COLORS OF THE WESTERN MINING FRONTIER

PAINTED FINISHES IN VIRGINIA CITY, MONTANA

by

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A THESIS

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THESIS ABSTRACT

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Virginia City once exemplified the cutting edge of culture and taste in the Rocky Mountain mining frontier. Weathering economic downturns, mining booms and busts, and the loss of the territorial capital to Helena, Virginia City survives today as a heritage tourism site with a substantial building stock from its period of significance, 1863-1875. However, the poor physical condition and interpretation of the town offers tourists an inauthentic experience. Without paint analysis, the Montana Heritage Commission, state-appointed caretakers of Virginia City cannot engage in rehabilitation. As of 2017, no published architectural finishes research exists that provides comparative case studies for the Anglo-American settlement of the American West between 1840-1880, for American industrial landscapes, or for vernacular architecture in Montana. This thesis offers a case study of five buildings to add to the body of scholarly architectural finishes research, provide rehabilitation recommendations, and provide a published, baseline study for future research.

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DEDICATION

"A student I am… a wizard I am not." – Victoria Lee, AAD, 2017

To all the students who are expected to be wizards…

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CHAPTER I

INTRODUCTION

Stories about paint are stories about people – Mary Jablowski.[1]

When you arrive in Virginia City, Montana, you notice that just a few blocks of buildings along Wallace Street and the surrounding residential streets separate the town from the rolling hills, treed creeks, and mine tailings that creep up to the edge of town. The town lies along State Highway 287, an attractive town that quickly submerges tourists in a classical American western landscape for a few blocks, and beckons visitors off the highway to experience the quaint shops and nostalgia of the heritage tourism site.

Though a diminutive tourist town today, it was once the territorial seat and boasted a population of over ten thousand in it and the spillover towns along Alder Gulch. Like many historic mining townsites, it contains a sense of loss— evidence of the founding era is present but altered. Virginia City is still an exceptional historical site, with over 200 examples of the original building stock still present.[2] The appearance of the town, however, contains an idiosyncrasy. Today, except for a few leased storefronts, nearly every wood exterior facing Wallace Street is left unfinished. Perhaps the lack of paint is meant to add to the historical charm of the town, perhaps it shows a lack of

[1] Mary Jablowski, Plenary Session Introduction, Architectural Paint Research Conference, Columbia University, New York, March 16, 2017

[2] Paul D. Friedman, *Final Report of the Architectural, Historical and Archaeological Inventory of the Virginia City National Historic Landmark, Madison County, Montana*, (Unpublished, Montana Heritage Preservation and Development Commission, 1990), 5; Friedman names 237 surveyed buildings within the townsite in his report. This number included outbuildings.

regular upkeep, or even the changing priorities of the administering historical commission. Reasons aside, the presentation is inherently false as the shops that lined Wallace would have been painted.

Problem Statement

Where does the study of paint fall within the spectrum of historic preservation and what can a paint analysis of Virginia City offer? Paint analysis of historic buildings grew out of paint analysis of the fine arts field, where conservationists tested paint to accurately restore historic paintings.[3] The progression of existing paint analysis research parallels the transitions in historic preservation itself—there are slow fits and starts in the early twentieth centuries where exceptional buildings of the elites were tested or restored. Then, in the late 1960s, there is a great flourishing of available materials, followed by a wave of corrective literature where many early hypotheses are tested and either refined or discarded, and finally there is an attempt connect paint analysis to the socio-cultural aspects of historic preservation, with a focus more on what historical paint can say about people—their social standing, their cultural identity, and personal values.[4]

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[3] Bonnie Werle Parks. "Aurora Blue: Identifying and Analyzing Interior Paint in an Oregon Utopia, ca 1870." Thesis. (University of Oregon, 1986), P. 4; Jocelyn Chan. "An Investigation of the Painted Finishes of Mission San José de Tumacácori's Façade: At the Interface of Materials Analysis, Conservation, and Cultural Confluence" Thesis. (University of Pennsylvania, 2015), 71.

[4] Penelope Hartsthorne Batcheler, "American Association for State and Local History Technical Leaflet 15: Paint Color and Restoration." *History News*, Volume 23, No. 10. (Nashville, TN: American Association for State and Local History, 1968), 2-4. Theodore Zuk Penn. "Decorative and Protective Finishes, 1750-1850: Materials, Process, and Craft." *Bulletin of the Association for Preservation Technology*, Volume 16, No. 1, Decorative Finishes. (1984), 4-45. Morgan W. Phillips. "Discoloration of Old House Paints: Restoration of Paint Colors at the Harrison Gray Otis House, Boston." *Association for Preservation Technology Bulletin*, Vol. 3, No. 4 (1971), 4-5. Matthew J. Mosca. "Paint Decoration at Mount Vernon: The Revival of Eighteenth Century Techniques." *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 112-115; Myron O. Stachiw. "The Color of Change: A Nineteenth Century Massachusetts House." *Paint in America: the colors of historic buildings*, edited by

Furthermore, paint as a material fulfills some of the most basic goals of historic preservation: it acts as a protective barrier for the materials underneath it; it visually changes a building and its impact within the landscape to its original intended state; and it is a focused material studies field that can convey information about availability of goods, intra-site commerce of the town, technological competence of the painter, and the economic situation of the building owner.

Like an archaeologist digging through stratigraphic layers of dirt, architectural finishes researchers in the eastern United States are often able to uncover different temporal layers of paint on an interior or exterior of buildings. Based on the building context and what is uncovered, a paint analyst can extrapolate information from the finishes regarding social class, pollution, personal taste, frequency of inhabitance, paint technology, and painting techniques that change over time. Exterior and interior decoration, like the construction of the building itself, can provide researchers with the nuanced data necessary to understand architectural changes and discern social shifts that are imposed on painted space.

At Virginia City, this sort of nuanced painted finish information simply isn't available, and no nearby town or other western American mining context has been investigated to give a baseline of data from which to make assumptions. By using investigative field techniques to take samples, lab analysis, and the corroboration of primary written stories such as receipts, diaries, and census records, this thesis aims to

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Roger W. Moss, 129-137. (Washington D.C.: Archetype Press, 1994), 129-130; Frank G. Matero and Joel C Snodgrass. "Understanding Regional Painting Traditions: The New Orleans Exterior Finishes Study." *Association for Preservation Technology Bulletin*, Vol. 24, No. 1/2 (1992): 36-52.

close the gap, if not by providing data that can be used throughout the American west, then at least providing a case study model for other researchers to use.

This problem of lack of relatable research is not unique to Virginia City. Like many studies in the field of historic preservation, budget issues, and owners' "lack of understanding regarding historical accuracy" may create issues when carrying out paint analysis, and can obstruct publishing such research.[5] Paint analysis and conservation techniques have a strong eastern American and European focus, overlooking the western United States. Since architectural technology and trends take some time to move west and experience cultural adaptation along the way—especially in frontier settings—studies of major eastern United States urban areas such as Williamsburg, New York City, Boston, or New Orleans would be inappropriate to apply in the west. Further, many paint studies suffer from a strong focus on the well-preserved spaces of the social elite, though some studies such as the paint analysis by the Tenement Museum or the Aiken Rhett slave quarters contradict this.[6]

The intersection of vernacular architecture, material cultural analysis, and performance theory is not new ground. Indeed, the built environment as physical artifact has been applied in many places in the west, in Montana, and in mining camps.[7] Though other materials, such as siding, construction techniques, hardware, roofing systems,

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[5] Parks, 4.
[6] No Author. *The Tenement Museum Paint Analysis Report*. (New York, NY: Tenement Museum, 1996); Susan Buck. "Paint Discoveries in the Aiken-Rhett House Kitchen and Slave Quarters." *Perspectives in Vernacular Architecture*, Vol. 10, Building Environments (2005), 185-198.
[7] Jennifer Flathman, "Performance Theory and Environmental Design." *Rereading the Library: A Cultural Conservation Approach to Determining the Architectural Significance of the Enoch Pratt Free Library, Baltimore, Maryland*. Thesis. (University of Oregon, 2007), 24-25; Susan Garfinkel. "Recovering Performance for Vernacular Architecture Studies." *Perspectives in Vernacular Architecture*, No. 13, (2006/2007), 107-108.

exterior systems, interior room plans and even interior furniture are addressed in vernacular studies, paint is remarkably left untouched in the American West.

The study of vernacular architecture has long focused on forms or materials and the often-invisible landscapes of our past that are so ordinary, so pedestrian, that they have hardly any mention in architectural histories. Vernacular architecture is a reactionary field that began in response to the realization that preservation had previously only focused on the exceptional buildings of the elite.[8] Other buildings, still important to history but not obviously exceptional and important in the way a president's home or architect-designed house is, were left unacknowledged by the major segments of the historic preservation field until the 1970s.

The study of vernacular paint, however, is a relatively underdeveloped field. To date, there are no existing paint analysis studies of historical Montana mining structures conducted through formal, replicable testing, that are available to the historic preservation community.[9] This seems an oversight—if, for example, commercial false fronts are significant examples of regional American Western architecture and "critical indicators of social change," then the painted surface of the building front is the vehicle by which owners of commercial false fronts could fully express formality and pretense to their community and visitors.[10] Commercial false fronts are one of the first structures

[8] Ned Kaufman. *Giving Preservation a History*: Histories of Historic Preservation in the United States. Eds. Max page and Randall Mason. (New York: Routledge, 2004), 322-326.
[9] There are two studies, one by Jeff MacDonald, former Archaeologist for the Montana Historical Commission, and Kingston Heath, professor emeritus and researcher at University of Oregon that discuss architectural finishes in Virginia City (and the entire state of Montana). Heath's study only tangentially discusses wallpaper finishes as part of an extrapolation of performance theory. MacDonald's study includes no citations, does not have a systematic testing methodology, and is not replicable. These studies, and the issues with relying on them, are expanded on in Chapter 3, Literature Review.
[10] Kingston Heath. "False Front Architecture on Montana's Urban Frontier." *Perspectives in Vernacular Architecture*, Vol. 3 (1989), 199.

that transition a town from mining camp (impermanent) to mature mining town (permanent).

Architectural finishes are truly the formalizing force from changing the color of the building from an informal, unpainted wood, recalling impermanent log structures, to a colorful, eye-catching advertisement recalling a more civilized town or city from the eastern United States. Paint is a visual indicator of investiture in buildings and therefore permanence. The form and materials of such structures have been explored before, but how they were finished has received no formal study to date. This thesis will attempt to provide a baseline for future paint research in mining towns, in Montana, in the American West, or in vernacular, common structures in general.

Case Study: Virginia City, Montana

Virginia City, in many ways, is an excellent site to conduct paint analysis research. Its unique preservation story provides more opportunity than a truly abandoned ghost town, left to physically rot back into the landscape. At the same time, the lack of redevelopment and the focus on presenting the town as a living museum at a period when most such places would either have been redeveloped or abandoned completely created the conditions at the site today: original building retention, mostly stable building conditions, and a caretaker staff to address serious issues.

Charles A. Bovey was the son of the president of General Mills cereal, a Montana legislator, Great Falls rancher, and collector of historic buildings. His interest in historic preservation eventually lead to his ownership and restoration of Virginia City, Montana,

and the curation of buildings at Nevada City.[11] When Charles Bovey and his wife decided to buy individual properties in Virginia City, the intention to preserve the entire town might not have been fully formed. Bovey's intention was to own and restore historic buildings from around the state, preserve them, and open the sites to the public as open-air museums. While Bovey's identity as a "progenitor" of Montana's historic preservation movement is contentious, his role in creating, curating, and restoring heritage tourism sites at Virginia City and Nevada City is indisputable.[12] Whatever you, as the reader, decide to think of Charles Bovey and heritage tourism, he is largely responsible for the preservation of the town and the retention of so many historic structures. Without his political power, personal wealth, keen interest in the area, and timely intervention, Virginia City might not exist at all. [13]

Charles Bovey's preservation of the town kept original buildings and thereby, the original finishes, intact. The three storefronts on Wallace Street, Kraemer Store (1863), McGovern-Goldberg Store (1863), and the Strasburger Colorado Store (1863) were turned into interpretive museum pieces. Green Fronts (1868/1878) operated as an eatery and ticket booth for the adjacent train and station that took visitors from Virginia City to nearby Nevada City before closing to the public. The Methodist Church (1874) sat vacant and remains unused, though was never formally mothballed.

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[11] Daniel Person. "For the Love of History: Bovey poured his life into saving Virginia City." *Bozeman Daily Chronicle*. July 31, 2011. Ellen Baumler. "More Than the Glory: Preserving the Gold Rush and Its Outcome at Virginia City, Montana." *Montana: The Magazine of Western History*. Vol. 49, No. 3 Special Gold Rush Issue (Autumn, 1999), 73-74.
[12] Baumler (1999), 74-75
[13] Baumler (1999), 65.

The five buildings in Virginia City stand alone as individual stories of place and time. They are each a testament to the town's story of growth, its people's technological mastery, and the economic booms and busts of those first few years. The stratigraphic layers of paint on their exteriors represent the choices of the occupants and their social performance to the rest of the town, customers, visitors, and the political classes. Despite their present appearance, each of these buildings underwent several painting campaigns, sometimes the work of a professional, sometimes the work of whomever was on hand to do the work.

The way that buildings are painted by their owners or professional painters can be deep, personal expressions of the economic conditions of the time, a specific location, and the cultural traditions of the painter. Therefore, paint analysis is going to be highly regionally and temporally specific—any researcher can reasonably expect Colonial Williamsburg to appear physically different than French-governed New Orleans or Victorian San Francisco. Virginia City is also going to appear differently as separate cultural traditions transplanted and intermingled in the former boomtown while new adaptations were implemented to account for local shortfalls. This thesis will use paint samples and primary written materials to define the colors of the case study buildings to add the color palette of a mining town from rural Montana to the body of paint analysis scholarship. Paint samples from different architectural elements on building exteriors were matched to Munsell colors and commercial paint, then compared to historically available paint colors to determine whether a town representing civility and culture in a young United States Territory would adopt the colors of the eastern United States.

CHAPTER II

HISTORICAL CONTEXT

General Overview

Prehistory

Even before the first humans settled on the land that would become the state of Montana, the land was formed after the prehistoric Western Interior Seaway receded in the Cretaceous period.[1] The mountains that currently dominate the western third of the state grew when several tectonic plates subducted beneath the North American plate 55-80 million years ago, forming the gold-bearing quartz veins that would catapult Virginia City to its place of prominence tens of millions of years later.[2] Volcanic activity to the west in Idaho and glacial events including major floods formed many of the landscape features surrounding Virginia City. Waves of human settlement in Montana began at least 13,000 years ago, according to archaeological evidence found at the Anzick Burial Ground in western Montana.[3] This site revealed a connection to the Clovis culture, whose distinctive stone tools are crucial for dating sites in early prehistoric North America.

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[1] The Western Interior Seaway is a shallow sea that stretched from the Arctic Ocean near present-day Yukon and Alaska to the present day Caribbean Sea, effectively bisecting North America across the northern Rockies and the midwestern plains through Oklahoma, Texas, Louisiana, Mississippi, in the United States and Tamaulipas, Veracruz, Oaxaca, and the states in the Yucatan peninsula in Mexico. The Seaway formed in in the mid-Cretaceous period and connected the Arctic and Caribbean Seas by the late-Cretaceous. At the end of the Cretaceous, the Laramide orogeny, the mountain building time period that began to uplift the Rocky Mountains and the Seaway began to regress.

[2] Susan M. Vuke. "Geologic Map of the Divide Area, Southwestern Montana." Open File Report MBMG 502, Montana Bureau of Mines and Geology. (2004), 1, 13-15.

[3] Ker Than. "Oldest burial yields DNA evidence of first Americans". *National Geographic*. Published: 02/12/2014. Retrieved 04/22/2017. URL: http://news.nationalgeographic.com/news/2014/02/140212-anzik-skeleton-dna-montana-clovis-culture-first-americans; Many human imprints from this early period were from transients—bands that simply moved through Montana on their way further south to more suitable lands in the southwestern United States. Actual permanent settlement that remained in Montana, as opposed to temporary camps, would not occur for another 4500 years.

Many distinct Native American tribal bands claimed the Alder Creek Gulch as their territory between those first humans and the bands inhabiting the area during the Caucasian contact period at the turn of the 19th century. They are identifiable only by technological horizons, when tools such as Folsom points and atlatls emerge in the archaeological record. Ecological changes to the plains in the eastern portion of the state 8000 years ago pushed human settlement out of the eastern plains and concentrated it in the foothills and Rocky Mountains. In the foothills, edible plants and smaller game eased the loss of larger game that were once present on the plains.[4] The pottery and bow and arrow technological horizons, as well as sophisticated social structures, seasonal camps, and buffalo jumps flourished until European contact.

In the 16th and 17th centuries, European disease devastated Native American populations in the Eastern, Southern and Midwestern states, as well as Mexico, Central America, and the Caribbean.[5] War, enslavement, and eradication categorized much of this period. It seems likely that tribes in Montana were aware of the hostile intrusion. After all, their territories were expansive, seasonally nomadic, and relied on inter-tribal trade.

In the 17th and 18th centuries, Euro-Americans had not yet physically expanded into the mountainous regions like Montana, Wyoming, and Idaho, but their horses and guns had made it there through trade and intertribal warfare. Shoshoni bands who had

[4] Michael P. Malone, Richard B. Roeder and William L. Lang. *Montana: A History of Two Centuries*. Revised. (Seattle: University of Washington Press 1991), 8-10

[5] Disease continued to affect the Native American populations into the 18th century, however, the populations of extant groups had been long since decimated. In the 18th century, white Euro-American colonialists encountered populations that had been reduced and consolidated numerous times from the effects of earlier Euro-American settlers.

traded for horses with their southern Ute neighbors, spread mounted attacks north and east into Montana.[6] The Native American band local to the Alder Creek region at the time of Euro-American contact were the Lehmi Shoshoni, bordered to the south by other Shoshoni, Bannocks, and Sheepeaters.[7]

Fur Trapping: 1804-1862

Caucasian exploration and settlement would not touch the future state until 1804 when the first recorded exploration party, the Lewis and Clark Expedition, explored the Yellowstone River, Continental Divide, and the Snake River on their route to the Pacific.[8] It's possible that British and French explorers and trappers might have reached the area first, but their impact is not recorded. The Expedition returned through Montana in 1806, and just a year later the first American fur trading post in Montana was established. In 1808, the American Fur Company was formed and trappers poured into the region from Canada, the eastern United States, and the Pacific Coast.[9] The activities of the trappers and the mounting pressure from white colonizers grabbing large swaths of lands in Minnesota, Iowa, and the Dakotas were also pushing several tribal groups further and further west.[10] In this period several forts were established that became important points of contact for trade and inter-state commerce for the early years of Virginia City. Fort Benton, where much of Virginia City's dry goods and shipped items came from, was

[6] Malone et al., 10; Francis Haines, "The Northward Spread of Horses Among the Plains Indians." *American Anthropologist*, New Series, Vol. 40, No. 3 (Jul. – Sept., 1938), 431.
[7] Malone et al, 10.
[8] Malone et al, 34-40.
[9] Krys Holmes. *Montana: Stories of the Land.* (Helena: Montana Historical Society Press,2009), 87.
[10] Malone et al, 20-21.

founded in 1846 at the end of this fur trapping period by the American Fur Company. Steamboat travel from St. Louis to Fort Benton along the Missouri provided a critical lifeline to manufactured goods for the territory, until superseded by the Northern Pacific Railway in 1883.[11]

Mining and Territory-hood 1862-1875

In 1849, a gold rush in California set off a mining craze the likes of which had not occurred in North America. In the years after the strike at Sutter Mill, gold and silver rushes struck in other parts of California, Nevada, Colorado, Idaho, Montana, eastern Oregon, New Mexico, Canada, finally culminating at the end of the 19th century with the Klondike Gold rush in Alaska.[12] Precious metal mining brought an immense volume of settlers to each state, causing them to become established as territories, with statehood looming in their futures. Many settlers passed through Wyoming and Utah to the south of Montana on the Oregon Trail in an attempt to reach the gold strikes or simply to settle in new, unclaimed lands.[13]

[11] Malone et al, 57; the Klondike Gold Rush was set off in 1898. Another strike in Nome, Alaska in 1901 set off another gold rush in Alaska as well but is less famous.
[12] Holmes, 101-102.
[13] Of course, it bears saying that white settlers of this sort simply did not recognize or honor the rights of the Native Americans who were already settled on the lands. In no way were the lands in the west ever "unclaimed"—they had been part of larger Native American territories for millennia before whites imposed themselves. Native Americans were either treated as hostile threats or as children in need of adult guidance and intelligence. At best, they were simply regarded as standing in the way of progress and settlement, at worst, they were slaughtered by military forces after disputes with settlers. This experience seems ubiquitous throughout the west as whites filtered in from the eastern states. Few exceptions exist but some tribes, such as the Nez Perce, did occasionally aid white colonialists in settlement or finding gold. These brief, exceptional moments of peace and fraternity do not excuse the overall bloody and oppressive history of the rest of tribes in the United States

In Montana, gold was first discovered at Gold Hill in 1858 by James Stuart, Granville Stewart and Reece Anderson near present-day Drummond. Things remained quiet for four years, but in 1862, other mining rushes in California, Nevada and Colorado had declined, leading miners to explore Montana and Idaho. Miners attempting a shortcut from Colorado through the Bitterroot Mountains to present-day Idaho set off Montana's first major gold rush at Grasshopper Creek. Bannack City formed by the end of 1862 to accommodate the 400-500 miners.[14] Those who did not immediately stake good claims in the initial strike prospected in the nearby hills and spread out from the area. In 1863, Congress took notice of the activity and established the Idaho Territory in 1863.[15] In 1865 Montana Territory became a separate United States territory.

Virginia City: 1863-present

In spring 1863, Bill Fairweather, Henry Edgar, and Barney Hughes left Bannack City for one such expedition and found a substantial placer deposit at Alder Creek. Hundreds of miners followed the "suspicious" trio and a mining government was quickly established to parcel out the region of the strike into placer or quartz claims.[16] Boomtowns, the largest being Virginia City, sprung up in the fourteen-mile corridor of Alder Creek. Unlike Bannack City, Alder Creek continued to be a productive area for years after its initial strike. Continued gold production allowed Virginia City to mature

[14] Malone et al, 65.
[15] Malone et al, 94.
[16] Placer claims are above ground mining operations, for example, panning for gold. Placers are usually the first type of claim in a gold strike area. Quartz claims are gold claims that involve sub-surface mining where miners will drive adits or shafts to access gold trapped in a vein of quartz. Often after surface gold is depleted, sub-surface mining will take place, if the claimant can afford to do so.

into a city that would become the territorial seat in 1864 and remain in its role until statehood, when the capital moved to Helena.[17]

Once established, miners and related commerce flooded into Virginia City. Some came north from Salt Lake City in Utah along the Corinne Road, some from the east along the Bozeman Trail. Some took a steamboat from St. Louis to Fort Benton, then made their way south on overland wagons or stages along the Mullan Road and others. More information on these roads is described in Chapter 2.3. Much of this infrastructure was already in place from the trapping years, though still new, slow, and rough going.[18]

The town of Virginia City was built quickly and was organized in 1863 into a grid of blocks and lots. The town was reorganized and platted again in 1868, after considerable growth overwhelmed the original plan.[19] Simple log structures and dugouts made way to false-fronted buildings. The Kohls' and other saw mills on the west end of town allowed balloon frame buildings to be built, while simultaneously stone rubble block buildings were erected along Wallace Street.[20] Brick, fine stone masonry, and eventually cast iron followed as material became available and investment in the townsite was assured.[21] The development of the commercial structures far outpaced individual homes. The journal of Ellen Gordon Fletcher noted in 1866,

> We reached Virginia City at about noon. I can hardly tell you what my feelings were, or what my impression of the place as I reached at last that long talked-of,

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[17] Kingston Heath. "Viewpoint: Buildings as Cultural Narratives. Interpreting African American Lifeways in a Montana Gold Mining Camp." *Buildings and Landscapes*. Vol. 21, No. 4 (Fall 2014), 2.
[18] Laura Arata. *Embers of the Social City: Business, Consumption and Material Culture in Virginia City Montana, 1863-1945*. Thesis. (Washington State University, 2009), xii.
[19] Paul D. Friedman. "Final Report of the Architectural, Historical and Archaeological Inventory of the Virginia City National Historic Landmark, Madison County, Montana." (Denver: Dames and Moore,1990), 8.
[20] Arata, 85.
[21] Friedman, 21-22; Arata, 34.

> long looked-for place. It certainly did'nt [sic] surprise me with its broad streets and splendid edifices. It looked strange and new to me, and different from anything which I had ever seen before. It is quite a large place, though it does'nt [sic] show off prepossessingly at first sight. The city is situated in a hollow or basin like, entirely surrounded by mountains, not green and fresh looking, but brown and bare, the numbers of stock in and around the city having eaten all of the grass. There is'nt [sic] a tree in sight. All have been cut down for wood, and all about the city, the ground is cut up by the mining which is constantly going on. All this gives the city at first sight, a rough, bare look. As you enter the city and pass through business streets, it shows to much better advantage. There are some very fine stone buildings, quite stylish and city-like, but mostly small. The streets are narrow and the dwelling houses small, the greater portion of them being built of logs. The outside streets consist entirely of log cabins, some of them the littlest bits of houses that I ever saw, and built right into the mountain side.[22]

Fletcher's journal shows that Virginia City business owners put more emphasis on changing their stores' appearance from informal log structures, to formal stone and wood buildings. Even if only a false front was applied, this shift was more important than changing to appearance of homes or living quarters.

Virginia City is also known as the "Social City."[23] It contained many diversionary activities for citizens such as multiple theaters, billiard halls, saloons, fraternal organization lodges, brothels, schools, and churches, in addition to providing food and housing for miners. (Figures 2.1 through 2.3) The place was not without hardship—the winter of 1864 was so harsh, organized riots erupted when flour shipments could not make it to the city.[24] Vigilantism and bareknuckle boxing were brief moments of popularity and notoriety for Virginia City but the town was in decline.[25] The rest of the

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[22] Ellen Gordon Fletcher. *A Bride on the Bozeman Trail: The Letters and Diary of Ellen Gordon Fletcher 1866*. Ed. Francis D. Haines, Jr. Medford OR: Gandee Printing Center, Inc. (1970), 59-60, July 28, 1866.
[23] Arata, iv.
[24] Arata, xiii.,
[25] Malone, 81; These events are the terrorizing of the Virginia City region by Plummer Gang, put to death by a vigilante group over the course of a few months in 1864. The other event is the bareknuckle boxing match between Hugh O'Neil and Con Orem in January 1865 which went for 185 rounds.

1860s were categorized by slow growth after the initial boom, with many accounts of the area describing an exodus to better diggings.

A PRIZE

AT THE CITY

BOWLING SALOON

1st Door above Creighton's Stone Block.

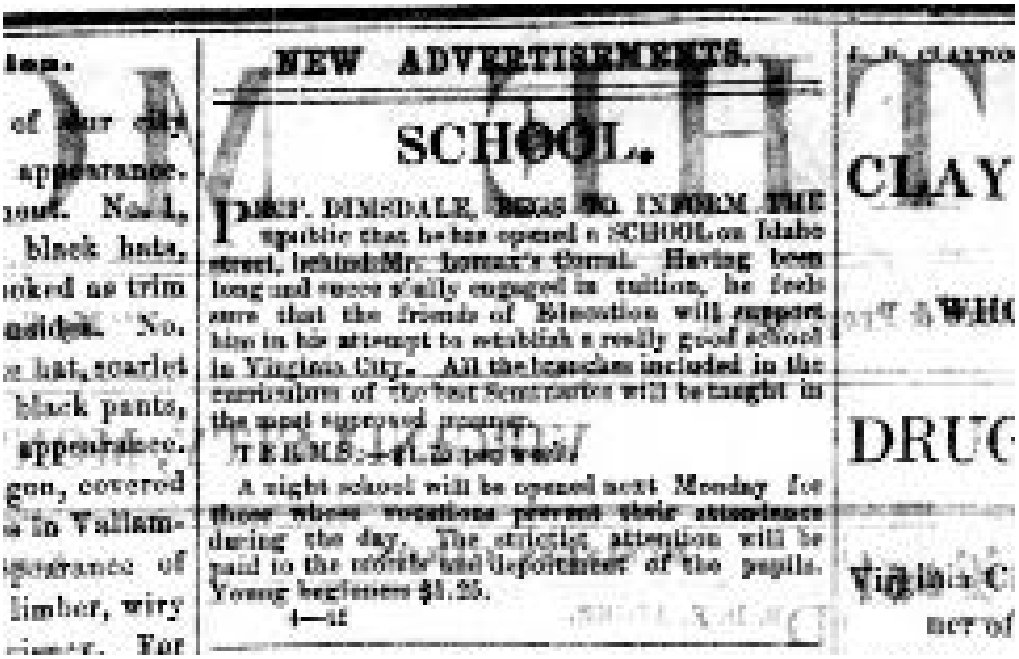
Virginia City, Montana Territory.

A PRIZE OF

$25,00 IN COIN-

FURNI

Figure 2.1. Advertisement for Bowling Saloon in the Creighton Stone Block. September 10, 1864, Montana Post (Montana Historical Society)



NEW ADVERTISEMENTS.

SCHOOL.

PROF. DIMSDALE, BEGS TO INFORM THE public that he has opened a SCHOOL on Idaho street, behind Mr. Lomax's Corral. Having been long and successfully engaged in tuition, he feels sure that the friends of Education will support him in his attempt to establish a really good school in Virginia City. All the branches included in the curriculum of the best Seminaries will be taught in the most approved manner.

TERMS:—$1.25 per week.

A night school will be opened next Monday for those whose vocations prevent their attendance during the day. The strictest attention will be paid to the morals and deportment of the pupils. Young beginners $1.25.

1—tf

CLAY

DRUG

Figure 2.2. Advertisement for the first school, run by Thomas Dimsdale. September 17, 1864. Montana Post (Montana Historical Society)

. PARROTT, S. W. BORTON, Iowa. Col.
ROTT & BORTON,
ice on Idaho street, opposite
ia City, Montana Territory.
2–3m

ity, Montana Territory.—
rs. Also the best of liquors.
-3m

Virginia City, Montana Ter-
tom work always on hand.
1–6m

a City, Montana Territory.
ous customers that he is al-
e mouths of the hungry.—
1–6m

n, formerly assistant in the
ris, and attached to the New
rk—recently from Dubuque,
ia City, opposite the hay
1–6m

CITY BATH ROOMS

Shaving and Hair Dressing Saloon.

South Side of Wallace Street, Va. City

GEO. TURLEY, Proprietor.

3—1y

PLANTER'S HOUSE

Corner of Idaho and Jackson Sts., Virginia City, Montana Territory.

WM. & JOHN A. SHOOT

(Formerly of the Planter's House, Hannibal Mo.)

PROPRIETORS.

THE ABOVE NAMED HOUSE, FORMERLY conducted by Wm. Sloan, Esq., having been enlarged and re-fitted is now open with every facility for the accommodation of Guests and Boarders. Comfortable rooms and beds are provided, and the table is carefully furnished with the best the market and seasons afford.

Passengers for the early Stage Coaches can obtain good lodgings here and be waisened at the proper hour. The patronage of the public is respectfully solicited. WM. & JNO. A. SHOOT,

4—tf PROPRIETORS.

with arms entering th
THE GR
Was well chosen, b
among the hills. In t
rall a most substantial
nice spot of turf was
it all that could be d
face was level and fr
means had been taken
The fine gravel pointe
the fallen, though it
objection of slipperi
having been made to tl
it was allowed by the
remedied. The crowd
way usual on such o
betting and chaff, the
prevailing. The odds
Foster, but on the gro
even. A photograph
would have been one
varied pictures of
that ever the pencil of

Figure 2.3. Advertisements for bathhouse and Planter's boarding house. September 24, 1864. Montana Post (Montana Historical Society)

Placer mining gave way to hydraulic mining in 1867, as mines became more sophisticated, employed larger work forces, and changed ownership from individuals to corporate mining operations.[26] (Figures 2.4, 2.5) Quartz mining operations also sprung up when easily recovered gold on the surface panned out.[27] Most miners coming to Virginia City were no longer romantically panning for gold in creeks—most productive claims were snapped up and sold for profit, and quickly exhausted afterwards. Most miners of the town worked instead at the sluice boxes of individual claims for far less pay. [28]

[26] Heath (2014), 2-3.
[27] Ellen Baumler. "More Than The Glory: Preserving the Gold Rush and Its Outcome at Virginia City, Montana." *Montana: The Magazine of Western History*. Vol. 49, No. 3 Special Gold Rush Issue (Autumn, 1999), 72.
[28] Heath (2014), 3.

Chinese immigrants, omnipresent in the community by 1870, replaced white workers as they left for better opportunities further west.

The once-10,000 strong population of Virginia City dwindled to 4000 in 1867, and by 1870 there were only 867 living there.[29] Business also were lost to Helena and other western strikes. Laura Arata's master's thesis on commerce in Virginia City writes, "The reputation it earned as the Social City during its early years, due to its claims of having twenty-five hotels, seventy-three liquor dealers, and three dance houses, gradually gave way to comments made in 1885 that it was a dead city, crooning over the embers of departed glory."[30]

[29] Arata, 79.
[30] Arata, 73.

Figure 2.4. Man on placer claim, panning for gold near Virginia City. (Photographer William Henry Jackson, 1867, Library of Congress #2005686471)

Figure 2.5. Hydraulicking operation in Virginia City, Montana (Photographer William Henry Jackson, 1867, Library of Congress #2005686471)

After losing a bid for the railroad in 1872, Virginia City's final marker of decline came when the town competed against Helena and Deer Lodge in 1874. The Montana Supreme Court awarded territorial capital to Helena after three elections could not decide the outcome.[31] In 1889, Montana became a state and Helena remained the capital. Mining activity declined after 1874, depressing the population to less than 800 with a third of this population being Chinese immigrants.[32] Hard rock mining categorized the still-operating mines that remained in Alder Gulch. In 1897, dredging, perhaps even more destructive than hydraulic mining, became the mode of mining and Virginia City received a small revival as a result of feeding and housing dredge operators and workers.

[31] Arata, 108; Baumler, 72.
[32] Baumler, 72.

A few revivals of gold dredging in the 1920s and 1930s kept a small population present in Virginia City, even during the Great Depression. In 1944, Charles Bovey and his wife, Sue Ford Bovey visited the site and made it their mission to save what remained of the town. They would spend the next decade purchasing properties from the remaining citizens and creating the heritage tourism site that can be seen today.

The town was nominated to the National Register of Historic Places in 1966. The nomination work included several Historic American Building Survey drawings of prominent and well-kept structures from a 1964 recording.[33] In 1977 it became a National Historic Landmark.[34] After the passing of the Bovey's, their son Ford began preparation to sell the townsite piecemeal to collectors, but Montana Historical Society received enough money from the state to purchase the site instead, preserving it again in 1997. The site today remains in the care of the Historical Society and is directly cared for by the Montana Historical Commission.[35]

[33] Blanche Higgins Schroer and Ray H. Mattison. "Virginia City, Montana Historic District." National Register of Historic Places Inventory/Nomination Form. Washington DC: Historic Sites Survey, National Park Service (1976), 4.
[34] Ibid.
[35] Daniel Person. "For the Love of History: Bovey poured his life into saving Virginia City." *Bozeman Daily Chronicle*. July 11, 2011. Accessed April 22, 2017. URL: http://www.bozemandailychronicle.com/100/for-the-love-of-history/article_fe081132-baff-11e0-a28c-001cc4c002e0.html

Building Histories

Each building of this study is part of, but not truly representative of, the phases of change in Virginia City after its founding. They are truly vernacular, common buildings adapted to the needs of their occupants and the historical setting in which they existed. They are ordinary, working buildings. The Kraemer Dress Shop, McGovern-Goldberg Store, and the Strasburger's Colorado Store, all in the same block represent the initial boom period (1863-1865) when demand for prime commercial space along Wallace was so strongly desired that stud-framed false fronts were applied to the log structures from the initial Alder Creek strike. Green Fronts represents the late 1860s, when the town matures, mining operation formalizes and the town adds places of culture, such as theaters, brothels, schools, and fraternal organizations build structures in the town. The Methodist Church represents the town just on the cusp of change—Helena is about to be voted the new territorial seat (1874), investment in the town is down, businesses are moving away, and the town population drops from ten thousand to 1902 by the 1870 census and 629 by the 1880 census.[36]

While paint analysis has the potential to yield more information about these nuanced periods of early Virginia City, each building and their survival to the present period in more-or-less unaltered states is incredibly important to understand. All the buildings had distinct origins, but they also shared a similar lead-up to the present—they

[36] Ancestry.com. *1870 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2009; The number of citizens, 1902 in 1870 and 629 in 1880, was derived from counting all of the entries from the census for citizens in Virginia City. It is always possible that the census missed counting some citizens, but the overall numbers should not be too far off.

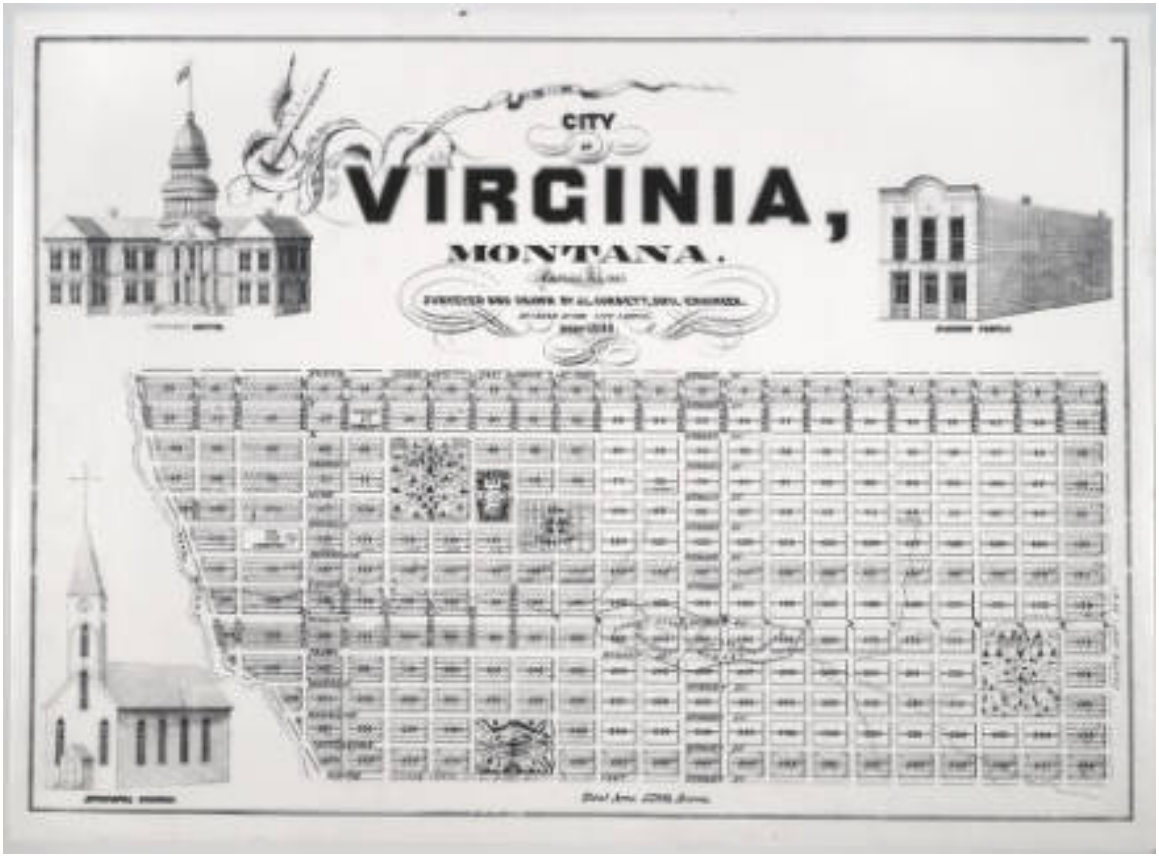


Figure 2.6. 1868 plat of Virginia City, as sent to Washington D.C. by surveyor John Corbett. (Montana Historical Society)

were all privately purchased by Charles Bovey in the 1940s or purchased by the Virginia City Trading Company in 1954.[37]

Before proceeding to the building histories, it is important to note that three buildings in the study, the Kraemer Store, The McGovern-Goldberg Store and the Strasburger Colorado Store, each have chronology issues stemming from their deeds. Because Virginia City was re-platted in 1868, each of these buildings had a new deed issued to the occupant for a fee.[38] (Figure 2.6) This may obscure who may have owned

[37] The buildings that comprised Charles and Sue Ford Bovey's property in Virginia City and Nevada City were sold to Bovey Restorations, Bovey's preservation company, between 1954 and 1974, then all transferred to the ownership of the Montana Historical Society in 1997. These buildings are currently in the care of the MHC

[38] John Corbett, City of Virginia Montana. City plat map. (1868); Arata, 64; Paul D. Friedman, *Final Report of the Architectural, Historical and Archaeological Inventory of the Virginia City National Historic*

the buildings before 1868, as record keeping and evidence of deeds before 1868 were difficult to find, and have conflicting secondary source accounts of their origins. To the best of my ability, I have worked out who owners of the buildings were and prices that the building was sold for prior to 1868, but often had to rely on secondary, uncited information. This will be noted in the building descriptions below and in Appendix A.

Kraemer Store (1863)

The Kraemer Dress Shop is one of the oldest buildings in town and the oldest in this case study group. (Figure 2.7) It began as a gable fronted, v-notched log structure with a sod roof.[39] It faces Wallace Street, though in 1863 central planned streets were disregarded and structures were built ad hoc, even on Wallace Street, until the town was re-platted in 1868.[40] The first owner was Augustus Griffith, a local blacksmith who owned and operated a smith out of the property. A 70-inch opening on the Wallace Street-facing façade would have facilitated getting stock animals in and out of the blacksmith for shipping goods and shoeing animals. According to a Condition Assessment Report, the 70-inch opening was only present during the blacksmith period.[41] Griffith sold to Julius Kraemer Sr. in 1870 for $8, suggesting that Augustus sold the building with no improvements.[42]

Landmark, Madison County, Montana, (Unpublished, Montana Heritage Preservation and Development Commission, 1990), 95; Baumler (1999), 66.

[39] John Kjelland. "Conservation Assessment Report: Kramer Building, Virginia City, Montana." Montana Heritage Commission, unpublished, on file at the Montana Heritage Commission McFarland Center, 2007., p 6

[40] Baumler (1999), 66.

[41] Kjelland, 6.

[42] Arata, 83; Arata does not give a deed book source for this information. Instead she cites John Kjelland's "Conservation Assessment Report: Kramer Building Virginia City, Montana" (2007). Kjelland's data is not derived from title searchers, but instead from historical photographs. The photographs are not included in the report and upon reaserching the collection of photographs at the Montana historical Society in a September 2016 visit, the photographs were determined to be overviews of the entirety of Virginia City

Figure 2.7. Kraemer Dress Shop, August 30, 2016. (Photographed by K. Geraghty)

By this time, buildings were in orderly blocks and lots along Wallace Street, and Kraemer's new shop bordered the Chinese district of town to the west. Sometime before Kraemer Sr. sold the shop, a large bay window was installed in the front of the property. It is likely that the board-and-batten false front was also applied at this time. Kraemer Sr. operated a saddlery at this location.

Ownership quickly changed to E.W. and Amanda Driggs, who then sold the building to Ah You, a Chinese immigrant who operated a laundry from the location, in

from a vantage point west of the town. The Kraemer building is not entirely visible from this angle, and I am unsure how Kjelland made his determinations about the gable end facing Wallace and opening sizes from photographs. Kjelland's guesses however, were materially confirmed though during a 2007-2008 building stabilization project.

1875.[43] Ah You sold the building back to Frederick Kraemer, son of Julius Kraemer Sr. in 1881 after a fire damaged the rear buildings.[44] Frederick and Julius Kraemer Sr. operated out of the property until it was sold again in 1904 to M.E. Steffrus. The building changed ownership five more times before being sold to Charles Bovey in 1946.[45] Between 1933 and 1946 the building was owned by three different women in succession: Esther Gilbert (1933), Olive Richmond (1939), and Alzora Weingart (1945).[46] After Bovey purchased the building, he created a museum display inside the building, interpreting it as a dress shop, despite never having been a dress shop in the building's history.[47]

The building consists of four rooms extending back from the Wallace Street entrance. The first room is the shop, followed by three rooms on the rear of the structure that would have comprised the living space for the shop keeper and family or tenants. The rear-most room is board-and-batten sided, clearly different from the saddle notched log structure in the first three rooms. No date is given for the rear-most room addition, but it is likely added after the 1881 fire. The false front was likely applied by Kraemer

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[43] Arata, 84; No data for Ah You's initial purchase of the building or the Driggs could be found in a title search at the Madison County records office, nor any deed transfer prior to Ah You's sale to Julius Kraemer. Arata does not cite her source for the Driggs. E. W. Driggs, according his position as a neighbor to in the 1870 census for Virginia City may have lived in the Kraemer store or nearby. Others listed nearby were Julius Kraemer, D.H Weston, Jacob Baker, William Douglas, H.A Blake and wife Clara, and Stephen Dupee (Etienne DuPuis). It's unknown how Arata or Kjelland arrived at the idea that the Driggs were to owner/occupants before Ah You from just census data.

[44] Madison County, Montana, Deed Book 37, page 327. Transfer of property at Block 154, lots 29 and part of lot 30 from Ah You to Frederick Kraemer on December 20, 1881; Kjelland, 12. Kjelland's building report does document evidence of fire and attribute it to Ah You around 1880.

[45] A complete record of all deed transfers for the Kraemer building are included in Appendix (LETTER) (they are included at the end of this draft.

[46] Madison County, Montana, Deed Book 120, page 64; Madison County, Montana, Deed Book 141, page 581; Madison County, Montana, Deed Book 141, page 40; information about these women or their occupations was not available in the US census data. They are not listed as residents in either the 1930 or 1940 censuses.

[47] Kjelland, 12; J. Phillip Gruen. "Staging the Past: Ruminations on History, Tourism and Preservation." *Montana: The Magazine of Western History*. (Winter 2011), 24.

Sr. in his first period of ownership, to cover the less-than-formal 70-inch wide opening for Augustus Griffith's blacksmith business. The false front also includes a window bay with four eight-light fixed windows, an extravagance given how difficult it would have been to transport glass in the early years of Virginia City. The false front is board-and-batten, terminating in a flat board cornice at the top. Board-and-batten siding also adorns the visible side of the building, covering less regular V-notched log structures underneath. The roof is a good example of a sapling pole and dirt roof, encased under a younger, sawn board roof and encased again under a corrugated metal roof. At some point a corrugated metal porch was added to the front, likely during the Bovey era.

McGovern-Goldberg Store (1863)

In the lot immediately east of the Kraemer store is the McGovern-Goldberg store, also built in 1863.[48] (Figure 2.8) In Mary Ronan (nee Sheehan)'s diary, she writes of the cabin on Wallace Street that her parents, James and Ann Sheehan lived in when they first arrived in Virginia City in July 1863 from Colorado, just a few months after Fairweather, Edgar and Hughes strike in spring 1863.[49] (Figure 2.9) James Sheehan, a freighter, had no trouble finding work in the burgeoning town. Mary describes it as a "big log cabin on Wallace Street," but the family soon bought and moved to "a little two-room cabin off Wallace" in 1864.[50]

[48] Friedman, 88.
[49] Margaret Ronan. *Girl from the Gulches: The Story of Mary Ronan*. Ed. Ellen Baumler. (Helena: Montana Historical Society Press, 2003), 21-23. "Nee" refers to Mary Ronan's name prior to her marriage.
[50] Ronan, 34, 35. This new home was on Cover Street according to an editorial footnote in Ronan's diary.

Figure 2.8. Portrait of Mary Ronan at the time of her marriage, 1873. (83-138, University of Montana)

Figure 2.9. McGovern-Goldberg Store (right) and Weston Hotel (left), August 29, 2016 (Photographed by K. Geraghty)

James Sheehan sold the cabin to H. Kastor, J. Berry, S. H. Bowman, and G. Goldberg in August 1864. The new owners intended to open a store on the site "doing business under the name and style of W. H. Kastor."[51] The business did not seem to flourish and was operated and lived in by Gumpert Goldberg and his wife Helena Goldberg. The Goldbergs are named as sole owners when they sold the same building in July 1865 to Joseph Knight. According to the Sheehan diary again, the Sheehans had "Jewish neighbors named Goldberg," with no mention of Kastor, Berry, or Bowman living or working on the premises.[52] The Goldbergs and Sheehans cohabitation or had a close, neighborly relationship on the same lot, is a testament to the overflowing capacity of a boomtown in its youth. Though the Goldberg name is ascribed to the residence, they only resided there for a year. The Goldbergs are listed in tax records from 1865 as liquor dealers.[53]

Joseph Knight, the next owner, sold to Etienne DuPuis in 1868, with DuPuis also purchasing lot 30, fronting Wallace for 25 feet, and extending back to the alley.[54] Etienne

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[51] Madison County, Montana, Deed Book B, pages 183-184.

[52] Ronan, 46; Mary's diary described interactions with Helena Goldberg over Passover, and Helena giving young Mary food to take over to her family, while Mary plays a child's prank by stealing Mrs. Goldberg's shoes. This level of familiarity with her neighbors suggests close quarters and little separation between the neighbors.

[53] Ancestry.com. *U.S. IRS Tax Assessment Lists, 1862-1918* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2008. Accessed April 20, 2017. URL: https://www.ancestry.com/interactive/1264/rhusa1862_101931-00022?pid=6925386&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DOHI28%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26msT%3D1%26gsfn%3DG%26gsfn_x%3D0%26gsln%3DGoldberg%26gsln_x%3D0%26msrpn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msrpn%3D56927%26msrpn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26mssng%3DHelena%26mssns%3DGoldberg%26cp%3D0%26MSAV%3D1%26MSV%3D0%26uidh%3Di61%26pcat%3D35%26h%3D6925386%26recoff%3D4%25205%26dbid%3D1264%26indiv%3D1%26ml_rpos%3D3&treeid=&personid=&hintid=&usePUB=true&_phsrc=OHI28&_phstart=successSource&usePUBJs=true

[54] Madison County, Montana, Deed Book W, pages 412.

is mistakenly recorded in the 1870 census as "Stephen Dupee" and his wife Elise as "Lizzie", but at the correct residence; Etienne was a teamster and his wife kept house. Both are listed as emigrants from Canada, with two children and a boarder, another teamster named Moses Enalt.[55] The DuPuis family sold to E.J. Walter in 1871.[56] After E.J.'s death in 1876, the property passed from his wife, to Ellen Williams (1876), and then to Thomas Deyarmon (1877) in quick succession.[57] Deyarmon's profession is listed as an editor in the 1880 census, signaling that the front end of the property might not have operated as a business since the Goldbergs had a store there.[58]

Nearly fifteen years later, in January 1892, Thomas Deyarmon and wife sold to Joseph J. Haines.[59] According to the 1900 census, Haines did not live in Virginia City but in Brandon, Montana as a saloonkeeper.[60] Haines sold to Robert Hawkins, the then-

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[55] Ancestry.com *1870 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2009. Accessed March 25, 2017. URL: https://www.ancestry.com/interactive/7163/4273884_00538?pid=34263666&backurl=http://search.ancestry.com/cgi-bin/sse.dll?db%3D1870usfedcen%26indiv%3Dtry%26h%3D34263666&treeid=&personid=&hintid=&usePUB=true&usePUBJs=true

[56] Madison County, Montana, Deed Book W, page 410-11

[57] Madison County, Montana, Deed Book 27, page 791; Madison County, Montana, Deed Book 29, page 174; Madison County, Montana, Deed Book 30, page 140

[58] Ancestry.com and The Church of Jesus Christ of Latter-day Saints. *1880 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2010. Accessed March 25, 2017. URL: https://www.ancestry.com/interactive/6742/4242183-00788?pid=43326997&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DOHI29%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26msT%3D1%26gsfn%3DThomas%2520%26gsfn_x%3D0%26gsln%3DDeyarmon%26gsln_x%3D0%26msrpn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msrpn%3D56927%26msrpn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26msydy%3D1880%26cp%3D0%26MSAV%3D1%26MSV%3D0%26uidh%3Di61%26pcat%3D35%26h%3D43326997%26dbid%3D6742%26indiv%3D1%26ml_rpos%3D1&treeid=&personid=&hintid=&usePUB=true&_phsrc=OHI29&_phstart=successSource&usePUBJs=true; in the 1884-5 business directory, Deyarmon is listed as proprietor for The Madisonian, a Virginia City newspaper.

[59] Madison County, Montana, Deed Book 50, page 497; this is when dredge mining became popular in Virginia City.

[60] Ancestry.com. *1900 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2004. Accessed March 25, 2017. URL: https://www.ancestry.com/interactive/7602/4120363_00150?pid=44784712&backurl=http://search.ancestry.com/cgi-

County Treasurer, in April 1905.[61] Hawkins is notable for selling the store, finally, to Hannah McGovern in 1914.[62] Hannah and her sister Mary ran a dry goods store there for forty years and well into their advanced years. Mary eventually sold the property to Charles Bovey in 1954.[63] The McGovern sisters thirty-year long residence at the store is important for two reasons—one, they returned the building to its former status as a store, and two, they are responsible for the state of the building exterior and interior at the time it was sold to Charles Bovey, who preserved it as it was sold to him with all of the goods at the McGovern store retained. Though not part of the mining-era chronology, the McGovern sisters are nevertheless important to understanding the current state and preservation of the store.

A few photographs of the store exist from the McGovern period, showing the classical revival false front applied to the log cabin. (Figure 2.10) Several additions to the rear of the store comprise the living spaces of the residents. It's possible that building

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bin/sse.dll?_phsrc%3DOHI30%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26gsfn%3DJoseph%26gsfn_x%3D0%26gsln%3DHaines%26gsln_x%3D0%26msrpn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msrpn%3D56927%26msrpn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26msydy%3D1900%26cp%3D0%26MSAV%3D1%26MSV%3D0%26uidh%3Di61%26pcat%3D35%26h%3D44784712%26dbid%3D7602%26indiv%3D1%26ml_rpos%3D1&treeid=&personid=&hintid=&usePUB=true&_phsrc=OHI30&_phstart=successSource&usePUBJs=true

[61] Madison County, Montana, Deed Book 71, page 269; Ancestry.com. *1910 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2004. Accessed March 25, 2017. URL: https://www.ancestry.com/interactive/7884/31111_4330822-00032?pid=15282585&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DOHI31%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26msT%3D1%26gsfn%3DRobert%2520%26gsfn_x%3D0%26gsln%3DHawkins%26gsln_x%3D0%26msrpn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msrpn%3D56927%26msrpn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26cp%3D0%26MSAV%3D1%26MSV%3D0%26uidh%3Di61%26pcat%3D35%26h%3D15282585%26dbid%3D7884%26indiv%3D1%26ml_rpos%3D1&treeid=&personid=&hintid=&usePUB=true&_phsrc=OHI31&_phstart=successSource&usePUBJs=true

[62] Madison County, Montana, Deed Book 129, page 115.

[63] Madison County, Montana, Deed Book 171, page 304.

owners rented the store to supplement their income, but it may be that the only stores that operated there were Goldberg's liquor store (1864-1865), and the McGovern sisters' dry goods store (1914-1944).

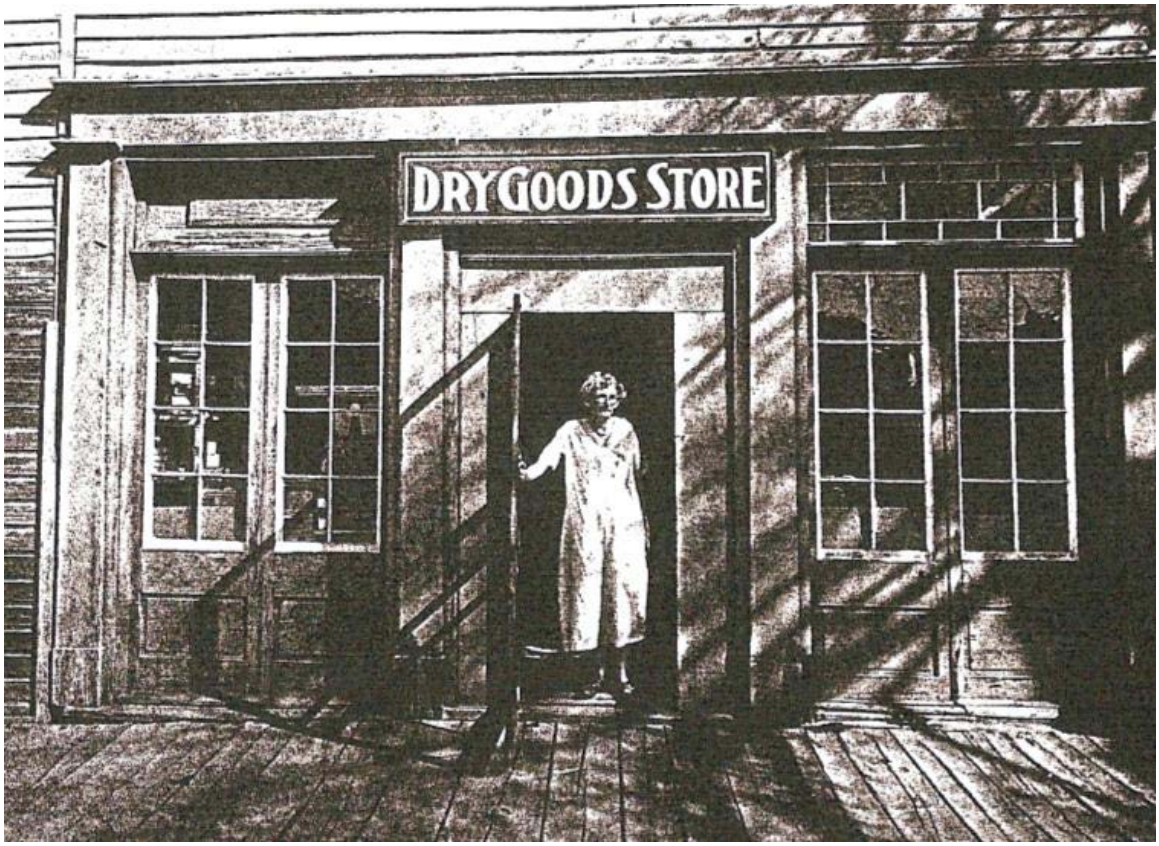


Figure 2.10. Hannah McGovern outside her store. c. 1930 (Montana Historical Society)

The first building is a large log cabin as described by Mary Sheehan in 1863. By 1864, the Sheehan's move and the building is used as a business. The false front with classical revival detailing may have been applied by the next tenant, Gumpert Goldberg and wife, who operated a liquor retail store from the location. A painted sign reading "G. Goldberg" on the sign band over the door is assumed to be authentic, however it is impossible to discern in photographs from the pre-Bovey era. Two rooms comprising the living quarters, are behind the store room and constructed of log, with gables finished

with boards. Behind these two room, with shed roofs, as a porch. The original roof structure was gable ended over the store and shed over the two rear rooms; roof materials are unknown and today encased in a corrugated metal roof.[64]

Weston Hotel (1863-1866)

By 1866, the west end of the McGovern-Goldberg store structure became the Weston Hotel, a hallway's width series of four rooms that connect in succession from the front of the lot to the rear of the lot. The hotel's exterior is plain lapped board beside the more formal Greek Revival detailing applied to the McGovern-Goldberg store, terminating in the same flat cornice board at the top of the false front. (Refer back to Figure 2.8)

Strasburger Colorado Store (1863) and cigar store (1863)

Like its neighbors, the Strasburger Colorado store began as a single-pen, gable-ended log cabin with an applied false front. Between the store and the McGovern-Goldberg store is a shed-roofed building known as a cigar store that is little more than a hallway leading away from Wallace Street. (Figure 2.11) The first recorded owner on the lot is Hiram J. Brendlinger. Brendlinger was a cigar dealer from Denver, Colorado who concurrently owned cigar shops in Cheyenne and later, Deadwood.[65] Brendlinger sold the

[64] Ellen Baumler. "An Analysis of the State-Owned Historic Resources of Virginia City and Nevada City. Building Prioritizations for Repairs and Stabilization." Report to the Virginia City/ Nevada City Commission. Helena: Montana State Historic Preservation Office (1998), 4-5.
[65] Hubert Howe Bancroft. *The Works of Hubert Howe Bancroft Volume25: History of Colorado, Denver and Arapahoe County*. (San Francisco: A. L. Bancroft and Company, 1882-1888). 572

Figure 2.11. Strasburger Colorado Store (right), Brendlinger cigar store (left), August 29, 2016 (Photographed by K. Geraghty)

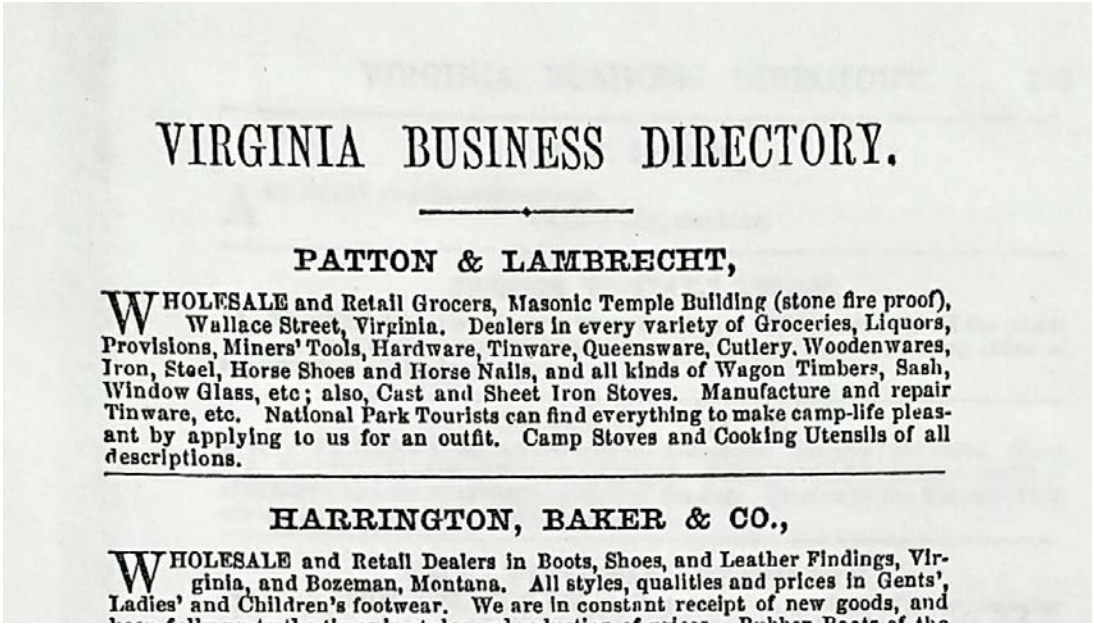
building and the portion of the lot to F.F. Stone in 1867.[66] Deed records for the Strasburger Colorado store portion of the lot prior to 1868 could not be located. According to Ellen Baumler's 1998 report, J. Samuels & Co. was the first owner of the building after construction in 1863, and the Strasburger's occupied the building in 1865. According to Ellen Baumler at the Montana Historical Society, J. Samuels & Co. applied the false front in 1866.[67] This suggests that the Strasburgers were granted their original deed between 1866 and 1868. The Strasburgers operated a dry goods store from the Wallace Street store for at least 6 years. After the town was re-platted in 1868, Mayor Daems issued deeds to F. F. Stone and Rachel Strasburger in 1868 for buildings in the

[66] Madison County, Montana, Deed Book P, page 278.
[67] Baumler (1998), 6; Baumler does not cite her source for J. Samuel & Co.

block and lot.[68] These "sales" from the City were most likely updates to the original deeds which would have had incorrect block and lot numbers for properties.

The Strasburgers sold the building to John H. Pfiel in 1871 for $300, suggesting that the Strasburgers made material improvements to increase the value of the property from $35 to $300 between 1868 and 1871.[69] In the 1870 census, Pfiel is listed as a wagon maker, but Lambrecht as a grocer. In the 1880 census, Lambrecht is listed as a hardware merchant, and Pfiel as a miner. In a business directory from 1885, Lambrecht is listed in an advertisement as part of Patton and Lambrecht, wholesale and retail grocers. We know that Lambrecht's grocery is not at the Strasburger Colorado Store because it is listed as being in the Masonic Temple in the advertisement.[70] (Figure 2.12) It's possible that Pfiel ran his wagon business from the shop as his advertisement in the same business directory indicated he had a shop on "lower Wallace," which is where the Strasburger Store was.[71] (Figure 2.13) It's unclear if Pfiel used the Strasburger Colorado store for his business as there aren't alterations to the storefront to accommodate wagons or animals.

[68] Madison County, Montana, Deed Book U, page 103; Madison County, Montana, Deed Book U, page 119.
[69] Madison County, Montana, Deed Book 33, page 513
[70] *Minnesota, Dakota, and Montana Gazeteer and Business Directory*. Volume IV. (R.L. Polk and A.C Danser: 1884-1885), 113
[71] Ibid, 116.



VIRGINIA BUSINESS DIRECTORY.

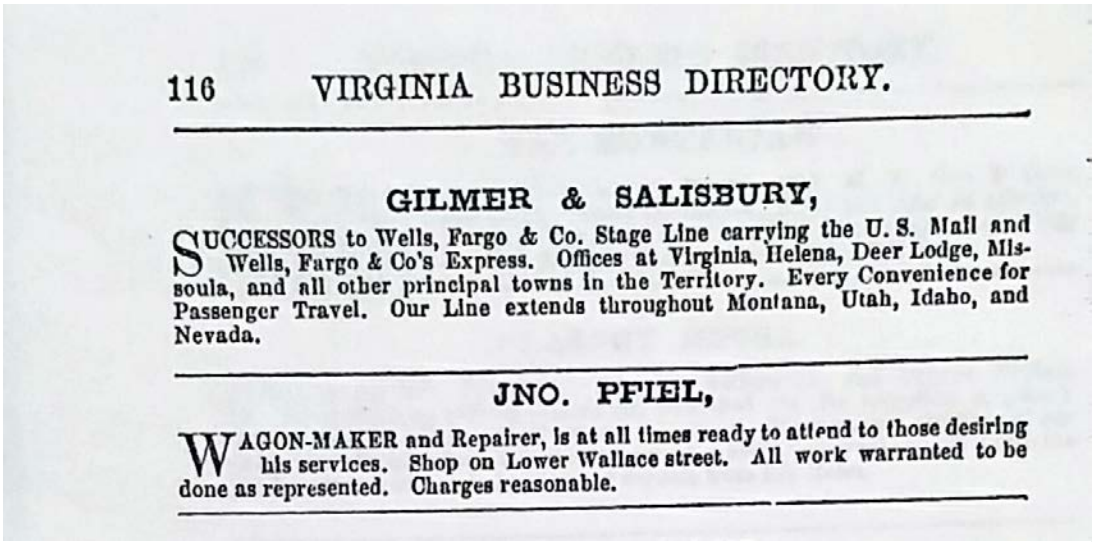
PATTON & LAMBRECHT,

WHOLESALE and Retail Grocers, Masonic Temple Building (stone fire proof), Wallace Street, Virginia. Dealers in every variety of Groceries, Liquors, Provisions, Miners' Tools, Hardware, Tinware, Queensware, Cutlery, Woodenwares, Iron, Steel, Horse Shoes and Horse Nails, and all kinds of Wagon Timbers, Sash, Window Glass, etc; also, Cast and Sheet Iron Stoves. Manufacture and repair Tinware, etc. National Park Tourists can find everything to make camp-life pleasant by applying to us for an outfit. Camp Stoves and Cooking Utensils of all descriptions.

HARRINGTON, BAKER & CO.,

WHOLESALE and Retail Dealers in Boots, Shoes, and Leather Findings, Virginia, and Bozeman, Montana. All styles, qualities and prices in Gents', Ladies' and Children's footwear. We are in constant receipt of new goods, and

Figure 2.12. Patton and Lambrecht advertisement from 1884-5 Polk Business Directory. (Montana Historical Society)



116 VIRGINIA BUSINESS DIRECTORY.

GILMER & SALISBURY,

SUCCESSORS to Wells, Fargo & Co. Stage Line carrying the U. S. Mail and Wells, Fargo & Co's Express. Offices at Virginia, Helena, Deer Lodge, Missoula, and all other principal towns in the Territory. Every Convenience for Passenger Travel. Our Line extends throughout Montana, Utah, Idaho, and Nevada.

JNO. PFIEL,

WAGON-MAKER and Repairer, is at all times ready to attend to those desiring his services. Shop on Lower Wallace street. All work warranted to be done as represented. Charges reasonable.

Figure 2.13. Pfiel advertisement from 1884-5 Polk Business Directory (Montana Historical Society)

John H. Pfiel lived or worked at the property until 1884 when he and part-owner Alphonse Lambrecht sold to Amos Hall for a staggering sum of $1500.[72] The significant rise in price from $300 to $1500 also indicated a large, material improvement on the property—either making expensive additions to the false front, or adding additions onto

[72] Madison County, Montana, Deed Book 33, page 513; Madison County, Montana, Deed Book 39, page 243.

the rear of the lot. Amos Hall is listed as a miner in the 1880 census.[73] This is not the entire story for Hall however. Amos C. Hall was also a prominent banker of Virginia City, and his son, also named Amos C. Hall became mayor. In 1879, Hall Sr. established a private bank with A.J. Bennett, Madison State Bank. This probably accounts for how Hall could easily afford a $1500 building on Wallace. Hall Sr. died in 1893. His son went on to be elected mayor of Virginia City in 1909.[74]

Hall sold the property to Charles and Agnes Simpson in 1887.[75] The Simpsons are not recorded in the 1890 Census or in tax records for Virginia City, so their occupations and whether they operated a business during the ten years they owned the property is unknown. In 1897, Charles and Agnes sell to Joseph J. Haines. Haines was a saloonkeeper from Brandon, Montana and his use of the property is unknown.[76] The same Joseph Haines owned the neighboring McGovern-Goldberg Store. In 1905, Haines

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[73] Ancestry.com and The Church of Jesus Christ of Latter-day Saints. *1880 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2010. Accessed April 22, 2017. URL: http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=eeT29&_phstart=successSource&usePUBJs=true&gss=angs-g&new=1&rank=1&msT=1&gsfn=Amos%20C.&gsfn_x=0&gsln=Hall&gsln_x=0&msypn__ftp=Virginia%20City,%20Madison,%20Montana,%20USA&msypn=56927&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C29%7C0%7C1862%7C56927%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=0&MSV=0&pcat=ROOT_CATEGORY&h=20015923&dbid=6742&indiv=1&ml_rpos=20

[74] Helen Fitzgerald Sanders. *A History of Montana*. Volume 2 Chicago: Lewis Pub. Co. (1913), 1203-1204.

[75] Madison County, Montana, Deed Book 44, page 299.

[76] Ancestry.com. *1900 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2004. Accessed: April 27, 2017. URL: https://www.ancestry.com/interactive/7602/4120363_00150?pid=44784712&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DeeT43%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26gsfn%3DJoseph%26gsfn_x%3D0%26gsln%3DHaines%26gsln_x%3DNN%26msypn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msypn%3D56927%26msypn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26msypn_x%3DPACO%26msypn__ftp_x%3D1%26cp%3D0%26MSAV%3D1%26MSV%3D0%26uidh%3Di61%26pcat%3DCEN_CENTURY1900%26h%3D44784712%26dbid%3D7602%26indiv%3D1%26ml_rpos%3D3&treeid=&personid=&hintid=&usePUB=true&_phsrc=eeT43&_phstart=successSource&usePUBJs=true

and his wife sell the property to Robert Hawkins, the same who bought the McGovern-Goldberg Store in April 1905.[77] So at least from 1892-1914, the two buildings are tied together in this thread of ownership. In 1911 Hawkins sold the property to Richard Cook.[78] Cook dies and his property transfers to his wife Kate Cook, in 1923.[79] Kate Cook sells to Charles Bovey in 1948.[80]

The building itself consists of the Strasburger Colorado store with the cigar store between it and the McGovern-Goldberg store. The first buildings that front Wallace Street are both log cabins, later encased in drop siding on the exposed eastern exterior elevation and the sawn board false front facing Wallace Street. The false front is thought to be added by either the Strasburgers or J. Samuels & Co. as its recessed entry and multi-light windows is a design that became typical in the United States by 1880.[81] Two log additions are attached to the rear of the store room. Remnants of cement foundation for a cellar are behind the rear-most log addition.

[77] Madison County, Montana, Deed Book 71, page 269.
[78] Madison County, Montana, Deed Book 80, page 247.
[79] Madison County, Montana, Deed Book 156, page 165.
[80] Madison County, Montana, Deed Book 152, page 8.
[81] Baumler (1998), 6.

Green Fronts (1868-1869)

The Green Fronts consists of two adjoined gable ended structures at the west end of Wallace, just after the bend in the road on the south side of the street. (Figure 2.14) Today it is situated beside Charles Bovey's 1964-introduced shortline railroad that currently runs tourists between Nevada City and Virginia City. The railroad and depot building are an anachronism and are moved from Harrison, Montana.[82] Originally, this block would have been the Chinese neighborhood of Virginia City, below the sawmill and above the tailing ponds.

Figure 2.14. Green Fronts Boarding house. 1868 encased log cabin (right), light framed 1878 building (left), August 27, 2016 (Photographed by K. Geraghty)

[82] Friedman, 101, (Table 2, Entry 194-1); The Harrison Montana train depot was built in 1890 and moved by Bovey in 1964.

The two gable-end wood structures have distinct beginnings before the buildings become adjoined. The older building is constructed of log and encased in lapped siding. It was likely built by William Douglas in 1868 or early 1869.[83] Douglas, according to the 1870 census, worked as a grocer, but the building's use at the time is unknown.[84] The property at block 194, lots 3 and 4, was purchased by Calvin Halley in 1870 from City of Virginia.[85] The newer, eastern structure is a lightly framed building with lapped siding. It was likely built by Halley in 1878.[86] The buildings have been conjoined ever since. In 1881, Halley dies and his estate is sold to Julius Kohls. In 1882, Julius Kohls began buying other lots in block 194, eventually owning the entire block for his large lumber yard.[87] In the 1890 census, Kohl is living on the property with four children and his wife.

In 1897, Kohls sells the property to Mattie DeVere for $500.[88] De Vere was also known as Mattie Lee, an infamous madame and murderer. (Figure 2.15) She allegedly operated a brothel out of the Green Fronts before selling the property back to Julius

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[83] Friedman, 101, (Table 2, Entry 191-2, 191-3).

[84] Ancestry.com. *1870 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2009. Accessed: April 25, 2017. URL: https://www.ancestry.com/interactive/7163/4273884_00538?pid=34264040&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DeeT49%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26gsfn%3DWilliam%26gsfn_x%3D0%26gsln%3DDouglas%26gsln_x%3DNN%26msypn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msypn%3D56927%26msypn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26cp%3D0%26catbucket%3Drstp%26MSAV%3D1%26MSV%3D0%26uidh%3Di61%26msypn__ftp_x%3D1%26msypn_x%3DPACO%26pcat%3D35%26h%3D34264040%26dbid%3D7163%26indiv%3D1%26ml_rpos%3D3&treeid=&personid=&hintid=&usePUB=true&_phsrc=eeT49&_phstart=successSource&usePUBJs=true

[85] Madison County, Montana, Deed Book 27, page 502.

[86] Friedman, 101, (Table 2, Entry 191-2, 191-3); Repeatedly in his deeds and in Baumler, Calvin Halley is referred to as Haley, Hally, Heally, and Holly. No record of Halley in the 1870 or 1880 census could be obtained.

[87] Madison County, Montana, Deed Book 37, page 73; Madison County, Montana, Deed Book 36, page 266 and 480.

[88] Madison County, Montana, Deed Book 57, page 209.

Kohls for $600 in March 1902.[89] In December 1903, DeVere shot and killed a man in Phillipsburg, Montana and was convicted of manslaughter.[90]

Julius J. Kohls, perhaps taking advantage of the town district he was in, perhaps inspired by Ms. De Vere begins to also house prostitutes at Green Fronts after he moves back in. According to the 1900 census, he was a widower with 6 children, and had almost

Figure 2.15. Portrait of Mattie Lee, aka Mattie DeVere. No Date. Photographer unknown (Montana Historical Society)

[89] Madison County, Montana, Deed Book 61, page 581.
[90] Ellen Baumler. "The Women of Virginia City Walking Tour." Montana Women's History: Virginia City. (2014) Accessed October 4, 2016. URL: http://montanawomenshistory.org/wp-content/uploads/2015/04/Women-of-VA-City_TourMap.pdf

exclusively Chinese neighbors. He owned the lumbermill just east of the Green Fronts where today there are stone foundations.[91]

In 1910, all his children have moved out except the youngest, and Kohls' nearest neighbors are brothels. Kohls also has several boarders including a Chinese man and Myrtle Butler, whose profession is listed as "prostitute."[92] In 1926, Julius Kohls dies and his estate is transferred to his youngest son Henry D. Kohls.[93]

Henry Kohls sells the property to H. Robert Thixton in 1929, an oil driller.[94] According to 1930 census data, Thixton appears to live in the house alone. In 1938, at the height of the Great Depression Thixton sells the property to two women: Barbara Rush and Velma C. Massengale. The two women aren't in the 1940 census so their occupations are not known. In 1940, the two women sell the property to Melvin Massey, who in turn sells the property to Charles Bovey.[95] The date of transfer is illegible on the original

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[91] Ancestry.com. *1900 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2004. Accessed: April 25, 2017. URL: https://www.ancestry.com/interactive/7602/4120363_00136?pid=44784157&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DeeT115%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26gsfn%3DJulius%26gsfn_x%3DNP_NN%26gsln%3DKohls%26gsln_x%3DNP_NN_NS%26msypn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msypn%3D56927%26msypn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26msypn_x%3DPCO%26msypn__ftp_x%3D1%26cp%3D0%26catbucket%3Drstp%26MSAV%3D0%26MSV%3D0%26uidh%3Di61%26pcat%3D35%26h%3D44784157%26dbid%3D7602%26indiv%3D1%26ml_rpos%3D4&treeid=&personid=&hintid=&usePUB=true&_phsrc=eeT115&_phstart=successSource&usePUBJs=true

[92] Ancestry.com. *1910 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2006. Accessed: April 28, 2017/ URL: http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=eeT119&_phstart=successSource&usePUBJs=true&gss=angs-g&new=1&rank=1&msT=1&gsfn=Julius%20J&gsfn_x=NP_NN&gsln=Kohls&gsln_x=NP_NN_NS&cp=0&catbucket=rstp&MSAV=0&MSV=0&uidh=i61&pcat=ROOT_CATEGORY&h=15282549&dbid=7884&indiv=1&ml_rpos=3

[93] Madison County, Montana, Deed Book 114, page 130.

[94] Madison County, Montana, Deed Book 88, page 531.

[95] Madison County, Montana, Deed Book 131, page 416; Madison County, Montana, Deed Book 136, page 21-22.

deed, but was obtained from a deed book that depicts transfers made to Bovey from 1944-1947. According to John Ellingsen, Charles Bovey operated a café and boarding house out of the property afterwards.[96] The house was eventually abandoned by Bovey and tenants, and today remains closed to the public and interpreted only by a small historical society plaque.

The building structure consists of two gable fronted buildings forming a double house by sharing a party wall. A single doorway connecting the two is cut directly into the wall material and the interstitial space between the buildings is visible today. The newer, eastern building also has an addition along its east and rear elevations. The older, western building has a small "mud room" addition on its south elevation where you can see the un-encased log cabin underneath the board-and-batten sheathing that hides the logs. Since nearly all of the owners except for Mattie DeVere and Julius Kohls were single occupants without large families or tenants, it's likely that either DeVere or Kohls are responsible for the additions. Kohls is the more likely party, as he owned the lumber mill immediately adjacent to the house.[97]

Methodist Church (1874)

In comparison to the other buildings in this study, the history of the Methodist church had a very simple chain of ownership. Before the church was a built, a residence

[96] John Ellingsen. *If These Walls Could Talk: The History of the Buildings of Virginia City*. Montana Ghost Town Preservation Society (1977), 4.
[97] The lumber mill foundation is a mere 50 feet away from the Green Fronts east building. It's likely that the rear lots (6-10) were used by the lumber mill for storage or sales. Though De Vere lived in the house for five years, she moved throughout the state and may not have been inclined to make an investment in the Green Fronts.

occupied the lot the Church is now on. Jeff MacDonald, the most recent archaeologist and preservation specialist for the Montana Historical Commission surmised that it was the Daems residence, which moved to adjoin the Corbett residence on the next lot.[98]

In 1875, John Spencer, a lumber dealer sold the land at the corner of Idaho and Van Buren Street to the Methodist congregation. The congregation was formed in 1874 under Reverend A. M. Hough. D.C. Farwell built the church building. It was constructed of rubble rock and covered in stucco scored to look like dressed ashlar for $4,650.[99] (Figure 2.16) It was used as a church until sometime in the 1920s, when it became a

Figure 2.16. Methodist Church with Daems-Corbett House in background, August 25, 2016 (Photographed by K. Geraghty)

[98] Jeffrey MacDonald. "The Historic and Decorative Finishes of Virginia City, Montana: a case study." *Architectural Finishes in the Built Environment*. eds. Mary Jablonski and Catherine Matsen. London: Archetype (2009), 228.
[99] Baumler (1998), 16.

gymnasium for the nearby school. The church floor appears to be a typical gymnasium floor and still has markings of a ball court. In 1948, it was sold to the Elling Estates Company by Richard R. Matthew for $1000.[100] In an apparent loan default, the Elling Estates Company, then known as the U.S. Grant Mining Company, forfeited the property to Andrew J. Davis Jr. in 1952.[101] Davis sold the church to Charles and Sue Ford Bovey during the late-1950s, but the deed date is illegible.[102] As far as can be told, the Boveys did not put the Methodist Church to use either as a museum piece or as rentable property. The interior appears unaltered from the 1920s or 1930s when the Church was a

Figure 2.17. Methodist Church interior. Note the painted gymnasium floor and intricate wallpaper of lath plaster ceiling, August 25, 2016. (Photographed by K. Geraghty)

[100] Madison County, Montana, Deed Book 149, page 458.
[101] Madison County, Montana, Deed Book 164, page 236.
[102] Madison County, Montana, Deed Book 171, page 347.

gymnasium. (Figure 2.17) The north, south, and east exterior elevations are completely unaltered except for window mothballing. The west elevation has had a three-part, eight feet wide, wood folding door cut into the rubble stone wall.

Broader Contexts

It is important to be able to understand Virginia City and the five individual case study sites in the broader context of settlement, United States history, and commerce of the late 19th century. Two excellent theses on commerce in Virginia City by Laura Arata (Washington State University, 2009) and Allison Olsen (University of Delaware, 2011) have already been published on consumerism and the influencing forces that built and drove businesses in Virginia City. I will not attempt to repeat their theses or conclusions in this chapter. Instead, drawing from these sources, I will focus mainly on how a specific set of goods (paint, oils, pigments, dryers, brushes) and services (house and sign painters) could make their way to Virginia City. These commercial forces will be placed in the context of greater trends across the United States.

A Brief History of Paint in the United States

Paint can be water-based (distemper), oil-based, or varnish. Historically, distemper paint was made by mixing ground pigments (white lead or chalk) into water and adding an animal glue binder. Oil-based paints were mixed by adding white or red lead and ground pigment to linseed oil. Sometimes a drier made of metallic compounds were added to speed up the drying process, as oil-based paints would harden very slowly. Varnishes were mixed by adding natural resins to a solvent; for example, shellac or copal could be dissolved in oil of turpentine or alcohol to create a varnish. Oil or water-based paints were white and could be tinted by the addition of other pigments.[103] Paints were

[103] Ian Bristow. *Interior House-Painting Colours and Technology 1615-1840.* (New Haven: Yale University Press 1996), 3

applied to the house interiors and exteriors using a wide range of brushes, usually of hog or boar hair in the United States.[104] Typical house-painting brushes had bristles arranged around the handle in a round or oval shape. Angled brushes for sash or detail work were not introduced until the early twentieth century.[105] Varnish brushes were flat and whitewashing brushes were typical paddle shaped flat brushes. (Figure 2.18)

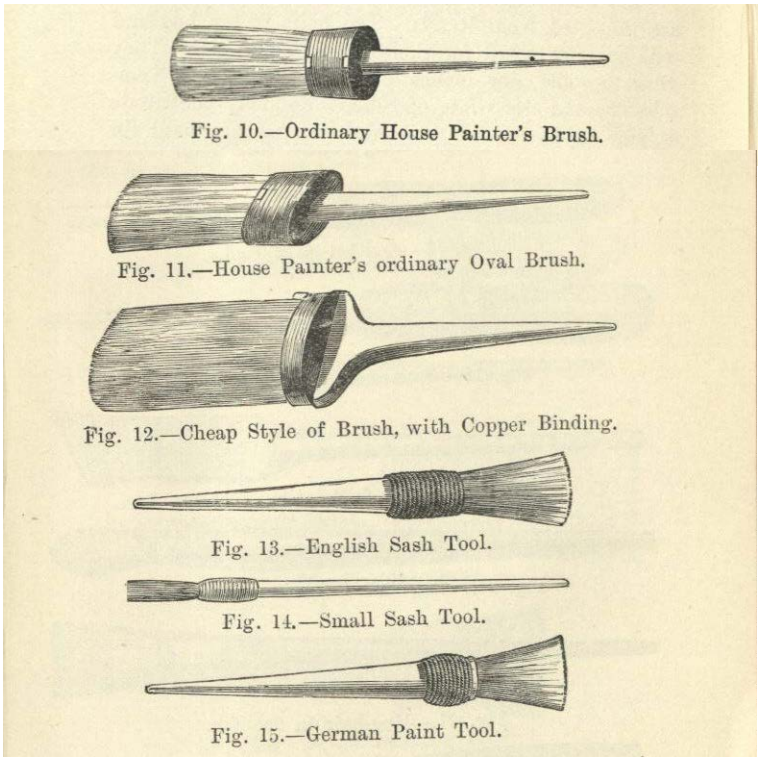

Figure 2.18. Figures of housepainter's tools from Paul Hasluck's 1903 House Decoration.

The professional house and sign-painter, according to Abbott Lowell Cummings and Richard Candee, has been present in America since 1635 when a painter-stainer named Augustine Clement from Reading, England came to Boston.[106] While rural

[104] Paul N. Hasluck, ed. *House Decoration Comprising Whitewashing, Paperhanging, Painting, Etc. With Numerous Engravings and Diagrams.* (Philadelphia: David McKay, 1903), 60-73.
[105] Ibid, 62.
[106] Abbott Lowell Cummings and Richard Candee. "Colonial and Federal America: Accounts of Early Painting Practices." *Paint in America.* ed Roger W. Moss. Washington DC: The Preservation Press (1994), 13.

American homes may have been unpainted through the 18th century, the homes and businesses of the elite classes had access to professional painters and had their homes finished on the interior and exterior. A painter might have had several assistants or worked alone. Paints were applied to interiors and exteriors with round, hog-hair brushes ranging in diameter from ¼"to 2". Painters applied an average of five coats of oil paint, and a minimum of three coats for new work, including priming, undercoat, and finish.[107]

Like carpenters, professional house painters did not exercise complete control over their craft. Those knowledgeable enough to mix distemper themselves seem to have done so, creating a cheap whitewash for their home. Mixing oil paints was not difficult, but oil and lead were more expensive than chalk, animal glue, and water. According to Richard Candee's introduction to Hezekiah Reynold's 1812 *Directions for Ship and House Painting*, "[t]raditionally, colonial Americans did their own whitewashing. Only after the Revolution did it become common for amateurs to use oil-based paints themselves."[108] So both homeowners and professional craftspeople were applying paint into the 19th century. Many of early and well-known professional painters in America studied with the London Painter-Stainers Guild and gained a certain sense of legitimacy from registering with a guild.[109]

Prescriptive texts in America begin with Hezekiah Reynolds's 1812 *Directions for Ship and House Painting*, and Andrew Jackson Downing's 1842 *The Architecture of*

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[107] Ian Bristow. "House Painting in Britain: Sources for American Paints 1615 to 1830." *Paint in America*. ed Roger W. Moss. Washington DC: The Preservation Press (1994), 47-49.
[108] Richard Candee. "Introduction." in Hezekiah Reynolds's 1812 *Directions for Ship and House Painting*. Worcester: American Antiquarian Society (1978), iv.
[109] Jessica P. Dockery. "Pre-1850 Paint in Historical Properties: Treatment Options and Processes." Thesis. Athens: University of Georgia (2005), 12; Dockery alleges this without a source, but legitimacy through guild membership seems in keeping with other crafts and industries of the same time period in England and the United States.

Country Houses and 1858 C*ottage Residences; or, A series of designs for rural cottages and cottage villas, and their gardens and grounds*. These prescriptive texts, coupled with an appreciation for emerging color theory from France in David R. Hay's 1828 *The Laws of Harmonious Colouring, Adapted to Interior Decorations: with Observations on the Practice of House Painting* and Michel Eugene Chevreul's 1839 *The Principles of Harmony and Contrast of Colors and Their Application to the Arts* prescribed a rather expressive and taste-driven series of colors for the home and business. Roger Moss and Gail Winkler identified four major color phases of the nineteenth century, each with its own distinctive color palette: late Federal and Neoclassical (to c. 1840), dominated by white; Gothic or Italianate Revival, or early Victorian (1840-1870), defined by pale earth tones such as dove, fawn, drab, and pale yellow; late Victorian (1870-1890), which switched to darker earthen tones such as brown, slate gray, dark reds, dark greens, and, notably, tertiary colors which are made by mixing two secondary colors;[110] and Colonial Revival (1890-1920), which is marked by a return to pastels and whites.[111] These phases seem to match prescriptive texts as well as several exemplary houses throughout the country. Whether common people or the consumer classes of the nineteenth century followed these directions is unknown.

The texts, however, do have one thing in common—they subvert the role of the craftsman painter. They implore homeowners to consider for themselves how they will paint their homes, and how to communicate taste and social standing with house paint. In

[110] Primary colors are blue, yellow and red. Secondary colors are orange, green and purple. Tertiary colors are between these shades and provide a wide amount of variety in paint color. Moss and Winkler give examples of tertiary colors names: citrine, olive, russet to jog the imagination and to illustrate (pun!) how a painter might demonstrate Hay and Chevreul's color theories such as the law of harmonious colors.
[111] Roger Moss and Gail Winkler. *Victorian Exterior Decoration: How to Paint Your Nineteenth Century American House Historically*. New York: Henry Holt and Company (1987), 16.

Reynolds, he writes that he expects his "directions will be an important substitute for experience."[112] In Hay, "the house-painter" is completing the task of matching colors and refraining from using too many intense shades.[113] Hay's audience was craftspeople primarily, and non-craftspeople building homes second. In Downing, he makes a point of protesting the use of white "by house painters… as entirely unsuitable, and in bad taste."[114] Downing's audience was the homeowner, a person "of correct architectural taste," making a distinction between a craftsperson who would not have any aptitude for artistry and the homeowner who is presumably educated and somewhat well off if he can afford to purchase a cottage and accompanying grounds designed by Downing.[115] Popular women's periodicals such as *Godey's Lady's Book* reprinted Downing's work.[116] Downing's own publication *The Horticulturalist and Journal of Rural Art and Rural Taste* promoted these views heavily in the eastern United States. Though phases of architectural color palettes are identified, Moss and Winkler note that in practice, switching color phases moves slowly. Newly-popular colors "creep" into the palette year by year until they take it over, rather than a quick and smooth transition.[117]

By the end of the 1860s, texts like John Masury's *How Shall We Paint Our Houses?: A popular treatise on the art of house painting: plain and decorative* (1868), and the first edition of *The Painter, Gilder, and Varnisher's Companion* (1850) directed

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[112] Hezekiah Reynolds. *Directions for Ship and House Painting*. Worcester: American Antiquarian Society (1978), 6

[113] David Ramsey Hay. *The Laws of Harmonious Coloring adapted to Interior Decorations with Observations on the Practice of House Painting.* Edinburgh and London: William Blackwood & Sons, (1828.) 54-69.

[114] Andrew Jackson Downing. *Cottage Residences; or, A series of designs for rural cottages and cottage villas, and their gardens and grounds*. New York: Wiley and Halsted. (1858), 14.

[115] Downing, 16.

[116] Roger Moss. "Nineteenth Century Paints." *Paint in America*. ed Roger W. Moss. Washington DC: The Preservation Press (1994), 57.

[117] Moss and Winkler, 24.

their information at any amateur that wished to paint like a professional.[118] They contain, like Reynold's and Downing's works, specific directions for preparing paint such as how to boil linseed oil, what equipment to use, how to grind pigments and what pigments in what amounts will create the painters desired colors. In the 1870s ready-mixed paint (patented in 1867 by Averill) entered the market.[119] Advertisements and sample cards are released by paint companies and offered color variety and ease of application to the amateur house painter. By the 1880s, Moss identifies a correlation between the diversity in architectural styles present in the United States and the availability of ready mixed paint—distinctive architectural styles (Federal Style House, Gothic Cottage, Queen Anne House) require different paints; the more styles there are, the more paint colors are needed to fulfill style requirements for each.[120]

Specific prescriptive texts are unlikely to have made it to Virginia City in the initial building period 1863-1865, but the practicality of knowing how to do basic painting was in demand on the frontier. And indeed, some structures like Colonel Sanders' 1867 gothic cottage on Idaho Street, exhibited the white body trimmed with bright green that Downing decried in his *Cottage Residences*, despite looking almost exactly like a Downing designed cottage.[121] Mary Ronan describes the building as being tasteful, befitting the elite housing of Virginia City's upper class.

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[118] John Masury. *How Shall We Paint Our Houses?: A popular treatise on the art of house painting: plain and decorative.* (New York: Appleton, 1868); Henry Cairy Baird. *The Painter, Gilder, and Varnisher's Companion: Containing Rules and Regulations in Every Thing Relating to the Arts of Painting, Gilding, Varnishing, and Glass-Staining; Numerous Useful and Valuable Receipts; Test for the Detection of Adulterations in Oils, Colours, Etc.* (Philadelphia, 1850)
[119] Moss, 56.
[120] Moss, 57.
[121] John DeHaas. "Colonel Wilbur S. Sanders' House." *If These Walls Could Talk: The History of the Buildings of Virginia City*. eds. John De Haas. Montana Ghost Town Preservation Society (1977), 43; Ronan, 46.

> Mrs. [W.F.] Sanders lived in a little frame house, whitewashed with green shutters on the windows. I thought it was beautiful. It was cozier than any other house I had encountered since we had left the cousins in Missouri. Mrs. Sanders had a board floor in her house and pieces of furniture and bits of carpet that she had brought "from the states." She once told me that she had sold almost all of her Brussels carpet in two and three yard strips to saloonkeepers who had besieged and besought her for it. They used it to dress their bars.[122]

Roger Moss, in his *Paint in America* Chapter "Nineteenth Century Paints" attributes the Civil War and the growth of the railroad network with providing the conditions under which owners of homes and businesses became interested in having variety in paint color. This demand leads to the invention and patenting of ready-mixed paint.[123] The Civil War seemed to touch Virginia City deeply, with Northern Army and Confederate Army supporters both present in the town. The railroad remained several hundreds of miles away from Virginia City until the arrival of the Northern Pacific in Helena in 1883. Ready-mixed paint however, took a long time to follow sentiment to Virginia City.

Getting to Town

Virginia City's entire premise, that is to provide goods, services, entertainment, and housing to miners in the greater Alder Creek area, was based in commerce. After the strike, the miners hoping to make a discovery after narrowly missing the 1862 Bannack strike immediately went to Virginia City to stake out a good claim and potentially make their fortune. Before any infrastructure had been established, before anyone other than

[122] Ellen Gordon Fletcher, diary, 1866, SC 78, folder 1/1, Montana Historical Society.
[123] Moss, 57.

miners and native people were utilizing the land at Alder Gulch, buildings were constructed of natural, available materials: sod, sapling poles, logs, and animal skins. It was mainly anything to protect miners from the harsh winters and springs of Montana. Arata, in her thesis, puts it bluntly: "Paint was not a priority" for this initial period.[124]

Within the first few months, more people arrived at Alder Creek. Several roads accessed Virginia City. It is over these routes that the paint equipment and ingredients would travel. (Figure 2.19) The Bozeman Trail was an Oregon Trail cut-off route to the Montana gold fields, from Casper, Wyoming to Virginia City traveled overland using wagons and stages.[125] Blazed by John Bozeman and John Jacobs in 1863, this route fell into disuse and was abandoned by 1869. This was the most dangerous route, running through Plains Sioux territory could take months to complete. This route was impassable by 1869 after the U.S. Military provoked hostile Sioux.[126]

Another route was the Corinne Road (also known as the Salt Lake Trail) from Ogden, Corinne, and Salt Lake City to Montana via Virginia City and Helena. This 550-mile route was the only route that connected Virginia City and many Montana towns to the Union Pacific, which reached southern Wyoming and northern Utah in 1869.[127] This was one of the only north-south trails in the west in the 1860s and 1870s in a time when connecting the west coast to the eastern states was more of a priority. Flour and foodstuffs were often transported along this route. In the Winter of 1864, after heavy snows, much of the trail could not be passed forcing a riot over the price of flour in

[124] Arata, 33.
[125] Malone et al, 74.
[126] Ibid.
[127] Malone et al, 75, 78.

Virginia City. It could take weeks to travel this route before Wells Fargo And Co.

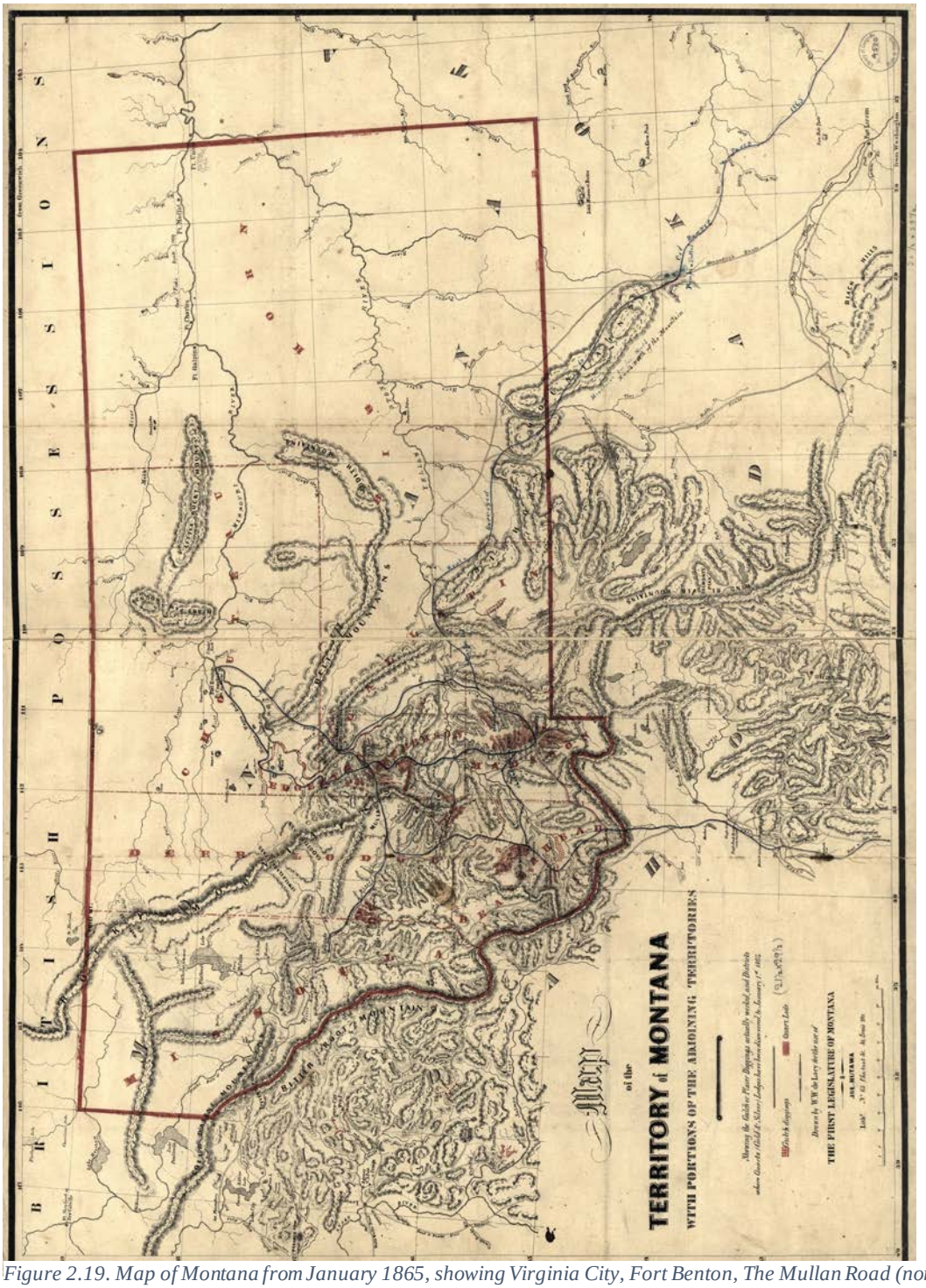

Figure 2.19. Map of Montana from January 1865, showing Virginia City, Fort Benton, The Mullan Road (north), the Corinne Road (south and west), and the Bozeman Trail (east)

Virginia City. It could take weeks to travel this route before Wells Fargo And Co. consolidated stage lines in Montana in 1866.[128] Even at the height of stage travel, Wells Fargo reported that in winter, 1867, a sleigh with passengers and freight between Salt Lake City and Virginia City took three days to arrive.[129]

A third route was the Mullan Road from Fort Benton to Fort Walla Walla via Virginia City. When the rivers were high enough, good could be shipped 3,000 miles up the Missouri River from St. Louis for two months, then shipped overland 265 miles.[130] Any item that could be shipped to St. Louis could, ostensibly, be shipped to Fort Benton. This route was comparatively safer than the other two due to United States military presence shipping goods between forts.[131] Though the overland portion of this route was comparatively shorter than other routes, the time it took to get goods upriver could be incredibly long.

Both individuals and professional freighters moved goods along these routes. Mary Ronan's father, James Sheehan, was a private freighter who took Fort Benton and Salt Lake City routes.[132] A.J. Oliver established the first freight line between Virginia City and Salt Lake City in 1863. Ben Holladay, who would later sell his freight business to Wells Fargo in 1866, started a competitive service the same year.[133] The Diamond R Freighting Company, founded in Virginia City, became the dominant freighter in 1864.[134] According to Malone, Diamond R shipments along the Corinne Road "averaged between

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[128] W. Turrentine Jackson. "Wells Fargo Stagecoaching in Montana: Into a New Territory." *Montana: The Magazine of Western History*, Vol 29, No 1 (Winter 1979), 43.
[129] Virginia Tri-Weekly Post, January 1, 1867.
[130] Arata,
[131] Malone et al, 72-73.
[132] Ronan, 41.
[133] Arata, 34; Malone et al, 78; Jackson, 40.
[134] Malone et al, 75.

six and seven million pounds annually and included everything from tools, machinery, dry goods, and coal oil to whiskey, fresh fruit and carefully packaged eggs."[135] Overland routes however, were seasonal and often would not carry people or goods over snow, or be able to ship up the ice-filled Missouri River.

Road agents also had an impact on these routes. The Henry Plummer gang had been robbing and killing travelers on the roads since the Bannack strike in 1862. Before members of the Plummer gang were hung in Virginia City in January 1864, they also presented an extra hazard to the roads.[136] Nearly every historical resource mentions the Plummer gang when laying out the history of Virginia City—the fear they instilled in the growing town clearly affected Virginians.

Painting Virginia City

Daybooks and ledgers in the Montana Historical Society archives indicate that Virginia City residents relied on professional painters and bought paint by individual ingredients well into the late 1870s, just before ready-mixed paint begins to dominate the national market.[137] Ledgers, such as the Virginia City Druggist and Sundries Shop (1864-1880) ledger, recorded transactions in 1878- 1880 of town residents, including women

[135] Malone et al, 77.
[136] Malone et al, 80.
[137] Moss, 62-63.

buying linseed oil, lead, turpentine, copal and pigments such as umber, lamp black and vermillion oil.[138]

FOUND.

ON THE HEADWATERS OF THE MADISON, about seventy-five miles from this city, one yoke of cattle, one a yellow with a white belly, and the other a dark brown; with white on his belly, and one hind white leg; also, a light iron grey mare. Any person proving property and paying charges can find the same by enquiring at the Saloon of Dr. J. Mearns, Nevada City, Madison county, Montana Territory. JAMES PURDY.
5—4t*

J. T. HENDERSON,
PAINTER AND SIGN WRITER.
Office on Cover Street, Virginia City.
5—6m

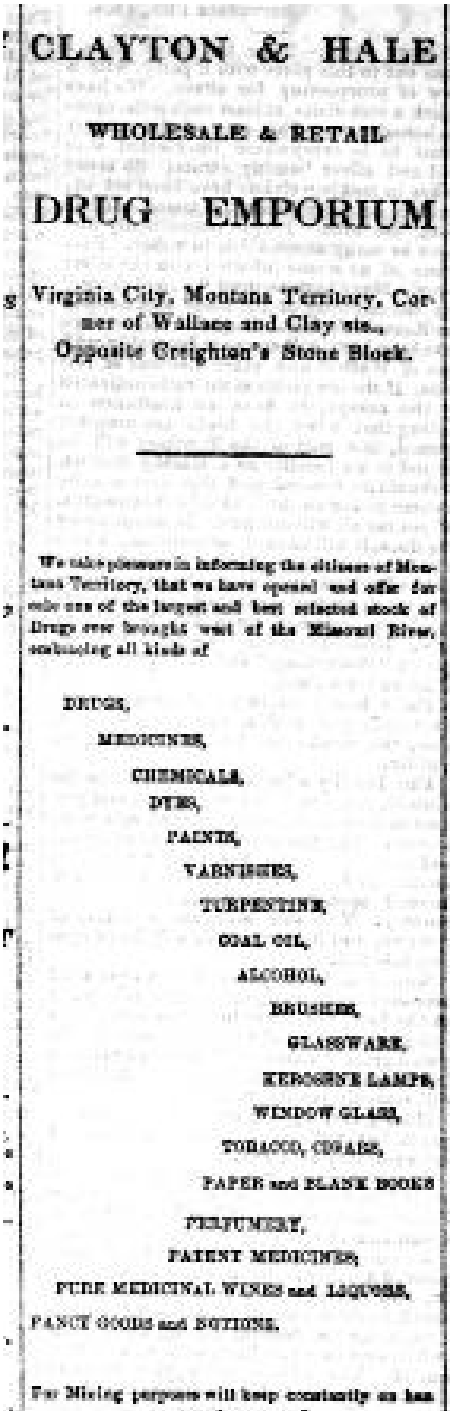
CHAMPION SALOON
Jackson Street, Virginia City, M. T.
CON OREM
Begs to inform the public that he has on hand an assorted stock of the Best Liquors, Cigars, &c. His Saloon is adorned with the best set of SPORTING PICTURES, west of New York.
Private Lessons in Boxing and Sparring Once a Week.

Figure 2.20. J.T. Henderson advertisement in Montana Post, September 24, 1864.

The business owners of Virginia City had access to paint since 1864, when Clayton and Hale's drug store published an advertisement in the second issue, and professional painter J.T. Henderson advertised in the third issue. (Figure 2.20) Clayton

[138] Virginia City Druggist and Sundries Shop [unidentified], records, 1864-1880. Montana istorical Society Research Center. Manuscript MF 137B

and Hale's store carried paint, varnishes, turpentine, brushes, chemical dyes and oils—all that an amateur painter would need to paint his own home or business.[139] (Figure 2.21)



CLAYTON & HALE

WHOLESALE & RETAIL

DRUG EMPORIUM

Virginia City, Montana Territory, Corner of Wallace and Clay sts., Opposite Creighton's Stone Block.

We take pleasure in informing the citizens of Montana Territory, that we have opened and offer for sale one of the largest and best selected stock of Drugs ever brought west of the Missouri River, embracing all kinds of

DRUGS,
MEDICINES,
CHEMICALS,
DYES,
PAINTS,
VARNISHES,
TURPENTINE,
COAL OIL,
ALCOHOL,
BRUSHES,
GLASSWARE,
KEROSENE LAMPS,
WINDOW GLASS,
TOBACCO, CIGARS,
PAPER and BLANK BOOKS
PERFUMERY,
PATENT MEDICINES,
PURE MEDICINAL WINES and LIQUORS,
FANCY GOODS and BUTTONS.

For Mining purposes will keep constantly on han

Figure 2.21. Clayton and Hale Advertisement from Montana Post, September 17, 1864.

[139] Clayton and Hale's Drug emporium advertisement, *Montana Post*, (September 17, 1864), 3

City directories such as the Pacific Coast Directory from 1867 named J.F. Cochran as a house and sign painter in Virginia City, Montana.[140] Cochran, E.E. Chase, J. B. Giffen, and Jacob Dick are described as "painters" and are likely professional house and sign painters ordering goods at the time.[141] (Figures 2.22, 2.23) The city directory for Virginia City in 1884-5, printed with Helena's, describes Patton and Lambrecht as

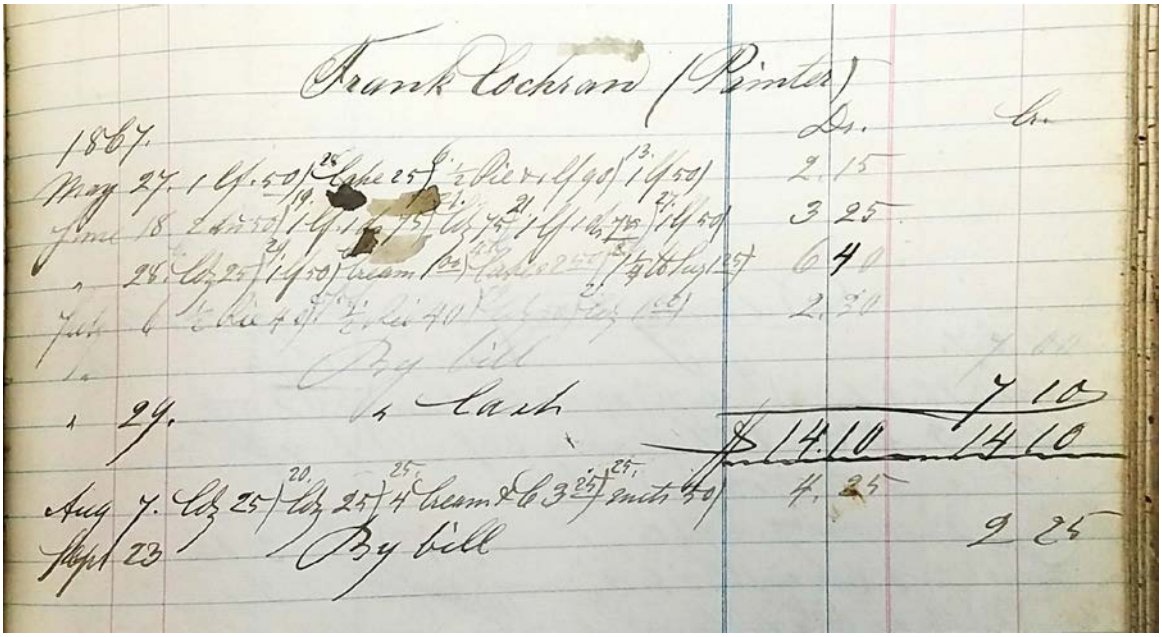


Figure 2.22. Excerpt from Petchner Mercantile Ledger 1867, page 129. (Montana Historical Society)

[140] Kim Barghouti, comp. *Pacific Coast Directory, 1867* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2000. URL: http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=eeT178&_phstart=successSource&usePUBJs=true&gss=angs-c&new=1&rank=1&msydy=1870&msypn__ftp=Virginia%20City,%20Madison,%20Montana,%20USA&msypn=56927&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C29%7C0%7C1862%7C56927%7C0%7C0%7C&gskw=paint&cp=0&MSAV=1&MSV=0&uidh=i61&msydy_x=1&msydp=10&msypn__ftp_x=1&msypn_x=XO&pcat=DIR_CITY&h=23845&dbid=4727&indiv=1&ml_rpos=24

[141] Ibid; Petchner Mercantile Company records, 1866-1868. Montana Historical Society Research Center. Manuscript SC 99; Ancestry.com and The Church of Jesus Christ of Latter-day Saints. *1880 United States Federal Census* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2010. Accessed April 20, 2017 URL: https://www.ancestry.com/interactive/6742/4242183-00788?pid=43326997&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DOHI29%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-c%26new%3D1%26rank%3D1%26msT%3D1%26gsfn%3DThomas%2520%26gsfn_x%3D0%26gsln%3DDeyarmon%26gsln_x%3D0%26msrpn__ftp%3DVirginia%2520City,%2520Madison,%2520Montana,%2520USA%26msrpn%3D56927%26msrpn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C29%257C0%257C1862%257C56927%257C0%257C0%257C%26msydy%3D1880%26cp%3D0%26MSAV%3D1%26MSV%3D0%26uidh%3Di61%26pcat%3D35%26h%3D43326997%26dbid%3D6742%26indiv%3D1%26ml_rpos%3D1&treeid=&personid=&hintid=&usePUB=true&_phsrc=OHI29&_phstart=successSource&usePUBJs=true#?imageId=4242183-00788

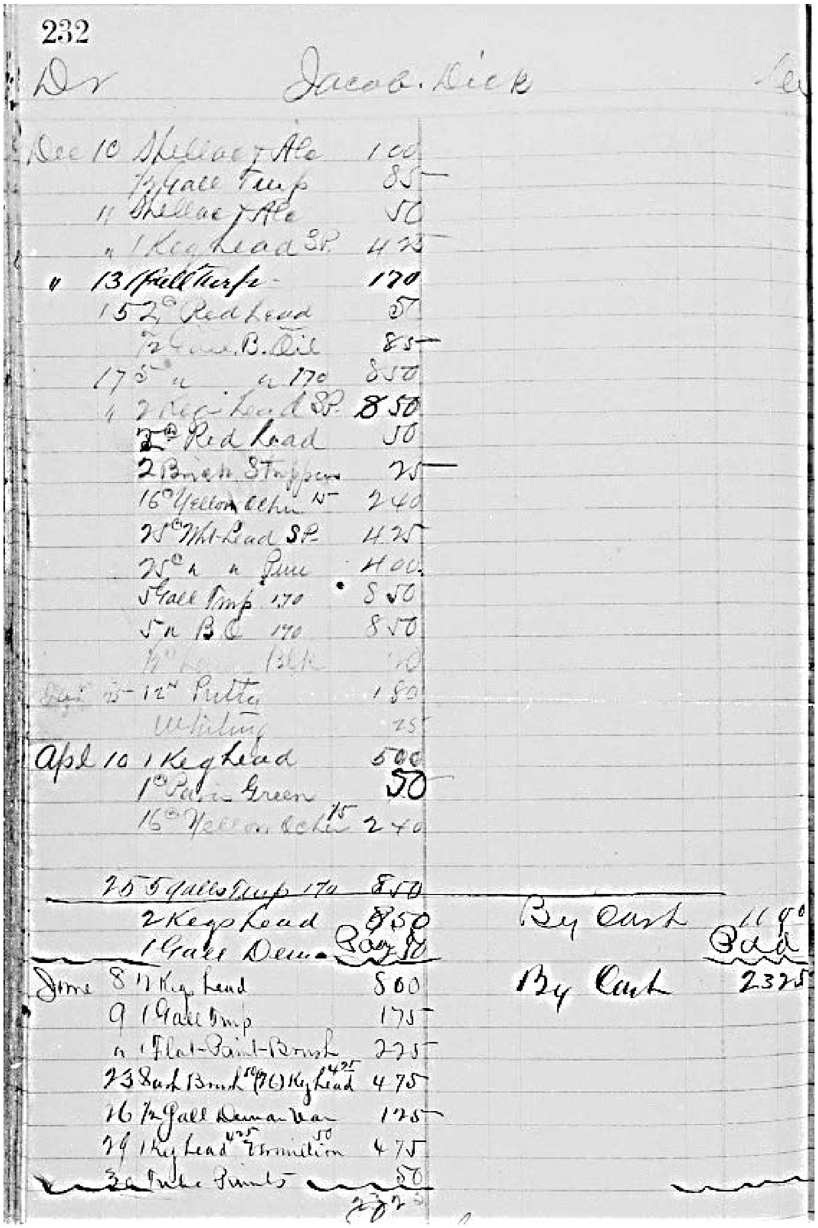
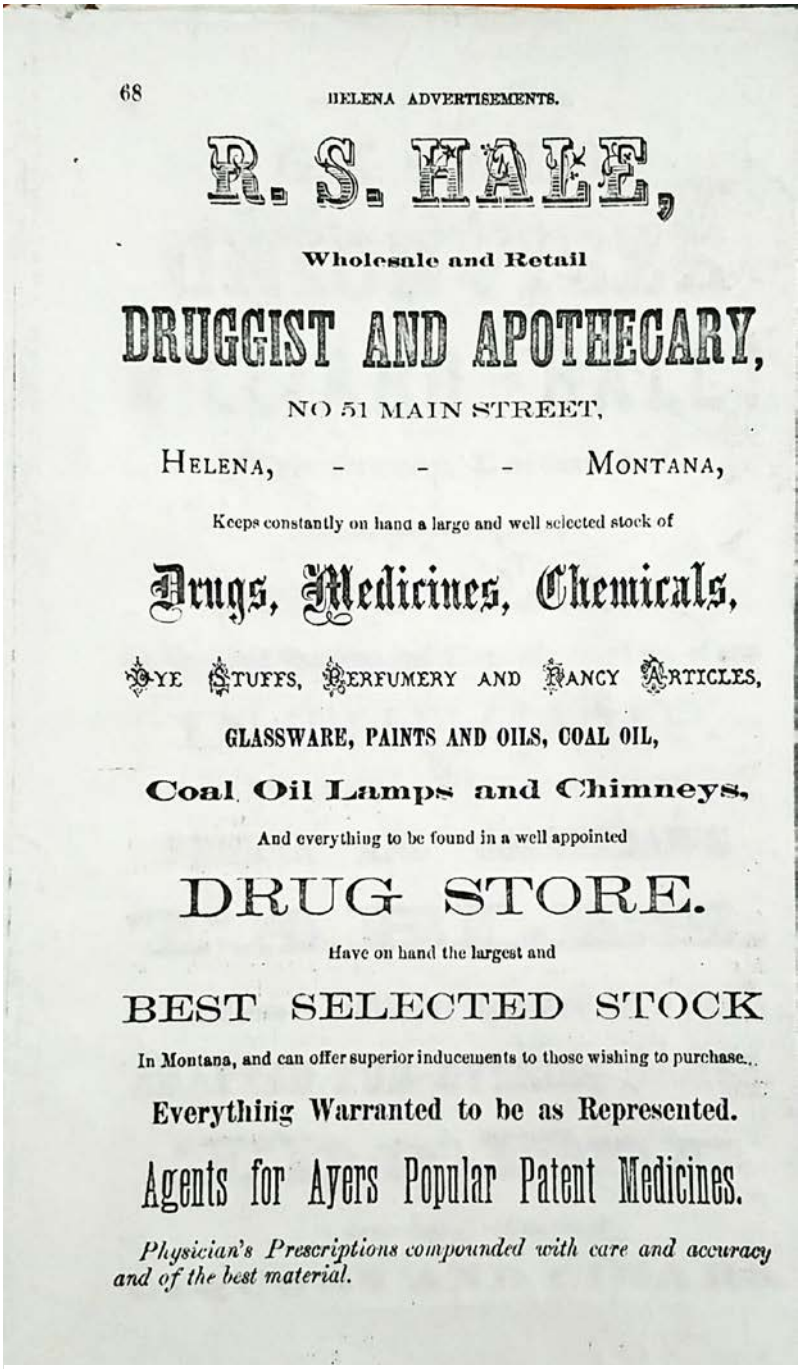

232
Dr Jacob Dick

Figure 2.23. Jacob Dick receipt at the unnamed VC Druggist and Sundry Shop, 1879. (Montana Historical Society)

wholesale and retail grocers that carry lumber, tools, and likely paint.[142] R.S. Hale, a druggist who came to Virginia City in 1864 and moved to Helena in 1865, sold "glassware, paint and oils, coal oil" according to an 1868 advertisement.[143] (Figure 2.24)

[142] R. L. Polk and A. C. Danser. Virginia Business Directory *Minnesota Dakota and Montana Gazetteer.* Volume IV. (1884-5) 113.

[143] Helena City Directory, 1868, 68.



68 HELENA ADVERTISEMENTS.

R. S. HALE,

Wholesale and Retail

DRUGGIST AND APOTHECARY,

NO 51 MAIN STREET,

HELENA, - - - MONTANA,

Keeps constantly on hand a large and well selected stock of

Drugs, Medicines, Chemicals,

DYE STUFFS, PERFUMERY AND FANCY ARTICLES,

GLASSWARE, PAINTS AND OILS, COAL OIL,

Coal Oil Lamps and Chimneys,

And everything to be found in a well appointed

DRUG STORE.

Have on hand the largest and

BEST SELECTED STOCK

In Montana, and can offer superior inducements to those wishing to purchase.

Everything Warranted to be as Represented.

Agents for Ayers Popular Patent Medicines.

Physician's Prescriptions compounded with care and accuracy and of the best material.

Figure 2.24. R.S. Hale advertisement in Helena City Directory, 1868. (Montana Historical Society)

The townspeople's desire to be cosmopolitan overrode the difficulties of getting goods to Virginia City. Paint probably arrived in town at the same time as glass panes—when the conscious decision was made to have modern store that would attract customers and communicate the quality of goods within to the outside world. In this sentiment, Andrew

Jackson Downing's views on "taste" and aesthetics transcends into the frontier. In execution, kegs of lead and linseed oil seem to be available in stores and from Virginia City professional painters.

Ready-mixed paint was also available in Virginia City as early as 1876. Entries in the Virginia City Druggist and Sundries Shop (1864-1880) ledger from 1876 onward indicate that townspeople did not discriminate between buying paint ingredients individually and buying cans of paint.[144] The author assumes that when individual paint ingredients such as linseed oil, lamp black, umber, white lead and red lead are listed, people were buying individual ingredients and mixing paint themselves or giving them to a professional painter they had contracted with. (Figure 2.25) If the ledger lists paint and does not list individual ingredients it is assumed that the customer was buying ready-mixed paint. (Figure 2.26) Ready-mixed paint brands, which might be an easier way to distinguish ready-mixed paint, are not recorded in the ledger. Since the ledger entries that show individual line items are from 1876-1880, and this is after many ready-mixed paints such as Averill and John Lucas are available in the national market, the implication of Virginia City citizens buying ready-mixed paint is not an unreasonable assumption.

Individual store ledgers that describe carrying such ingredients, other than Petchner Mercantile and the unnamed Virginia City druggist and sundries shop, have not survived. Other ledgers available at the Montana Historical Society merely record debts and balances for entries that simply read "merchandise" or short hand for the same.

[144] Virginia City Druggist and Sundries Shop [unidentified], records, 1864-1880

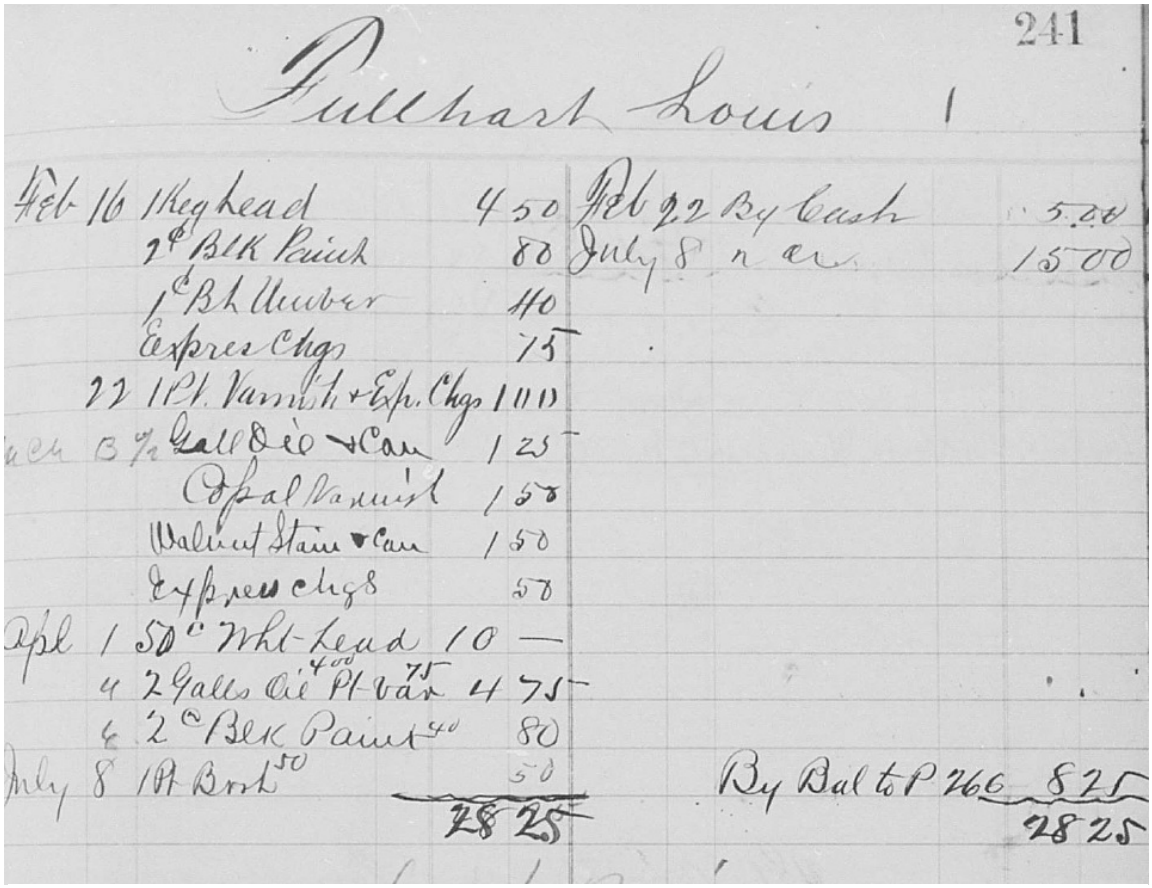


Figure 2.25. Louis Fullhart's ledger entry in 1879 showing individual pigments, paint, stains, and copal varnish February 16 and 22, Also note that Louis paid express charges for his orders. Then white lead, a gallon of oil, a pint of varnish, and black paint in April. In July he buys a single paint brush. (Montana Historical Society)

Professional painters likely moved around counties or states in search of work, hiring themselves on a case-by-case basis rather than remaining in one town permanently. Diaries, daybooks, or ledgers are not available for any of the painters discovered in archival research so learning their rates and whose homes and businesses were painted by professionals is unknown. Neither Cochran nor Chase are present in Virginia City censuses. Jacob Dick does appear in the 1880 census, as mentioned above, but for these few ephemera the presence of professional painters is difficult to detect in Virginia City.

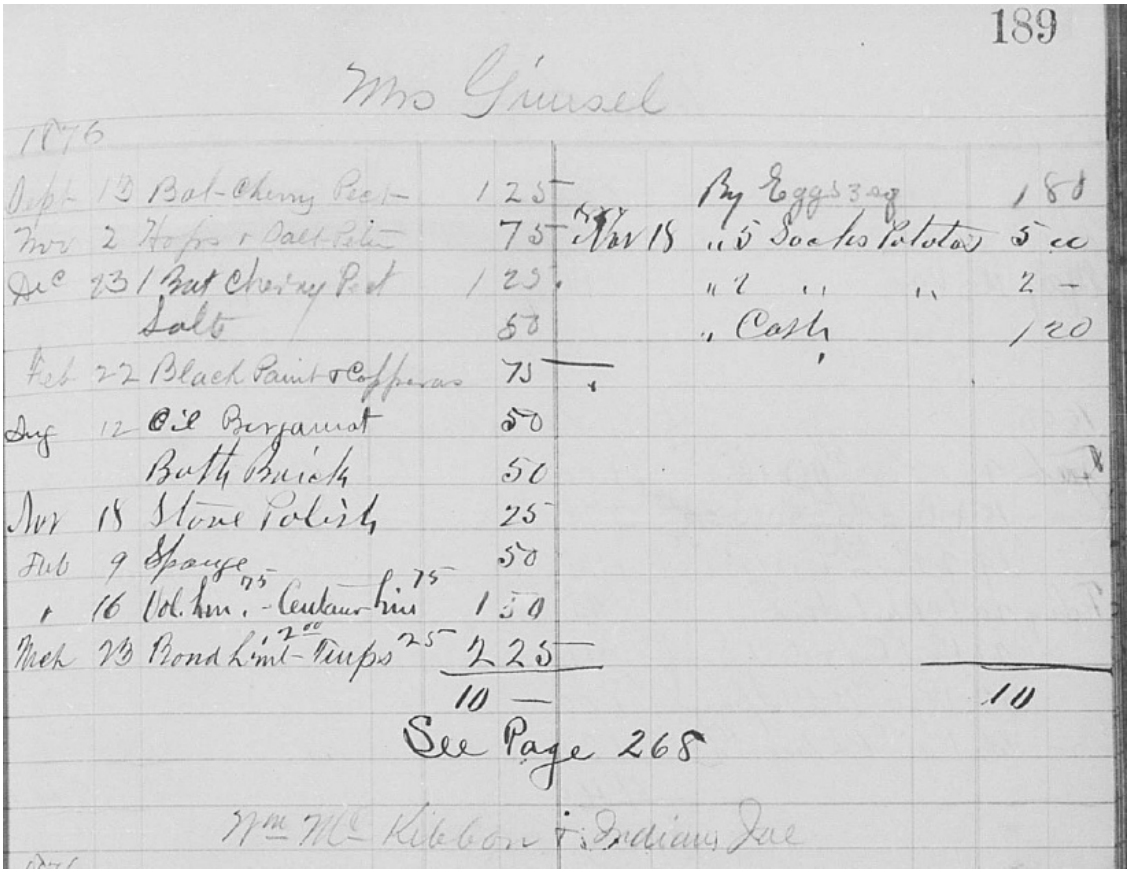


Figure 2.26. A ledger entry for Mrs. Gimsel [sic], for 1876 ordering black paint (pre-made) (Montana Historical Society)

No notes are made by owners either, recounting when they may have added false fronts, windows, or painted their exteriors and signs. The sawn wood in false fronts or the in the gothic arches of the Methodist Church would have been better protected from Montana's weather with a coat of paint. This study will show that each of these buildings does have more than one painting campaign. However, there is not enough primary written evidence to draw a direct link between buildings and when they were painted or by whom.

CHAPTER III

LITERATURE REVIEW

Paint analysis is part of a broader scholarly and professional field within historic preservation. It draws from the practical and scholarly fields of art conservation, architectural history, and chemistry to provide accurate account of paint on a structure, as well as appropriate restoration methods for that paint to researchers, designers, and building stewards. The field has expanded from simple scratch-and-match color sampling used at Colonial Williamsburg in the 1930s to using a variety of microscopic and chemical techniques to sequence and evaluate the chemical materials present in paint. It is not limited to building exteriors, but can be used to learn about any painted surface: building exterior, trim, interior, painted furniture, and more. From paint analysis, we can learn about architectural change over time, an environmental context for the building, and a full understanding of color and style choices through analyzing paint stratigraphy on a building.

Overview of Paint Analysis as a Field

Several themes are present in existing paint analysis research that parallels the transitions in the historic preservation field, itself. Like preservation, first there was a great flourishing of available materials, then there is another wave of corrective literature where many early hypotheses are tested and either refined or discarded. The final period, mirroring preservation, tries to connect paint analysis to the socio-cultural aspects of

historic preservation, with a focus more on what historical paint can teach us about people.

As early as 1914, fine arts conservators A. P. Laurie and Rutherford J. Gettens were the first to have encased samples from fine art oil paintings in wax, cut with a microtome, ground, polished, and viewed under a microscope to address problems in painting restoration.[1] In the studies of architectural finishes, Helen Duprey Bullock used household inventories, wills, diaries, journals, and merchant records to research colonial-era paint at Colonial Williamsburg. Susan Higginson Nash, also at Colonial Williamsburg, was the first to identify and recreate original paint color in Raleigh Tavern in the 1930s.[2] Before World War II, all paint analysis was done without the aid of microscopic and chemical analysis, and it was not until 1948 that Singleton Moorehead at Colonial Williamsburg took advantage of the experiments of fine arts conservators Laurie and Gettens to conduct microchemical analyses.[3] It is based on the art conservator works and the pioneering studies at Colonial Williamsburg that paint analysis was born.

In the late 1960s and 1970s, paint analyses research papers and National Park Service Bulletins were short and to the point, defining how to conduct sampling, what equipment to use and how to perform color matching.[4] Theodore Zuk Penn's 1966 thesis

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[1] Joyce Plesters, "Cross-Sections and Chemical Analysis of Paint Samples," *Studies in Conservation*, Volume 3 (April 1956): 110.
[2] Thomas H. Taylor Jr. and Nicholas A. Pappas. "Colonial Williamsburg Colors: A Changing Spectrum." In *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 88-90
[3] Taylor and Pappas, "Colonial Williamsburg Colors: A Changing Spectrum." In *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 87-95; Dorothy Krotzer. "Architectural Finishes: Research and Analysis." *Association for Preservation Technology Bulletin*, Vol. 39, No. 2/3 (2008), 1
[4] Penelope Hartsthorne Batcheler. "American Association for State and Local History Technical Leaflet 15: Paint Color and Restoration." *History News*, Volume 23, No. 10. Nashville, TN: American Association for State and Local History, (1968), 2-4.

on the components of historical paint, based on his archival research, was first to take principles of fine arts studies in pigments and apply them to architectural finishes.[5] When the earliest methods were put into practice by the Society for the Preservation of New England Antiquities (SPNEA) (now Historic New England at the 1795 Harrison Gray Otis House in Boston, critical restoration issues were exposed concerning the discoloration of the original paint due to ultraviolet light damage.[6] By the 1980s, paint analysts were using more rigorous chemical tests to determine pigment types, as well as ultraviolet light microscopy and bleaching to bring samples back to their original hues.[7]

In the 1990s and early 2000s, paint researchers begin connecting the choice of paint at a residence, commercial, or civic buildin, with culture, economic class, and personal taste.[8] More rigorous testing is also available to test paints and determine their chemical content for replication such as Fourier transform infrared (FTIR) spectroscopy, microchemical analysis such as Scanning Electron Microscopy with Energy Dispersive X-Ray Spectroscopy (SEM-EDS), fluorescence microscopy, polarized light microscopy (PLM), scanning electron microscopy, and gas chromatography-mass spectrometry

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[5] Theodore Zuk Penn. "Decorative and Protective Finishes, 1750-1850: Materials, Process, and Craft." *Bulletin of the Association for Preservation Technology*, Volume 16, No. 1, Decorative Finishes. (1984), 4-45.

[6] Morgan W. Phillips. "Discoloration of Old House Paints: Restoration of Paint Colors at the Harrison Gray Otis House, Boston." *Association for Preservation Technology Bulletin*, Vol. 3, No. 4 (1971), 4-5.

[7] Bonnie Wehle Parks. "Aurora Blue: Identifying and Analyzing Interior Paint in an Oregon Utopia, ca. 1870." Thesis. University of Oregon (1986)

[8] Matthew J. Mosca. "Paint Decoration at Mount Vernon: The revival of Eighteenth Century Techniques." *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 105-106, 112-115; Myron O. Stachiw. "The Color of Change: A Nineteenth Century Massachusetts House." *Paint in America: the colors of historic buildings*, edited by Roger W. Moss, 129-137. (Washington D.C.: Archetype Press, 1994), 129-130; Frank G. Matero and Joel C Snodgrass. "Understanding Regional Painting Traditions: The New Orleans Exterior Finishes Study." *Association for Preservation Technology Bulletin*, Vol. 24, No. 1/2 (1992): 36-52.

(GCMS).[9] These tools were used in the fine arts world and slowly were introduced as a methodology for historic paints analysis.

In the 2000s and 2010s architectural paint research has expanded to include all types of architectural finishes including plasters and wallpapers and has expanded to include non-Eurocentric geographical regions that have different paint and preservation traditions such as China, Israel, Japan, and Taiwan. An International Architectural Paint Research Conference has met six times in Europe and New York City to discuss and share different conservation methodologies as well as discuss paint research standards. Most importantly, as a result of this conference, architectural finishes research is being published and shared internationally, working further towards creating internationally appropriate standard operating procedures to define the field.[10]

Despite the proliferation of available new technology, paint studies contain four components: sampling, where physical remnants of paint are removed and preserved for testing; microscopic analysis, where a microscope with 40x-200x magnification can be used to determine paint stratigraphy; color matching, where samples are compared to a standardized color standards such as Munsell or CIE Labs; and analysis of paint composition, which is based on the needs of the project, and can employ various techniques to determine pigment and medium composition.[11]

In existing paint analysis case studies from the eastern United States, such as at Mount Vernon, the Aiken-Rhett House, and Matero and Snodgrass' work in New

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[9] Andrea M. Gilmore. "Analyzing Paint Samples." In *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 172-185; Krotzer, 4-5.
[10] Line Bregnhoi, ed. *Paint Research in Building Conservation*. London: Archetype Publications (2006); Mary Jablonski and Catherine Matsen, eds. *Architectural Finishes in the Built Environment*. (London: Archetype, 2009)
[11] Krotzer, 3-5; Jessica Parker Dockery. "Pre-1850 Paint in Historical Properties: Treatment Options and Processes." Thesis. University of Georgia (2005), 31.

Orleans, a major research arc correlates access to expensive pigments with higher economic status: i.e. access to vermillion pigment to achieve red paint color indicates high economic class, whereas red lead mixed with Spanish brown and white lead pigments to achieve red paint color indicates a low economic class and consequently fewer color choices. Similarly, contracting with a professional house painter, rather than a building owner painting their own property, can also communicate status.[12] As other researchers have pointed out, when exploring this correlation, a researcher should find regional differences in color palette and diffusion of new paint technology.[13]

Shortcomings of Paint Analysis

When being critical of the field of paint analysis, it is important to remember that the field is relatively young and not focused entirely on providing comparable case studies for every location, medium, or architectural style. The purpose of the field is ultimately to aid in restoration—even the smallest of projects have the eventual goal of restoring an original painting, or re-painting a degraded specimen i to achieve the historically authentic aesthetic that the original designer, builder, or craftsperson had in mind. Usually when architectural paint is restored, there is a focus on obviously artistic and finely crafted examples, such as interior murals, monumental art, churches, or the homes and recreational places of the cultural and economic elite.[14] This leads to a

[12] Mosca (1994), 124-127; Caroline Alderson. "Re-creating a 19th Century Paint Palette." *Association for Preservation Technology Bulletin*, Vol. 16, No. 1, Decorative Finishes (1984), 53.
[13] Susan Buck. "Paint Discoveries in the Aiken-Rhett House Kitchen and Slave Quarters." *Perspectives in Vernacular Architecture*, Vol. 10, Building Environments (2005), 185-198; Sara B. Chase, "Painting Historic Interiors." *Preservation Briefs 28*. (Washington D. C.: U. S. Department of the Interior, 1992), 2. Dockery (2005), 3; Matero and Snodgrass, 36-39; Bonnie Wehle Parks. "Aurora Blue: Identifying and Analyzing Interior Paint in an Oregon Utopia, ca. 1870." Thesis. University of Oregon (1986)
[14] Thomas Danzl. "Paint Research on 20th-century Architecture: The Case of the Bauhaus Buildings in Dessau." *Paint Research in Building Conservation*. London: Archetype Publications (2006), 37-39;

client/commission bias: the only research done is on buildings chosen for restoration by clients. This leads to the bias in paint restoration for houses of historical figures and the economically elite groups, while discounting vernacular, common buildings and disenfranchised economic or cultural groups.

While paint analysis can do its job and help establish the narrative of the building, showing architectural change through time and providing paint strata for the researcher, this still limits the types of narratives to the choice of color and contemporary tastes to a privileged few.[15] This is akin to the trouble present in historic preservation as a field, where researchers are forced to distinguish between buildings based on their perceived significance—and in practice, preserve exceptions not common buildings and contexts. So, while a historic preservationist might wish to overcorrect, paint conservationists deem it most important to understand "how paint was used and how it was applied over various periods of time" instead of using paint analyses to provide insight on people and performance of a building over time.[16]

There is a strong predominance of paint analysis studies in the eastern United States and Europe. Pioneering studies such as Frank Welsh's work at Monticello, George Fore's work on the Joseph Bell House in North Carolina, Morgan Phillips and the SPNEA at the Otis House in Boston, or even the work of Susan Buck at the Aiken-Rhett slave quarters in South Carolina all have a distinctive eastern United States focus.[17]

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[15] Helen Hughes. "The Potential of Architectural Paint Research in Building Analysis and Conservation." *Paint Research in Building Conservation*. London: Archetype Publications (2006), 4.
[16] Mary Jablonski. "Do You See What I See? Historic Paint Colour Investigations." *Paint Research in Building Conservation*. London: Archetype Publications (2006), 50.
[17] Frank Welsh. "Microchemical Analysis of Old Housepaints with a Case Study of Monticello." *The Microscope*. Volume 38, No. 3 (1990); George Fore, The Joseph Bell House, Beaufort, North Carolina Historic *Finishes Analysis*, n.p., 2001; Morgan Phillips and Norman Weiss, "Some Notes on Paint Research and Reproduction", Association

These researchers borrowed heavily from the art conservation world, and when innovative art conservation techniques or technology was available to restore a painting, it was quickly applied to architectural paint in eastern sites. Mary Jablonski, writing about New York cast-iron buildings, noted in 2006 that few systematic studies of historical architectural paints had been done for specific regional areas and attributed the research shortfall to lack of clients or commissions to do the work.

There is also a strong predominance for formal architecture in these paint case studies. Even Susan Buck's painted slave quarters cannot escape its context within the fine, upper class properties of the Charleston elite and cannot express regional adaptation or diversity in architectural form and material. Other case studies address the houses or recreational spaces of the east-coast elite. Though there is plenty that paint analysis can offer the field of vernacular architecture, study of painted finishes in vernacular structures is not formally addressed. The closest that a formal, published paint study comes to analyzing truly vernacular, commonplace architecture is Frank Matero and Joel Snodgrass' 1992 case study in New Orleans that explored regional paint traditions as applied to Creole cottages, Creole and American townhouses, shotgun houses, and two-story front gallery houses on the Vieux Carré.[18]

In the 1980s and early 1990s, paint analysis began to gain interest among amateurs looking to paint their historical Victorian homes. This interest, and the popular "painted lady" boutique Victorians in San Francisco, constitute some of the earliest and only paint research in the American West. Victorian houses in San Francisco of the

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for Preservation Technology Bulletin Vol. VII, No. 4, 1975; Susan Buck. "Paint Discoveries in the Aiken-Rhett House and Slave Quarters. *Perspectives in Vernacular Architecture*, Vol. 10, Building Environments (2005), pp.185-198

[18] Matero and Snodgrass, 37-40.

Italianate or Queen Anne traditions were translated into their west coast environment with bright colors and pastels.[19] In an effort to correct the trend and to inspire owners of these buildings to favor historically accurate paint schema, Roger Moss and Gail Winkler published a series of books on accuracy in Victorian house painting: *A Century of Color* (1981), *Victorian Exterior Decoration: How to Paint Your Nineteenth Century American House Historically* (1987), *Victorian Interior Decoration: American Interiors: 1830-1900* (1992). Other books, such as a 1976 Athenaeum Library reprint of the F.W. Devoe Paint Company's 1885 text *Exterior Decoration: A Treatise on the Artistic Use of Colors in the Ornamentation of Buildings and a Series of Designs, Illustrating the Effects of Different Combinations of Colors In Connection With Various Styles of Architecture*, also lent support to historical preservationists interested in accuracy and prescribing authentic colors to the non-professional homeowner.

While informative, Moss's body of work overwhelmingly presents a history of prescriptive paint literature, and a modern prescriptive text for homeowners that is not supported by formal paint analysis like the case studies listed above. Moss and Winkler's prescriptive texts fail to take their research further and test the prescriptive literature against physical examples of Victorians in California to see how pervasive reliance on prescriptive texts was in the 1840s-1890s. The work, in short, is untested. All studies work primarily with established, formal architectural examples in the eastern United

[19] Roger Moss. *Century of Color: Exterior Decoration for American Buildings, 1820-1920*. New York: American Life Foundation (1981), 14

States, leaving a large gap in knowledge for researchers. No resources, to date, exist using examples from an American Western boomtown.[20]

Comparable Paint Analyses

A few student theses briefly touch on western sites that are not owned by cultural elites or are culturally transplanted from the eastern United States: the first of these is Bonnie Wehle Parks' thesis on the Aurora Colony in Oregon. Parks' site was formed by a sect of religious separatists that left Pennsylvania to form a utopian community in Oregon. Parks tested paint at the site looking specifically for Prussian Blue. As blue pigment on architectural features was believed to be a distinguishing feature of the Aurora Colony, Parks' thesis sought to determine whether the faded light shade of blue was the original paint color or whether it had faded from a more vibrant hue.[21]

The second of these is Jocelyn Chan's 2015 thesis on plaster pigments at Mission San José de Tumacácori in Arizona, a Spanish mission from 1801, and now a National Historic Site managed by the National Park Service. Chan uses the latest technologies, cross-sectional analysis by optical microscopy, microchemical analysis, particle dispersion, scanning electron microscopy with energy dispersive x-ray spectroscopy (SEM-EDS), Raman microscopy and Fourier transform infrared spectroscopy (FTIR), and finally thin-section petrographic analysis to analyze samples from the site and

[20] Some international examples of painted finish studies take place in the United Kingdom, Norway, the Netherlands, Canada, China, and Israel, to name a few, as well as some studies colonial Puerto Rican buildings as of 2016. Paint analysis is not limited to the United States, but when it is, it is limited to the Eastern United States.
[21] Parks, 8.

identify original pigments to help the National Park Service develop better restoration techniques.[22] While this thesis has been the most helpful in developing a methodological approach and research goals, it examines Spanish colonial architecture of the American Southwest, an established style of colonial architecture with regional adaptation using adobe and locally available material as well as traded pigments. Chan's thesis on Tumacácori being culturally and regionally unrelated to Virginia City's mining rush, as well as being of a different time periods, paint mediums, and construction techniques, make it a poor site-to-site comparison.

Conversely, studies of the American Western mining or other industrial communities do not address paint. C. Eric Stoehr's book *Bonanza Victorian* on the architecture of mining towns in Colorado gives an overview of residential, commercial, institutional and industrial styles common in most Colorado mining towns. Despite its publication in the 1970s, before the field of vernacular architecture had really taken off, Stoehr gave an excellent description of vernacular structures common in mining towns such as false-front architecture and log buildings encased in sawn wood to hide their less refined beginnings.[23] Though his book contains example photographs of painted buildings and even a long description of cast-iron fronts which must be painted in order to be preserved against the elements, and a description of "unpainted pine cribs" signaling brothels in Cripple Creek, Stoehr frustratingly does not address painted finishes

[22] Jocelyn Chan. "An Investigation of the Painted Finishes of Mission San José de Tumacácori's Façade: At the Interface of Materials Analysis, Conservation, and Cultural Confluence" Thesis. University of Pennsylvania. (2015)
[23] C. Eric Stoehr. *Bonanza Victorian: Architecture and Society in Colorado Mining Towns*. Albuquerque: University of New Mexico Press (1975), 61-66

or color whatsoever.[24] It seems reasonable to conclude that Stoehr simply overlooked paint as a possible social informant and important component of the built environment. Today this seems an oversight, but based on the publication date of the book, paint analysis was simply not as finely formed as it is today.

Corri Lyn Jimenez' 2000 University of Oregon thesis on Bodie, California's built environment and architecture might have been a good comparison for Virginia City. Bodie is also a gold mining boomtown, established in 1876, experiencing its gold boom in the late 1870s after mining in nearby Virginia City, Nevada had slowed.[25] Today, the site is also a heritage tourist site, managed by California State Parks and presented in a state of arrested decay.[26] Jimenez gives an excellent overview of the town's architecture, both vernacular styles and formal, residential and commercial building forms, and focuses specifically on a "quintessential and vernacular residential house in Bodie, as well as other mining towns in the west."[27] She describes this as the regular rectangular, light-framed house, with a lean-to addition on the rear or side of the building, citing fifteen extant examples in Bodie as of 1999.[28] Jimenez dedicated several pages of her thesis to architectural details at Bodie, and described specialty windows and doors, hardware, decorative scrollwork and decorative details like a lozenge-and-quatrefoil bargeboard, pressed metal ceilings, and wallpaper, but failed to discuss painted finishes on interior or exterior in her overviews.[29]

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[24] Stoehr, 67-77, 103-107; Stoehr's 1975 book is based on his 1974 thesis from University of New Mexico: "Victorian Mining Communities of Colorado: An Investigation of a Society Through Its Architecture."
[25] Corri Lyn Jimenez. "Bodie, California: Understanding the Architecture and Built Environment of a Gold Mining Town." Thesis. University of Oregon, (2000), 38-39.
[26] Jimenez, 54-59.
[27] Jimenez, 106.
[28] Jimenez, 106-107.
[29] Jimenez, 107-110.

It is in her depictions of individual buildings as case studies that Jimenez reveals the potential colors of Bodie. The James S. Cain House built in 1879 is a "white", elaborate high-style Classical Revival building.[30] The Lottie Johl House front façade was painted red with double-bracketed one-over-one windows trimmed with red or pink. The Johl interior shows evidence of wood graining, a painting technique to give the a richer or more expensive wood finish. Other interior colors include a sage green and mustard yellow.[31] Jimenez does not clarify whether these are original finishes or simply finishes present at the time of her survey. Jimenez falls short in elaborating further on color schema for her other "quintessential" vernacular residences or for commercial architecture. Frustrating Jimenez, like Stoehr, photographed many painted buildings without mentioning their paint in their architectural descriptions.

Missing the Mark: Architectural Studies in Virginia City

Several architectural studies of Virginia City, Montana are of note for the purposes of this thesis. The first of these is John DeHaas, Jr.'s 1964 *Montana's Historic Structures,* Volumes 1 and 2 which contain architectural descriptions of buildings in Virginia City and around Montana. At Virginia City, DeHaas documented the Colonel W.F. Sanders House (b. 1867), Content Corner (b. 1864), and the Madison County Courthouse (b. 1875-1876).[32] Other buildings in the report are from Bannack, Fort Keogh, Elkhorn, Stevensville, Fort Missoula, Granite, Helena, Bozeman, and Fort Logan in Montana as well as sites in Idaho and Wyoming. DeHaas's reports do have a space

[30] Jimenez, 116.
[31] Jimenez, 130-131.
[32] John DeHaas, Jr. *Montana's Historic Structures*. Volume 1. Collaborative publication between National Park Service and Montana State College (1964), 1-56.

under "Technical Description of the Interior" for each building for a discussion of interior finishes but did not describe paint campaigns, building color, or signs. Instead, he used the space for describing plaster or metal detailing, such as pressed metal ceilings.

Laura J. Arata's 2009 thesis from Washington State University is up-to-date and draws interesting conclusions about the social fabric of Virginia City. Her study focuses on the Buford Store (1878) and the McGovern-Goldberg Store (1863) on Wallace Street. The McGovern-Goldberg store is a building included in this thesis' case study, thus Arata's thesis was particularly relevant. Arata provided engrossing and exhaustive research on two businesses of Virginia City that bookend the period between 1874 when Virginia City lost the state capital to Helena and 1944 when Charles Bovey began to turn the town into a heritage tourist attraction.[33] Arata does discuss paint in a passing mention of E.E. Chase, a local house, sign, and carriage painter present in Virginia City 1876, though Chase was of no direct relation to her study buildings.[34] Her thesis topic covered historical consumerism rather than specifically architectural finishes, but Arata does a good job of mentioning the possibility of refined taste transferred from eastern states to the remote west.

Kingston Heath, in his 2014 article "Buildings as Cultural Narratives," discusses architectural progression and African-American lifeways at the Coggswell-Taylor House in Virginia City. While providing a good rendering of the house and adjoined store throughout its phases of existence and showing the building's growth over time, Heath's paper does not specifically discuss paint. The finishes discussed by Heath are limited only to the wallpaper finishes on the house's interior, using them as a reflection on the

[33] Arata, 206-210.
[34] Arata, 93.

personal taste and economic means of Minerva Coggswell, the inhabitant to whom he attributes interior wallpaper changes.[35] Heath employs a decidedly anthropological approach to the Coggswell-Taylor House, interpreting architectural changes through the people using the building, and explaining additions and building intricacies as the outcome of owner choices and personal circumstances. While an interesting paper, and valuable for its discussion of African-Americans in the mining west where they are often rendered invisible due to current and past institutional racism, delegitimization, and erasure, the paper was not intended as a discussion of paint as much as it examined performance theory at the Coggswell-Taylor House.

Finally, and perhaps most difficult to discuss is the paint analysis by Montana Heritage Commission historic preservationist and archaeologist Jeffrey MacDonald presented in 2008 and published in 2009.[36] A paint analysis of sorts has already been attempted at the Daems-Corbett House in Virginia City, however there are several serious pitfalls with the study that eliminate including it as a comparable case study. The first is that even though MacDonald presented his paper at a conference, published his paper in a peer-reviewed journal, and wrote a supporting report of his work for the Montana Heritage Commission, he failed to cite any sources in any of his works. This makes MacDonald's conclusions and historical research difficult to decipher and impossible to replicate. Second, his scope for the Daems-Corbett study is weighted towards the non-vernacular example of a high-ranking official's home, rendered in the Gothic Cottage

[35] Kingston Heath. "Viewpoint: Buildings as Cultural Narratives; Interpreting African American Lifeways in a Montana Gold Mining Camp." *Buildings and Landscapes*. Volume 21, Number 2 (Fall 2014), 11.
[36] Jeffrey MacDonald. "The Historic and Decorative Finishes of Virginia City, Montana: a case study." *Architectural Finishes in the Built Environment*. eds. Mary Jablonski and Catherine Matsen. London: Archetype (2009), 226-234; Jeffrey MacDonald. "The Historic and Decorative Finishes of Virginia City, Montana: The Doctor Daems and Corbett Residence Case Study." Presented to the Third International Architectural Paint Research Conference. New York, NY: Columbia University. (2008)

Style, and is not a good comparison to the general population of Virginia City. The Daems-Corbett House was a private residence, modeled closely on an Andrew Jackson Downing style gothic cottage, located off the main street on Idaho Street, and owned by upper class town residents Dr. Daems, first doctor and first mayor of the town, and later by John Corbett, a federal government surveyor and cartographer. Both men were wealthy and would have had access to materials not available to the average or even the above- average Virginia City Residents. These two figures are exceptional historical figures. There are other discrepancies with the report, mostly lack of sampling procedure, lack of testing explanations, lack of citable sources, and in general, missing critical information that would be necessary to repeat MacDonald's experiment. The Daems-Corbett study is a poor example of a paint study, failing to meet the lowest benchmark standards for the field of paint analysis, as well as a relatable study building.[37]

[37] Frank Welsh. "Who is an Historic Paint Analyst? A Call for Standards." *APT Bulletin: The Journal of Preservation Technology*. Vol. 18, No. 4 (1986), 4-5.

CHAPTER IV

METHODOLOGY

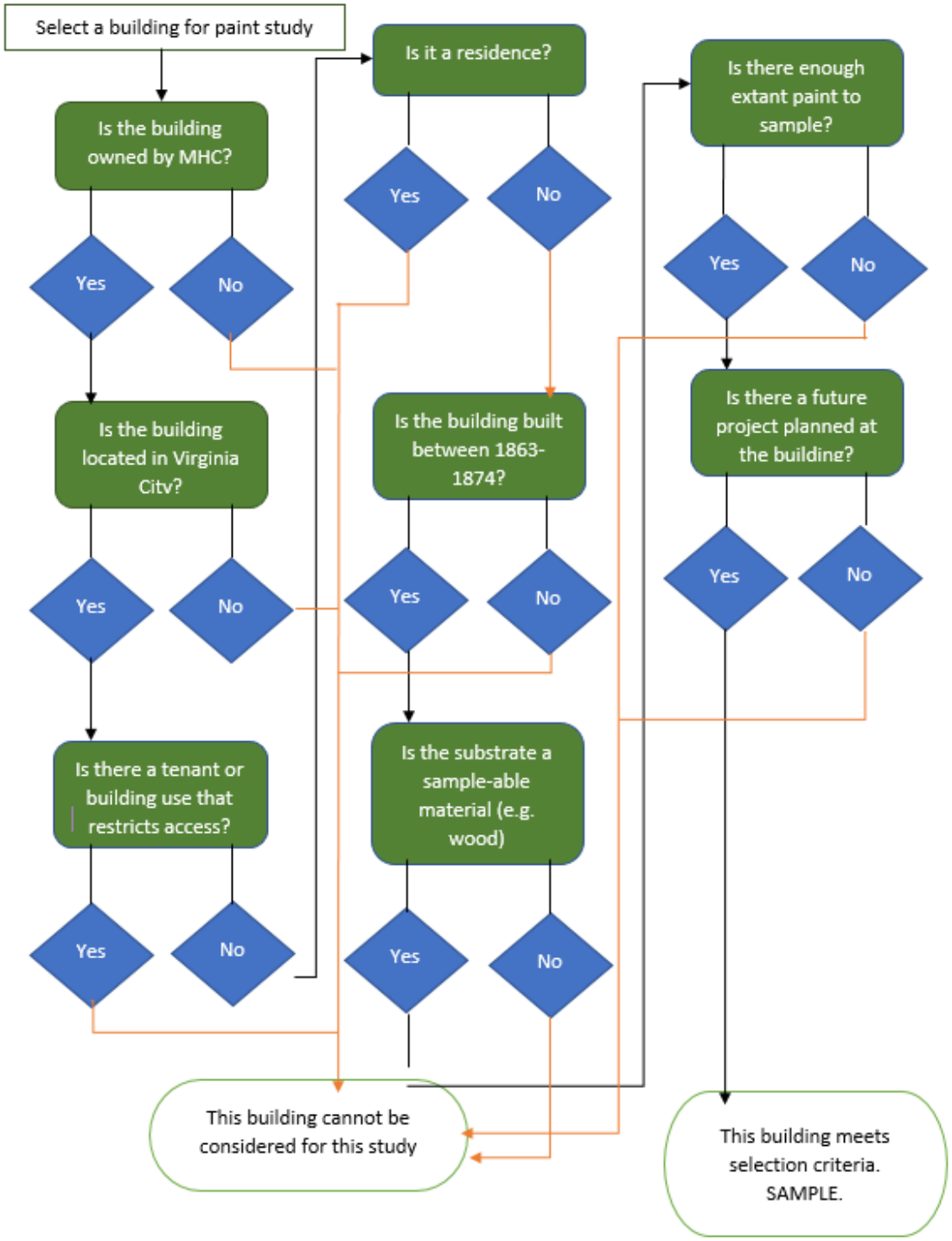
This chapter establishes which buildings are chosen for sampling and why, what parts of buildings are sampled, how many samples are taken, and how samples were analyzed. Building selection is explained in Part 1, culminating in a decision flow chart. In Part 2, field methodology is discussed, explaining how samples were taken and discussing field conditions. In Part 3, the chapter will discuss laboratory methodology including conditions, equipment, and items for future study. Fieldwork for this study was conducted August 22, 2016 to August 31, 2016, with roughly one to two days spent sampling each building. Sample testing took place from February 2, 2017 to March 3, 2017. More detail will be provided in Part 2.

Part 1. Site Selection

The parameters of the study were limited to buildings included in the Virginia City National Register of Historic Places nomination.[1] Building site selection was determined using a set of criteria developed based on access (publicly owned vs. private), occupancy (in use vs. interpretive display vs. vacant), construction date, building integrity (high integrity vs. altered vs. reconstructed), substrate material, and paint integrity. (Figure 4.1) Below, I will define each of these criteria and how they narrowed the sample group to the five buildings included in this study.

[1] Published 1966

Figure 4.1. Building Selection Decision Flow Chart.



One of the primary criteria for inclusion in this study had to do with access of the researcher to buildings covered in the field investigation. Over two hundred buildings in Virginia and nearby Nevada City comprise the Virginia City National Historic Landmark District; they are in the care of the Montana Heritage Commission (MHC).[2] According to the Virginia and Nevada City Historic Site Management Report, an audit published after the state of Montana purchased the site from Bovey Restorations in 1997, MHC buildings account for nearly half of all buildings in Virginia City.[3] Nonetheless there is still a great deal of private property that was not considered for this study due to lack of access. In my attempt to simplify access and to reduce the number of sample-able buildings that could be studied in the limited time frame, buildings that were not directly owned by MHC were not considered for the study. No buildings from Nevada City, Charles Bovey's other preservation site and neighboring town to Virginia City, were considered. Though Nevada City has a large stock of period appropriate buildings, many buildings at Nevada City have been heavily altered, reconstructions, or moved from other sites around Montana.

Access was complicated because some buildings, especially residences, were owned by MHC but leased to business owners and town residents for their use. Restaurants, art galleries, and souvenir shops occupy many MHC buildings along Wallace Street, the main thoroughfare. Sampling often involved being on a ladder, blocking access to buildings, being on the roof of a building, as well as photographing the building in detail. Rather than seeking consent to photograph from every commercial

[2] Montana Heritage Commission. "Strategic Plan." (2013), 2.
[3] Montana Legislative Audit Division. "Virginia and Nevada City Historic Site Management Report." Performance Audit. Report to the Legislature. Legislative Audit Division, 2003. 3

occupant, buildings that were purely interpretive exhibits or closed to the public and unoccupied were chosen.

The study was further limited according to building type. As discussed earlier, a paint study has already been carried out by MHC staff on one privately-owned historic residence in Virginia City, therefore this study will focus on non-residences.[4] Non-residences may make relevant models for studying the intersection of the built environment and cultural expression, because building owners are more likely to be motivated to do upkeep on their place of business as it presents a public space to their community. While one's house is a private space to which the home-owner can control entry, businesses are public and building owners will rarely exclude potential income sources (i.e. paying customers). Paint can also be a tool of attraction to a business venue. In short, I theorize that building owners are likely to undertake preventative maintenance on their businesses and make them visually attractive to customers.

With access issues and building type classification narrowing the pool of buildings under investigation, the next measure was to limit construction dates. Only buildings constructed during the original gold rush settlement period (1863-1865) and the period when Virginia City was the Territorial Capital (1865-1874) were considered. This can be interpreted as limiting the study to buildings of high historical significance—those that match the period of significance for Virginia City's National Register Historic District (1976) and National Landmark designation (1997). Reconstructions of buildings

[4] Here I refer to the Daems-Corbett study carried out by Jeff MacDonald, published in 2008/2009. Jeffrey MacDonald. "The Historic and Decorative Finishes of Virginia City, Montana: a case study." *Architectural Finishes in the Built Environment*. eds. Mary Jablonski and Catherine Matsen. London: Archetype (2009), 226-234; Jeffrey MacDonald. "The Historic and Decorative Finishes of Virginia City, Montana: The Doctor Daems and Corbett Residence Case Study." Presented to the Third International Architectural Paint Research Conference. New York, NY: Columbia University. (2008)

from this period were not considered, nor were heavily altered buildings, such as store fronts where the original first story store front had been removed and replaced with glass plate. Limiting by integrity and construction date did very little to limit the buildings under consideration, as much of the building stock is from these two periods.

Buildings with an easily sampled substrate, i.e. wood, were also the only buildings considered, removing several cast iron, stucco, and stone store fronts that dominate the east side of Wallace Street, the main street. Though several log structures were originally considered, only two, the Kramer Dress Shop and the Goldberg-McGovern store which have board false fronts dating from 1863 were considered. In addition to simply being constructed of wood, buildings had to have visible exterior paint in sufficient volume that still adhered to the original surface for sampling. Deciding which buildings had such extant paint was achieved by visual survey on August 22, 2016 and consulting Don Steeley of the Montana Heritage Commission.

Five buildings were selected for the project ultimately: Kramer Store (1863), Goldberg-McGovern Store (1863), Strasburger Colorado store (1863), Green Fronts (1868-69), and the Methodist Church (1874). An exception to the scope of the study was made in the case of the Methodist Church, a scored stucco building with wood windows and doors, that was ultimately included in the study. This building and the other four were chosen because the MHC has future projects planned for them. MHC plans to adaptively reuse the Methodist Church, but first must rehabilitate the interior and windows. The findings of this thesis will help guide such projects.

A final note about site selection that was logical in retrospect, but difficult to discern while in the field, was the selection of Charles Bovey building reproductions.

Charles Bovey reproductions account for a half dozen main street building stock in Virginia City. Reconstructed using historic photographs, Bovey and his workers seem to have painstakingly reproduced several of the intricate gothic-style wood buildings such as the Dance and Stewart Store and the Montana Post. Reproductions were, initially, tempting to sample—if they were not recorded as reproductions and openly advertised as such, they would have met many of the other selection criteria listed above. Moreover, the Gothic detailing on the structure is usually a good indicator of easily-sampled paint—original paint is likely to be trapped under a wood detail or shaded from the harsh Montana seasons under a series of gothic arches, parapets, and cornices. Including reproductions would have been an exercise in futility. It's unlikely that reproductions were ever painted to match the buildings they are meant to emulate. If true, including reproductions would have resulted in a null value (no paint present). If reproductions had been painted there would be no guarantee of the accuracy in color or paint type. Reproductions were avoided by researching building records offsite and consulting with staff at MHC.

Part 2. Fieldwork Methodology

Fieldwork sampling methodology was modeled on several paint analysis methods borrowed from Dorothy Krotzer's 2008 "Architectural Finishes: Research and Analysis" in the *APT Bulletin*. Krotzer describes how to take samples in situ, using cratering, mechanical scraping, using solvent, or stripping overpaint to create an exposure window

all as valid methods for in situ investigation.[5] Her guidelines also specify that all layers of overpaint and a small portion of substrate, that is the painted wood, plaster, metal, or other material surface, must be present in the scraped sample for it to be viable.[6] This is to capture all paint campaigns and to determine which is the first. It is akin to the archaeological excavation practice of digging until virgin soil or bedrock is reached. Though the paint analysis field has refined the process and provided alternative methods with time, methodological approaches such as cratering and mechanical scraping have not changed since the field was established in the 1960s.[7] Krotzer goes on to express the importance of selecting sample locations that are "protected areas of paint build-up or hard-to-reach places, to avoid taking samples from locations that may have been previously stripped or were heavily weathered."[8]

Mechanical scraping was the method selected for this study. Since the parameters of the study were driven by the client (MHC)'s upcoming projects, their funding sources, and inability to accurately reproduce historic paint, further analysis other than taking physical samples and comparing them to Munsell colors was not appropriate for the scale of the project. Scraping produced paint chips less than 0.5 inches square and were taken

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[5] Cratering is when a cut is made into layers of paint down to substrate and the chip removed. Then in the newly carved crater, edges of the paint are sanded until a gradual slope is formed so that individual layers can be distinctly seen in sequence. Mechanical scraping, the method of chosen for this study employs the same mechanics of gouging paint down to the substrate, except the paint chip is retained, stored, mounted then analyzed at a later date. Using solvent or otherwise stripping or scraping paint to expose an exposure window is a popular method and useful if sampling sites are going to be incorporated into site interpretation.

[6] Dorothy Krotzer. "Architectural Finishes: Research and Analysis." *Association for Preservation Technology Bulletin*, Vol. 39, No. 2/3 (2008), 3.

[7] Penelope Hartsthorne Batcheler. "American Association for State and Local History Technical Leaflet 15: Paint Color and Restoration." *History News*, Volume 23, No. 10. (Nashville, TN: American Association for State and Local History, 1968); Morgan Phillips and Norman Weiss. "Some Notes on Paint Research and Reproduction." *Association for Preservation Technology Bulletin*. ed. Kevin Miller. (September 1977)

[8] Ibid.

from visibly obscure locations such as under eaves, near corners, near locations where there was existing paint damage or chipping.

Some paint sampling methods, such as the use of solvents to remove layers of paint were impractical given the field conditions and were not attempted. The limited locations of sample-able exterior paint precluded attempting exposure windows, or removing a large square area of paint to expose an inch or more of each paint stratigraphic layer using solvents or mechanical scraping. This methodology is useful in building interiors especially, and when there are multiple paint campaigns which are also protected from weather. After laboratory analysis, it was confirmed that there were very few painting campaigns for each building sampled anyway; hence,using exposure windows might not have been the best use of time in the field, but this was unknown at the time of fieldwork. Such a field methodology would be desirable if testing one of the cast-iron store fronts in Virginia City, and will be recommended in the conclusions and future work section of this thesis.

At each building, samples were taken from available wooden surfaces. Multiple samples were taken for large surfaces, such as along sampling several drop lap boards in a false-front wall plane, but samples were not taken at regularly spaced locations due to lack of viable sample-able paint at regular intervals. A total of 121 samples were taken. Paint chips were removed by mechanically scraping using a curved blade scalpel. A semi-circular cut was made deep enough to scrape off complete paint layers while keeping the wood substrate intact on one side.[9] Samples were taken from multiple locations on the same building. Dorothy Krotzer addresses the process of taking samples

[9] Ibid.

from various parts of the building — windows, doors, trim, body, stairs, details. She points out that "analysis of a paint sample's layering sequence can reveal valuable information about a building's construction chronology by comparing the sequences of samples removed from different portions of the building relative to each other."[10] This is important to capture any potential polychromatic architectural elements—when trim, window sash, or details are rendered in one or more colors than the building body. Multiple samples of the building body are also important as we know that false front architecture regularly used the false front wall as sign space.[11] At one building, the McGovern-Goldberg Store, the original painted sign on the false front was overpainted, but still visually distinguishable. This approach was particularly successful at this storefront.

For each building, no less than seven samples were gathered. This number is non-binding and correlates to the amount of individual architectural elements of the least embellished building—the Kramer Dress Shop. Three buildings with false fronts along Wallace Street had only their false fronts sampled—the buildings behind the fronts were log structures that lacked a visible finish. Access to the interior was also restricted by MHC permissions, further limiting the samples from these buildings. At the other two buildings, Green Fronts and the Methodist Church, painted surfaces were available for sampling on all exterior elevations and interior access was granted by MHC.

Fieldwork took place in hot, dry conditions typical of the end of August in Montana. All the buildings showed the effects of hot dry summers, cold snowy winters,

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[10] Krotzer, 1.
[11] Kingston Heath. "False Front Architecture on Montana's Urban Frontier." *Perspectives in Vernacular Architecture*, Vol 3. 1989, p. 200

and lack of regular care and painting campaigns from owners. This manifested as paint "alligator"-ing, sun-bleaching, and paint layers stripped off exposed sections of wood, leaving only paint in protected spaces under cornices, in corners, and under awning porches.

Samples were stored in archivally stable, re-sealable plastic bags. Each bag was labeled with the sample name, a brief description of the sample location, the date the sample was taken and the name of the building. Sample names were derived from the building name, the cardinal direction of the elevation, exterior or interior location, and identification letter (e.g. MG-S-E-P, or McGovern-Goldberg, South, Exterior, Sample P). Samples were packaged into large plastic bags and stored in an area where they would be unlikely to experience UV deterioration or be in danger of crushing.

Sample locations were digitally photographed— one photograph showing the context within the building elevation and one detailing the of the scraped sample —using a Canon Powershot Elph1200. Digital files were manually renamed to match sample names. The building was also hand sketched and locations were keyed on the sketch by the letter designation in their sample name (e.g. MG-S-E-P, or McGovern-Goldberg, South, Exterior, Sample P; annotation appears as a "P" at the sample location). Sketches also recorded building measurements so that the sketches could be converted to measured line drawings.[12] Sample names were derived from the building name, the cardinal direction of the elevation. Samples were packaged into large plastic bags then stored in an area where they would be unlikely to experience UV deterioration or be in danger of crushing.

[12] Converting to line drawings was outside the scope of this project. The author experienced setbacks with the amount of information recorded onsite.

Part 3. Laboratory Methodology

Cross-section analysis of paint samples using optical microscopy is the primary starting point for analysis of architectural finishes. Viewing in cross-section means that samples are viewed from the side, so that all paint campaign layers and the original substrate (wood, plaster, etc) are visible, stacked one atop the other, with the newest paint layer at the top and the oldest paint layer just above the substrate. Optical microscopy simply refers to the use of a light microscope using a system of lenses to magnify images. Examining samples using a 20x-200x magnification microscope is the best way to confirm findings and corroborate existing individual architectural histories for a building.[13]

Unlike most contemporary studies, the author opted to not cast samples in clear polymer resin to view cross sections. Many samples were fragile and resin casting might have filled in spaces where samples were defoliating from one another and the wood medium, creating more opportunity for a false-positive painting campaign.[14] Another drawback to casting samples in resin was that a resin cast and cut cross section can only be viewed from a single angle—that is, if the side of the sample shown does not illustrate the most visible or best preserved paint sequence, there is no way to select another side of the sample, or turn it over to view another side. Instead the author has chosen to handle delicate samples with care and embed them into razor-sliced sponges so the layers can be viewed in profile. Samples were turned on their side, and inserted into the razor slice,

[13] Krotzer, 2008, 3.
[14] Defoliating is when individual paint layers separate from one another and from the substrate, making it impossible to establish a stratigraphic pattern where one paint layer is definably older than the other.

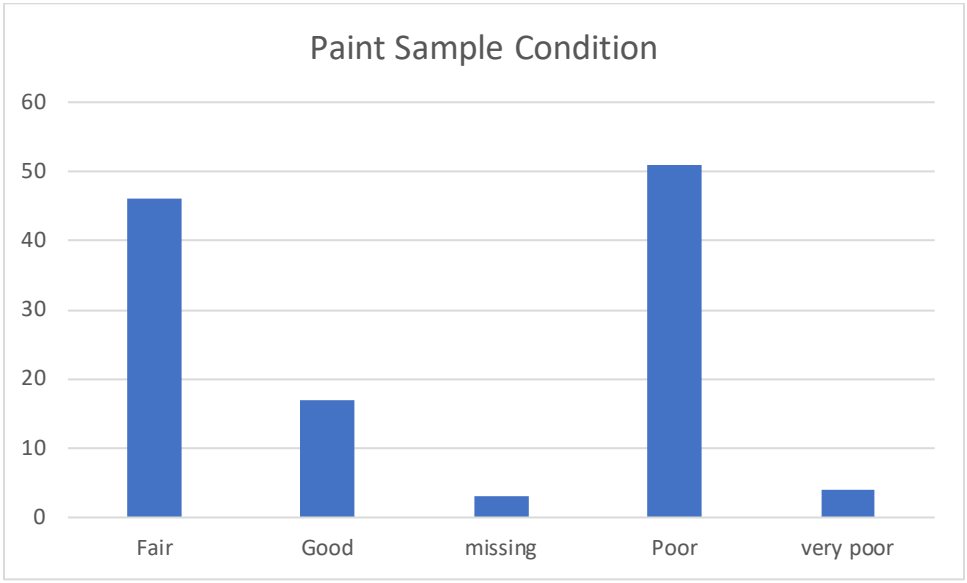
then viewed under the microscope. If a profile view was not the best view of the paint stratigraphy, the sample was turned and viewed again.

Samples were examined under an Amscope SE306R-P20 Forward-Mounted Binocular Stereo Microscope to determine bulk stratigraphy. Direct lighting was used and a full-spectrum light and natural window light supplemented the direct, quartz-halogen upper light of the Amscope microscope. UV lighting was not available and not used. All samples were photographed using an AmScope MD35 microscope camera, inserted into one of the eyepieces of the stereomicroscope.

Nearly all 121 samples survived storage and transport conditions well enough to be analyzed. Sample conditions varied and were assigned a designation of good, fair, poor, or very poor based on their properties (Figure 4.2). Conditions were assigned based on how well the sample's paint remained adhered to the wood substrate and whether samples disintegrated upon handling outside of storage. Good condition was characterized by remaining more than 75% intact, being non-brittle, remaining adhered to the wood substrate, and remaining adhered to other paint layers. Fair condition allowed for some brittleness and having some damage, but remaining more than 50% intact overall. Fair samples must also remain adhered to the wood substrate and to other paint layers. Poor condition samples were more than 25% intact, but very brittle, prone to cracking, and presented some difficulty in mounting. Defoliating from other paint layers and from the wood substrate was present in all poor samples, though minimal adherence to the wood substrate was enough to identify the base layer of paint. Very poor condition samples met none of the above criteria and were less than 25% intact. Very poor samples could not be analyzed.

Some of these deficiencies were the fault of insufficient storage conditions or damage in transit, but many of the conditions were due to the sample's properties. More than half of the samples were in fair or good condition, while 55 samples were in poor or very poor condition. Five samples were so badly damaged or became so badly damaged while mounting samples that no conclusive color could be matched to it. Three samples are labeled missing and their status is not known. 112 samples were intact enough to reach a conclusion about color.

Figure 4.2. Paint Sample Conditions



Samples in good condition were compared to paint chips from the Munsell Book of Color to determine what color they were, and all layers representing different paint campaigns in each paint sample were matched. One of the few standards in paint analysis is matching sample color to the Munsell Book of Color. CIE l*a*b* color standards, another color benchmark, were not used for this study but could be matched later as many

of the samples remain in good enough condition to be re-sampled and there is a direct correlation to Munsell Colors. Munsell Book of Color was developed in the 1905 by Albert Munsell and defines color by three components: "hue" which is the name of a color e.g. red, yellow, green, etc.; "value" which is the light of a color, or the means to distinguish light colors from dark colors, e.g. dark red, light red; and "chroma" which is the strength of a color defining strong colors from weak ones, also known as saturation.[15] It became a standard for paint matching because it consists of hundreds of measurable colors, that have defined nomenclature that has not changed since the original publication.[16] The Munsell Book of Color has removable paint chips making it easy not only to match color under the microscope, but easy to replicate with commercial paints as colors could be visually matched between commercial paint chips and the Munsell ones. Today one could take a Munsell chip directly to a store and have paint custom mixed to match the color.

For this study, samples were mounted in sponges, then placed under a microscope lighted with quartz halogen lightbulbs. Each sample was viewed through the lens, then each layer of the sample was matched to a Munsell color chip held under the microscope beside the sample. To reach a color match, color chips compared to samples until an approximate color was reach, then colors a few chroma or values away were compared as well to better define the sample layers. This involves much trial and error. Multiple chips were viewed until the closest possible match was reached. As each sample was matched visually by an individual, the issue of human error will always be present. Only one

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[15] A.H. Munsell *A Color Notation*. (Baltimore: Munsell Color Company, 1926), 18-19.
[16] Andrea M Gilmore. "Analyzing Paint Samples: Investigation and Interpretation." In *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 184.

person handled, mounted, and tested samples, but as the project spanned the course of several 2-3 hour sessions over the course of a month, some matching error should be expected.

Once all campaign layers were matched, samples were photographed using a microscope camera and individual campaign layers annotated on the photograph in chronological order (1. Oldest, 2. Layer immediately above 1, 3. Layer immediately above 2, and so on to the top layer). This information, as well as keys matching campaign number to Munsell color, a description of the sample condition, sample name, dates, and identifying information about the sample (building location, date of sample) were recorded in a table. Later, Munsell color chips were matched to a color deck for Pittsburgh Paints (PPG)'s Voice of Color Collection, a proprietary paint specified by MHC as their preferred paint.

CHAPTER V

RESULTS

This chapter summarizes the results of laboratory observations and interprets the results through archival research of owners, deeds transfers, and economical changes of the late nineteenth century. The outcomes below will paint a picture, so to speak, of Virginia City's streetscape and give researchers a visual aid for what is essentially refined living on the frontier. It is important to remember that this is a limited case study with a very small sample size, restrictive location and date range, and other non-regional, non-temporal selection criteria. Therefore, it will be difficult for a future researcher to extrapolate these results to other mining boomtowns of the west. Case studies like this one instead speak to regionally specific trends and technologies and are good comparisons for future research.

Data from each building is presented in tabular form, including data pertaining to building color palette and its change over time. Color palettes show, for example, body, trim, detail, and muntin colors for each paint campaign. Each building receives a brief explanation of possible future work, including conservation, restoration, or interpretation. Recommendations, covered thoroughly in Chapter 6, follow the *Secretary of Interior Standards for Treatment of Historic Properties*, the National Park Service's *Preservation*

Briefs 10: Exterior Paint Problems on Historic Woodwork, and the Montana Heritage Commission's *Preservation Philosophy.*[1]

Paint campaigns, for the purposes of this section, refer to the day where a building assumes a new coat of paint. Painting campaigns can include up to three layers: linseed oil, which appears as a tan or off-white, waxy substance; primer, which appears as a white or off-white; and the paint, which may be any color, but usually appears as colored, irregularly shaped particulate suspended in finer white, smooth layer.

For unpainted buildings at Virginia City, an application of linseed oil to the wood substrate is prescribed.[2] Linseed oil is usually only applied to bare wood, so the only location where it should be present is under the very first layer of primer. Linseed oil often contains dark brown or black particulate. Given that buildings were not painted immediately after construction, wind-swept dirt, dust, pollution, and debris that contacted the surface would have become trapped in the oil layer as it was drying and before the primer was applied. Linseed oil applications will soak into the wood, conditioning it to receive primer, without pulling too much moisture out of the primer or paint.

Primer is identified by its white color and a tacky and dry, chalky-looking consistency. Primer consists of red and white lead, raw linseed oil, and lesser amounts of

[1] The MHC's Preservation philosophy is outline in their latest annual Preservation Report for 2015. They emulate the Secretary of Interior Standards with a few modifications specific to Virginia City, such as concealing stabilization or reinforcement so as not detract from a historic structure's appearance, using historically appropriate stabilization methods if stabilization is visible to the public, keeping accurate photographic and written documentation for future research, using qualified preservation specialists and technicians to conduct preservation maintenance, and providing a safe work environment for all preservation, stabilization, maintenance and repair work. (Preservation Annual Report, 2015)
[2] Don Steeley, Personal communication, August 26, 2016.

litharge, but on its own is an insufficient finish for the building.[3] It is irregular where it adheres to the wood substrate but comparatively even where it adheres to the paint layer above it. Primer is also likely to trap debris but dries quickly before paint is applied.

In samples, paint appeared oily in consistency, and given the overwhelming primary data of receipts and that professional painters were present in the town, oil-based paints were likely used on the buildings in the case study. Paint appeared as multiple-colored particulate suspended in a white or colored base that had a hardened but glassy look. Distemper paint and whitewash paints were not found in this case study; however, whitewash is suggested as a possible exterior finish by Kingston Heath in his socio-cultural study of the Coggswell-Taylor House.[4]

In determining results, the first paint campaign was identified and subsequent campaigns were identified where possible. Often, after a complete campaign (oil-primer-paint, primer-paint, or paint-only) there is a dirt layer that accumulates atop the paint layer. This dirt is an accumulation of the local dust, weather, pollution, pollen and debris, and likely contains a fortune of information if studied in the future.

Paint was not present on the entire building in any of the building case studies. Paint was usually only on wood that was protected from the sun and elements, e.g. under eaves or window sills. The rest of the paint on the building had either been stripped off by

[3] Paul N. Hasluck ed. *House Decoration: Comprising Whitewashing, Paperhanging, Painting, ETc. With Numerous Engravings and Diagrams.* (Philadelphia: David McKay 1903), 116; Litharge is a naturally occurring form of lead oxide (PbO).
[4] Heath, 11.

lack of maintenance over decades-long periods, or heavily damaged. In any event, nearly all the buildings have an unpainted, bare wood appearance.

Finally, in some exterior samples, a strange layer appears as the youngest paint campaign. This is a tan or off-white layer with dark brown or black particulate. The layer appears to be a different consistency than the paint and primer layers below. After discussing building maintenance with MHC Historical Carpenter Don Steeley, I have determined that this layer is linseed oil, applied by the MHC and then exposed to the elements with no follow-up campaign. Nearly all the buildings in Virginia City appear bare and stripped of their original paint, with a few exceptions (the Buford Store cast iron front, the Rank Store cast iron front, the Fairweather Inn, and a scattering of businesses along Wallace Street that have active tenants. This gives the town a nostalgic "ghost town" feeling, but leaving historically-painted wood buildings without finishes goes against the Secretary of Interior Standards as well as the MHC's *Preservation Philosophy*. According to Steeley, MHC staff treats the buildings with colorless linseed oil every 1-3 years, as preventative maintenance for the bare wood. Without a paint analysis identifying the original paint colors, the MHC is in the delicate position of having to perform preventative maintenance, but unable to paint buildings due to lack of available data. Their solution is to treat wood buildings with linseed oil, accounting for this unusual youngest layer.

Challenges in Color Matching

Metamerism is an issue identified in Bonnie Wehle Parks' thesis and one that was also an issue for this study. According to Parks, "colors in metameric pairs match under one type of light (such as incandescent, fluorescent or daylight) but, because they have different spectral reflectance curve, do not match under another lighting condition."[5] For the Virginia City case study, metamerism occurred when the sample and a Munsell color appeared to match under the quartz halogen light, but under a natural light source appeared different. This can be caused by using glossy Munsell chips checked against the flat or matte of the sample, or simply error of the human eye. In these cases, matches were made under quartz halogen light and checked against a natural light source, and then the best possible match was chosen. Metamerism may account for some of the similar colors along a building's color palette. There are a few colors just one or two hues away from another that may be the same paint, faded or weathered differently, or simply viewed under different light conditions.

Kraemer Store

The Kraemer store had at least two painting campaigns. (Figure 5.1) I surmise that the earliest paint campaign is contemporaneous with the application of the bay window and board-and-batten false front, added by Julius Kraemer Sr. after he adapted the building from August Griffith's blacksmith shop and opened his saddlery in 1870.[6]

[5] Parks, 24.
[6] Arata, 83.

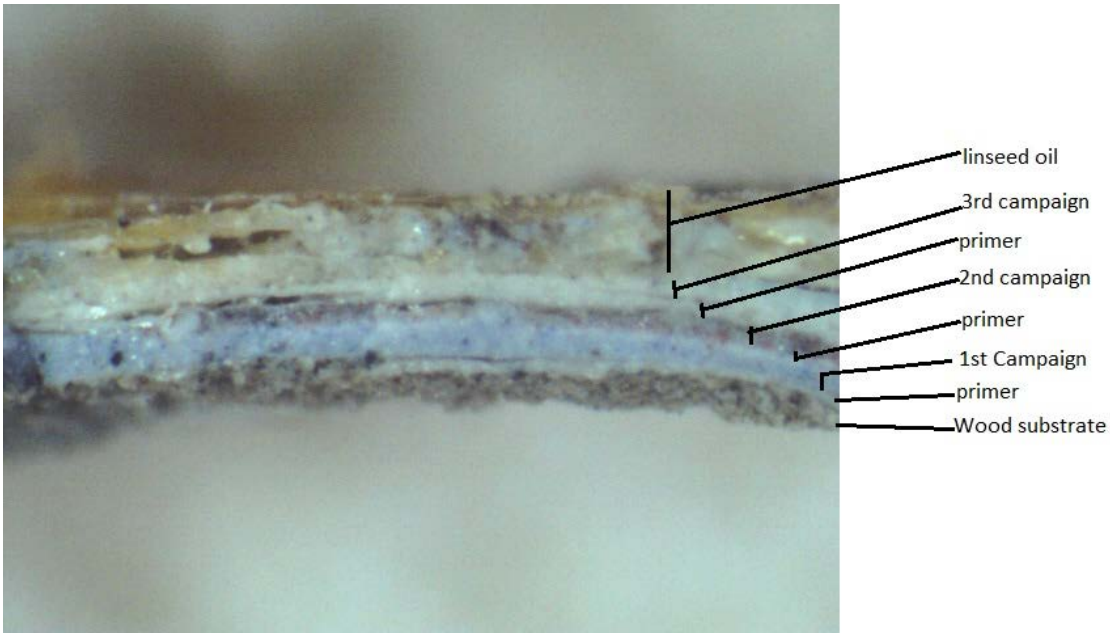


Figure 5.1. Sample K-S-E-A Kraemer Building Dress Shop taken from the board siding. 40x magnification. (Sample procured August 30, 2016)

This paint campaign is linseed oil, a thin layer of white primer, then blue-gray board. Battens have a very thin layer of white primer and were white. The window frame has a thick layer of white primer, then dark gray paint. Muntins were white and had no primer. The cornice board at the top of the building has five distinct parts nailed together, but are all painted light blue. The top-most piece of the cornice is a very light gray and may be white like the battens. (Table 5.1)

The colors of pale, cool-toned blue-grays and grays with dark gray details and white trim are somewhat consistent with the prescribed popular shades of the early Victorian (1840s-1870s), which, according to the timeline proposed by Roger Moss and Gail Winkler would have been colors promoted by Andrew Jackson Downing: dove, fawn, drab, straw, etc.[7] (Figure 5.2) No historic photographs showing the front of the

[7] Roger Moss and Gail Winkler. *Victorian Exterior Decoration: How to Paint Your Nineteenth Century American House Historically*. New York: Henry Holt and Company (1987), 16.

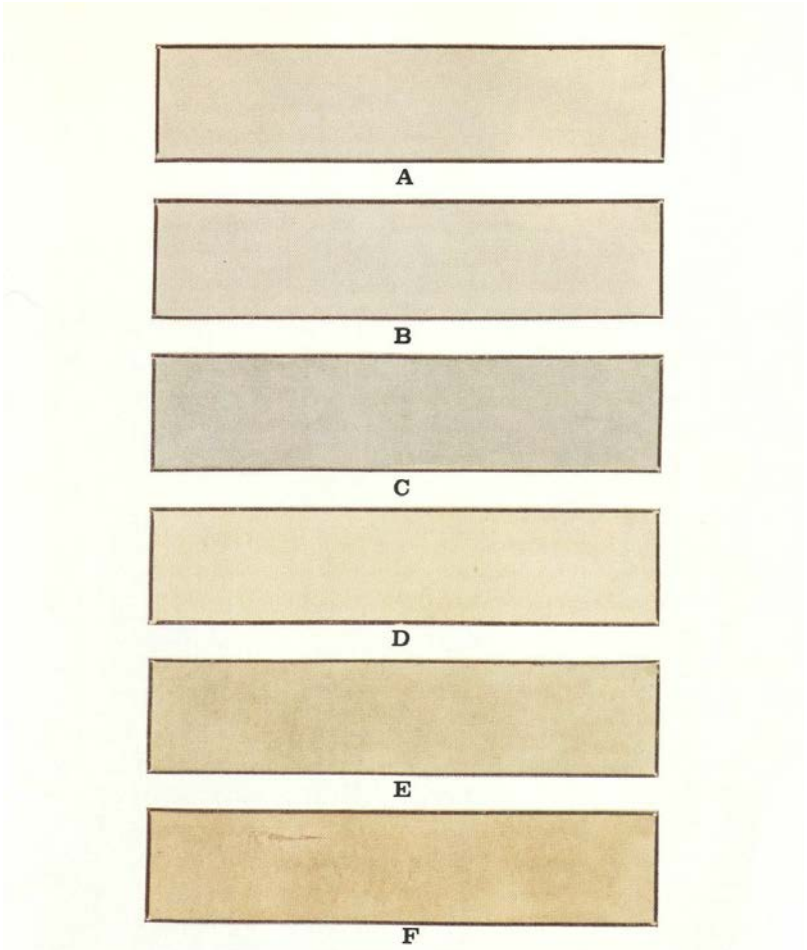
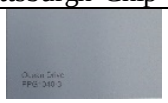
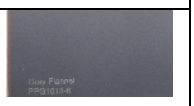
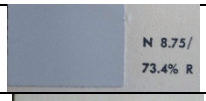
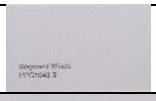
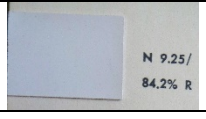
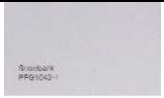


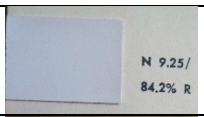
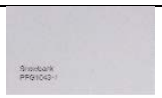
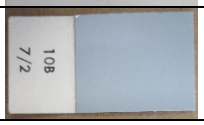
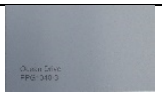
Figure 5.3. Hand Colored card from Andrew J. Downing's Country Houses. (1848)

Figure 5.3. A posed 1952 postcard, despite the women in "period dress." Kraemer store is board-and-batten storefront with "Dress Shop" sign.

Kraemer Store have been found, to show at what periods it may or may not have had paint. A postcard from 1952 shows the building to have a weathered, unpainted wood exterior, as well as the trappings of the Bovey-era: barriers and shoe displays, but predate the added wood and corrugated metal awnings added later. (Figure 5.3)

Table 5.1. Kraemer Store Color Palette

Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
Board	1) 10B 7/2 2) 10B 5/1	1)  2) 	1) Ocean Drive; PPG 1040-3 2) Garrison Gray PPG 1039-5	1)  2) 
Batten	1) 10B 7/2 2) 10B 5/1	1)  2) 	1) Ocean Drive; PPG 1040-3 2) Garrison Gray PPG 1039-5	1)  2) 
Projecting window frame	1) 5PB 4/1 2) 10B 6/1	1)  2) 	1) Gray Flannel PPG 1013-6 2) Steeple Gray PPG 1012-5	1)  2) 
Flat window muntin	N 8.75 /73.4% R		Wayward Winds PPG 1043-3	
Door frame - rail	N 9.25/ 84.2% R		Snowbank PPG 1043-1	

Door recess	N 9.25/ 84.2% R		Snowbank PPG 1043-1	
Cornice upper board	10B 7/2		Ocean Drive; PPG 1040-3	

If the building was already down to bare wood by 1952, as it appears on the postcard, then the limited number of paint campaigns (two campaigns for siding, one campaign for details) indicates that only one owner painted the building and subsequent owners did not invest in painting the building. If painted by Kraemer in the 1870s, the store's color palette is consistent with national tastes. There is no way to discern if the Kraemer store was painted by a professional or an amateur. The building shows evidence of an oil-primer-paint sequence, which may mean the store was painted by a professional or a person with previous experience and access to prescriptive texts.

McGovern-Goldberg Store

The McGovern-Goldberg Store has had at least three distinct painting campaigns, but all were very similar in color, suggesting a repainting or repair rather than starting an entirely new campaign and breaking away from the original colors. (Fiogure 5.4) The first painting campaign was carried out by Gumpert Goldberg and wife Helena, liquor merchants who owned the store for a year from 1864-1865. This is known for two reasons: first - they are the likely party that erected the false front to hide the log cabin

described by Mary Ronan in her diary, and second - a paint shadow on the stringer course above the store door reads “G. Goldberg.”

Since Bovey interpreted this store using the McGovern sisters’ dry goods, it seems a reasonable conclusion that he would not have confused his own interpretation by paint a sign for the Goldberg store. The paint shadow is weathered and the original pigment is missing. As in archaeology, sometimes stratigraphy is disturbed by an event that strips away a layer. In this case solvent, sanding, or simply weathering is responsible for the paint shadow. The sign was painted over in a later painting campaign, preserving the shadow against the wood. (Figure 5.5) Goldberg’s paint campaign consisted of a pale tan or fawn color, trimmed with yellow and brown details. The second paint campaign had a similar tan body, but a few darker details, such as a dark green-brown on the lintel board over the door and the cornice board. The third paint campaign again featured pale tan/fawn color, trimmed with light brown-red and yellow. The fourth campaign was just pale tan and yellow. (Table 5.2) The Weston Hotel only has one paint campaign. This is

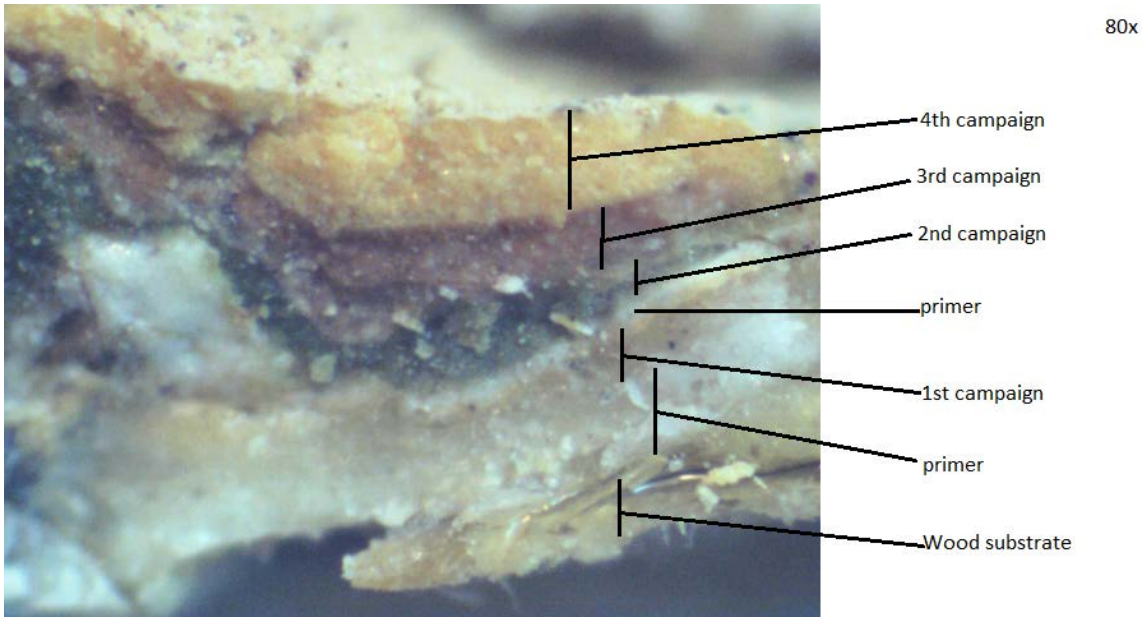
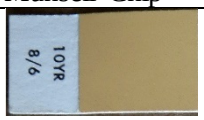
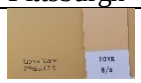
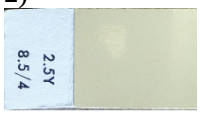
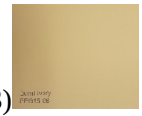
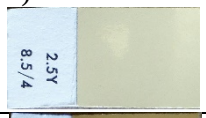
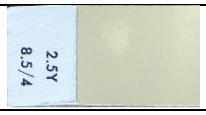
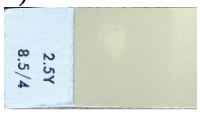
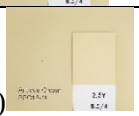
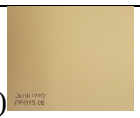
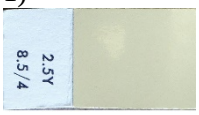
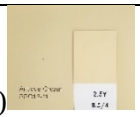
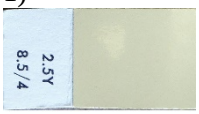
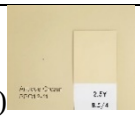
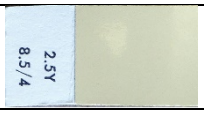
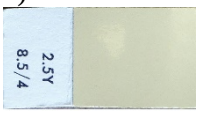
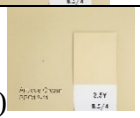
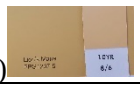


Figure 5.4. Sample MG-S-E-H from the lintel board.. 80x magnification. (Sample procured August 30, 2016)

probably due to a replacement in siding materials for the building from lapped board to drop siding. The Weston Hotel paint campaign consists of two shades of medium tan paint in one layer. (Table 5.3)

Figure 5.5. Paint Shadow of the "G" in Goldberg. Photographer: K. Geraghty, August 30, 2016

Table 5.2. McGovern Goldberg Store Color Palette				
Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
pilaster shaft	10YR 8/6		No good comparison; Lions Mane PPG 1207-5 or Chunk of Cheddar PPG 1204-5	
Transom Pilaster Capital	1) 10YR 8/6 2) 2.5Y 8.5/4 3) 10YR 7/6	1)  2)  3) 	1) Lion's Mane PPG 1207-5 2) Antique Cream PPG 12-11 3) Burnt Ivory PPG 15-08	1)  2)  3) 
Display window frame	1) 10YR 8/6 2) 2.5Y 8.5/4	1)  2) 	1) Lion's Mane PPG 1207-5 2) Antique Cream PPG 12-11	1)  2) 
Transom window frame	10YR 7/6		Burnt Ivory PPG 15-08	
Transom window muntin	2.5Y 8.5/4		Antique Cream PPG 12-11	
Transom display window trim	1) 2.5Y 8.5/4 2) 10 YR 7/6	1) 	1) Antique Cream PPG 12-11 2) Burnt Ivory PPG 15-08	1) 

		2) 		2) 
Transom wood panel	1) 2.5Y 8.5/4 2) 10 YR 8/10	1)  2) 	1) Antique Cream PPG 12-11 2) No Good comparison; Fall Gold PPG 1205-7	1)  2) 
Lintel board over door	1) 2.5Y 8.5/4 2) 10Y 4/2 3) 5YR 5/4 4) 10YR 8/10	1)  2)  3)  4) 	1) Antique Cream PPG 12-11 2)No good comparison; Nevergreen PPG 1031-6 3) Southern Wood PPG 16-07 4) no good comparison; Fall Gold	1)  2)  3)  4) 
G. Goldberg lettering	10YR 8/10		No good comparison; Fall Gold PPG 1205-7	
Stringer Course molding	2.5Y 8.5/4		Antique Cream PPG 12-11	
False front lapped board	1) 2.5Y 8.5/4; 2) 10YR 8/6	1) 	1) Antique Cream PPG 12-11 2) Lion's Mane PPG 1207-5	1)  2) 

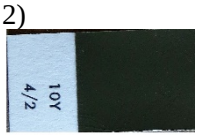
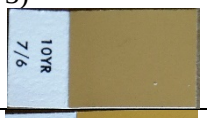
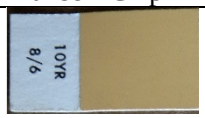
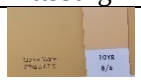
		2) 		
Cornice flat board	1) 10YR 8/6 2) 10Y 4/2 3) 10YR 7/6	1)  2)  3) 	1) Lion's Mane PPG 1207-5 2) bad match Nevergreen PPG 1031-6 3) Burnt Ivory PPG 15-08	1)  2)  3) 
Bulkhead panel	10YR 7/8		Bran Muffin PPG 16-14	

Table 5.3. Weston Hotel Color Palette				
Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
Annex- lapped board front	10YR 8/6		Lions Mane PPG 1207-5 or Chunk of Cheddar PPG 1204-5	
Annex- drop siding front	10 YR 7/8		Bran Muffin PPG 16-14	

Strasburger Colorado Store

The Strasburger Colorado Store has two distinct paint campaigns. (Figure 5.6, 5.7) The first is a medium brown body with dark brown details for the trim, pilasters, lintel, and cornice with lighter, pale tan and pale gray details for the window frame and muntins. The second campaign is a lighter pale tan body with medium brown details for trim, pilasters, and cornice. Like at the Kraemer Store, this use of light neutrals trimmed with dark neutrals is consistent with prescribed colors, as historical paint books or paint manuals might recommend. Unlike prescriptive literature recommendations, the window frames and muntins are not painted in dark tones to make the window appear as though it is all one large, expensive piece of glass. (Table 5.4)

The Brendlinger cigar store, by comparison, is plainer with only two paint campaigns: first, a medium brown body trimmed with darker brown, and second, one monotonous medium brown. For the most part, these browns and trim colors match the more elaborately painted Strasburger Store with which it shares the false front. (Table

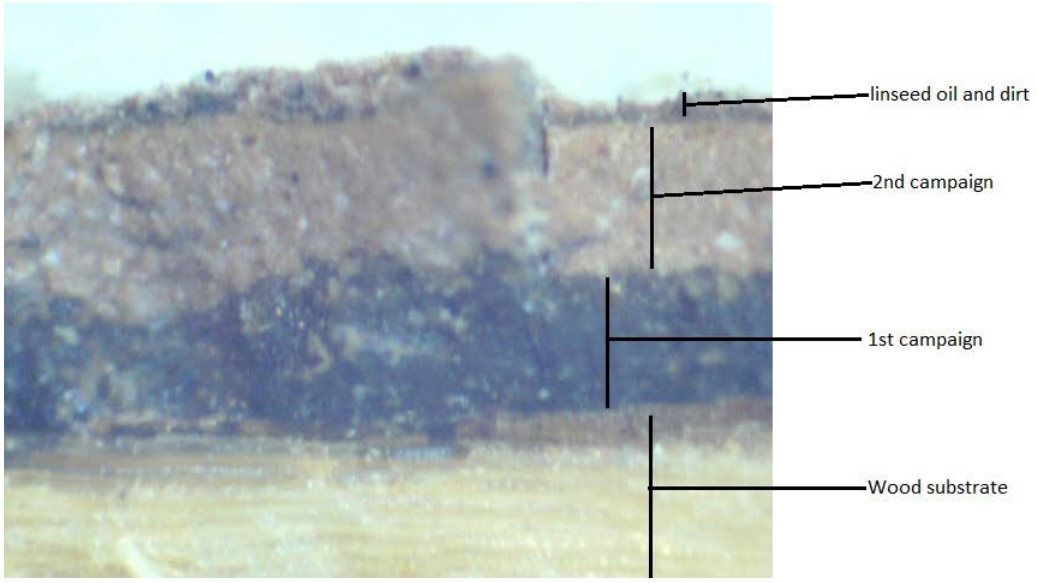


Figure 5.6. Sample SC-S-E-A taken from the panel trim below the 20 light display window. 80 x magnification. (Sample procured August 29, 2016)

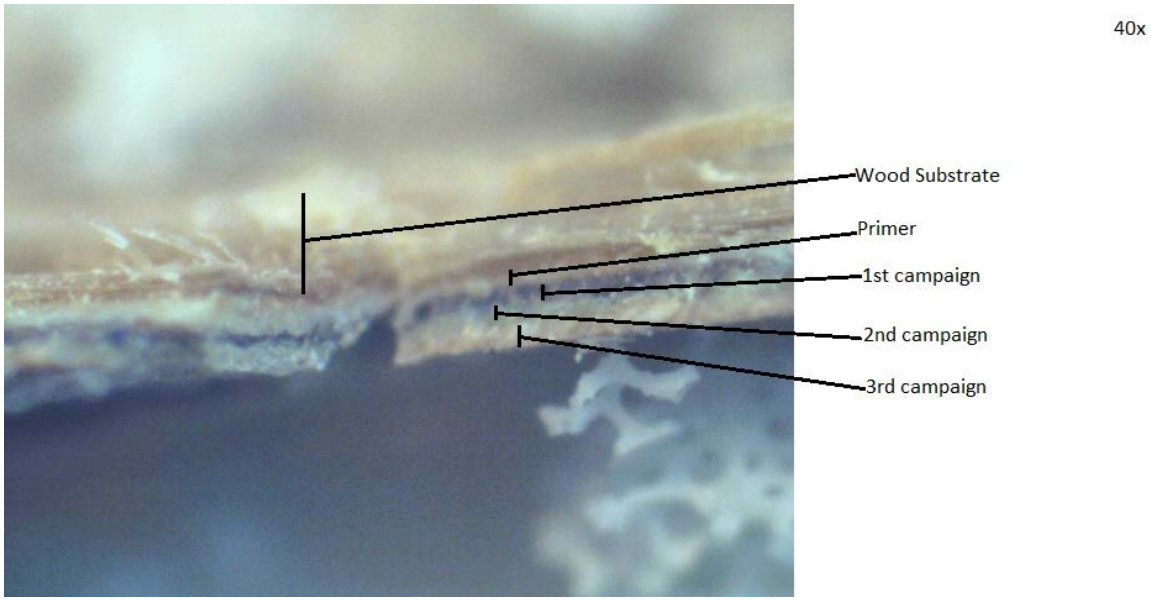


Figure 5.7. Sample SC-S-E-H from the lintel trim. 40x magnification. (Sample procured August 29, 2016)

5.5) There are fewer architectural details on the Brendlinger store to paint, other than the door, the door trim, the body, and the body trim (all of which were sampled), which may account for the simpler palette.

The colors of the Strasburger Colorado Store are particularly of note as the second paint campaign matches the F.W. Devoe late 1860s paint card entitled "Homestead Colors."[8] The window frame panel and muntins, a cream color (Munsell 2.5 Y 8.5/4), matched Devoe's #45 according to the adjacent color matches provided by Roger Moss in *Century of Color*.[9] Another match was the medium brown (Munsell 7.5 YR 5/4) used as a color on the lintel, pilasters, and one of the cornice pieces, which matched Devoe #19.[10] (Figure 5.7) While it would be impossible to tell if the painter had access to the actual Devoe paint card chip, the use of similar colors off of a nationally circulated

[8] This paint card featured ready mixed paints and the true colors are a few increments off in chroma, hue, and value. Moss annotates these colors with "neighboring Munsell Colors" which have the regularly stepped Munsell notations.
[9] Roger Moss. *v Century of Color: Exterior Decoration for American Buildings, 1820-1920*. New York: American Life Foundation (1981), 27.
[10] Ibid.

advertisement shows that popular tastes did permeate into remote areas and the drive to have a stylish and up-to-date business was present.

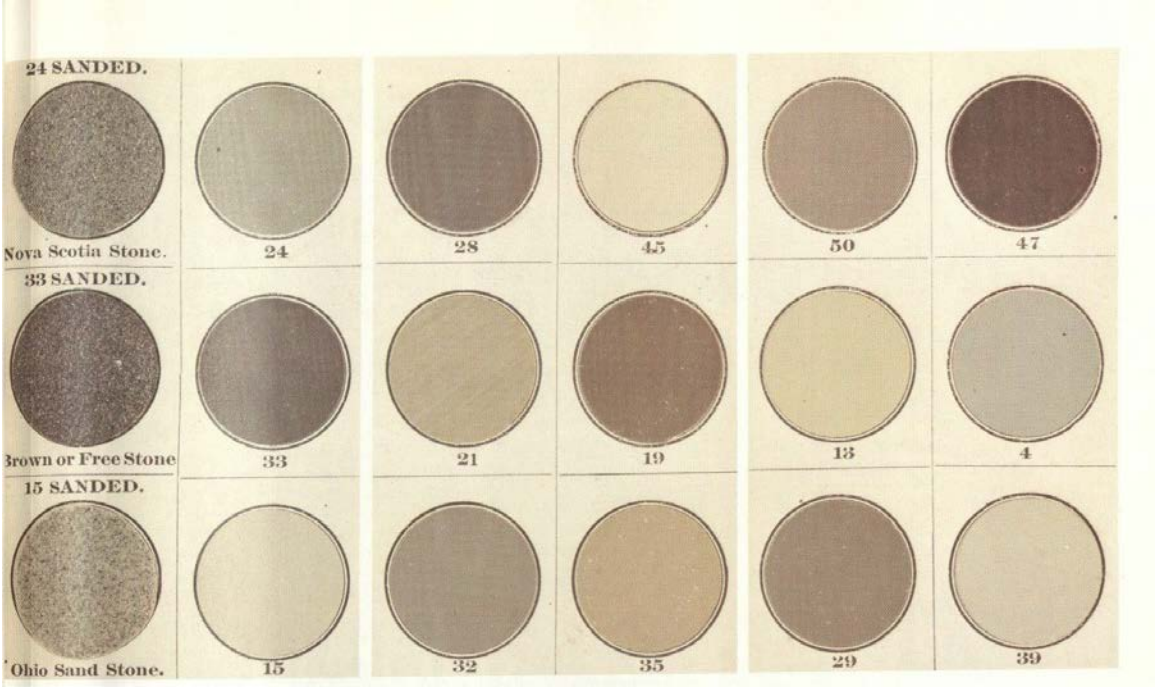
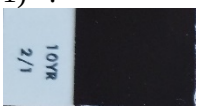
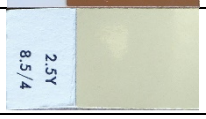
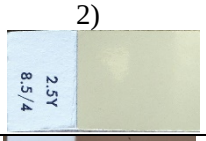
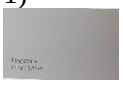
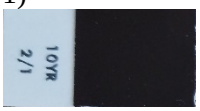
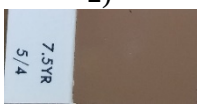
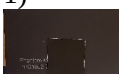
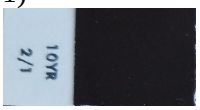


Figure 5.8. Figure 4. F.W. Devoe paint chip sampler from late 1860s (Source: Moss, 1981)

Table 5.4. Strasburger Colorado Store Color Palette				
Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
panel trim below 20 light window	1) 10YR 2/1 (or a dark N such as N 1.25 1.6% R) 2) 7.5 YR 5/6	1) .  2)  	1) Phantom Mist 1002-7 2)Cinnamon Twist PPG 1081-6	1)  2) 
panel below 20 light window	2.5Y 8.5/4	 	Antique Cream PPG 12-11	
20 light window muntin	1) N 7.5 50.7%R 2) 2.5Y 8.5/4	1)  2)  	1) Flagstone PPG 1001-4 2) Antique Cream PPG 12-11	1)  2) 
door trim panel	7.5YR 5/4	 	Caravel Brown PPG 1079-6	
pilaster, column shaft	1) 10YR 2/1 2) 7.5 YR 5/4	1)  2)  	1) Phantom Mist 1002-7 2) Caravel Brown PPG 1079-6	1)  2) 
Pilaster, capital	1) 10YR 2/1 2) 7.5 YR 5/4	1)  2)  	1) Phantom Mist 1002-7 2) Caravel Brown PPG 1079-6	1)  2) 

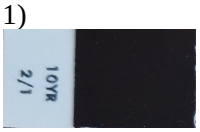
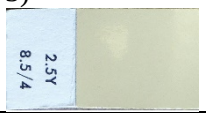
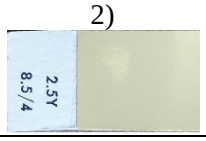
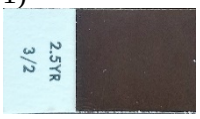
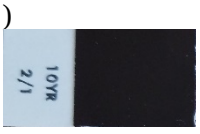
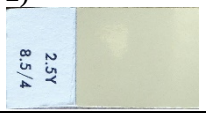
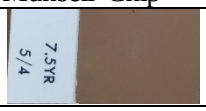
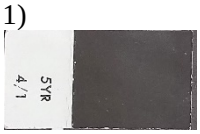
Lintel	1) 10YR 2/1 2) 7.5 YR 5/4	1)  2)  	1) Phantom Mist 1002-7 2) Caravel Brown PPG 1079-6	1)  2) 
Lintel trim	1) 2.5YR 3/2 2) 7.5YR 5/4 3) 2.5Y 8.5/4	1)  2)  3)  	1) Chestnut PPG 15-23 2) Caravel Brown PPG 1079-6 3) Antique Cream PPG 12-11	1)  2)  3) 
false front siding above entry	1) 7.5YR 5/4 2) 2.5Y 8.5/4	1)  2)  	1) Caravel Brown PPG 1079-6 2) Antique Cream PPG 12-11	1)  2) 
cornice trim curved	1) 2.5YR 3/2 2) 7.5YR 5/4	1)  2)  	1) Chestnut PPG 15-23 2) Caravel Brown PPG 1079-6	1)  2) 
cornice trim flat	1) 10YR 2/1 2) 2.5Y 8.5/4	)  2)  	1) Phantom Mist 1002-7 2) Antique Cream PPG 12-11	1)  2) 

Table 5.5. Cigar Store Annex Color Palette				
Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
Annex – drop siding	7.5YR 5/4		Caravel Brown PPG 1079-6	
Annex – door surround	1) 5YR 4/1 2) 10YR 5/4	1)  2) 	1) Eagle Eye PPG 1014-6 2) Cocoa Pecan PPG 1084-6	1)  2) 
Annex door rail	1) 5YR 4/1 2) 10YR 5/4	1)  2) 	1) Eagle Eye PPG 1014-6 2) Cocoa Pecan PPG 1084-6	1)  2) 
Annex door panel	1) 5YR 4/1 2) 7.5YR 5/4	1)  2) 	1) Eagle Eye PPG 1014-6 2) Caravel Brown PPG 1079-6	1)  2) 

Green Fronts

The Green Fronts, on the west end of Wallace Street, exhibits at least three different paint campaigns on the original buildings. (Figure 5.9, 5.10) The paint campaigns on these two buildings are further complicated by the south and east additions on the east building and the south addition on the west building. While these additions encapsulated and preserved original paint campaigns, they were not painted subsequently, making it look as though there are fewer total campaigns. Addition exteriors, particularly on the east building, have all three paint campaigns represented, indicating either the whole building was not painted until the additions were added or the original siding was removed. The building still reads today as painted, though it does not live up to its name as having a "green front."

The current and youngest color palette is a red body, trimmed with green, with some dark gray or black detailing in the window muntins. This youngest paint campaign matches the train station across the lot, moved by Charles Bovey in 1964. The reason for

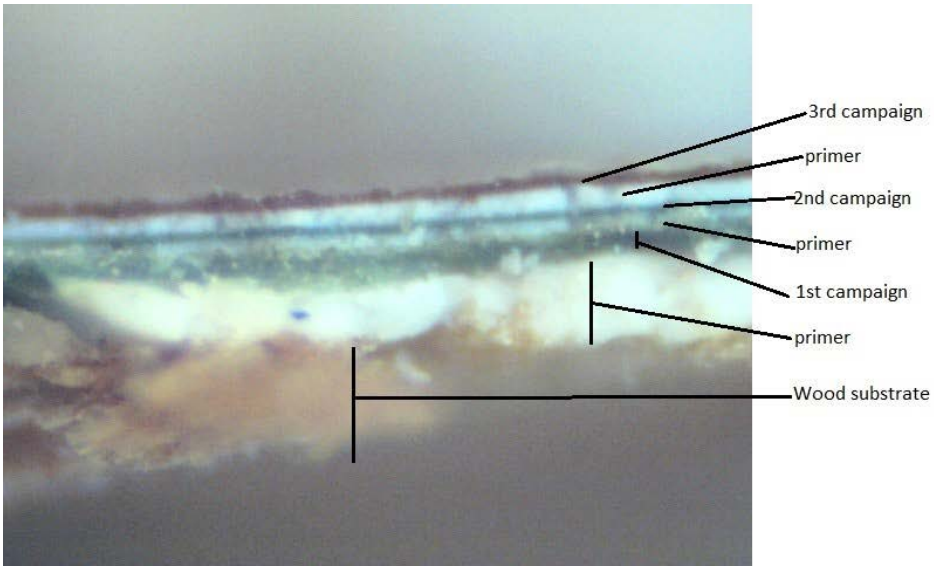


Figure 5.9. Sample GF-N-E-J from west building eave. 40x magnification. (Sample procured August 26, 2016)

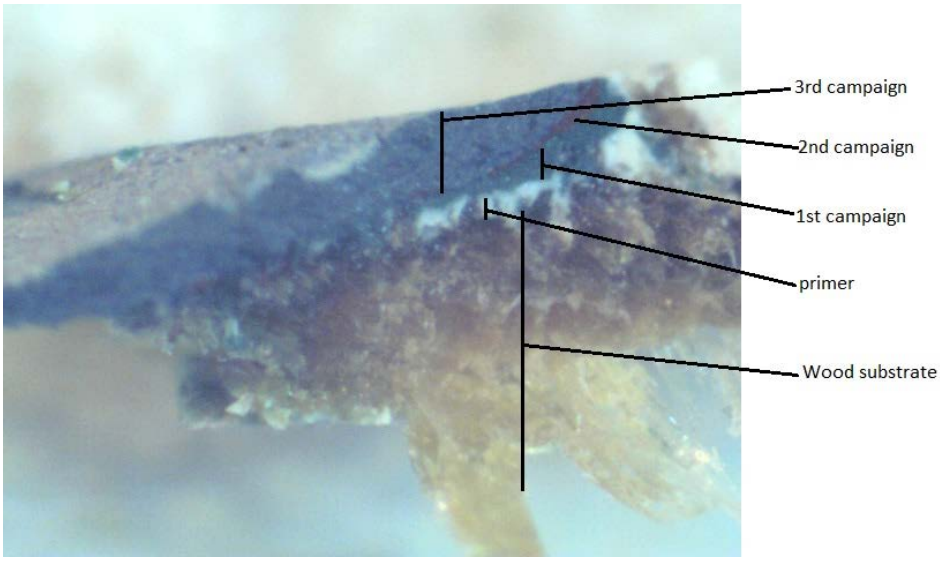
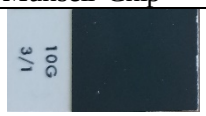
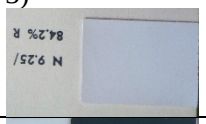
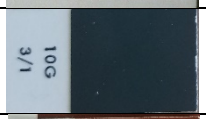
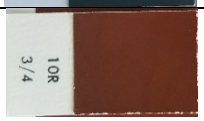
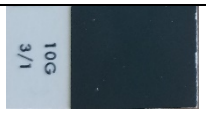
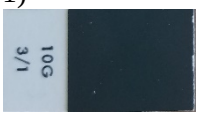
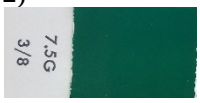
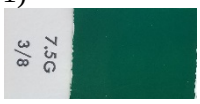
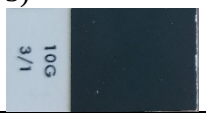
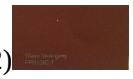
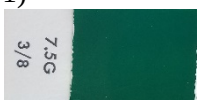
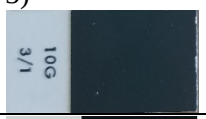
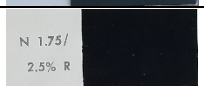
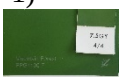
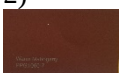


Figure 10. Sample GF-N-E-B taken from the east window surround. 40x magnification. (Sample procured August 26, 2016)

the matching color palettes seems to suggest a connection between the two buildings, probably when the Green Fronts operated as a diner in the early Bovey era. The second youngest paint campaign displays the entire building in red, with no differentiation between trim and body. This paint campaign can be indicative of hard times for the owner or lack of experience.

Underneath these younger layers is the original campaign, showing a vibrant green building. The original campaign features a bright medium green building body on both the east and west buildings, with windows and eaves trimmed with a slightly darker blue-green. The west building, a log cabin with an applied gabled front, has no paint on its west elevation. The west building's southern elevation is also sided in drop siding through to the gable. A portion of this drop siding is encased within the shed addition. The drop siding seems to simply be applied to the log building. The east building features colors in the east addition consistent with the rest of the building.

Table 5.6. Green Fronts Boarding House Color Palette – East building, exterior				
Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
East Building: wood trim in gable (south elevation)	10G 3/1		Evergreen Boughs 1129-7	
East Building: drop lap siding in gable (south elevation)	10R 3/4		Warm Mahogany PPG 1060-7	
East Building: wood trim on addition under roofline (south elevation)	1) 10G 3/1 2) 10R 3/4 3) N 9.25 84.2%R	1)  2)  3) 	1) Evergreen Boughs 1129-7 2) Warm Mahogany PPG 1060-7 3) Snowbank PPG 1043-1	1)  2)  3) 
East Building: door top rail (south elevation)	10G 3/1		Evergreen Boughs 1129-7	
East Building: door - top left panel (south elevation)	10R 3/4		Warm Mahogany PPG 1060-7	
East Building: east window surround (south elevation)	10G 3/1		Evergreen Boughs 1129-7	
East Building: east window muntin (south elevation)	1) 10G 3/1 2) 7.5G 3/8	1)  2) 	1) Evergreen Boughs 1129-7 2) Peacock Green PPG 1140-7	1)  2) 

East Building: roof trim, eave (north elevation)	1) 7.5G 3/8 2) 10R3/4 3) 10G 3/1	1)  2)  3) 	1)Peacock Green PPG 1140-7 2) Warm Mahogany PPG 1060-7 3) Evergreen Boughs 1129-7	1)  2)  3) 
East Building: east window – surround (north elevation)	1) 7.5G 3/8 2) 10R3/4 3) 10G 3/1	1)  2)  3) 	1)Peacock Green PPG 1140-7 2) Warm Mahogany PPG 1060-7 3) Evergreen Boughs 1129-7	1)  2)  3) 
East Building: east window muntin (north elevation)	N1.75/ 2.5%R		Onyx PPG 1011-7	
East Building: drop lap siding (north elevation)	1) 7.5GY 4/4 2) 10R 3/4	1)  2) 	1) Mountain Forest PPG 1130-7 2) Warm Mahogany PPG 1060-7	1)  2) 
East Building: Door, panel (north elevation)	10R 3/4		Warm Mahogany PPG 1060-7	

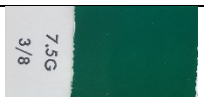
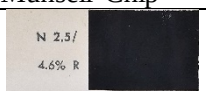
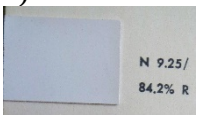
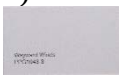
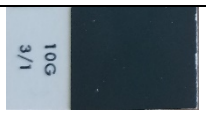
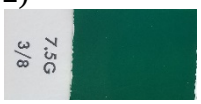
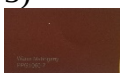
East Building: Door surround (north elevation)	7.5G 3/8		Peacock Green PPG 1140-7	

Table 5.7. Green Fronts Boarding House Color Palette – West building, exterior

Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
West Building: wood trim in gable (south elevation)	N2.5 4.6%R		Black Forest 1012-7	
West Building: wood trim in gable under roof (south elevation)	10R 3/4		Warm Mahogany PPG 1060-7	
West Building: gable, behind chimney (south elevation)	10R 3/4		Warm Mahogany PPG 1060-7	
West Building: window rail, west building 4-light (south elevation)	2.5BG 2/6		Billiard Green PPG 1139-7	
West Building: trim under shed roof on addition (south elevation)	1) 2.5y 5/2 2) N 9.25 84.2%R 3) 10R 3/4	1)  2)  3) 	1) Patches PPG 1024-6 2) Snowbank PPG 1043-1 3) Warm Mahogany PPG 1060-7	1)  2)  3) 
West Building: drop lap siding (south elevation)	10R 3/4		Warm Mahogany PPG 1060-7	

West Building: eave trim (north elevation)	10G 3/1		Evergreen boughs PPG 1129-7	
West Building: Closed eave (north elevation)	1) 7.5GY 4/4 2) 7.5G 3/8 3) 10R 3/4	1)  2)  3) 	1) Mountain Forest PPG1130-7 2)Peacock Green PPG 1140-7 3) Warm Mahogany PPG 1060-7	1)  2)  3) 
West Building: lapped siding in gable (north elevation)	1) 7.5GY 4/4 2) 10R 3/4	1)  2) 	1) Mountain Forest PPG1130-7 2) Warm Mahogany PPG 1060-7	1)  2) 

Methodist Church

The Methodist Church is a rubble building with wood windows, doors, and roof. Because there are few wood elements, both the inside and the outside of the building were sampled. The church interior is wallpapered on both the walls and ceiling, with seemingly only one wall-papering campaign. The wallpaper is an intricate blue and gold affair with geometric and floral patterns. Underneath the wallpaper is a blue-tinted plaster.

The interior side of the gothic arched windows were painted white with some faint blue tones on the window rails and muntins. The sill was white in the first campaign, but later painted a darker gray. The window apron was painted white. All of the gothic windows have the same paint campaign, but this was expected. The church door interior is also entirely white (rails, panels, arch) trimmed with the same dark gray (lighter in tone than the sill, but possibly the same).

The exterior windows, door, and boxed eaves feature up to three campaigns. (Figure 5.11) The windows have two campaigns; the first is white and the second features gray window rails with a medium tan trim around the entire window. The door exterior also has two campaigns; the first is white and the second a warm yellow-tan, with no variation. The boxed eaves have three paint campaigns; the first is white and the second is a dark beige. The third campaign only occurs on some of the detailing for the cornice beneath the boxed eave. These elements are the molded cornice and the flat cornice pieces, which are a rich, dark burgundy color. Two more cornice pieces below the red are

the same sandy brown as the boxed eaves, suggesting that the red elements were decorative.

The first paint campaign of white for both the interior and exterior suggests two things: one - that it is highly likely that the same white paint was used for both interior and exterior, and two - that the painter, amateur, volunteer, or professional, saw the paint as less important than the wallpaper, and did not want to distract from the complex patterns that cover every available surface.

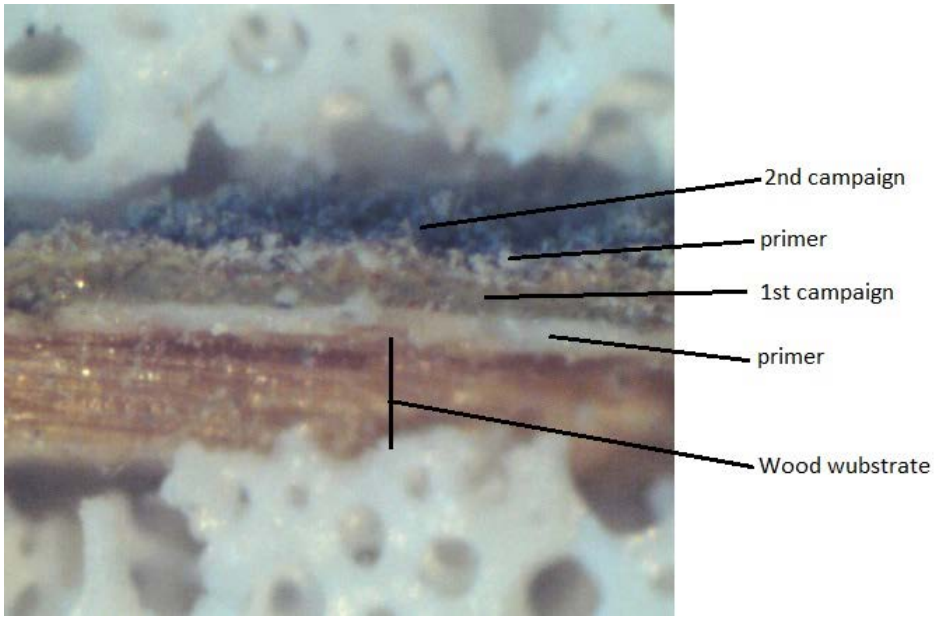
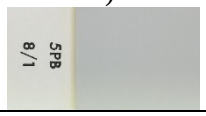
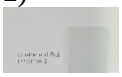
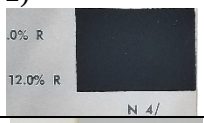
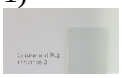
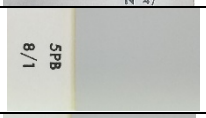
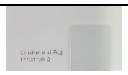
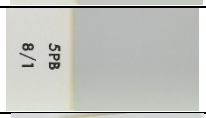
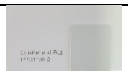
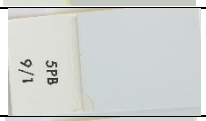
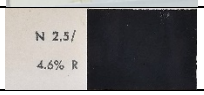
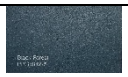
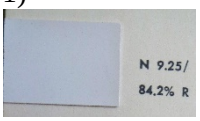
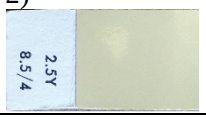
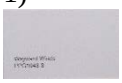
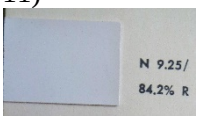
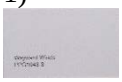


Figure 5.11. Sample BE-E-A taken from the boxed eave on the east elevation. 40x magnification. (Sample procured August 24, 2016)

Table 5.8. Methodist Church Color palette - interior				
Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
Window apron	1) 5b 6/1 2) 5pb 8/1 base under flecks	1)  2)  	1) Feldspar PPG 1038-5 2) Cumberland Fog PPG 1168-2	1)  2) 
Window sill	1) 5pb 8/1 2) N 4 12.0%R	1)  2)  	1) Cumber-land Fog PPG 1168-2 2) Knight's Armor PPG 1001-6	1)  2) 
Angled frame	5pb 8/1	 	Cumberland Fog PPG 1168-2	
Lower sash side, upper rail	5pb 8/1	 	Cumberland Fog PPG 1168-2	
Upper sash rail	5pb 9/1	 	Orchid Mist PPG 1247-1	
Arch rail	5pb 9/1	 	Orchid Mist PPG 1247-1	
North Door interior: trim	N 2.25 3.8% R	 	Black Forest PPG 1012-7	
North Door interior: side rail	1) N 9.25 84.2%R 2) 2.5y 8/4	1)  2)  	1) Snowbank PPG 1043-1 2) Antique Cream PPG 12-11	1)  2) 
North Door interior: upper panel	1) N 9.25 84.2%R 2) 2.5y 8/4	11)  	1)Snowbank PPG 1043-1 2) Antique Cream PPG 12-	1) 

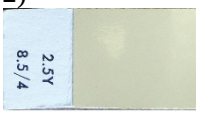
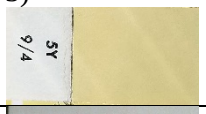
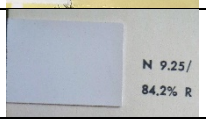
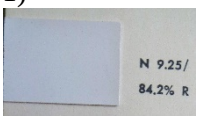
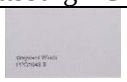
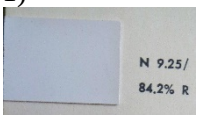
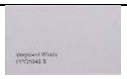
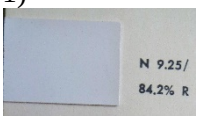
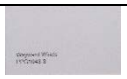
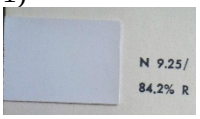
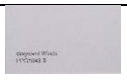
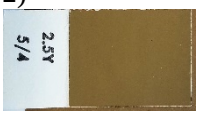
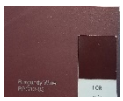
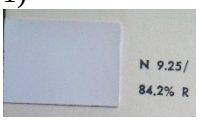
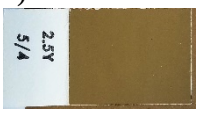
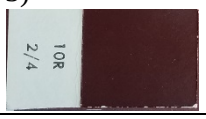
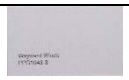
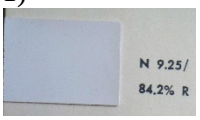
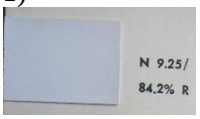
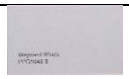
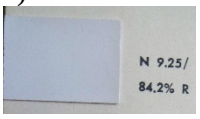
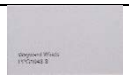
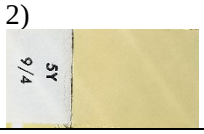
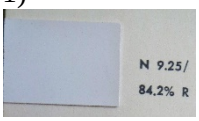
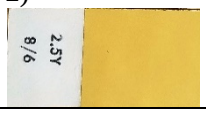
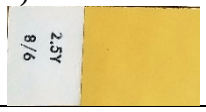
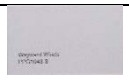
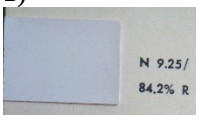
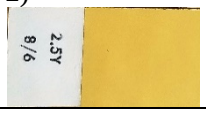
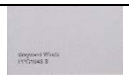
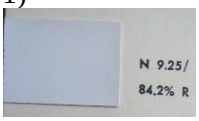
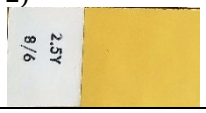
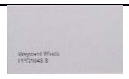
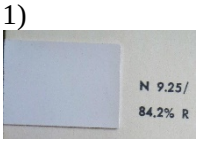
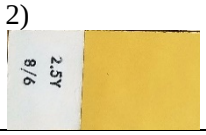
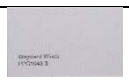
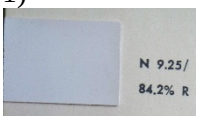
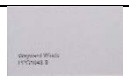
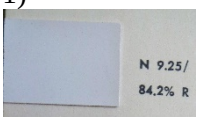
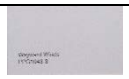
	3) 5y 9/4	2)  3) 	11 3) Turning Oakleaf PPG 1107-3	2)  3) 
North Door interior: gothic arch	N 9.25 84.2%R		Snowbank PPG 1043-1	

Table 5.9. Methodist church color palette- exterior				
Location	Munsell Code	Munsell Chip	Pittsburgh Code	Pittsburgh Chip
Boxed Eave: east elevation - topmost piece of molded cornice	1) N 9.25 84.2%R 2) 2.5y 5/4	1)  2) 	1) Snow-bank PPG 1043-1 2) Seasoned Acorn PPG 1096-7	1)  2) 
Boxed Eave: east elevation - 2nd piece from top – flat	1) N 9.25 84.2%R 2) 2.5y 5/4	1)  2) 	1) Snow-bank PPG 1043-1 2) Seasoned Acorn PPG 1096-7	1)  2) 
Boxed Eave: east elevation - underside of boxed eave	1) N 9.25 84.2%R 2) 2.5y 5/4	1)  2) 	1) Snow-bank PPG 1043-1 2) Seasoned Acorn PPG 1096-7	1)  2) 
Boxed Eave: east elevation - molded cornice below boxed eave	1) N 9.25 84.2%R 2) 2.5y 5/4	1) 	1) Snow-bank PPG 1043-1	1) 

	3) 10R 2/4	2)  3) 	2) Seasoned Acorn PPG 1096-7 3) Burgundy Wine PPG 13-03	2)  3) 
Boxed Eave: east elevation - flat piece below molded piece	1) N 9.25 84.2%R 2) 2.5y 5/4 3) 10R 2/4	1)  2)  3) 	1) Snow-bank PPG 1043-1 2) Seasoned Acorn PPG 1096-7 3) Burgundy Wine PPG 13-03	1)  2)  3) 
Box ed Eave: east elevation - molded piece 1" thick below flat piece	1) N 9.25 84.2%R 2) 2.5y 5/4	1)  2) 	1) Snow-bank PPG 1043-1 2) Seasoned Acorn PPG 1096-7	1)  2) 
Boxed Eave: east elevation - bottom most piece of cornice – flat	1) N 9.25 84.2%R 2) 2.5y 5/4	1)  2) 	1) Snow-bank PPG 1043-1 2) Seasoned Acorn PPG 1096-7	1)  2) 
North Door exterior: side rail	1) N 9.25 84.2%R 2) 5y 9/4	1) 	1) Snow-bank PPG 1043-1 2) Turning Oakleaf PPG 1107-3	1)  2) 

		2) 		
North Door exterior: lower panel (relief)	1) N 9.25 84.2%R 2) 2.5y 8/6	1)  2) 	1) Snow-bank PPG 1043-1 2) Tropical Siesta PPG 1107-5	1)  2) 
North Door exterior: lower panel (trim)	1) N 9.25 84.2%R 2) 2.5y 8/6	1)  2) 	1) Snow-bank PPG 1043-1 2) Tropical Siesta PPG 1107-5	1)  2) 
North Door exterior: arch recess trim	1) N 9.25 84.2%R 2) 2.5y 8/6	1)  2) 	1) Snow-bank PPG 1043-1 2) Tropical Siesta PPG 1107-5	1)  2) 
North Door exterior: door recess trim panel	1) N 9.25 84.2%R 2) 2.5y 8/6	1)  2) 	1) Snow-bank PPG 1043-1 2) Tropical Siesta PPG 1107-5	1)  2) 
North Door exterior: door recess trim	1) N 9.25 84.2%R 2) 2.5y 8/6	1)  2) 	1) Snow-bank PPG 1043-1 2) Tropical Siesta PPG 1107-5	1)  2) 

Northmost window on east wall – exterior: exterior trim arch	1) 10b 9/1 2) 2.5y 5/4	1)  2) 	) Snow-bank PPG 1043-1 2) Seasoned Acorn PPG 1096-7	1)  2) 
Northmost window on east wall – exterior: arch rail	1) 10b 9/1 2) 5y 5/2	1)  2) 	1)Snow-bank PPG 1043-1 2)no good match; Rattan palm PPG 1027-5	1)  2) 

CHAPTER VI

RECOMMENDATIONS

The intended audience of this thesis is the Montana Heritage Commission (MHC) and groups like it—those in charge of the care of vernacular buildings in western United States settings, and especially those with no relation or precedent study to draw from. It is important for the audience of this thesis to recognize that preservation philosophy plays a significant role in how buildings are preserved. A preservation philosophy dictates the way a group will approach and treat a historic resource. Whether a group's philosophy is to preserve-in-place with minimal intervention, to restore buildings to former appearance, to rehabilitate buildings to an operating standard for their continued use, or to reconstruct a building otherwise lost to demolition or other forces, the chosen philosophy will affect the longevity of the buildings in their care.

In practice the Montana Heritage Commission at Virginia City, with respect to paint, subscribe to a preservation-based approach. They opt to present the town in a state of arrested decay, the state it decayed to by Charles Bovey's 1940s interventions. Though Bovey reconstructed several buildings, he left them bare and without historical finishes. Bovey's preservation philosophy might be construed as reconstruction and restoration of existing Virginia City buildings, but his personal vision or fantasy of what an old western mining town should look like and what would be attractive to the average tourist in the 1950s-1970s likely dictated Bovey's lack of desire to restore painted or wallpapered finishes. As a result, the Virginia City that is portrayed is the one frozen in the 1940s when Charles Bovey began acquiring buildings, rather than one frozen in the National Historic Landmark District period of significance 1863-

1875. This is carried forward in interpretive practice where MHC has kept the 1940s-1950s buildings' names and interpretive displays curated by Bovey, despite their inaccuracies: for example, the Kraemer Store is interpreted as a dress shop despite never having been a dress shop.[1]

According to the MHC's strategic plan, their top strategic priority is to "preserve: establish a more effective system to ensure proper allocation of resources, preservation and maintenance prioritization, and cataloging of historic buildings and artifacts."[2] Their strategies for implementing this including moving artifacts to a database system and prioritizing buildings for preservation, and determining which assets (buildings) align with revenue goals.[3] Another strategic priority that is incredibly relevant to this thesis is the fourth priority: "Enhance visitor's physical experience by providing engaging, memorable, and a unique understanding of where Montana's history began."[4] This relates directly to the possibilities for new interpretation suggested by this thesis. At several of the buildings, the stories of women in brothels, the stories of Chinese or German immigrants, and the stories of the Methodist church congregation all receive very little attention and have opportunity for improvement.

The preservation model for MHC as of the most recent 2015 accomplishments report is to preserve in place, with minimal intervention that is hidden from view.[5] Though the philosophy does allow for repairs, repairs are restricted to replacement in kind for deteriorated parts. The philosophy mirrors the Secretary of Interior Standards for Preservation, with few specifications

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[1] Gruen (2011), 24.
[2] Montana Heritage Commission. *Montana Heritage Commission Strategic Plan*. Report. (2015) 5.
[3] Ibid, 6.
[4] Ibid, 6.
[5] Don Steeley. *Montana Heritage Preservation and Development Commission Historic Preservation Team Annual Report*. (Virginia City: Montana Heritage Commission, 2015), 5; the entire text of the Montana Heritage Commission Preservation Philosophy may be found in Appendix B.

beyond these standards.[6] In practice, the 2015 report shows that the MHC does engage in "rehabilitation" of buildings outside of their preservation philosophy, with the example of the siding and porch detail replacement and repainting of a building referred to as "Aunt Julia's." The report makes no mention of attempting a color matching or using historically accurate paints to conduct the rehabilitation.[7] (Figure 6.1)

Figure 6.1. Aunt Julia's 2015 restoration. Images from 2015 MHC Preservation Report

[6] 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 & Reconstructing Historic Buildings.* (Washington D.C.: Department of the Interior, 1995), 17-18.
[7] Steeley, 8-15.

It is the conviction of the author that given the MHC's chosen philosophy of preservation and their practices with rehabilitation and restoration that are incompatible with that philosophy, the MHC should update their preservation philosophy to reflect the work they must do to keep such a large building stock from deteriorating. They should instead adopt the Secretary of Interior Standards for Rehabilitation. (Table 6.1)

Table 6.1. Secretary of Interior Standards for Rehabilitation[8]

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.

[8] Weeks and Grimmer, 62.

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 a such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The MHC already employs in practice, if not in official philosophy, many aspects of the Rehabilitation Standards as exemplified by Aunt Julia's and other 2015 preservation projects. The Rehabilitation Standards should be applied to all new projects and buildings should be prioritized for rehabilitation. With respect to paint, historical finishes should not merely be recorded and suggested—it should be incorporated directly into preservation projects for buildings and included as if it were a structural element, roof piece, or decorative bracket.

General Recommendations

Why paint a building rather than opting for arrested decay or applying linseed oil every year to bare wood? Though historic districts, historical landmarks, and outdoor museums are typically painted to appear as accurate to their given period of significance as possible, the same trend has not extended to mining towns in the American West. Arrested decay as a preservation philosophy at Bodie wholly accepts that the buildings will one day degrade beyond repair and the California State Park caretakers have chosen to allow their slow demise.[9]

[9] Jimenez, 169, 174

Virginia City has chosen to maintain buildings in a state of arrested decay, even though they do not formally say so, contributing to the idea that the "ghost town" historical site and tourist attraction must appear to be decaying. Bare wood and peeling paint contribute to this aesthetic, but it is at its heart detrimental for buildings in the long term, and a misrepresentation of how the buildings would have appeared in their period of significance. Current practice at the MHC is to apply a yearly or bi-yearly coat of colorless, boiled linseed oil to bare wood exteriors as a conditioning treatment.[10] This methodology and appeal to the "ghost town" aesthetic, however inauthentic a presentation it may be, likely achieves part of the MHC's goals for aligning building assets with revenue goals. The application of linseed oil atop failing paint is also in one of the "not recommended" practices listed in the Rehabilitation Guidelines.

Linseed oil, after a multi-decade period of decay and lack of paint, is starting to show its shortcomings. Wood exteriors are splintering and checking. Nail and hardware attach points have become degraded from being exposed to the elements. Existing historical paint is peeling and alligator-ing away from the wood substrates. Linseed oil is insufficient for all of the buildings in this study's needs due to their advanced state of decay. Painting these surfaces would resolve some of these issues, and would protect building materials longer than a yearly or bi-yearly application of linseed oil. A new paint layer would also trap earlier paint campaigns and prevent further deterioration of historical materials. Finally, paint contributes visually to the experience of visitors. New paint can be matched to authentic and historically representative colors, provide a visual connection between the buildings and the people who would have lived and worked in

[10] Don Steeley. Personal communication. (August 2016)

them, and gently leads visitors to the understanding that bare wood buildings are intellectually dishonest representations of the past.

Prioritization of Buildings for Rehabilitation

Given the project work from 2015, the current preservation work of the MHC mostly consists of stabilization work for deteriorated structural building components. This thesis recommends a shift in preservation philosophy and a shift in prioritization of sites. Preservation is their top strategic plan priority and visitor experience is the fourth priority—rehabilitating painted exteriors and updating and incorporating new interpretation can satisfy both priorities. Below is a ranking of buildings in this project for rehabilitation. (Table 6.2) There are three factors by which to rank buildings in this project: the state of their physical deterioration, the potential for future interpretation which may satisfy MHC's strategic plan priority, and a ranking of the least time and monetarily-intensive projects. Physical deterioration ranking includes not only the physical status of the paint on the building but the physical deterioration of the wood substrate or missing/damaged painted elements (such as window trim or battens). The second factor was the highest potential for new interpretive opportunities to incorporate into the MHC's existing landscape of stories. The third factor weighs time, labor, and material costs into the project—in other words a ranking of project difficulty. A project that involved repainting the window and eaves of the Methodist church is less material- and time-intensive than repainting the multiple facades and architectural elements of the Green Fronts.

Table 6.2. Ranking of buildings for paint rehabilitation			
Most physically deteriorated	*Highest potential for interpretation/new stories*	*Lowest monetary cost, labor cost*	*Final Ranking*
Kraemer Store	Green Fronts	Methodist Church	Kraemer Store
McGovern Goldberg Store	Strasburger Colorado Store	Kraemer Store	McGovern Goldberg Store
Strasburger Colorado Store	McGovern Goldberg Store	McGovern Goldberg Store	Strasburger Colorado Store
Green Fronts	Kraemer Store	Strasburger Colorado Store	Green Fronts
Methodist Church	Methodist Church	Green Fronts	Methodist Church

Technical Execution

Several excellent texts and guidelines for repainting historical structures exist for the MHC and organizations like it. This thesis will only attempt an overview of these texts—not repeat them. Chief among these are the Rehabilitation Guidelines produced by the Department of the Interior, which include a set of "recommended" and "not recommended" processes, described below. (Table 6.3) As these are all contributing sites to the Historical Landmark District, it is paramount that the MHC follows the Secretary of Interior guidelines closely.

The general process involves sampling, color matching, and testing, which have been carried out by this thesis, then rehabilitation. When MHC chooses to rehabilitate buildings, they will prepare the surface by removing damaged paint, prime the substrate, and apply new paint that has been color matched per the results of this thesis. Here, "damaged paint" refers to paint that is peeling, blistering, wrinkling, crazing, checking, surface microcracking, alligatoring, chalking, or otherwise separating from the wood substrate or other layers of paint.[11] (Figure 6.2)

[11] Frank G. Matero. "Chapter 10. Paints and Coatings." *Conserving Buildings*. Eds. Martin E. Weaver and Frank G. Matero. (New York: Preservation Press, John Wiley and Sons, 1997), 222.

Table 6.3. Rehabilitation Guidelines: Building Exterior. Wood: Clapboard, weatherboard, shingles, and other wooden siding and decorative elements[12]	
Recommended	Not Recommended
Identifying, retaining, and preserving wood features that are important in defining the overall historic character of the building such as siding, cornices, brackets, window architraves, and doorway pediments; and their paints, finishes, and colors. Protecting and maintaining wood features by providing proper drainage so that water is not allowed to stand on flat, horizontal surfaces or accumulate in decorative features. Applying chemical preservatives to wood features such as beam ends or outriggers that are exposed to decay hazards and are traditionally unpainted. Retaining coatings such as paint that help protect the wood from moisture and ultraviolet light. Paint removal should be considered only where there is paint surface deterioration and as part of an overall maintenance program which involves repainting or applying other appropriate protective coatings.	Removing or radically changing wood features which are important in defining the overall historic character of the building so that, as a result, the character is diminished. Removing a major portion of the historic wood from a façade instead of repairing or replacing only the deteriorated wood, then reconstructing the facade with new material in order to achieve a uniform or "improved" appearance. Radically changing the type of finish or its color or accent scheme so that the historic character of the exterior is diminished. Stripping historically painted surfaces to bare wood, then applying clear finishes or stains in order to create a "natural look." Stripping paint or varnish to bare wood rather than repairing or reapplying a special finish, i.e., a grained finish to an exterior wood feature such as a front door. Failing to identify, evaluate, and treat the causes of wood deterioration, including faulty flashing, leaking gutters, cracks and holes in siding, deteriorated caulking in joints and seams, plant material growing too close to wood surfaces, or insect or fungus infestation. Using chemical preservatives such as creosote which, unless they were used historically, can change the appearance of wood features. Stripping paint or other coatings to reveal bare wood, thus exposing historically coated surfaces to the effects of accelerated weathering.

[12] Weeks and Grimmer, 71.

Per the Secretary of Interior Rehabilitation Guidelines, undamaged historical paint should not be removed—paint can adhere effectively to both older paint layers and bare wood substrate.[13] For paint removal execution, another Secretary of the Interior Technical Brief provides excellent solutions for specific problems— *Preservation Briefs 10: Exterior Paint Problems on Historic Woodwork.*[14] While the Guidelines provide a rough outline of what to do and what to avoid, the technical brief addresses condition assessment, paint removal methods, and paint removal safety with specific instructions. The brief breaks down removal treatments by media type (e.g. distemper or oil mediums) and specific condition problems.

Figure 6.2. Example of "alligatoring" at Green Fronts. Photo by K. Geraghty August 24, 2016

[13] Kay D. Weeks and David W. Look. *10. Preservation Briefs: Exterior Paint Problems on Historic Woodwork.* (Washington D.C.: Department of the Interior, September 1982), 2.
[14] Weeks and Look, 1-2.

Another excellent source is Brian Powell's chapter in *Paint in America* titled "Painting Techniques: Surface Preparation and Application." Powell outlines surface preparation, priming, and painting as well as necessary tools, various application techniques, and climatic considerations for the painter. For the purposes of this thesis, I will summarize which techniques from Powell's chapter should be utilized for buildings at Virginia City. For a more in-depth approach, preservation technicians or conservationists should consult Powell's chapter.

Preparing previously painted wood for new paint is dependent on the condition of the previous paint layer: good condition paint may be left untouched, poor condition paint will require removal. The wood substrate should be cleaned of all oil or dirt wherever possible.[15] This may be difficult in an outdoor environment such as summer in Virginia City, Montana, so technicians should not leave too much time between cleaning, priming and painting. Dirt and oil may be cleaned by hand with a sponge, rag or low-pressure hose. Under no circumstances should a pressure washer be used as the substrates in Virginia City are fragile and porous.[16] All surface should be clean and dry before priming.

New paint should not be applied over failing paint. If paint is detaching from the building or from other paint layers, there are several types of paint removal at the disposal of the preservation technician including scraping, sanding, solvent-based strippers, or by heating. For the Virginia City sites, scraping or hot-air guns are the recommended methods for paint removal if it is necessary.

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[15] Brian Powell. "Painting Techniques: Surface Preparation and Application." *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 208.
[16] Ibid.

Scraping is the least invasive method. It should be done in the direction of the wood grain with a dull knife or scraper held at a low angle.[17] Curved scrapers exist for cleaning difficult moldings and may be useful for several buildings in this study. Mechanical scraping is time intensive, but the outcomes are easiest to control for, unlike with using machines to scrape or sand which can damage wood substrate. Scraping is best suited for a wood substrate and will not be as effective with a masonry or cast-iron substrate.

As the paint in this study is almost certainly lead-based pigments in an oil medium, hand or mechanical sanding should be undertaken only with the utmost care for the preservation technician and the public that could come into contact with the project. Lead, known to be present in these paints, is considered a toxic substance and ingestion of lead via "hand-to-mouth transmission is thought to be the greater threat."[18] Those doing sanding should wear respirators, even in outdoor settings and work areas should be covered to make clean-up of lead dust easier. Vacuuming is not an effective method for lead dust removal.

Solvent-based strippers are an effective and low-cost method for paint removal. Because many solvent-based strippers contain methylene chloride, methanol, and toluene, preservation technicians should take all precaution to avoid inhaling the solvent, allowing the solvent to touch bare skin, or reusing rubber gloves that have touched solvent, as these are carcinogenic chemicals that may cause health issues. If using this method, after paint removal the area must be cleaned with denatured alcohol to remove residual waxes from the solvent. [19]

[17] Powell, 209.
[18] Powell, 210.
[19] Powell, 212.

Heating is another effective paint removal method with some health precautions. Heating lead-based paint can release toxic gases. With proper personal protective equipment, such as a fitted inhaler mask with a "fresh organic vapor cartridge", these hazards can be mitigated[20] Heat coils or hot-air guns are the best tools for this method, but take considerable time. The heat from these guns causes paint to lift and a scraper or putty knife can then be used to remove paint.

Priming is the next step after preparing the wood surface. The only primer that should be used on these buildings is an oil-based primer. This allows for better bonding between a historical oil-based paint layer below and any other type of paint layer above. Do not use any primer that does not specifically say on its label that it can "bind to oil films."[21] Primer should be applied to clean, dry surfaces and should always be completely dry before applying paint atop the primer. Applying paint to wet or tacky primer can cause poor adhesion or damage such as wrinkling, cracking, or blistering in the future.[22] Primer should be applied in a thin coat with a brush to assure quick drying.

Oil based paints are the recommended product for Virginia City as it is essentially "replacement in kind." Oil based paints also shrink less than latex paints, and are better for outdoor application.[23] Paint must be compatible with its primer, so choosing paint and primer from the same commercial manufacturer is ideal.[24] Paint should be applied using a brush to achieve the aesthetic and visual compatibility with the historic landmark district. Preservation technicians should not use rollers or mechanical sprayers to apply paint. Brushes are also ideal for painting architectural details in distinct colors, for example, painting a thin band on the

[20] Powell, 212.
[21] Powell, 213.
[22] Powell, 214.
[23] Weeks and Look, 11.
[24] Powell, 213.

cornice or painting the window muntins. Synthetic or natural fiber brushes are both acceptable for painting on wood substrate, if the brush is cared for properly in between uses. Visible brushwork that leaves directional markings, a process called "laying off," is not incompatible with the historical period of significance for the site: 1863-1874.[25] Once painted, buildings should be painted as part of their routine maintenance. They may not need to be repainted for years with proper maintenance and regular condition assessment.

A Word on Commercial Paint Manufacturers

Commercial paint manufacturers once had to publish collections of paint chips that were manufactured and sold as-is, with no variation in colors. This made matching a Munsell color to an existing commercial chip difficult if you could not locate your color in one manufacturer's collection. Some collections, such as the Benjamin Moore© Colonial Williamsburg Collection were recommended for their supposed historical accuracy, though limited to only 144 colors and a single regional and temporal style. Color matching after paint analysis would typically be done using several paint chip fan decks to locate ideal matches. If there was no exact match, clients like MHC and paint researchers would simply have to make do.

Today, you can have any color matched using a colorimeter or photo-spectrometer and mixed on-site at a retailer using any paint manufacturer of your choosing. Therefore, if there is no exact commercial match in an existing paint chip collection, now paint researchers and preservation groups like the MHC have the option of taking a Munsell paint chip to a local

[25] Powell, 220. "Laying off," according to Powell, would involve painting a broad surface in an "irregular pattern against the direction of the final brush work. After the given wall or ceiling area is covered with paint, lay off with even parallel strokes." (220)

hardware store and having a custom-mixed batch of paint made in the amount they require as needed. MHC specifically requested matching colors to Pittsburgh Paints© for this project, and indeed, they will be able to use their preferred manufacturer. Nearly all manufacturers offer multiple-year guarantees on the quality of their products, so a Sherwin Williams© paint and Benjamin Moore© paint and a Pittsburgh Paints© paint are all just as likely to be successful as the other. There is now little discernable difference between paint manufacturers other than personal preferences and customer loyalty. If a preservation organization like MHC decides to implement the prescriptions present in this thesis, it may be desirable to test multiple manufacturers and determine which one works best in their individual environmental conditions.

Additional Testing

For the purposes of this thesis and other projects at Virginia City, a simple color match was all that was needed to fit MHC's needs. For this, additional testing to discern the exact chemical signatures of the paint and amounts of individual pigments used in the original paint mixture were not called for. Usually, testing to identify the pigment and media in paints is customary practice for paint analysis, one that has been encouraged for nearly seventy years both for architectural paints and for the fine arts world.[26] There is great opportunity for better "historical and visual" interpretation, capturing owner tastes, painter's craft, alterations, and even contributing chronological information—some pigments are only used in certain regions in

[26] Andrea M. Gilmore. "Analyzing Paint Samples: Investigation and Interpretation." *Paint in America: the colors of historic buildings*, edited by Roger W. Moss. (Washington D.C.: Archetype Press, 1994), 180; Matero (1997), 223-226; Rutherford G. Gettens and George L Stout. *Painting Materials: A Short Encyclopedia*. (New York: Dover Publications, 1966); Joyce Plesters. "Cross-Sections and Chemical Analysis of Paint Samples." *Studies in Conservation*. Volume 2. (1956), 110-131.

specific time frames.[27] This is often useful for determining chronology in the early nineteenth century.

If the MHC were interested in moving beyond color matching and wished to test samples from this thesis or wished to test paint samples in the future, to discover the chemical content of the paint, this thesis recommends scanning electron microscopy with energy dispersive X-ray spectroscopy (SEM-EDS). Scanning electron microscopy (SEM) uses an electron beam to give information about the texture, shape and size of a sample, while energy dispersive X-ray spectroscopy (EDS) clarifies composition and crystalline structure of the sample. In short, a report from SEM-EDS will give the percent composition of each chemical present in the sample. This would be useful if the components of the paint were a mystery, or contained an unforeseen chemical not normally used in the paint process. However, there is no indication of this practice and the receipts of professional painters and Virginia City citizens alike show that white and red lead, lampblack, umber, and oil comprised most of the hand-mixed paint available in town. The earliest buildings in this study (Kraemer Store, McGovern-Goldberg, and Strasburger Store) corroborate these pigments. Brighter colors, such as the bright green at Green Fronts are very likely ready-mixed paint, as green pigments were expensive, toxic and unlikely to be used to cover entire building surfaces.

[27] Matero (1997), 223.

Individual Recommendations for Buildings

Kraemer Store Recommendations

The Kraemer Store would benefit greatly from both physical rehabilitation and new interpretation. The false front on the south elevation is deteriorating: battens are separating from boards, the bay window foundation or supports have failed, causing the window to sink and pull away from the building, and the nail hardware all appear loose and unsecured. The Kraemer Store would benefit greatly from rehabilitation using paint. After other structural problems, such as the separating bay window, are remedied, MHC should restore paint to the first paint campaign at the Kraemer Store. The first paint campaign is a dark gray board and batten, with window frame, window muntins, and door frame trimmed in lighter dove-gray. A paint color key is included at the end of this section. (Figure 6.3) Paint should be applied with a brush. No evidence of signage or advertisement painted directly onto the building was discovered on the false front above the building's awning and should not be attempted without photographic evidence.

The MHC should also update their interpretation for the Kraemer Store. The Kraemer Shop has a Bovey-era display of goods inside the south-most room, but misrepresents the shop as a dress store. Currently, only a small interpretive panel measuring 12 inches by 8 inches is affixed to the side of the building with limited information. Perhaps instead the MHC could re-interpret the display to be reflective of Julius and Frederick Kraemer's long-standing saddlery business or, as there is a distinct lack of Chinese immigrant interpretation at Virginia City, Ah You's short-lived Chinese laundry business. A second interpretive panel, placed in front of the building or across the street looking at the building could depict a scaled model of the building or

photo with appropriate colors on respective pieces of the building. The issue with outdoor panels is that they fade over time and with exposure to sunlight and may need replacement. Interpretive displays could also be placed in building windows, though this would no achieve the desired effect for comparison.

It is not recommended that the MHC open paint layer exposure windows on the Kraemer Store. An exposure window consists of a few square inches of paint removed to show the sequence of lower paint layers. This format would not succeed at the Kraemer Store as there is not enough paint left on the surfaces to safely or effectively show each paint campaign layer. The existing paint has weathered beyond the capacity for this type of interpretation.

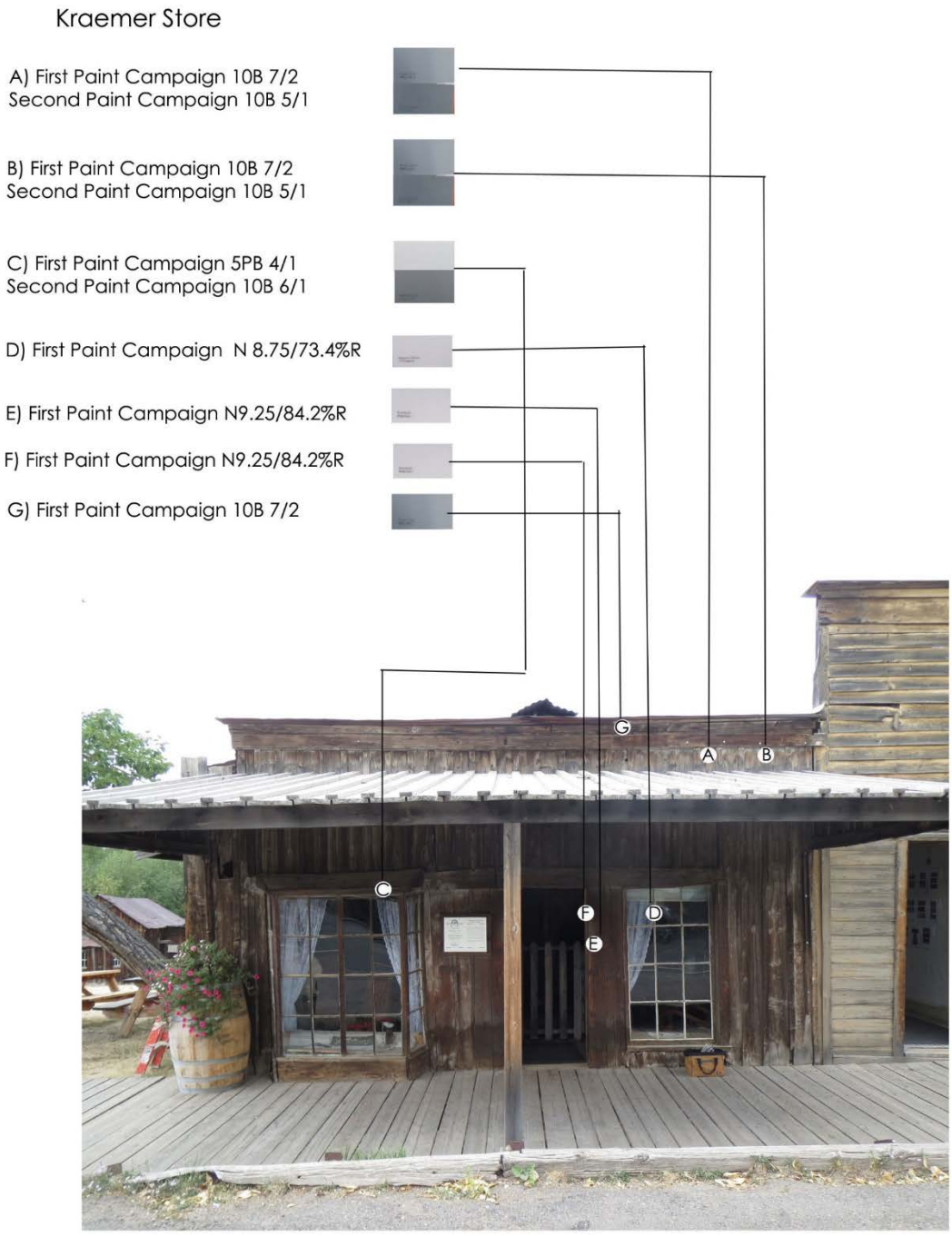


Figure 6.3. Kraemer Store paint recommendations, keyed by location. Image created by K. Geraghty May 2017

McGovern-Goldberg Store Recommendations

Like its neighbor, the McGovern-Goldberg Store would benefit greatly from both physical rehabilitation and new interpretation. The false front on the south elevation is in better condition than the Kraemer Store; however, there are still large portions of the false front and details that are devoid of paint and are severely weathered. There are no notable structural repairs necessary before beginning to paint the false front, other than to make sure that loose decorative elements such as cornice moldings and boards are firmly attached to the false front. There is one section of the building, where the "G. Goldberg" paint shadow is on the stringer course, where particular care should be taken. For this thesis, we suggest a full paint rehabilitation for the building. This includes repainting and covering this faint physical remnant of the Goldberg Store. Because the paint was only recovered as a shadow, it appears that the original lettering color was removed, likely with a solvent. The over-paint, matched to the same light yellow-tan as the most recent paint campaign, simply covers bare wood. The original color of the G. Goldberg painted sign is up for debate. The simplest suggestion would be to make it black. Another suggestion is to preserve the paint shadow of the original behind protective glass or plastic sheeting. If this is done, it should be monitored and replaced when what is behind the display is no longer visible. It will have to be cleaned regularly. And finally, displaying the older remnant will have to be explained with interpretive signage.

The McGovern-Goldberg Store varies somewhat from the Kraemer Store in that many of the individual architectural elements are painted in different colors than the lapped board. Care should be taken to match to the first and second paint campaigns. If MHC wants to interpret the Goldberg Store, then they would use the fawn (light tans), medium tans, and dark brown trims. If

the MHC wants to match the McGovern Store, they should use the third and fourth campaigns of yellows and tans identified in the paint key as reference. (Figure 6.4) The McGovern-Goldberg Store still reads as a tan and yellow-painted building. If the MHC were to do a full-scale restoration of the building by repainting it, it would not be visually distracting or contradictory to their preservation philosophy by being obtrusive. When repainting, MHC should not scrape abrasively to remove paint. The object is to preserve as much existing historical paint remnants as possible under a new coat of paint that has been color matched to the paint analysis in this thesis.

It is the strong recommendation of this thesis that the MHC repaint the McGovern-Goldberg Store. If the MHC chooses not to repaint the McGovern-Goldberg Store, it is possible to open an exposure window in a few places to showcase the older paint layers. The paint is in good enough condition to allow this strategy; however, only a few exposure windows may be opened at average adult or child eye level for tourists to view. The trade-off of only restoring eye-level paint exposure windows is that visitors would not be able to experience the other colored areas of the building like the dark green-brown cornice at the top of the building. The McGovern-Goldberg Store has several interpretive possibilities, but its current form is as the McGovern Dry Goods Store (1914-1944). I suggest a plan similar to the one suggested for the Kraemer Store: an interpretive panel placed in front of the building or across the street, possibly depicting a scale model or drawing with appropriate colors on respective pieces of the building.

McGovern-Goldberg Store

A) First Paint Campaign 10YR 8/6

B) First Paint Campaign 10YR 8/6
Second Paint Campaign 2.5Y 8.5/4
Third Paint Campaign 10YR 7/6

C) First Paint Campaign 10YR 8/6
Second Paint Campaign 2.5Y 8.5/4

D) First Paint Campaign 10YR 7/6

E) First Paint Campaign 2.5Y 8.5/4

F) First Paint Campaign 2.5Y 8.5/4
Second Paint Campaign 10YR 7/6

G) First Paint Campaign 2.5Y 8.5/4
Second Paint Campaign 10YR 8/10

H) First Paint Campaign 2.5Y 8.5/4
Second Paint Campaign 10Y 4/2
Third Paint Campaign 5YR 5/4
Fourth Paint Camapign 10YR 8/10

J) First Paint Campaign 10YR 8/10

K) First Paint Campaign 2.5Y 8.5/4

L) First Paint Campaign 2.5Y 8.5/4
Second Paint Campaign 10YR 8/6

M) First Paint Campaign 10YR 8/6
Second Paint Campaign 10Y 4/2
Third Paint Campaign 10YR 7/6

N) First Paint Campaign 10YR 7/8

O) First Paint Campaign 10YR 8/6

P) First Paint Campaign 10YR 7/8

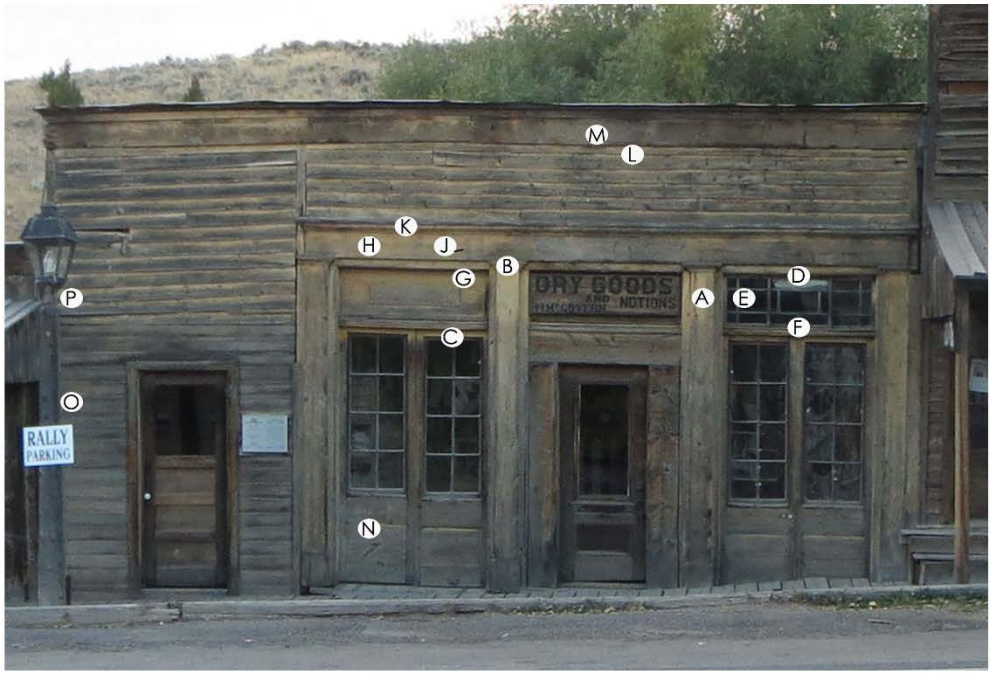


Figure 6.4. McGovern-Goldberg Store paint recommendations, keyed by location. Image created by Kate Geraghty, May 2017

Strasburger Colorado Store Recommendations

For the Strasburger Colorado Store, it is the strong recommendation of this thesis that the MHC repaint the store. The multiple paint campaigns for this building are incredibly interesting and detailed—clearly the work of a professional painter and rendered in the popular style of the 1870s. That makes this an excellent opportunity for rehabilitation and interpretation at the site. It is the recommendation of this thesis that the building be restored to the first paint campaign—the layers most likely associated with Rachel and Isadore Strasburger, who added the false front in in the early 1870s. Following the paint key at the end of this chapter, the Strasburger Colorado Store first paint campaign features a medium brown body, with dark brown-black detailing and a few light tan and gray elements. (Figure 6.5)

Exposure windows are not recommended for the Strasburger Colorado Store due to the poor condition of the painted surfaces and the little remaining historical paint. No new signage should be added for this building, or painted onto the false front unless an historical photo can be located to corroborate its existence. There are no special preparation instructions other than to make sure each wood element is firmly attached to the frame.

I suggest an interpretive panel like the one suggested for the Kraemer Store and McGovern-Goldberg Store, placed in front of the building or across the street looking at the building, which could depict a scale model or drawing of the building, rendered in historically accurate colors. The Strasburger Colorado store is a good example of an early Victorian (1840s-1870s) elaborate color palette. The storefront, with its numerous surfaces and details for painting, not only used an 1860s color palette, but also used an 1860s color scheme in which a light body

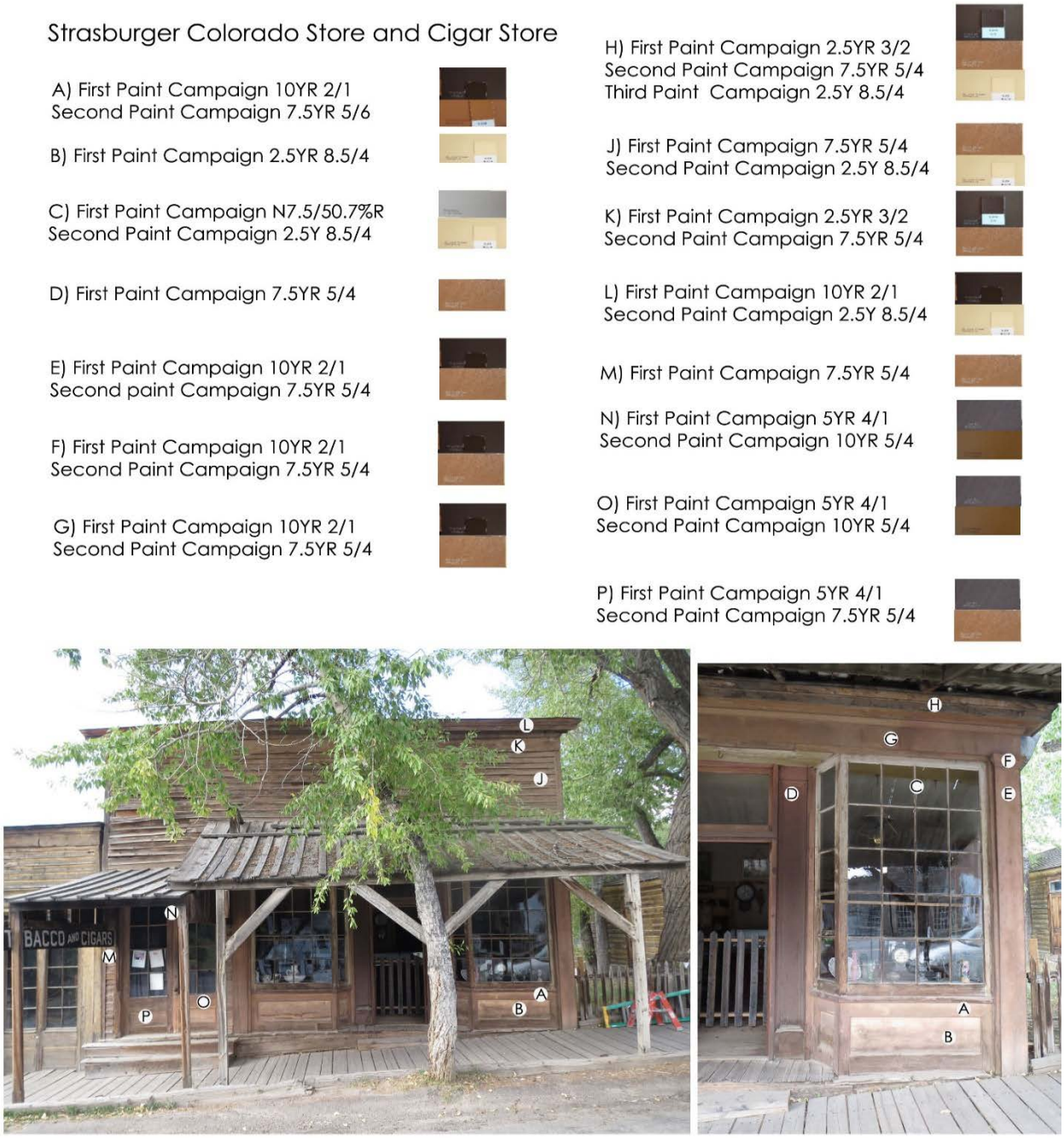


Figure 6.5. Strasburger Colorado Store paint recommendations, keyed by location. Image created by Kate Geraghty, May 2017

was trimmed with affinity colors in a three-color pattern.[28] Both paint campaigns show evidence of this influence and these details may provide a teaching opportunity in an interpretive panel.

[28] Moss, 14.

Compared to its neighbor, the McGovern-Goldberg Store, which uses 1860s available colors but does not follow popular color directions, tourists can imagine for themselves how the individuals who owned each property would have made different choices to set themselves and their businesses apart.

Green Fronts Recommendations

The condition of the paint at Green Fronts is in the best condition of all the five buildings in this study. The current color scheme of the building, however matched in body and trim the train station in the same lot, speaking volumes to the strong relationship created by the way the two buildings are painted – even if it is historically inaccurate. It is the recommendation of this thesis that both the north and south elevations be repainted using the paint color key included at the end of this chapter. (Figures 6.6-6.8). These buildings, particularly their drop and lap siding are younger than other buildings in this study, likely attached in the late 1870s and painted after. In any event, ready-mixed paint was available and being sold in Virginia City by the late 1870s. Moreover, such a bright and saturated green was not attainable by those without means and even then, expensive greens pigments like chrome green and verdigris were highly toxic and used in small quantities, like the trim and shutters at the Sanders House. To have two entire elevations painted with it, both street-facing and rear-lot facing elevations, indicates that it was more likely to be ready-mixed paint, as ready-mixed paint was a fraction of the cost of earlier hand ground and mixed green paints. Using modern ready-mixed paints to rehabilitate the site would be the best use of in-kind material. The green color palette is the most appropriate campaign to return

to, as it was likely painted by Julius Kohls or De Vere, the red almost certainly added by Bovey or Bovey Reconstructions, Inc. to force a match to the train station.

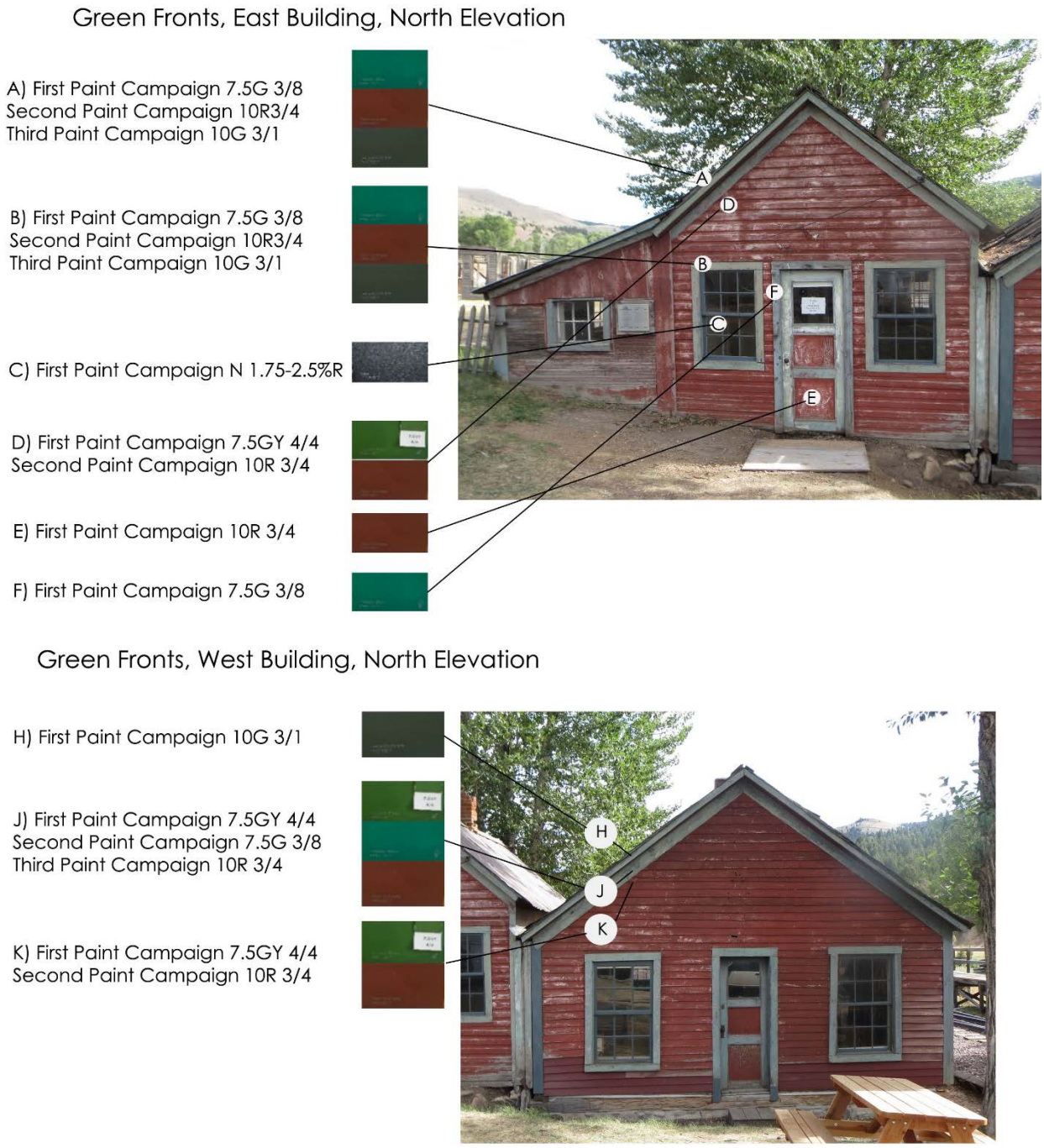


Figure 6.6. Green Fronts North Elevation paint recommendations, keyed by location. Image created by Kate Geraghty, May 2017

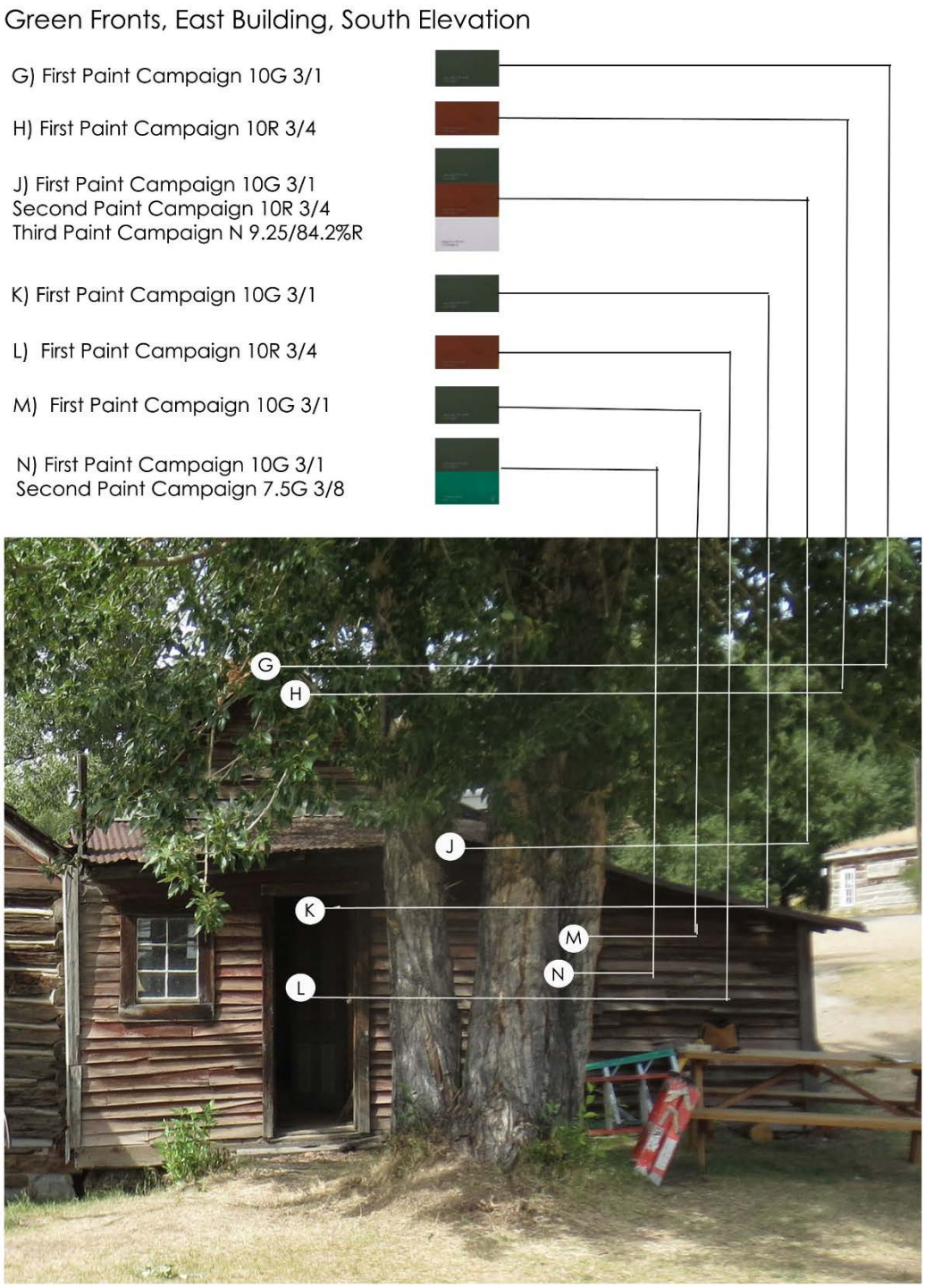


Figure 6.7. Green Fronts East Building South Elevation paint recommendations, keyed by location. Image created by Kate Geraghty, May 2017

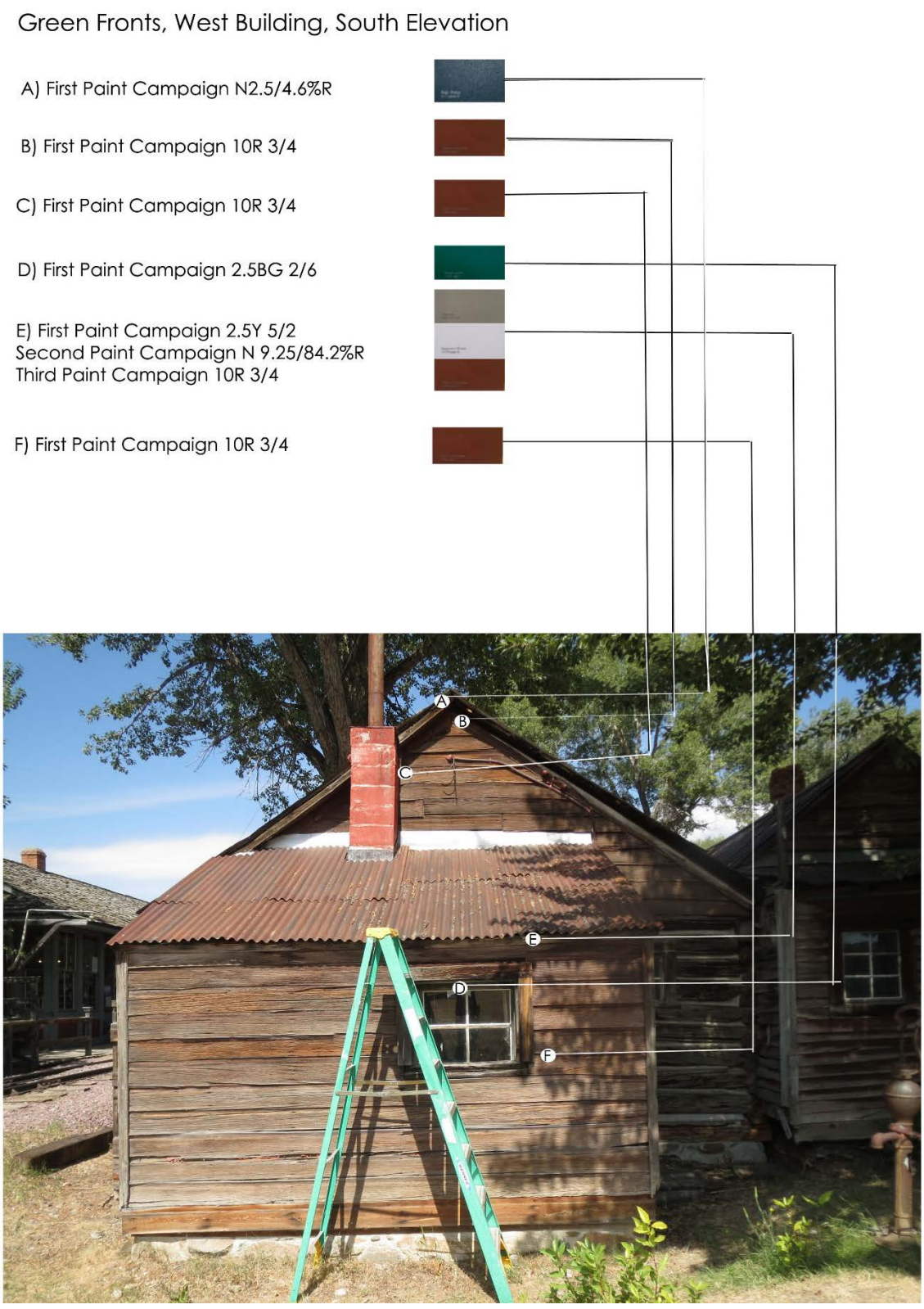


Figure 6.8. Green Fronts West Building South Elevation paint recommendations, keyed by location. Image created by Kate Geraghty, May 2017

However, if there were any building that was most suitable for opening an exposure window to showcase older paint layers, it would be Green Fronts. An exposure window could be opened under the existing red paint layer, showcasing a large exposure window at eye level for any adult or child tourist to view and learn about why a building called "Green Fronts" is painted red. There are several excellent opportunities for interpretation at the Green Fronts. The Green Fronts Boarding House is not currently interpreted beyond a small plaque on its north elevation, facing the train station parking lot. However, the building could still be used as a house, business, or interpretive display. As one of Virginia City's extant, in-situ brothels, the building retains its original context in the west end of Wallace, even though the buildings representative of the Chinese district and other brothels are gone. This provides a unique opportunity to restore the building to Mattie De Vere's 1890s brothel and use the building as a tool to tell the story of the less-respectable part of town, the story of working women in the West, and the multi-cultural neighborhood this section of town represented.

A paint and interior restoration would be appropriate interventions to tell the story of the brothels and to put the building back to use. The current interior is an amalgam of different eras of wallpapers and painted finishes—an exposure window in the interior would be an excellent opportunity to show the building's change over time. The site has also had an archaeological excavation carried out in 2011, which could also aid in interpretation at the site. The Green Fronts is an excellent opportunity for an interpretive display, and it is the recommendation of the author that the MHC take advantage of this.

Methodist Church Recommendations

Because the Methodist Church is scheduled for a restoration in 2017/2018, my recommendation is that the building be restored to its first paint campaign (likely 1875), and should be restored to look like a church, as opposed to its later occupation as a gymnasium. The interior and exterior should be rehabilitated. The exterior elevations should be repaired and re-dressed to look like ashlar. The wood elements should be repaired and repainted white as their first 1875 paint campaign would show. (Figure 9, 10) Missing glass panes should be cut and added back to the windows. The interior wallpaper should be scanned and reproduced on both the ceilings and the walls; the plaster should be repaired. The gymnasium floor should be retained, but perhaps the painted ball court could be removed. The added, sliding garage doors on the west elevation of the building should be removed and replaced with something more airtight. Without historical photographs, reconstructing the building in this space would be challenging and mostly conjecture. If the building is used as rental hall space, a second fire exit or ADA accessibility is possible with this doorway. As mentioned earlier, the building would make an excellent rentable wedding or celebration venue and could be operated by the MHC or a caretaker.

Figure 6.9. Methodist Church Exterior eave and window paint recommendations, keyed by location. Image created by Kate Geraghty, May 2017

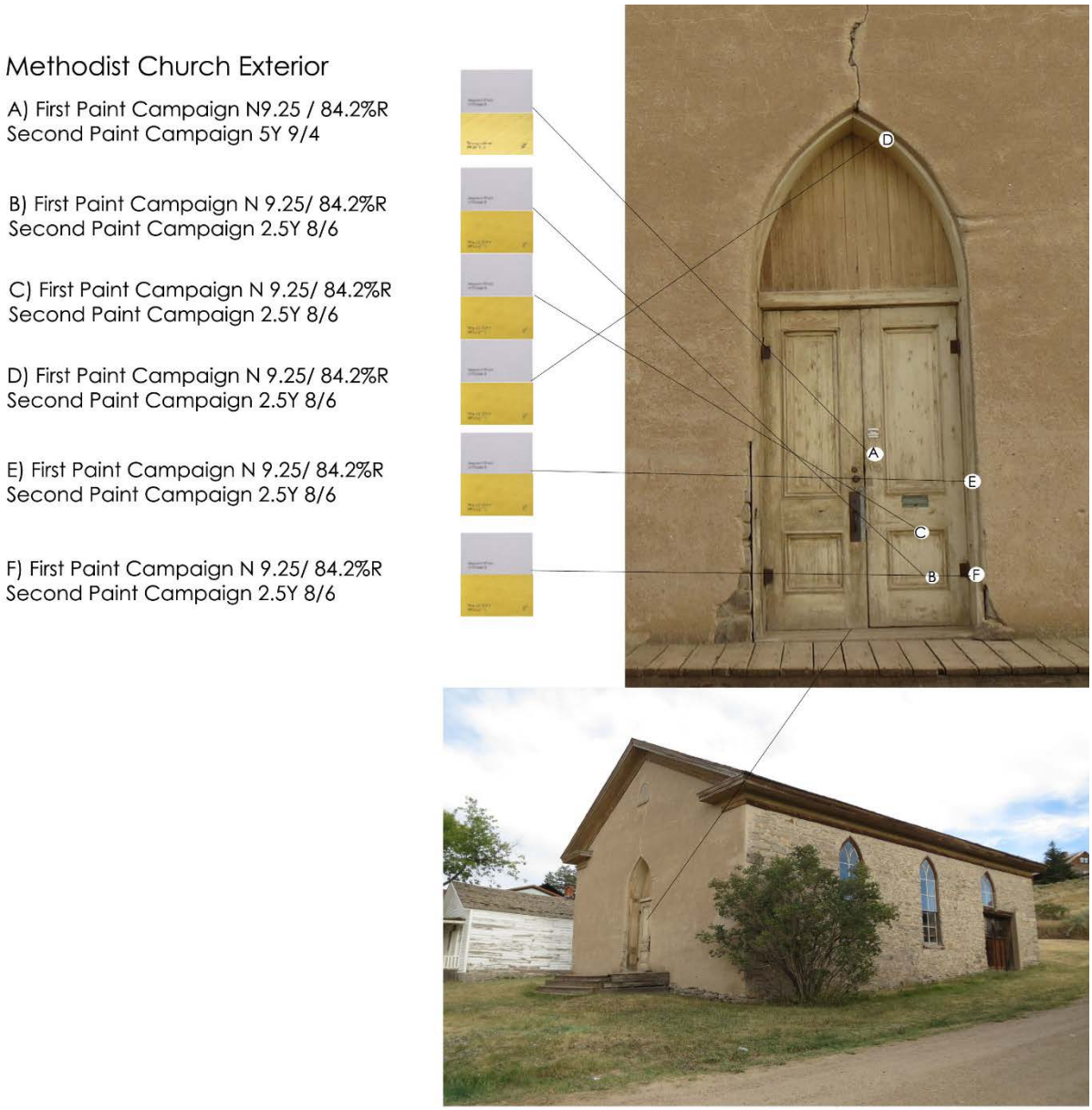


Figure 6.10. Methodist Church Exterior Door paint recommendations, keyed by location. Image created by Kate Geraghty, May 2017

CHAPTER VII

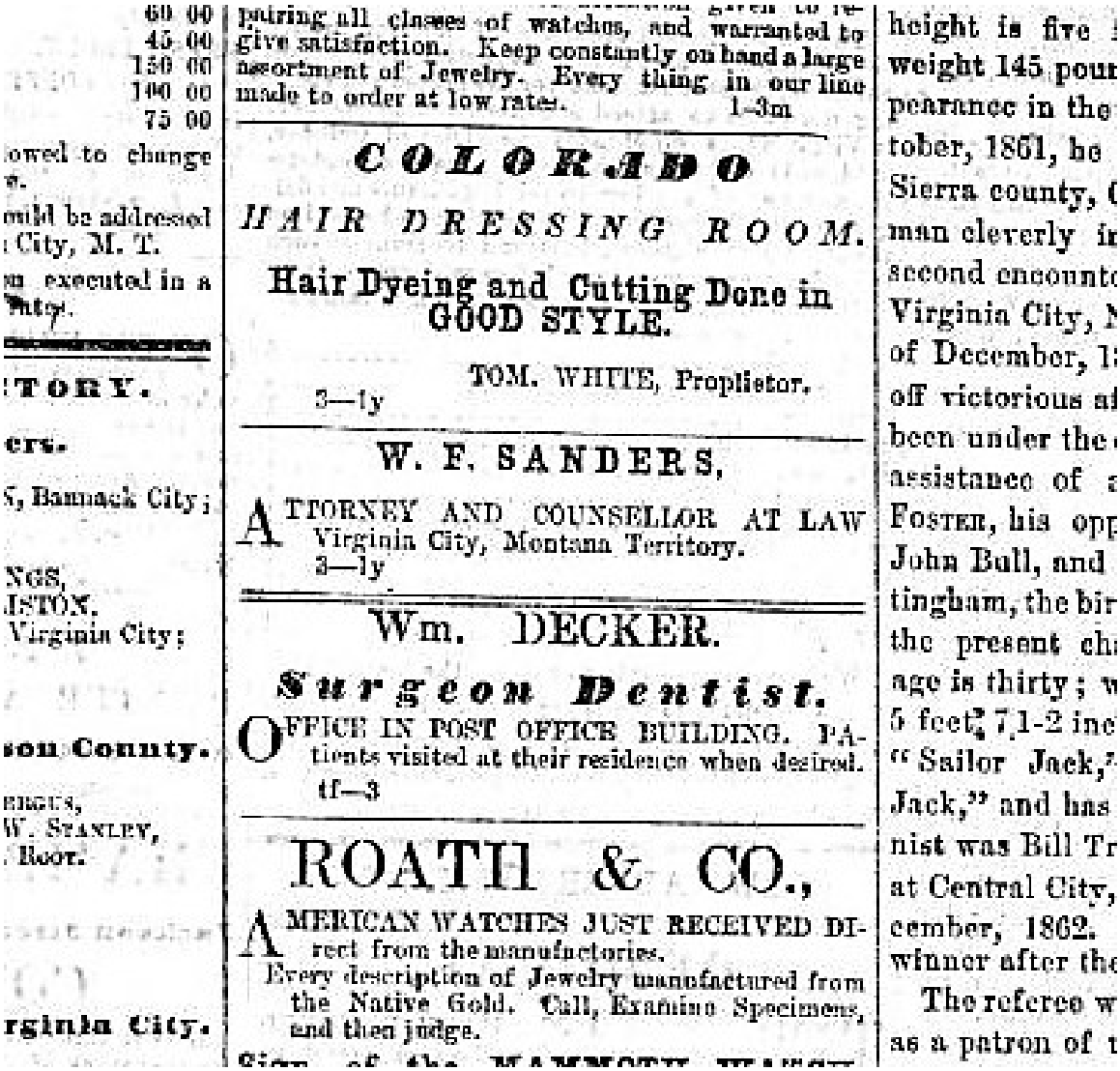
DISCUSSION AND CONCLUSIONS

Tastes From Back East

The outcome of the paint analysis confirmed two things. The first is that each building in the study was once painted and the current presentation and interpretation of the buildings as weathered and colorless is disingenuous. The second is that despite the difficulty, cost, and time commitment of transporting goods to Virginia City and the remoteness of the location, business owners did pay for paints and kept up with national paint trends and color palettes. The effect of this second outcome was that Virginia City was a large, cosmopolitan city, home to thousands of people and dozens of businesses. Early advertisements in the Montana Post, the local paper, offered the services of lawyers, doctors, bathhouses, barbers, clothiers, French bakers, and druggists, despite not being essential to survival in the remote Montana Territory. (Figure 1) The citizens and businesses of Virginia City strove to make the town appear as though it were an eastern metropolitan center, and as best they could, translated popular tastes from the eastern states into the American Western mining frontier.

The business owners of Virginia City had access to paint since 1864, when Clayton and Hale's drug store published an advertisement in the second issue, and professional painter J.T. Henderson advertised in the third.[1] (Figures 2 and 3) Receipts

[1] Clayton and Hale's Drug emporium advertisement, *Montana Post*, (September 17, 1864), 3; J.T. Henderson Painter and Sign Writer advertisement , *Montana Post*, (September 24, 1864), 2.



pairing all classes of watches, and warranted to give satisfaction. Keep constantly on hand a large assortment of Jewelry. Every thing in our line made to order at low rates. 1-3m

COLORADO

HAIR DRESSING ROOM.

Hair Dyeing and Cutting Done in GOOD STYLE.

TOM. WHITE, Proprietor.

3—1y

W. F. SANDERS,

ATTORNEY AND COUNSELLOR AT LAW Virginia City, Montana Territory.

3—1y

Wm. DECKER.

Surgeon Dentist.

OFFICE IN POST OFFICE BUILDING. Patients visited at their residence when desired.

tf—3

ROATH & CO.,

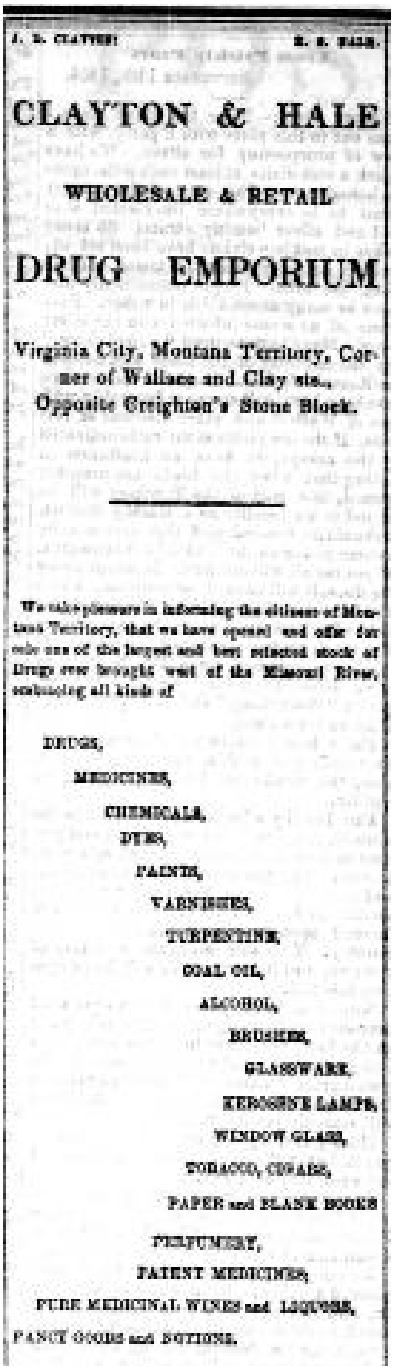
AMERICAN WATCHES JUST RECEIVED DIrect from the manufactories.

Every description of Jewelry manufactured from the Native Gold. Call, Examine Specimens, and then judge.

Figure 7.1. Advertisements showing just a few of the available services in Virginia City in 1864. Despite the remoteness, personal hygiene services, clothing, jewelry and personal adornment was on hand. (Montana Post, September 17, 1864)

from various dry goods and drug stores in 1867 through 1880 show that both building owners and professional painters were purchasing paint ingredients and preparing their own paint, as well as purchasing ready-mixed paint as early as 1876.[2] Paint might not have been a necessity in the earliest months after the Alder Gulch rush, but by September 1864, it was an available good and kept in stock at stores. As the town matured from

[2] Virginia City Druggist and Sundries Shop [unidentified], records, 1864-1880



J. S. CLAYTON. E. S. HALE.

CLAYTON & HALE

WHOLESALE & RETAIL

DRUG EMPORIUM

Virginia City, Montana Territory, Corner of Wallace and Clay sts., Opposite Creighton's Stone Block.

We take pleasure in informing the citizens of Montana Territory, that we have opened and offer for sale one of the largest and best selected stock of Drugs ever brought west of the Missouri River, embracing all kinds of

DRUGS,
MEDICINES,
CHEMICALS,
DYES,
PAINTS,
VARNISHES,
TURPENTINE,
COAL OIL,
ALCOHOL,
BRUSHES,
GLASSWARE,
KEROSENE LAMPS,
WINDOW GLASS,
TOBACCO, CIGARS,
PAPER and BLANK BOOKS
PERFUMERY,
PATENT MEDICINES;
PURE MEDICINAL WINES and LIQUORS,
FANCY GOODS and NOTIONS.

Figure 7.2. Advetisement for Clayton and Hale's store in the Montana Post, September 17, 1864 (second issue). Note that Clayton and Hale sell paint, oils chemical dyes, varnishes, turpentine and brushes, so that any amateur could paint their building.

camp to permanent and growing city, the role of paint was more than utilitarian, it was to emulate the cities of eastern United States in architectural form and color. At the very least, the street fronting portion of the building was painted—just the side that a visitor or

customer would directly interact with or see—to evoke qualities of refinement and business acumen.

STAR RESTAURANT.

Jackson, between Wallace and Idaho streets, Virginia City, M. T.

FOWLER & SCHENK, PROPRIETORS.

THE "STAR" is now open for the accomodation of Guests and Boarders as a regular Restaurant, and is the only establishment of the kind in the city.

FRESH TROUT, GAME, HAM AND EGGS,
HOT COFFEE, OYSTERS,

in every style and the best of everything the market affords, neatly served to order, at all hours of the day or night. Old friends and new ones, and persons from abroad, recollect the Star.

5—3m

FOUND.

ON THE HEADWATERS OF THE MADISON, about seventy-five miles from this city, one yoke of cattle, one a yellow with a white belly, and the other a dark brown; with white on his belly, and one hind white leg; also, a light iron grey mare. Any person proving property and paying charges can find the same by enquiring at the Saloon of Dr. J. Mearns, Nevada City, Madison county, Montana Territory. JAMES PURDY.

5—4t*

J. T. HENDERSON,

PAINTER AND SIGN WRITER.

Office on Cever Street, Virginia City.

5—6m

CHAMPION SALOON

Jackson Street, Virginia City, M. T.

CON OREM

Begs to inform the public that he has on hand an assorted stock of the Best Liquors, Cigars, &c. His Saloon is adorned with the best set of SPORTING PICTURES, west of New York.

Private Lessons in Boxing and Sparring Once a Week.

Figure 7.3. Advertisement for J.T. Henderson, professional painter and sign painter in the Montana Post, September 24, 1864 (third issue).

The buildings in this case study are all good examples of their building periods and reflective of owners' tastes during the 1860s and 1870s. The Kraemer Store, McGovern-Goldberg Store, and Strasburger Colorado Store each exhibit color palettes that are consistent with nationally popular colors, and the Strasburger Store with specific paint detailing from the period where each decorative element is painted with complimentary colors and painted in a pattern consistent with paint pattern book suggestions. The Green Fronts, despite how it is currently portrayed was green in its first paint campaign, painted vivid greens on the lapped siding, and darker greens in the trim. This pattern was visually attractive, but doesn't match any of the nationally popular painting styles of the 1890s.[3] At the Methodist Church paint is a simple affair and subordinate to the elaborate wallpaper of the interior. On the exterior, the building was a beige colored plaster, scored to look like dressed stone. The original all-white trim would have been visually complimentary to that, if not reflective of nationally poplar tastes. The Methodist Church was likely painted by an amateur or even church parishioner-volunteers, given that there was no variation in the earliest paint campaign.

Interpretation at Virginia City

The current interpretative practices at Virginia City have a strong predisposition towards presenting nostalgia, instead of historically accurate, authentic vignettes that tell the story of town citizens, political shifts, and historical events. In J. Philip Gruen's

[3] The 1890's color palette would have been darker, muted, earth tones for the late Victorian (1870-1890) or the light pastels, trimmed with white of the Colonial Revival (1890-1920). (Moss and Winkler, 16)

article "Staging the Past: Ruminations on History, Tourism and Preservation," the goal of visiting tourists is to "relive the legend" of the 1860s goldrush.[4] However, instead of presenting Virginia City frozen in time in the height of its gold rush with what is left of the buildings stock, the unpainted and weathered exteriors show the buildings in the state of obvious and intentional decay of the 1940s, when Charles Bovey began purchasing, repairing and rebuilding the town's buildings.

The Montana Heritage Commission (MHC) should no longer present the town in this way if it is possible to provide a historically accurate restoration, or they should interpret the town accurately calling more attention to how Charles Bovey and Bovey Restorations chose to present buildings and giving artistic credit to Bovey for the style of restoration he chose. While Bovey had enjoyed the luxury of a rise in tourism in the post-WWII era, attracting modern tourists to the town is much more difficult.[5] By providing a more inclusive and historically accurate view of Virginia City's past, which means focusing on non-whites, non-miners, women, people of color, and children. Ellen Baumler's Women of Virginia City Tour map, as well as recent papers recounting the cultural lifeways or historical impact of African American women at Virginia City are excellent jumping-off points to build new, more inclusive interpretive exhibits from. Children are also underrepresented in the town's current interpretation but miners and businesspeople often brought their families and Virginia City had children present since

[4] J. Philip Gruen. "Staging the Past: Ruminations on History, Tourism and Preservation." (Winter 2011), 17.
[5] Gruen, 25.

1863.[6] The buildings in the case study could be interpreted to fill these gaps and add new stories to Virginia City's recognized heritage.

In a scenario where the MHC had the disposable funds to conduct restorations on the buildings in this case study, a complete paint restoration to the first paint campaigns (1860s-1870s) is possible and would meet Secretary of Interior and MHC Preservation Philosophy standards. This research was intended to provide a foundation for future testing and conservation work, and has provided a complete color palette for each building. If the MHC wanted to restore each building now, they could, as this study meets the Secretary of Interior standards and satisfies requirements in their Preservation Philosophy.

Future Work

This case study was limited in many ways. The sample size was very small. Future paint case studies should seek to study more than five buildings, especially when the existing building stock from the period of significance is so high. Not only was the sample size (five buildings) very small, and the location limited to a single town instead providing a regional comparison, but chemical analysis of paints was not carried out and original paint recipes could not be reconstructed. Chemical analysis is key to determining whether paint was hand-mixed by a professional or ready-mixed paint, which was just beginning to permeate the national market by the late 1860s. Chemical analysis is also a

[6] Ronan, 36.

standard, reliable way of determining the chemical signatures of paint pigments and ubiquitous in the field of paint analysis. It could not be carried out for this study, but testing key paint samples from Virginia City to determine which pigments were used and where would provide valuable information about paint diffusion.

Though Virginia City did match some national popular styles, it would be appealing to also study whether smaller, less cosmopolitan towns than the former territorial capital also had access to paint and also followed national styles. A study of the diffusion of paint in the west is necessary so that conservators and historic preservationists can draw from regional studies to make recommendations for their local buildings.

More research in the American West in general is needed, particularly in industrial settings such as mining and logging towns in Montana, Idaho, Washington, Oregon, Utah, California, Nevada, and Colorado. Researchers could expand on the regional architectural guide of C. Eric Stoehr in Colorado, or Corri Lyn Jimenez's thesis on Bodie to include paint analysis. Other mature gold rush camps such as Virginia City, Nevada or Deadwood, South Dakota could benefit from a paint analysis study, to ensure a more authentic presentation of the towns' historic building stock. Future study might try to fill these gaps, with the eventual goal to create a library of color palettes that are regionally appropriate for the American West.

It is critical that future work that compares this thesis to another town's color palette publish their research. Several decades worth of papers from the architectural paint analysis community call for researchers to publish their work. It is still possible that

paint analysis studies in the state of Montana already exist, however, without being published researchers or restoration groups cannot rely on that data if they cannot have access to it. This thesis, once published, will begin to fill that gap and hopefully more research in this region will follow.

Conclusion

At the core, the way that buildings are painted by their owners or professional painters were expressions of the national tastes, translated to a specific location. Consequently, paint color palettes may be regionally and temporally specific—any researcher can reasonably expect seventeenth-century Colonial Williamsburg to appear physically different than eighteenth-century New Orleans or nineteenth-century San Francisco. As the United States moved towards its industrial future, some of this regional specificity becomes absorbed into the national pattern until nationally dominant tastes permeate the entire market. A case study at a western mining town in the latter half of the nineteenth century has potential to show either regionally specific color palettes or national taste.

Few western towns in the United States have formal, published paint analyses, and none of those locations are industrial contexts such as Montana mining towns. This thesis sought to bridge that gap using five buildings in the National Historic Landmark District Virginia City, Montana as case studies in paint. Despite its limitations, this case study was intended to provide a foundation for future testing and conservation work. All buildings most assuredly had painted wood elements and all buildings used nationally popular color palettes, except the church. Case studies are limited, and should not be

extrapolated to encompass a wider regional context; it would be inappropriate to say that the color palette for these five buildings in Virginia City is indicative of tastes in all late nineteenth century mining towns in the American West. This study however may provide a baseline comparison for future studies.

That architectural examples from the founding era of Virginia City have survived into the twenty-first century is remarkable. It is through the efforts of interested and dedicated preservation-minded people that the heritage tourist site can be enjoyed and stories of this town's past can be told today. Paint analysis and restoration of these buildings can contribute a wealth of information to these stories, and provide an authentic, historically accurate, and visual experience to visitors. Each building has its own story, that deserves to be told in full, not just with signage or curated displays, but with color. We no longer need to imagine what Virginia City may have looked like from photos—we now know exactly how the building appeared, and have the ability to share this with visitors.

APPENDIX A

DEED INFORMATION FOR CASE STUDY BUILDINGS

Kraemer Store

Grantee	**Grantor**	**Date**	**Book, page**	**Notes**
Montana Historical Society	Virginia City Trading Co.	1997	408, 475	
Virginia City Trading Co.	Charles C. Bovey	1974	244, 457	
Virginia City Trading Co.	Charles C. Bovey	1953	244, 452	
Charles C. Bovey	Alzora Weingart	1946	119, 486	
Alzora Weingart	Olive M. Richmond	1945	144, 20	
Olive M. Richmond	Esther Gilbert	1939	141, 581	
Esther Gilbert	Seymour L. Potter	1933	120, 64	
Seymour L. Potter	John R. Rogers	December 14, 1918	94, 474	
John R. Rogers	M.E. Steffrus	February 14, 1911	80, 207	$800
M.E. Steffrus	Frederick Kraemer	March 14, 1904	73, 209	
	Julius Kraemer		73, 210	
Julius Kraemer	City of Virginia	March 20, 1880	33, 603	Part of lot 30
Frederick Kraemer	Ah You	December 20, 1881	37, 327	Parts of lots 29 and 30; Ah You, marked as a Chinese
Ah You	E.W and Amanda Driggs	1875	No data	Ah You runs laundry
Julius Kramer	Augustus Griffith	1870	No data	$8; bay window in place by this time

McGovern-Goldberg Store

Grantee	Grantor	Date	Book, page	Notes
Montana Historical Society	Virginia City Trading Co.	1997	408, 475	
Virginia City Trading Co.	Mary McGovern	1954	171, 304	
Mary McGovern	Hannah McGovern	1937	119, 189	
Hannah McGovern	Robert N. Hawkins	1914	129, 115	
Robert N. Hawkins	Jos. J. Haines	April 17, 1905	71, 269	
Jos. J. Haines	Thos. And Margaret Deyarmon	January 30, 1892	50, 497	
Thos. Deyarmon	Ellen Williams	January 31, 1877	30, 140	
Ellen Williams	Clodia Walter	March 30 1876	29, 174	
Clodia Walter	E.J. Walter	February 26, 1876	27, 791	A deed transfer after E.J.'s death
E.J. Walter	E & E DuPuis	December 11, 1871	W, 410	
E. DuPuis	Virginia City	July 8, 1868	W, 412	Block 154 lot 30 fronting Wallace for 25 feet, and extending back to the alley
Joseph Knight	G. & H. Goldberg	July 22, 1865	F, 556	Block 31, lot 31 (from old system)
Mr's. H. Kastor, J. Berry, S. H. Bowman and G. Goldberg	James and Ann Sheehan	August 16, 1864	B, 183	"doing business under the name and style of W. H. Kastor"

Strasburger's Colorado Store

Grantee	Grantor	Date	Book, page	Notes
Montana Historical Society	Virginia City Trading Company	1997	408, 470	
Virginia City Trading Company	Charles Bovey	1974	244, 457	
Virginia City Trading Company	Charles Bovey	1953	244, 452	
Charles Bovey	Kate Cook	1948	152, 8	
Kate Cook	Richard Cook	1923	156, 165	
Richard Cook	Thomas J. Farrell et al	November 1, 1922	106, 168	Part of Block 154, lot 33
Richard Cook	Robert M Hawkins	May 2, 1911	80, 247	Block 154, lot 32
Thomas J. Farrell et. Al.	Bessie and George Farrell	August 2, 1901	65, 584	Part of lot 33
Robert M Hawkins	Jos J. Haines et ux	April 17, 1905	71, 269	Block 154, Lots 9, 10, 11, 12, 31, 32
Bessie and George Farrell	T.J. Farrell	July 14, 1898	60, 332	This transaction contains many lots in several different blocks including lot 154, lot 33; and is noted to be subject to a mortgage, where all rents are to be paid to Henry Elling et al
Jos J. Haines et ux	Annie and Charles Simpson	May 24, 1897	57, 267	
Charles Simpson	Amos Hall	July 25, 1887	44, 299	
T.J. Farrell	Henry Elling at al	January 14, 1887	44, 73	
S.R. Buford et al	FF and Agnes Stone	January 5, 1886	41, 386	Note the name change from Buford to Elling. They owned the block across the street and many properties in

				town. This indicates a business partnership
Amos Hall	John H. Pfiel and Alphonse Lambrecht	August 27, 1884	39, 243	
John H. Pfiel	Rachel and Isadore Strasburger	June 1, 1871	33, 513	Block 154, lot 32 (extending to the alley)
F.F. Stone	City of Virginia	January 12, 1871	U, 103	Original sale of lot section from Virginia City; Part of block 154, lot 33
Rachel Strasburger	City of Virginia	July 8, 1868	U, 119	Original sale of lot section from Virginia City; Block 154, lot 32
F. F. Stone	Hiram J. Brendlinger	June 4, 1867	P, 278	Lot 33, block 31 (before the blocks were given new names)

Green Fronts

Grantee	Grantor	Date	Book, page	Notes
Montana Historical Society	Bovey Restoration	1997	408, 470	
Bovey Restorations	Chas. A. and Sue Ford Bovey	1978	244, 822	
Chas. A. and Sue Ford Bovey	Melvin Massey et. al.	Illegible	186/427	
Melvin Massey	Barbara C. Rush	1940	136/22	Co- owners, but separate deeds
	Velma C. Massengale		136/21	
Massengale, Bush	H.R. Thixton	1938	131, 416	
H.R. Thixton	Henry D. Kohls	1929	88, 531	
Henry D. Kohls	Lewis A. Dudley	1926	114, 130/95	
Lewis A. Dudley	Julius Kohls, estate	1926	Missing	Kohls dies, Dudley gets estate, turns it over to Henry Kohls in 1926—will? Executor?
Julius Kohls	Mattie Devere	March 7, 1902	61, 581	Sold it back to Kohls
Mattie Devere	Julius Kohls	April 17, 1897	57, 209	Famous madame; period when it would have been a brothel
Julius Kohls	Willis W. Stevens	May 23, 1892	50, 605	Portion of lots
Willis W. Stevens	City of Virginia	May 23, 1892	50, 604	Portion of lots
Julius Kohls	Estate of Calvin Halley/Heally/ Hally	December 30, 1881	37, 73	"1/3 interest in lots 2, 3, block 194"
Julius Kohls	Ira L. Livermore	December 2, 1882	36, 480	Block 194, lot 1
Julius Kohls	City of Virginia	April 21, 1882	36, 266	"lots 8, 9, 10, block 194"
Julius Kohls	Amelia Thurgood	April 21, 1882	Missing?	Block 193 (across street?)

Ira L. Livermore	E. Creighton & Co.	April 21, 1882	36, 265	Part of lot 1, block 194
Calvin Halley	City of Virginia	September 1, 1875	27, 502	Lots 3 and 4
E. Creighton & Co.	City of Virginia	December 16, 1870	U, 100	Part of lot 1, block 194

Methodist Church

Grantee	Grantor	Date	Book, page	Notes
Montana Historical Society	Bovey Restoration	1997	408, 470	
Bovey Restorations	Chas. A. and Sue Ford Bovey	1978	244, 822	
Chas A. and Sue Ford Bovey	Andrew J. Davis, Jr.	Illegible	171, 347	
Andrew J. Davis, Jr.	U.S. Grant Mining Co.	1952	164, 236	
U.S. Grant Mining Co.	Richard R. Matthew	1948	149, 459	
Richard R. Matthew	[Blank]	N.D.	n/a	
Methodist Church	John A. Spencer	May 15, 1875	24, 373	Sold to congregation; 4,650

APPENDIX B

MONTANA HERITAGE COMMISSION PRESERVATION PHILOSOPHY

Preservation maintains the existing character and integrity of a historic structure by slowing and attempting to arrest deterioration caused by normal use and natural forces. Preservation includes maintenance, stabilization, and repair. Maintenance is a systematic activity that protects the condition of a historic structure by mitigating wear and deterioration. Stabilization is the process of reestablishing the stability and safety of a deteriorating, damaged, and/or unsafe structure while maintaining its existing historic character. Repair can be stabilization, consolidation, and conservation of a structure or features. Repair can also be limited replacement in kind of extensively deteriorated or missing parts of features.

The preservation philosophy is based on the Secretary of the Interior's Standards for the Treatment of Historic Properties. The expressed goal of the Secretary's Standards is the retention of a historic structure's existing form, features, and detailing. The following Standards for Preservation, with some modifications specific to Virginia City, are as follows:

1. A historic structure will be used as it was historically, or be given a new or adaptive use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a historic structure will be protected, and if necessary, stabilized until additional work may be undertaken.

2. The historic character of a structure will be identified, retained, and preserved. The replacement or removal of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a structure will be avoided.
3. Each historic structure will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Changes to a historic structure that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive and/or historic materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a historic structure will be preserved.
6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive or historic feature, the new material and work will match the old in composition, design, color, texture, and where possible, material. Repair or replacement of features is substantiated by physical, documentary (photographic and/or written), or archaeological 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. Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

The following additional standards also apply. These standards are specific to Virginia City and have been approved by the Montana Heritage Preservation and Development Commission.

1. Building stabilization will detract as little as possible from a historic structure's appearance and significance. Reinforcement will be concealed wherever possible so as not to detract or intrude upon the historical, archaeological, or aesthetic nature of the structure, except where concealment would result in the destruction or alteration of historically or archaeologically significant features, materials, or physical or visual relationships.
2. If the stabilization methods will be visible, then the stabilization method will be historically appropriate, historically accurate, structurally sound, aesthetically pleasing, and able to withstand seismic events.
3. Accurate documentation, both photographic and written, of all preservation conducted will be kept and made available for future research.
4. Qualified preservation specialists, technicians, and architects, in accordance with approved work procedures, will conduct preservation, maintenance, and repair on historic structures. Where such procedures are nonexistent or incomplete, a historic architect or other qualified specialist will provide technical guidance.

5. All preservation, stabilization, maintenance, and repair work will be conducted in a safe and responsible manner, in a safe working environment.

APPENDIX C

LIST OF MONTANA HERITAGE COMMISSION OWNED BUILDINGS AND FACTORS IN DECIDING STUDY INCLUSION

Building name	Upcoming project	Non-residence	Built in study period	Sample-able substrate	In use by tenant
Northern Pacific Railroad Depot	No	Yes	1895	Yes	Yes
Green Fronts Boarding House	Yes	Yes	1868-69	Yes	No
Smith and Boyd Livery Stable	No	Yes	c1890s	Yes	No
Bale of Hay Saloon	No	Yes	1863	Yes	Yes
Mechanical Bakery Site	No	Yes	1863	Yes	Yes
Sauerbier Blacksmith Shop	No	Yes	1863	Log cabin- not sampleable	No
Frank Prasch Blacksmith Shop	No	Yes	1863	Yes	No
Virginia City Trading Co.	No	Yes	1948/ Reconstruction	Yes	Yes
Barber Shop	No	Yes	1863	Yes	No
W.P. Armstrong/ Photo Shop	No	Yes	1863	Repainted by tenant	Yes
Henry Elling Store	No	Yes	1950/ Reconstruction	Yes	No
Buford Block	No	Yes	1888-1899	Brick, Cast Iron Front painted	Yes
S.R. Buford Store	No	Yes	1874	Brick	Yes
Assay Office	No	Yes	1946/ Reconstruction	Yes	No
McClurg and Ptorney Mercantile- Wells Fargo Display	No	Yes	1863	Yes	Yes

Star Billiard Hall. E.L. Smith Store	No	Yes	1863	Yes	Yes
Variety Store	No	Yes	1946/ Reconstruction	Yes	Yes
Content's Corner	No	Yes	1864/ altered 1890s	Brick/Stucco	Yes
Building beside Stonewall Hall	No	Yes	unknown	Stucco	Yes
Stonewall Hall	No	Yes	1864	Brick/ stone rubble	No
Miner's Café	No	Yes	1915/ replaced one that burned	Stucco	Yes
F.R. Merk Block/ Pioneer Bar	No	Yes	1867	Stone	Yes
Miland's Shoe Store	No	Yes	1868	Stucco	Yes
Bartlett's Blacksmith Shop	No	Yes	1920	---	Not extant
Creighton Stone Block	No	Yes	1864	Quarried Stone	Yes
Allen and Millard Bank	No	Yes	1864	Stone	Yes
Herndon and Donaldson Furniture Store	No	Yes	1960s	Yes	Yes
City Hall/ Elk's Club	No	Yes	1897	Stucco	Yes
Madison County Courthouse	No	Yes	1875-76	Brick	Yes
C.L. Dahler House	No	No	1875	Unknown	n/a
McKay/ McNulty House	No	No	1864	Unknown	n/a
Territorial Governor's Mansion	No	No	1864	Unknown	n/a
Lewis/ Gohn House	No	No	1864	Unknown	n/a
Thompson-Hickman Museum	No	Yes	1918	No	Yes

William Thompson House	No	No	1864	Unknown	n/a
Adobetown School	No	Yes	1873	Unknown	n/a
Aunt Julia's	No	No	1875	No- recently scraped and repainted (2015)	n/a
Dance and Stewart Store	No	Yes	1864 / Bovey Reconstruction N.d.	Yes	No
Pittman Gas Station	No	Yes	1919	Yes	n/a
Cabbage Patch	No	Yes	1870s/moved?	Yes	No
Kramer Shop/ Dress Shop	Yes	Yes	1863	Yes	No
Goldberg/ McGovern Store	Yes	Yes	1863	Yes	No
Strasburger Colorado	Yes	Yes	1863	Yes	No
Labeau's Jewelry Store	No	Yes	1863	Yes	Yes
City Bakery	No	Yes	1946/ Reconstruction	Stone under wood false front	Yes
Kiskadden Stone Block	No	Yes	1863/ wooden front added 1872	Stone under wood false front	No
Fairweather Inn	No	Yes	1860	Recently and regularly painted	Yes
Montana Post	No	Yes	1946 reconstruction	Yes	No
J. Spencer Watkins Museum	No	Yes	1960	Unknown	Yes
Wood Building	No	Yes	Unknown	Yes	Yes
Metropolitan Meat Market	No	Yes	1888	Cast Iron	Yes
Albright Clothing Store/ Candy Store	No	Yes	1911	Brick	Yes
Rank's Drug	No	Yes	1865	Stone	Yes

Masonic Temple	No	Yes	1867	Stone	Yes
Elling Bank	No	Yes	1863-64; remodeled front 1910	Yes	Yes
Hangman's Building	No	Yes	1863-64	Brick	
Gilbert Brewery Complex	No	Yes	1863-1880s	Yes	Yes
Player's Village	No	Yes	1950-1977	Yes	Yes
Bonanza Inn	No	Yes	Mid 1860s; remodeled 1876	Yes	Yes
Governor Meager's House	No	No	1864	Log cabin	No
Mrs. Slade's House	No	No	1864	Yes	n/a
Elling-Knight Warehouse Gymnasium	No	Yes	1870s	No	Yes
Methodist Church	Yes	Yes	1875*	Yes	No
Episcopal Parsonage	No	No	1906	No	n/a
Judge Henry Blake House	No	No	1868	Unknown	n/a
St. Paul's Episcopal Church	Yes	Yes	1902-04	Stone	Yes
Callaway House	No	No	1876	Unknown	n/a
Territorial Arsenal	No	Yes	1867	Stone/brick?	
Bennett House	No	No	1876/ remodeled 1901	Unknown	n/a
Sander's House	No	No	1864-1867	Yes	n/a
Cole/Batten House	No	No	1868	Unknown	n/a
Virginia City School	No	No	1876	Unknown	Yes
Thexton House	No	No	1884	Unknown	n/a
Elling House	No	No	1876	Stone	n/a
Governor Sam Stewart House	No	No	1905	Unknown	n/a
Bickford House	No	No	1864	Unknown	n/a
S.R. Buford House	No	No	1878	Unknown	n/a

Samuel Word/ For Bovey House	No	No	1864, remodeled 1973	Stone	n/a
Rockfellow House	No	No	1866	Unknown	n/a
Coggswell-Taylor House	No	No	1867	Yes	No

APPENDIX D

FIELDWORK AND SAMPLING DATA SHEETS

Building	Sample no.	Date of sample	Collection Location	Collection detail	Match date	Comments	Condition	Munsell Match
Methodist Church	E1A	8/23/2016	window on east wall	Apron	2/2/2017	Cool gray, flecked black, atop a white primer coat	Good	5PB 8/1 base under flecks
Methodist Church	E1B	8/23/2016	window on east wall	Sill	2/2/2017	light cool gray under dark cool blue-gray	Good	5pb 8/1, n4 12.0%R
Methodist Church	E1C	8/23/2016	window on east wall	Angled frame (L)	2/2/2017	white and light cool gray; very poor condition sample	Poor	5pb 8/1
Methodist Church	E1D	8/23/2016	window on east wall	Lower Sash side/ upper rail	2/2/2017	primer or lighter gray present	Fair	5pb 8/1
Methodist Church	E1E	8/23/2016	Northmost window on east wall	Upper sash rail	2/2/2017	thick white primer with thinner dark, cool gray top coat	Good	10YR 3/2 (probably just dirt)
Methodist Church	E1F	8/23/2016	window on east wall	arch rail	2/2/2017	thinner dark, cool gray top coat	Good	5pb 8/1 under 10yr 5/1
Methodist Church	E1G	8/23/2016	window on east wall	arch wood relief	2/2/2017	seemingly no top coat, samples bad condition	Poor	5pb 8/1
Methodist Church	E2A	8/23/2016	window on east wall	window on east wall - Apron	2/2/2017	thinner dark, cool gray top coat	Fair	5pb 8/1 under 10yr 5/1
Methodist Church	E2B	8/23/2016	window on east wall	Window stop (right)	2/2/2017	thinner dark, cool gray -- may be dirt/grime layer	Fair	10b 9/1
Church	E2C	8/23/2016	window on east	muntin	2/3/2017	dark dirt/grime buildup	Poor	10B 9/1
Church	E2D	8/23/2016	window on east	muntin	2/3/2017	under dirt/grime buildup	Poor	10b 9/1
Church	E2E	8/23/2016	window on east	surround (left)	2/3/2017	under dirt/grime buildup	Poor	10b 9/1
Church	E2F	8/23/2016	window on east	surround (top)	2/3/2017	under dirt/grime buildup	Fair	10b 9/1
Church	E2G	8/23/2016	window on east	Sill - top	2/3/2017	under dirt/grime buildup	Fair	10b 9/1
Methodist Church	NDI-A	8/24/2016	North Door interior	trim (left)	2/3/2017	gray under white, under more grime	Fair	N 2.25 3.8% R
Church	NDI-B	8/24/2016	interior	side rail	2/3/2017	generation white, light tan	Fair	8/4
Methodist Church	NDI-C	8/24/2016	North Door interior	upper panel (right)	2/3/2017	tan, primer, thin unknown, primer, light tan	Good	10b 9/1; 2.5y 8/4; 5y 9/4
Church	NDI-D	8/24/2016	interior	(relief)	2/3/2017	wood substrate	Poor	n/a

Church	NDI-E	8/24/2016	interior	gothic arch	2/3/2017	under dirt/grime buildup	Fair	10b 9/1
Church	NDE-A	8/24/2016	exterior	side rail	2/3/2017	tan	Fair	9/4
Church	NDE-B	8/24/2016	exterior	(right)	2/3/2017	tan	Poor	9/4
Church	NDE-C	8/24/2016	exterior	(relief)	2/3/2017	tan	Fair	8/6
Church	NDE-D	8/24/2016	exterior	(trim)	2/3/2017	tan	Poor	8/6
Church	NDE-E	8/24/2016	exterior	arch recess trim	2/3/2017	tan	Poor	8.5/6
Church	NDE-F	8/24/2016	exterior	panel	2/3/2017	tan; sample very brittle	Poor	8.5/4
Church	NDE-G	8/24/2016	exterior	door recess trim	2/3/2017	oily, light tan	Poor	8.5/6
Methodist Church	E1H	8/24/2016	window on east wall - exterior	exterior trim - arch	2/7/2017	grimy/medium yellow-tan with agregate top coat?	poor	10b 9/1; 2.5y 5/4
Methodist Church	E1J	8/24/2016	window on east wall - exterior	arch rail	2/7/2017	white primer, gray top coat with some yellow tones	Fair	10b 9/1; 5y 5/2
Methodist Church	BE-E-A	8/24/2016	Boxed eave - east elevation	topmost piece of molded cornice	2/7/2017	grimy/medium yellow-tan top coat; possibly another layer of primer and grimy	Fair	10b 9/1; 2.5y 5/4
Church	B	8/24/2016	elevation	top - flat	2/7/2017	grimy/medium yellow-tan	poor	5/4
Church	C	8/24/2016	elevation	boxed eave	2/7/2017	grimy/medium yellow-tan	very poor	5/4
Methodist Church	BE-E-D	8/24/2016	Boxed eave - east elevation	below boxed eave	2/7/2017	yellow-tan with dark red aggregate	good	10b 9/1; 2.5y 5/4; 10R 2/4
Methodist Church	BE-E-E	8/24/2016	Boxed eave - east elevation	flat piece below molded piece	2/9/2017	medium yellow-tan with dark red aggregate	poor	10b 9/1; 2.5y 5/4; 10R 2/4
Methodist Church	BE-E-F	8/24/2016	Boxed eave - east elevation	1" thick below flat piece	2/9/2017	grimy/medium yellow-tan top coat under heavier	poor	10b 9/1; 2.5y 5/4
Methodist Church	BE-E-G	8/24/2016	Boxed eave - east elevation	piece of cornice - flat	2/9/2017	grimy/medium yellow-tan top coat	poor	10b 9/1; 2.5y 5/4
Church	IP-E-A	8/24/2016	interior plaster	east wall		missing	missing	
Church	IP-C-B	8/24/2016	interior plaster	ceiling	2/9/2017	plaster top coat	Fair	5pb 7/2
Church	IF-A	8/24/2016	floor	wall		missing	missing	
Green Fronts	GF-S-E-A	8/26/2016	Exterior samples, west building, south elevation	wood trim in gable	2/9/2017	primer layer; south side of building-- UV damage? Fire? Near a kitchen stove	poor	N2.5 4.6%R
Green Fronts	GF-S-E-B	8/26/2016	west building, south elevation	gable under roof	2/9/2017	thick white primer under red-brown top coat	fair	10R 3/4

Green Fronts	GF-S-E-C	8/26/2016	west building, south elevation	gable, behind chimney	2/9/2017	thin white primer under a red-brown coat	poor	10R 3/4
Green Fronts	GF-S-E-D	8/26/2016	west building, south elevation	west building 4-light	2/9/2017	dark green oxidized black	poor	2.5BG 2/6
Green Fronts	GF-S-E-E	8/26/2016	west building, south elevation	rood on addition	2/9/2017	tan aggregate (dirt in linseed oil?), then white	fair	2.5y 5/2; 10b 9/1; 10R 3/4
Green Fronts	GF-S-E-F	8/26/2016	west building, south elevation	drop lap siding	2/9/2017	thin white primer under a red-brown coat	fair	10R 3/4
Green Fronts	GF-S-E-G	8/26/2016	east building, south elevation	wood trim in gable; badly	2/9/2017	smooth, uniform gray	poor	10G 3/1
Green Fronts	GF-S-E-H	8/26/2016	east building, south elevation	drop lap siding in gable	2/14/2017	thin white primer under a red-brown coat	poor	10R 3/4
Green Fronts	GF-S-E-J	8/26/2016	east building, south elevation	wood trim on addition under	2/14/2017	gray-green atop red atop white primer	fair	10G 3/1; 10R 3/4; 10b 9/1
Green Fronts	GF-S-E-K	8/26/2016	east building, south elevation	eb - door top rail	2/14/2017	green layer nearly absent atop primer	poor	10G 3/1;
Green Fronts	GF-S-E-L	8/26/2016	east building, south elevation	eb - door - top left panel	2/14/2017	red-brown atop pasty white primer	poor	10R 3/4
Green Fronts	GF-S-E-M	8/26/2016	east building, south elevation	window surround	2/14/2017	green layer nearly absent atop primer	fair	10G 3/1
Green Fronts	GF-S-E-N	8/26/2016	east building, south elevation	eb - east window muntin	2/14/2017	charcoal green intermixed; impossible to tell base layer	poor	10G 3/1; 7.5G 3/8
Green Fronts	GF-S-I-A	8/26/2016	Interior samples, east building, south elevation	elevation wall exterior - drop lap - east	2/16/2017	green tinted primer; very poor quality sample	poor	10GY 6/2
Green Fronts	GF-S-I-B	8/26/2016	Interior samples, east building, south elevation	elevation exterior door surround - east	2/16/2017	green over thick white primer	fair	7.5GY 4/4
Green Fronts	GF-S-I-C	8/26/2016	east building, south elevation	elevation wall drop lap below	2/16/2017	poor quality; light green-gray stain? Over wood	poor	10GY 6/2
Green Fronts	GF-S-I-D	8/26/2016	east building, south elevation	surround, south elevation	2/16/2017	black, then white primer, then white paint	fair	10G 3/1
Green Fronts	GF-S-I-E	8/26/2016	east building, south elevation	sill, south elevation	2/16/2017	white primer with gray top	poor	2.5Y 5/2

Green Fronts	GF-S-I-F	8/26/2016	east building, south elevation	muntin, south elevation	2/16/2017	White primer - not paint coat	fair	10B 9/1
Green Fronts	GF-N-E-A	8/26/2016	North elevation, exterior samples	east building, roof trim, eave	2/14/2017	true green then red-brown then green-hued charcoal	good	10R3/4; 10G 3/1
Green Fronts	GF-N-E-B	8/26/2016	North elevation, exterior samples	east window - surround	2/14/2017	true green then red-brown then green-hued charcoal	poor	10R3/4; 10G 3/1
Green Fronts	GF-N-E-C	8/26/2016	North elevation, exterior samples	east window muntin	2/16/2017	dark gray on white primer - new? One coat only	good	N1.75/ 2.5%R
Green Fronts	GF-N-E-D	#########	North elevation, exterior samples	east building, drop lap siding	2/16/2017	olive green, then white primer, then red	good	7.5GY 4/4; 10R 3/4
Green Fronts	GF-N-E-E	8/26/2016	North elevation, exterior samples	east building, door, side rail	2/16/2017	white primer, then a very thin layer of gray-tan	poor	n/a
Fronts	E-F	8/26/2016	exterior samples	door, panel	2/16/2017	brown	fair	10R 3/4
Green Fronts	GF-N-E-G	8/26/2016	North elevation, exterior samples	east building, door, surround	2/16/2017	thick green atop white primer	fair	7.5G 3/8
Green Fronts	GF-N-E-H	8/26/2016	North elevation, exterior samples	west building, eave trim	2/16/2017	thin gray-green atop thick white primer	fair	10G 3/1
Green Fronts	GF-N-E-J	8/26/2016	North elevation, exterior samples	west building, closed eave	2/16/2017	primer, light green, primer, dark green), primer, red	good	7.5G 3/8; 10R 3/4
Green Fronts	GF-N-E-K	8/26/2016	North elevation, exterior samples	lapped siding in gable	2/16/2017	no primer, light green, primer, dark red-brown	fair	7.5GY 4/4; 10R 3/4
Green Fronts	GF-N-I-G	8/26/2016	east building, north elevation	surround, north elevation, east	2/16/2017	white primer, thin red, primer, white-peach	fair	10R 3/4; 10YR 9/4
Green Fronts	GF-N-I-H	8/26/2016	east building, north elevation	muntin,north elevation, east	2/21/2017	grime, white primer, thin red, white; unusable	poor	n/a
Green Fronts	GF-N-I-J	8/26/2016	east building, north elevation	north elevation, wood surround	2/21/2017	paint very flaky; white under light yellow/peach	poor	10YR 9/4
Green Fronts	GF-N-I-K	8/26/2016	east building, north elevation	north elevation, side rail	2/21/2017	wood, white primer, peach-yellow	fair	10YR 9/4
Green Fronts	GF-N-I-L	8/28/2016	east building, north elevation	north elevation, bottom panel	2/21/2017	wood, white primer, peach-yellow	good	10YR 9/4
Green Fronts	GF-N-I-M	8/28/2016	west building, north elevation	surround, north elevation, west	2/21/2017	wood, white primer, peach-yellow	good	10YR 9/4

Green Fronts	GF-N-I-N	8/28/2016	west building, north elevation	interior door side rail	2/21/2017	wood, white primer, peach-yellow	fair	10YR 9/4
Green Fronts	GF-N-I-O	8/28/2016	west building, north elevation	interior door, middle panel	2/21/2017	wood, white primer, peach-yellow	good	10YR 9/4
Green Fronts	GF-N-I-P	8/28/2016	west building, north elevation	interior window surrround	2/21/2017	wood, white primer, peach-yellow	fair	10YR 9/4
Green Fronts	GF-N-I-Q	8/28/2016	west building, north elevation	bottom sash, top rail	2/21/2017	wood, white primer, peach-yellow	good	10YR 9/4
Green Fronts	GF-N-I-R	8/28/2016	west building, north elevation	door, north room, trim	2/21/2017	wood, white primer, peach-yellow	fair	10YR 9/4
Green Fronts	GF-N-I-S	8/28/2016	Interior samples, west building, north elevation	interior swing door, north room, side rail	2/21/2017	(linseed?), gray-brown, dark gray, white primer, peach-yellow, 2nd coat p-y,	good	2.5Y 7/4; 2.5Y 5/2; 10YR 9/4
Green Fronts	GF-N-I-T	8/28/2016	Interior samples, west building, north elevation	interior swing door, north room, panel	2/21/2017	(linseed?), gray-brown, dark gray, white primer, peach-yellow, 2nd coat p-y,	fair	2.5Y 7/4; 2.5Y 5/2; 10YR 9/4
Green Fronts	GF-W-I-U	8/28/2016	Interior samples, west building	south room surround	2/21/2017	brown layer, dark brown, white, peach, white, peach,	good	2.5Y 5/2; 10YR 9/4;
Green Fronts	GF-W-I-V	8/28/2016	Interior samples, west building	door, south room side rail	2/21/2017	no intact base layer, similar scheme to sample U	Poor	n/a
Green Fronts	GF-W-I-W	8/28/2016	Interior samples, west building	door, south room, panel	2/21/2017	no intact base layer, similar scheme to sample U	Poor	n/a
Fronts	X	8/28/2016	west building	window, south	Missing	Missing	Missing	n/a
Strasburger's Colorado Store	SC-S-E-A	8/29/2016	Exterior samples, eastmost of four, south elevation (false front)	panel trim below 20 light window	2/23/2017	substrate with white granular inclusions under light brown with white granular inclusions under a	Poor	a dark N such as N 1.25 1.6% R); 7.5 YR 5/6
s Colorado Store	SC-S-E-B	8/29/2016	eastmost of four, south elevation	panel below 20 light window	2/23/2017	very poor sample; white primer, pale yellow top coat	Poor	2.5Y 8.5/4
s Colorado Store	SC-S-E-C	8/29/2016	eastmost of four, south elevation	20 light window muntin	2/23/2017	(dove?) paint, pale yellow top	poor	50.7%R; 2.5Y 8.5/4
s Colorado Store	SC-S-E-D	8/29/2016	eastmost of four, south elevation	door trim panel	2/23/2017	black and white granular inclusions	Poor	7.5YR 5/4

Strasburger's Colorado Store	SC-S-E-E	8/29/2016	Exterior samples, eastmost of four, south elevation (false front)	pilaster, column shaft	2/23/2017	substrate with white granular inclusions under light brown with white granular inclusions under a	Fair	10YR 2/1; 7.5 YR 5/4
s Colorado Store	SC-S-E-F	8/29/2016	eastmost of four, south elevation	pilaster capital	2/23/2017	Wood, white primer, dark brown, light brown	poor	10YR 2/1; 7.5 YR 5/4
s Colorado Store	SC-S-E-G	8/29/2016	eastmost of four, south elevation	lintel	2/23/2017	be same layers (white primer, dark brown, light	Poor	10YR 2/1; 7.5 YR 5/4
s Colorado Store	SC-S-E-H	8/29/2016	eastmost of four, south elevation	lintel trim	2/23/2017	wood, white primer, dark yellow-red, pale yellow	Fair	7.5YR 5/4; 2.5Y 8.5/4
s Colorado Store	SC-S-E-J	8/29/2016	eastmost of four, south elevation	false fron siding above entry	2/23/2017	wood, white primer, tan, yellow, tan	Fair	7.5YR 5/4; 2.5Y 8.5/4
s Colorado Store	SC-S-E-K	8/29/2016	eastmost of four, south elevation	cornice trim curved	2/23/2017	wood, white primer, dark brown, light brown	Fair	2.5YR 3/2; 7.5YR 5/4
s Colorado Store	SC-S-E-L	8/29/2016	eastmost of four, south elevation	cornice trim flat	2/23/2017	alligatoring; wood, dark brown, yellow	poor	10YR 2/1; 2.5Y 8.5/4
s Colorado Store - Annex	SC-S-E-M	8/29/2016	Exterior samples, for Annex, south elevation	drop lap siding (annex)	2/23/2017	poor quality; brown with possible white primer under	poor	7.5YR 5/4
s Colorado Store - Annex	SC-S-E-N	8/29/2016	Exterior samples, for Annex, south elevation	door surround (annex)	2/23/2017	poor quality; dark brown, then tan? Yellow?	poor	5YR 4/1; 10YR 5/4
s Colorado Store - Annex	SC-S-E-O	8/29/2016	Exterior samples, for Annex, south elevation	door rail (annex)	2/23/2017	poor quality; dark brown, then tan? Yellow?	very poor	5YR 4/1; 10YR 5/4
s Colorado Store - Annex	SC-S-E-P	8/29/2016	Exterior samples, for Annex, south elevation	door panel (annex)	2/23/2017	white primer, dark brown, light brown	fair	5YR 4/1; 7.5YR 5/4
Goldberg Store	MG-S-E-A	8/30/2016	middle, second from west, south	pilaster shaft	2/28/2017	wood, linseed oil, white primer, light yellow paint	fair	10YR 8/6
Goldberg Store	MG-S-E-B	8/30/2016	middle, second from west, south	pilaster capital	2/28/2017	tan, white primer, light yellow, white primer,	good	2.5Y 8.5/4; 10YR 7/6
Goldberg Store	MG-S-E-C	8/30/2016	middle, second from west, south	display window frame	2/28/2017	tan with black aggregate, light yellow	fair	10YR 8/6; 2.5Y 8.5/4

Goldberg Store	MG-S-E-D	8/30/2016	middle, second from west, south	transom window frame	2/28/2017	tan; samples in bad condition; uv damage?	poor	10YR 7/6
Goldberg Store	MG-S-E-E	8/30/2016	middle, second from west, south	transon window muntin	2/28/2017	yellow (possibly white or cream)	poor	2.5Y 8.5/4
Goldberg Store	MG-S-E-F	8/30/2016	middle, second from west, south	display divider trim	2/28/2017	wood, white primer, light tan, darker tan	fair	2.5Y 8.5/4; 10YR 7/6
Goldberg Store	MG-S-E-G	8/30/2016	middle, second from west, south	transom wood panel (west)	2/28/2017	wood white primer, light tan, dark oily tan, yellow	fair	2.5Y 8.5/4; 10YR 8/10
Goldberg Store	MG-S-E-H	8/30/2016	middle, second from west, south	lintel board	2/28/2017	tan (oil?) yellow, white, dark brown (in oil), red (in	fair	10Y 4/2; 5YR 5/4; 10YR
Goldberg Store	MG-S-E-J	8/30/2016	middle, second from west, south	"G. Goldberg" lettering	2/28/2017	wood, no primer, yellow; highly degraded	very poor	10YR 8/10
Goldberg Store	MG-S-E-K	8/30/2016	middle, second from west, south	stringer course moulding	2/28/2017	wood, white primer, light yellow	very poor	2.5Y 8.5/4
Goldberg Store	MG-S-E-L	8/30/2016	middle, second from west, south	false front lapped board	3/2/2017	wood, white primer, light tan, yellow	fair	2.5Y 8.5/4; 10YR 8/6
Goldberg Store	MG-S-E-M	8/30/2016	middle, second from west, south	cornice flat board	3/2/2017	wood, white primer, yellow, gray-green, yellow	fair	10Y 4/2; 10YR 7/6
Goldberg Store	MG-S-E-N	8/30/2016	middle, second from west, south	bulkhead - panel	3/2/2017	tan; poor quality, alligatoring/defoliation	poor	10YR 7/8
Goldberg Store	MG-S-E-O	8/30/2016	middle, second from west, south	annex - lapped board front	3/2/2017	wood, white primer, yellow-tan	fair	10YR 8/6
Goldberg Store	MG-S-E-P	8/30/2016	middle, second from west, south	annex - drop lap board front	3/2/2017	wood, no primer, yellow	fair	10YR 7/8
Building (Dress Shop)	K-S-E-A	8/30/2016	Exterior samples, west-most of 4, south elevation	board	3/3/2017	black particulate, white, white with finer, more evenly spaces blue (gray)	fair	10B 7/2; 10B 5/1
Building (Dress	K-S-E-B	8/30/2016	west-most of 4, south elevation	batten	3/3/2017	primer, white with blue and black particulate	poor	10B 7/2; 10B 5/1
Building (Dress	K-S-E-C	8/30/2016	west-most of 4, south elevation	projecting window frame	3/3/2017	primer, dark layer, white with blue and black	poor	5PB 4/1; 10B 6/1
Building (Dress	K-S-E-D	8/30/2016	west-most of 4, south elevation	flat window muntin	3/3/2017	very poor samples; white primer, white paint	poor	N 8.75 /73.4% R

Building (Dress	K-S-E-E	8/30/2016	west-most of 4, south elevation	door frame - rail	3/3/2017	Very poor samples; white primer, white paint	poor	N 9.25/ 84.2% R
Building (Dress	K-S-E-F	8/30/2016	west-most of 4, south elevation	door recess	3/3/2017	Very poor samples; white primer, white paint	poor	N 9.25/ 84.2% R
Building (Dress	K-S-E-G	8/30/2016	west-most of 4, south elevation	cornice upper board	3/3/2017	poor sample; white primer, light blue paint	poor	10B 7/2

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