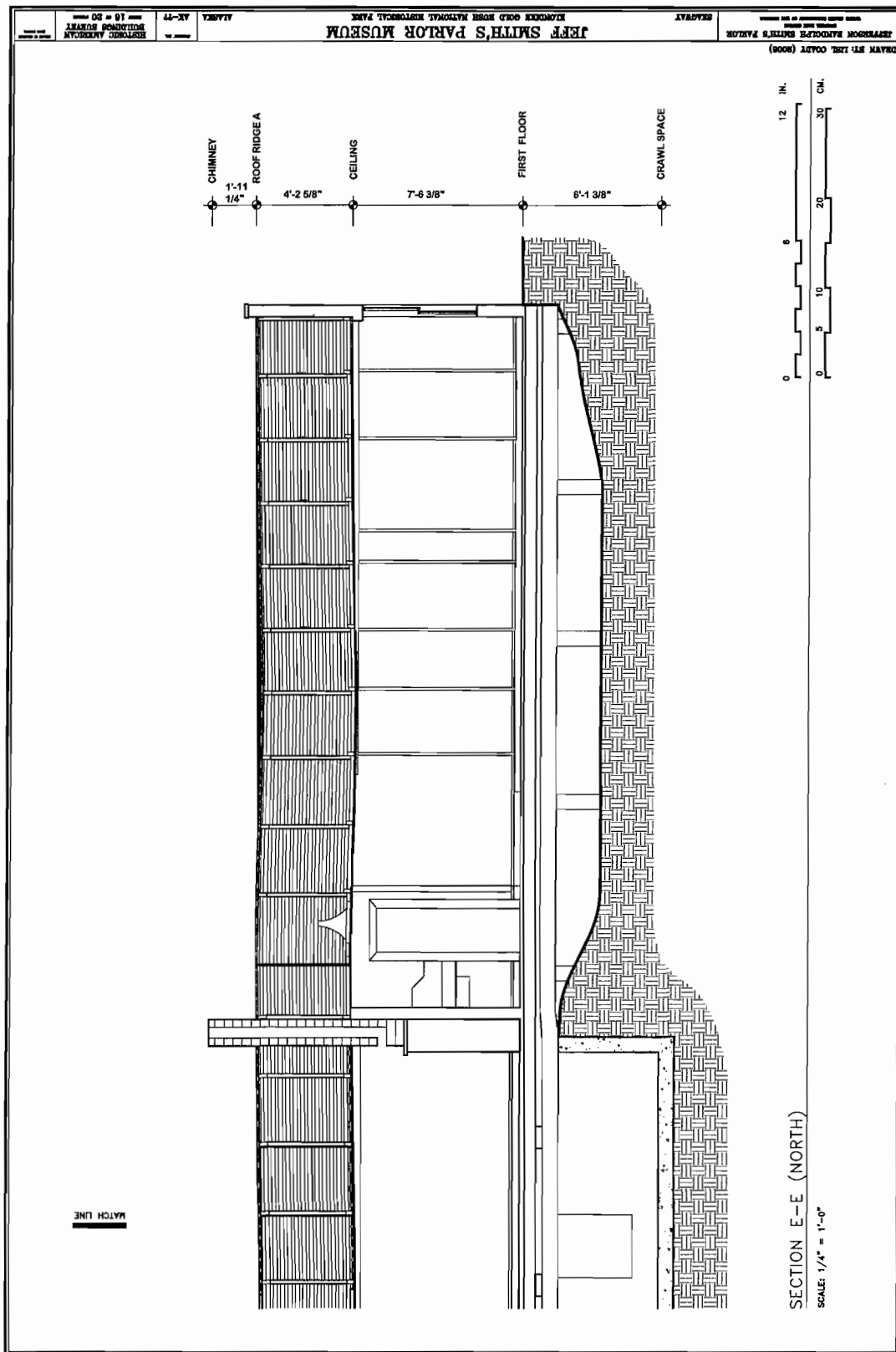
SECTION D-D

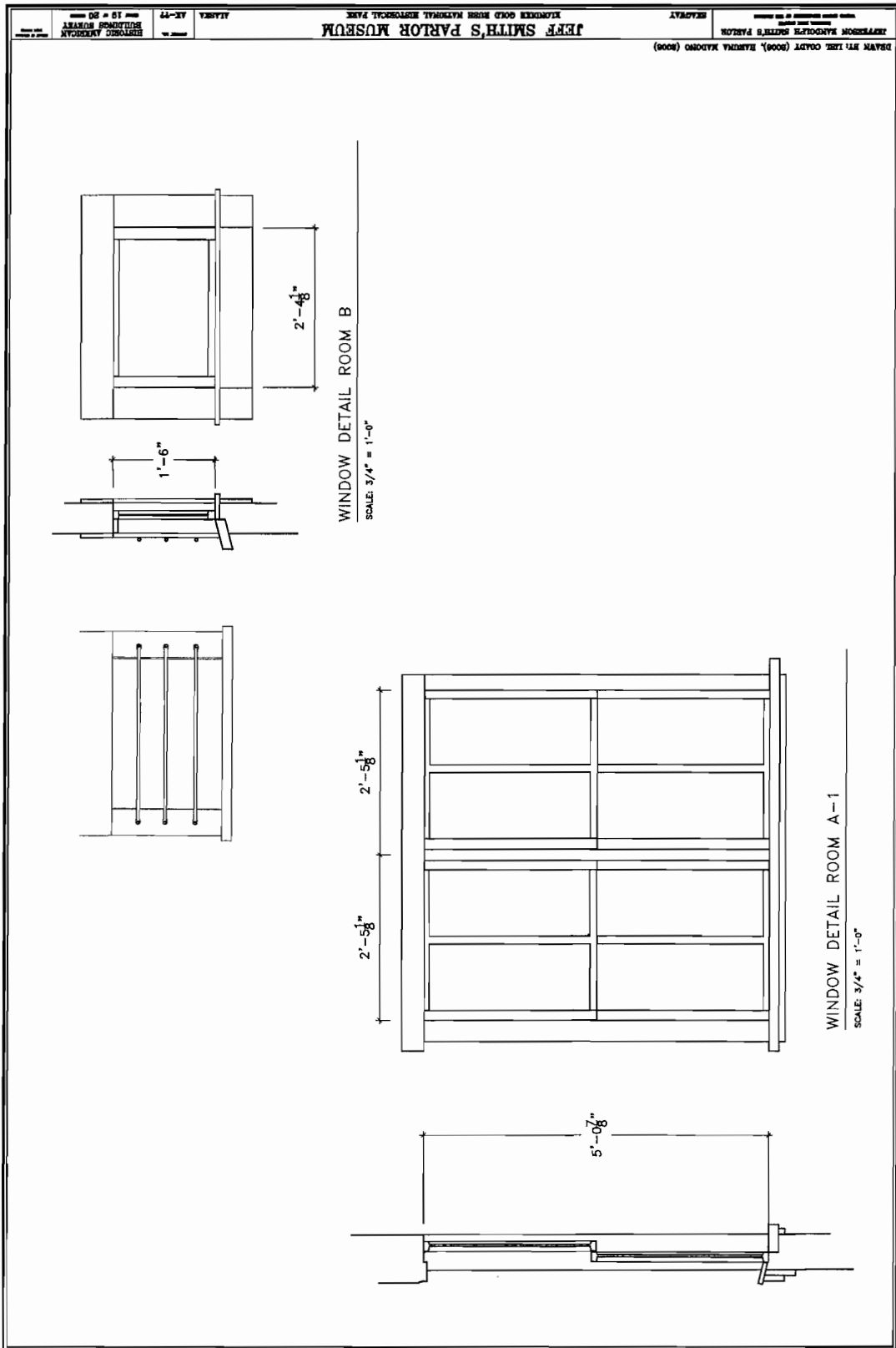
SCALE: 1/4" = 1'-0"



DRAWN BY: JEE. COLTY (0008)
 ARCHITECT: HANCOCK SMITH'S PARLOR
 PROJECT: JEFF SMITH'S PARLOR MUSEUM
 LOCATION: SEAWARD GOLD BEACH NATURAL HISTORICAL PARK
 COUNTY: ESCAMBAL
 STATE: ALABAMA
 DATE: 10-11-00
 SCALE: 1/4" = 1'-0"







<p>JEFF SMITH'S PARLOR MUSEUM KILBUCKER GOLD MINE NATIONAL HISTORICAL PARK</p>		<p>JEFF SMITH'S PARLOR MUSEUM KILBUCKER GOLD MINE NATIONAL HISTORICAL PARK</p>	
<p>DRYAN RTV. LBL. COALT (9006)</p>		<p>DRYAN RTV. LBL. COALT (9006)</p>	
<p>REVISIONS</p>		<p>REVISIONS</p>	
<p>DATE: 02-20-00</p>		<p>DATE: 02-20-00</p>	
<p>BY: [Signature]</p>		<p>BY: [Signature]</p>	
<p>PROJECT NO. 00-00-00</p>		<p>PROJECT NO. 00-00-00</p>	

3"

WALL TYPE ROOM A-2
SCALE: 3/4" = 1'-0"

2"

WALL TYPE ROOM C
SCALE: 3/4" = 1'-0"

4"

WALL TYPE ROOM A-1
SCALE: 3/4" = 1'-0"

6 3/4"

WALL TYPE ROOM B
SCALE: 3/4" = 1'-0"

APPENDIX B

CONDITION ASSESSMENT

Overview

This condition assessment of the Jeff. Smith's Parlor Museum (JSPM) was conducted by the author over two field visits in July 2008 and August 2008. While there might have been some interior improvements and items mentioned below since removed from the building; overall the building condition has not significantly changed.

Site

The site is overgrown with uneven grade and is surrounded by a rusted metal fence. There is an assortment of objects and rusting mechanical items located around the site, particularly to the west of the building and western half of the site. These items include spoke wheels, saws, metal cauldrons, pulleys, ladders, etc. The origin of these items are not yet known. The rose bushes and other foliage around the site are overgrown.



Figure 1. Jeff. Smith's Parlor Museum northeast elevation.
Source: National Park Service/Alaska Regional Office,
July 2008.

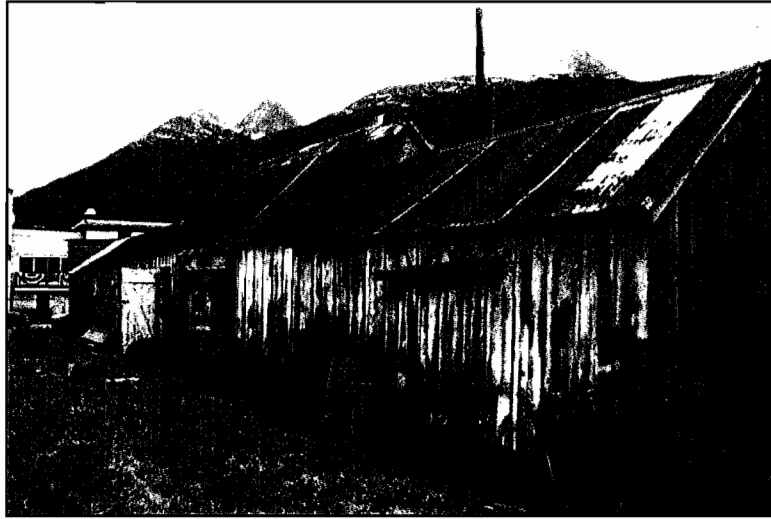


Figure 2. JSPM southwest corner. *Source:* National Park Service/Alaska Regional Office, July 2008.

The Museum

Overall the museum is in poor condition. The foundation has failed allowing the building to sink into grade on the west side and in the northwest corner. The east wall is bowing out and separating from the sill plate exposing the building interior and foundation to moisture. Foliage along the east elevation is infiltrating the building envelope. Additionally, moisture is entering the building holes in the roof allowing mold to anchor on the interior walls. To arrest further deterioration and listing to the building, the foundation needs urgent stabilization and roof moisture barrier reinforcement.

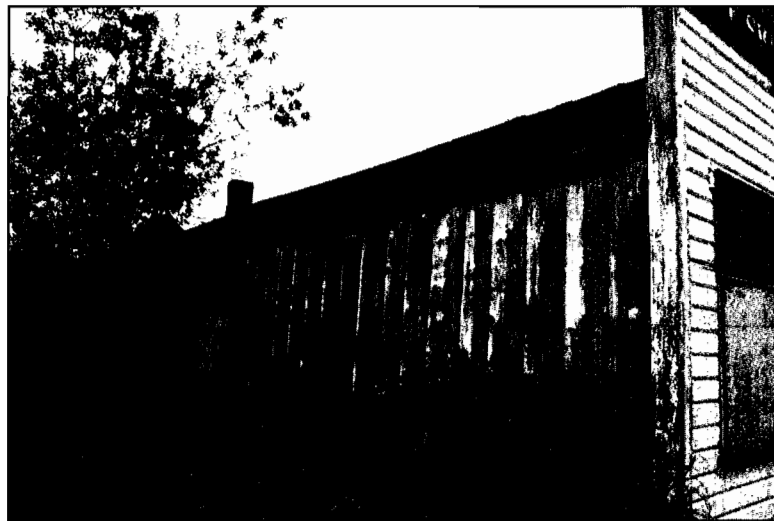


Figure 3. JSPM northeast corner. *Source:* National Park Service/Alaska Regional Office, July 2008.

Foundation

The log and concrete foundation has failed and the building is listing to the west and sinking into grade. There is a large hole in the foundation the west side of the building beneath section A. It appears that this was a cave-in related to what was once an external access to the cellar. Adjacent to this section the foundation is sill on log on piers of stacked cuts of log and chunks of concrete in the northern end of section A. Beneath building sections B and C the foundation appears to be simple sill on grade. Here a shallow crawl space did not accommodate further investigation.

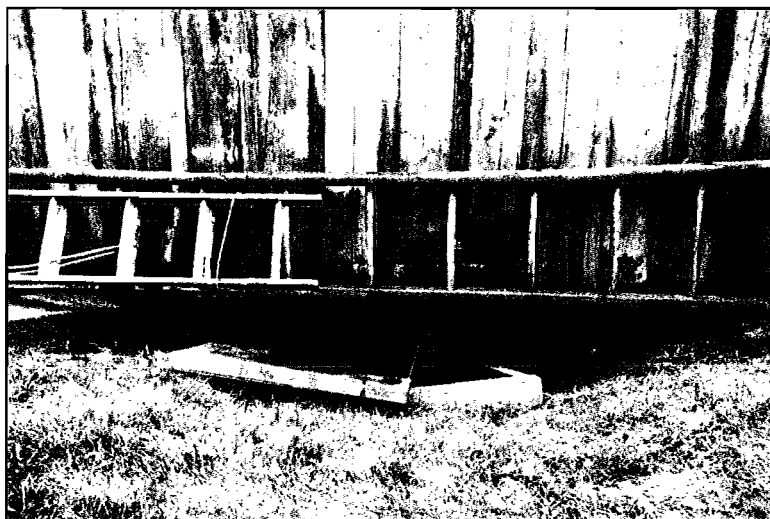


Figure 3. Cave-in along west side beneath section A-2.
Source: National Park Service/Alaska Regional Office,
July 2008.



Figure 5. Crawl Space A section A-1 looking west at log foundation supported by cut log on concrete pier. *Source:* National Park Service/Alaska Regional Office, July 2008.

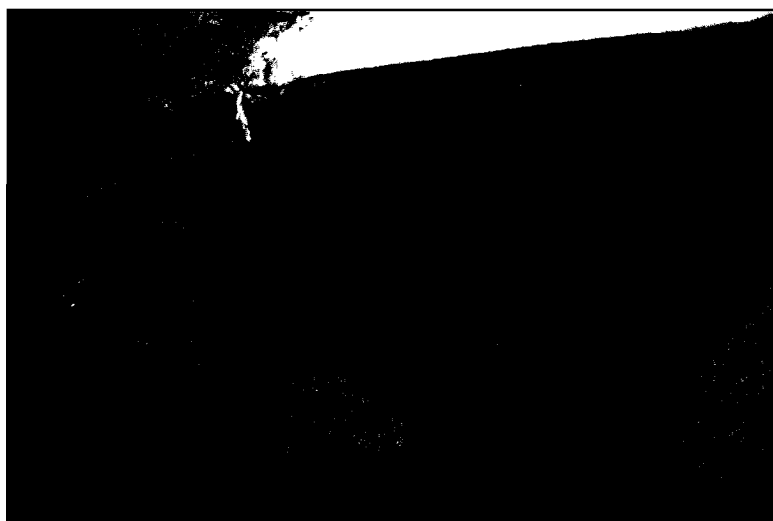


Figure 6. Crawl Space A section A-2 cellar with log sill atop concrete walls. Note central support post in left foreground. *Source:* National Park Service/Alaska Regional Office, July 2008.

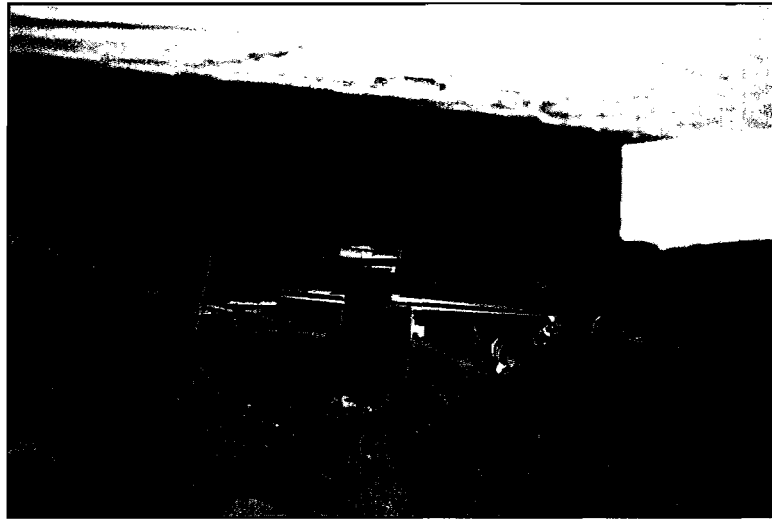


Figure 7. Crawl Space A, section A-1 looking south toward Crawl A section A-2. *Source:* National Park Service/Alaska Regional Office, July 2008.

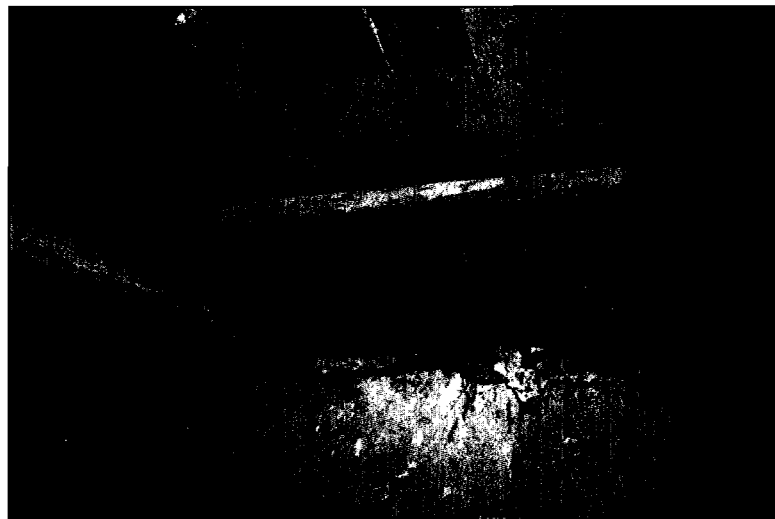


Figure 8. Crawl Space A section A-2 cellar south wall looking toward Crawl B. *Source:* National Park Service/Alaska Regional Office, July 2008.

North Elevation

This is the principle elevation with a 3-panel wood door with window and two 2:2 double hung windows. The windows are presently inoperable, nailed shut and boarded over. The door is pad locked close and the window in the door is covered with plywood. The painted white on black "Jeff. Smiths Parlor" sign hangs just below the cornice board on

the roof parapet. This elevation is clad with shiplap siding that appears to have been painted with a whitish color paint that is now cracked and peeling. The water table is partially covered by grass and grade but is exposed in the northeast corner and appears to have been painted a red color. There is noticeable growth of moss between the base of the wall and the foundation.



Figure 9. North elevation windows and door. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 10. Northwest corner sinking into grade with grass covering the watertable. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 11. False front with painted sign - north elevation.
Source: National Park Service/Alaska Regional Office,
 July 2008.

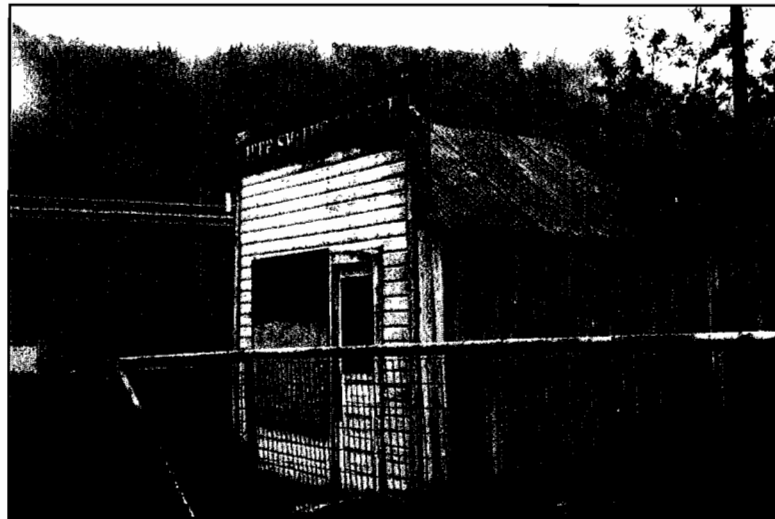


Figure 12. Northwest elevation. *Source:* National Park
 Service/Alaska Regional Office, July 2008.

**East Elevation
 (faces the Martin Itjen House)**

This elevation is clad with the board and batten siding. Here the battens vary in width and spacing. There is one fixed casement window midway down the length to this elevation in building section B. The window is boarded over with plywood from inside the building. The baseboard along this elevation is missing in some sections and in

others is detached from the building at a 30 to 45 degree angle allowing duff and moss to collect near the foundation line. The chimney pipe that was once attached is now dangling from the roof along this side. Overgrown rose bushes, grass and a lilac bush are growing against this elevation.

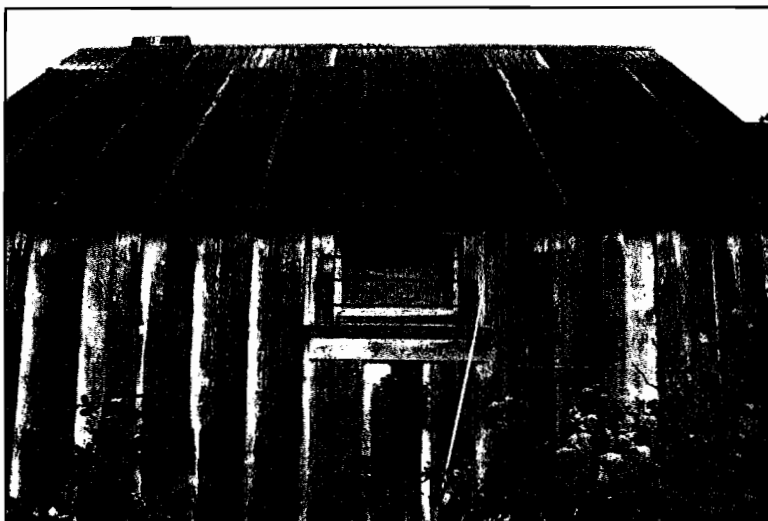


Figure 13. East elevation window. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 14. East elevation baseboard detached from siding on north end collecting duff and moss. *Source:* National Park Service/Alaska Regional Office, July 2008.

South Elevation (faces alleyway)

The board and batten siding on this elevation is wider than that of the east and west elevations measuring approximately 6" wide. The gable bargeboard is clad partially covered with a rusted metal flashing. There is very little paint on this elevation.



Figure 15. South elevation. *Source:* National Park Service/Alaska Regional Office, July 2008.

**West Elevation
(faces WWII Commissary)**

On this elevation the board and batten changes in width from north to south and the only accessible doorway midway in section A of this side of the building. Adjacent to this doorway is a reconstructed jail-like false façade and vertical metal bars attached to main body of the building. A variety of car jacks, pumps, pieces of metal and a wood and metal ladder rest against the side on this elevation.



Figure 16. West elevation entrance and jail-like false facade. *Source:* National Park Service/Alaska Regional Office, July 2008.

Roof

The Museum has three distinct gable roofs (see diagram). Roof A consists of cedar shingles and corrugated metal sheeting on the northwest end. Shingles are missing or damaged in this section created holes and gaps allowing moisture inside the building. Roof B is the steepest pitch gable and covered entirely in sheet and corrugated metal that has rusted. Roof C on the southern end of the building is also covered in corrugated metal.

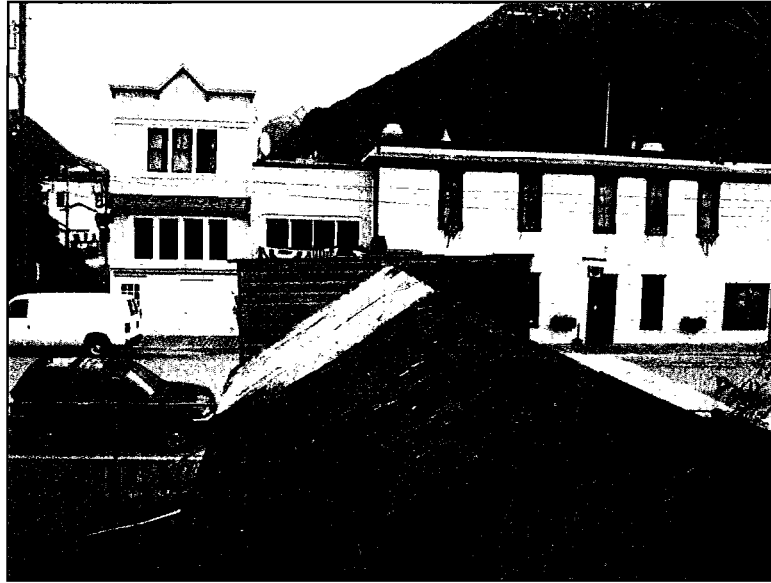


Figure 17. View of roof looking north toward the back of the false front. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 18. North peak and gable of roof section B. Ridge covered with sheet metal. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 19. East slope of roof section A, masonry chimney and detached chimney pipe. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 20. Eave connection at southeast corner of roof section A (shingles) and northeast corner (rusty metal) of roof section B. Note the damaged shingles. *Source:* National Park Service/Alaska Regional Office, July 2008.

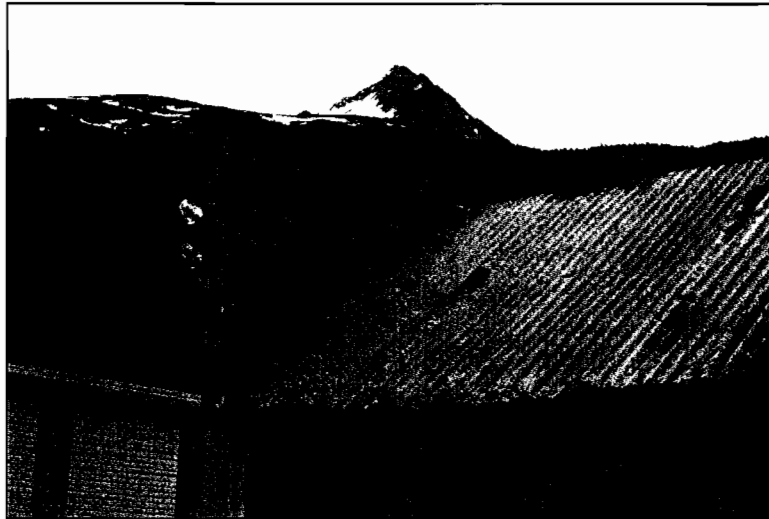


Figure 21. Northwest end of roof section A and back of false front. *Source:* National Park Service/Alaska Regional Office, July 2008.

Interior Room A-1

Room A-1 is the largest room and includes the only bathroom in the Museum. This rectangular shaped room corresponds to the original parlor shown in historical photographs of Soapy Smith and members of his gang ca. 1897. There is a long bar constructed of wood trim boards and 2"x4"'s in this room. In comparing this bar to the bar in historical photographs from Jefferson Smith's era it does not appear to be the original bar. Most of the walls in this room are covered in newspapers, magazine pages, signs, receipts and other paper ephemera installed by Itjen and Rapuzzi. There are areas of mold and water damage on all the walls in this room. The floor is 1" x 7" tongue and groove flooring that runs parallel to the length of this room. In an effort to stabilize this room, which is listing with the building to the west, two contemporary freestanding wood stud wall frames have been constructed along the east and west walls. There is a dead rose bush branch inside this room having grown through a gap between the east wall and floor/foundation.



Figure 21. Interior view of room A-1 looking north toward front door. *Source:* National Park Service/Alaska Regional Office, July 2008.



Figure 23. Interior view of room A-1 looking south toward room A-2. *Source:* National Park Service/Alaska Regional Office, July 2008.

Room A-1 North Wall

The north wall consists of the front door and two 2:2 double hung windows boarded shut on the exterior. The windows are nailed shut and the door is padlocked on the outside. There is a noticeable gap between the top of the door and the doorframe, most likely from

the overall building slump along the west foundation. White lace curtains cover the window. There are old electrical switches and exposed connectors on this wall.

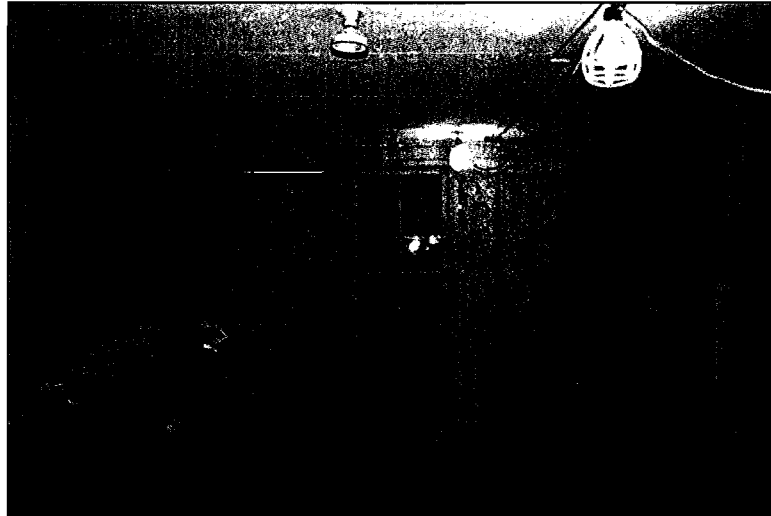


Figure 24. North interior wall of room A-1. *Source:* National Park Service/Alaska Regional Office, July 2008.

Room A-1 East Wall

The east wall is covered with composite paperboard, old newspapers and *The “Soapy” Smith Tragedy* (6 pages). These paper wall treatments show signs of mold and water damage. There is decorative wood shelf attached to the wall running half the length of this room. This wall and shelf would have been behind the bar when it was in its original position.

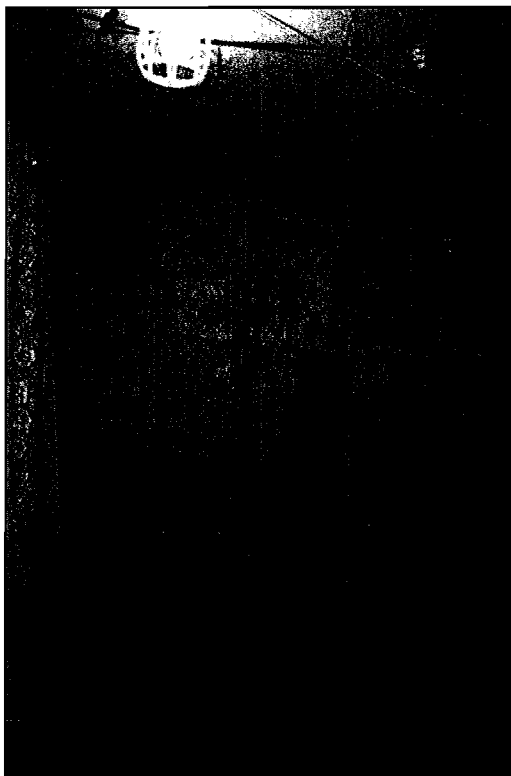


Figure 25. Northeast corner - east interior wall room A-1. *Source:* National Park Service/Alaska Regional Office, July 2008.

Room A-1 South Wall

The south wall with a doorway in the southwest corner divides room A-1 and room A-2. The only bathroom in the building is in the SW corner of room A-1 adjacent to a counter with drawer attached to the south wall. This wall is almost entirely covered in newspapers and signs with pages from *The Daily Alaskan* and two signs for the “Hotel Moore” and “Bay View House, Martin Itjen, Proprietor.”



Figure 26. Hanging desktop in southwest corner of room A-1 with adjacent bathroom doorway to the right. *Source:* National Park Service/Alaska Regional Office, July 2008.

Room A-1 West Wall

The west wall is almost entirely covered in newspapers, receipts related to the Klondike Gold Rush, shipping records, share certificates and other paper ephemera associated with the Klondike Gold Rush era. There are over 140 separate paper documents on this wall.

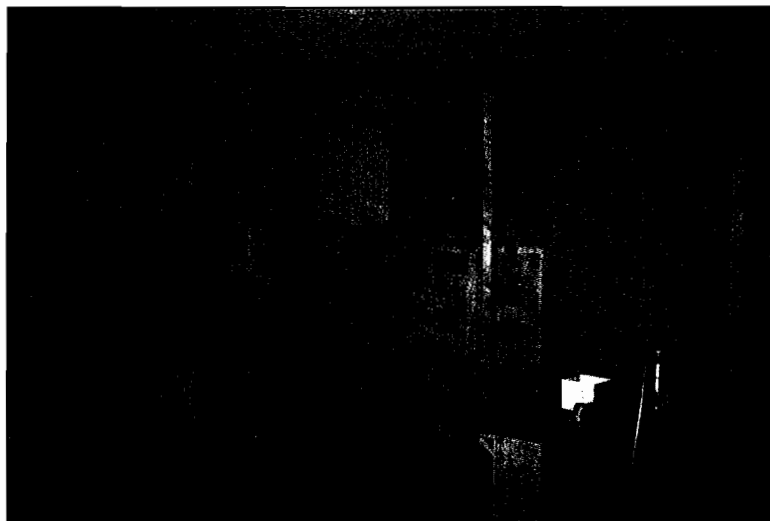


Figure 27. Southwest corner of room A-1. *Source:* National Park Service/Alaska Regional Office, July 2008.

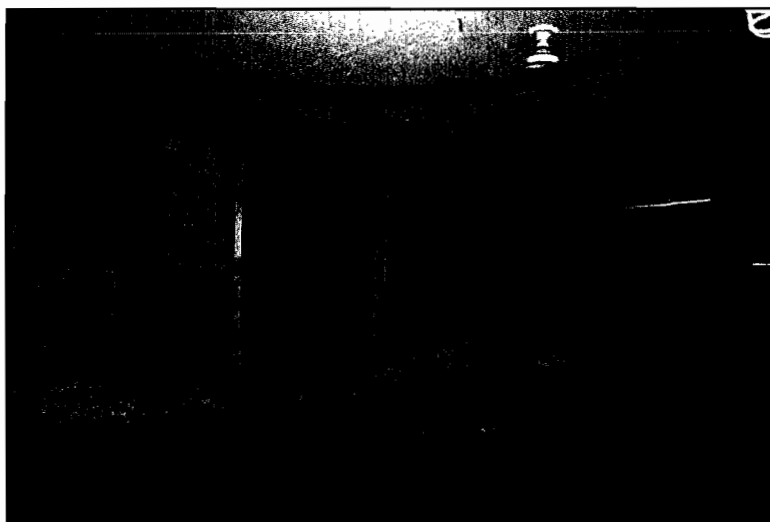


Figure 28. Northwest corner of room A-1. *Source:* National Park Service/Alaska Regional Office, July 2008.

Bathroom

The bathroom is located in the southwest corner of room A-1. It is a small room with bead board wainscoting on the walls, toilet flange in the floor and small porcelain sink attached to the wall. Above the green painted wainscoting the wallpaper is painted white that is bubbling and peeling.



Figure 29. Toilet flange and doorway into bathroom from room A-1. Note the painted beadboard. *Source:* National Park Service/Alaska Regional Office, July 2008.

Interior Room A-2

Room A-2 is the first room upon entering the Museum through the west entryway. Like Room A-1 many of the walls here are clad with newspapers, pages from books, photographs and signs. There is a butterfly motif wallpaper border running along the top edge of all the walls in this room and a wood baseboard. The floor is 1" x 4" tongue and groove, which is narrower than the floor boards in room A-1. This room was most likely the addition added by Martin Itjen after 1935.

The brick masonry chimney is located on the north wall of this room and a freestanding cast iron stove with a label of *The Art Stove, Co, Wood Laurel, Detroit & Chicago, 125B* is in the middle of this room. Historic photos from the Soapy Smith era show a stove pipe on the roof of this building but given that there are no interior photos of the stove and subsequent remodels, it is uncertain and unlikely that this is the original stove from the Smith era. The chimney flue is partially plastered and needs repointing and stabilization. A cabinet with door and shelves supports the chimney flue.

There are a variety of items strewn about the floor including stove elements, wood, shelves, bottles, and a wood and iron green painted bench. These items should be curated and removed. A rusted metal fan prop with rod in attic A-2 is situated in the ceiling just inside the west doorway. Throughout this room, and others in the building, are handwritten tags tacked to the wall identifying items that were once part of the Itjen/Rapuzzi museum collection.

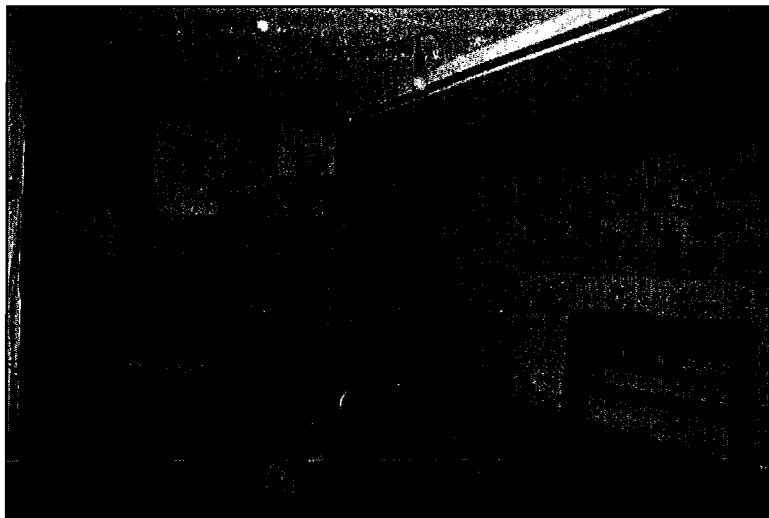


Figure 30. Northeast corner of room A-2 photo taken at doorway looking into room A-2 from outside of building.
Source: National Park Service/Alaska Regional Office,
July 2008.

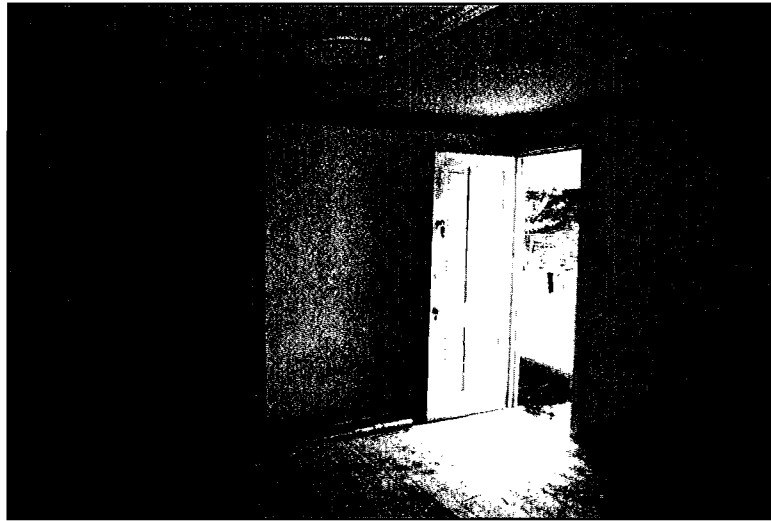


Figure 31. Southeast corner of room A-2. Note opening doorway to exterior and doorway to room B. Also visible is the inoperable ceiling fan and gramophone in ceiling.
Source: National Park Service/Alaska Regional Office, July 2008.

Interior Room B

Room B is directly south of Room A-2 and is accessible through a doorway from Room A-2. The wood floor is covered with a reddish linoleum-like material. The floor here and in room C is soft in many places. The walls and ceiling are painted. Seams and staples in the walls suggest that the walls of this room are also clad with a composite paperboard. There are a few handwritten tags on the walls but there are no paper documents or newspapers on the walls in this room. The ceiling appears to be covered in painted wallpaper that is bubbling and peeling back.

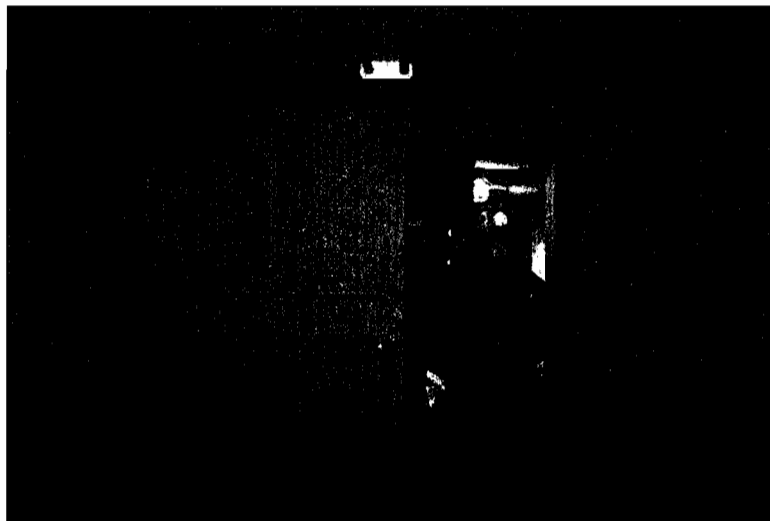


Figure 32. North wall of room B and doorway from room A-2. *Source:* National Park Service/Alaska Regional Office, July 2008.

Interior Room C

A small change in wall thickness distinguishes Room C from Room B, however, where Room B was mostly empty; a life size diorama occupies most of Room C. This diorama consists of animals collected by Martin Itjen as part of his Alaskana museum exhibit. The animals were preserved with arsenic and due to this contact hazard the interior of this room was not measured. The centerpiece of this life size diorama is two bull moose with antlers interlocked. According to local oral history, Mr. Itjen purchased the skeleton of these two bull moose that had died of starvation after locking antlers. Mr. Itjen commissioned a hunter to shoot two moose for their hides that were then stretched around the skeletons restoring the moose to more lifelike representations. Other mounted animals included in this diorama are a timber wolf, ram, deer, two white furred animals situated in a branch, and a moose skull with deformed antlers. On the walls behind this diorama is a large mirror on the south wall, a painting of mountain scene on the east wall and a photograph of a ship on the west wall. A mixture of wood shavings, rocks and branches are spread on the floor beneath the diorama.

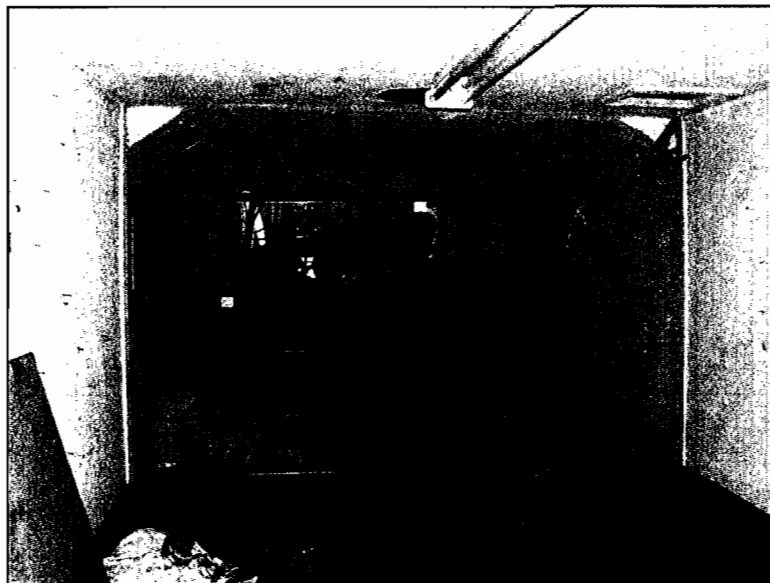


Figure 33. Room C. *Source:* National Park Service/Alaska Regional Office, July 2008.

Attic

There are four distinct attic areas under three distinct roof types – see diagram. The ridge board, skip sheathing and collar ties are charred in the north end of section B. There is old knob and tube wiring throughout the attic space and loose wood shaving insulation.

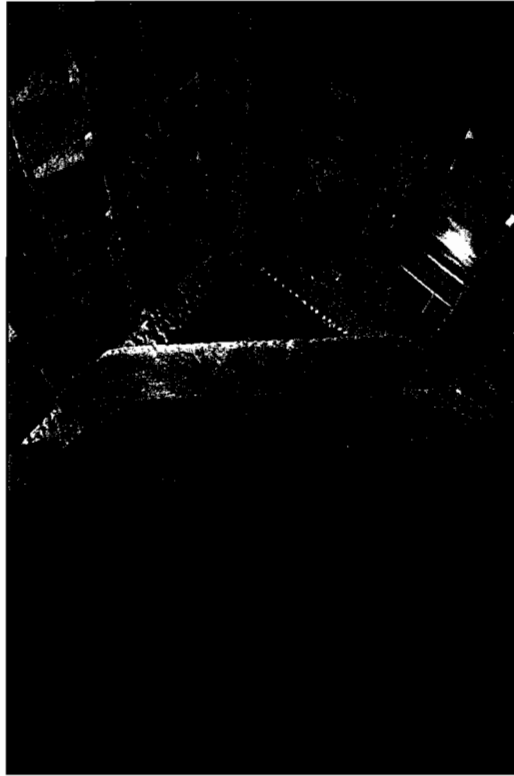


Figure 34. Charred ridgeboard, rafters and collar ties in attic section B.

Source: National Park Service/Alaska Regional Office, July 2008.

APPENDIX C

LEED 2009 NEW CONSTRUCTION AND MAJOR RENOVATION

SCORECARD

The following is a blank LEED 2009 New Construction and Major Renovation Scorecard from the U.S. Green Building Council.



LEED 2009 for New Construction and Major Renovation
Project Scorecard

Project Name:
Project Address:

Yes ? No **SUSTAINABLE SITES** **26 Points**

<input checked="" type="checkbox"/>	Prereq 1	Construction Activity Pollution Prevention	Required
<input checked="" type="checkbox"/>	Credit 1	Site Selection	1
<input checked="" type="checkbox"/>	Credit 2	Development Density and Community Connectivity	5
<input checked="" type="checkbox"/>	Credit 3	Brownfield Redevelopment	1
<input checked="" type="checkbox"/>	Credit 4.1	Alternative Transportation - Public Transportation Access	6
<input checked="" type="checkbox"/>	Credit 4.2	Alternative Transportation - Bicycle Storage and Changing Rooms	1
<input checked="" type="checkbox"/>	Credit 4.3	Alternative Transportation - Low-Emitting and Fuel-Efficient Vehicles	3
<input checked="" type="checkbox"/>	Credit 4.4	Alternative Transportation - Parking Capacity	2
<input checked="" type="checkbox"/>	Credit 5.1	Site Development - Protect or Restore Habitat	1
<input checked="" type="checkbox"/>	Credit 5.2	Site Development - Maximize Open Space	1
<input checked="" type="checkbox"/>	Credit 6.1	Stormwater Design - Quantity Control	1
<input checked="" type="checkbox"/>	Credit 6.2	Stormwater Design - Quality Control	1
<input checked="" type="checkbox"/>	Credit 7.1	Heat Island Effect - Nonroof	1
<input checked="" type="checkbox"/>	Credit 7.2	Heat Island Effect - Roof	1
<input checked="" type="checkbox"/>	Credit 8	Light Pollution Reduction	1

Yes ? No **WATER EFFICIENCY** **10 Points**

<input checked="" type="checkbox"/>	Prereq 1	Water Use Reduction	Required
<input checked="" type="checkbox"/>	Credit 1	Water Efficient Landscaping	2 to 4
		<input type="checkbox"/> Reduce by 50%	2
		<input type="checkbox"/> No Potable Water Use or Irrigation	4
<input checked="" type="checkbox"/>	Credit 2	Innovative Wastewater Technologies	2
<input checked="" type="checkbox"/>	Credit 3	Water Use Reduction	2 to 4
		<input type="checkbox"/> Reduce by 30%	2
		<input type="checkbox"/> Reduce by 35%	3
		<input type="checkbox"/> Reduce by 40%	4

ENERGY & ATMOSPHERE **35 Points**

<input checked="" type="checkbox"/>	Prereq 1	Fundamental Commissioning of Building Energy Systems	Required
<input checked="" type="checkbox"/>	Prereq 2	Minimum Energy Performance	Required
<input checked="" type="checkbox"/>	Prereq 3	Fundamental Refrigerant Management	Required
<input checked="" type="checkbox"/>	Credit 1	Optimize Energy Performance	1 to 19
		<input type="checkbox"/> Improve by 12% for New Buildings or 8% for Existing Building Renovations	1
		<input type="checkbox"/> Improve by 14% for New Buildings or 10% for Existing Building Renovations	2
		<input type="checkbox"/> Improve by 16% for New Buildings or 12% for Existing Building Renovations	3
		<input type="checkbox"/> Improve by 18% for New Buildings or 14% for Existing Building Renovations	4
		<input type="checkbox"/> Improve by 20% for New Buildings or 16% for Existing Building Renovations	5
		<input type="checkbox"/> Improve by 22% for New Buildings or 18% for Existing Building Renovations	6
		<input type="checkbox"/> Improve by 24% for New Buildings or 20% for Existing Building Renovations	7
		<input type="checkbox"/> Improve by 26% for New Buildings or 22% for Existing Building Renovations	8
		<input type="checkbox"/> Improve by 28% for New Buildings or 24% for Existing Building Renovations	9
		<input type="checkbox"/> Improve by 30% for New Buildings or 26% for Existing Building Renovations	10
		<input type="checkbox"/> Improve by 32% for New Buildings or 28% for Existing Building Renovations	11
		<input type="checkbox"/> Improve by 34% for New Buildings or 30% for Existing Building Renovations	12
		<input type="checkbox"/> Improve by 36% for New Buildings or 32% for Existing Building Renovations	13
		<input type="checkbox"/> Improve by 38% for New Buildings or 34% for Existing Building Renovations	14
		<input type="checkbox"/> Improve by 40% for New Buildings or 36% for Existing Building Renovations	15
		<input type="checkbox"/> Improve by 42% for New Buildings or 38% for Existing Building Renovations	16
		<input type="checkbox"/> Improve by 44% for New Buildings or 40% for Existing Building Renovations	17
		<input type="checkbox"/> Improve by 46% for New Buildings or 42% for Existing Building Renovations	18
		<input type="checkbox"/> Improve by 48%+ for New Buildings or 44%+ for Existing Building Renovations	19
<input checked="" type="checkbox"/>	Credit 2	On-Site Renewable Energy	1 to 7
		<input type="checkbox"/> 1% Renewable Energy	1
		<input type="checkbox"/> 3% Renewable Energy	2
		<input type="checkbox"/> 5% Renewable Energy	3
		<input type="checkbox"/> 7% Renewable Energy	4
		<input type="checkbox"/> 9% Renewable Energy	5
		<input type="checkbox"/> 11% Renewable Energy	6
		<input type="checkbox"/> 13% Renewable Energy	7
<input checked="" type="checkbox"/>	Credit 3	Enhanced Commissioning	2
<input checked="" type="checkbox"/>	Credit 4	Enhanced Refrigerant Management	2
<input checked="" type="checkbox"/>	Credit 5	Measurement and Verification	3
<input checked="" type="checkbox"/>	Credit 6	Green Power	2



LEED 2009 for New Construction and Major Renovation
Project Scorecard

Project Name:
Project Address:

Yes ? No
Yes ? No

MATERIALS & RESOURCES 14 Points

<input checked="" type="checkbox"/>	Prereq 1	Storage and Collection of Recyclables	Required
<input checked="" type="checkbox"/>	Credit 1.1	Building Reuse - Maintain Existing Walls, Floors and Roof	1 to 3
		<input type="checkbox"/> Reuse 55%	1
		<input type="checkbox"/> Reuse 75%	2
		<input type="checkbox"/> Reuse 95%	3
<input checked="" type="checkbox"/>	Credit 1.2	Building Reuse - Maintain Interior Nonstructural Elements	1
<input checked="" type="checkbox"/>	Credit 2	Construction Waste Management	1 to 2
		<input type="checkbox"/> 50% Recycled or Salvaged	1
		<input type="checkbox"/> 75% Recycled or Salvaged	2
<input checked="" type="checkbox"/>	Credit 3	Materials Reuse	1 to 2
		<input type="checkbox"/> Reuse 5%	1
		<input type="checkbox"/> Reuse 10%	2
<input checked="" type="checkbox"/>	Credit 4	Recycled Content	1 to 2
		<input type="checkbox"/> 10% of Content	1
		<input type="checkbox"/> 20% of Content	2
<input checked="" type="checkbox"/>	Credit 5	Regional Materials	1 to 2
		<input type="checkbox"/> 10% of Materials	1
		<input type="checkbox"/> 20% of Materials	2
<input checked="" type="checkbox"/>	Credit 6	Rapidly Renewable Materials	1
<input checked="" type="checkbox"/>	Credit 7	Certified Wood	1

INDOOR ENVIRONMENTAL QUALITY 15 Points

<input checked="" type="checkbox"/>	Prereq 1	Minimum Indoor Air Quality Performance	Required
<input checked="" type="checkbox"/>	Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
<input checked="" type="checkbox"/>	Credit 1	Outdoor Air Delivery Monitoring	1
<input checked="" type="checkbox"/>	Credit 2	Increased Ventilation	1
<input checked="" type="checkbox"/>	Credit 3.1	Construction Indoor Air Quality Management Plan - During Construction	1
<input checked="" type="checkbox"/>	Credit 3.2	Construction Indoor Air Quality Management Plan - Before Occupancy	1
<input checked="" type="checkbox"/>	Credit 4.1	Low-Emitting Materials - Adhesives and Sealants	1
<input checked="" type="checkbox"/>	Credit 4.2	Low-Emitting Materials - Paints and Coatings	1
<input checked="" type="checkbox"/>	Credit 4.3	Low-Emitting Materials - Flooring Systems	1
<input checked="" type="checkbox"/>	Credit 4.4	Low-Emitting Materials - Composite Wood and Agrifiber Products	1
<input checked="" type="checkbox"/>	Credit 5	Indoor Chemical and Pollutant Source Control	1
<input checked="" type="checkbox"/>	Credit 6.1	Controllability of Systems - Lighting	1
<input checked="" type="checkbox"/>	Credit 6.2	Controllability of Systems - Thermal Comfort	1
<input checked="" type="checkbox"/>	Credit 7.1	Thermal Comfort - Design	1
<input checked="" type="checkbox"/>	Credit 7.2	Thermal Comfort - Verification	1
<input checked="" type="checkbox"/>	Credit 8.1	Daylight and Views - Daylight	1
<input checked="" type="checkbox"/>	Credit 8.2	Daylight and Views - Views	1

INNOVATION IN DESIGN 6 Points

<input checked="" type="checkbox"/>	Credit 1	Innovation in Design	1 to 5
		<input type="checkbox"/> Innovation or Exemplary Performance	1
		<input type="checkbox"/> Innovation or Exemplary Performance	1
		<input type="checkbox"/> Innovation or Exemplary Performance	1
		<input type="checkbox"/> Innovation	1
		<input type="checkbox"/> Innovation	1
<input checked="" type="checkbox"/>	Credit 2	LEED [®] Accredited Professional	1

REGIONAL PRIORITY 4 Points

<input checked="" type="checkbox"/>	Credit 1	Regional Priority	1 to 4
		<input type="checkbox"/> Regionally Defined Credit Achieved	1
		<input type="checkbox"/> Regionally Defined Credit Achieved	1
		<input type="checkbox"/> Regionally Defined Credit Achieved	1
		<input type="checkbox"/> Regionally Defined Credit Achieved	1

PROJECT TOTALS (Certification Estimates) 110 Points

Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points

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