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Thomas Han Garcia

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The Preservation of the John A. Kerr Building

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The Preservation of the John A. Kerr Building

by

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Report

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Dedication

I dedicate this report to Jeff Bodi; thank you for being there for me throughout my time at UT. I cannot repay you enough.

Acknowledgements

Although I, the author, have written this report, its existence would not be possible without the help and guidance of many.

The residents of Cotulla have been extremely valuable in the information and time they have offered me. I thank Patsy Leigh, Cotulla's Main Street Manager, for the help she has given me throughout the course of my project. Additionally, she provided me with the opportunity to present the scope of this report to important members of Cotulla's community, bringing my efforts to a broader audience.

I also thank Nora Mae Tyler for generously donating her time and effort in assisting me with deciphering the city's deed records and for providing me with a tour of the Brush Country Museum. Her years of experience as the county clerk and her lifetime in Cotulla have helped paint a better picture of the town and its evolution.

I thank CJ Horton, Cotulla's librarian, for allowing me to occupy her library during my last visit to Cotulla. I also thank her for allowing me to raid her stock of withdrawn books.

The information I have received from Wade Shoop and John Keck have also been invaluable. Whether it be in terms of building access or historical information, they have been vital for a greater understanding of the building. This report would be incomplete without them taking time out of their schedule to assist me.

In Austin, there are also many people who command my thanks. I thank Robert Mezquiti for introducing me to this project and for providing me with his photographs of the building and town. My fellow preservationists and professors have also been instrumental in the completion of this project in the support they have offered me, both directly and indirectly: Amalia, Andreea, Julie, Rebecca, Yuanjing, and of course Dr. Holleran.

Above all, however, I thank Frances Gale for her dedication and support, not only in terms of her time and effort in helping me complete this report, but the support she has given me throughout my academic career at UT. Her guidance and expertise have provided me with greater knowledge and interest in architectural conservation. My education, and certainly this report, would be greatly diminished without her.

Abstract

The Preservation of the John A. Kerr Building

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The University of Texas at Austin, 2012

Supervisors: Frances Gale and Michael Holleran

The Kerr Building, located in Cotulla, Texas, was built in 1883 by John A. Kerr and was the first commercial brick building constructed in the town. Originally housing a wholesale and general store, the building was converted to a bank in 1907. The bank remained until its liquidation in 1935, after which another general store was established in the building, followed by an auto store. Despite its history and prime location, currently the building remains unused. The building suffers from interior deterioration of wood floors, painted pressed metal ceilings and walls, and severely deteriorated wood window and door frames. Additionally, cement stucco was used to coat the entire building between 1907 and 1916. This cement stucco presents problems of historical integrity, as well as other potential issues as the cement stucco exhibits cracking.

This report provides a historical record of the John A. Kerr Building. Broader histories of Cotulla, prominent residents, and of nineteenth century architecture in Texas provide a historical context for the building. Additionally, condition assessments in the form of annotated elevations indicate deterioration of the exterior. Some interior

deterioration is also briefly discussed in the report. This report also discusses mechanisms of deterioration and provides treatment recommendations.

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Chapter 1: Introduction, Purpose, and Methodology

THE JOHN A. KERR BUILDING

Cotulla's first commercial brick building was constructed in 1883, a significant achievement in the context of a nineteenth century Texan settlement. The John A. Kerr Building initially housed a wholesale and general store, providing goods and services to the growing town. With its prominent location on the town's main commercial strip across from the railroad, and only two short blocks away from the courthouse and public squares, the building represented the town's prosperity and aspirations. Simple in massing and restrained in detail, the building provided a handsome face to those arriving to town by rail, the main means of transportation before the age of the automobile. The Kerr Building has since housed the Cotulla State Bank, followed by more retail establishments. Currently, the building is abandoned and has been so for some years. Fortunately, the sale of the building in February, 2012 has prompted more interest in the building's history and reuse.

Unfortunately, both historical and contemporary information regarding the building is scarce; indeed, much of the building information was never recorded. Regardless, enough documentation and historic photographs exist to piece together a history of the building as it evolved over time; broader histories allow a historical context to be established.

Purpose and Structure of the Report

The purpose of this report is twofold. First, it will provide a history of not only the building, but of Cotulla. This will allow an understanding of how the building fits into the historical spectrum of the town, and how it represents the town's growth. This history will include biographical information of some important figures related to the town and the building. In addition, the development and evolution of the building will be discussed, with a description of the building as it stands today.

Second, this report provides information on deterioration processes and resulting conditions throughout the exterior of the building; some historical interior elements are also described. Annotated elevations accompany the written exterior deterioration assessment. From these, possible mechanisms and sources of deterioration are discussed. Finally, treatment options for the building are outlined with recommendations provided.

The report is divided into six chapters. Chapter 2 provides an overview of Cotulla from the days of Polish immigration to the present day. Chapter 3 deals specifically with the history of the Kerr Building and its evolution. This chapter also discusses the building in the context of nineteenth century architecture in Texas. Chapter 4 describes existing exterior conditions as well as some interior conditions. The second section of this chapter discusses possible mechanisms and sources of deterioration. Chapter 5 recommends treatments for the building and makes product recommendations. Finally, Chapter 6 provides a conclusion to the entire report.

Annotated exterior elevations with noted conditions can be found in Appendix A. Appendix B provides definitions and images of deterioration in the form of a conditions glossary. Appendix C lists the Secretary of the Interior's Standards for Rehabilitation. Appendix D contains laboratory reports for testing conducted. Finally, Appendix E lists websites for product manufacturers suggested in Chapter 5.

METHODOLOGY

The history La Salle County and its county seat, Cotulla, were largely compiled using information from Annette Martin Ludeman's *La Salle: La Salle County*, published in 1975. Broader histories were obtained through books on Polish immigration to Texas and the development of nineteenth century architecture in Texas. In regards to the latter, Willard Bethurem Robinson's *Texas Public Buildings of the Nineteenth Century*, published in 1974, was instrumental in identifying and describing the broader context of the Kerr Building.

Deed research was conducted at the La Salle County Courthouse in Cotulla to determine a chain of ownership. Some minor information was obtained through the La Salle Central Appraisal District. Unfortunately, building permits located at Cotulla City Hall did not extend beyond 2004; a clerk noted that additional records, if located, would not extend earlier than the late 1990s. The Brush Country Museum and John Keck provided valuable information via historic photographs. Additional information was gathered from Cotulla's Main Street Program and long-time residents of the town.

The annotated elevations were completed using information gathered on-site, either using handwritten notes or by using working copies of the elevations. The east and south elevations were provided by Studio Autoforma and modified by the author. The west elevation was produced by the author. Naturally, photographs were taken for the conditions glossary on-site. All photographs in the report, unless otherwise noted, were taken by the author. Electrical, mechanical, and structural investigations are outside the scope of this report.

Chapter 2: Cotulla Historical Report

POLISH IMMIGRATION TO TEXAS

Immigrant cultures and influences infuse Texas' landscape with a rich tapestry of history and change. Immigrants came to Texas, and to the rest of America, for various reasons. One such ethnic group, the Polish, began immigrating to Texas as early as the turn of the nineteenth century,[1] before the annexation of the Republic of Texas. Indeed, Texas' Panna Maria in Karnes County is the first Polish settlement in the United States.[2] Although the settlement is now sparsely populated,[3] it perseveres as a testimony of Polish Texan heritage.

Unfortunately, the circumstances under which many Polish came to Texas were disagreeable. Prior to the nineteenth century, from 1772 to 1795, Poland was partitioned by several surrounding foreign powers, effectively ending centuries of Polish sovereignty. Cultural, economic, and religious repression soon followed, resulting in an exodus of Polish refugees. Those wealthy enough resettled in Western Europe; many with more modest means would find a new home in a new land, America.[4]

It is worth noting that Polish contributions to America extended beyond settling and cultivating land. Some prominent Poles include Albert Zborowski, who served as an

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[1] James P. McGuire, *The Polish Texans* (San Antonio: Institute of Texan Cultures, 1972), 1.
[2] Edward J. Dworaczyk, *The First Polish Colonies of America in Texas: Containing Also the General History of the Polish People in Texas* (San Antonio: Naylor Company, 1979), vii.
[3] Louann A. Temple, "PANNA MARIA, TX," Texas State Historical Association (TSHA), accessed March 4, 2012, http://www.tshaonline.org/handbook/online/articles/hlp04.
[4] McGuire, 1.

early interpreter to Native American land contracts in the second half of the seventeenth century, the fur trader Jacob Sodowski of New York, whose sons would be the first immigrants to explore as far south as Kentucky in the late-eighteenth century, and General Thadeus Kosciusko and cavalry officer Casimer Pulaski, both of whom aided America in her fight for independence; additionally, along with Pulaski were several Polish noblemen serving as aides. Additionally, a large number of Poles served in American armed forces during the Seminole Wars of the early-nineteenth century. Throughout this period, the plight of the Polish people during these times was not lost to Americans. By the 1830s, the Polish National Committee was formed with some prominent Americans in their ranks. Soon, these sympathies materialized in the form of a Congressional grant of thirty-six sections of land and two townships near River Rock, Illinois.[5]

Texas, then a Spanish colony, had a minimal Polish presence until after 1830. That year a strongly oppressed revolution in the Russian-occupied portion of Poland resulted in thousands of Poles choosing self-exile. Although many found temporary refuge in France, Austria, and Prussia, only France allowed them to stay; those in Austria and Prussia were deported to America.[6]

It was not long before a number of exiled Polish revolutionaries formed the Association of Poles in America, commemorating their lost independence and keeping Poland's past alive. Just ten years later, in 1852, a second organization was formed, the

[5] Dworaczyk, xi.
[6] McGuire, 2.

Democratic Society of Poles in America, a strongly anti-slavery group. The Poles, with their lost independence, perhaps understood what it meant more than other groups what it meant to lose freedom. By revolting in their homeland and commemorating their loss, and by protesting the enslavement other peoples, the Poles were recognized by some Americans as "martyrs for liberty."[7] Their loss of freedom and independence not only influenced why they came to America, but also who they became once they arrived.

JOSEPH COTULLA: HIS BEGINNINGS AND THE FOUNDING OF COTULLA

Following this period of mass immigration, a major figure for La Salle County was born. On March 19, 1844, Joseph Cotulla was born in Wielkie Strzelce,[8] a small town in Polish Silesia.[9] He was the son of John and Rosalia (née Hoffmann) Kotula.[10,11] There, he attended a Catholic school from 1850 to 1855,[12] the only formal education he is known to have received. His early years are unfortunately not recorded, and one can only speculate about his beginnings and upbringing in Poland.

Joseph would not remain in Poland for long, however. In 1856, at the age of twelve, his widowed mother and grandmother brought him with them to America.[13] In December of that year, Joseph found himself in Galveston, and from there they all

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[7] Dworaczyk, xi.
[8] Annette Martin Ludeman, *La Salle: La Salle County* (Quanah, Texas: Nortex, 1975), 151.
[9] Jacek Przygoda, "New Light on the Poles in Texas," *Polish American Studies* 27, no 1/2 (1970), 83.
[10] Ludeman, 151.
[11] Joseph's name was Anglicized after his arrival to America. Przygoda, 83.
[12] Ludeman, 151.
[13] Przygoda, 83.

traveled via ox cart to Indianola and then to San Antonio.[14] In 1857, his family traveled again, this time to La Gallinas in Atascosa County[15] to live with an aunt and sister who had arrived before them. By the age of thirteen he began working. It was during these early years in America that he taught himself to read, write, and speak not only English, but Spanish as well.[16]

Once the Civil War broke out, Joseph went to New Orleans to enlist in the Federal Army. After serving for two years, he was honorably discharged and returned to Atascosa County. In the fall of 1869, he ventured south beyond the Nueces River and established a ranch. This ranch would be located two miles west of the town which he would be found eleven years later.[17]

The next milestone of Joseph's life came in 1871, when he returned to Atascosa County to marry Mary Rieder, the only child of Swiss immigrants Simon and Caroline Rieder. He returned alone, however, as there was no place to house his new bride[18] and the large family that would soon follow. Throughout their marriage, they would have a total of nine children, five boys and four girls.[19]

In the early 1880s, he learned that the International – Great Northern Railroad was extending into La Salle County, and decided to begin work on founding the town of Cotulla. In 1881, he gave the railroad company incentive to pass through his town by

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14 Przygoda, 83.
15 Ludeman, 151.
16 Przygoda, 83-4.
17 Ibid., 83.
18 Ludeman, 151-2.
19 Przygoda, 83.

granting them 120 acres of right of way.[20,21] The railroad came through Cotulla the following year.[22] On the first train to arrive in Cotulla came Joseph's wife.[23]

COTULLA'S EARLY YEARS TO JOSEPH'S DEATH: 1882 TO 1923

On Tuesday, January 10, 1882, an auction was held to sell the lots of the newly platted town of Cotulla (Figure 1).[24] A generous man, Joseph offered a town lot to every religious denomination and school.[25] The brochure for the auction described a town situated on a rolling prairie less than a mile from the Nueces River and resting on red loam. Just a year prior to the auction, the town had cow trails lined with heavy brush, but no actual streets.[26] There were about twenty families already in the area, and most lived in one or two room wood cabins; modern conveniences and comforts were nonexistent. This was soon to change, as by 1882 the train depot was built.[27] The arrival of the railroad along with the auction of town lots resulted in the birth of Cotulla.

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20 John Leffler, "COTULLA, TX," Texas State Historical Association (TSHA), accessed March 4, 2012, http://www.tshaonline.org/handbook/online/articles/hgc16.
21 Ludeman, 152.
22 Przygoda, 83.
23 Ludeman, 152.
24 "Brief History of Cotulla", La Salle County Historical Commission, accessed March 18, http://historicdistrict.com/Genealogy/LaSalle/cotulla.htm.
25 Przygoda, 83.
26 "Brief History of Cotulla."
27 Leffler.

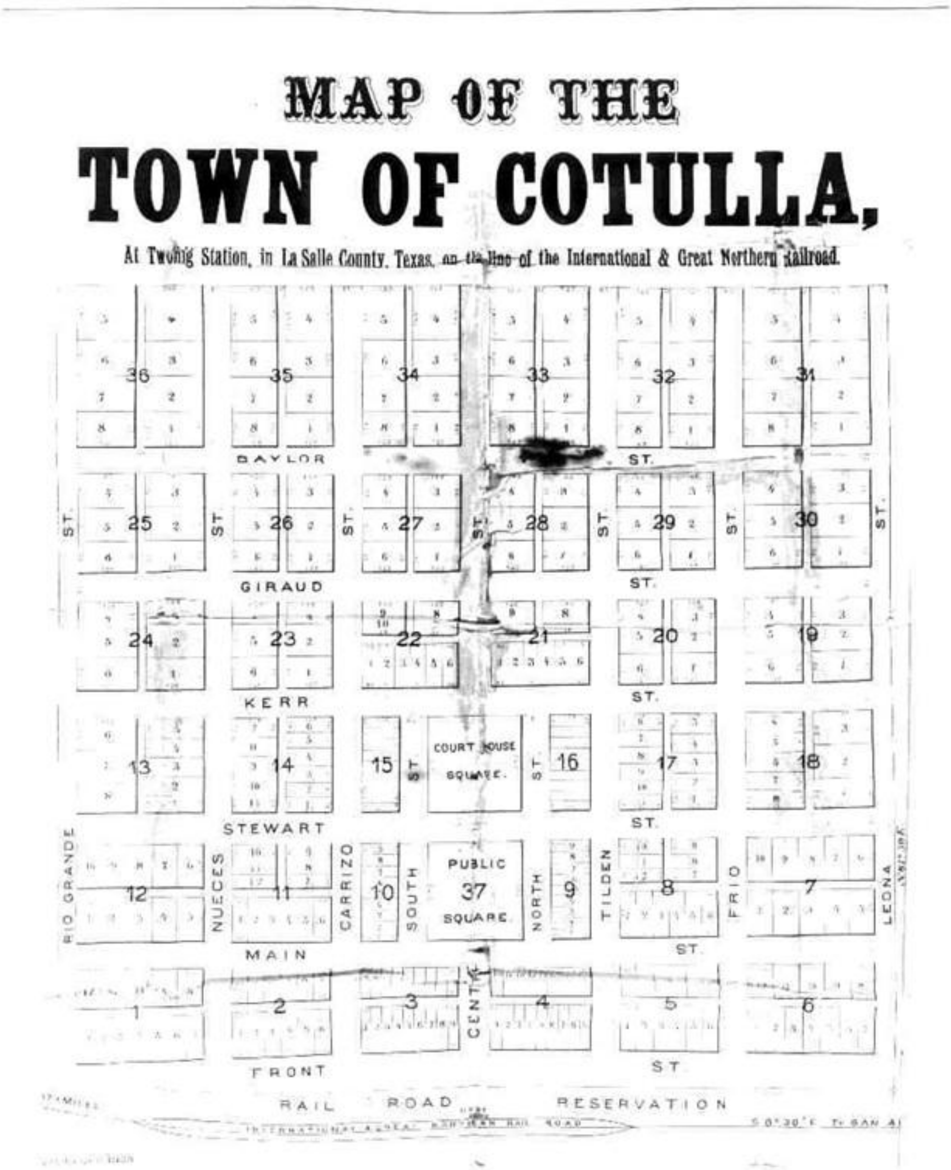

Figure 1: The newly platted town of Cotulla. (Source: Brush Country Museum)

By 1883, the town had a post office, hotel, and jail amongst other buildings. The year 1883 was important for Cotulla for another reason: a special county election was held to determine which city should be the county seat; Cotulla won. By 1885 there was school with 135 students, and eleven years later, school records indicate a separate school for African-American children.[28]

The town formed communal ties through its public spaces as well. The public square, located east of the courthouse square, was given to the city by Joseph Cotulla. In its early years, the area served as a camping ground for those passing through or those who had just arrived. A bandstand later stood in the park, providing local musicians a venue to perform popular songs of the day. When visitors such as politicians came to speak, the bandstand was used to provide entertainment and ceremony.[29] The public square provided the town with an area in which to gather, and it also served as a space in which public speakers could address the town.

By 1890, Cotulla had a population of about 1,000, three general stores, two weekly newspapers and churches, and a bank amongst other establishments of contemporary civilization.[30] The early 1890s also saw the birth of one of Cotulla's oldest businesses. The lumber and hardware store, originally owned by a Mr. Pfeuffer and Mr. Sloan, was bought in 1891 by Thomas Randall Keck;[31] the lumberyard remains in the Keck family to this day and is still in operation. It sits obliquely to the east of the John A. Kerr Building and serves as a living example of Cotulla's past.

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[28] Leffler.
[29] Ludeman, 33.
[30] Leffler.
[31] Ludeman, 31.

Another early business that did not survive was one of Cotulla's first industries: brick-making, without which the permanent buildings could not have been built. The kilns for manufacturing Cotulla brick, as it was known, were located along Mustang Creek.[32] Mustang Creek Valley, just east of the town, contained kilns over two brickyards. Production of Cotulla brick has long since been discontinued, and even by the early 1930s there was little evidence that the brick yards existed.[33]

Although information on the manufacturing of Cotulla brick is very limited, it is possible to paint an image of how the industry likely worked. Manufacturing bricks consists of five basic steps, essentially unchanged since antiquity. First, clay is extracted from surface deposits (or manufactured by extracting shale and pulverizing it), then tempered, which is the process in which the clay is mixed with sand and water.[34]

Then the bricks are formed; mechanized, steam-powered brick making was popular by the mid-century and allowed the production of homogenous bricks with sharp, regular edges, characteristic of the late-nineteenth century.[35] This is the method that was likely used to shape Cotulla brick, as the brick sample taken from the Kerr Building exhibits sharp, well-defined edges.

Then next step involved drying the bricks, which was required since immediate firing could cause the brick to warp or explode due to steam buildup. Initially, bricks

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[32] "Brief History of Cotulla."
[33] Ludeman, 15.
[34] Mark London, *Masonry: How to Care for Old and Historic Brick and Stone* (Washington, D.C.: Preservation Press, 1988), 55.
[35] Martin E. Weaver and F. G. Matero, *Conserving Buildings: Guide to Techniques and Materials* (New York: Wiley, 1993), 100.

were just set out in the sun; later, with more permanent settlements, sheds and shelters were built to house them.[36]

Once sufficiently dried, the bricks were then fired. Firing is essentially burning the brick in a kiln, which causes partial sintering, or fusing, of the constituent materials. The quality of the brick is dependent on the temperature of the fire and the amount of time it is fired. This process is fundamental in determining the brick's strength, hardness, color, and porosity.[37]

Brick firing in Cotulla at the time of the Kerr Building could have occurred in two different ways. It is possible that the earliest Cotulla bricks were made in clamps, which were built at the construction site using unfired bricks covered with clay and more bricks. The cavity was then filled with more unfired bricks in alternating layers with wood, which was then set on fire. Firing bricks in clamps took several days, and produced a wide range of bricks, not all of which were usable; between 10-40% of bricks would be useless. These temporary kilns were used up until the turn of the century.[38]

When demand was high, permanent kilns made of fired brick were usually constructed near sources of clay; although kilns increased the quality of the bricks made, the process was similar to its predecessor.[39] The kiln would have been a large pile of unfired bricks constructed over parallel flues which contained fuel; coal was commonly used in the latter half of the nineteenth century. The base of the kiln and the flues would

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[36] London, 59.
[37] Ibid., 59.
[38] Ibid., 60.
[39] Ibid.

be composed of previously rejected fired bricks. Protective coverings of plaster or other materials were also used to provide insulation for even firing temperatures or to protect the kiln from windstorms, which would result in excessively high temperatures.[40]

Brickmaking is worth noting and describing for the effect it had on Cotulla's built heritage. The Kerr Building, as will later be discussed, was built using Cotulla brick and physically represents the town and the brick industry alike.

Although Cotulla had several industries in its earliest days, there was not much in terms of diversions. Mexican traveling shows did come through from time to time providing some entertainment. Public and private dances were sometimes held, and although picnics and barbeques were rare, when planned they had high attendance.[41]

It was not long, however, before the town found ways in which to enrich their lives. In January, 1886 the Cotulla Debating Society was formed, holding its first meeting on the thirteenth of February that year. Topics ranged from the usefulness of the cow versus the goat, to whether women should receive the same education as men. The following year, the K and H Lodge was established;[42] these early organizations brought home-grown culture to the town and provided distractions from day-to-day activities.

However, despite Cotulla's prosperity and cultural progress, it developed a reputation as a "rough place" early in its history. One anecdotal story relates that railroad conductors would announce the town by shouting, "Cotulla! Everybody get your guns

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[40] Weaver and Matero, 100-1.
[41] Ludeman, 31-32.
[42] Ibid., 33.

ready." Other stories relate that three sheriffs and nineteen residents lost their lives due to gunfights in the early years.[43]

One such murder occurred in the immediate vicinity of the Kerr Building, on December 31, 1886, with the death of George E. Hill. His death was related to a feud that left two other men dead, all of whom, including Hill, were family men with children and county officials. At the time, John A. Kerr was in his store, which was closed for the day. He was writing a letter when he heard the gunshots and quickly blew out the candles, readying his revolver in the event the gunshots were destined for him. The tragedy left the town in shock and mourning,[44] and to this day, the account of the murder is remembered.

All was not lost in Cotulla, however. Will T. Hill, sheriff of La Salle County at the turn of the century, played a vital role in enforcing the law in the town, and required everyone that came to town with a firearm check it into his office upon their arrival. Prior to their departure, they could come by and pick up their gun for the rest of their journey.[45]

Another institution that played a role in reducing the lawlessness of the land was the church, whose role has been important to Cotulla throughout its history. Catholics, Episcopalians, Lutherans, Baptists, Methodists, the Church of Christ, and undoubtedly others have found a home in Cotulla. Of the church's role in the town, Mrs. T. R. Keck wrote that:

43 Leffler.
44 Ludeman, 113.
45 Ibid., 123.

> "We cannot estimate the value of these church organizations and what they stand for. Before they came and had time to teach a better way…Cotulla was a wild west town…I lived through the old wild days and am now living among transformed people."[46]

At the turn of the century, as crime began to drop, life became more peaceful for the townspeople.

Just prior to the turn of the century, in 1898, the population had reached approximately 1,200. By this time, the town now had: five general stores, blacksmith shops, and churches; three bakeries; two confectionary stores, newspapers, shoe shops, hotels, boarding houses, restaurants, barber shops, schools, meat markets, and saloons; and one drug store, lumber yard, hardware store, livery stable, feed yard, and irrigating plant. There were still limited amenities in the town, however. Ice had to be express shipped from Laredo, and even then it was only used for medical purposes or on special occasions. Eggs and vegetables were rare; butter even more so. Clothing and other accessories were available and reasonably priced, although the money to buy them was scarce for most residents. Water was also occasionally in shortage. Some residents used water from cisterns that collected rain water from their roofs, but most bought river water by the barrel from local Mexican carts.[47]

In 1914, drilling for a water well was approved by town vote, and drilling began the next year. Since 1910, Joseph Cotulla sought to have a pure artesian well for the town, since the lake, river, and underground cisterns were insufficient in times of

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[46] Ibid., 54.
[47] Ibid., 32-4.

drought. Soon, fresh water was available to all. Also in 1914, the Central Power and Light Company was created, providing not only streetlights, but the capability for the town to make its own ice.[48] This may seem like a minor luxury, but it would have undoubtedly made Texas summers more bearable.

Throughout the late-nineteenth century, Joseph's and Cotulla's wealth and prosperity only continued to grow. As the years went by, Joseph accumulated approximately 30,000 acres of land in the counties of La Salle, Dimmit, and Webb. He was also a prominent figure in politics, serving as the county commissioner for some time.[49] He was a member of the Old Trail Drivers Association, and drove cattle up the trail to market in Kansas in his more youthful years. On August 17, 1923, Joseph Cotulla's long and accomplished life came to an end.[50]

Even at that time Joseph was a forward thinking man; his direct actions would benefit the future growth of the town. He was the first to dig an artesian well in the area and to plant crops such as wheat and hay.[51] However, his most prominent accomplishment was perhaps his instrumental role in bringing the International – Great Northern Railroad through Cotulla.[52] Without this lifeline, the town, if it existed at all, would not be what it is today.

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48 Ibid., 35.
49 Ibid., 152.
50 Przygoda, 83.
51 Ibid.
52 Ludeman, 152.

COTULLA AFTER JOSEPH

As Cotulla and La Salle County continued to grow, some unfortunate problems followed. Like many areas in the United States, Prohibition was met with some resistance. The 1920s in La Salle County saw quite a bit of illegal alcohol manufacturing. Additionally, wealth was slow to come to the area; a 1925 income tax report showed that 83 people in the entire county paid income tax. Only six had incomes over $5,000; none had incomes over $10,000.[53]

Hunting, a hobby and means of economy for the county, would also pose a problem as the native wildlife was overhunted, especially deer and javelinas, both of which were killed en masse for their pelts. Deer, turkey, quail, doves, and wild hogs were also hunted throughout the county. One hunter, Lee Dobie, noted that "you could walk 25 miles and never [see] a single buck."[54]

Along with the growth of the town came new buildings, which often meant the destruction of old ones. In 1931, a major loss occurred with the destruction of the old brick jail, built in 1883. Situated north of the courthouse square, it was one of the town's oldest buildings. It was also during this time, however, that Cotulla also gained one its primary landmarks, the courthouse. On November 27, 1931, the new courthouse and jail were officially opened; the previous two had burned down.[55]

Soon afterwards on November 6, 1938, the Alexander Library opened, an institution which still survives today. From humble beginnings, the library started as a

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[53] Ibid., 15.
[54] Ibid., 88-9.
[55] Ibid., 12,15.

book club run by Mrs. J. T. Maltsberger in her own home. Once the La Salle County Library was founded, it was housed on the second floor of the courthouse. As space and accessibility became a problem, there was a need for a new building to house the library. The present library was built by Mr. and Mrs. Ben Alexander just south of the courthouse in the early 1970s. The library was then renamed the Alexander Memorial Library.[56] The library today still offers its services to the public, providing a venue for the town's residents to broaden their minds.

In general, the years between 1930 and 1950 saw many improvements in infrastructure and technology. Technological advancement improved farming and ranching techniques. For those in Cotulla proper, electric refrigerators, freezer, washing, and drying machines transformed daily living.[57]

Population growth continued fairly steadily up until the mid-twentieth century. There was a decline in population from 4,425 residents in 1954 to 3,960 residents in 1961. To this day, the population has remained fairly constant.[58]

Another constant for Cotulla and the county is the production of agriculture and hunting. Since its earliest days, one of Cotulla's most important industries was stock raising; indeed, ranches can still be found on Cotulla's outskirts. Farming in La Salle County was another one of the earliest industries. It began in the late-nineteenth century on a commercial basis, and at various times the county produced spinach, tomatoes, peppers, beans, and Bermuda onions, an early cash crop, amongst other vegetables; these

[56] Ibid., 37.
[57] Ibid., 17.
[58] Leffler.

were often shipped north for sale. Cantaloupe, cotton, and broom corn would also become important crops throughout the course of the twentieth century. Crops were grown by aid of irrigation, built to increase the land's productivity.[59]

After World War II, grain sorghums, forage sorghums, peanuts, watermelons, peas, and oats grew over much of the farmland. Coastal Bermuda grass was also grown to be used by the ranches for hay and grazing. Hunting is also still important for the county, and wildlife has long been more protected by hunting regulations. With its variety of wildlife, La Salle County is a hunter's "paradise,"[60] offering leisure for residents and tourists alike.

Finally, no history of Cotulla and its environs is complete without mentioning oil. Oil was first discovered in August, 1940, and that same month the H.R. Cullen No. 1 Washburn was open for commercial oil production. That year the first train car load of oil shipped out from Cotulla; twenty years later the oil fields were producing over four million barrels.[61] Today, the industry is growing and is responsible for much of the renewed economic interest in the area, which can be seen with the renewed interest in the John A. Kerr Building.

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[59] Ibid., 82-5.
[60] Ibid., 85-9.
[61] Ibid., 90.

Chapter 3: The John A. Kerr Building Historical Report

Building History and Evolution

There are no existing specifications for the Kerr Building, and it is unlikely that any ever existed given the era in which the building was constructed and its location. Much of the building history has been gathered either through deeds, oral histories, or historic photographs. Other forms of documentation are unfortunately limited. However, enough information exists to illustrate the building, past and present.

Joseph Cotulla sold Lot 1 of Block 4 to John A. Kerr in March, 1882; the lot was approximately 30 feet along Front Street and 125 feet along Center Street.[62] One year later, in 1883, Kerr built the town's first commercial brick building on the corner of Front and Center Streets; it was among the first businesses in Cotulla.[63] Once complete, it housed a wholesale and general merchandise store; it would serve this commercial function until 1907.[64] Kerr came to Cotulla with his wife, date unknown, and became active in politics and served as the county treasurer for some years.[65] It is known that he was in the area as early as 1879, for in October of that year, Kerr became postmaster of Nopal until September, 1881; Nopal was a relatively new settlement about which little is known.[66]

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[62] Deed of Sale from Joseph Cotulla to John A. Kerr, March 1882 (filed 22 February 1886), La Salle County, Texas, Deed Volume F, page 291-2. County Clerk's Office, Cotulla, Texas.
[63] Ludeman, 30.
[64] *The John A. Kerr Cotulla State Bank Preservation Project*, prepared by Frank Architects, 2010.
[65] Ludeman, 176.
[66] Ibid., 6.

Kerr's involvement in Cotulla, much like his life, was somewhat unusual. In 1888, shortly after the building was constructed, he sold his Cotulla properties (of which he had several) and went to Independence, Missouri, where he remained until 1914. He then traveled to Cuba for eleven years, and shortly upon his return to the United States, he visited Cotulla in 1926. He indicated an interest in starting more businesses in Cotulla, but unfortunately this was not to be. In October, 1929, at the age of 77, Kerr died in Independence, Missouri.[67]

There were very few people who recorded daily life in Cotulla's early years. Some local remembrances according to Annette Martin Ludeman, speak of the store selling ranch supplies and the building's high board sidewalks "where ranch wagons could back up and load their supplies," but not much else. If anything, John A. Kerr's business practices and ambition preceded his day-to-day activities. Of him his cousin W. A. Kerr noted, "[he] was a good businessman, and was a leader in his day in La Salle County."[68]

Kerr's store not only sold goods, it was also involved with some banking activities for sheep and cattle ranchers in the area, an indication of the amount of trade the railroad brought Cotulla.[69] This was not to be the last time banking would be done within the walls of the Kerr Building.

Since John A. Kerr left Cotulla in 1888, it appears that one of his sons, William Augustus "Willie Gus" Kerr took control of the store. A biographical sketch outlined by

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[67] Ibid., 176-7.
[68] Ibid., 177.
[69] Ibid., 176.

Ludeman indicates that among Willie Gus' many jobs was his role as a merchant.[70] Sometime shortly before 1907, George E. Tarver, a well-known stockman, moved into Cotulla and became business partner's with Willie Gus.[71] By 1907, the State Bank of Cotulla, later renamed the Cotulla State Bank, was formed.[72] From then on, the bank would reside in the Kerr Building for some time.

There were several owners and investors of the building and bank until 1916, when the Cotulla State Bank was liquidated.[73] In March of that year, an investor group led by Col. John H. Zachry of Laredo bought the bank, ending internal stockholder and bank officer dissent. At this time, the bank was reorganized and changed its name to the Farmer's and Stockman's Bank. The bank remained until its liquidation in 1935.[74]

The sign across the façade is still visible today. After 1935, the building again became a retail store, initially selling dry goods. Later, the building housed the Western Auto Supply Company.[75]

Throughout these changes of title and use, physical changes occurred as well. The earliest photograph of the building is undated, but is from the early twentieth century, before 1907 (Figure 2). On the east elevation, immediately below the second story windows is a sign that appears to be painted on the façade that reads "GEO. E.

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[70] Ibid., 177.
[71] Ibid., 211.
[72] *The John A. Kerr Cotulla State Bank Preservation Project*.
[73] Liquidation of the Cotulla State Bank, La Salle County, Texas, Deed Volume M-2, page 130-1. County Clerk's Office, Cotulla, Texas.
[74] Kerr Building history notes, provided by John Keck. Undated and unpublished.
[75] *The John A. Kerr Cotulla State Bank Preservation Project*.

TARVER." This dates the photo to around the time that George E. Tarver came to Cotulla to set up business with Willie Gus Kerr.

Figure 2: The Kerr Building, circa 1907. East elevation. (Source: John Keck)

Here, we see the building as it was originally built, with the Cotulla brick exposed, covered only by the sign and awning, which continues north to the building next to it. The decorative brickwork is apparent in the parapet and the brick arches that frame the second story windows. The corners of the building also exhibit quoins, which may have been achieved by using different colored brick, likely the result of different firing temperatures.

There are still three opening on the first floor, but they are largely obscured by the awning. It is apparent, however, that the central opening served as the main entrance; glazing covers the other two openings on either side. Another prominent feature is the porch, raised a couple of feet off the ground, covering the upper part of the basement visible today. The porch appears to be made of wood and the awning covered with corrugated metal. Whereas the building provides a sense of architectural aspiration, the porch and awning are strictly functional.

A second photograph from the around same period shows the south elevation at an oblique angle, looking towards the courthouse (Figure 3). Here, the porch continues to wrap around the building and in front of the adjoining buildings to the west. The large opening, presumably matching the others on the east elevation obscured by the awning, serves as a secondary entrance. The only other openings are on the west end of the elevation, and they appear to be two doors side-by-side and capped by segmental arches. These probably led to separate business; Sanborn maps from 1933 and 1948 indicate a separate space for another business.

Figure 3: Cropped image of the photograph, also circa 1907. (Source: Brush Country Museum)

The second story openings were much the same as they appear today. However, the middle opening is longer than the others, extending below the uniform sill. It is possible that this served as an entrance to the second floor, as sources indicate that the second floor was not originally accessible from the interior. The upper floor, throughout the much of the building’s history, appears to have served as either living space or as separate business. There are no clear records regarding the use in more recent times, unfortunately.

Indeed, a circa 1913 photograph shows stairs leading up to this second story opening (Figure 4). There is some discrepancy with the historic photographs, however, as one photograph dated April 1, 1913 shows the building as the Cotulla Mercantile Co., selling clothing, furniture, feed, and ranch supplies (Figure 5). This store appears to inhabit the Kerr Building and the two buildings to the north of it. This date may not be accurate, as the Cotulla State Bank was chartered in 1907, and the Cotulla Mercantile Co. was most likely associated with Willie Gus Kerr and George E. Tarver, who died in 1909. Additionally, this photograph is missing the wood stairs on the south elevation that lead up the second floor. There are, however, signs painted on the south elevation just west of the side entrance, which are not entirely legible. This may provide further information regarding additional businesses in the building, such as a bank. Also, the main entrance has now changed, and stairs lead up to the southern opening on the east elevation rather than the central one. Regardless of the discrepancies, the most important thing to note is that the building remains unchanged, with the exception that the porch has been removed and a sidewalk has taken its place.

Figure 4: Undated photograph of the Kerr Building, circa 1913. (Source: John Keck)

Figure 5: Cropped view of photograph dated 1913. (Source: John Keck)

Although the date of interior's pressed metal installation is unknown, it is likely to have been installed around this time, after 1907, with the arrival of the Cotulla State Bank. As early as 1868, sheet iron was used for ceilings; not surprisingly, with the advent of pressed metal ceilings came the production of sheet iron walls, wainscoting, decorative ceiling medallions, and cornices to transition from wall to ceiling.[76] The popularity of metal ceilings reached its height in the late 1880s, extending well into the twentieth century; indeed, its popularity did not begin to wane until the 1920s.[77]

Industrialization resulted in mass production and distribution of pressed metal. Combined with assertive and slightly embellished claims,[78] this meant that pressed metal became fashionable. Any city or town that was accessible by train could have a variety of pressed metal components delivered from nearly anywhere in the country.[79] Companies that produced pressed metal ceilings also probably made exterior metal cladding, interior pressed metal sidewalls, storefronts, and metal shingles; few companies made pressed metal only for ceilings.[80]

Pressed metal was also popular due to its promotion as fire resistant and sanitary, as well as claims of permanence, low cost, and aesthetics. Fire resistance was widely promoted in catalogues, which included images and stories of buildings being saved from

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[76] Margot Gayle, David W. Look, and John G. Waite, *Metals in America's Historic Buildings* (Washington D.C.: National Park Service, 1992), 76.
[77] Mary Dierickx, "Metal Ceilings in the U.S.," *Bulletin of the Association for Preservation Technology* 7, no. 2 (1975): 83, accessed April 8, 2012.
[78] Pamela H. Simpson, "Cheap, Quick, and Easy, Part II: Pressed Metal Ceilings, 1880-1930," *Perspectives in Vernacular Architecture* 5 (1995): 156, accessed February 25, 2012.
[79] Bradley T. Smith, "Substitute Materials for Deteriorated Metal Building Components: The Rehabilitation of a Country Courthouse in Southern Georgia," *Bulletin of the Association for Preservation Technology* 13, no. 4 (1981): 20, accessed March 10, 2012.
[80] Simpson, 154.

fires when the pressed metal contained it to one floor. Fire tests also proved that pressed metal was more fire resistant than wood or plaster ceilings. However, fireproofing did not come from the pressed metal alone; it was likely a combination of air space between the ceiling and joists and the plaster underneath that provided fire resistance.[81]

Sanitation was yet another selling point, as pressed metal was less dusty than plaster and easily cleaned. With a wood backing, a tight seal could be formed that was considered vermin proof. Permanence, too, was proven to be a top selling point, as it solved the problem of falling plaster ceilings, a seemingly unusual problem, but one prevalent enough to be recorded.[82] In 1890, one O. O. Shackleton of Hackensack, New Jersey wrote:

"The ceilings recently put up in my house…are in every respect all that we could wish – neat, beautiful, attractive, clean – and we are not afraid to sit under them."[83]

Pressed metal was also marketed as more durable than wood or plaster, with a life expectancy equal to that of the buildings they adorned. In 1888, *American Architect and Building News* advised that a "stamped metal ceiling" could be used to replace a plaster ceiling in disrepair, without having to remove the plaster underneath. In cases such as these, where pressed metal was installed in an older building, it was secured in place by using furring strips nailed into the plaster.[84]

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[81] Ibid., 154, 161.
[82] Ibid., 154
[83] Ibid.
[84] Dierickx, 83-4.

Virtually all literature promoted the economic advantages of pressed metal as opposed to other ornamental finishes. Even if the initial price of installation was more expensive than plaster or other materials, it was noted that low maintenance cost along with the permanence of the material would offset this. Additionally, there were claims that insurance premiums were lower.[85]

Designs were often categorized stylistically, ranging from Greek to Rococo and beyond. Many companies articulated the "high-class" quality that pressed metal could impart.[86] Indeed, in 1897, an issue of *Architecture and Building* commented that those that sought a "high-class treatment" introduced pressed metal into their buildings, including the "many who at first hesitated to adopt them."[87] Despite critics who attacked pressed metal as a cheap imitation of more expensive materials, many more appreciated the economy and aesthetic experience pressed metal provided.[88]

It is likely that the cement stucco was applied around this time as well, since "COTULLA STATE BANK" is painted on the cement stucco (Figure 6). This bank was only active from 1907 to 1916, when it was liquidated.

[85] Simpson, 154-5.
[86] Ibid., 155.
[87] Dierickx, 85.
[88] Simpson, 159.

Figure 6: Painted sign on the façade of the Kerr Building. East elevation.

Another undated photograph indicates, presumably from the 1920s or 1930s given the style of the automobiles present, appears to show the Kerr Building after it received its cement stucco coating (Figure 7). Although the photograph is not clear, the overall tone of the building is much lighter than before; previous photographs, although also black and white, are able to show the rich tone of the Cotulla Brick. It is also interesting to note the widespread practice of stuccoing existing buildings. The following decade, this was done on another building in Cotulla, further supporting this theory.

Figure 7: Front Street circa 1920s-30s. The Kerr Building is located right of center. (Source: Brush Country Museum)

By 1925, the schools in Cotulla were "bulging at the seams" so a new school was constructed. In addition to the Welhausen School, completed in 1926, the new Cotulla High School was built and completed in 1928. During its construction the year prior, one of the older educational buildings was "modernized" by stuccoing the exterior and adding Spanish decorative motifs.[89]

On a national scale, stucco experienced somewhat of a renaissance. At the turn of the twentieth century, revival styles of the nineteenth century had a revival of their own. This revival combined with the increased availability and better quality of Portland

[89] Interestingly, among the earliest teachers was twenty year old Lyndon Baines Johnson, who taught there in 1928. Ludeman, 42-3, 124.

cement resulted in a stucco "craze." This began in the 1890s and extended into the 1930s and 1940s. Certain architectural styles were associated with stucco, ranging from Art Deco to Pueblo to English Cotswold Cottage. Stucco buildings were especially prevalent in California, Florida, and the Southwest, predictably due to their Spanish and/or Mexican heritage. Textured finishes appeared around this time as well; in the early twentieth century, textures such as the English cottage finish, pebble-dashed or dry-dash surface, and reticulated and vermiculated were common.[90]

By the 1920s, stucco was not only readily available, but low in cost. This resulted in an even wider usage for a wider variety of building types: railroad stations, hotels, private mansions, and even gas stations. In an attempt to capture the "romance" of revival styles, stucco rapidly grew in popularity. Stucco placed over a (perceived) less finished substrate altered the appearance of the building to make it appear more expensive or more important.[91]

Other than the new cement stucco coating, with this photograph, Figure 7, it is difficult to identify other large changes to the building fabric. However, it is noteworthy that by this point the awning has been removed, revealing the arched openings that were previously hidden.

Another photograph dated 1938 shows the addition of a small porch on the east elevation which still remains today (Figure 8). Due to the angle and quality of the photograph, however, any other changes are not readily visible.

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[90] Anne E. Grimmer, "The Preservation and Repair of Historic Stucco," NPS.gov, accessed January 28, 2012, http://www.nps.gov/history/hps/tps/briefs/brief22.htm.
[91] Ibid.

Figure 8: Cropped image of a photograph dated 1938. The Kerr Building is on the far left. (Source: John Keck)

The final historic photograph dates from around the 1940s or 1950s, using the automobiles again as an indicator of time (Figure 9). Here, as in all photos, the horizontal painted sign on the east elevation is still visible. By this time, it appears that the stairs have been built on the interior, as the door opening on the second story of the south elevation has been replaced by a window opening. This process included shortening the opening to align it with the other windows. The other major visible change is the addition of two small windows to the west of the south elevation's side entrance. Although it is possible that they were added prior to this, previous photographs do not provide a clear enough view of the area to say with certainty.

Figure 9: Cotulla circa 1940s-50s. The Kerr Building is located in the center of the photograph. (Source: John Keck)

Other building changes are still visible today, although the dates of the changes are unknown. On the east elevation, there is a corrugated metal awning over the first floor central opening; photographs taken by Robert Mezquiti in August, 2010 shows a similar awning hung over the southern opening (Figure 10). Metal attachments are found below the second story windows and on the southeast corner of the building that most likely held a larger awning or sign; these were probably added after 1950 and before 1979, which was around the time the building was last used by the then owners Donald and Katharine Gallman.[92] These attachments can be seen in Figure 6.

Figure 10: The Kerr Building in 2010. East elevation. (Source: Robert Mezquiti)

[92] Deed of Sale from Katharine Gallman, Donald Poole Gallman, and Barbara Gallman Greene to Herbert E. Menn, Jr. and Virginia Reese Menn, 18 December 1979 (filed 18 January 1980), La Salle County, Texas, Deed Volume 221, page 472-3. County Clerk’s Office, Cotulla, Texas.

On the south elevation, the stairs leading down to the basement that exists today are not visible in any historic photographs. Additionally, the two door openings on the west end of the elevation are now accompanied by two windows and another entrance. Concrete stairs lead up to each of the openings, including the large opening on the east end of the elevation.

Some of these changes may have occurred prior to the 1940s or 1950s, the date of the last historic photograph. Many of the historic photographs not only do not show the entire building, but they are also difficult to decipher given that many of the photographs were taken from afar. Additionally, technology of the time obviously did not permit color or high definition photographs.

THE KERR BUILDING IN CONTEXT

In general, Main Streets across America proliferate with small, mixed-use buildings built prior to 1930. These structures, usually built with load-bearing masonry walls and wood floor framing, were generally two to four stories tall, with commerce housed on the ground floor, and residences or offices above.[93]

Willard Bethurem Robinson's *Texas Public Buildings of the Nineteenth Century* discusses various building types in Texas during the nineteenth century, including commercial buildings. As one of the few sources to describe this typology in detail, and to specifically cover this region, information has been principally drawn from here. It is an important distinction that these buildings do not necessarily belong to a particular

[93] Mike Jackson, "Main Street and Building Codes: The "Tin Ceiling" Challenge," *APT Bulletin* 34, no. 4 (2003): 29, accessed March 7, 2012.

period defined by years, but rather they developed according to a particular stage of the town's development.[94]

In the 1850s, Texas experienced a small boom in the construction of public buildings. Unfortunately, this brief period came to a close with the outbreak of the Civil War; throughout the War and into Reconstruction, very few public buildings were built. Although Texas was spared much of the destruction the South endured, economic growth was severely stalled, immigration all but ceased, and many homeowners and farmers simply left their properties behind in search of work.[95]

As the Reconstruction wound down, more money became available for building, partly from a new wave of settlers from home and abroad. Coinciding with this increase in population, there was an increase in industry and capital; as Texas' economy rebounded, so did its building activity. Industry was largely driven by cattle, cotton, and other agricultural goods. The second driving economic factor was industry; interestingly, among the Republic of Texas' first industries were those that produced building materials. After all, the development of agriculture and industry required not only infrastructure such as roads and bridges, but also buildings to house workers, their families, and other functions of a settlement. By mid-century, some areas of East Texas already had several brickyards to supply the need for permanent building materials.[96]

Buildings were typically not built until a town was platted. Once platted, entrepreneurial-minded individuals began setting up hotels, banks, commercial shops,

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[94] Willard B. Robinson, *Texas Public Buildings of the Nineteenth Century*, (Austin: University of Texas Press, 1974), 58.
[95] Ibid., 55.
[96] Ibid., 55-6.

and other services for the public. Initially, these buildings would be one-story, wood framed, symmetrical, and parapeted to cover the shingle-clad or metal roof. These wood parapets were symbols in the West; they distinguished businesses from other structures. Although some minor variations can be found in these early buildings, they were found in nearly every early Texan town.[97]

If a town was fortunate enough to grow in population and prosperity, then these earlier buildings would be gradually replaced with more permanent structures of native stone or local brick. Although these buildings were typically one or two stories tall and modest, they often reflected some higher architectural aspirations with their embellished, ornamental details such as decorative brick cornices.[98] With the Kerr Building, the use of classicizing elements on the parapet such as dentils and Greek crosses indicate the desire to express design, not just function (Figure 11).

Figure 11: Image of the façade’s parapet as it looks today. East elevation.

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[97] Ibid., 58.
[98] Ibid.

During the third quarter of the nineteenth century, commercial buildings were often three or more bays wide, with openings supported by lintels or, more commonly, arches. When round arches were used, fanlight windows were typically inserted under them. The upper floor would typically contain smaller openings spanned with segmental arches.[99] The east elevation of the Kerr Building follows these principles exactly as can be seen in Figure 10.

In terms of plan, these buildings were often simple and uncomplicated. Typically, there was a row of columns through the center of the first floor that supported the second floor; these columns were generally cast iron. Typically, at the back of the long and narrow space were stairs leading to the second floor. Interiors were more standard than exteriors; exteriors were more indicative of individuality in taste through abstract patterns and decorative motifs.[100]

Regional differences are apparent in the choice of building material. In the case of East Texas and the Gulf Coast region, stone was not widely available, although there was an abundance of clay. In these areas, brick was commonly used as the permanent building material.[101] Cotulla, approximately 130 miles from the Gulf Coast, has abundant red clay, resulting in a local industry of brick making.

The Kerr Building utilizes common bond with seven stretcher brick courses, followed by a header course. Common bonds can vary in the number of stretcher courses

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[99] Ibid.
[100] Ibid., 59.
[101] Ibid.

followed by a course of headers; four, five, and more courses of stretchers can be found throughout the country.[102]

Also worth noting is the types of buildings certain professions favored. Bankers were amongst those that looked for substantial buildings of higher architectural aspirations; perhaps they wanted their building to reflect permanence and security. Bankers also sought to increase their presence by selecting locations on prominent street corners, allowing access from two thoroughfares. However, banks were often built utilizing various historical and contemporary styles, such as Richardsonian Romanesque.[103] In the case of the Cotulla State Bank, the building already existed and had not only a prime location, but also the "higher architectural aspiration." It is no surprise, then, that the Cotulla State Bank and later the Farmer's and Stockman's Bank found a home in the Kerr Building.

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102 Weaver and Matero, 102.
103 Robinson, 64.

Chapter 4: Architectural Description of the Kerr Building

OVERVIEW

Stylistically, the Kerr Building fits into the genre of nineteenth century commercial buildings and can be characterized as Victorian with some classicizing elements. The Kerr Building was built in a vernacular tradition rather than trying to emulate high-style examples. The building is three-stories, including a basement level, partially visible at street level and forming a “base” on which the upper stories rest. This wraps around the south elevation; however, as the base continues west it becomes shorter due to a grade change. The building sits on the southern end of a row of commercial and administrative buildings. Its northern wall is a party wall. (Figure 12).

Figure 12: Overview of the Kerr Building. South and east elevations.

Although constructed with locally made Cotulla brick and a locally available sedimentary stone, ironstone, the building has been coated with two types cement stucco, one that covers the upper two stories and another that covers the upper portion of the basement, visible from street level. The basement stucco is smooth and light grey in color, coating the ironstone. The stucco on the upper two floors covers the brick walls and the stucco aggregate is visible with the naked eye (Figure 13). Although originally painted white, much of the paint has now flaked off to varying degrees. The stucco's intended finish is heavily textured, and appears to be a modified Monterey style, heavily applied and unsmoothed.

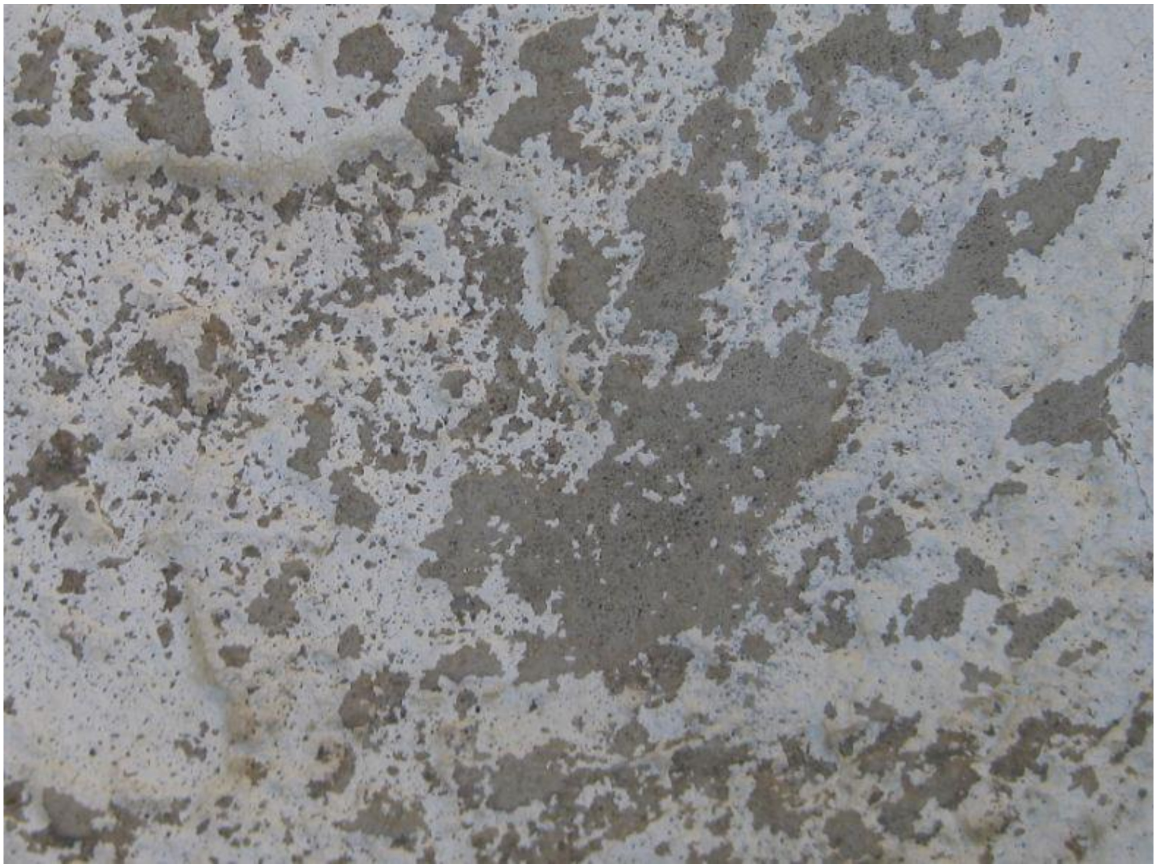

Figure 13: Cement stucco with aggregate visible.

EAST ELEVATION (FAÇADE)

Visually, the façade can be divided into three vertical bays, each very similar. However, for the sake of written clarity, it is best to describe the building in terms of its division by floors. The clearest demarcation between the first and second floor is a faded marquee painted on the façade; it spans the entire length of the façade and the words "COTULLA STATE BANK" are still legible. Below this are three openings of equal size, each capped by a round arch. The south opening is covered with a single, large pane of glazing, painted white on the interior to provide opacity. On top of this is a wood tympanum that is contained within the arch; in the middle of the tympanum are two metal vents placed side-by-side. The arch consists of three concentric half-rings; the innermost ring is flush with the façade and each ring projects further out than the one that precedes it. These are supported on both sides by a thin, rectangular impost, which is in turn supported by a tripartite corbelled bracket, representing an inverted step pyramid with a large base. The glazing and tympanum are framed in wood. On this particular opening, the wood extends beyond the first floor and cuts into the base of the building. Below this, a single step can be found projecting out from the base, leading up to the opening, although currently there is no access to the building through it.

The second opening is the same, although the panel of glazing is slightly shorter than the one just described. Covering the glazing is a metal awning with a simple vertical scoring pattern. Above this there is a wood fanlight rather than a tympanum, divided into four sections. Like the glass pane below, the glazing of the fanlight is also painted white to provide opacity. In front of the fanlight is a metal grille consisting of five horizontal bars more-or-less equally spaced. All of this is framed in wood; however, this opening does not extend into the base. Instead, it stops approximately ½ foot above the base, resting on a simple wood sill. Below this ensemble is a basement window, framed in wood. The opening is covered with mesh wire and at one point had at least one metal bar extending across it, now only attached to the right edge of the wood frame.

The northern and final first-floor opening replicates the tympanum initially described, metal vents and all. The opening below, however, is even shorter than the previous two openings; this is because here, the opening contains a sliding glass door, framed in aluminum. The glass doors are also painted white on the interior. The aluminum door frame and tympanum are all housed in a larger wood frame like the other two openings. Here, projecting out from the façade and resting on top of the base is a square concrete slab supported by two thin concrete piers. This provides a landing for access to the door. Stepping down from the slab to the north, and also made of concrete, are four steps. The railing for the stairs and railing surrounding the landing are made of metal pipes connected with various fittings. Below this is a basement window similar in size to the one described previously; here, the metal cross-bar is still properly attached.

On the southern corner of the building is a large metal attachment with two small prongs that spans the upper portion of the first floor. This metal attachment likely held an awning or marquis which does not survive. Between each of the first-floor openings, and across the faded marquee, are two more metal attachments, each vertical and connected by a horizontal piece of wood. These elements occupy an area that covers the top of the first-floor and the bottom of the second. These were also likely supports for a marquis or awning. Somewhat obscured by the stucco are three star shaped ties; the center one attached above the central arch (Figure 14). The other two are found on the outer ends of the vertical metal attachments.

Figure 14: Star-shaped tie above the center opening. East elevation.

The second floor contains three window openings, each corresponding to an opening on the first floor. These also are capped by arches, but they stand apart and above from the window openings. Here, the arches are all simple bands that project from the façade, resting on a small impost. Like the first-floor, these are also supported with the same corbelled bracket.

These windows are smaller in height and width, and each is divided with a single horizontal and vertical wood muntin encased in a wood frame. The southern and center openings are missing panels of glazing, whereas the northern one is missing the lower portion of its vertical muntin. Here the lower half is boarded with plywood while the upper two panels of glazing are painted white on the interior, similar to the first floor. The other intact glazing remains unpainted and transparent.

The top of the second floor is capped with a decorative parapet, divided into three sections, corresponding to the divisions below. Serving as the dividing mark are merlons, one on either corner of the building and one between each of the openings below. These are plainly decorated, corbelling out from the façade. The southernmost merlon has attached to it another merlon in profile, as the merlon motif is also found on the south elevation.

The area between these merlons is layered with simple decorative motifs. Beginning from the bottom up, there are widely spaced and stretched dentils, slightly projecting from the façade. Above this is a row of recessed Greek cross patterns. There is then a band that again projects from the façade, and resting on this is a row of more typical dentils. Above this is an even further projecting band, which is capped by coping set back from these projections. The parapet can be seen in Figure 11.

SOUTH ELEVATION

The south elevation is approximately 80 feet long and carries over some elements found on the façade (Figure 15). The first floor contains many different and irregularly placed elements compared to the rest of the building. The east corner of the first-floor has an arch and opening like the ones found on the façade. Here there is a fanlight in the same configuration as previously described, except there are only two metal cross bars.

Within the opening there is a single-acting door with a sidelight to its left. Above this is an inoperable transom window; all of this is framed in aluminum and set within a larger wood frame. All of this glazing is also painted white on the interior. Just to the right of this can be seen the same metal corner attachment previously described. Stepping down from the door are three steps attached to the base. A simple, bent metal rod attached to the building serves as a handrail.

Figure 15: The south elevation of the Kerr Building.

Several feet to the west of this are two smaller windows which are not found anywhere else on the building. Spaced a few feet part, these are rectangular and vertically oriented with a single horizontal muntin in front of a metal grille with four horizontal bars; this entire ensemble is framed in wood and behind can be found clear glazing. Both have a segmental arch above. Below the western window is a matching window, the top of which is visible on the base, extending down into the basement. It is now largely blocked by the stairs that lead down to the basement and the opening has been boarded with wood. Below the east window is a larger opening with a segmental arch containing wood double-doors. These doors provide the only access to the basement. Surrounding the stair is a railing of metal pipes and various connections, covered with simple metal latticework.

The western third of the first floor contains a series of doors and windows. These can be broken down into a pattern of ABABC. The A portions consists of wood double doors with vision glazing, above which rests a transom (the second of which has a vertical muntin.) The B portions consist of a single-sash window resting on a protruding lintel; each has a transom above with a vertical muntin. The C portion consists of a single wood door with vision glazing and a single transom window above. All of these elements are framed in wood. There are some minor differences to be found, however. Some portions are missing glazing or have glazing painted white like other areas of the building. Additionally, the first A has a single concrete step leading up to it, while the second has a more extensive entrance in the form of a ramp on the west and two steps from on the east, both leading to a platform, all made of wood. Section C has two concrete steps leading up to the single door.

The second floor is much simpler and regular, in accordance with the façade. Equally spread across the second-floor are five window openings. These are similar in shape to the segmental arches found one the first-floor of the south elevation, although these are larger and approximately the same size as the second-story windows on the façade. Although they also contain the same projecting arch, these are segmental arches and the corbelled brackets on which they rest are all the same size (as opposed to the large base of the inverted pyramid on the façade.) Each opening contains a wood frame, but the content the frames hold varies. The far west opening contains a single-sash window with a single vertical and horizontal muntin; here some of the glazing is missing. Moving leftwards, the second opening contains a wood door, while the following opening mimics the first, sans glazing. The last two openings have been boarded up and contain only plywood. Any glazing present on the second floor is transparent.

The parapet continues around the façade onto the south elevation. Here there are only two merlons, found on the corners of the elevation. To the right of the east merlon is the profile of the façade's south merlon, switching the roles of the merlons previously described. Between the merlons, and spanning the entire length of the elevation, is the same decorative pattern of dentils and Greek crosses.

West Elevation

The west elevation is unusual in that there was a building that abutted it, now partially gone (Figure 16). This results in the first floor being in an unusual state. Three-fourths of the first floor is covered with plaster, representing the interior of the building that abutted it. This plaster covers two windows several feet apart, each similar to the second story windows of the south elevation. The south window is not visible at all with the exception of its brick segmental arch. A sliver of the north window is visible, as is its segmental arch (here, the arches are flat and do not have any projections as described before.) The rest is covered with plaster. About a foot to the south of the north window opening is a engaged brick pier, which presumably provided support for the connecting building. The building that connected to the Kerr Building was one story tall, and it is still visible where its roof attached to the Kerr Building, where portions of the wood rafters and roofing material remain in place.

Figure 16: First floor of the Kerr Building's west elevation.

The plastered portion does not rise up to the top of the first floor; it stops where the segmental arches begin, revealing the Cotulla brick underneath. The flooring of the newer building is gone, revealing brick below the plaster as well. The portion of the first floor not covered by plaster (the northern one-fourth of the elevation) reveals Cotulla brick as well; here, there is a door opening framed in wood and covered by a metal gate. The south part of the door cuts into a portion of the northern window next to it.

The first floor of this elevation shows the only Cotulla brick not covered by cement stucco. This reveals information on how the building was constructed. Here is where the common bond can be seen, with seven stretcher courses followed by a header course.

The second floor is demarcated as the area above the remnants of the one story roof line (Figure 17). Here the entire area has been stuccoed as well, although it has been smoothed over on this elevation. The most prominent feature on this level are the two window openings, each corresponding to the covered windows below. The northern window has one vertical and two horizontal wood muntins, framed in wood. Here, there is no glazing; rather, a door sits behind window frame. The south window opening contains a wood frame, but no muntins; it has been covered with plywood. Between the two windows are two vertical and irregularly placed wood battens, the northern one higher than its neighbor. These are separate by a few feet and have been nailed to the exterior.

Figure 17: Second floor of the Kerr Building’s west elevation.

The parapet on this elevation is much simpler; the only merlon visible is the west merlon of the south elevation, seen in profile. There are two smaller, unadorned vertical projections along the parapet, not quite merlons as described before. On the north side of the parapet, a large downspout collects precipitation runoff from the roof which slopes down to the northwest.

INTERIOR ARCHITECTURAL DESCRIPTION

The basement is contained on all four sides with ironstone in a coursed rubble pattern. It largely sits on a dirt foundation, covered with wood flooring; the western third of the basement floor has a concrete foundation. Wood beams longitudinally span the center of the basement, supporting wood rafters and the flooring of the first floor. There is a small room that sits along the southern wall that corresponds to the placement of bank vault on the first floor.

The first floor has the most significant interior architectural elements. Here, pressed metal can be found on a large section of the ceiling and walls. The pressed metal is located along much of the southeastern portion of the south wall. On the eastern wall, three-fourths of the wall is covered in pressed metal. Much of the southeastern portion of the ceiling is also covered with pressed metal.

The pressed metal is decorated with a variety of intricate and elaborate designs (Figure 18). The pressed metal on the wall consists of a narrow repeated design, stretching from the floor to the ceiling. The bottom portion acts almost as a wainscot; two panels wide, the very bottom contains two side-by-side quatrefoil patterns, and above each of these is panel with scallopesque motifs, joined by a circular motif. This is capped by a decorative rail. These two elements are then combined under the larger central panel that spans most of the wall. Surrounding this panel is a simple molding, and at the bottom is a decorative urn with a floral motif resting on it (Figure19). The molding continues up nearly to the top and is crowned with symmetrical curlicues and stylized leaves. Above this rests two more quatrefoil motifs in the same manner as those on the bottom.

Figure 18: View of southern wall showing pressed metal. Note corrosion under the window.

Figure 19: Lower portion of the pressed metal wall.

Providing a transition between the wall and ceiling is pressed metal molding. Contained on either side by decorative, abstract motifs, the body of the molding consists of shields with a fleur-de-lis in the center, surrounding by organic scrollwork. Separating each shield is a simple rectangular motif (Figure 20). The corners of the molding contain a larger more elaborate shield, divided diagonally by two waving bands (Figure 21). There is also a transition from this molding to the ceiling and walls; above and below the molding can be found pressed metal that is adorned only with a stippled or "rusticated" effect.

Figure 20: The transition from pressed metal wall to pressed metal ceiling.

Figure 21: Detail of a pressed metal corner.

The outer edge of the pressed tin on the ceiling is unadorned as it transitions from the pressed tin molding. After this transition, there is a band of symmetrical curlicue and stylized floral motifs, which contain octagonal designs that comprise most of the area of the ceiling. The octagonal designs have smaller, concentric octagons inside them, and they line up with each other forming rows. The empty areas that the corners of these designs contain have more stylized organic motifs (Figure 22).

Figure 22: The outer edge of the ceiling's pressed metal. The transitional molding from wall to ceiling is at the bottom of the image.

On the first floor, wood is also used as the flooring material, although much of it has been covered with vinyl tiles. The first floor also contains the bank vault along the south wall, corresponding to the room in the basement, possibly for structural support. Along the north wall are a series of star shaped ties, exactly like those found on the façade. The second floor, with the exception of the wood floors, does not have any significant interior finishes or details.

CHARACTER-DEFINING FEATURES

The following analysis of character-defining features illustrates and focuses on the building not as it is today, but as it would have appeared prior to the application of the cement stucco. As will be discussed in the following paragraphs, the cement stucco regrettably conceals some notable characteristics thereby reducing the building's architectural integrity.

The building's shape is the first distinguishing characteristic experienced it. It is distinctly rectilinear and box-like, broken only by the simple, decorative parapet and the base on which the building rests, neither of which are strongly pronounced. The roof is not visible, hidden below the parapet wall thereby indirectly contributing to the overall form of the building. Upon further inspection, the building's tripartite division becomes evident: the base, body, and parapet (in place of a cornice.) This assembles the building into a classicizing form, simultaneously preventing the building from being a plain box and expressing the need for higher architectural aspirations.

The building's form is punctuated by various door and window openings. Rhythmic openings on the façade provide a simple symmetry to the building. Three large openings on the first floor are mirrored on the second floor by smaller, narrower ones, each one aligned with a larger version below. Each of the openings are emphasized by round arched pediments. Simple, wood muntins are used to divide panes of glazing for window openings. Decoration is minimal; there are no shutters or decorative trim. The façade's symmetry and order, combined with its location along Front Street and multiple projecting merlons, makes it more prominent than the larger south elevation. The second story of south elevation continues the regularity and order of the façade, with its five equally spaced window openings.

The Kerr Building's setting is very important and prominent, given its proximity to the public and courthouse squares and its location on Front Street, the town's equivalent to Main Street. Adjoining buildings, now in a severe state of disrepair, sit at the building's rear, while the north wall serves as a party wall. The Kerr Building anchors the intersection of Front and Center Streets. Although the building initially appears inconspicuous residing amongst other buildings, it serves as an anchor for the southern end of the block.

Materiality is also important in its simplicity. Locally manufactured red brick is used for the upper two floors and the basement uses ironstone. Simple wood door and window frames, undecorated, complete the building. The materials stress economy over opulence; the result is not provincial or substandard, rather it is dignified in its restraint and simplicity.

Although the brick is economical, it is used imaginatively and decoratively. Historic photographs indicate the brick was used not only for the parapet, but also for the arches and their supporting brackets. The craftsmanship continues in the common bond used to construct the building's walls; about a foot wide and three wythes deep. Arches are composed of headers, and although this was done out of necessity to form the arch, it provides a visual break from the modified common bond, accentuating the arches composition. The corners of the façade indicate quoins were made out of the brick, further accentuating the classicizing appearance of the building. The mortar joints are standard, approximately 3/8 inch, and the form of each individual brick is apparent.

Craft details are found in the decorative brick parapet, as well as in the quoins on the corners of the façade. The detailing of the arches over the doors and windows is also noteworthy, as they too have been made of brick. The façade also has two star-shaped ties located between the first and second floors. These star ties can also be found on the interior.

The interior of the building is notable for the star ties found on the first floor along the upper portion of the north wall. The ceiling on the first floor is also notable for its great height, approximately 14 feet, which is adorned with the pressed metal ceiling and walls on the southeast portion. The bank vault also contributes to the character of the building as it remains as an artifact of the Cotulla State Bank, along with the pressed metal. The interior is largely simple and straightforward, much like the exterior.

Chapter 5: Existing Conditions and Sources of Deterioration

OVERVIEW

This chapter is divided into two major sections. The first will discuss existing exterior conditions, as well as conditions found on the interior pressed metal. These conditions will be organized according to building assemblies; the pressed metal interior will be discussed after the building assemblies. The conditions will be described generally, and then unique conditions, if any, will be discussed afterwards. The exterior conditions correlate to the annotated elevations in Appendix A. Images and definitions for conditions are located in Appendix B. The second section will consider the sources of deterioration and pathologies identified in the first section. This section will cover the physical properties of individual materials along with the identification of existing exterior conditions.

All observations were made by the author during site visits unless otherwise noted. The first site visit occurred on January 1, 2012; the weather was sunny and clear with temperatures around 50°F. Only exterior conditions were examined at that time. The second site visit occurred on March 9, 2012; the weather was overcast with rain, with temperatures around 40°F. The final site visit occurred on March 12 and 13, 2012. The weather was warm and sunny with temperatures around 70°F. The March site visits involved interior investigation. All exterior observations were made from the street level using binoculars.

WALLS

Exterior brick walls, three wythes deep, are covered with a cement stucco; on the interior, the brick substrate is coated with plaster, followed by pressed metal in a section of the first floor as previously described. The second floor is the same, without the pressed metal; here there are also areas of wallpaper applied to the plaster. The exterior cement stucco is painted white, although this coating is severely deteriorated. The east and south elevations have a mottled appearance due to the failed paint coating. Staining is also evident throughout various locations, most notably around iron attachments and under window sills. The staining is oriented vertically, indicating moisture runoff (Figure 23). This will be further discussed in the following section.

Figure 23: Staining evident on the east elevation.

There are also a few areas of minor mechanical damage where nails or metal attachments have been inserted into the stucco, penetrating the brick substrate. Other areas of mechanical damage can be found on the façade, where the previously described awning attachments are located.

There are also cracks present throughout the exterior ranging from hairline cracks to cracks visible when standing many feet away from the building that are up to ½ inch wide. These larger cracks are often found over the arched window and door openings, and in some cases they continue diagonally upwards through to the parapet. The cracks do not follow the mortar joints and it is possible that the cracks affect both the brick substrate and cement stucco. Many of these cracks have been inappropriately repaired with a cementitious mortar that does not blend in with the surrounding area due to its darker color. Additionally, of the cracks are still open, indicating that some cracks are still active (Figure 24). Crack repairs can be found above each of the large, first floor arches on the east elevation, and on the first floor arch and below one of the second story windows on the south elevation.

Figure 24: A failed crack patch over the central opening of the east elevation.

The parapet wall uniformly exhibits biological growth as can be seen in other photographs. The top of the parapet and the top of the merlons are extremely discolored and very dark compared to the rest of the building. This biological growth and staining is present along the entire façade and south elevation, and to a lesser degree on the west elevation.

The east elevation, or façade, exhibits severe paint coating failure under the small porch the projects from under the main entrance. To the north of the base, there is also a cement stucco spall that reveals the ironstone substrate (Figure 25). Chipping and holes, resulting from missing parts, are also present on the base around the basement clerestory windows. These windows also contain ferrous cross bars that are corroded.

Figure 25: A cement stucco spall from the base of the east elevation.

On the south elevation, there is a section of stucco that appears to have ghosting along the west end of the first floor, along the cluster of doors and windows, visible in Figure 15. This area is also painted white and ehibits paint coating deterioration. However, this area has retained more paint than the rest of the building, and is brighter in appearance, which may indicate that an awning at one time covered this area, providing not only shade but protection from weathering. Above one of the set of doors, there is a rounded area of ghosting, which may indicate this area was the main entrance for this section of the building; currently, a nonoriginal wood ramp and steps are in front of the set of doors. Additionally, some of the dentils on the south elevation parapet are damaged or are missing.

WEST ELEVATION

The west elevation is vastly different than the other two elevations. Plaster, from the interior of the adjoining building, covers much of the first floor, except for the upper and northern portions. On this northern portion, a door has been cut into the historic brick and is inappropriately patched above and around the door’s lintel (Figure 26). The opening is only covered by a metal gate. Immediately to the south of this is a window, now boarded with wood battens. The brick arch and the brick courses above it have open joints, also visible in Figure 26. Of the two concentric brick arches, the inner brick arch appears to be failing since a large hole exists in its center; although it is being supported by the remaining mortar and wood battens. The brick underneath the window and near the door exhibits loss of material, which creates a hole that leads into the building. Vegetation has also grown into the building through the door opening.

Figure 26: Inappropriate patch, open joints, and holes on the west elevation.

The door has been placed in a manner that has eliminated a section of the window. To the south of the window is a nonoriginal brick pier whose upper portion is not covered with plaster. The area that is covered with plaster exhibits flaking and peeling revealing the nonoriginal brick substrate underneath.

In line with the brick arches, just visible above the plaster wall, are a series of large holes that have been punched into the building, presumably to receive wood beams that would have supported the roof and ceiling of the adjoining building. Much of the brick along this upper area has a white appearance, indicating that the plaster may have discolored the brick or left behind a residue or deposit following removal. Above this is the remaining section of the roof of the adjoining building. This consists of a tar-like and cementitious type substance, covering a wood roof structure and wood beams, both of which are still attached to the Kerr Building, as can be seen in Figure 16.

The upper north corner of the west elevation has a large downspout which serves as the only conduit for water drainage. The downspout is heavily corroded, and the stucco around it and below it is either cracking, has failed, or is missing (Figure 27). Like the other stuccoed areas, this area was originally painted white, but the coating is now failing resulting in a mottled appearance. There are also cracks present throughout this area, again ranging from hairline to visible from afar, up to ½ inch wide. The largest crack is visible above the right window opening, and it spans the area between the window opening and the parapet wall. Here, the parapet wall exhibits some biological growth and staining as well, but not on the same scale as the other elevations.

Figure 27: Corroded downspout and stucco loss. West elevation.

Like the rest of the building, both the first and second floors of the west elevation exhibit mechanical damage due to various attachments inserted into the wall. The most obvious attachments on the west elevation are the two vertical wood battens attached at the second story.

Doors and Windows

The windows and doorways uniformly exhibit failed coatings and deterioration. Before describing these, it is important to note that there are two aluminum doors as previously noted, which although dirty, currently do not exhibit deterioration.

All wood elements of the window and door openings, with few exceptions, have white paint coatings which are in various states of deterioration. The wood elements on the south and west elevations and the second floor of the east elevation, exhibit the greatest loss of paint, while those elements on the first floor of the east elevation exhibit loss of paint to a lesser degree. This could be due to the metal awnings that were present over each window, of which only one survives. However, they too are in poor condition. These wood elements all exhibit cracking and/or splintering and many have a faded, washed out appearance (Figure 28).

Figure 28: Severely deteriorated wood door frame. South elevation.

There are also instances of biological colonization found under the wood arches above the larger openings (Figure 29). These are in the form of wasp nests, and although currently small, there is potential for a larger scale infestation if not remedied.

Figure 29: Wasp nests on wood elements. South elevation.

Glazing has been removed in many places, either purposefully, in the case of openings that have been boarded over, or due to natural or other anthropogenic risk factors, as can be seen in broken or missing panels of glazing. Additionally, some of the glazing has been painted white on the interior.

There are a couple of additional, unique conditions. Reddish-brown, vertical staining is present on areas immediately below the second story sills of the east elevation. On the south elevation, the two smaller first floor windows to the left of the large arched opening exhibit a greater loss of paint than the surrounding areas.

Some windows, principally two of the second story windows on the east elevation and at least one on the south, have been infiltrated by pigeons that roost on the window sills and deposit droppings on the wood elements.

FOUNDATION

The foundation consists of coursed ironstone rubble in good condition with a presumably lime-based mortar, which is deteriorated and powdery in some areas. Some of the joints are open, and some mechanical damage exists as well, especially along the northern basement wall (Figure 30).

Figure 30: Coursed ironstone rubble on the basement's north wall.

ROOF AND WATER HANDLING

The roof currently exhibits drainage issues, and standing water is present along the northern edge of the wall where the drainage system has failed (Figure 31). Additionally, much of the flashing of the parapet wall has failed as is evidenced by the presence of numerous repairs between the vertical tiles of flashing. Nearly all of the merlons have also been repaired using the same tar-like material used to patch the flashing. The second merlon from the south on the east elevation suffers from greater deterioration as the flashing below it is failing. The coping surrounding the building exhibits deposits of pigeon droppings. Repairs are also visible through large sections of the horizontal flashing that covers the roof.

There are also likely issues with rising damp and moisture infiltration as vegetation has grown into the west elevation. This moisture may migrate upwards into the brick and seep downwards into the ironstone.

Figure 31: Partial view of the roof with standing water. Camera facing west. (Source: Wade Shoop)

SOURCES OF DETERIORATION

Deterioration is defined as “an alteration of the material that usually leads to a reduction in resistance, increased brittleness, porosity and a loss of material that usually begins from the outside and works inward; it is mainly related to physical or chemical actions."[104] It can be associated with environmental conditions such as humidity, rain, frost, and extreme temperatures. There are also other natural and anthropogenic factors that may increase the rate of deterioration, such as traffic, pollution, biological colonization and growths, and deferred maintenance.

In general, the main mechanisms for deterioration at the Kerr Building are physical and chemical changes to materials and biological processes.[105] These processes can either act alone, or more commonly, in tandem. Moisture is a precursor to many types of deterioration. It is important to note that moisture includes liquid water and water vapor, sometimes containing soluble salts and pollutants.

This section will first deal with the porous materials of the Kerr Building: the cement stucco, brick, and mortar. This will then be followed by pressed metal and paint deterioration, followed by wood deterioration.

It is important to make the distinction that these are possible, not confirmed, sources of deterioration. Thorough on-site investigation and testing have not been conducted, and they are necessary to determine the presence of soluble salts, water vapor permeability, and other sources of deterioration.

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[104] Giorgio Croci, *The Conservation and Structural Restoration of Architectural Heritage* (Boston: Computational Mechanics Publications, 1998), 41.
[105] A. Moncmanová, *Environmental Deterioration of Materials* (Boston: WIT Press, 2007), 1.

SOURCES OF CEMENT STUCCO, BRICK, AND MORTAR DETERIORATION

Water is attracted to bricks, mortars, and concretes since they are hydrophilic materials.[106] The porous nature of these materials also means that water can easily travel from soils or from the environment into the material itself. With the standing moisture present on the roof, observed by Wade Shoop of TXS Minerals, L.L.C., this indicates that rainfall is not completely directed away from the building; some water remains, pooling in the lowest points of the roof. Additionally, the failed window and door assemblies allow moisture penetration into the building and into the walls. Moisture may also travel upward from the ground, and it is evident that enough moisture exists to allow vegetation to grow immediately next to the building and into it, as evident on the west elevation door opening.

This results in water infiltration through the building material's porous interior. Fortunately, according to the NOAA Satellite and Information Service, Cotulla rarely if ever experiences freezing temperatures.[107] This is important for moisture-saturated materials, since when freezing occurs, ice crystals form and exert pressure on the pore walls.[108]

When moisture evaporates, it often causes damage to porous materials because of the crystallization of the soluble salts. As with ice crystals, salt crystals form inside pores resulting in subflorescence, a condition referring to the internal growth of crystals. This is

[106] Giorgio Torraca, *Lectures on Materials Science for Architectural Conservation* (Los Angeles: Getty Conservation Institute, 2009), 81.
[107] NOAA Satellite and Information Service, *Annual Climatological Summary*, accessed May 1, 2012, http://cdo.ncdc.noaa.gov/ancsum/ACS.
[108] Torraca, 84.

damaging to materials since subflorescence exerts pressure from the interior of the materials, weakening them. Warm, windy, and dry climates that favor quick evaporation of moisture also favor subflorescence with deeper damage. Although efflorescence that forms on the surface of the material is not likely to cause as much damage, it is often a symptom of interior problems.[109]

The cement stucco also exhibits problems as it is exposed to the elements. Biological growth and staining of the parapet wall is exacerbated by the presence of pigeons. Bird droppings, particularly from pigeons, contain acids that produce physio-chemical deterioration, while the droppings may trigger biological growth.[110] Compounds of phosphorus, nitrogen, and sulfur are also found in bird droppings, which are then washed down the building during rainfall.[111] In the Kerr Building, bird droppings are especially problematic on windows sills, and areas below the sills exhibit staining and cement stucco paint loss. Leaking roofs can cause stains on walls and ceilings and damage masonry as the water slowly travels downwards into the materials and then evaporate.

Bacteria and cyanobacteria, along with other algae, fungi, lichens, and plants, also contribute to the deterioration of building materials.[112] These microorganisms create acidic byproducts that gradually dissolve the highly alkaline cement stucco. Generally, cement stucco is also susceptible to abrasion and erosion, sulfate and acid attacks,

[109] Ibid., 85-6.
[110] Croci, 45.
[111] A. Moncmanová, 237.
[112] Ibid., 20.

carbonation, and salt crystallization.[113] These issues are compounded by years of rainfall that have washed over the building, which in itself wears down the paint coating and erodes the cement stucco, as can be seen in the Kerr Building's failing cement stucco paint.

Cracking, spalls, and flaking have been observed along the lower portion of the building and on the base, indicating soluble salts may be at the root of deterioration. Portland cement sometimes produces some soluble salts as it cures, which may infiltrate adjoining porous materials, resulting in efflorescence, subflorescence, and incrustations. Rainwater that flows over cement may also damage unprotected porous materials.[114] This is likely to cause deterioration to the exposed bricks and mortar, especially on the west elevation.

Another source of deterioration relates to rates of varying thermal change resulting in dimensional changes.[115] This expansion and contraction can occur during the day, between day and night, and during seasonal changes. Materials expand and contract at different rates, and if they are bonded together, the differential expansion and contraction will result in either a bond failure or failure of the weaker material. David S. Watts notes that the coefficient for clay brick is 5-8 x 10^{-6}/°C, while cements and concretes range from 10-14 x 10^{-6}/°C. The cement stucco expands less than the brick,

113 Ibid., 153.
114 Torraca, 70.
115 David Watt, *Building Pathology: Principles and Practice* (Malden: Blackwell Publishing, 2007), 125.

creating internal stresses that can cause cracking and distorting if materials are not able to expand and contract.[116]

As noted, fluctuations in moisture content can activate soluble salts, affecting both brick and mortar. Calcium carbonate is one of the main components of lime-based mortars. Acids present in moisture attacks the calcium carbonate and dissolves it. Rain on calcareous materials also poses problems. Weakly acid rainwater can dissolve calcium carbonate or convert it to calcium sulfate dihydrate, or gypsum, if sulfur dioxide is in the air. These are then washed away by rainwater as it travels down the building, resulting in surface erosion and loss of material.[117]

Analysis of the mortar samples also indicates that a small amount of clay is present. Clay minerals are typically composed of plate-like hexagonal crystals.[118] They have a structure of up to 500 layers; each layer, called a micelle, is made of aluminum silicate which is itself stratified.[119] The micellae are attached to each other, usually by sodium ions with a positive charge between each micelle. When the clay is moistened, the micellae are separated by the water molecules attracted by the sodium ions. This results in an increase in distance between micellae, weakening their connection. These clay minerals have a random orientation which results in the mass growing anisotropically, or in all directions.[120] When the moisture evaporates, the crystals return

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[116] Watt, 125-7.
[117] Torraca, 90.
[118] Weaver and Matero, 137.
[119] Torraca, 39.
[120] Weaver and Matero, 137.

to their original size. With excess water the micellae lose all connection and are dispersed.[121]

When carbonates are removed from the lime by prolonged exposure to and penetration of moisture, the mortar becomes sandy, losing most if not all of its strength, whether it be cohesive, compressive, or adhesive.[122] This may be what has caused the mortar to fail on the west elevation.

Missing and broken bricks exacerbate these problems as they allow moisture to penetrate deeper into the building. This occurs mostly on the lower level of the west elevation, where bricks and mortar both are missing. Additionally, foundation and basement walls are more likely to allow water penetration if they are made of brick or stone, as opposed to concrete.[123] This is the case with the Kerr Building with its ironstone basement walls.

It is important to note that the top of parapet walls and other horizontal areas are particularly susceptible to water infiltration. Previous repairs and alterations can also be problematic; the use of more modern Portland cement may be harder and incompatible with softer, earlier stuccos that were not produced according to strict standards.[124]

Sources of Pressed Metal and Paint Deterioration

When iron is exposed to the atmosphere it develops iron oxide, or rust. The rust is porous, allowing further layers of the sheet iron to oxidize, resulting in the loss of

[121] Torraca 40
[122] Weaver and Matero, 137.
[123] London, 80.
[124] Grimmer, "The Preservation and Repair of Historic Stucco."

strength and usefulness. The porous rust acts as a “reservoir” that retains moisture, accelerating deterioration.[125] In this case the sheet iron is not structural; therefore, strength is not an issue. However, it serves an aesthetic purpose, representing a higher architectural aspiration, and is therefore historically important to the building.

Corrosion is caused by an electrochemical process called electrolysis. Air contains water, dilute acids, and salts; the concentrations of each increase in industrial or coastal areas. Therefore, metals exposed to the atmosphere form an electrolytic cell, resulting in corrosion of the anode area whose presence is indicated by rust.[126] In addition, salts dissolved in water change its pH, increasing conductivity. This solution influences the formation of layers on a metal surface and may be a cause of corrosion.[127]

When an iron element rusts, the volume increases by 6-8%.[128] This expansion can create a stress on the paint coating, which was applied to prevent corrosion. Even a scratch in a paint film can result in corrosion, since a galvanic cell is formed between the coated metal and the surface exposed by the scratch.[129]

There are several areas of corrosion throughout the interior, indicating that moisture or water vapor has come into contact with bare, uncoated metal (Figure 32). The largest area of corrosion is under the windows on the south elevation. These are the same windows that exhibit more paint loss under their sills on the exterior cement stucco. Here, moisture and dissolved acids and salts appear to have infiltrated through the deteriorated

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[125] Gayle, Look, and Waite, 72, 131.
[126] Alf Fulcher, Brian Rhodes, Bill Stewart, et al., *Painting and Decorating: An Information Manual* (Malden: Wiley-Blackwell, 2005), 149.
[127] A. Moncmanová, 56.
[128] Croci, 53.
[129] Torraca, 137.

window openings, causing corrosion. This area still retains some of the paint coating, which indicates that the corrosion is continuing under the paint causing it to lose adhesion.

Figure 32: Pressed metal corrosion on the south wall. This area is underneath one the window openings.

Other areas of paint exhibit blistering and peeling, characterized by the loss of adhesion between paint layers or loss of adhesion of all layers to the substrate (Figure 33). This can be related to many factors, such as inadequate surface preparation, incompatible paint layers (such as oil and latex emulsions), and the entrapment of moisture or water vapor beneath paint layers.[130] These areas are primarily located along the lower portion of the pressed metal, and leave the pressed metal exposed to further corrosion.

Figure 33: Peeling and flaking paint on the east wall.

Additionally, there are several areas of mechanical damage, ranging from areas that appear to have been ripped out and areas damaged by staples (Figure 34). These areas also expose the metal to moisture, posing a threat of more corrosion.

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[130] Weaver and Matero, 222.

Figure 34: Mechanical damage of the pressed metal wall. South wall.

SOURCES OF WOOD DETERIORATION

Given that the wood elements on the exterior door and window openings are largely exposed to the environment due to the failed paint coating, the harsh light and heat of the south Texas region has caused the wood to split and deteriorate. Infrared (IR) radiation, found in both natural and artificial light, provides radiant heat resulting in molecular bond vibrations. This causes shrinkage of organic materials, which can be seen in warped and split wood elements.[131] More importantly, photodegradation of wood surfaces can occur when they are exposed to ultraviolet radiation.[132]

Also, during periods of rainfall, if the wood remains damp for an extended period of time, it would deteriorate quickly from a wide variety of factors. Lignin becomes soluble in water and can leach out, loosening fibers and resulting in a silver-gray appearance. Damage may also arise from cycles of expansion caused by the hydration and dehydration of crystals in water-soluble salts. Chemical degradation also occurs when acids or alkalis are present.[133] This occurs in the sills that contain large amounts of bird droppings, which are mostly located on the second story and parapet, which then travels down to other areas of the building.

ADDITIONAL FACTORS

The location of the Kerr Building also contributes to its deterioration. Vibrations from traffic introduce mechanical stresses in nearby buildings; this is caused by the impact of vehicle wheels over pavement irregularities. Parking is available immediately off of the sidewalk of the Kerr Building on both the east and south elevations. Additionally, the building is sited on a major city thoroughfare. More importantly, across the street lies the railroad tracks and the nearby lumberyard. The train, which passes through several times daily, has the potential to introduce greater stress to the building. Although the magnitude of the vibrations is greatly reduced as it travels through soil,

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[131] Watt, 109.
[132] Weaver and Matero, 20.
[133] Weaver and Matero, 20-1.

buildings very close to roads are still affected.[134] Individual elements that are not tightly attached to the building may suffer more damage or displacement, such as ceilings. Proximity to a major road or railroad can also cause harmful vibrations that may damage mortar joints.[135] Deteriorated materials are greatly affected by these vibrations.

[134] Torraca, 77.
[135] London, 78.

Chapter 6: Treatment Recommendations

OVERVIEW

The Kerr Building exhibits different stages of deterioration throughout different areas and materials, as outlined in the preceding chapter. This chapter focuses on treatment recommendations for selected conditions on the exterior and interior. Outlined below are treatment options for the exterior stucco, mortar, and interior pressed metal. Prior to the implementation of any treatments, it is critical that all sources of deterioration be addressed, especially moisture infiltration, which is a precursor for nearly all deterioration. Even conditions not directly caused by moisture can be exacerbated by its presence. If these issues are not resolved, repair and restoration work can be undone resulting in further deterioration and escalating costs. Above all, the building will be adversely affected by inadequate planning and execution of preservation work.

Once these repairs have been completed, and even during repair work, a moisture meter should be used on-site in the interior to measure the current levels of interior moisture and any changes afterwards. Testing should be done on wood members in various locations. The basement wood columns and wood trusses should be investigated in various areas. The same should be done on the wood floors of the first floor. Likewise, the ceiling of the first floor and the flooring of the second should be tested. Additionally, it is very important that the second floor ceiling be tested to determine its moisture content, given the condition the roof. This testing will provide the project team with an indication of moisture present in the building.

THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

In exploring possible treatments for the building, it is recommended that the design and project team review the Secretary of the Interior's Standards for Rehabilitation, which can be found in Appendix C. These Standards, neither technical nor prescriptive, encourage responsible practices with respect to cultural resources. The standards are not intended to provide decisions, but to guide them. Although they do not in themselves decide how to implement a project, they do "provide philosophical consistency."[136]

When working with historic buildings, there are four possible treatment approaches. According the National Park Service (NPS), they are in order of preference: preservation, rehabilitation, restoration, and reconstruction. Preservation and rehabilitation share very similar objectives; both emphasize the retention and repair of historic materials, features, finishes, spaces, and spatial relationships that comprise historic character.[137] As defined by the NPS, however, rehabilitation provides more freedom in replacing elements that are severely deteriorated. Given the Kerr Building's current level of deterioration for some materials, especially wood, the Standards for Rehabilitation should be used.

The Standards will be useful in preventing unsympathetic repairs and treatments. Additionally, they are helpful even during the beginning stages of design as they provide

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136 "Introduction: Choosing an Appropriate Treatment for the Historic Building," NPS.gov, accessed March 25, 2012, http://www.nps.gov/hps/tps/standguide/overview/choose_treat.htm.
137 Ibid.

guidelines for decision-making. Even minor changes unsympathetic to the building's materials and aesthetics can significantly impact architectural integrity.

Using the Standards as guidelines, the removal of the nonoriginal stucco is strongly recommended as it severely affects the building's character-defining features, namely the decorative brickwork evident in historic photographs. Additionally, removing the stucco will reveal the no longer manufactured Cotulla brick, making visible again the product of one of the town's earliest industries. In the event that stucco removal is not possible, recommendations are made to repair the stucco, which is itself in various states of deterioration.

A recommendation for a new mortar is also made. The west elevation of the Kerr Building already has areas of exposed brick, as previously noted. Mortar loss and deterioration are evident, requiring repointing with a mortar sympathetic to the historic mortar. Even if the stucco is not removed from the building, it is necessary that this area of exposed brick be repointed.

Finally, recommendations are made for the removal of paint from the pressed metal found on the interior with a recommendation for a new coating. This will ensure that the historic pressed metal is protected, allowing it to continue defining the interior character of the building.

It is important to note that the products suggested have not been tested on the Kerr Building on-site or in the Architectural Conservation Laboratory. These products are only suggestions and should neither be considered the only nor the best options for the project; the recommendations are made in order to provide a starting point for possible products that can be used. Ultimately, the project team will need to evaluate various products in order to determine which best suit the needs of the building. No product should be selected without conducting on-site tests to evaluate effectiveness and rule out adverse effects.

CEMENT STUCCO REMOVAL

As noted, the cement stucco coating the building should be removed to restore the building's architectural integrity. However, prior to any cement stucco removal or repair, the first step is to determine if the numerous cracks are active. Minor crack movements are typically not detectable unless measured using crack monitors, which should be placed in different areas over cracks of different sizes. Using this method, crack movements can be charted and graphed over a period time, indicating the scale of movement, if any.

It is important to note that all cracks should be examined in well-lit conditions to bring out any surface irregularities or distortions. Structural cracking can range from hairline cracks up through cracks that can be seen form a few feet away in well-lit environments. Some cracks are only aesthetic, while others are evidence of structural problems. Cracks can be the result of settling posts, columns, footings, sleeper walls or other such issues. Bending beams or trusses and subsidence associated with mining, collapsing excavations, or landslips may also be the culprit.[138]

In his *Conserving Buildings*, Martin E. Weaver describes several types of cracks:

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[138] Weaver and Matero, 5.

1. The crack may no longer open if movement has stopped. This is typically associated with foundation settlement which has stopped due to full compaction of the soil underneath.
2. Cyclic or intermittent opening and closing of cracks occurs when soils expand and contract in relation to climate cycles; this can also occur when subterranean water levels fluctuate with tidal patterns.
3. Cracks continue to open; when charted as time and crack width, it may be possible to determine when the crack will become large enough to be structurally dangerous.
4. The crack opens at an accelerated rate that makes it difficult or impossible to determine when it will become large enough to be structurally dangerous.[139]

Crack monitoring and assessment should be carried out by a structural engineer to determine the severity of any active cracks. Additionally, the structural engineer will be able to determine if the cracks only affect the cement stucco, or if there are more serious structural issues with the brick substrate.

Once it has been determined the brick substrate is sound, stucco removal should be attempted. Unfortunately, it is difficult to remove stucco from brick without damaging the substrate.[140] Additionally, many historic buildings have been stuccoed or otherwise coated to correct persistent maintenance problems caused by flawed construction or

[139] Weaver and Matero, 6.
[140] London, 143.

deterioration. Stucco was also used for aesthetic reasons, such as an attempt to mask additions or alterations. Removal of the stucco may expose these problems.[141]

Portland cement stucco is generally hard with little water vapor permeability, resulting in problems when applied to a softer substrate.[142] However, there can be success in removing the cement stucco to uncover the historic brickwork, if the bricks have remained intact structurally and aesthetically.

First, the author recommends that stucco in a test area be removed to determine the condition of the brick underneath. In conjunction with the findings from the consulting structural engineer, it can be decided whether or not to continue with the stucco removal. With the Kerr Building, there is good indication that moisture infiltration occurs through the roof and parapet wall, since standing water has been observed on the roof after rainfall by Wade Shoop.[143] Photographs provided by Wade Shoop also indicate standing water. Additionally, biological growth can be seen along the entire parapet wall, indicating high moisture content. Due to this evidence it is suggested that a vertical section of stucco be removed along the parapet wall first in order to get a sense of the condition of the brick. A test area can also be made under a second story window sill to assess the degree of brick deterioration below failed window assemblies.

Since there is a chance that the stucco removal may not be successful, tests should be conducted in inconspicuous locations. It is recommended that the test areas be located on the western end of the south elevation, which is the area farthest away from the façade

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141 Anne E. Grimmer, "Dangers of Abrasive Cleaning to Historic Buildings," NPS.gov, accessed April 15, 2012, http://www.nps.gov/history/hps/tps/briefs/brief06.htm.

142 Telephone interview with preservation architect Joseph K. Oppermann, FAIA, 2 April 2012.

143 Site visit with Wade Shoop and Frances Gale, 9 March 2012.

on the east. Additionally, since test areas will be on the second story of the building, their presence will be less noticeable on the street level. This area would be harder to access, however, and would require an aerial lift for access.

The test for stucco removal can be carried out in a rectangle, approximately four feet wide by five feet high, starting at the top of the parapet or window sill moving downwards. This will give a better indication of the condition of the brick along the presumed points of moisture entry. Since deterioration of the brick is likely to be most severe at these points of entry, it may not be as beneficial to move horizontally across the parapet or window sill since it may provide a less accurate understanding of the brick substrate's condition.

The test areas should first be physically outlined to ensure that the bounds of the test area are clear to workers. Once this has been done, stucco removal can begin. Preservation architect Joseph K. Oppermann has used the following method to successfully remove cement stucco.[144] His relevant projects removed stucco from a Coquina stone substrate (the circa 1798 Ximenez-Fatio House in San Augustine, Florida) and from brick and Connecticut River Valley sandstone substrates (the 1841 Market Hall in Charleston, South Carolina).[145]

First a pneumatic chisel can be used by a skilled technician to remove the bulk of the stucco.[146] This must be done very carefully to ensure that the brick is not struck with the pneumatic chisel. If at any time the pneumatic chisel appears to damage the brick, its

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[144] Interview with Joseph K. Oppermann.
[145] Email from Joseph K. Oppermann, FAIA, 19 April 2012.
[146] Interview with Joseph K. Oppermann.

use should be discontinued and a hammer and hand chisel should be used instead. The majority of the stucco should be removed in this manner, leaving a layer of approximately 1/16 inch on the brick;[147] at this thickness, the brick substrate should be visible.

Since the cement stucco is made of Portland cement, simply washing the thin layer with water would not be sufficient. Unfortunately, a harsher method using acidic cleaners is recommended. Products such as Prosoco© Sure Klean® Vana Trol®, Prosoco© Sure Klean® Custom Masonry Cleaner®, or Dumond Chemicals® Peel Away® 4 – Paint and Coating Removal System should be evaluated. All products suggested here and in following sections are to be used per the manufacturer's instructions. Links to manufacturer products mentioned here and in later sections are located in Appendix E; product information, including Material Safety Data Sheets, are available on the manufacturers' websites.

It is important to note that Vana Trol® is not designed for restoration work; however, according to the manufacturer, it does soften excess mortar and is safe to use on natural stone and color-sensitive brick. Its slow-drying formula prevents streaking during cleaning, and it is compliant with all national, state, and district VOC regulations. Vana Trol® has a lower concentration of hydrochloric acid, therefore it may not be as damaging to the brick substrate as Custom Masonry Cleaner®.

[147] Ibid.

When using acidic cleaning products on historic buildings, water pressure rinsing should be moderate, ranging from 200 to 600 psi.[148] The fan spray tip should be 15° to 45°. It is very important that pressures do not exceed 600 psi and that spray tips are no smaller than 15° as this may damage soft masonry.

Once it has been determined that the stucco can be successfully removed and that the brick is in an acceptable structural and aesthetic condition, the process can be continued on a larger scale, working in manageable sections to ensure quality control.

In the event that the stucco is removed, there is a high likelihood that the some of the historic mortar may be damaged or missing. Repointing is discussed later in this chapter. Additionally, in accordance with the Secretary of the Interior's second and fourth Standards for Rehabilitation, it is suggested that the design team consider retaining the "COTULLA STATE BANK" sign painted on the stucco on the façade. The second Standard states that "the removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided," while the fourth states that "changes to a property that have acquired historic significance in their own right will be retained and preserved."[149] Although the sign is painted on the non-original stucco, the establishment of the bank has provided interior character-defining elements still found today, and its existence as evident on the exterior should be maintained if possible as a record of the building's history. Therefore, retaining this strip of stucco may be an option for the design team to consider.

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[148] Grimmer, "Dangers of Abrasive Cleaning to Historic Buildings."
[149] "Standards for Rehabilitation," NPS.gov, accessed March 25, 2012, http://www.nps.gov/hps/tps/standguide/rehab/rehab_standards.htm.

CEMENT STUCCO REPAIR

In the event that complete removal of the cement stucco is not possible, loose and unsound areas of stucco should be removed. These areas can be detected by the hollow sound they produce when tapped with a wood or acrylic mallet. Once loose areas have been located, they should be carefully removed down to a sound surface or to the brick using a hand chisel and hammer. Because patches are difficult to match with the original stucco, a large section should be removed to prevent a mottled appearance.[150] Although the exterior will be repainted with a water vapor permeable coating, it is best to ensure that patches blend in with the original stucco as much as possible. Patching should be undertaken by an experienced contractor.[151]

Prior to patching loose and deteriorated stucco, remaining residual paint should be removed from the adjacent stucco. Paint stripping is typically done for different reasons. It can be for aesthetic reasons, but it can also be done to ensure that a new coat of paint adheres properly to the substrate; with the Kerr Building, removing the excess exterior paint will allow the new paint to adhere properly to the cement stucco.

Given the hardness of the cement stucco, power washing can be attempted to remove the paint. Pressure should not exceed 600 psi as noted to prevent damage; excessive pressure can result in artificial erosion and abrasion and it can fill surface pores with moisture, which may take a long time to dry. Additionally, entrapped moisture can

[150] London, 143.
[151] Grimmer, "The Preservation and Repair of Historic Stucco."

attract salts,[152] which may damage any metal features, such as the star ties on the façade of the building. Using a densely packed, natural fiber or nylon brush may help with removing the residual paint. If this method does not work, paint strippers with chemicals may be required.

Halogenated solvents, such as methylene chloride, should be avoided due the health and environmental risks they pose. This is particularly dangerous in enclosed environments.[153] It is recommended that the paint removal product be low odor, be easily applied and water rinsable, have little to no toxicity, and not require neutralization. Prosoco© Enviro Klean® SafStrip® and Dumond Chemicals® Peel Away® Smart Strip™ are two products that meet these criteria.

There is also biological growth along the entire parapet wall that is much conspicuously darker than the rest of the cement stucco. First, a light pressure wash not exceeding 600 psi can remove loose material and soften biological growth. For removing the remaining biological growth, it is suggested that a cleaner be used that is biodegradable, non-toxic, fast acting, not harmful to masonry and surrounding materials, and designed to remove biological staining. Products such as Prosoco© Enviro Klean® BioWash® and Cathedral Stone® D/2 Biological Solution are examples of cleaners that have been effective on historic buildings.

Once this has been completed, new stucco can be used to patch the loose and deteriorated areas that were removed previously. When doing so, ASTM C 926 – 11a,

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[152] "Cleaning Concrete: the Perils of Powerwashing," Portland Cement Association (PCA), accessed April 04, 2012, http://www.cement.org/tech/cct_con_design_powerwashing.asp.
[153] Sara B. Chase, "Painting Historic Interiors," NPS.gov, accessed February 4, 2012, http://www.nps.gov/hps/tps/briefs/brief28.htm.

Standard Specification for Application of Portland Cement-Based Plaster should be considered. ASTM C 926 allows the stucco to be applied directly to solid surfaces. It is important that the new stucco is only applied after the substrate is free of contaminants such as dirt and previous coatings.[154] Failure to do so can lead to a poor bond and future deterioration of the new stucco. ASTM C 926 notes that when applied to an absorptive substrate, such as brick, Type N stucco may be used. If needed, the mortar joints of the brick can be raked out to allow approximately a 5/8 inch key that would provide a good bond between the substrate and stucco. Additionally, the NPS's Preservation Brief 22, The Preservation and Repair of Historic Stucco, contains information on historic stucco mixes and how to plan repairs. The project team may review the Brief for additional guidance in conducting repair work.

Hairline cracks can be sealed with a slurry coat of the same ingredients as the stucco. A coat of mineral paint or whitewash can also be used. Caulking compounds are not recommended for sealing hairline cracks. With highly textured stuccos, it is essential that a professional plasterer do the work to blend the repairs with the existing stucco.[155]

Although it is generally not recommended that the stucco surface be painted or sealed,[156] there are coatings that allow water vapor to escape from the substrate to which it applied. Surfaces that contain lime or cement contain alkalis; therefore, dry surfaces should be painted using an alkali-resistant primer or sealer.[157] Once the new stucco

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[154] "Stucco Installation Standards," Portland Cement Association (PCA), accessed April 13, 2012, http://www.cement.org/stucco/installation.asp.
[155] Grimmer, "The Preservation and Repair of Historic Stucco."
[156] London, 144.
[157] Fulcher, Rhodes, Stewart, et al., 148.

patches have been applied and curing is complete, then the stucco can be coated. It is very important that the coat be water vapor permeable to allow moisture to evaporate out and away from the building. In addition to being water vapor permeable, it is recommended that a mineral coating be used for its strong adherence to the substrate, its permanence, and its low-maintenance, all a result of the bond it creates with the substrate. The mineral paint should also be water repellent and color fast, and be able to withstand extreme climates. Recommended products are Cathedral Stone® MASONRE® Mineral Coating and KEIM© Soldalit. The residual paint on the cement stucco is white, a common color for stucco. It is recommended that the mineral coating be white as well to restore the original stucco appearance.

MORTAR REPLACEMENT

As previously noted, even if the stucco is not removed, the area of exposed brick on the west elevation will need to be repointed. It is also suggested that this area not be stuccoed over, as it would remain the only part of the Kerr Building to exhibit the original brickwork.

Mortar plays a vital function in historic masonry construction in terms of aesthetics as well as structure. Inappropriate mortars can alter the visual character of the building and mar the intent of design; physically, it can damage historic masonry.[158]

In most cases, Portland cement mortars should not be used for repointing historic masonry. With lime mortar, if the brick expands the mortar compacts. Portland cement-

[158] Lorraine Schnabel, "Mortar Analysis Part 1: Mortar-Making Materials," *APT Bulletin* 39, no. 1 (2008), accessed March 23, 2012.

based mortar, however, does not expand as readily, sometimes causing brick corners and edges to spall. Conversely shrinking brick may result in cracks that allow moisture penetration. Even worse, the cement-based mortar may cause the face of the brick to detach as the brick shrinks. Early Portland cement may also contain impurities that result in salt contamination of nearby brickwork, causing crumbling and exfoliation.[159]

The flexibility of mortars can be increased with the addition of lime, which in turn reduces the stresses of the adjoining brick and increasing durability. Mortars should always be slightly weaker than the masonry units so that the new material is sacrificial rather than the original material. However, it is important to note the difference in contemporary lime versus historic lime. Historically, when limestone was selected for making lime, certain impurities such as clays were desired to provide hydraulic properties. Essentially, this would result in mortars that could cure more quickly and in damper conditions. Today, hydrated limes are manufactured without purities and cannot be used in the standard 1:3 sand mix commonly found in old mortars. In order to use contemporary hydrated limes, a small amount of Portland cement or some other pozzolanic material must be added in order to provide the much desired hydraulic characteristics.[160] Per ASTM C 150 / C 150M, Standard Specification for Portland Cement, the author recommends Type I Portland cement, which is white and non-staining.

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[159] Weaver and Matero, 107.
[160] Weaver and Matero, 135-6.

When repointing, it is important to keep in mind the joint appearance, which is dependent on three factors: color, texture, and profile. While mortar materials determine the color and texture, the profile is produced by the craftsman. Even having detailed descriptions of colors and proportions of mortar ingredients, however, can still leave problems. This is because historic mortars were typically not specified according to a specific, standardized color system and they often did not include aggregate size and quantifiable characteristic descriptions.[161]

In order to determine the composition and characteristics of the mortar, acid digestion was used along with microscopical examination. Acid digestion's usefulness is twofold: first, it provides a rough estimation of proportion by weight of the acid-insoluble components, and second, it provides a sample of the original aggregate that can be examined and used to determine a matching equivalent.[162] The laboratory report for the acid digestion test can be found in Appendix D.

Mortar analysis allows the determination of the size, color, shape, and luster of the aggregate, and the color of the binder.[163] Determining the original composition of a cured mortar is a difficult task, but fortunately this may not be the main purpose of mortar analysis. In some cases, isolating the aggregate to find a contemporary match may

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161 Weaver and Matero, 134.
162 Lorraine Schnabel, "Mortar Analysis Part 2: Analytical Methods," *APT Bulletin* 40, no. 2 (2009), accessed March 23, 2012.
163 Schnabel, "Mortar Analysis Part 1: Mortar-Making Materials."

be sufficient.[164] Likewise, determining the approximate proportion of aggregate to binder can also be a main objective.

Mortar digestion and analysis of a 17.35 g sample indicated that the sand, the largest component of mortar, made up 76.31% of the sample and lime made up 15.04% of the sample. The "fines" consisted of 8.65% of the sample. This indicates a roughly 1:3 binder to aggregate ratio. It is important to keep in mind, however, that these figures are approximate.

When viewed at various magnifications, ranging from 20x to 50x, the aggregate is subangular. This is indicative of "river sand," from an "immature stage" of a river.[165] Visually, the majority of the aggregate is clear and colorless. This is interspersed with white, milky aggregate grains and a smattering of darker grains throughout. The most prominent colors, other than these clear grains, are amber and yellowish. The darker grains range from amber-brown to dark-brown (Figure 35). When using a sieve set made according to ASTM E 11, Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves, the largest sand grains were retained on the No. 30 sieve (0.60 mm) and the smallest on the No. 200 sieve (0.075 mm), with some fine, silt-like grains remaining. Combining the acid soluble fraction and fines, the binder represents 24% of the total. In selecting sand for repointing, a small portion of the original sand should be given to the contractor in order to find a match.

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[164] Lorraine Schnabel, "Mortar Analysis Part 3: Buying the Right Services," *APT Bulletin* 42, no. 1 (2011), accessed March 23, 2012

[165] Weaver and Matero, 135.

Figure 35: Sand grains from the mortar sample viewed at 10x.

ASTM C 270, Standard Specification for Mortar for Unit Masonry notes that Type O mortar can be used when the application area is above grade and exposed on one side, unlikely to be frozen when saturated, not subject to high winds or other large lateral loads. The ratio for Type O mortar is 1:2:7-9, indicating 1 part Portland cement, 2 parts lime, and 7-9 parts sand.

Prior to repointing, irreparable brick should be carefully cut out and replaced with new brick that match the original dimensions, colors, texture, and physical characteristics. When new brick are chosen, they should meet ASTM C 62-10, Standard Specification for Building brick (Solid Masonry Units made from Clay or Shale) and ASTM C 67-11, Standard Methods of Sampling and Testing Brick and Structural Clay Tile, especially in regards to water absorption, maximum saturation coefficient, minimum compressive strength, and weathering indices or some other system that considers brick quality in relation to climatic exposure. Some salvageable bricks can be reused, but they should not be used in areas where they will be exposed to excessive moisture.[166]

PRESSED METAL PAINT REMOVAL

As with the cement stucco repair, it is often beneficial to remove existing paint in order to ensure adhesion. Paint that is peeling, cracking, blistering, or unsound should be stripped so that the substrate can be treated as a new surface.[167]

White lead was used extensively for oil-based house paints from colonial times well into the first half of the twentieth century.[168,169] Due to the age of the pressed metal, and therefore presumably the age of the earliest paint layer, there is a high likelihood that a lead-based paint was used. Paint samples taken and analyzed indicated the presence of lead in the earliest paint layers.[170] This was done by conducting a microchemical test. Under the stereomicroscope, a small portion of the paint sample's first layer was removed with an X-Acto knife and then pulverized between two glass plates. A drop of dilute

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166 Ibid., 107-9.
167 Fulcher, Rhodes, Stewart, et al., 139.
168 Roger W. Moss, *Paint in America: The Colors of Historic Buildings* (Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1994), 108, 289.
169 Sharon C. Park and Douglas C. Hicks, *Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing*, National Park Service, U.S. Department of the Interior, 2006, 1.
170 Further paint information and analysis can be found in the following section.

nitric acid was then placed on the pulverized sample, followed by a crystal of potassium iodide. The solution then turned yellow, and under a stereomicroscope, crystals could be detected, indicating the presence of lead in the pressed metal's early finishes. It is still recommended, however, that tests be completed by a certified lab to confirm these results. The laboratory report for the microchemical test can be found in Appendix D.

Given these results, it is important that safety precautions be followed for lead paint removal prior to any work being carried out. This will greatly reduce health risks for workers and future occupants of the building as lead dust can contaminate the air and soil. Lead is a highly dangerous heavy metal, and removal can release lead dust into the environment which then enters the human body through the skin and lungs. Stripping old paints can expose workers and inhabitants to serious health and safety hazards; the State Historic Preservation Officer should be contacted for more legal and technical information regarding paint removal and disposal.[171]

In general, when removing lead paint, it is vital that dust circulation be prevented by covering room openings and removing interior furnishings. Any drop cloths or masking materials should be carefully enclosed in tight plastic bags prior to removing them. Anyone who enters the room should wear respirators with High Efficiency Particulate Air (HEPA) filters and change clothes just outside the room; work clothes should be kept inside the room. Contact between dust and bare skin should be avoided, and there should be no eating, drinking, or even smoking when lead dust is present. Periodic blood testing should also be carried out as a precaution for workers. Special

[171] Chase.

HEPA vacuums must be used to remove lead dust after work and surface areas must then be rinsed well with a solution of trisodium phosphate and water, which must be changed often. It is important to note that other heavy metals such as cobalt were also used in historic oil paints.[172]

Although lead was detected in the paint, this does not mean that all painted surfaces pose an immediate risk. A risk assessment should be undertaken by a certified specialist in order to determine where the paint may be problematic for occupants. From this assessment it can be determined where the paint needs to be removed. Although the walls exhibit paint coating failure and corrosion, the ceiling paint coating appears largely intact and may not have to be removed. Regardless of the findings, a building file should be kept to inform future tenants and workers of the presence of lead-based paint.[173]

According to the National Park Service, peeling, chipping and flaking lead-based paint pose the greatest risk and should be mitigated or removed first. In other areas, an encapsulant paint may be used to contain the lead-based paint; this circumvents some of the problems associated with lead removal by reducing the amount of paint removal and does not require as much worker protection. However, encapsulants can obscure decorative details unless they are applied thinly and in several coats. Additionally, they are difficult to remove.[174] For these reasons, the author does not recommend encapsulants be used.

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[172] Ibid.
[173] Park and Hicks, 5-6.
[174] Ibid., 6.

After a risk assessment has been conducted, the first step is to remove loose and detached paint. There are areas along the lower half of the walls where the paint is already detached and easily removed. As much paint as possible should be manually removed under the required work safety regulations; this will reduce the dispersal of lead dust.

There are also several techniques available that may remove the paint and corrosion from the pressed metal. In areas in which corrosion is present, hand scraping, chipping and wire brushing may be tested in a small area in order to determine how well the corrosion and the surrounding paint remnants can be removed. This method is not only very common, but the least expensive. It is worth noting that this method may not remove all corrosion and residual paint, and that experienced craftsmen should carry out the work to avoid unintentional damage to fragile areas.[175] However, if these methods are not adequately successful in removing the paint and corrosion, chemical paint removal may be required.

Solvents are preferable to alkalis when removing paint from pressed metal. Solvents soften paint layers down to the substrate; some solvents also lift the film as they evaporate. Most solvent strippers do not damage metal and remove many types of paint. Using solvents requires proper ventilation and the protection of surrounding materials which may be damaged by the solvent.[176]

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[175] Gayle, Look, and Waite, 135.
[176] Fulcher, Rhodes, Stewart, et al., 139.

The stripper used should contain no methylene chloride, should not burn skin, should remove many different types of paint coatings, be water-based, have low to no odor, and require no neutralization after application. Cathedral Stone© MASONRE® S-301 General Purpose Paint Stripper and Dumond Chemicals® Peel Away® Smart Strip™ are two products that meet these requirements, per the respective manufacturers.

Blasting techniques can also be used to remove the paint. Testing should be carried out before implementing a method on large scale, since some methods can be physically and aesthetically damaging. Although sand is commonly used as the grit material,[177] it is not recommended for removing corrosion and paint from the pressed metal. A gentler option must be used, such as Sponge-Jet® Blue Sponge Media™ which contains no added abrasive materials. White Sponge Media™ is also available, which contains added abrasives, and has been used on a wide range of preservation projects, per the manufacturer. Another option involves using carbon dioxide to blast away coatings from the substrate. Cold Jet®, according to their restoration information, has devised a method that not only removes coatings without damaging the substrate, but is also successful in lead-based paint abatement. Links to both companies can be found in Appendix E.

PRESSED METAL REPAINTNG

Architectural finishes, such as paints, are typically analyzed to determine and document a color scheme for a building's period of significance, which is typically the

[177] Anne E. Grimmer, "Dangers of Abrasive Cleaning to Historic Buildings", National Park Service, http://www.nps.gov/hps/tps/briefs/brief06.htm.

original paint scheme. Determining the original color also uncovers the intent of the owner or designer of a building. This does not mean that paint analysis occurs only under a microscope. Gathering historic documentation, images, and building specifications is vital for architectural finish research, and should be undertaken prior to other forms of investigation such as lab and on-site testing.[178] Research establishes the context for the building and its finish. It can reveal an aesthetic history, construction chronology, design intent, and other details. Color matching, despite its shortcomings, can be a valuable tool in evaluating a materials original appearance.

With this in mind, the pressed metal should be repainted using the original color, restoring its appearance as it was when it was first installed and coated. In order to determine the original paint color, paint analysis was conducted. Microscopes are necessary for such an analysis since many coatings are too thin or degraded to be visible with the naked eye, or even with handheld magnifiers.[179]

The primary goal of selecting paint samples is to remove enough to adequately examine and color match; it is preferable that the person that removes the sample be the one to analyze it.[180] The Kerr Building pressed metal paint samples were examined under a stereomicroscope, both as collected and in a prepared cross-section.

In order to determine the original paint colors, samples were taken from two different walls with two different, existing paint colors; samples were taken from both the south and east walls. Both samples were taken at levels below waist height, partially due

[178] Dorothy S. Krotzer, "Architectural Finishes: Research and Analysis," *APT Bulletin* 39, no. 2/3 (2008): 1-2, accessed March 25, 2012.
[179] Moss, 29.
[180] Krotzer, "Architectural Finishes: Research and Analysis," 3.

to the ease of removal and due to the verticality of the space; since no ladder was available during the site visit, samples higher on the wall or on the ceiling could not be obtained. Of the two sample areas, one has a white topmost paint layer (from the south wall) while the other has a blue topmost paint layer (from the east wall).

Upon microscopical investigation, it was evident that these paint coats were nonoriginal; several underlying paint layers were visible, indicating multiple applications. Both samples, despite their different appearances, have the same paint stratigraphies. The blue coating proved to be an additional coating applied to just a portion of the pressed metal interior. The white samples consist of nine layers while the blue samples consist of ten.

In total, eight of the same layers were present in the samples, not including the substrate and the additional tenth blue coating (Figure 36). The first coating was grey on the blue sample and brown on the white sample. This layer is very thin and glossy, indicative of a primer. Then, a thicker layer of yellowish-cream was applied over this. After this is a brown layer, a yellowish layer, a faint light green layer, a dark green layer, and a medium-green layer of more or less the same thickness.

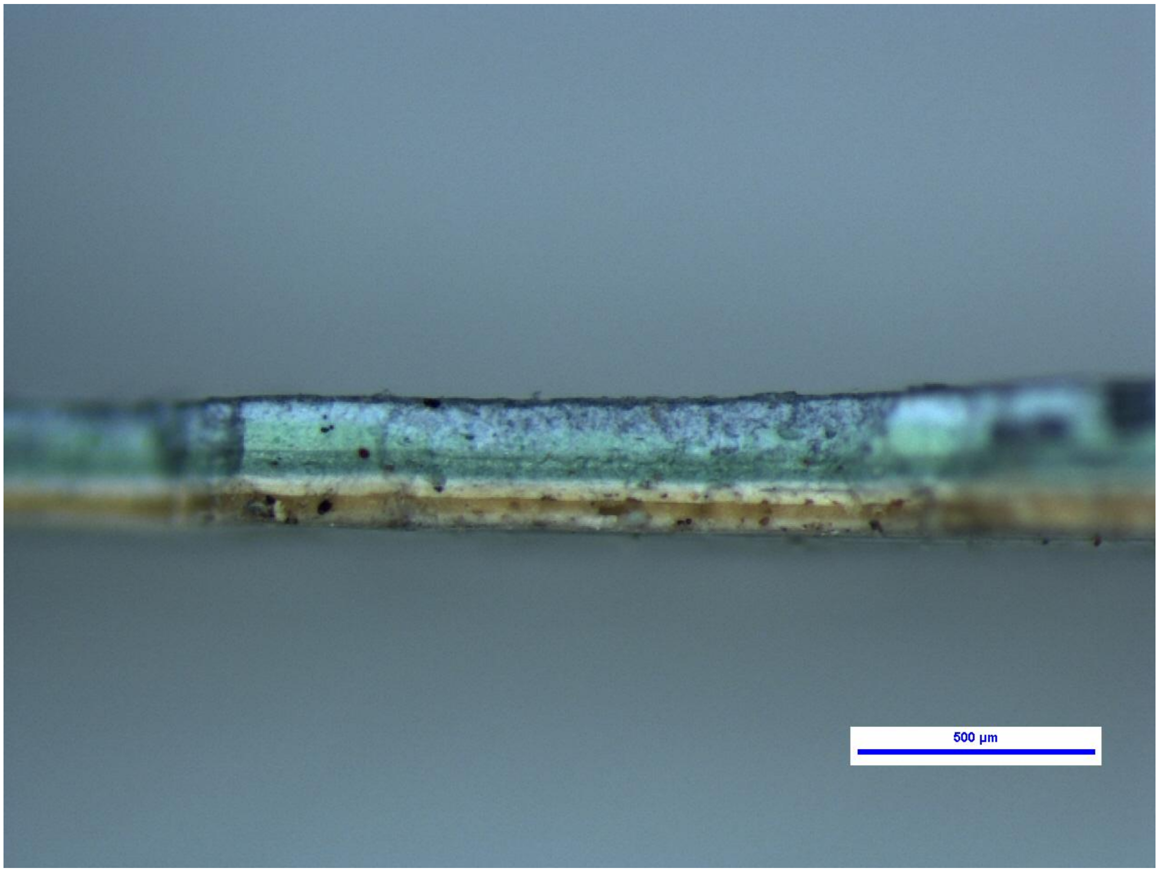

Figure 36: Section of the blue paint sample viewed at 50x.

After these layers is a thicker light green layer (not as light as the first green layer), followed by a thinner white and blue layer, depending in the sample. These layers have air bubbles indicating a different manufacturing method was used; these may be modern paints.

It is important to keep in mind that even the best paint samples can be subject to discoloration.[181] This can occur for a number of reasons, such as the inherent nature of

[181] Moss, 182.

the medium. Studies have shown that the most unstable medium is oil.[182] Linseed oil, the most common of paint media during the nineteenth century, turns yellow-brown when protected from light. This occurs whether the linseed oil-based coat is covered by interior furnishing or by another coating. Unfortunately, it is not easy to determine how much light a coating received, therefore it is difficult to determine when the discoloration began. Conversely, oil media are also subject to physical deterioration through blanching, which also causes discoloration. Blanching occurs when oxidation and light exposure cause oil degradation, reducing gloss and causing the paint to appear dull and faded. Layers that have been exposed for long periods of time are extremely susceptible to blanching.[183] Additionally, pigments such as Prussian blue and chrome yellow naturally change over time.[184]

Whites and blues are the most visibly affected by yellowing, and exposure to strong light can reverse the process to some degree.[185] However, fully reversing binder and pigment yellowing and deterioration is generally not possible.[186] Color matching also suffers from human error. Metamerism can occur, in which a color appears different under different lighting, meaning that a color can have two separate “matches” even when analyzed by the same person.[187] To get a more accurate reading of a color, natural light or filters to simulate it should be used.

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182 Principally by Morgan Phillips, ibid.
183 Moss, 182.
184 Krotzer, “Architectural Finishes: Research and Analysis,” 4.
185 Moss, 269.
186 Ibid., 273.
187 Ibid., 183.

Paint deterioration is not fully understood, and the debate lies largely on the changes that occur with linseed oil-based paints over time.[188] This means that the paint sample may reflect an inaccurate color. Therefore, after paint analysis is completed, the result should not be considered final. If new evidence surfaces that changes previous understanding of the original paint color, those involved in the project should be notified so that further investigation may be conducted.[189] Regardless, despite information from written sources, such as material supply lists, paint recipes, and photographic documentation, the best source of information is from paint samples themselves. Because replicating and conserving historic paint involves complex procedures in order to determine the medium and pigments, repainting a room to match historic paint colors is carried out on most projects.[190]

Since the pressed metal interiors are only being restored to match color and not paint composition, this complex testing is not needed. With repainting, the new color is matched to the original palette using modern alternatives; recreating earlier paints and treatments is often not required.[191]

Although there is no standardized method for visually color-matching historic paint colors, there is a methodology that can be followed. After identifying the earliest paint layer in a cross-section, the layer is exposed by carefully removing later paint layers. Then this is color matched visually according to a standardized system such as the

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[188] Krotzer, "Architectural Finishes: Research and Analysis," 4.
[189] Moss, 30.
[190] Ibid., 173-4.
[191] Chase.

Munsell Color System, which is independent of any commercial paint manufacturing system. Additionally, it is generally recommended that a commercial paint palette be used as an additional matching system.[192]

Given the prevalence of linseed oil, and the glossiness of the primer coat, it is likely that linseed oil served as the paint's vehicle. Since linseed oil yellows over time, the first finish coat with its yellow/cream color most likely does not accurately represent the original color of the finish coat. Given the prevalence of the color white (to resemble plaster walls and ceilings) and the presence of lead (indicating white lead was likely used), it is very probable that the finish coat was originally white or off-white.

Direct-to-metal alkyd enamels are suggested for coating the pressed metal. These coating provide corrosion resistance and have long-term durability. Additionally, they do not require a separate primer, as the alkyd enamel serves as both the primer and the finish coat. Products such as Benjamin Moore© Super Spec HP D.T.M. Alkyd Low Lustre (P23) and Sherwin-Williams© DTM Alkyd Enamel are examples of direct-to-metal coatings.

PRESSED METAL REPLACEMENT AND CODE COMPLIANCE

After cleaning the pressed metal, repairs are suggested for minor holes and punctures. Patching can be used, which requires covering or filling a deteriorated area with the same or compatible material. Additionally, if needed, the patch can isolated to

[192] Krotzer, 4.

prevent it from interacting with the original metal. The patch can be applied by either soldering or by using mechanical connections such as rivets or bolts.[193]

Failed or severely damaged architectural metals are typically replaced with reproductions. One practical consideration is the cost that can be involved in trying to restore damaged pressed metal.[194] Fortunately, there are companies that manufacture pressed metal today. One such company, W. F. Norman in Nevada, Missouri, carries an extensive inventory of pressed metal designs of not only ceilings and walls, but of ornaments and exterior architectural elements. They offer custom made pressed metal panels in the event they do not carry molds for the panel designs needed. Information for W. F. Norman can also be found in Appendix E.

Unfortunately, pressed metal interiors, despite their architectural significance, are no longer considered adequate for their previously acknowledged fire-safety value. Although touted as being fireproof, little technical evidence exists to prove this. Although the metal tiles were noncombustible, the wood furring strips certainly were not. There is evidence that pressed metal over plaster had a one hour fire-resistance rating, and indeed, simply covering an existing wood or plaster ceiling with pressed metal was very common.[195]

Renovation of the building may require safety-requirement upgrades. There are several methods that improve fire ratings for pressed metal assemblies, each with advantages and disadvantages.

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193 Gayle, Look, and Waite, 99.
194 Ibid., 97-98.
195 Jackson, 29-30.

When working with fire ratings and building codes, it is essential to work with an architect who is familiar not only with building code, but also with historic buildings and the challenges they face. Although some possible solutions are listed below, it is vital that further investigation be conducted by a qualified professional.

When a building with pressed metal needs to be code compliant, the substrate underneath the pressed metal ceiling should first be investigated to identify the existing assembly. Removing one or two ceiling panels may be the best approach to determine the condition of the substrate, although existing piping and fixture openings can provide a quick look into substrate conditions. Unfortunately, there are no such openings in the Kerr Building. Since the fire rating with the latter assembly is largely dependent on the plaster, it is important that the plaster be examined.[196]

One method of improving fire rating requires the removal of pressed metal panels, installing new, fire rated materials to the substrate, then reinstalling the panels. If this method is used, it is suggested that a 5/8-inch Type X gypsum board be installed. This method allows the preservation of the original ceiling, the installation of a new HVAC system if needed, and a contemporary and recognized fire-resistant material to be installed. Removing the pressed metal ceiling also presents an opportunity to investigate the building structure further, possibly revealing further conditions. Removing the panels must be done very carefully to prevent dents and bends. It may be helpful to first remove the nail head from the nail shanks using a drill. Additionally, leaving cornice and border

[196] Jackson, 32.

pieces in place may save costs. If this is done, an intumescent foam or fire-retardant insulation can be inserted above the cornice, providing it with fire protections.[197]

Another option involves installing noncombustible insulation in the floor cavity, which slows the transfer of heat and improves the fire separation for stud walls. As a fringe benefit, insulation reduces the transfer of sound and heat between adjoining spaces. For an existing ceiling, installation can be done by removing a two-foot-wide strip of the ceiling panels in the center, but this must be done carefully and skillfully.[198]

Covering the floor above the ceiling with a layer of noncombustible material also increases an assembly's overall fire rating. A ¾ inch cement board or other lightweight cement level compound can easily provide a fire rating well over an hour. This method is possible in the Kerr Building since the floors have been covered with nonoriginal linoleum and the areas of exposed wood need to be examined for structural integrity. However, there is an issue with the placement of the floor covering, as it is located on the "far side" of a fire.[199]

A recent method has involved applying intumescent paint, which increases the fire-rating while leaving the ceiling intact. However, the thickness of the coating can reduce the sharpness of pressed metal details. The paint is also fairly expensive, but still cheap compared to other alternatives. However, the system can only be applied by a certified applicator to receive the manufacturer's warranty. This coating is also a lead-

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197 Ibid.
198 Ibid., 33.
199 Ibid., 33.

paint encapsulant,[200] which may make it a good option if the ceiling coating presents a health hazard, as it solves both issues with one solution.

A final possible solution involves installing fire-protection devices. Although fire-detection devices and alarms can improve safety, building codes do not automatically allow them to bypass fire separation solutions. However, for many Main Street buildings, this alternative is less expensive and less intrusive. Before making this decision, a local building official and the design team should analyze all of the building's life-safety features and systems rather than focusing on the fire separation alone.[201]

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[200] Ibid.
[201] Ibid.

Chapter 7: Conclusion

"It is important to understand why we are drawn to a good building of any age. First there is the intellectual achievement of creating an artefact of beauty and interest. Second, the human achievement perceived by later generations in the care of the craftsmen in its construction. This care can also be visible in later repairs and alterations. Thirdly, we are drawn by the sense of place created both by the designers and many humans who have lived and worked in the building."

Alan Baxter – Journal of Architectural Conservation, no. 2, July 2001[202]

The John A. Kerr Building has been a part of Cotulla's built environment for over 125 years; indeed, the building represents one of the oldest parts of the town's fabric, bearing witness to the cyclical boom and busts of the town. These waxing and waning periods of economic prosperity can also be found in the use of the building. From its earliest days, it provided goods for the residents of Cotulla, whose population at the time was ever increasing. As the town's prosperity increased, a new banking institution, the Cotulla State Bank, made visible the growth and wealth through its elegant pressed metal interior.

The Kerr Building, however, represents more than the materials that compose it. As the first brick business building, it signified that Cotulla had arrived. The settlement, once dotted with temporary wood structures, was now a permanent town. This building, combined with the arrival of the railroad in 1882 which provided Cotulla with its main lifeline for decades, embodied this new permanence. From the railroad, just opposite

[202] Bernard M. Feilden, *Conservation of Historic Buildings* (Burlington: Architectural Press, 2003), vii.

Front Street, arrived not only goods with which to develop and enrich the town, but also people, who would upon their arrival see the simple elegance of the decorative, rich brickwork of the Kerr Building.

This brick also holds another key to Cotulla's past. Bright red in color, and aptly called Cotulla brick, they were manufactured just outside the city; today, few if any buildings exist that were built using the no longer manufactured Cotulla brick. As one of the town's earliest industries, the bricks represent one of the earliest products made in Cotulla, which provided not only means for economic growth, but physical growth as well.

The Kerr Building also represents the will and determination of Joseph Cotulla. Born halfway across the world, his humble beginnings gave no indication that he would set out on his own after arriving in Texas to form a new town; it was, after all, his business acumen that resulted in the arrival of the International – Great Northern Railroad. His imprint can also be found in the layout of the town itself, whose oldest streets conform to the land as he platted it in the late-nineteenth century. The mark of John A. Kerr can be found in the building, as obviously without him, the building and this report, would not exist. His entrepreneurial spirit resulted in the early development of town and undoubtedly contributed to the town's growth.

Unfortunately, as the town's fortunes declined, so did the building. Once abandoned, the building was left to fall into disrepair and deterioration began in earnest. Regrettably, no new occupants resided in the building for some time. Today, however, renewed interested in the building by the city's residents and investors has signaled a brighter future for the Kerr Building. Previous interests and goals in reviving the building now appear to be well within reach.

This report will provide information for those involved in the preservation and restoration of the Kerr Building, and to those residents, both lifelong and new, that have an interest in Cotulla's heritage. It is the author's wish that, in addition to providing a historical backdrop for the building, this report underscores the understanding of what the Kerr Building is, both physically and culturally. With proper care, attention, and maintenance, the Kerr Building can continue to provide a living sense of community and identity to the town of Cotulla.

Appendix A: Annotated Elevations

Materials List

03 Concrete: stairs
04 Brick: walls
04 Ironstone: foundation walls
05 Metal: railings; marquee attachments; downspout; grills; aluminum door frame (main entrances)
06 Wood: window frames; door frames
08 Glass: glazing
09 Cement stucco: exterior coating (over brick)
09 Paint: cement stucco; wood elements; windows
09 Plaster: interior wall of adjoining building (west elevation)

Existing Conditions

03 Concrete
- 03.01 chipping
- 03.02 staining

04 Brick and Mortar
- 04.01 hole
- 04.02 missing part*
- 04.03 mechanical damage*
- 04.04 inappropriate patch*
- 04.05 deposit*
- 04.06 open joints (mortar)*

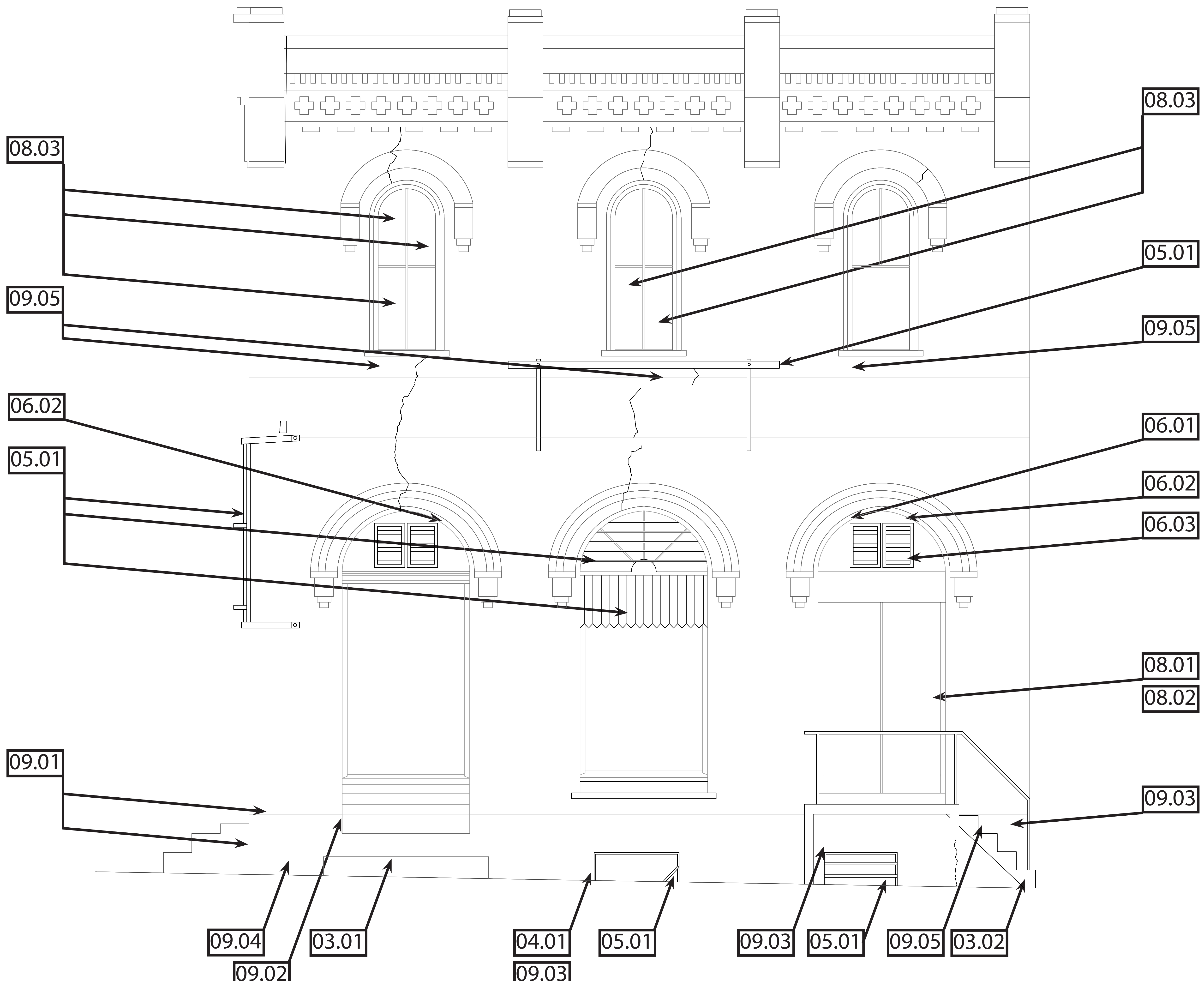
05 Metal
- 05.01 corrosion

06 Wood
- 06.01 biological colonization
- 06.02 missing part
- 06.03 inappropriate patch

08 Glass
- 08.01 crack
- 08.02 mechanical damage
- 08.03 missing piece (glazing)

09 Cement Stucco and Plaster
- 09.01 chipping
- 09.02 rounding
- 09.03 spall
- 09.04 peeling*
- 09.05 staining
- 09.06 mechanical damage*
- 09.07 deposit*
- 09.08 peeling (plaster)*
- 09.09 mechanical damage (plaster)*

*Condition not present on elevation



East Elevation

Drawing not to scale

Notes:
09.05 Staining present throughout parapet wall
Cracking present throughout cement stucco (larger cracks indicated on elevation)
Peeling paint on all painted elements
All wooden elements exhibit rot and splintering

Spring 2012

Professional Report
ARC 398R

Name: Thomas H. Garcia
Advisor: Frances Gale

John A. Kerr Building
101 Front Street
Cotulla, Texas 78014

Original designer: John A. Kerr
Construction date: 1883

Drawing courtesy of Studio Autoforma
Modified by Thomas H. Garcia

Materials List

03 Concrete: stairs
04 Brick: walls
04 Ironstone: foundation walls
05 Metal: railings; marquee attachments; downspout; grills; aluminum door frame (main entrances)
06 Wood: window frames; door frames
08 Glass: glazing
09 Cement stucco: exterior coating (over brick)
09 Paint: cement stucco; wood elements; windows
09 Plaster: interior wall of adjoining building (west elevation)

Existing Conditions

03 Concrete
- 03.01 chipping*
- 03.02 staining*

04 Brick and Mortar
- 04.01 hole*
- 04.02 missing part
- 04.03 mechanical damage
- 04.04 inappropriate patch*
- 04.05 deposit*
- 04.06 open joints (mortar)*

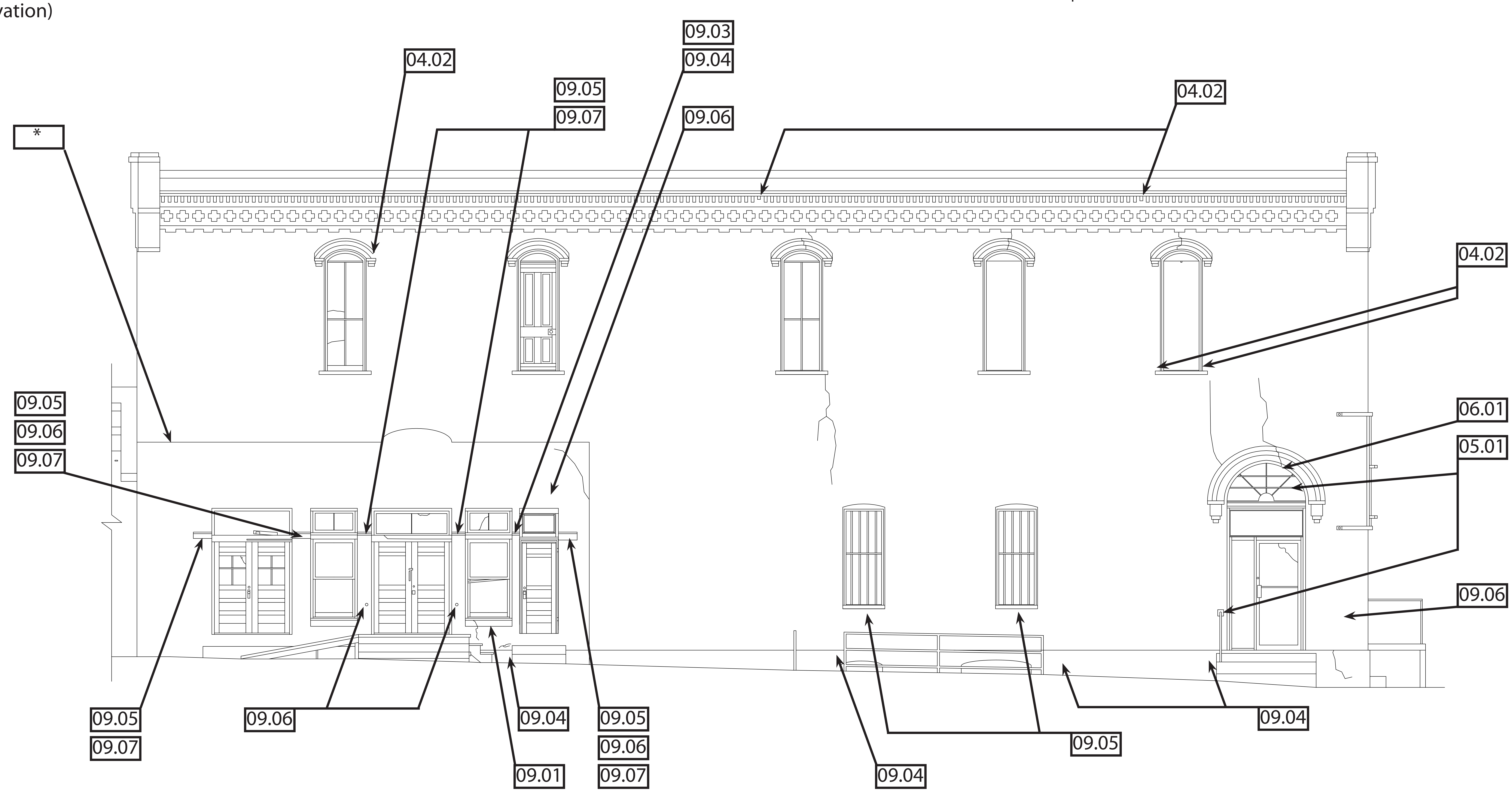
05 Metal
- 05.01 corrosion

06 Wood
- 06.01 biological colonization
- 06.02 missing part*
- 06.03 inappropriate patch*

08 Glass
- 08.01 crack
- 08.02 mechanical damage
- 08.03 missing piece (glazing)

09 Cement Stucco and Plaster
- 09.01 chipping
- 09.02 rounding*
- 09.03 spall
- 09.04 peeling
- 09.05 staining
- 09.06 mechanical damage
- 09.07 deposit
- 09.08 peeling (plaster)*
- 09.09 mechanical damage (plaster)*

*Condition not present on elevation



South Elevation

Drawing not to scale

Notes:
* Area contained below this area exhibits ghosting and is lighter in color
08.01 08.02 08.03 Glazing throughout this elevation exhibits varying degrees of damage/loss
09.05 Staining present throughout parapet wall
Cracking present throughout cement stucco (larger cracks indicated on elevation)
Peeling paint on all painted elements
All wooden elements exhibit rot and splintering

Spring 2012

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ARC 398R

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09 Plaster: interior wall of adjoining building (west elevation)

Existing Conditions

03 Concrete
- 03.01 chipping*
- 03.02 staining*

04 Brick and Mortar
- 04.01 hole
- 04.02 missing part
- 04.03 mechanical damage
- 04.04 inappropriate patch
- 04.05 deposit
- 04.06 open joints (mortar)

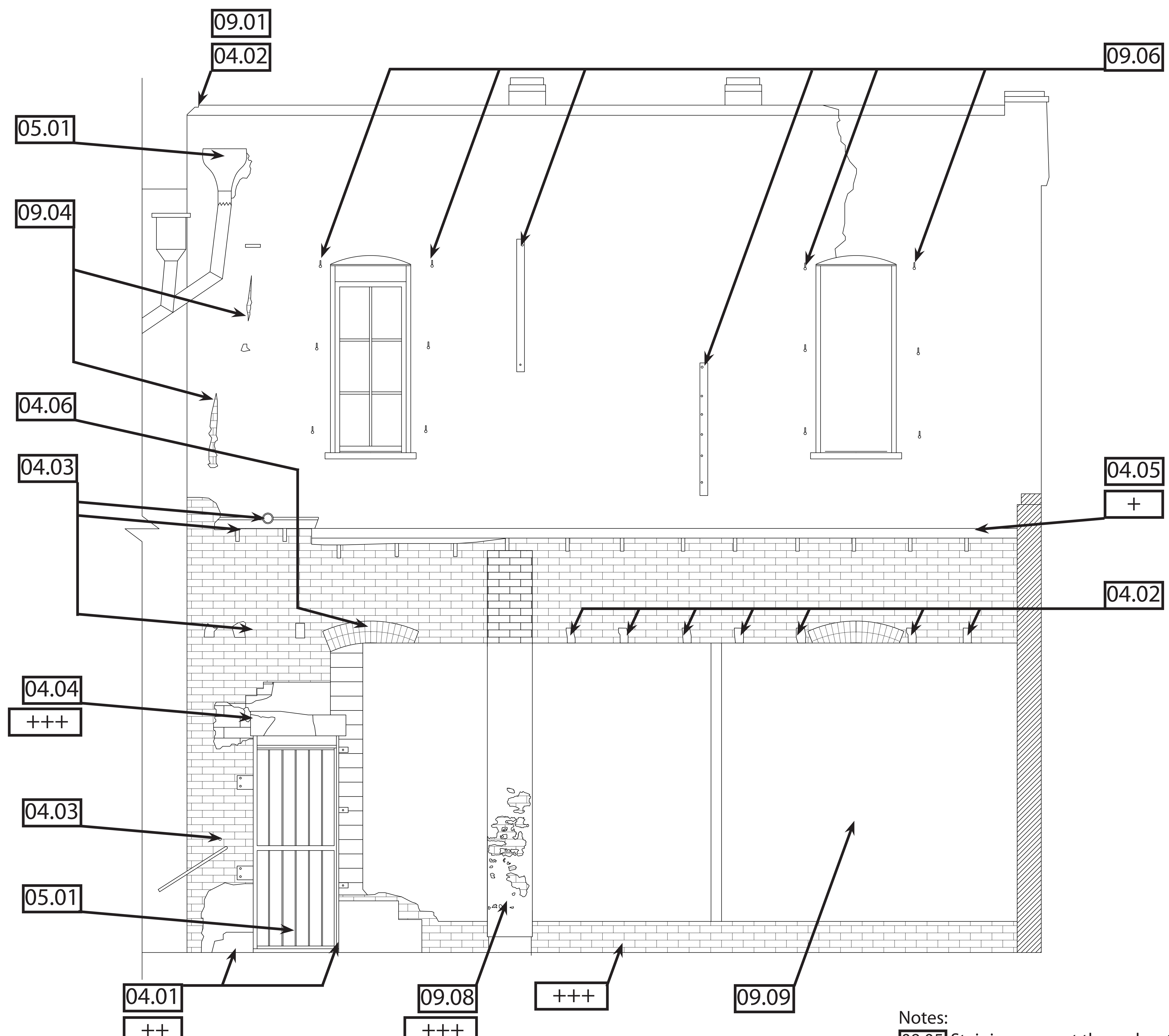
05 Metal
- 05.01 corrosion

06 Wood
- 06.01 biological colonization*
- 06.02 missing part*
- 06.03 inappropriate patch*

08 Glass
- 08.01 crack*
- 08.02 mechanical damage*
- 08.03 missing piece (glazing)*

09 Cement Stucco and Plaster
- 09.01 chipping
- 09.02 rounding*
- 09.03 spall*
- 09.04 peeling
- 09.05 staining*
- 09.06 mechanical damage
- 09.07 deposit*
- 09.08 peeling (plaster)
- 09.09 mechanical damage (plaster)

*Condition not present on elevation



West Elevation

Drawing not to scale

Notes:
09.05 Staining present throughout parapet wall
+ Deposits continue horizontally across the building
++ Vegetation has grown into the building through the holes
+++ Patches made with non-matching brick
Cracking present throughout cement stucco (larger cracks indicated on elevation)
Peeling paint on all painted elements
All wooden elements exhibit rot and splintering

Spring 2012

Professional Report
ARC 398R

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Advisor: Frances Gale

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Original designer: John A. Kerr
Construction date: 1883

Drawing courtesy of Studio Autoforma
Modified by Thomas H. Garcia

Appendix B: Illustrated Glossary of Conditions

ILLUSTRATED GLOSSARY OF CONDITIONS

	**Biological colonization** Colonization of the stone by plants and micro-organisms such as bacteria, cyanobacteria, algae, fungi and lichen (symbioses of the latter three). Biological colonization also includes influences by other organisms such as animals nesting on and in stone. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*
	**Blistering** Separated, air-filled, raised hemispherical elevations on the face of stone resulting from the detachment of an outer stone layer. This detachment is not related to the stone structure. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*
	**Chipping** Breaking off of pieces, called chips, from the edges of a block. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*

	**Corrosion** Surface oxidation of metals resulting in color, texture and dimensional changes. Source: National Cemetery Association
	**Crack** Individual fissure, clearly visible by the naked eye, resulting from separation of one part from another. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*
	**Deposit** Accumulation of exogenic material of variable thickness. Examples include: splashes of paint or mortar, sea salt aerosols, atmospheric particles, etc. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*

<table>
<tr><td></td><td>Erosion
Loss of original surface, leading to rough surfaces.

Source: ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns</td></tr>
<tr><td></td><td>Hole
Hollow space in stone surface.

Source: ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns</td></tr>
<tr><td></td><td>Inappropriate patch
Patch or repair that is inconsistent in appearance or character with its surrounding materials.</td></tr>
</table>

	**Mechanical damage** Loss of stone material clearly due to a mechanical action. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*
	**Missing part** Empty space, obviously located in the place of some formerly existing stone part. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*
	**Open joints** Areas in which mortar between masonry units has deteriorated or otherwise removed.

	**Peeling** Shedding, coming off, or partial detachment of a superficial layer (thickness: submillimetric to millimetric) having the aspect of a film or coating which has been applied on the stone surface. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*
	**Peeling paint** Paint that is detaching from the substrate on which it has been applied.
	**Plant growth** Vegetal living being, having, when complete, root, stem, and leaves, though consisting sometimes only of a single leafy expansion (e.g. tree, fern, herb). Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*

	**Soiling** Deposit of a very thin layer of exogenous particles (e.g. Soot) giving a dirty appearance to the stone surface.
	**Spall** Scaling in which the interface with the sound part of the stone is parallel to the stone surface. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*
	**Staining** Kind of discoloration of limited extent and generally of unattractive appearance. Source: *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*

Appendix C: The Secretary of the Interior's Standards for Rehabilitation

The Secretary of the Interior's Standards for Rehabilitation

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Appendix D: Laboratory Reports

ARCHITECTURAL CONSERVATION LAB
HISTORIC PRESERVATION PROGRAM
SCHOOL OF ARCHITECTURE
THE UNIVERSITY OF TEXAS AT AUSTIN

COURSE: Professional Report, ARC 398R
DATE: 27 April 2012
LAB SESSION: Mortar Analysis
PREPARED BY: Thomas Garcia

PURPOSE OF TESTING:
The purpose of this test is to roughly determine the ratio of aggregate, lime, and "fines" in a historic mortar sample from the John A. Kerr Building. Test data were used in developing a repointing mortar.

SAMPLES:
A 17.35 g mortar sample was taken by the author from the first floor of the west elevation of the John A. Kerr Building.

TEST METHOD:
ASTM C 1324 – 10, Standard Test Method for Examination and Analysis of Hardened Masonry Mortar, modified

MATERIALS AND EQUIPMENT:
Mortar sample, mortar and pestle, 1000 ml glass beaker, stereomicroscope, wash bottle, graduated cylinder, electronic balance, 50 ml of 3 M hydrochloric acid, filter paper, funnel, 500 ml Erlenmeyer flask, sand sieves (made according to ASTM E 11, Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves)

PROCEDURE:
Part 1: Examination

1. Take the mortar sample and examine a freshly broken surface with the stereomicroscope.
2. Provide a description of the sample, including aggregate colors, hardness, condition, etc.
3. Match the binder color to a standard color system.

Part 2a: Analysis: Acid Soluble Component

4. Using the electronic balance, weigh the glass beaker and record the weight.
5. Pulverize a portion of the sample using the mortar and pestle.
6. Transfer the pulverized sample to the beaker and get a combined weight of the beaker and sample. Subtract the weight of the beaker from the combined weight to obtain the weight of the pulverized sample and record the weight.
7. Use a wash bottle to moisten the pulverized mortar sample with water.
8. Working under the fume hood, measure approximately 50 ml of 3 M hydrochloric acid in a graduated cylinder and transfer the dilute acid to a plastic beaker.
9. Slowly and carefully add approximately 10 ml of 3 M hydrochloric acid to the moistened sample. Observe the evolution of carbon dioxide gas and record the observations. Continue to adding dilute acid in 10 ml aliquots to dissolve the acid soluble material.
10. When the reaction is complete, slowly add approximately 50 ml water to dilute the solution in the beaker.

Part 2b: Analysis: Separation of the "Fines" and Sand Components

11. Weigh a filter paper circle and record the weight.
12. Fold the filter paper in half and in half again and use it to line the funnel. Place the lined funnel in a 500 ml Erlenmeyer flask. Moisten the folded filter paper with a small amount of water to secure it.
13. Gently swirl the diluted solution in the beaker to suspend the solids that were not dissolved by hydrochloric acid.
14. Slowly pour the solution into the funnel. Continue this process to collect the "fines" on the filter paper, separating them from the sand.

Part 3: Completion of Mortar Analysis

15. Examine the dried "fines" collected on the filter paper and match the color of the "fines" to a standard color system.
16. Weigh the filter paper with "fines" and subtract the weight of the filter paper. Record the "fines" weight.
17. Weigh the beaker and dried sand and subtract the weight of the beaker. Record the sand weight.
18. Examine the dried sand and describe the colors, sizes, and shapes of sand grains.
19. Add the "fines" weight and sand weight and subtract the combined weight from the weight of the mortar sample to obtain the acid soluble weight.
20. Calculate the weight percent for each component.

Part 4: Sand Grain Sieve

21. Using sand sieves made according to ASTM E 11, Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves, sieve the sands obtained from the mortar analysis.
22. Record the range of sand grain sizes.

TEST DATA:
Part 1: Examination

The mortar sample has a light, red-brown appearance and was very sandy in texture. Small pieces of lime were visible without magnification. The aggregates were not easily discernible from the "fines." The sample was very soft and easily broken apart. Even light handling of the sample resulted in the loss of material. Using the Munsell Color System, the color is very similar to 7.5YR 6/4.

Part 2: Analysis

Glass beaker	→ 411.83 g
Pulverized sample plus beaker	→ 429.18 g
Weight of sample	→ 17.35 g

Once 3 M hydrochloric acid was added to the moistened sample, the reaction was immediate. Carbon dioxide was produced and the mixture bubbled continuously for some time. After the bubbling stopped, the mixture was swirled more and the reaction began again. This happened several times, with a decrease in intensity each time.

Part 3: Completion of Mortar Analysis

Filter	→ 3.27 g
Filter with "fines"	→ 4.77 g
Weight of "fines"	→ 1.50 g

Glass beaker	→ 411.83 g
Glass beaker with sand	→ 425.07 g
Weight of sand	→ 13.24 g

Weight of acid soluble component → 2.61 g

Using the Munsell Color System, the mortar sample overall is 2.5Y 7/2 and the "fines" are 10 YR 6/2. The sand is 10 YR 7/4, although this is an "average" of the colors since the sand grains are not uniform in color. Individual grains range from clear/colorless, milky white, amber-yellow, amber-brown, and dark brown. The grains are subangular.

Percent weight of "fines"	→ 8.65 %
Percent weight of sand	→ 76.31 %
Percent weight of acid soluble component	→ 15.04 %

Part 4: Sand Grain Sieve

The largest sand grains were retained on the No. 30 sieve (0.60 mm) and the smallest on the No. 200 sieve (0.075 mm), with some fine, silt-like grains remaining.

Discussion of Results:

Combining the acid soluble fraction and fines, the binder represents 24% of the total. The binder to aggregate ratio is approximately 1:3, common for historical mortars. Further testing can be carried out using instrumental analysis to further identify the components of the mortar.

Recommendations for a repointing mortar for the John A. Kerr Building, included in the Professional Report, are based on the results of the mortar analysis.

ARCHITECTURAL CONSERVATION LAB
HISTORIC PRESERVATION PROGRAM
SCHOOL OF ARCHITECTURE
THE UNIVERSITY OF TEXAS AT AUSTIN

COURSE:	Professional Report, ARC 398R
DATE:	27 April 2012
LAB SESSION:	Microchemical Testing for Lead
PREPARED BY:	Thomas H. Garcia

PURPOSE OF TESTING:
The purpose of this test is to determine if a lead-based paint was used on the interior pressed metal of the John A. Kerr Building.

SAMPLES:
Two paint samples taken by the author from the east wall and south wall of the John A. Kerr Building

TEST METHOD:
Microchemical test using potassium iodide

MATERIALS AND EQUIPMENT:
Stereomicroscope, superglue, X-Acto knife, three microscope slides, eraser, dilute nitric acid, potassium iodide crystals

PROCEDURE:
1. Mount the samples, substrate side up, to one of the microscope slides using superglue.
2. Under the stereomicroscope, use the X-Acto knife to expose the paint stratigraphy.
3. Once the earliest finish coat has been identified, use the X-Acto knife to isolate a small portion of it from the later coatings.
4. Place a portion of the isolated paint between two microscope slides and use the eraser to gently pulverize the sample.
5. Add a drop of dilute nitric acid to the pulverized sample.
6. Add a crystal of potassium iodide to the acidified sample.
7. Observe any reaction that occurs with and without the stereomicroscope.
8. Repeat steps 2 through 7 for the remaining sample.

TEST DATA:
Once the potassium iodide crystal was added to the acidified sample, a reaction was observed that produced yellow crystals, visible under the stereomicroscope. This reaction confirmed the presence of lead in both paint samples.

Discussion of Results:

The presence of lead indicates that a lead-based paint was used to protect the pressed metal interior. Due to the areas of chipping and peeling paint present on the interior, the removal of paint will be required. The result of the microchemical test requires that lead abatement procedures be followed to protect worker and inhabitant health.

Appendix E: Manufacturer's Websites

Manufacturer's Websites

Note: Manufacturers are listed alphabetically followed by the name of specific products where applicable. All websites listed in this appendix were accessed on May 3, 2012.

Benjamin Moore & Co.©
101 Paragon Drive
Montvale NJ 07645
http://www.benjaminmoore.com/en-us/welcome-to-benjamin-moore

- Super Spec HP D.T.M. Alkyd Low Lustre (P23)

Cathedral Stone® Products, Inc.
7266 Park Circle Drive
Hanover, Maryland 21076
http://cathedralstone.com/

- MASONRE® Mineral Coating
- MASONRE® S-301 General Purpose Paint Stripper

Cold Jet, LLC®
455 Wards Corner Road
Loveland, Ohio 45140
http://www.coldjet.com/en/index.php

Dumond Chemicals, Inc.®
83 General Warren Blvd. Suite 190
Malvern, PA 19355
http://www.dumondchemicals.com/

- Peel Away® 4 – Paint and Coating Removal System
- Peel Away® Smart Strip™

KEIM Mineral Coatings of America, Inc.©
10615 Texland Blvd. #600
Charlotte, NC 28273
http://www.keim.com/

- Soldalit

Prosoco, Inc.©
3741 Greenway Circle
Lawrence, KS 66046
http://www.prosoco.com/

- Enviro Klean® SafStrip®
- Sure Klean® Custom Masonry Cleaner®
- Sure Klean® Vana Trol®

The Sherwin-Williams Company©
101 Prospect Avenue N. W.
Cleveland, Ohio 44115
http://www.sherwin-williams.com/

- DTM Alkyd Enamel

Sponge-Jet, Inc.®
14 Patterson Lane
Newington, NH 03801
http://www.spongejet.com/

- Blue Sponge Media™
- White Sponge Media™

W. F. Norman Corporation©
214 N. Cedar
P.O. Box 323
Nevada, MO 64772
http://wfnorman.com/

References

Anthony, Ronald W. "Basics of Wood Inspection: Considerations for Historic Preservation." *APT Bulletin* 38, no. 2/3 (2007): 1-6. Accessed February 6, 2012. http://www.jstor.org/stable/40004717.

Baer, Norbert S., S. Fitz, R. A. Livingston, and J. R. Lupp, eds. *Conservation of Historic Brick Structures: Case Studies and Reports of Research*. Shaftesbury, Dorset: Donhead, 1998.

Baker, T. Lindsay. *The First Polish Americans: Silesian Settlements in Texas*. College Station: Texas A&M University Press, 1979.

"Brief History of Cotulla." La Salle County Historical Commission. Accessed March 18. http://historicdistrict.com/Genealogy/LaSalle/cotulla.htm.

Chase, Sara B. "Painting Historic Interiors." NPS.gov. Accessed February 4, 2012. http://www.nps.gov/hps/tps/briefs/brief28.htm.

"Cleaning Concrete: the Perils of Powerwashing." Portland Cement Association (PCA). Accessed April 04, 2012. http://www.cement.org/tech/cct_con_design_powerwashing.asp.

Croci, Giorgio. *The Conservation and Structural Restoration of Architectural Heritage*. Boston: Computational Mechanics Publications, 1998.

Deed of Sale from Joseph Cotulla to John A. Kerr, March 1882 (filed 22 February 1886), La Salle County, Texas, Deed Volume F, page 291-2. County Clerk's Office, Cotulla, Texas.

Deed of Sale from Katharine Gallman, Donald Poole Gallman, and Barbara Gallman Greene to Herbert E. Menn, Jr. and Virginia Reese Menn, 18 December 1979 (filed 18 January 1980), La Salle County, Texas, Deed Volume 221, page 472-3. County Clerk's Office, Cotulla, Texas.

Dierickx, Mary. "Metal Ceilings in the U.S." *Bulletin of the Association for Preservation Technology* 7, no. 2 (1975): 83-98. Accessed April 8, 2012. http://www.jstor.org/stable/1493499.

Dworaczyk, Edward J. *The First Polish Colonies of America in Texas: Containing Also the General History of the Polish People in Texas*. San Antonio: Naylor Company, 1979.

Email from Joseph K. Oppermann, FAIA, 19 April 2012.

Feilden, Bernard M. *Conservation of Historic Buildings*. Burlington: Architectural Press, 2003.

Fulcher, Alf, Brian Rhodes, Bill Stewart, Derick Tickle, John Windsor, and Derek Butterfield. *Painting and Decorating: An Information Manual*. Malden: Wiley-Blackwell, 2005.

Gale, Frances, and John C. Robbins. "Removal of Interior Coatings at the Statue of Liberty." *Bulletin of the Association for Preservation Technology* 16, no. 3/4 (1984): 63-65. Accessed March 17, 2012. http://www.jstor.org/stable/1494040.

Gayle, Margot, and John G. Waite. *Metals in America's Historic Buildings*. Washington D.C.: U.S. Dept. of the Interior, Heritage Conservation and Recreation Service, Technical Preservation Services Division, 1980.

Grimmer, Anne E. "Dangers of Abrasive Cleaning to Historic Buildings." NPS.gov. Accessed April 15, 2012. http://www.nps.gov/history/hps/tps/briefs/brief06.htm.

Grimmer, Anne E. "The Preservation and Repair of Historic Stucco." NPS.gov. Accessed January 28, 2012. http://www.nps.gov/history/hps/tps/briefs/brief22.htm.

Hawkes, Pamela W. "Paints for Architectural Cast Iron." *Bulletin of the Association for Preservation Technology* 11, no. 1 (1979): 17-36. Accessed February 12, 2012. http://www.jstor.org/stable/1493676.

ICOMOS. *ICOMOS-ISCS: Illustrated Glossary on Stone Deterioration Patterns*. International Scientific Community for Stone, 2008.

"Introduction: Choosing an Appropriate Treatment for the Historic Building." NPS.gov. Accessed March 25, 2012. http://www.nps.gov/hps/tps/standguide/overview/choose_treat.htm.

Jackson, Mike. "Main Street and Building Codes: The "Tin Ceiling" Challenge." *APT Bulletin* 34, no. 4 (2003): 29-34. Accessed March 7, 2012. http://www.jstor.org/stable/1504868.

Kerr Building history notes, provided by John Keck. Undated and unpublished.

Krotzer, Dorothy S. "Architectural Finishes: Research and Analysis." *APT Bulletin* 39, no. 2/3 (2008): 1-6. Accessed March 25, 2012. http://www.jstor.org/stable/25433950.

Krotzer, Dorothy S., and John J. Walsh. "Analyzing Mortars and Stuccos at the College of Charleston: A Comprehensive Approach." *APT Bulletin* 40, no. 1 (2009): 41-48. Accessed April 2, 2012. http://www.jstor.org/stable/27650528.

Leffler, John. "COTULLA, TX." Texas State Historical Association (TSHA). Accessed March 4, 2012. http://www.tshaonline.org/handbook/online/articles/hgc16.

Liquidation of the Cotulla State Bank, La Salle County, Texas, Deed Volume M-2, page 130-1. County Clerk's Office, Cotulla, Texas.

London, Mark. *Masonry: How to Care for Old and Historic Brick and Stone*. Washington, D.C.: Preservation Press, 1988.

Ludeman, Annette Martin. *La Salle: La Salle County, South Texas Brush Country, 1856-1975*. Quanah: Nortex Press, 1975.

Mack, Robert C., and John P. Speweik. "Repointing Mortar Joints in Historic Masonry Buildings." NPS.gov. Accessed March 3, 2012. http://www.nps.gov/history/hps/tps/briefs/brief02.htm.

McGuire, James P. *The Polish Texans*. San Antonio: University of Texas Institute of Texan Cultures, 1972.

Meadows, Robert E. *Historic Building Facades: A Manual for Inspection and Rehabilitation*. New York: New York Landmarks Conservancy, Technical Preservation Services Center, 1986.

Moncmanová, A., ed. *Environmental Deterioration of Materials*. Boston: WIT Press, 2007.

Moss, Roger W., ed. *Paint in America: The Colors of Historic Buildings*. Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1994.

Nelson, Lee H. "Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character." NPS.gov. Accessed April 3, 2012. http://www.nps.gov/history/hps/tps/briefs/brief17.htm.

NOAA Satellite and Information Service, Annual Climatological Summary, accessed May 1, 2012, http://cdo.ncdc.noaa.gov/ancsum/ACS.

Park, Sharon C. "The Use of Substitute Materials on Historic Building Exteriors." NPS.gov. Accessed April 19, 2012. http://www.nps.gov/history/hps/tps/briefs/brief16.htm.

Park, Sharon C. and Douglas C. Hicks. *Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing*. National Park Service, U.S. Department of the Interior, 2006.

"Plaster Textures." Technical Services Information Bureau. May 3, 2012. http://www.tsib.org/plaster.shtml.

Przygoda, Jacek. “New Light on the Poles in Texas.” *Polish American Studies* 27, no. 1/2 (1970): 80-86. Accessed March 15, 2012. http://www.jstor.org/stable/20147817.

Ridout, Brian. *Timber Decay in Buildings: The Conservation Approach to Treatment*. London: E & FN Spon, 2000.

Robinson, Willard Bethurem, and Todd Webb. *Texas Public Buildings of the Nineteenth Century*. Austin: University of Texas Press, 1974.

Schnabel, Lorraine. “Mortar Analysis Part 1: Mortar-Making Materials.” *APT Bulletin* 39, no. 1 (2008): 1-4. Accessed March 23, 2012. http://www.jstor.org/stable/25433935.

Schnabel, Lorraine. “Mortar Analysis Part 2: Analytical Methods.” *APT Bulletin* 40, no. 2 (2009): 1-7. Accessed March 23, 2012. http://www.jstor.org/stable/40284487.

Schnabel, Lorraine. “Mortar Analysis Part 3: Buying the Right Services.” *APT Bulletin* 42, no. 1 (2011): 1-4. Accessed March 23, 2012. http://www.jstor.org/stable/41203181.

Simpson, Pamela H. “Cheap, Quick, and Easy, Part II: Pressed Metal Ceilings, 1880-1930.” *Perspectives in Vernacular Architecture* 5 (1995): 152-63. Accessed February 25, 2012. http://www.jstor.org/stable/3514252.

Smith, Bradley T. “Substitute Materials for Deteriorated Metal Building Components: The Rehabilitation of a Country Courthouse in Southern Georgia.” *Bulletin of the Association for Preservation Technology* 13, no. 4 (1981): 19-26. Accessed March 10, 2012. http://www.jstor.org/stable/1494050.

"Standards for Rehabilitation." NPS.gov. Accessed March 25, 2012. http://www.nps.gov/hps/tps/standguide/rehab/rehab_standards.htm.

"Stucco Installation Standards." Portland Cement Association (PCA). Accessed April 13, 2012. http://www.cement.org/stucco/installation.asp.

Suter, G. T., J. Vandenberg, and L. Fontaine. "Bond Capacity of Mortars for Historic Structures." *APT Bulletin* 27, no. 4 (1996): 27-45. Accessed January 29, 2012. http://www.jstor.org/stable/1504561.

Telephone interview with preservation architect Joseph K. Oppermann, FAIA, 2 April 2012.

Temple, Louann A. "PANNA MARIA, TX." Texas State Historical Association (TSHA). Accessed March 4, 2012. http://www.tshaonline.org/handbook/online/articles/hlp04.

The John A. Kerr Cotulla State Bank Preservation Project, prepared by Frank Architects, 2010.

Torraca, Giorgio. *Lectures on Materials Science for Architectural Conservation*. Los Angeles: Getty Conservation Institute, 2009.

Watt, David. *Building Pathology: Principles and Practice*. Malden: Blackwell Publishing, 2007.

Weaver, Martin E. and F. G. Matero. *Conserving Buildings: Guide to Techniques and Materials*. New York: Wiley, 1993.

Welsh, Frank S. "Paint Analysis." *Bulletin of the Association for Preservation Technology* 14, no. 4 (1982): 29-30. Accessed February 5, 2012. http://www.jstor.org/stable/1493901.