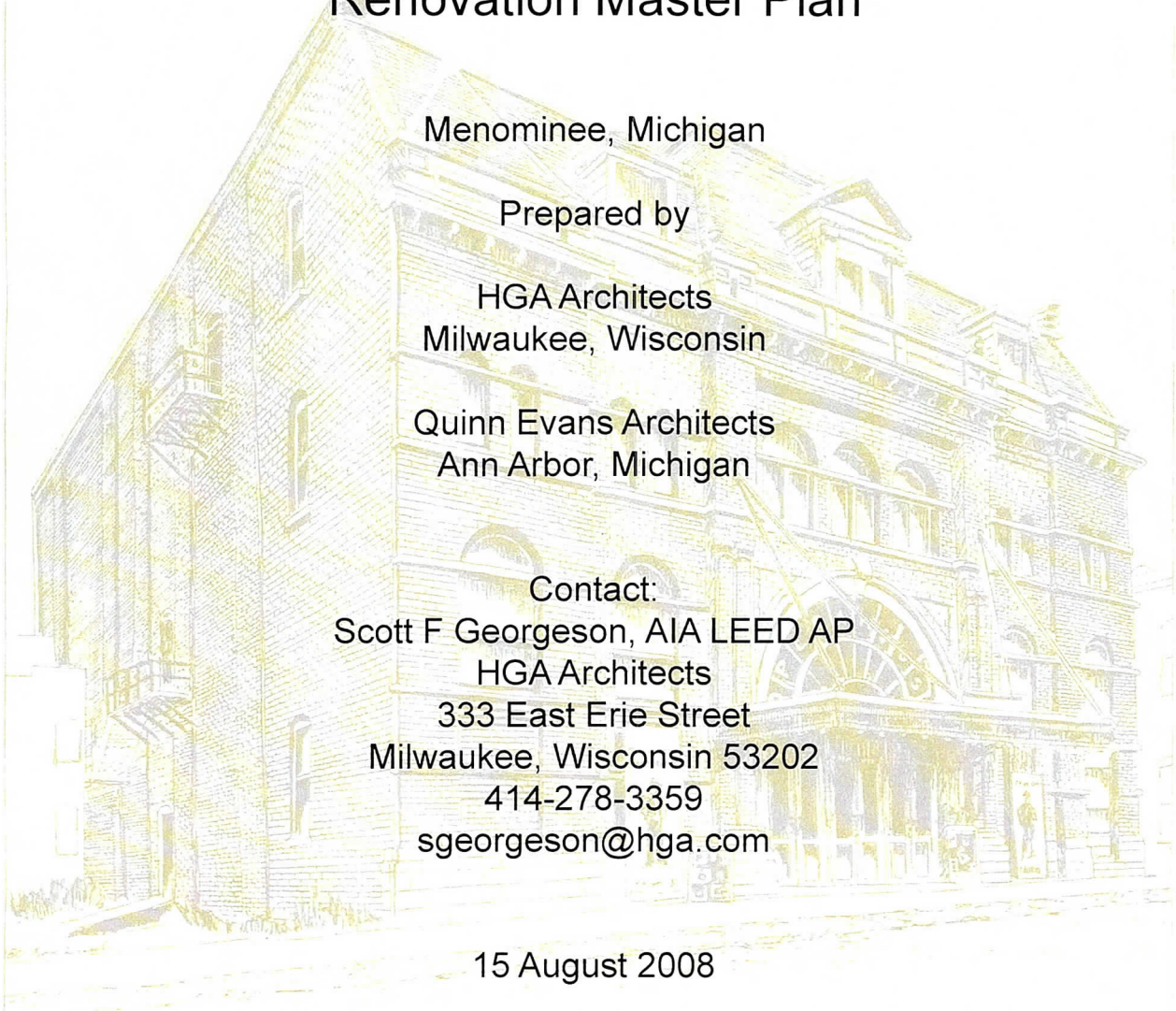
Menominee Opera House
Renovation Master Plan



Menominee, Michigan

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Menominee Opera House – 1902

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I. MANAGEMENT SUMMARY

Executive Summary

This Restoration Master Plan is the results of on site investigations by a team of architectural, historical, structural and theatre professionals.

The final design outlined in this Restoration Master Plan was derived through a series of workshops and presentation with the Menominee Opera House Building Committee.

The enclosed design concepts were completed within the Secretary of Interiors Standards for Historic Buildings; and Michigan Department of History, Arts and Libraries State Historic Preservation Office.



The Restoration Master Plan outlines a reconstruction/restoration of the Historic Opera House approximately 23,634 sf and an addition of 18,670 sf.

Project Team

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Administrative

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Renovation Goals

Renovation Goals

The Menominee Opera House building committee outlined several important design goals for the design team

1. The Fifth Avenue elevation is to be restored to it's original design.

2. The entry marquee is to be reconstructed.

3. The asphalt roof should be replaced with a hexagon slate tile.

4. The entry lobby should be rebuilt to match the historic qualities of the original lobby. It is understood that some adjustment will be required to allow entry into the new addition to the west.

5. The cheek walls, boxes and forestage ceiling eyebrow are to be as close to the original design as possible.

6. Every effort should be made to rebuild the first balcony as close to the original design as possible.

7. The upper balcony with the existing pew seating should be maintained and reused.

8. The original dressing rooms wing should be maintained.

9. The large east and west stage load-in doors should be maintained.

10. The basement under the stage and lobby should be excavated and used for new back stage functions.

11. There is no need for a counter weighted theatre rigging system.

12. The public alley north of the stage can not be used for future additions.

II. HISTORICAL DATA

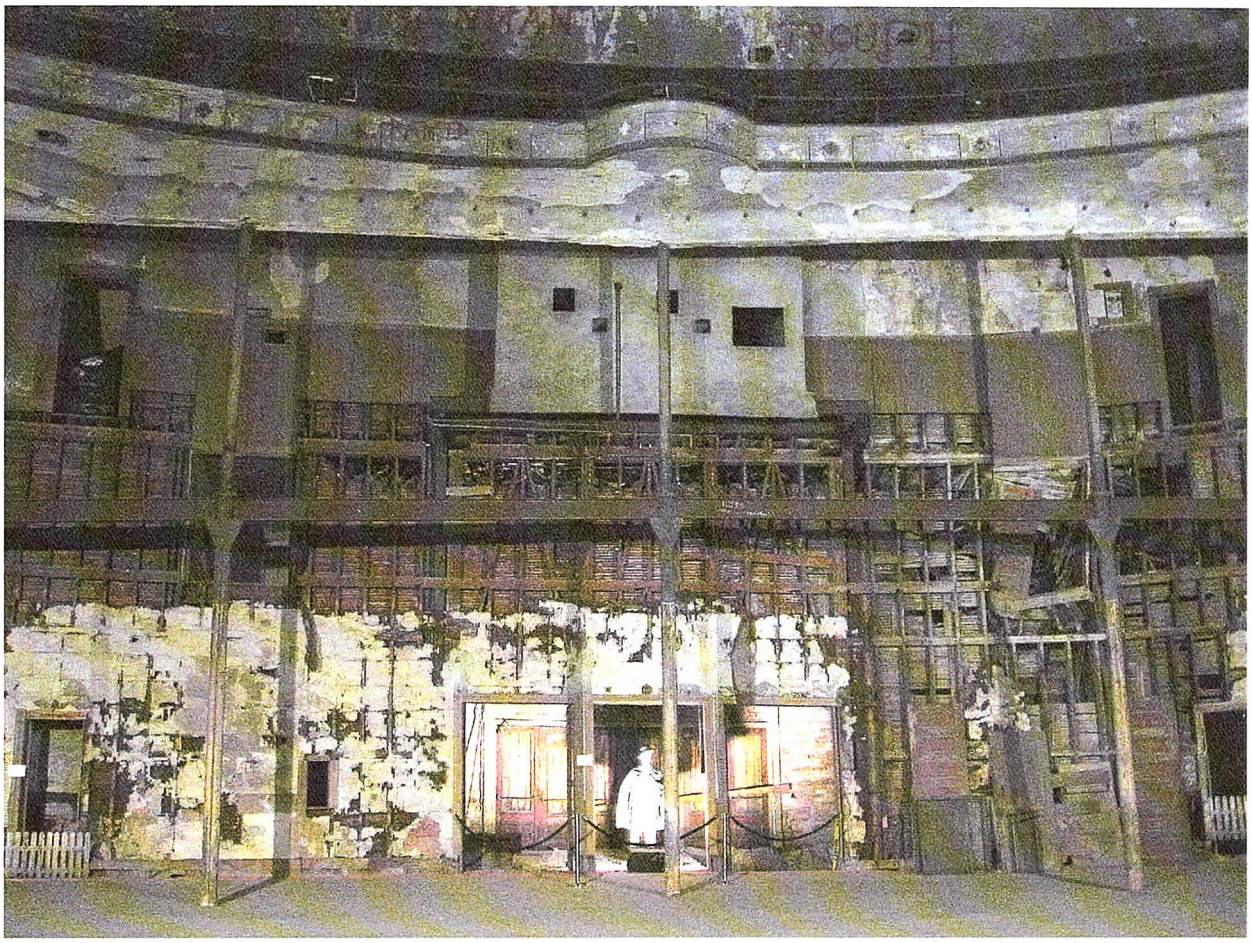
Background



Menominee Michigan

The city of Menominee, Michigan is located at the mouth of the Menominee River overlooking Lake Michigan's Green Bay, about 60 mile north of the City of Green Bay, Wisconsin. Menominee gets its name from a regional Native American tribe known as the Menominee, which roughly translates into "Wild Rice". The area was originally the home of the Menominee Indian Tribe. Menominee gained prominence as a lumber town. In its 19th century heyday Menominee produced more lumber than any other city in America. Today, Menominee relies on manufacturing (paper products, wicker lawn furniture, auto supplies, ship building, tourism, etc.) for its economic well-being. Current population is around 9,300. Across the river and the state line is Marinette, Wisconsin population 11,700. Together the two communities have a strong base for supporting cultural and community activities that benefit the entire area.

History of the Opera House



Introduction

When it opened in 1902, the Menominee Opera House was the pride and joy of the city, a visible symbol of the economic and cultural status of this town built on the timber industry. Built during the golden age of traveling theater i**n America, the** Opera House adapted itself to the changing state of entertainment in the city, shifting to motion pictures in the 1920s, community theater in the 1930s, and back to motion pictures in the post World War II era. Devastated by a fire in 1950, the Opera House was frequently on the brink of demolition, but always managed to escape the fate of many historic theaters during the latter half of the twentieth century. It was rescued from demolition in the late 1970s and mothballed until a small but dedicated community group brought it closer to restoration in the early years of the twenty-first century.

Episode 1: "A Monument...to this City" (1902-1919)

Menominee in 1902 was a lumbering town. The earliest European settlers had arrived in the area less than a hundred years previously, eventually crowding out the Menominee tribe for whom the city was named. Menominee's location, at the mouth of the Menominee River where it empties into Green Bay, facilitated its early use as a fur trading post, but the permanent settlers quickly saw the value of the timber stands throughout the region, as well as the abundant supplies of trout and whitefish in the lake. The first sawmill was built on the Wisconsin side of the river in 1832, and more followed in the next decades, eventually making Menominee the greatest lumber port of the Upper Peninsula. The prodigious amounts of timber cut and ore mined in Menominee during the latter half of the nineteenth century resulted in a prosperous class of industrial leaders and the accompanying merchants and professionals who built Menominee into a thriving town by the turn of the century.

In the late nineteenth and early twentieth centuries, one of the symbols of culture in the medium-sized towns of the Midwest was the Opera House. In the early years of the nation, substantial theaters were largely confined to the large metropolitan areas on the East Coast. Smaller towns in less accessible locations had neither the patronage nor the resources to construct and support a dedicated theater. By the later years of the nineteenth century, however, those circumstances were gradually changing. A rising industry-based middle class populated the new towns of the Midwest, and, as the citizens prospered, demand for the trappings of culture increased. At the same time, the railroads provided reliable, fast transportation around which traveling companies could schedule their engagements. Live theater reached its golden age at the turn of the twentieth century, as theatrical companies brought their Broadway repertoires to the "hinterlands" and increasingly sophisticated Midwest audiences could boast of seeing the big stars in their own hometowns.[1]

Menominee's own gentry, proud of their town and determined to demonstrate their world-class culture, needed only an Opera House to complete the city. In fact, several theaters already served the area, including the 1876 Centennial Hall and the Turner Opera House, built by the Turn Verein in 1881, as well as the Scott Opera House (1899) in neighboring Marinette. None of the existing buildings, however, were felt to be sufficiently grand for the growing city. Local newspapers had been pushing for the construction of a better building for many years, and several plans had already come to nothing, when a new scheme was announced in April of 1902. A local civic group known as the Commercial Club proposed the building of a new Opera House, at a cost of $35,000, to be completed by the end of the year. The building was to be paid for by stock subscriptions and it was anticipated that at least $25,000 of the cost would be pledged immediately. The local newspaper made it clear that the new Opera House was a civic endeavor, even if it was being privately funded: "The theater inside and out will be a pride and joy to Menominee and the first night's performance will probably be the occasion of a display of civic enthusiasm not witnessed before in Menominee's history." A few days later the same paper boasted that the building would be "a monument to the progress and enterprise of this city."[2]

With funding secured, the committee was able to begin designing the new theater. Three architects were interviewed, and George Otis Garnsey of Chicago was chosen. Born in 1840, Garnsey already had an established practice in Chicago by the 1870s, designing a number

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1 Craig Morrison, Theaters (New York, NY: W.W. Norton and Co, 2006), 13-16.

2 "Opera House Costing $35,000 Will Be Built This Year," The Menominee Herald, April 12, 1902; "New Opera House Seat Sale Planned," The Menominee Herald, April 19, 1902.

of replacement buildings after the Chicago Fire of 1871.[3] Garnsey was later appointed Superintendent of Federal Buildings in Chicago in 1893, including the government buildings at the Columbian Exposition, and throughout his career worked on residential, commercial, and government projects, from blocks of modest residential dwellings in Chicago to his involvement in the design of the Illinois State Capitol at Springfield. Garnsey was also well-known for his publications, including the American Glossary of Architectural Terms (1868) and the National Builder, a pattern book periodical which he edited from 1885 to 1893.[4] Like many architects of the age, Garnsey was adept in working in the popular styles of the time, including Romanesque (Ogle County Courthouse, Oregon, Illinois, 1891), Queen Anne (the Syme House, 1880, and the Boynton House, 1887, both in Sycamore), Gothic (Kosciusko County Jail, Warsaw, Indiana, 1870 and the Congregational Church, Sycamore, 1884) and, in the latter part of his career, bungalows. Garnsey was also reported to have a nationwide reputation for theater and opera house design, and his works included a number of Chicago area theaters, including the Criterion Theater (1880), and the Empire Theater on Chicago's west side (1893). It is likely this reputation that secured his selection as the architect of the Menominee Opera House.

Garnsey's design for Menominee's Opera House was fairly typical for a late nineteenth/early twentieth century live performance theater. America's earliest theaters had followed European precedent, with a relatively simple exterior and an interior based on segregation of the various classes of theater-goers. The lower classes congregated in the pit, with the wealthiest patrons occupying boxes on the first and second tiers and the middle classes (still a relatively small audience) occupying the third tier gallery level. By the middle of the nineteenth century, however, the growing middle classes had claimed the former pit (now called the parquet) and first tiers, with boxes for the wealthiest patrons contracted to the sides of the theater. The former occupants of the pit were now relegated to the upper gallery, with separate entrances directly from the street to keep them isolated from the respectable patrons on the lower levels. Opera House exteriors and interiors became increasingly lavish to demonstrate the prosperity of the town. Finally, the "business end" of the theater – the stage – accommodated innovations in scenery design with a high stage loft which could raise or lower the canvas screens which companies often brought with them. Traveling companies required standardized stage dimensions and enclosed stages where the proscenium became a "fourth wall", as well as state-of-the-art stage lighting and equipment.[5]

Garnsey incorporated all of these elements into his design for Menominee. The exterior was constructed of a yellow, slightly oversized pressed brick known colloquially as "Pompeian brick." The exterior style was a blend of popular design elements for the time. The overall form of the building was Second Empire, with its forward-stepping central tower and corner bays, mansard roof, and cresting. The façade was dominated by Romanesque arches, with a massive central arch over the entry flanked by two-story Ionic pilasters and a large cornice and frieze at the roof line. The result was a grand and imposing façade, which contrasted sharply with the utilitarian appearance of the remaining elevations. The interior incorporated the stage enclosed by proscenium arch then in demand, with a parquet floor and two balconies for the audience, including the upper gallery accessed by separate entrances. Behind the scenes, arrangements for the comfort of the actors and stage crew were the best obtainable, with modern lighting and equipment installed.

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3 "New Chicago," Chicago Tribune, Mar 31, 1872.

4 "Garnsey Named to Succeed Bell," Chicago Daily Tribune, February 19, 1893.

5 Morrison, Theaters, 13-17.

An important concern in the post-Chicago Fire era was fire safety, especially in buildings where large numbers of people congregated, such as opera houses. After a devastating fire in Chicago killed nearly 600 patrons of a supposedly "fireproof" theater in Chicago in 1904, architect Garnsey wrote a lengthy letter to the citizens of Menominee to reassure them of the safety of their theater. Garnsey noted that it was not simply the construction materials (i.e. steel framing and brick walls) that made a building fireproof, but the arrangement of the interior. He pointed to a number of features that made the Menominee theater safe: a large lobby with a straight path between the seats and the doors; several lobby exit doors that were easy to operate and remained unlocked during performances; stairways from the lower balcony to the lobby and a separate stair from the gallery to the exterior so that patrons exiting the gallery avoided crowding those exiting from the balcony; and large exit doors behind the stage in case of fire in the front of the building. Garnsey also pointed out that the wall between the stage and the auditorium was constructed of heavy brick and the asbestos curtain would hold back fire on the stage until patrons could escape. He estimated that the theater could be evacuated in two to three minutes.[6]

The site chosen for the new theater was in what was then the heart of downtown Menominee on Ludington Avenue (now 5th Avenue), just one block off Main Street and adjacent to the Federal building (post office), which had just been constructed to the north of the site. The quarter-block site, comprising five narrow lots, had been largely empty prior to 1895, containing only a few one-story wood structures, likely storage or other subsidiary buildings for the commercial and retail buildings on Main Street whose rear elevations faced the site.[7] Between 1895 and 1901, a bowling alley was constructed on part of the site. This was moved to another location on Kirby Street to make way for the Opera House and converted to a blacksmith shop in July of 1902. After construction of the Opera House, the lot to the west of the building remained empty until the 1950s.[8]

By the first of August 1902, the newly formed Opera House Company had elected officers and formed a construction committee. Four days later the $25,500 bid of Thomas E. Young of Chicago was accepted from the thirteen bidders who had submitted for the general construction contract (only two of whom were local). Young, who was experienced in building opera houses and had worked with Garnsey before, subcontracted elements of the work to local businesses, including the masonry work, done by William Bang, and the plumbing and heating contract, let to F. Robinson. Bang began excavation immediately, a necessity if the building was to be finished on schedule a scant four months later.[9]

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6 "Builder Says That Local Theater is Perfectly Safe," The (Menominee) Daily Herald, January 7, 1904.

7 One source recorded that a jail stood in the center of the block prior to the construction of the post office and opera house.

8 Sanborn Fire Insurance Company Maps, Menominee, MI, 1884, 1887, 1890, 1895, 1901, 1907, 1913, 1921-50; "Bowling Alley Removal," Menominee Daily Leader, August 1, 1902.

9 "Officers for Opera House," Menominee Daily Leader, August 1, 1902; "Opera House Work Begun," Menominee Daily Leader, August 5, 1902.

Work continued quickly on the building throughout the fall months. The cornerstone was laid on September 9th, unfortunately with only a small ceremonial turnout due to bad weather. A sealed copper box was placed in the cornerstone containing documents related to the Opera House Company and the city, as well as one 1902 copper penny. By early November, the roof was on, the masonry work was nearly completed, and the carpenters were working day and night to be finished by the 20th so the decorators could start their work.[10]

While construction work was ongoing, the Company labored to secure an opening night play and plan the sale of tickets. By October, the Company had managed to steal away Charles Green, manager of Marinette's Opera House, to manage the new Menominee Opera House. Green immediately traveled to Chicago to book plays, and in early December he was able to announce that the opening play would be the "Prince of Pilsen," a popular Chicago production (the same company took the play to Broadway three months after it opened the Menominee Opera House). The local newspaper was able to boast that the manager of the theatrical company considered Menominee's facility "one of the best play houses in the west and equal to those of Milwaukee." In early December, four days before opening night, a drawing for the seats (which had themselves only just arrived) was held, with half of the 1200 person capacity selling in one night. The Company wanted everything to be perfect for opening night, and even went to the trouble of devising a valet parking system in which driver and passengers were each given half of a numbered ticket. Carriage drivers waited a short distance away, and when patrons arrived at the curb, they would give their half of the ticket to the manager, who would in turn call out the number to summon the driver.[11]

The last days before the opening night on December 16th were a frantic rush to complete the house. On the 12th, the decorators were putting the finishing touches on the hall and were still working on the boxes and the balcony. In the final 48 hours, the orchestra chairs were temporarily fastened down with nails (to be screwed down permanently later), the electricians installed the lights, and the permanent house scenery was put in place, although the "Prince of Pilsen" company carried its own scenery.[12]

On the 16th of December 1902, the doors of the Menominee Opera House opened at 7:30pm. The theatrical company had arrived earlier that afternoon from Green Bay with their own orchestra, augmented by local musicians. The audience, which included architect George Garnsey and the contractors, entered a spacious theater which, if not quite completed, was certainly splendid enough to justify its description as "a thing of rare beauty" by the Daily Herald. The interior decoration had previously been described in detail:

...Indian red and gold form the color scheme throughout along the walls, while the spacious ceiling will be adorned with green foliage and goldenrod upon a background of buff. Just over the proscenium arch, the huge sounding-board which will control the acoustics of the auditorium will be adorned with an artistically executed allegorical painting representing "Mirth" while the handsome drop curtain will

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10 "Cornerstone Ceremonies," Menominee Daily Leader, September 6, 1902; "To Complete Theater by December 10th," (Menominee) Daily Herald), November 6, 1902.

11 "Chas. Green to be Manager," Menominee Daily Leader, October 9, 1902; "The Opening Performance," Menominee Daily Leader, December 5, 1902; " 'Prince of Pilsen' Secured for Premier Performance," Menominee Herald, December 6, 1902; "Awarding the Opera Tickets," Menominee Daily Leader, December 12, 1902; "One Pleasing Innovation," Menominee Daily Leader, December 16, 1902.

12 The original permanent sets were later described as a red parlor set; a kitchen set, reversed with a stone dungeon; a dining room; marble pillars; an outdoor woodland scene; a seascape; a red brick wall; overhead borders; a white ceiling piece; and a street scene. They survived until at least 1944.

depict a scene from Longfellow's celebrated poem "The Courtship of Miles Standish," in which the demure little Puritan Priscilla is seen walking through the old Massachusetts village, the painting being inscribed: "When she had passed it seemed like the ceasing of exquisite music." The chairs of the orchestra and parquet will be finished in maroon plush and in perfect harmony with the prevailing colors used in the wall decorations.[13]

The opening night reverence for "Mirth" and Priscilla unfortunately did not last; the perspective made it seem as if one of the handmaiden's legs was extending from Mirth's arm socket, and "exquisite" was misspelled on the curtain. But the Opera House's patrons eventually took pride in the idiosyncrasies of their theater, pointing them out to newcomers and even mourning them when they were later painted over.

While the opening night performance was not sold out, over 1000 of the 1200 seats were filled with patrons from Menominee, Marinette, and the surrounding areas. By the next morning, when the theatrical company had left in a special train for Duluth, the Daily Herald was describing the "brilliant" opening night:

Totally eclipsing the traditional blaze of glory, the new Menominee Opera House last evening was formally dedicated in the presence of a most brilliant audience, which in addition to a large majority of the prominent residents of this city, included a liberal representation from Marinette. Owing to a sudden break in the electrical apparatus which made it impossible to properly light the house until repairs could be made, several hundred patrons were unavoidably kept outside the doors until a few minutes after eight o'clock. The few who predicted from the beginning that the thing would never be any good were compelled to acknowledge their surprise...At the conclusion of the musical prelude the curtain rose for the first time, the exact hour being 8:46 o'clock, displaying a street scene, and then Hon B. J. Brown, the venerable attorney who was most happily chosen as the orator of the evening, made his appearance amid generous salvos of applause and delivered his address...[14]

The glory of the opening night of the Menominee Opera House carried the theater forward for several seasons, during which the management provided a variety of performances, including plays, concerts, vaudeville shows and "psychic" performers. The local newspaper even reported that a theater similar in design to Menominee and built by the same contractors was being constructed in Ishpeming.[15] The Opera House went through a rough period two years after its opening, when financial difficulties made its continued operation uncertain for a time. Performances were continued, however, after the smaller stockholders were bought out by some of the larger stockholders, including C. I. Cook, and a new manager was hired. In September of 1904, a new season opened, and the large patronage of shows and active solicitation by the management of touring companies from Chicago and Milwaukee kept the Menominee Opera House attractive to audiences and actors alike for the next several years. In June 1907, the local newspaper was able to boast that the previous season had been "artistically and financially the most successful in the history of the house."[16]

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13 Jean Worth, "Ye Town Crier (Column)," (Menominee) Herald Leader, January 5, 1952.

14 "Menominee Theater's Brilliant Opening," Menominee Daily Herald, December 17, 1902.

15 "Ishpeming's New Theater," (Menominee) Daily Herald, June 16, 1903. This theater, located on Cleveland Avenue between 2nd and 3rd streets, no longer exists.

16 "Opera House to Re-open," (Menominee) Herald Leader, September 3, 1904; "Menomi-

Ironically, 1907 was also the year that Menominee's first movie theater opened. Although no one realized it at first, the movie theater would first encroach upon, and then take over the theater-going audience, signaling the end of the golden age of live performance theater in America. The chief advantage of movies was their cost. Rather than hiring theatrical companies with upwards of 100 performers and crews who could only perform in one location at a time, early movie theater operators only had to purchase a film and hire a projectionist and a piano player, with the opportunity for multiple showings. The earliest movie theaters needed no elaborate house with stage and auditorium; most were converted retail stores with chairs, a projector, a screen and a piano. Menominee's first movie theater was of this variety, located in a remodeled storefront in the same block as the Opera House. At first a novelty, movies gradually crowded out live performances as the twentieth century progressed, particularly when talking pictures arrived on the scene in the late 1920s and theaters abandoned their pianos and organs for wired sound.[17]

The Menominee Opera House did not immediately feel the effects of the arrival of motion pictures. In 1909, the local newspaper was still able to boast of a "brilliant" theatrical season under the management of C. I. Cook, with over a dozen first rate productions secured.[18] Indeed, many of the greatest stars of the day performed in the Opera House in the second decade of the century, including May Robson, Minnie Maddern Fiske, Douglas Fairbanks, Sr., John Philip Sousa's band in 1912, Maude Adams in her most famous role in Peter Pan, August 1913 (Adams was the inspiration for the Elise McKenna character in "Somewhere in Time"), and Irish tenor Fiske O'Hara in 1917. The Winninger Brothers brought their popular stock company to Menominee for a week-long engagement over a period of twenty years. The most famous of the Winninger brothers was Charles, best known for originating the role of Captain Andy in Show Boat.

In addition to serious stage plays and musicals, various shows and community events were also hosted at the opera house, including classical and modern dancers, "Uncle Tom Cabin" shows, magicians, Punch and Judy shows, local high school graduations, and orations by politicians such as Senator Arthur Vandenberg and Governor Frank Murphy (later a justice of the US Supreme Court). Throughout the early decades of the twentieth century, the Opera House was a vibrant part of Menominee's cultural and social life, and a lifelong love for theater was instilled in many of the young people who saw shows there.

Episode Two: Movie Theater to Municipal Auditorium and Back Again (1920-1950)

By the early 1920s, however, the Opera House was faltering under the onslaught of motion pictures. Already by 1919 it was showing movies. A short-lived proposal in that year to move the building to a more central location was deemed impractical, and the Opera House survived its first threatened demolition, the idea being to wreck the building and salvage its materials to be used in erecting a "theater which would meet the demands of an up-to-date movie house."[19] In July of 1922, the Opera House, now known as the Menominee Theater, was sold to the Bennie Brothers of Florida, who remodeled the theater to show both first-run movies and live performances. The theater was redecorated for the first time since its opening, with the foyer repainted in ivory and walnut. The "old rose" color of the auditorium was retained (for

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nee Theater," (Menominee) Daily Herald, June 7, 1907.

17 Morrison, Theaters, 22-28.

18 "Theatrical Season will be Brilliant," (Menominee) Herald Leader, August 21, 1909.

19 "Not Advisable to Move Theater," (Menominee) Herald Leader, March 14, 1919.

the practical reason that the original tint would bleed through any new paint) and highlighted with ivory and gold boxes, ivory panel borders, and touchup of the old rose. An organ was also installed and the building thoroughly cleaned, and with new lighting and brighter colors, the management was confident that it would be the finest motion picture house between Duluth and Milwaukee and would be able to "make good" (financially) for the first time in its history. The theater reopened on August 21st of 1922 with a musical comedy, demonstrating that live theater still had a place in Menominee, followed the next evening by a first run film, "Reported Missing."[20]

The Bennie Brothers' optimism unfortunately did not last long. Their tenure at the Opera House is chiefly remembered for the wildlife that roosted in the building – patrons remember bats flying across the screen during movies, and a lion lodged for a time in the basement, remnant of an ill-conceived circus venture. C. I. Cook apparently bought the building back in 1926, but this was the same year that Marshall Burns Lloyd, Menominee's former mayor, inventor and manufacturer, opened his own movie theater. By 1929, Lloyd's Theater had completely eclipsed the Opera House and the building was again under threat of demolition, this time by a "Marinette party" who intended to tear down the building for salvage and sell the five lots on which it stood. At this point, the city of Menominee stepped in and purchased the building and all its contents for about $2000, including back taxes that were owed on the property. The city council believed the building could continue to be used for road shows as well as serving as a community auditorium (Menominee had none besides the high school and a hall on the second floor of city hall) for conventions, public meetings, and other events. The aldermen unanimously voted that the purchase and continued operation of the Opera House was "in the best interests of the city."[21]

Five years later the Opera House received yet another new lease on life, with a name change and a second redecoration project. In January of 1934, the city council voted to officially change the name of the building to the "Municipal Auditorium." The following month, Menominee received approval for several Civil Works Administration projects, including the redecoration of the Opera House. The Civil Works Administration, or CWA, was a short-lived (five month) New Deal program devised to create high-paying construction jobs during the winter of 1933-34. Work at the Opera House included rehabilitation of the wiring system and redecoration of the interior, including replacement of cracked plaster, the removal of the calcimine finish from the walls and repainting, and the preservation of the canvas oil painting on the ceiling of the auditorium. CWA workers removed evidence of the building's past incarnations, including old playbills and the motion picture projection equipment.[22]

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20 "Theater Sold to Florid Firm; Opens August 1," (Menominee) Herald Leader, July 11, 1922; "New Menominee Theater Premier Playhouse in UP," (Menominee) Herald Leader, July 18, 1922; "Theater Opens as Movie House," (Menominee) Herald Leader, August 18, 1922.

21 "City Buys Menominee Opera House," (Menominee) Herald Leader, June 20, 1929.

22 "Change in Name of the Opera House, (Menominee) Herald Leader, January 5, 1934; "CWA Projects Start Monday," (Menominee) Herald Leader, February 24, 1934; "CWA Crew Finds Reminders of Theater's Colorful Past," (Menominee) Herald Leader February 27, 1934.

The Opera House remained the city's municipal auditorium for the next ten years. Events during these years included high school graduations, concerts, a free Halloween party for children, a four day cooking school and fashion show, and Little Theater and high school plays. Although when it was purchased in 1929 the city had anticipated that rental fees would pay for its maintenance, it appeared that few rental fees were collected, and by 1938 at least one alderman was terming the building a "white elephant." Yet another proposal to raze the building and salvage the materials, this time for a Works Progress Administration project to build a new city hall, came to nothing. During World War II, Jim Mikolasek, who managed the Opera House for the city for many years, staged the annual Servicemen's Fund show, a variety show that raised money for soldiers leaving for war. Local theater productions were still staged in the building, such as the September 1944 production of "The Absent Minded Man" which rented new stage settings in place of the outdated but still well-cared for original 1902 scenery still in place on the stage. In 1944-45, the city decided it was cheaper to install a new boiler than to repair the old one; however the installers (Deschaine Brothers of Menominee) encountered a problem while trying to install the new boiler in the basement. It had to be lowered through the trap door, but the door was 36" wide and the boiler 37". The plumbers eventually pried the trap door open with jacks and two-by-fours to produce the extra inch of clearance.[23]

The civic career of the Menominee Opera House came to a close in late 1945, when the city leased the building to Maurice Cammack for its second reincarnation as a movie theater. Cammack installed a fireproof projection booth at the rear of the first balcony, hung a "psychorama" or beige curtain as a backdrop for "home theatrics" and introduced other improvements, such as a popcorn machine. Cammack also erected a "Menominee Theater" sign at the corner of Ludington Avenue and Sheridan Road. Two years later, Cammack purchased the building outright for $15,000 under an option of the lease agreement, which required him to operate the theater for five years as well as provide access to the theater twenty nights a year for civic functions. The sale was approved by the voters by a two to one margin.[24]

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23 "Council Considering Razing Opera House," (Menominee) Herald Leader, October 4, 1938; "Deschaine Magic Act Plays at Opera House," (Menominee) Herald Leader, March 19, 1945.

24 "Move House to Erect Sign," (Menominee) Herald Leader, October 2, 1945; "Cammack Buys Theater From City For $15,000," (Menominee) Herald Leader, April 22, 1947.

Episode Three: Decline and Rebirth (1950 to present)

A fire in the early morning hours of March 9, 1950 ended the use of the Menominee Opera House as a theater of any kind. Maurice Cammack had been operating the theater on weekends (Friday through Monday), so the building had been empty for two days when fire broke out in the basement on Thursday morning from an undetermined cause. The fire spread slowly up through the stage floor and ignited the scenery, creating an inferno that reached up into the stage rigging and loft. Although firefighters were able to check the fire before it burned the entire auditorium, the intense heat scorched the varnish off the seats and blasted out windows in the front of the theater. The water poured into the building to fight the fire, which later froze in the cold March air, served to increase the damage to the old building. Cammack, whose investment in the building was only partially insured, did not have the funds to rebuild, and less than two years later went bankrupt.[25]

Miraculously, the theater, which by all rights should have finally been torn down after the devastating fire, was purchased in the bankruptcy proceedings by John Stang, operator of the Stang Tank Line and Stang Sales and Service. Stang had no interest in rebuilding the Opera House as a theater, but intended to use it as a warehouse. In February of 1952 the seats were removed and the entire floor was repoured with concrete to create a level base for the storage of paper pulp. At around this time, the main balcony was also removed and a concrete block addition was built on the empty lot to the west.[26]

Stang's transformation of the Opera House into a storage building saved it for a time, but for the next half a century the building's fate would see-saw between restoration and condemnation. One of the earliest efforts to restore the building came in 1968, when a citizen's group called the Civic Heritage Development proposed to restore the buildings on the lower end of 1st Street as well as the Opera House. An architect from Chicago was brought in to inspect the building, and the Menominee Herald Leader insisted that the Opera House could be saved and would reinvigorate Old Town Menominee, becoming again the "heart of the Twin Cities."[27]

The Civic Heritage Development effort, part of an early interest in historic preservation in the 1960s, was unable to restore the Opera House, and the building went into a further decline. Part of the roof collapsed in January of 1973, possibly due to the weight of accumulated snow, and the city started condemnation proceedings on the building, now owned by Richard McKinnon, two years later.[28] The local historical society pleaded with the city for more time, noting that the building could be placed on the National Register of Historic Places and thus be made eligible for restoration funding.[29] The Michigan Council for the Arts funded a visit by a representative of the History Division of the Michigan Department of State, who urged that the building be saved from premature demolition.

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25 "Ex-Opera House Stage Destroyed, Future Uncertain," (Menominee) Herald Leader, March 9, 1950; "Inspect Theater to Fix Damage," (Menominee) Herald Leader, March 10, 1950.

26 "Stang Purchases Theater Building," (Menominee) Herald Leader, January 3, 1952. "Theater Warehouse Conversion Starts," (Menominee) Herald Leader, February 2, 1952.

27 "Opera House Remembered," (Menominee) Herald Leader, August 17, 1968.

28 "Opera House: Is It Doomed?" (Menominee) Herald Leader, January 26, 1975.

29 It was never placed on the Register as an individual building, but it appears to be within the boundaries of the First Street National Register Historic District.

In January of 1976, the city gave the building a twelve month reprieve. The owners had given up on the Historical Society plan, complaining that the Society had not agreed to lowering the north wall (it was in danger of falling), because "it wouldn't be an opera house any longer." Instead, the owners planned to lower the north, east, and west walls, replace the roof, and repair the doors, in order to turn the building into a small machine shop.[30]

These planned repairs never took place, leading the council to condemn the Opera House in April of 1977. Demolition did not occur, probably because the building lay within the jurisdiction of the city's Historic District Commission.[31] Members of the Vennema family purchased the building around 1979 in order to save it from the demolition threat hanging over it, and carried out some remedial restoration work in the fall of 1981. The collapsed north wall was rebuilt and other walls shored up and repointed, the concrete block addition was removed, the roof was replaced, and damaged trusses were braced. Tentative plans to restore the interior never materialized, although the Vennemas kept the structure sound and the exterior tight in anticipation of the day that restoration would be possible.[32]

In 2004, the Vennema family corporation agreed to donate the building to the newly formed Menominee Opera House Project, who intended to restore the building for the purpose it held for almost fifty years, as a live performance and community event venue. After two years of fundraising, the non-profit organization received the deed to the building. Funds for a master plan, including a state grant, were secured in 2007 and a design team chosen for the restoration master plan.

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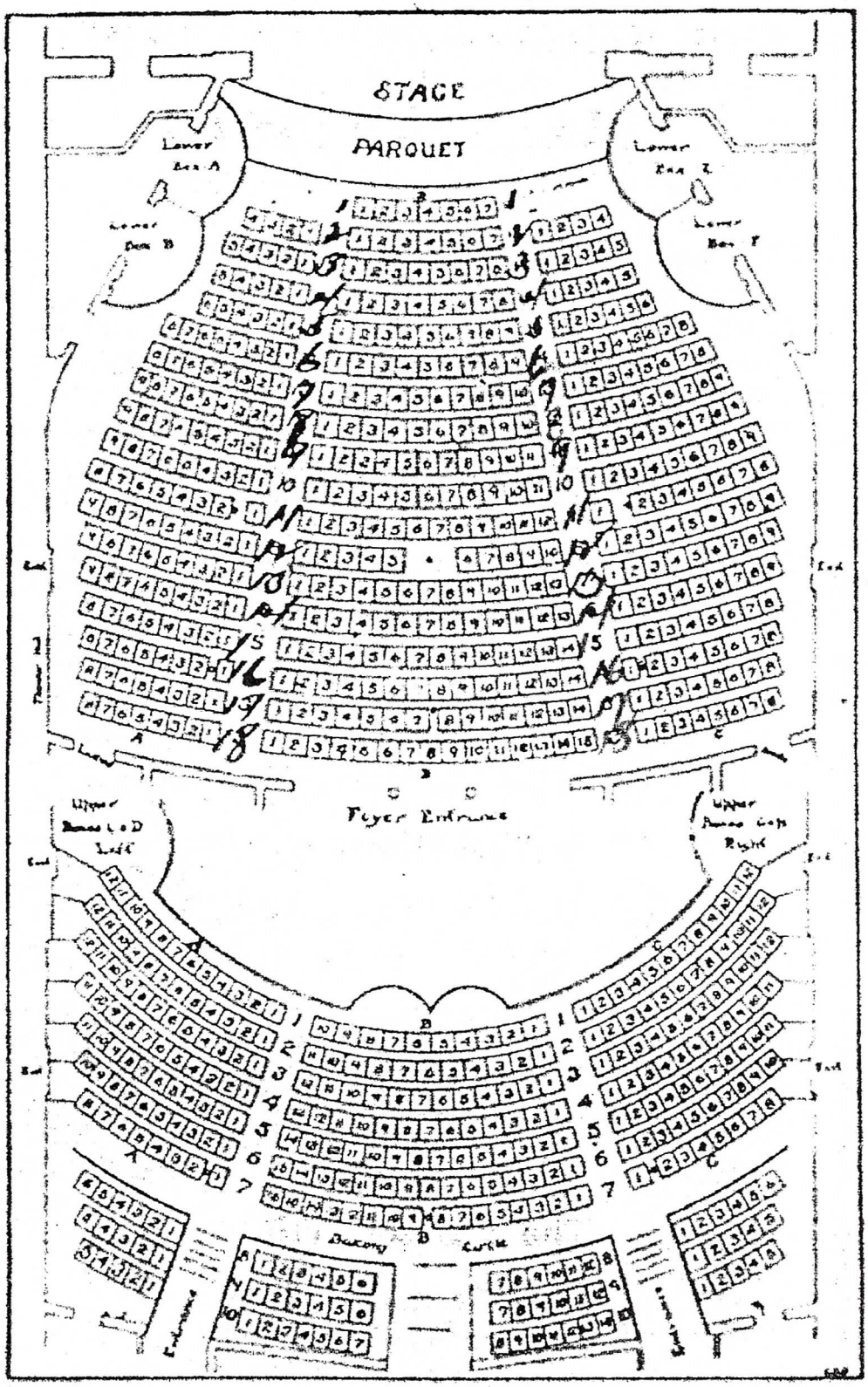
30 "Council Delays Opera House Issue: Restoration Possible," (Menominee) Herald Leader, January 1, 1976; "Council Gives Owners 12 Months to Repair, Remodel Opera House," (Menominee) Herald Leader, January 10, 1976.

31 "Opera House Condemned," (Menominee) Herald Leader, April 19, 1977.

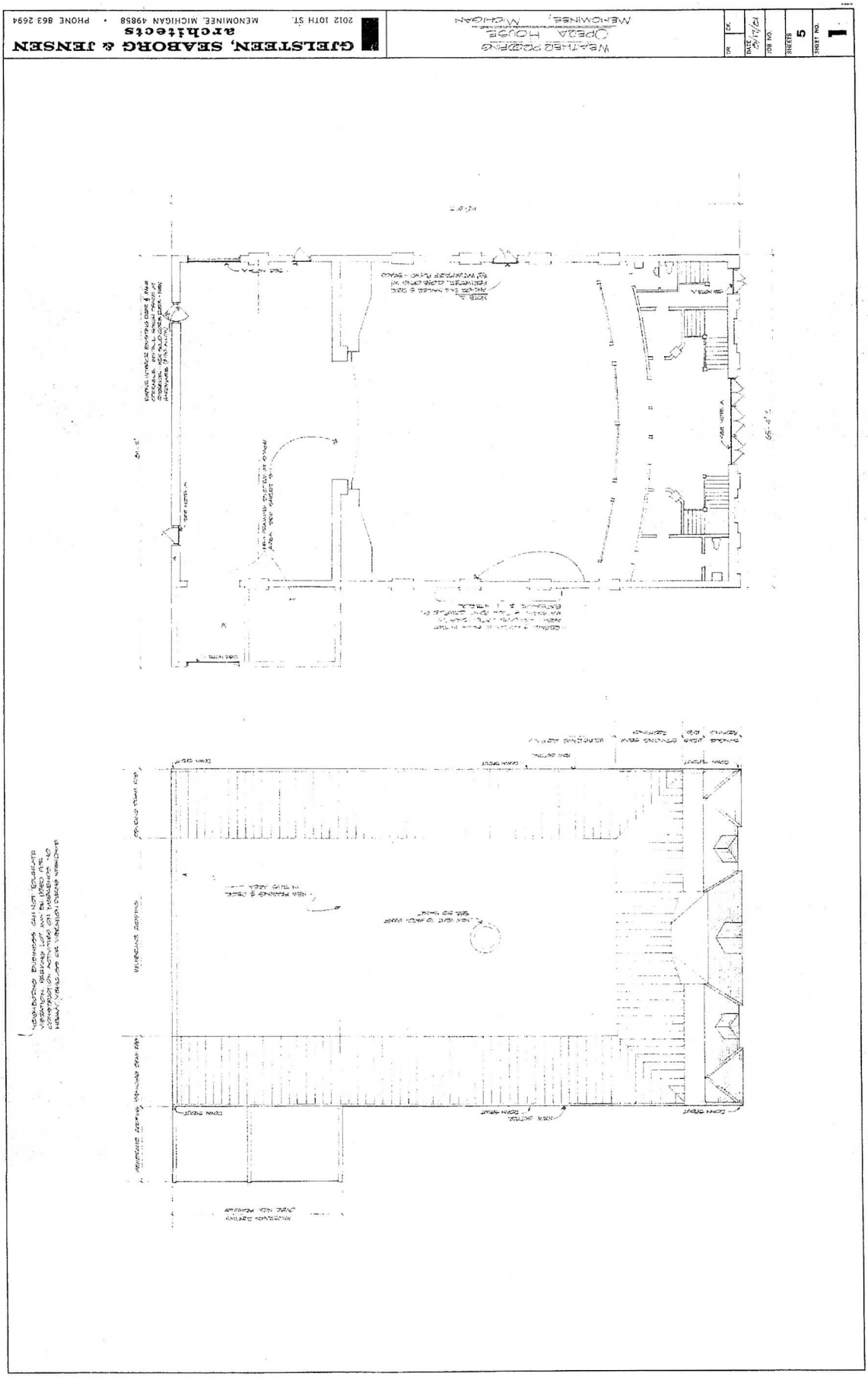
32 "Major Project," (Menominee) Herald Leader, September 16, 1981; "A Real Balcony Seat," (Menominee) Herald Leader, November 5, 1981.

Building Information

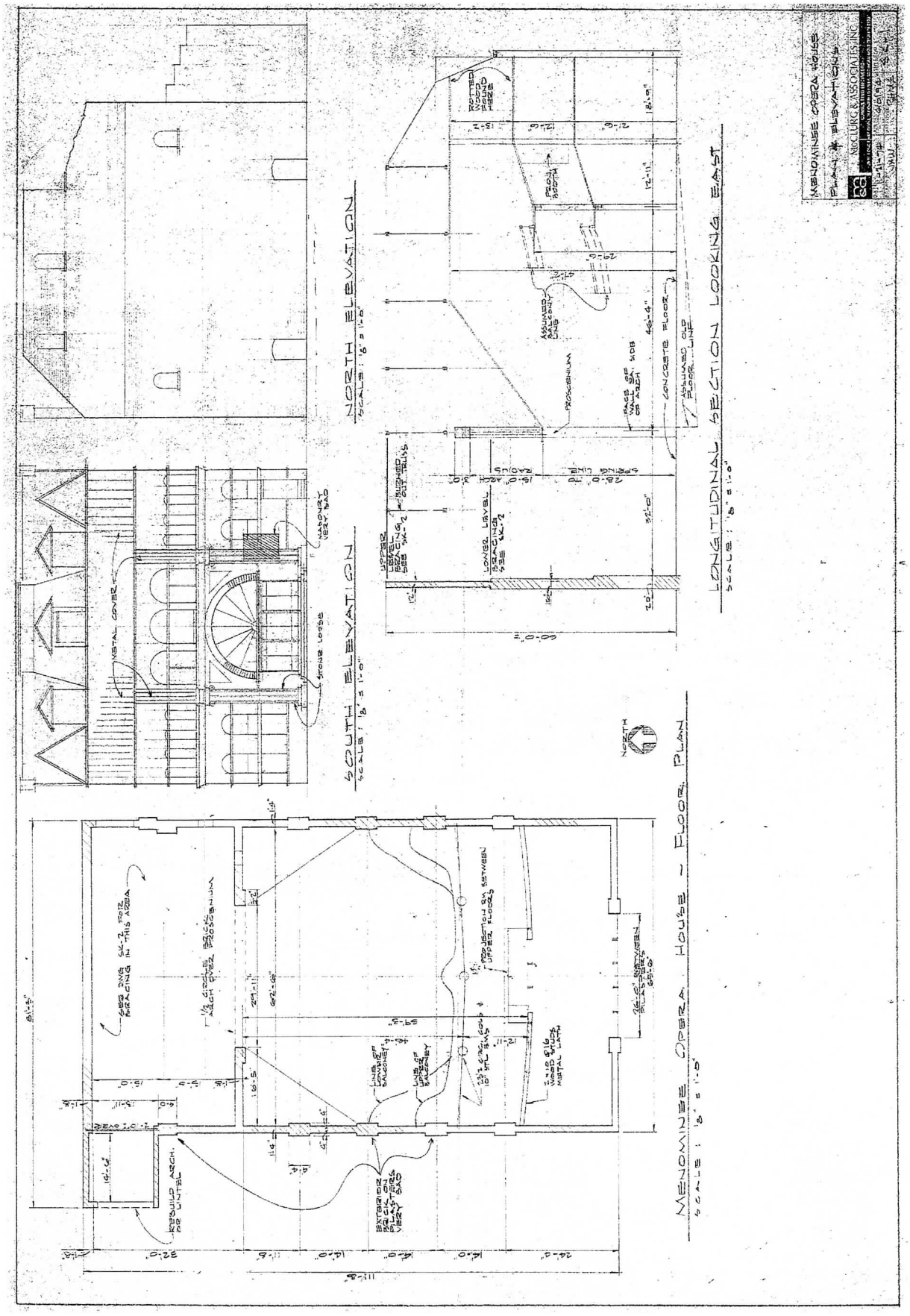
Menominee Theatre Diagram



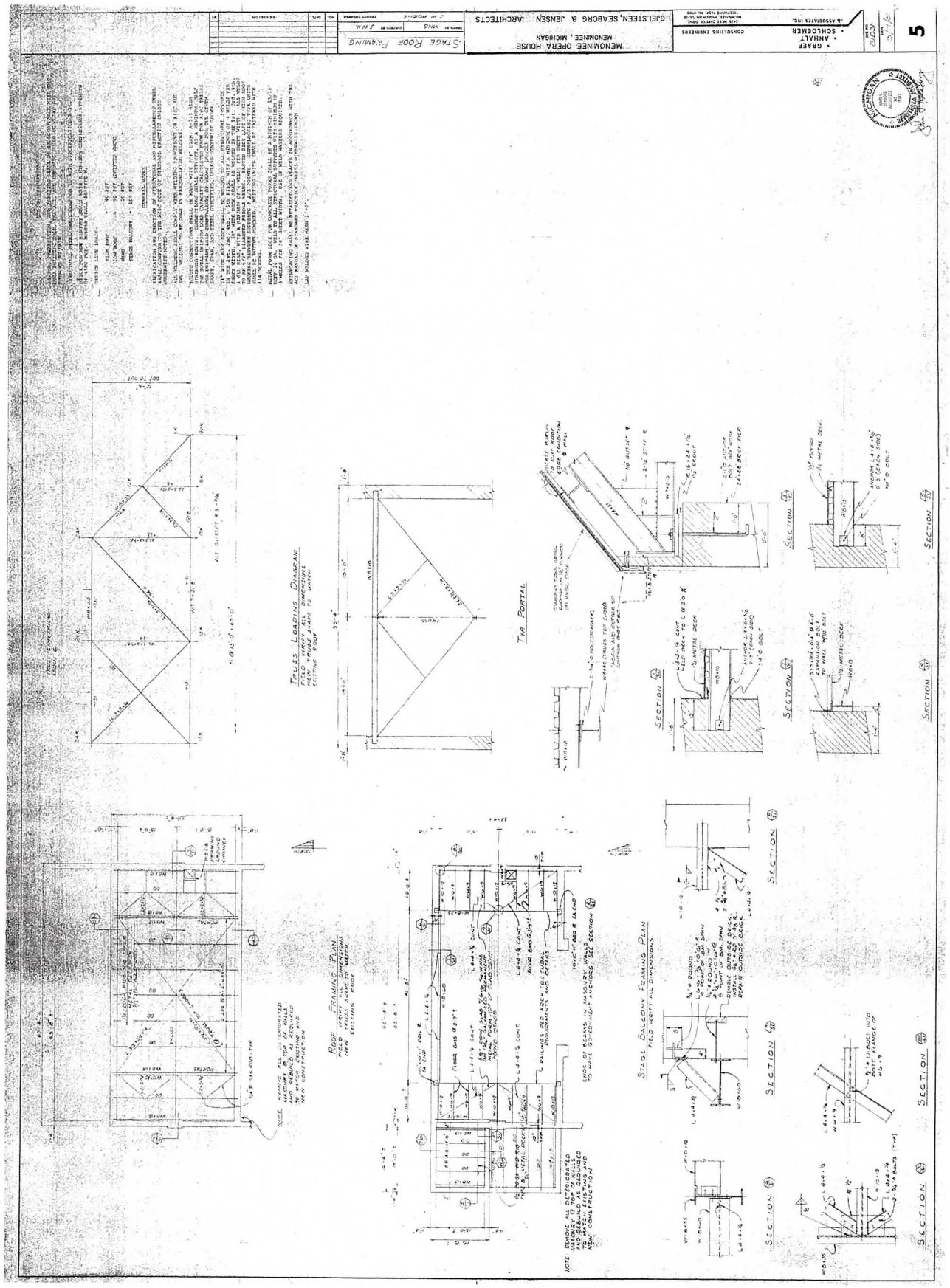
1981 Theatre Upgrades



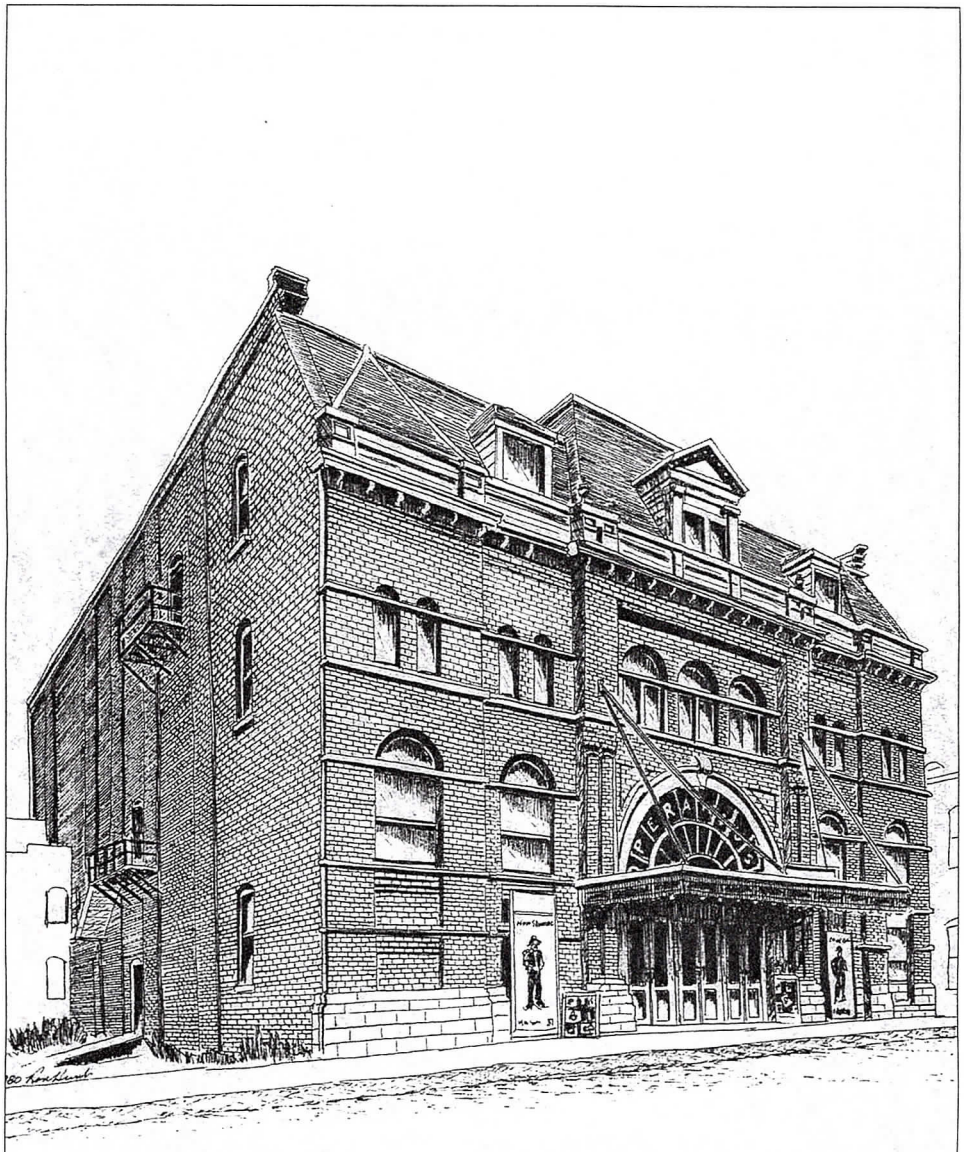
1981 Theatre Upgrades



1981 Theatre Upgrades



Historic Photographs



Menominee Opera House – 1902





Opening Night
Dec. 16, 1902





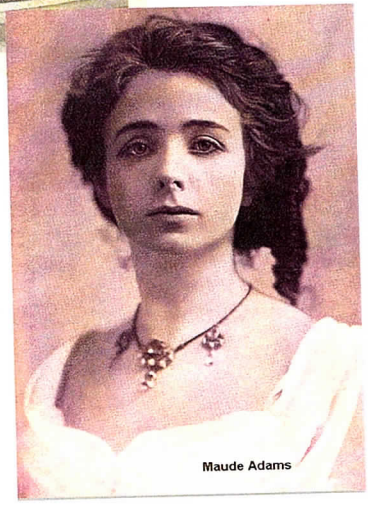
Mack Cammack and
Staff - 1948



Menominee Civic Chorus
February 21, 22, 1944

Menominee Service Men's
Show, February 21, 22, 1944





Maude Adams

March 9, 1950

Ex-Opera House Stage Destroyed; Future Uncertain

Cause Of Early Morning Fire Of 42-Year-Old Auditorium Unknown

Fire of undetermined origin but believed caused either by defective wiring or from the heating plant, gutted the stage and badly damaged the auditorium of the 800-seat Menominee theater early today.

The theater is owned by M. [illegible] Cammack who purchased it from the city five years ago and has since operated it as a movie theater.

Damage in the fire had not been estimated this afternoon. Cammack

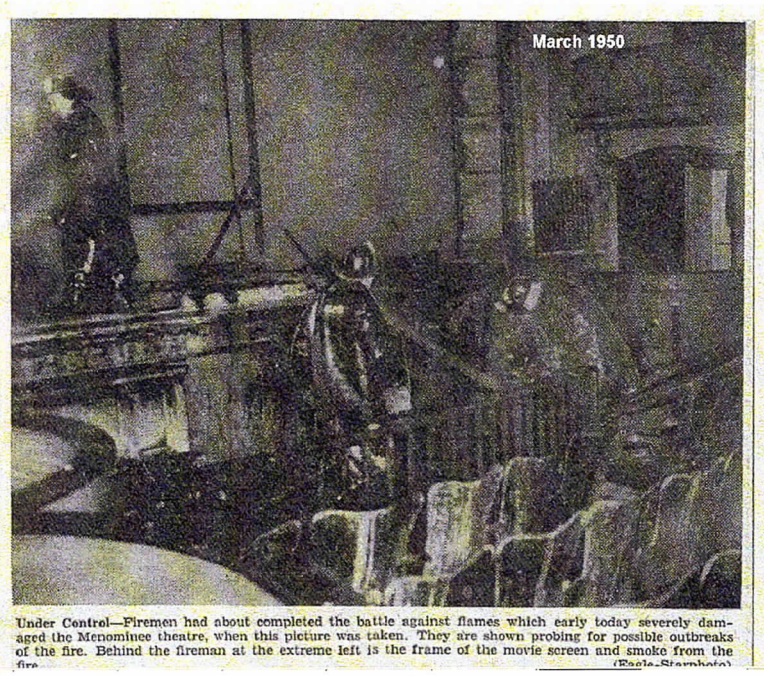
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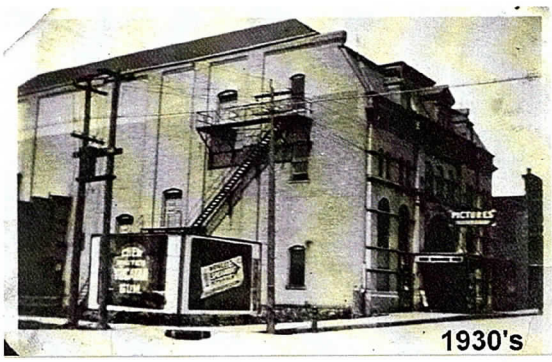
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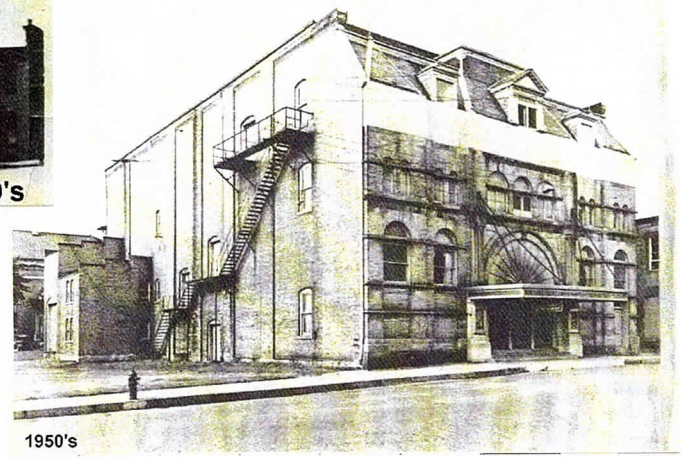
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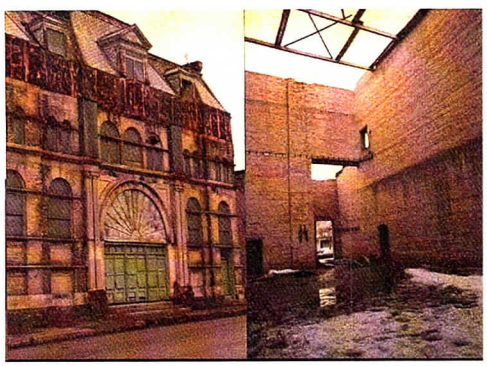
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did not e



Under Control—Firemen had about completed the battle against flames which early today severely damaged the Menominee theatre, when this picture was taken. They are shown probing for possible outbreaks of the fire. Behind the fireman at the extreme left is the frame of the movie screen and smoke from the fire.







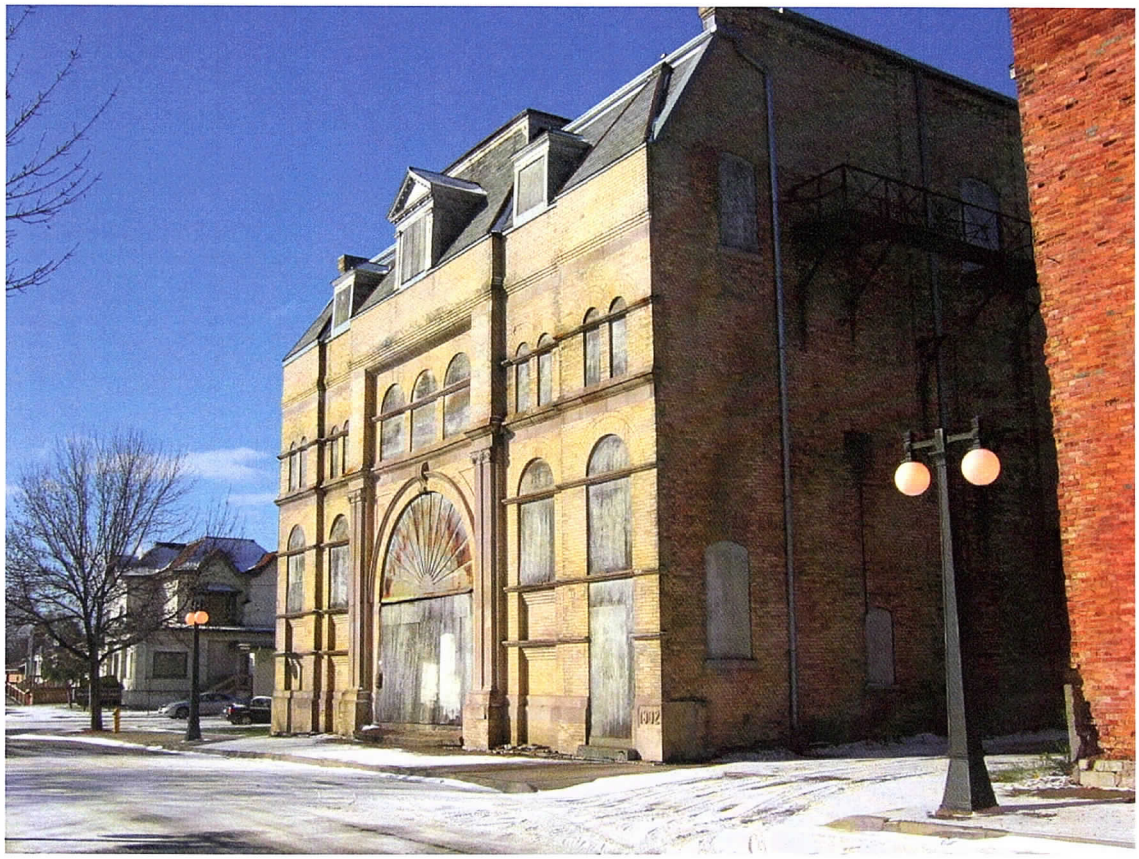




III. SITE ANALYSIS

Existing Photographs



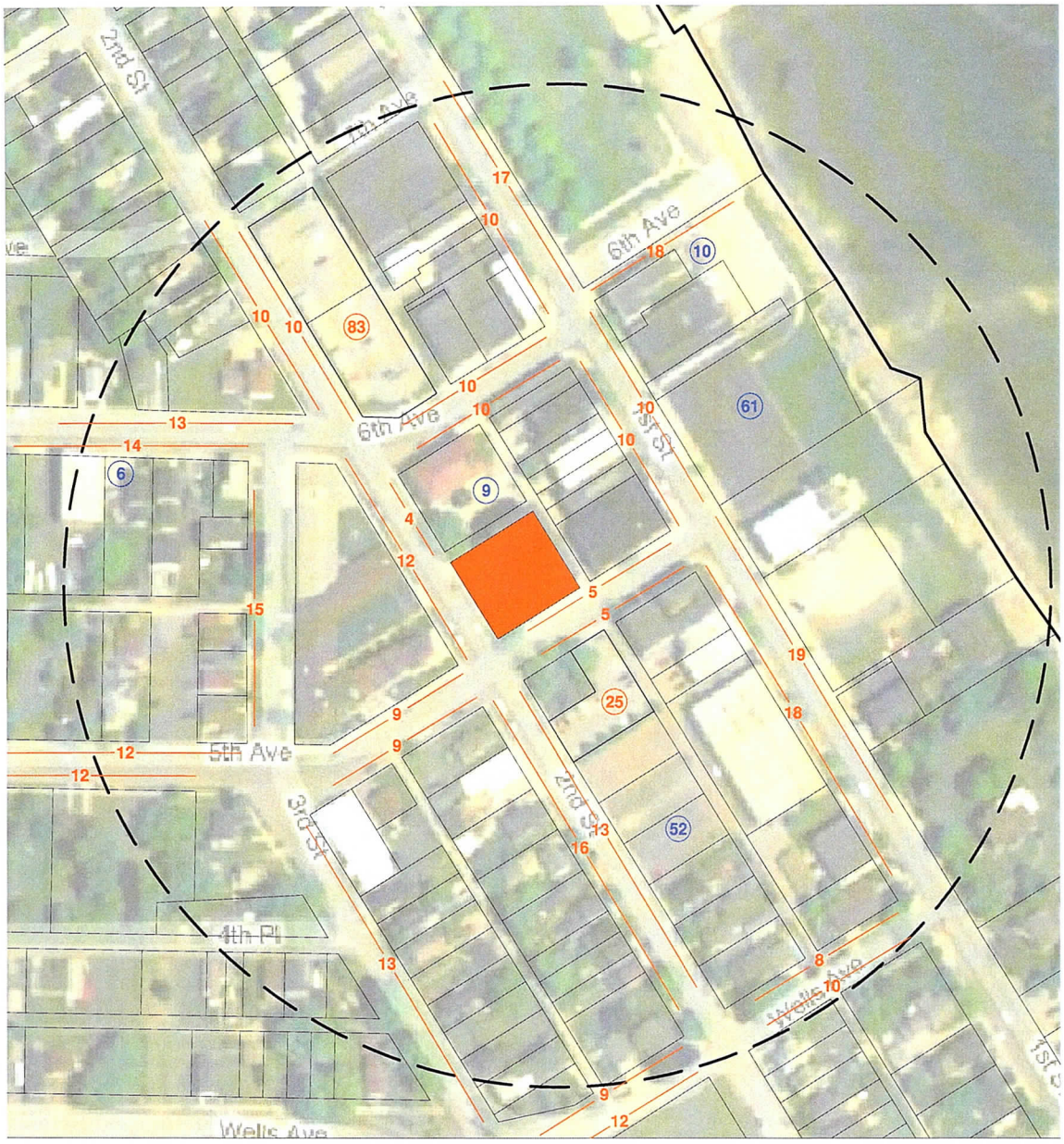








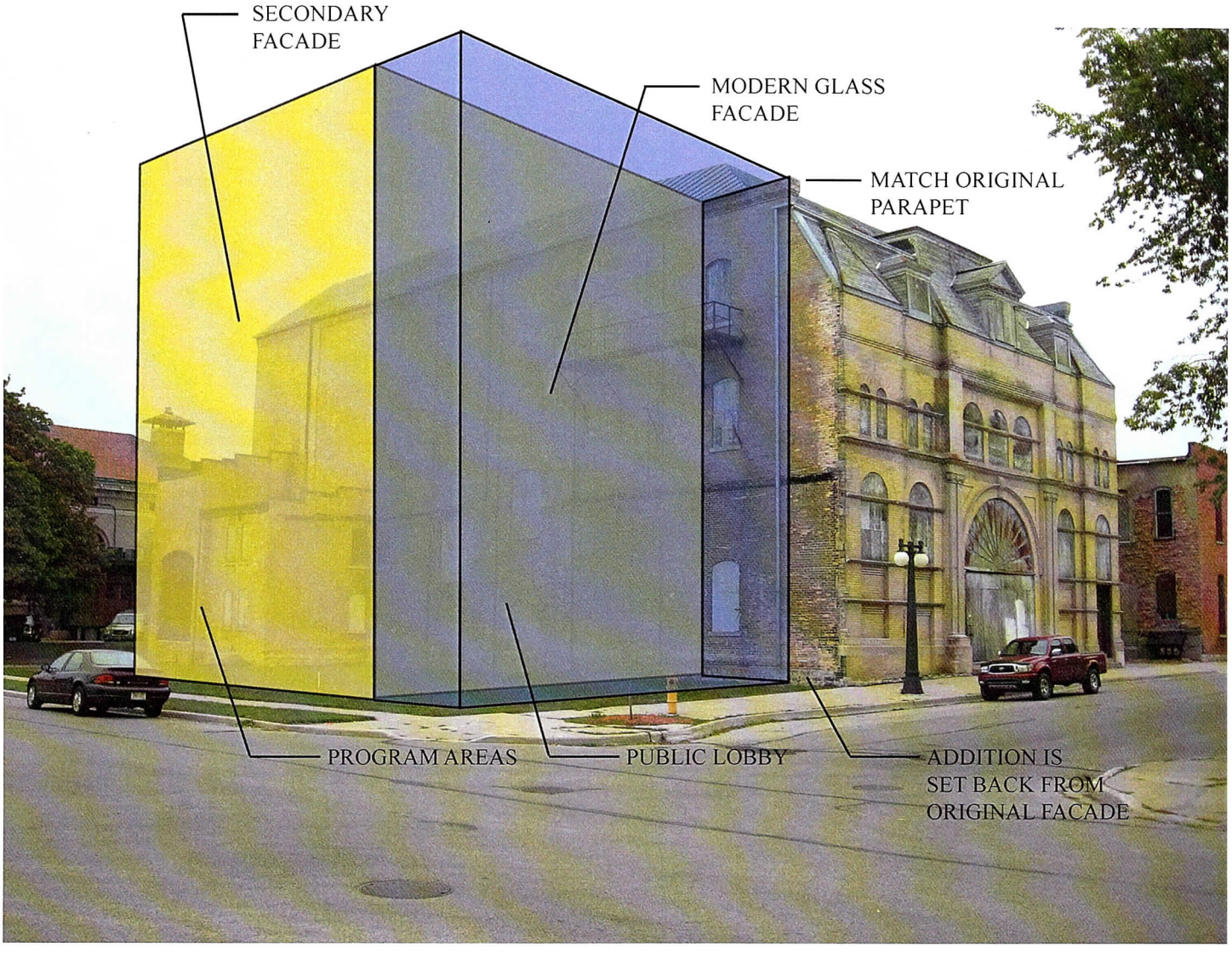
Downtown Location



The Opera House is located at 122 Fifth Avenue, in Menominee's historic downtown. This is one block west of First Street, the main street of downtown. Victorian commercial storefronts line the west side of First Street overlooking the harbor and a city park that provides public access to the water. In recent years redevelopment of these historic buildings has brought retail, housing and restaurants back to the downtown. A "Blueprint" for downtown development highlights the important role the restored Opera House will play in bringing more people to downtown.

Being located one block off the main street is an advantage to the redevelopment of the Opera House. An adjacent vacant lot provides space for the additional program spaces need for a modern performance venue. The audience drop off can be accomplished without disturbing traffic on the main roads. Parking for over almost 650 cars can be found within two blocks of the Opera House. Loading of touring shows is easily accommodated from the public alleys on two sides of the building as well as Second Street.

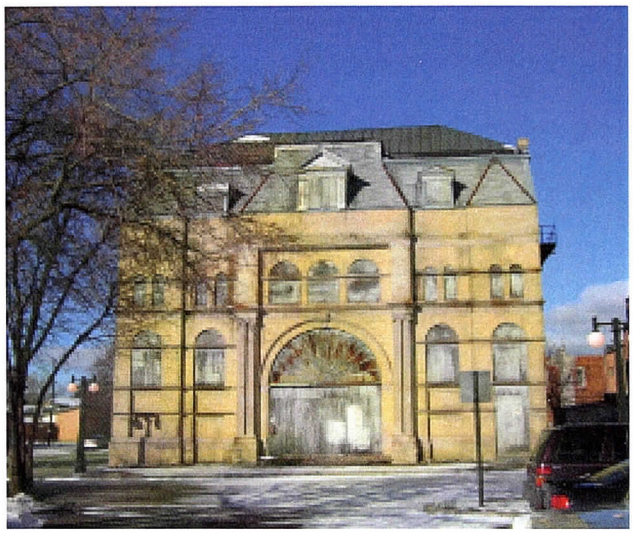
Building Addition



IV. Building Conditions Analysis

Building Conditions

GENERAL DESCRIPTION



The Menominee Opera House is a three story brick theater building. Its ornate, eclectic front façade faces south toward 5th Street. It is bounded by public alleys to the east and north, with an open lot to the street corner on the west side. While the side and rear elevations are very utilitarian in nature, the front elevation is unquestionably the primary façade and architectural statement of the building. It is constructed from hard-fired yellow face brick, with cast stone trim resembling Indiana limestone. Its Romanesque elements are suggestive of Louis Sullivan's work, reflecting theater architect George O. Ramsey's Chicago influences. The façade prominently features a dramatic arch and lunette window over the entrance doors and is crowned with a mansard roof. A secondary entrance accessing the gallery level balcony is also located on the front façade, tucked away on the right-hand side.

EXTERIOR

Roofing Systems

Sheet Metal Roof: Sloped portions of the roof over the House, Stage, and a portion of the lobby are protected by a standing seam roof system, which appears to be galvanized steel. Some corrosion of the roof panels was observed. Additionally, some of the standing seams and many of the flat interlocking seams of the roof system appear to have lifted, providing a conduit for wind-driven rain to get under this roof system. Substrate conditions beneath the roof system are unknown and generally could not be observed. The metal deck system over the stage house, the underside of which is visible, showed no visible signs of corrosion or water penetration. Water infiltration, apparently from the roof, was observed in the form of drips and puddles within the house. It is not clear whether this is due to failure of the standing seam roofing, the membrane roofing over the low-sloped center roof area, or a combination of the two.



Asphalt Shingle Roof: The mansard roof crowning the front (south) elevation was historically a hexagonally-cut slate shingle system, but in its current state is clad with gray square-tab asphalt shingles. The slate roof appears to have been replaced during the 1981 stabilization project. The shingles are most likely beyond their expected service life, exhibiting curled edges and deterioration of their wearing surface. The shingles are also rust-streaked, apparently from runoff from the galvanized sheet metal trim.

Membrane Roof: Low-slope areas of the roof are clad with what appears to be an EPDM membrane roof system. The roof system is reported to be about 20 years old. These roofs were not safely accessible for inspection, but EPDM roofs are typically at or near the end of their expected service life at this age. From the ground, some loose membrane, perimeter flashings and base tie-ins were observed over the dressing room wing. Additionally, ice streams were observed on the interior face of the exterior walls in the dressing room area, indicating that the roofing has failed.

Metal Flashings and Trim: Copings, caps, ridge and valley flashings, and cornices and cladding at dormers appear to be galvanized steel sheet. Additionally, various ornamental features such as dentils, pilaster capitals, and other applied ornaments appear to be either formed sheet metal or cast metal. The sheet metal and ornamental work appears to be generally intact, though it exhibits a significant amount of rust. Some ornamental cast components are damaged or missing, as are the original finials and cresting once found on the building's rooftops.

Gutters and Downspouts: Gutters and downspouts throughout the exterior envelope are galvanized steel. These systems have generally failed or are missing altogether.

Masonry

Face Brick: The face brick used at the south elevation is a hard-fired yellow brick. The brick units themselves generally appear to be intact and in good condition. The brick was chemically cleaned as part of the 1981 stabilization work. A few cracked units are visible, but most movement failures appear to have happened at the mortar joints. There are a significant number of open and deteriorated mortar joints. Some joints are completely devoid of mortar, and the bricks have moved or settled as a result. A significant portion of this brick at the upper portion of the façade has apparently been displaced and appears to be no longer properly anchored to



the backup wythes. It is likely that this deterioration has been exacerbated by water infiltration into the wall. Step cracking is found in the central bay above the entrance, both in the brick field above the mezzanine-level windows and in the pilasters adjacent to the center bay. Combined with observed sagging in the stone sills and belt courses in this area, it appears that the entire center section of the front elevation has shifted slightly downward at some point. It is not clear whether this settlement is currently active, or exactly what the cause is, although it is possible that it is related to settlement or shifting of the projection room structure at the interior. At the southwest corner of the building, some of this brick was removed to tooth in concrete masonry units which were installed with the construction of a warehouse addition. These concrete masonry units were left embedded when the addition was demolished.

Common Brick: Backup wythes at the south elevation, and other brick construction throughout the building, is of a soft, pale buff common brick which appears similar to the "cream city brick" commonly found in Wisconsin. The common brick construction appears to be in good condition and stable overall. There is significant unit and mortar joint deterioration at areas of failed downspouts, as well as open joints at tops of walls and parapets, likely caused by water infiltration in these exposed areas. A significant amount of what appears to be carbonaceous atmospheric staining was observed on the exterior surfaces of the common brick. Additionally, rust stains associated with runoff from steel and iron anchors and brackets is found adjacent to these items. Concrete and asphalt remain adhered to the brick masonry along the west elevation, at the floor and roof lines of the former warehouse addition. Additionally, the reglet for the roof termination, which was cut into the brick, remains visible and open. Step cracks were observed over arched openings at several locations, indicating movement in the masonry at some point. It is not clear whether this movement is still occurring. It appears that this movement is related to the masonry arches rather than settlement of the walls as a whole. At the east and west walls of the house, it is possible that point loads imposed by balcony framing over the centerlines of the archways may be contributing to this movement. At the former main floor egress doorway on the west elevation, the arch itself has partially failed.



Stone: Ornamental belt courses, sills, transoms, and decorative pilasters found on the south façade are made from a cast stone similar in appearance to Indiana limestone. The stone units themselves generally appear to be intact and in good condition, although some cracking is found at stress points, particularly in transom bars, and surface spalling is found in the plinth stones surrounding the entrance doors. Mortar joints in the stone are generally open and failed. The stone sill and belt courses are

damaged at the southwest corner of the building, where they appear to have been cleft off to accommodate installation of the former warehouse addition.

Foundations: The foundations are limestone rubble, laid in flat courses and set with wide mortar joints. The foundations appear to be generally sound, but exhibit significantly deep open mortar joints at exposed surfaces. The foundations do not perfectly match the perimeter dimensions of the building at the exterior. A mortar wash covers a ledge at the top of the foundation wall at both the east and west elevations. The foundation walls are flush with the brick piers. At the front elevation, a significantly deeper ledge is found at the top of the foundation wall. Any mortar wash applied to this ledge has subsequently deteriorated away, and the joints are deteriorated to the point where the stones are effectively dry-stacked. This has permitted and encouraged soil infiltration in the joints and growth of vegetation. The settlement of the foundation wall has also allowed the bottom courses of face brick to settle. Investigation of the interior face of the foundation wall in this area indicates that the entire wall has not settled, suggesting that this damage has so far been limited to only the outermost wythe of the wall.



Windows and Doors

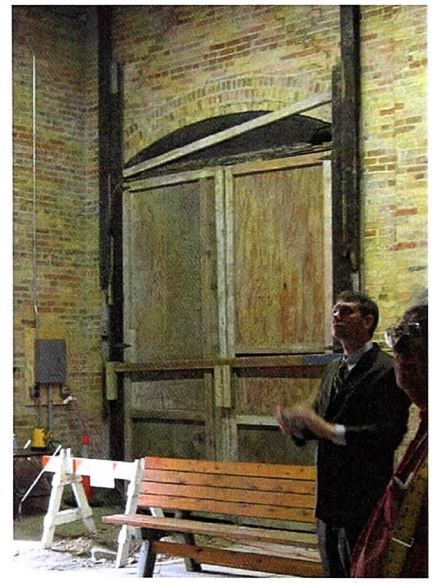
Windows: Remnants of the original wood double-hung windows remain in place, visible from the interior of the building. The windows are all covered with plywood to the exterior and are generally in very poor condition.



Entrance Doors: The original wood entrance doors remain in place. These doors are in very poor condition, exhibiting significant rot and failure of joints.

House Egress Doors: the original wood egress doors remain at most locations within the House, on both the east and west elevations. These doors are in very poor condition, exhibiting significant rot and deterioration.

Stage Exit Doors: The two remaining stage exit doors are located on the rear (north) elevation of the building. Although possibly the original doors, they are in poor condition, with their bottom rails cut down to match the elevation of the concrete warehouse floor. The doors swing into the building.



Stage Loading Doors: Large arched stage loading doors are found at the east and west ends of the stage house. The doors are built up from solid lumber in a herringbone pattern. The doors are hinged to swing inward, though on the east doors there is an overhead track which suggests that these doors may have been configured to operate in a guillotine fashion.

Miscellaneous

Fire Escapes: Steel fire escape systems were provided for the mezzanine and gallery level balconies and lobbies, on both the east and west sides of the building. Remnants of these systems remain, including stanchions on the east elevation, the gallery-level platforms, and various brackets and hangers for the support and counter-balance systems. These components are severely rusted and appear to have deteriorated beyond usefulness.

INTERIOR

Lobby Areas

Floors: The original wood floor system of the main floor entrance lobby is in a state of progressive collapse. The floor system consists of a solid lumber plank deck over 12-inch deep wood joists, with intermediate beams. A terrazzo floor with mosaic inlays on a concrete bed was installed over the wood structure. With a total thickness of four inches, the dead loads imposed by this system may have been a contributing factor in the collapse of the floor system. This terrazzo floor is original to the building. Several heavy timber shoring elements were found, both stacked on the remaining lobby floor and in the crawl space below. These may have been installed to help the floor system take the weight of the terrazzo. The collapse of the floor system can most likely be attributed to a combination of excessive imposed dead loads, dry rot in the structural members, and the loss or failure of these shoring members to continue to support the floor, either by settlement or inadvertent removal.

Perhaps hastening the collapse of this floor system was the fact that the floor system also carried the mezzanine level stairs. When the main lobby floor collapsed, it appears to have started a chain reaction which resulted in the collapse and/or weakening of

the stairs and floors above. As a result, both stairways to the lower balcony and the upper level lobby floors to the west have collapsed as well, and the upper-level floors to the east have weakened significantly. Additionally, the collapse of the main level floor disturbed the concrete piers supporting the steel structure installed to support the projection room, which has further destabilized the remaining floor and wall structures remaining in place, both at the rear of the house and on the mezzanine level. While the mezzanine and gallery level lobby floors are still physically intact on the east side, they have weakened significantly and are no longer safe.

Walls and Ceilings: The walls and ceilings in lobby areas are plaster, installed over wood strip lath. Due to the various interior structural failures, water infiltration and decades of the building interior being maintained in an unconditioned state, most of the plaster has failed and detached from the lath. Some decorative painting remains on intact surfaces, including a portrait of a Native American in profile over the auditorium entrance doors. It is unknown whether this is the original decoration.

Stairs: Interior stairways, including the lobby grand stairs and the gallery level access stairs were constructed of wood. The gallery stairs are of a utilitarian nature and are intact. The grand stairs are more ornamental, featuring a simply-ornamented balustrade and newel posts. Both stairways have partially or completely collapsed. Upper-level stairways at the west side of the theater are not accessible due to the structural failures, and based on the level of damage to the interior are presumed to be collapsed as well.



Balconies: The lower balcony has been completely removed, except for three of the original six supporting steel columns and their accompanying transverse steel beams. The upper balcony is in place and generally remains sturdy and intact. Like the lower balcony, it is partially supported by steel columns. It is framed with wood, with solid lumber tiers and risers. The original wood bench seats remain in place. The front rail consists of a low kneewall, finished with plaster on the side which faces the stage, with a steel pipe safety railing mounted above. The plaster surfaces are generally intact but have lost nearly all of their decorative elements.



Projection Room: A projection room was built at the mezzanine level, centered on the building, presumably of concrete and/or

masonry on a steel frame, supported by steel columns retrofitted into the rear wall of the house. Presumably this structure is also supported on the south wall of the building. The projection room appears to have been accessed from the west side of the lobby, and is not currently accessible.

House

Floor: The existing floor throughout the House is a non-original concrete slab, poured flat at the elevation of the lobby. This floor slab is reportedly poured over sand fill. The slab is in fair condition, with some cracking resulting from shrinkage and possibly a bit of settlement of the fill below.

Walls and Ceiling: The wall surfaces in the House were originally finished in decoratively-painted plaster. A significant amount of the plaster is lost, particularly along the side and front walls. The remaining plaster is generally in poor condition, and unlike the lobbies, was installed over metal lath. Much of the finish coat is missing from the remaining plaster. Some surviving decorative paint and finishes remain, as do fragments of the proscenium arch. The ceiling features a plaster dome, with a ventilator in the oculus.

Stage House

Floor: The concrete slab-on-grade floor of the auditorium extends throughout the stage house area.

Walls and Ceiling: The stage house walls are exposed brick masonry. This appears to have been the original condition. The structural arch for the proscenium opening, a dramatic brick masonry full arch spanning the entire width of the opening, is visible from the stage house side of the proscenium wall. The upper one-third of the rear wall of the stage house was reconstructed as part of the 1980s stabilization work, and is in good condition. A beam was added at the gallery level across the rear wall, presumably as a structural stabilization measure. There is no finish ceiling over the stage house. The steel trusses and decking installed in the 1980s are visible from below and appear to be in excellent condition. The reconstructed stage house roof lacks smoke vents.

Fly Loft/Gallery: The existing fly loft galleries date from the stabilization efforts of the early 1980s. They are constructed of concrete on steel fluted decking, supported by exposed structural steel framing. The gallery level is not accessible but the structure appears to be in excellent condition from the stage house floor. Their decidedly heavy construction suggests that they were installed to play a structural role in bracing the building, rather than a programmatically functional role as gallery platforms.

No other rigging, gridiron, or lighting positions are currently present in the stage house.

Dressing Room Wing

Floors: Floors in the dressing room areas are wood framed, similar to the lobbies. Like the lobby area, the floors have collapsed, taking all of the interior construction with them.

Walls: Walls are plaster over wood lath in the dressing rooms.

Ceilings: Dressing room ceilings are of plaster over wood lath.

Stairs: A narrow wood-framed stairway was constructed to permit access to the second floor of the dressing room area. These stairs collapsed along with the floor structures, and have been completely destroyed.

Structural Review



General

The Memoninee Opera House was built in 1902 in Menominee, Michigan. The exterior shell of the building consists of multi-wythe brick bearing walls supported by a stone shallow foundation system. The original roof structure was framed with heavy timber wood trusses. The roof structure over the stage was replaced with steel framing in 1981-82. The interior structures, including the lobbies and balconies, were framed primarily with wood stick-built framing. The balconies are also supported by a steel frame in the theater area. A steel framed control room was added at the mezzanine level sometime after the original construction.

The foundation is generally in good condition with repair required at some locations. There do not appear to be any signs of foundation settlement. The side and back exterior bearing walls are generally in good condition. There are a number of areas that require some repair as discussed later in this report. The front bearing wall/façade is showing signs of deterioration in multiple locations as discussed later in this report. It appears that water is infiltrating this wall at the top and causing deterioration of the brick façade. The roofing will need to be repaired to prevent further water infiltration and the front façade will require extensive repairs.

The level of investigation of the roof structure was limited due to lack of access to the roof truss elevation. The stick-built wood roof framing over the lobby will need repair due to water damage. The heavy timber roof trusses will require a structural analysis to determine if they can support a catwalk system within the truss interstitial space for lighting control access. The steel roof truss over the stage will require a structural analysis to determine if it can be modified to accommodate rigging and fly gallery space.

The lobby structures have severely deteriorated. Some areas have completely collapsed and other areas are unsafe and near collapse. Failure appears to be primarily due to wood decay due to water infiltration from roof leakage. A concrete slab was poured over the top of the main lobby floor that likely overstressed the wood framing. The lobby area framing will require complete demolition and reconstruction. The wood stick-built bearing wall that separates the lobbies from the theater is substantial, but will require additional investigation to determine if it has experienced wood decay due to exposure from leaking water.

The mezzanine balcony was completely removed when the building was converted to a warehouse. The gallery balcony appears to be in generally good condition. The connection of the gallery balcony framing to the back of theater wood bearing wall appears to be minimal. Additional investigation will be required to determine if reinforcing of this connection will be required.

The wood floor framing of the dressing rooms has completely collapsed. Failure appears to be due to wood decay from water infiltration from roof leakage. Complete demolition and reconstruction of the floor framing will be required after the roof is repaired.

Foundation

There are a number of locations where the exposed foundation needs to be repaired due to damage from weathering (See Figures 1 and 2).

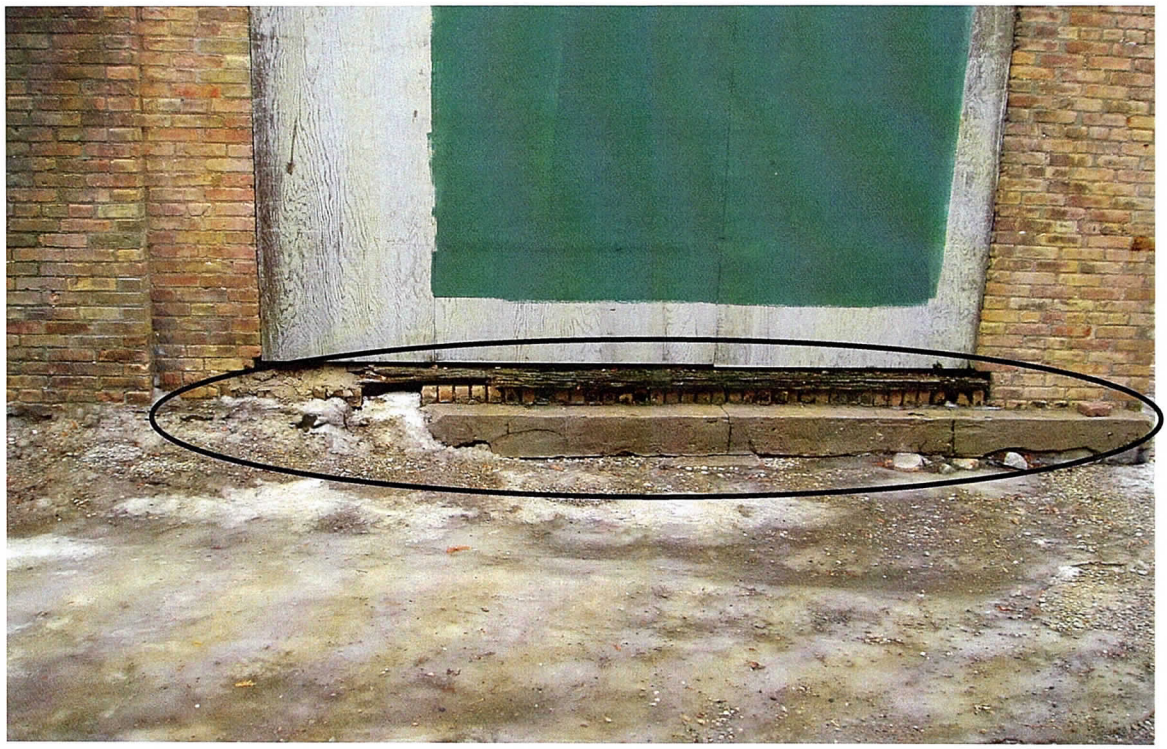


Figure 1



Figure 2

Exterior Shell – Sides and Back

The arched brick lintels at the large stage doors on either end of the stage have some diagonal cracks above the lintel that have been repaired and have since failed again. The brick above these lintels needs to be repaired and the lintel may require reinforcing (See Figures 3 and 4). There is a crack in the wall above an arched brick lintel on the west side of the building. This crack originates at the bearing point of the gallery balcony floor framing (See Figure 5). There are several other arched brick lintels on the west side of the building that have some wall cracks above the lintels (See Figure 6). There are several locations where the exterior wythe of brick has deteriorated due to insufficient roof drainage (See Figures 7 and 8).



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8

Exterior Shell – Front

The brick arch over the main entrance has deflected at the center, but the brick around the arch appears to be in good condition (See Figure 9).



Figure 9

Exterior Shell – Front

The brick at the mezzanine level is shifting. The brick at the pairs of arches at the inset panels of façade appears to have shifted in-plane and out-of-plane and a number of the mortar joints appear loose (See Figures 10 and 11). The brick joints at several of the setback locations appear to be failing and the outset brick appears to be separating from the inset brick (See Figures 12 and 13). There are several locations where the interior wythe of brick is deteriorating (See Figure 14).



Figure 10



Figure 11



Figure 12



Figure 13



Figure 14

Exterior Shell – Front

The brick at the gallery level is shifting. The brick joint at the west setback location appears to be failing and the outset brick appears to be separating from the inset brick (See Figure 15). The interior wythe of brick is deteriorating (See Figures 16 and 17). There is evidence of significant roof leakage at the top of the brick wall which would allow water to enter the top of the wall (See Figures 16 and 17).



Figure 15



Figure 16

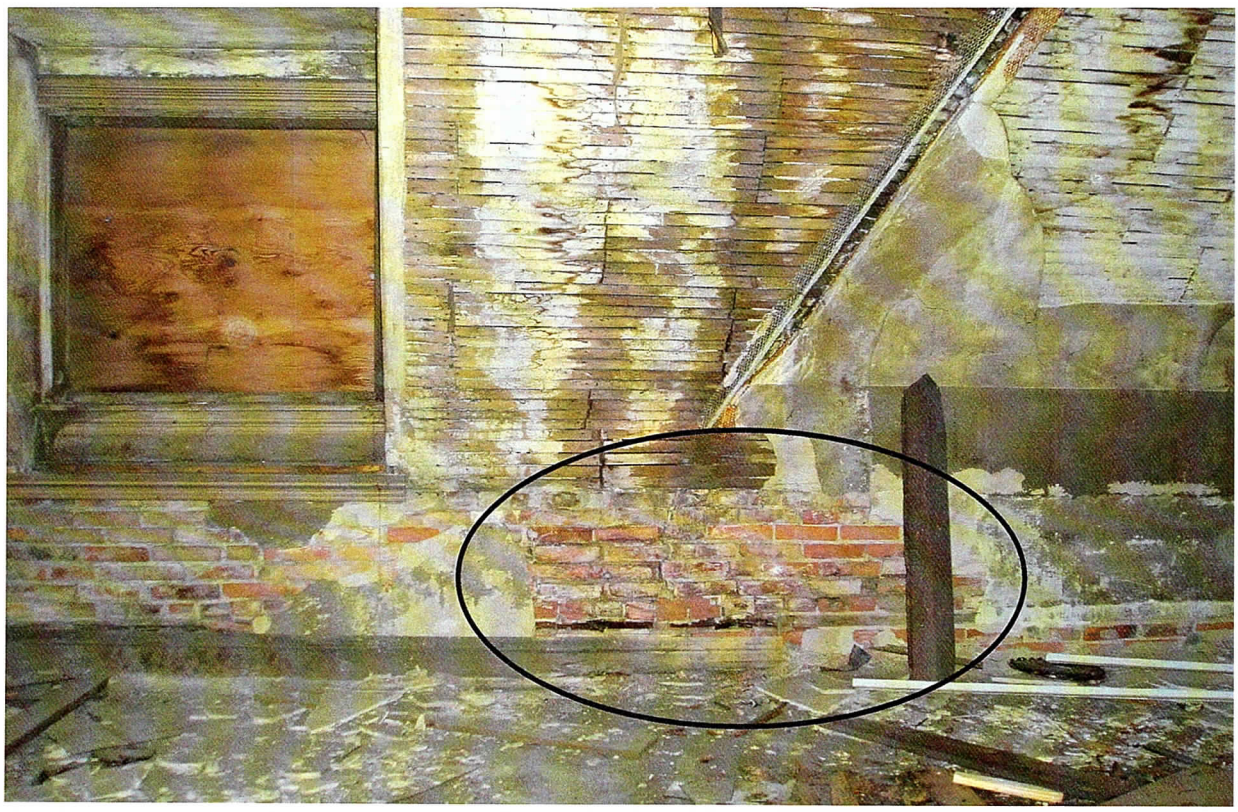


Figure 17

Roof Structure

The bearing condition of the southern most truss is a concern. The steel shim plates do not allow for a uniform or level bearing on the brick bearing surface (See Figure 18).



Figure 18

Main Lobby, Mezzanine Lobby, Gallery Lobby

The lobby floors have partially and some areas completely collapsed (See Figure 19).



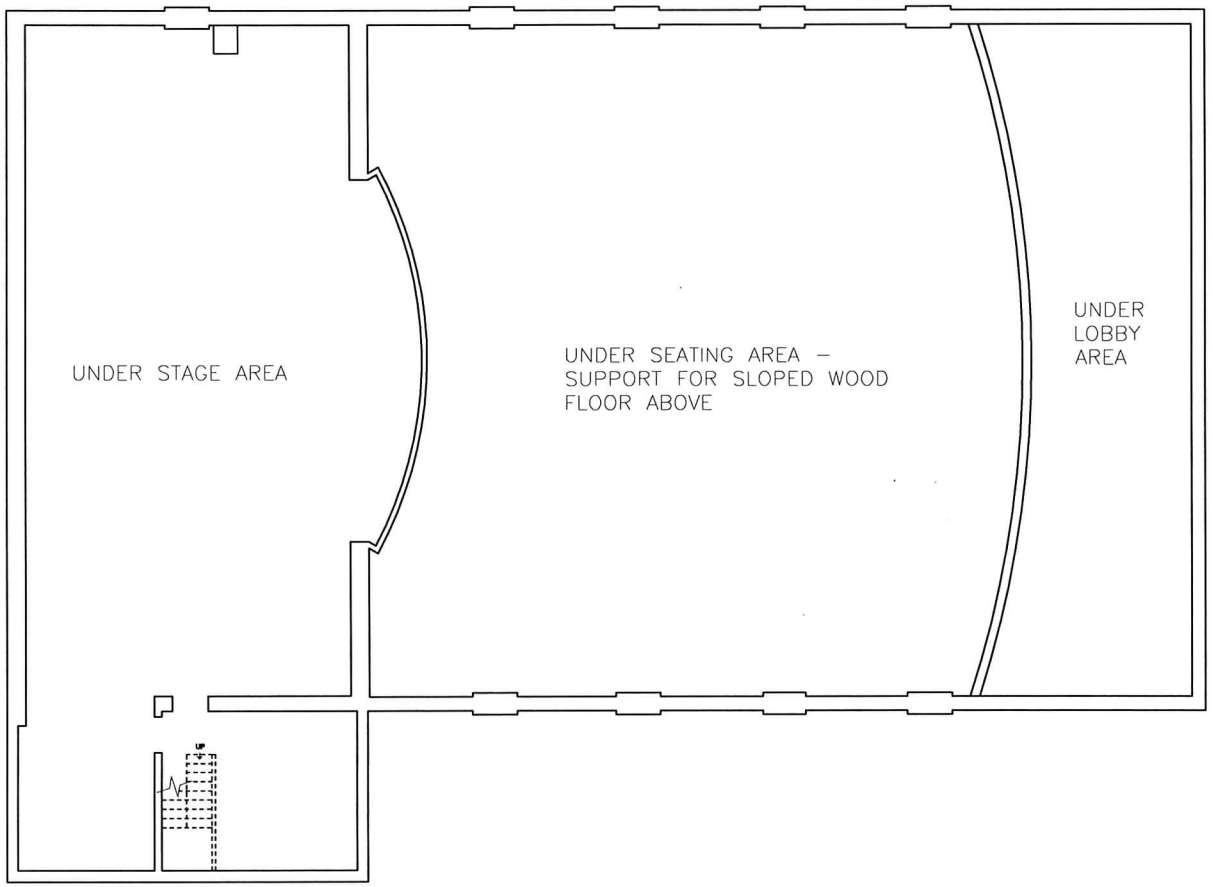
Figure 19

Gallery Balcony

The connection of the framing to the back bearing wall appears to be light and may need reinforcing (See Figure 20).



Figure 20



Building Plans

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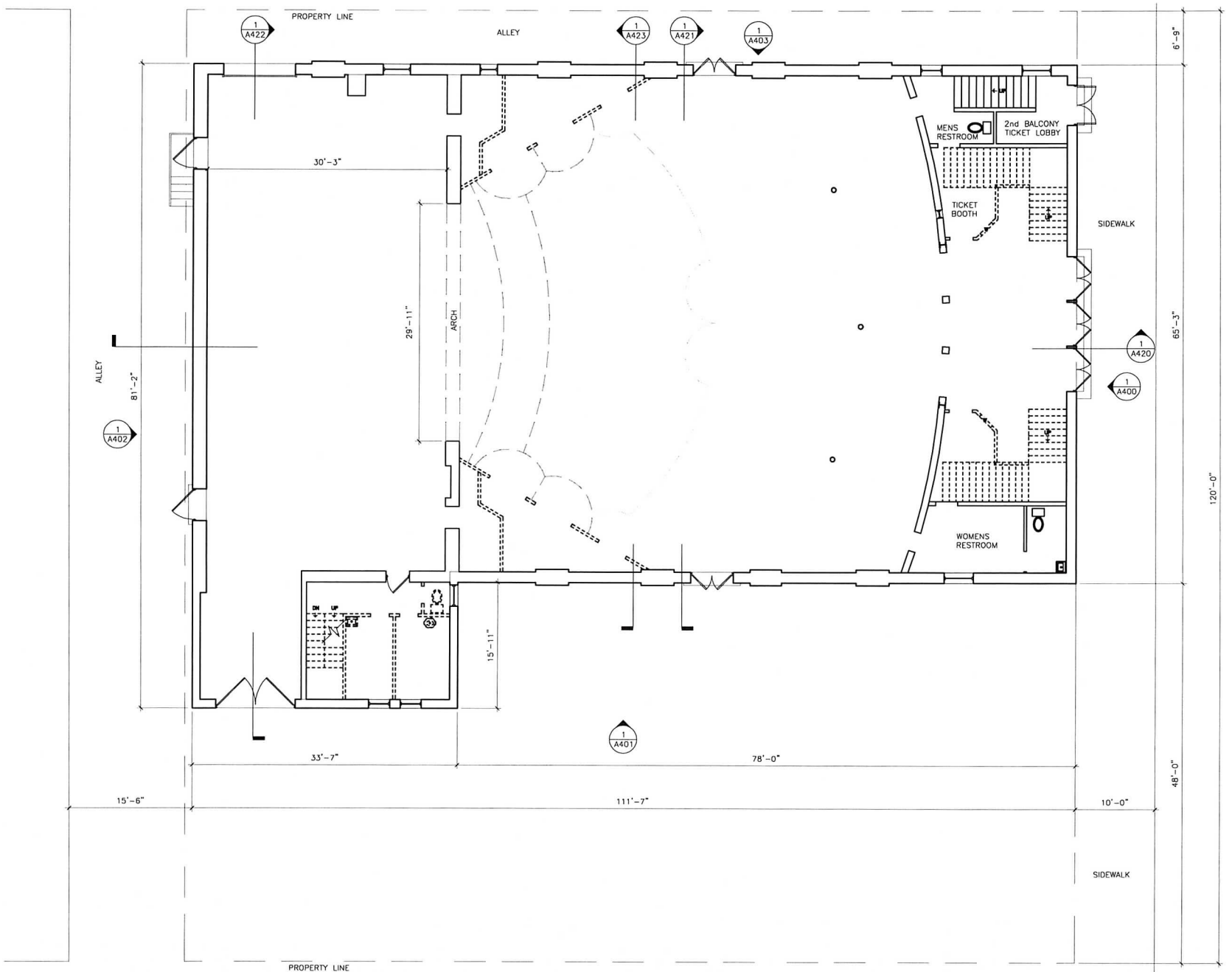
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BASEMENT PLAN

A200

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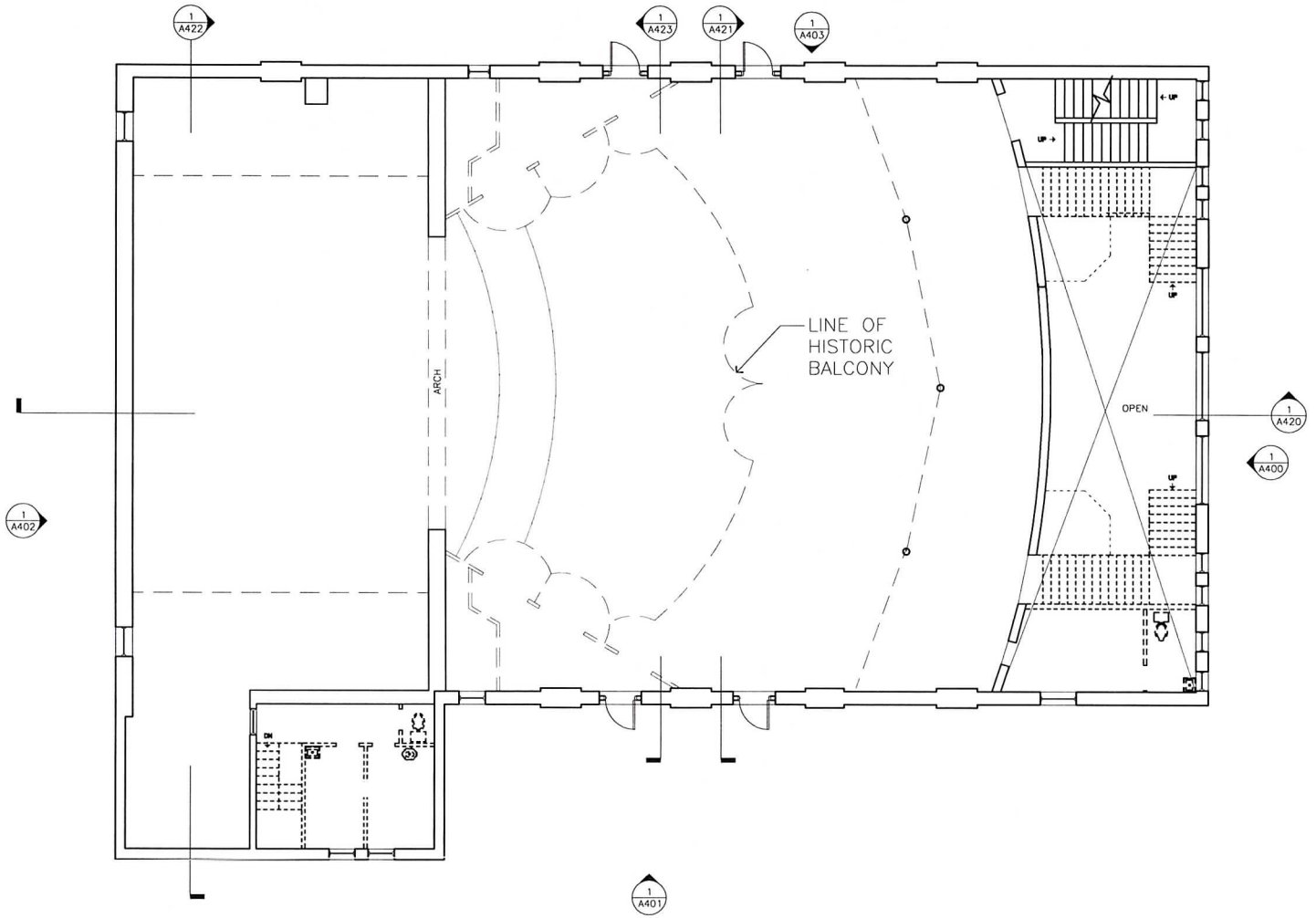
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FIRST FLOOR PLAN

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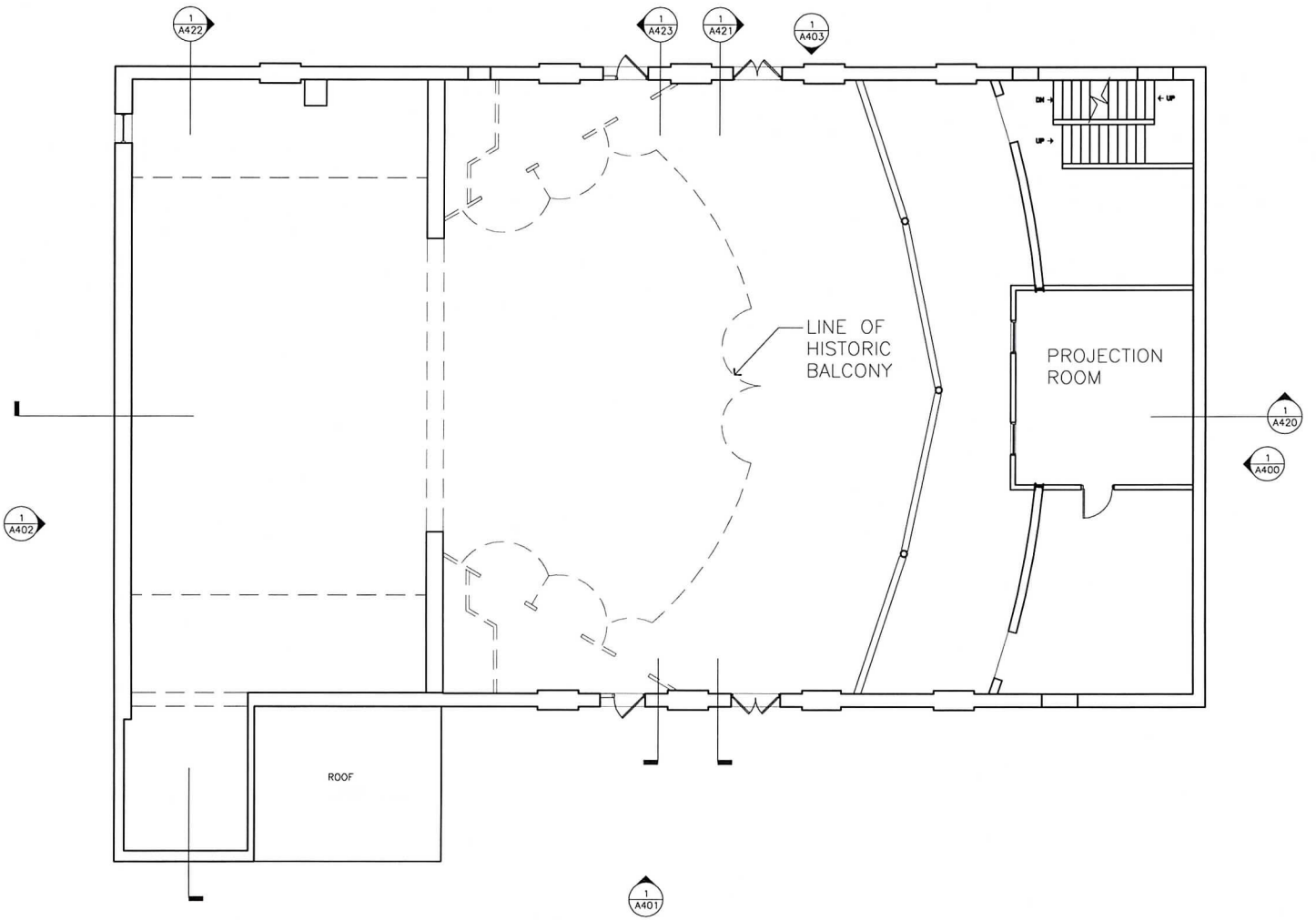
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MEZZANINE FLOOR PLAN

A201M



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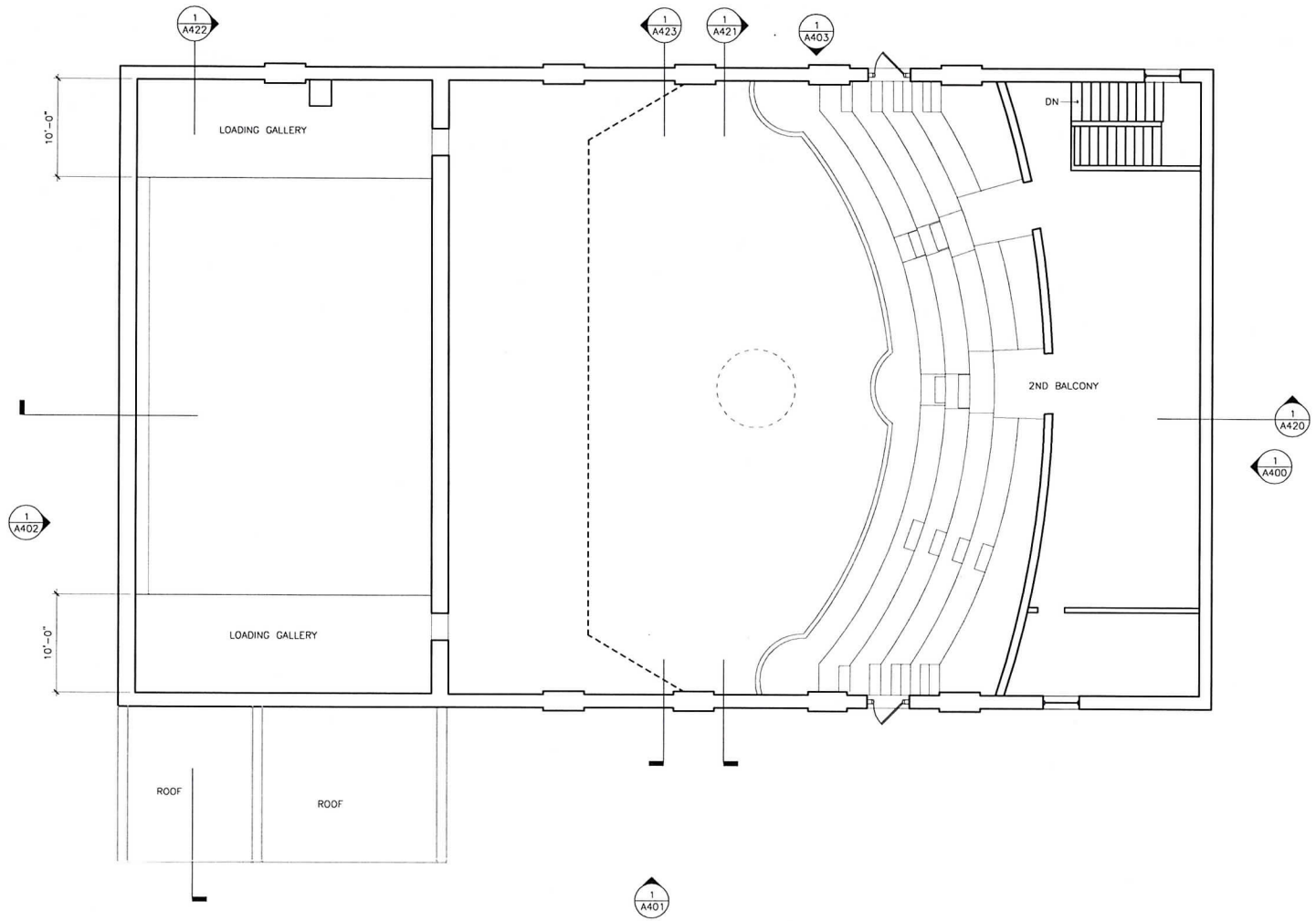
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SECOND FLOOR PLAN

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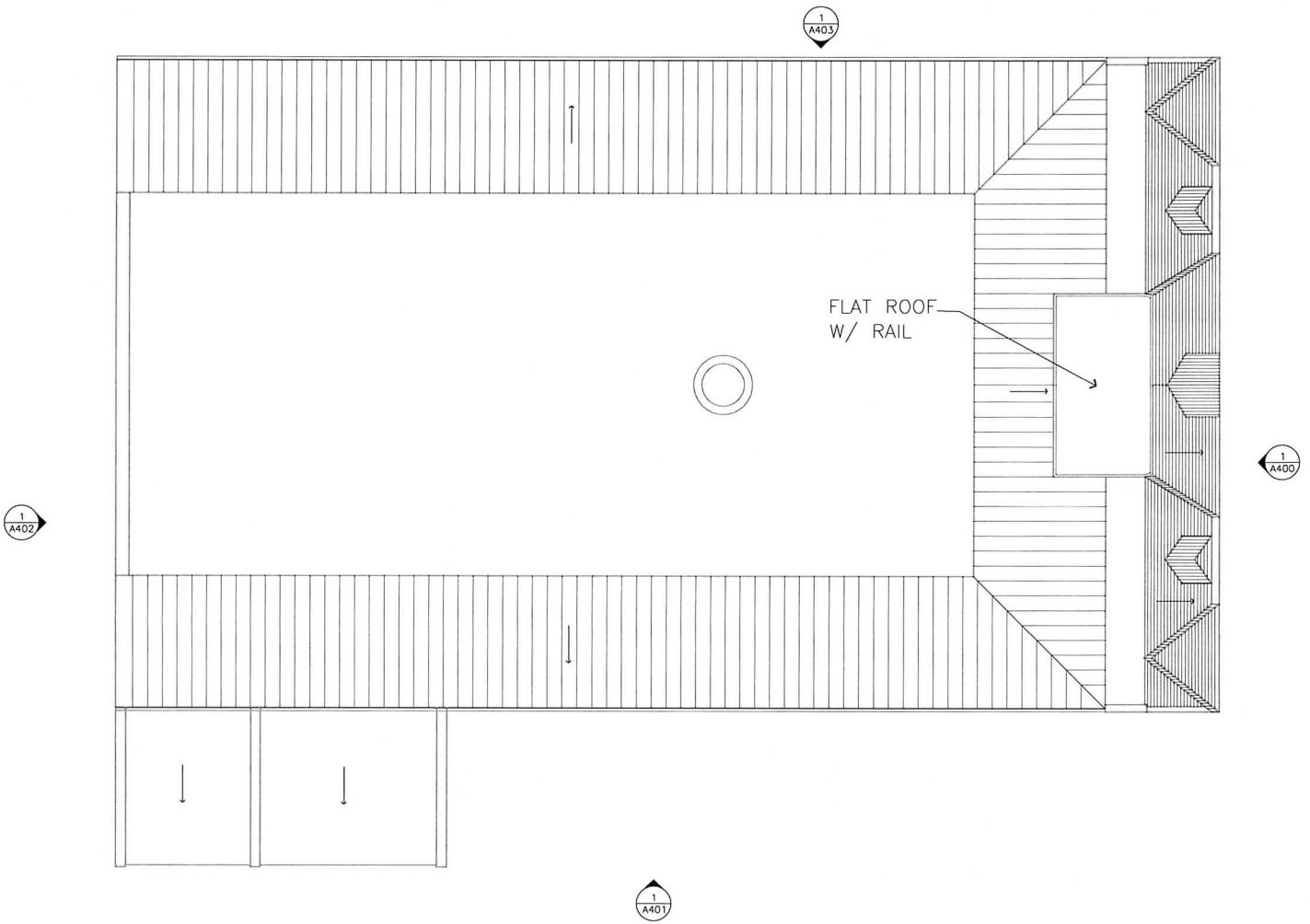
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THIRD FLOOR PLAN

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ROOF PLAN

A204



1 SOUTH ELEVATION
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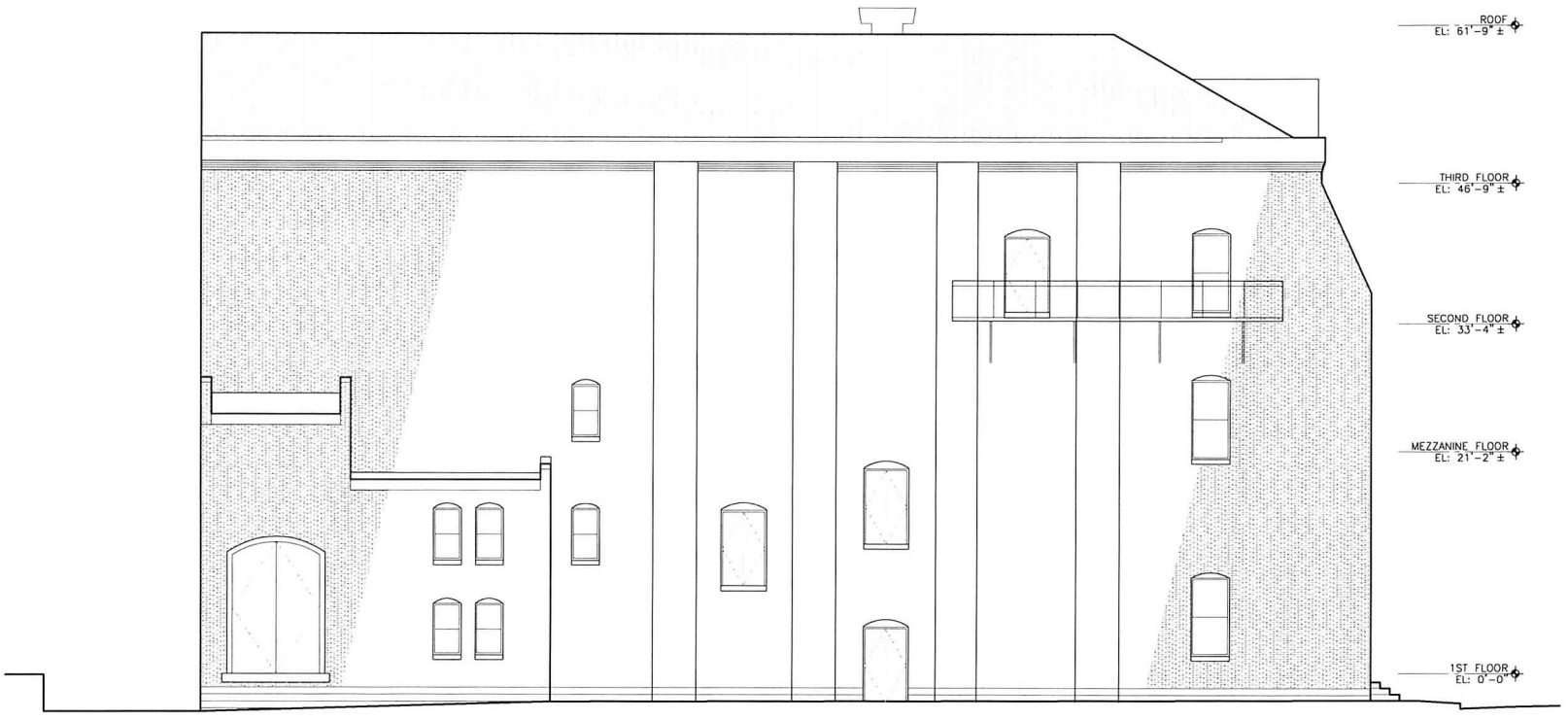
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EXTERIOR ELEVATION

A400



1 WEST ELEVATION
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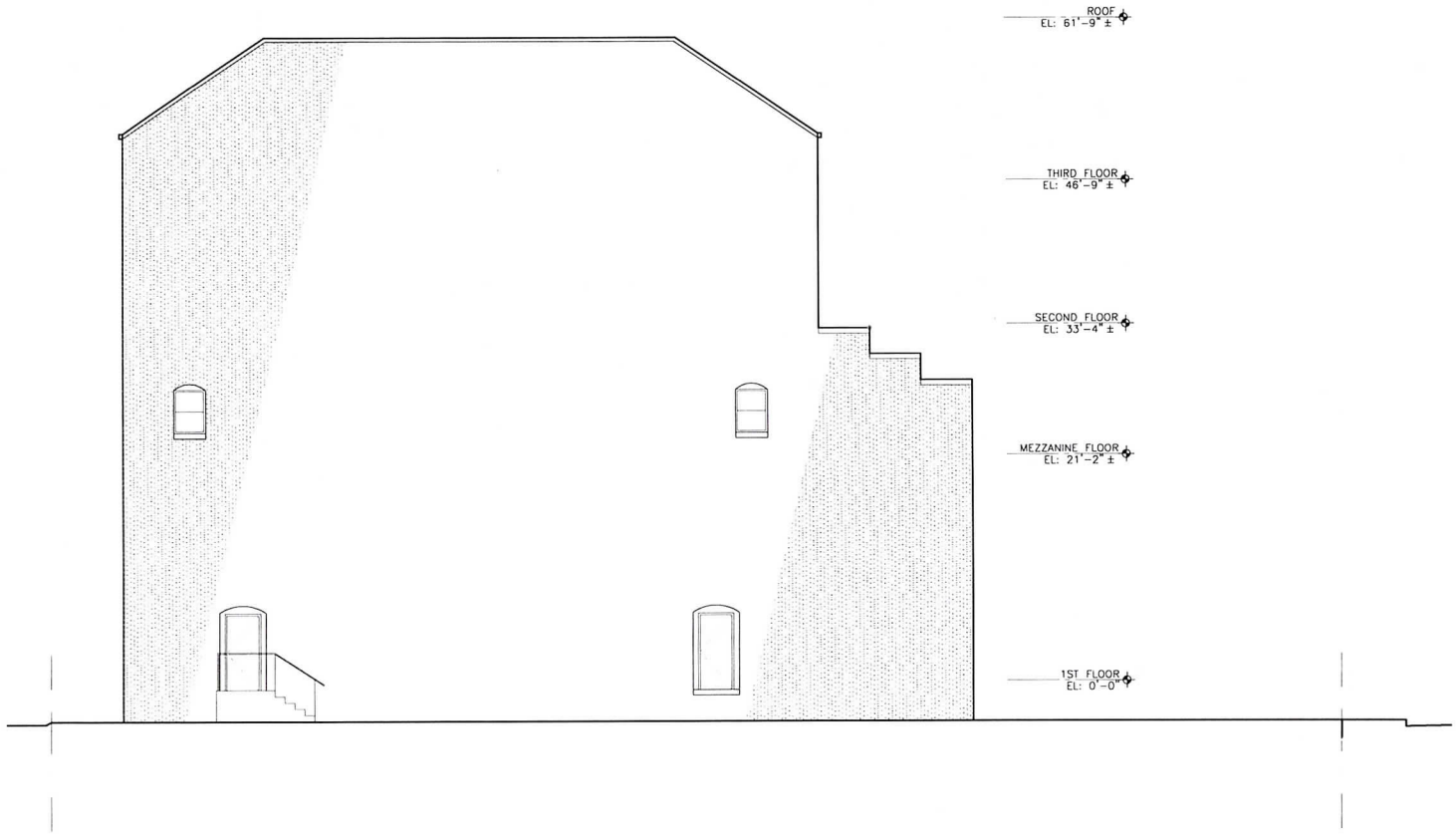
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EXTERIOR ELEVATION

A401



1 NORTH ELEVATION
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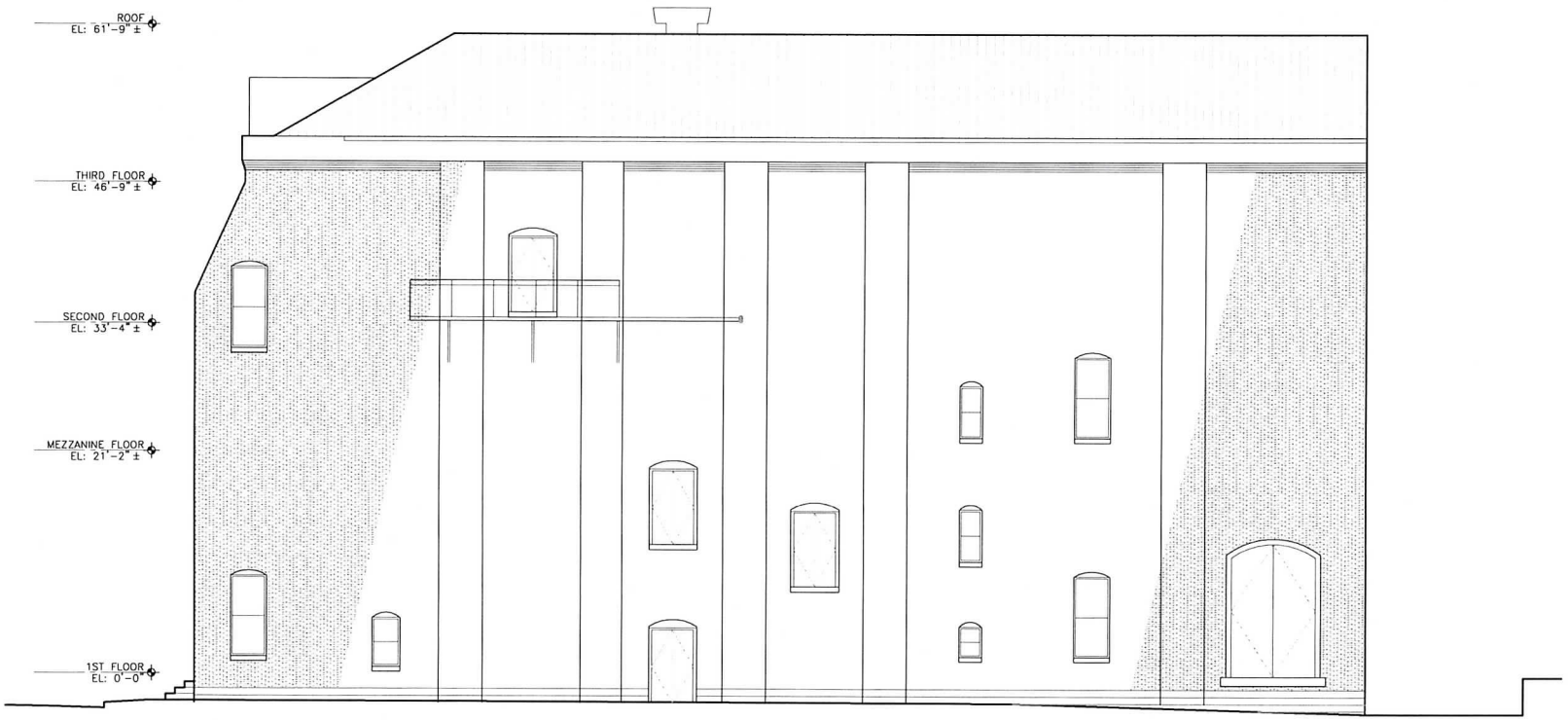
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EXTERIOR ELEVATION

A402



1 EAST ELEVATION
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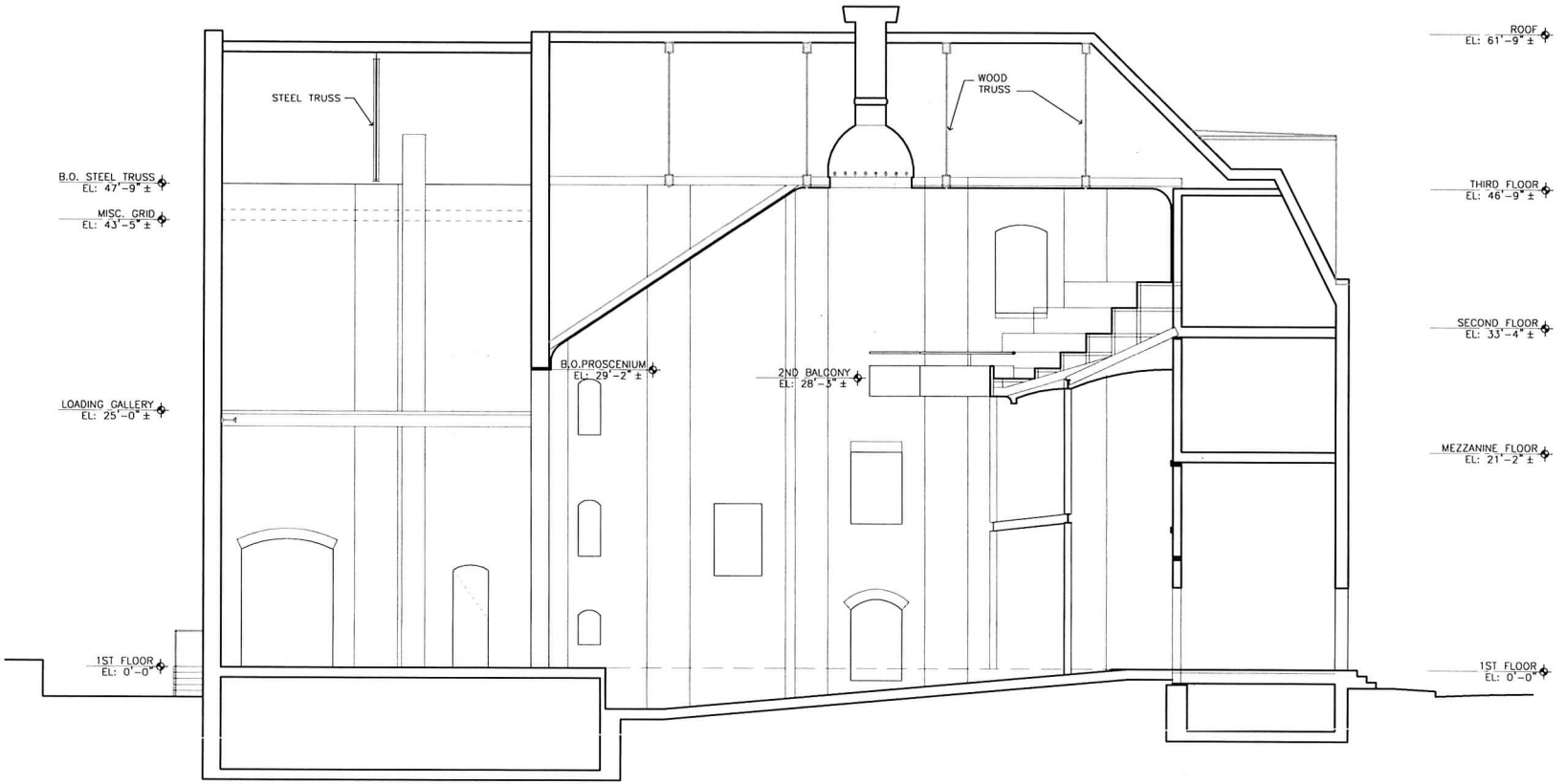
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EXTERIOR ELEVATION

A403



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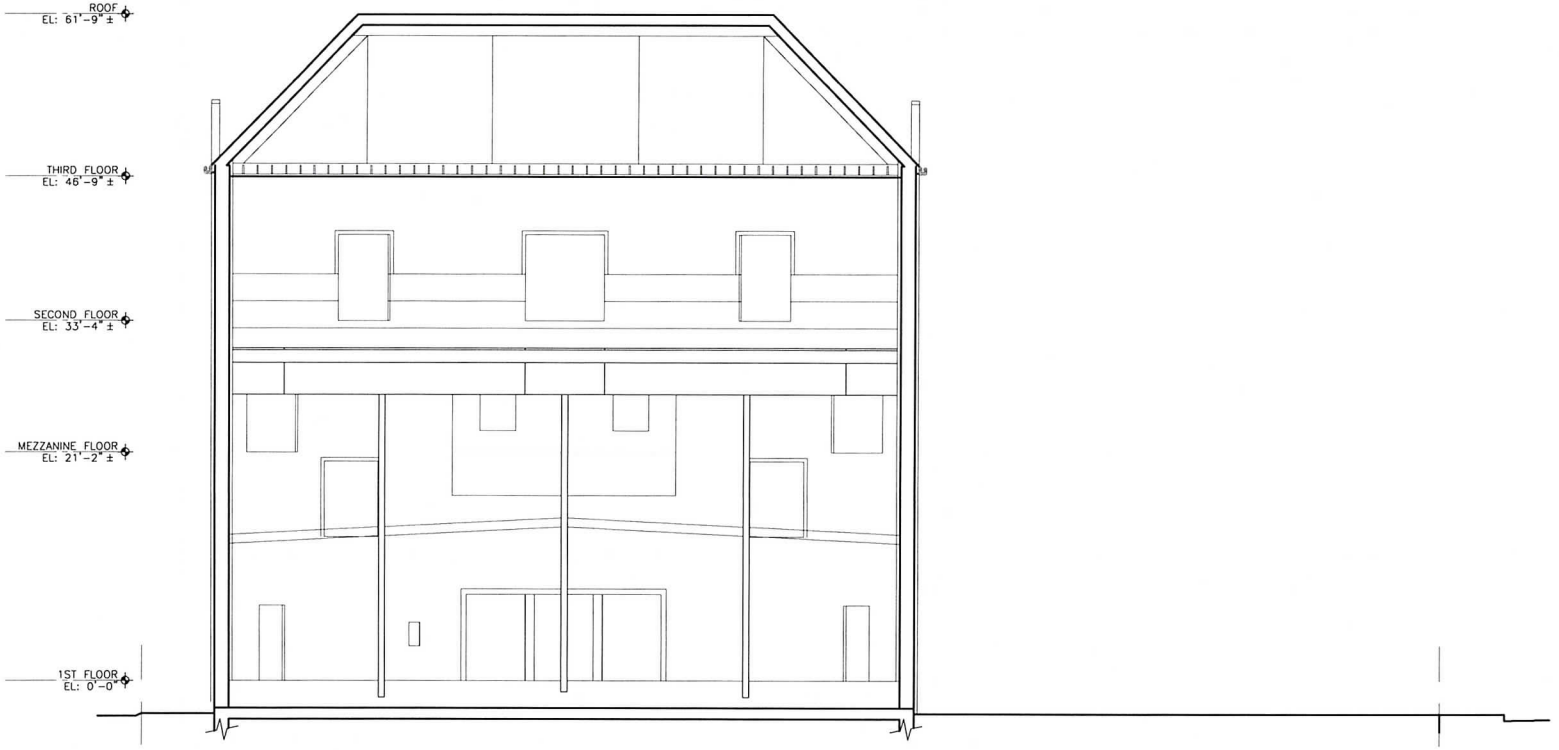
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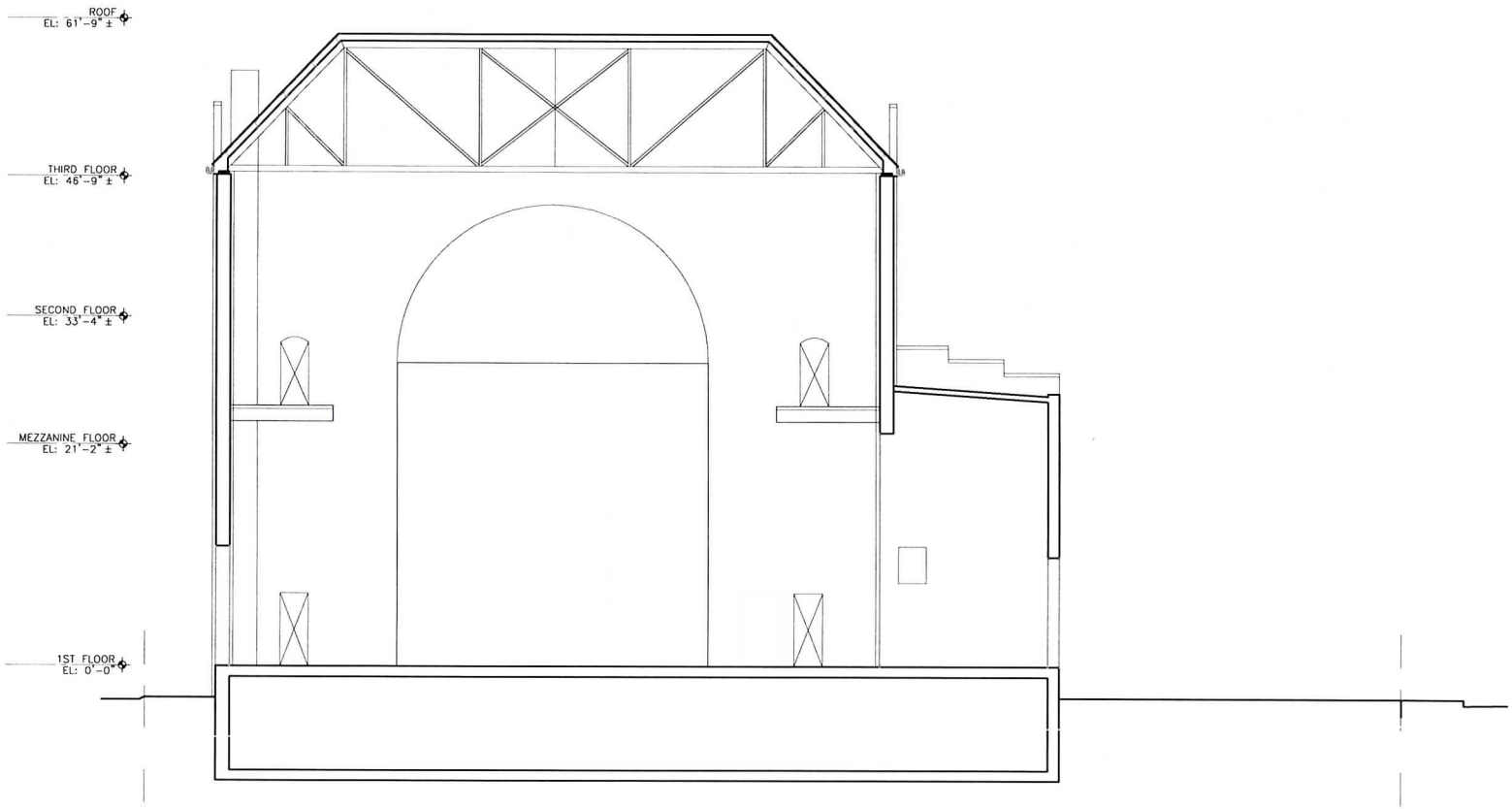
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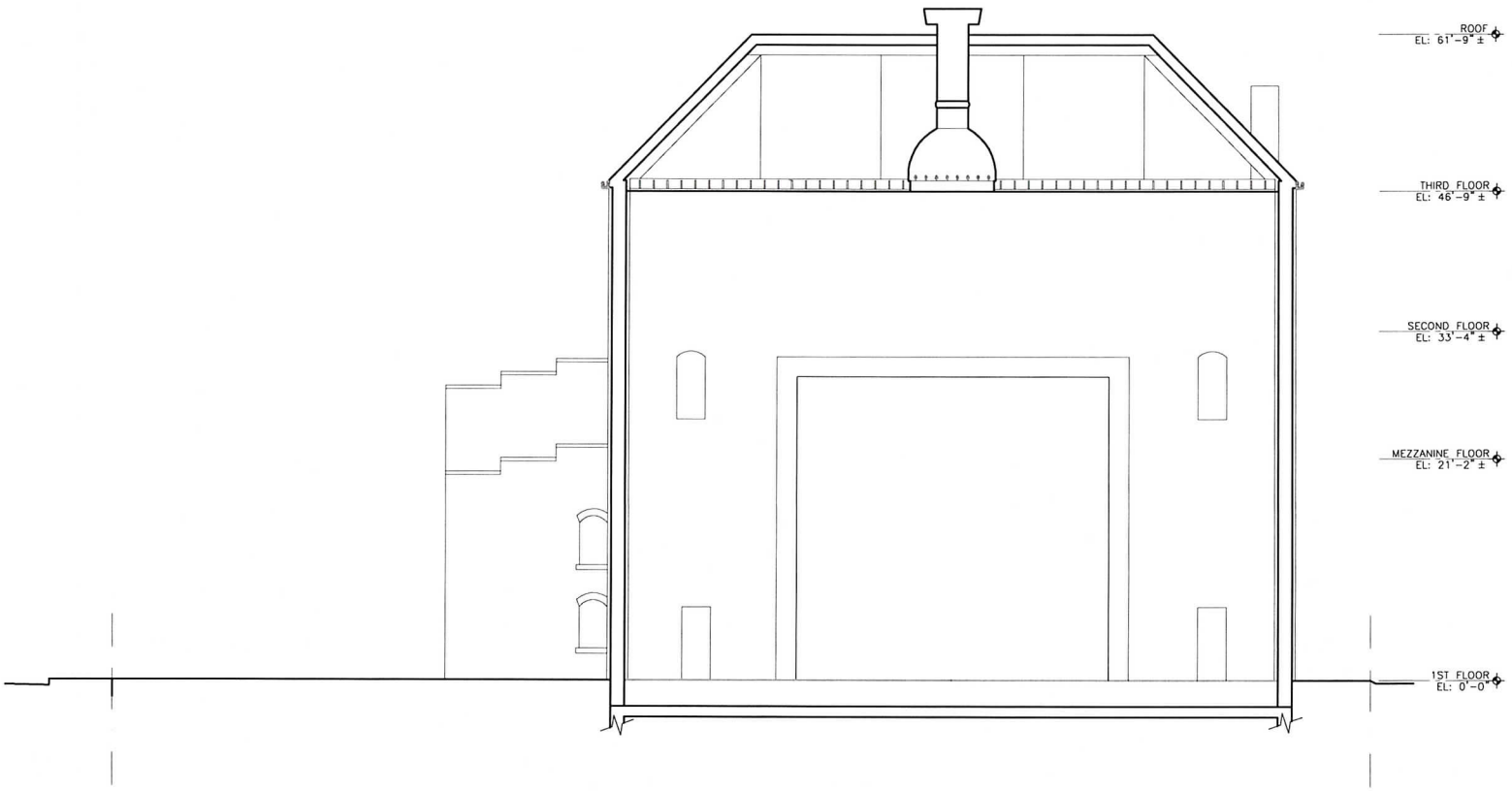
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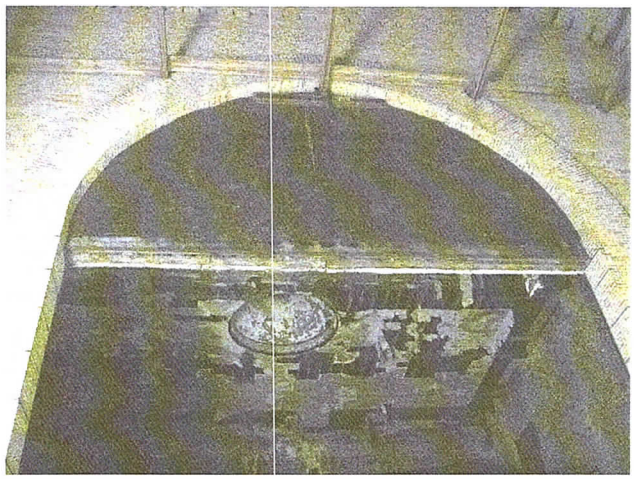
A423

Building Systems

Heating and Cooling

At this point in time none of the original mechanical equipment or systems exists.

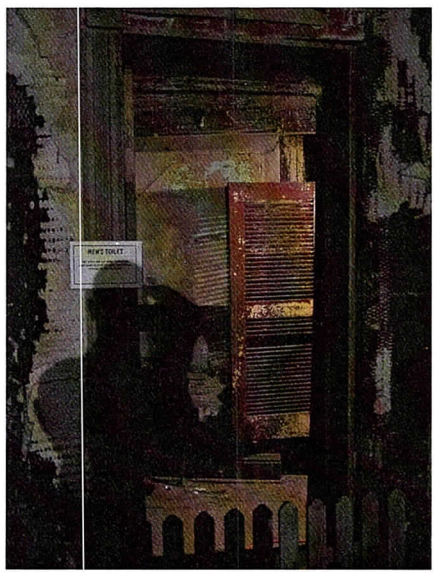
When the Opera House was built it received steam from the boiler at the Hotel a block away. Later a steam boiler room was built under the east end of the stage. This was filled in when the Opera House was converted into a warehouse and the stage and main auditorium were topped with the current concrete slab. No temporary heating or cooling equipment has been installed in the Opera House.



There is no record of cooling equipment ever existing in the Opera House. However the auditorium still has a ceiling vent that is opens to the sky.

Plumbing

At this point in time the Opera House has no working plumbing system. None of the original restrooms are in a condition that would allow reconnection or reuse.



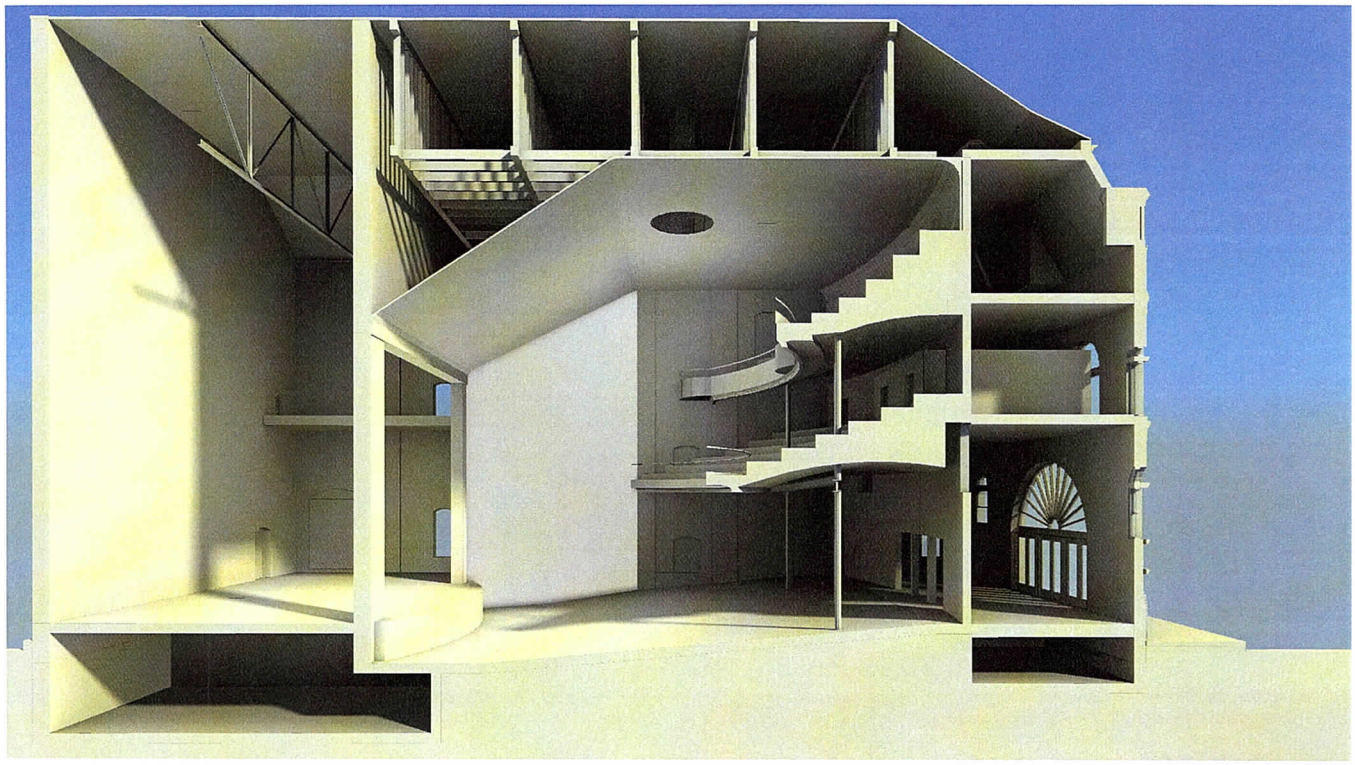
Electrical

The building's knob and tube electrical system is not functioning and would not meet code if it was. The Opera House does have temporary electricity for lighting and power. This is adequate for lighting the main floor for the public presentations and tours. To access the upper levels flash lights are required.

Theatre Systems

No theatre rigging, curtains, lighting or sound system exists.

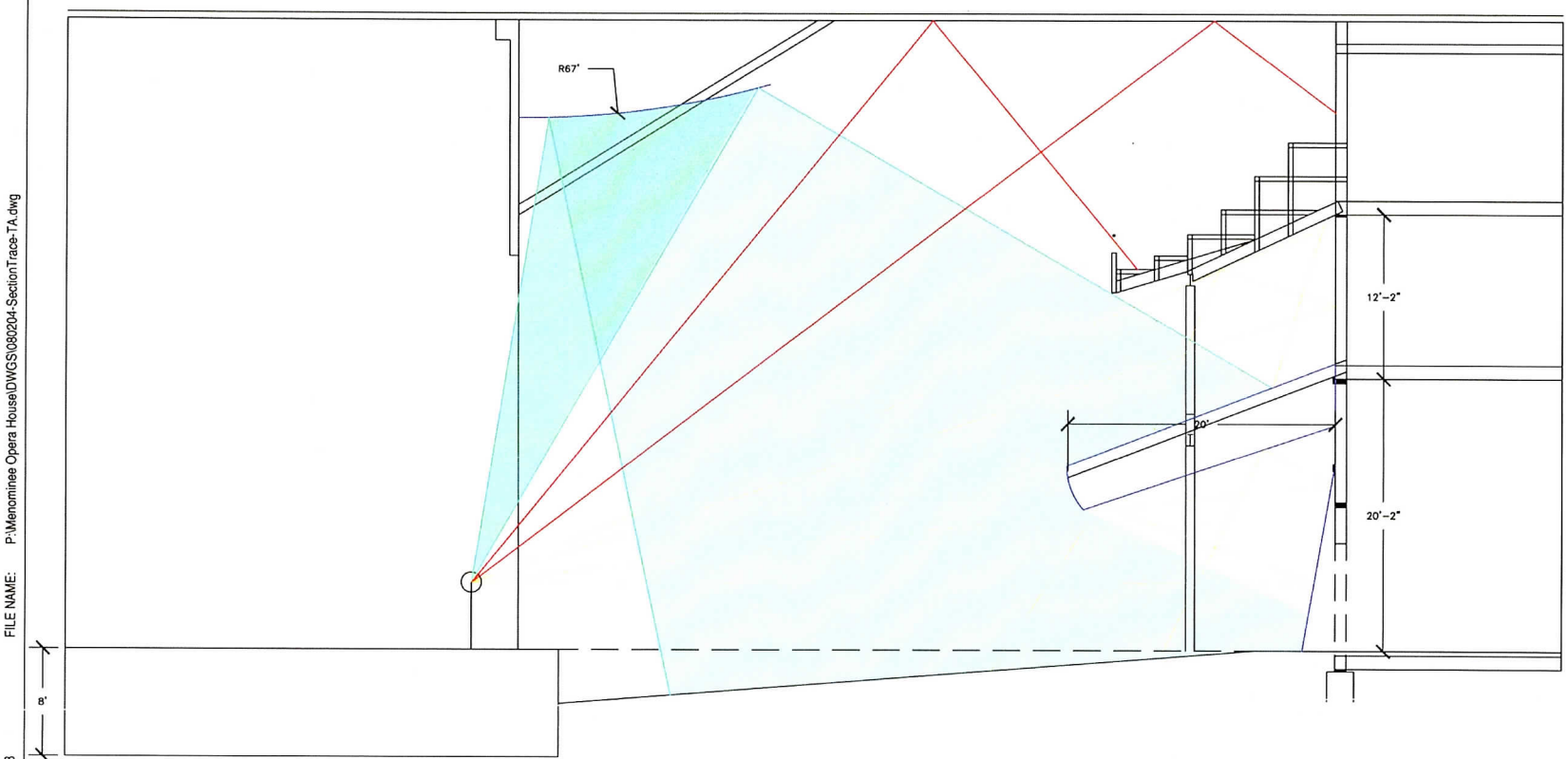
Theatre Acoustics



Acoustical Summary

Great acoustics are one of the key factors in live performances. The Opera House has a basic shape and volume to provide great natural acoustics. Understanding the qualities of the original auditorium is the first step in shaping the walls and ceiling in a rebuilt auditorium. The following pages are the ray diagrams highlighting some of the acoustical concerns in the original room. By today's standards the center of the auditorium does not get proper coverage. Also the deep over hang of the original first balcony would affect the experience of the first floor back rows.

The study showed that the ideal shape of the box walls and forestage eyebrow is much shallower angle then the historic walls and ceiling. The desire to reconstruct the historical shape of the side boxes and the eyebrow over the forestage will result in some acoustical compromises. This team is confident that great acoustics will be achieved in the new auditorium. Further study be required as the final architecture of the room is developed.



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GENERAL NOTES:

SECTION RAY TRACE
OF TA MODIFICATIONS

REVISIONS:

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PROJECT:
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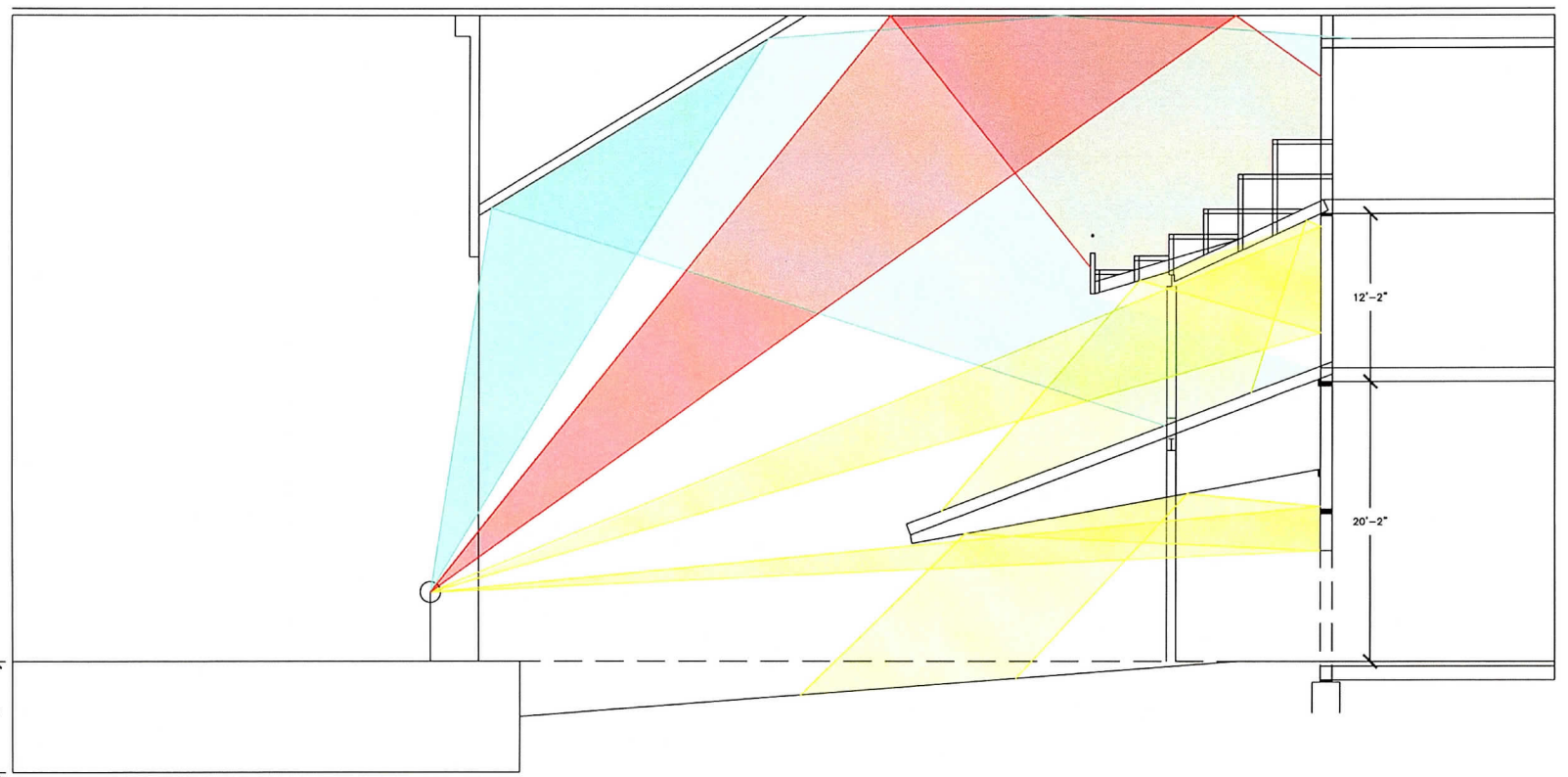
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GENERAL NOTES:

RAY TRACE OF ORIGINAL CEILING COVERAGE.

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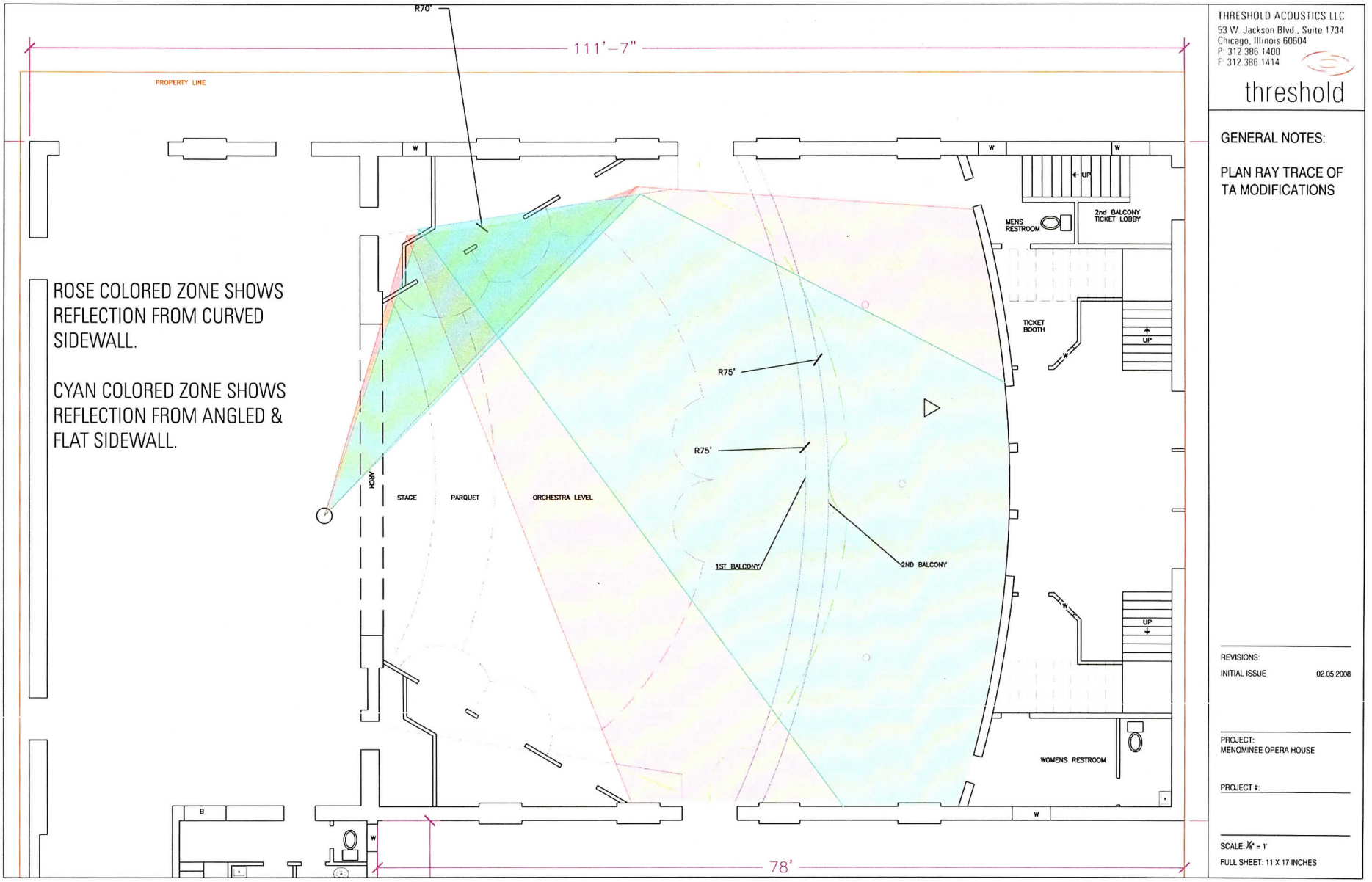
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PLAN RAY TRACE OF TA MODIFICATIONS

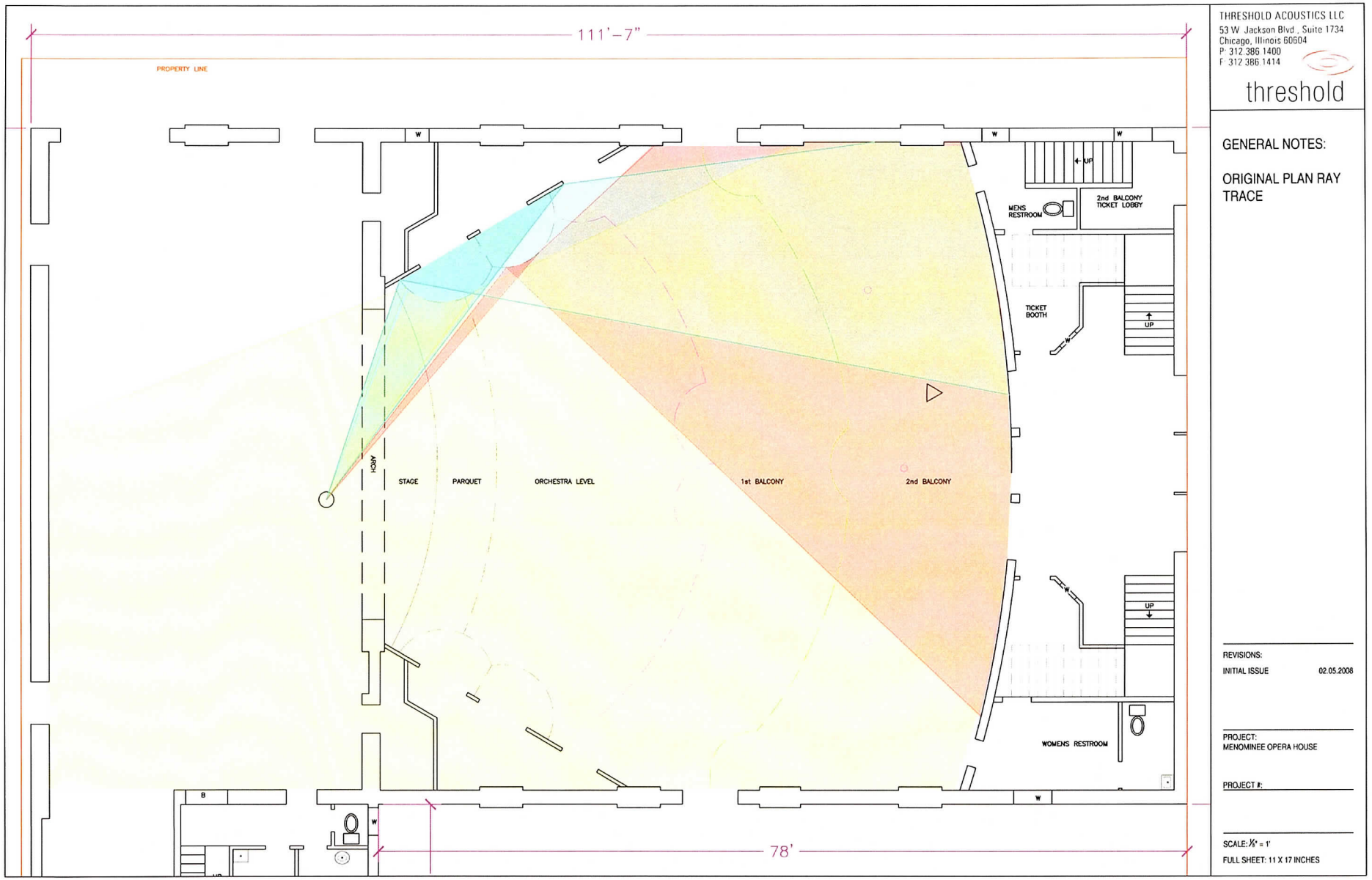
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V. RENOVATION CONCEPTS

Architectural Recommendations

EXTERIOR

Roofing Systems

All roof systems appear to be in varying states of failure and should be replaced with appropriate systems. Roof decks and underlayments should be inspected after tear-off of the existing roof. Any deteriorated, rusted or rotted sections of the roof deck should be replaced prior to application of the new roof system. Stabilization of the roof systems and management of rainwater runoff are critical elements to the building's long-term survival. Areas of identified leakage and water infiltration should be addressed as soon as possible to prevent further damage to the structure. These include leaks in the roof over the main house and gallery level lobby, loose membrane roofing at flat roof areas, failed or missing gutters and downspouts, downspouts which are damaged or otherwise discharge on or immediately adjacent to the building, and the lack of gutters and downspouts at the mansard roof.

Sheet metal roofing should be replaced with new standing seam metal roofing. Although the capability of local roof installers' equipment is a concern, intermediate horizontal lap seams should be avoided if possible. If horizontal seams must be provided, they should be interlocking-type expansion seams with sealant, designed to avoid uplift and wind-driven rain penetration, detailed in accordance with the SMACNA Sheet Metal Manual. The new metal roofing should be made from pre-finished aluminum sheet, with a factory-applied organic flouropolymer high-performance finish, in a gray color tone selected to complement the shingles on the south elevation's mansard roof. As an alternative, a lead-coated copper or terne-coated copper system may be considered. This will offer a substantially increased lifespan for the roof system - at least fifty years, as opposed to at least twenty for the aluminum roof system - but at a substantial increase in first cost. Insulation may be applied under the sheet metal system or at the underside of the deck below to improve thermal performance of the roof assembly. If applied over the roof deck, the roof edges will need to be detailed to account for the insulation thickness. This will also require careful study of the sightlines to ensure that the change does not negatively affect the building's roofline.

Membrane roofing should be replaced with a commercial-quality sheet membrane roofing system such as EPDM or TPO. A minimum membrane thickness of 60 mils should be used, with tie-ins, edges and terminations detailed in accordance with the system manufacturer's recommendations. A fully-adhered membrane system should be considered, with mechanical attachments for the insulation to secure it to the existing metal and wood roof decks. Insulation should be tapered at transitions to adjoining roof systems so that sightlines are not compromised. Because the low-slope areas of the roof, where the membrane roofing is used, are not readily visible from the street, a white roofing system may be considered to improve the energy efficiency of the building.

The mansard roof areas are perhaps the most significant to the building's character, as they crown the historic south façade. Because there is good photographic documentation of the historic slate roof system prior to its removal in 1981, the opportunity exists to accurately reconstruct the original roof design. A slate roof system will be expensive. However, if properly specified, installed and maintained, it will last indefinitely with little maintenance. A rubber or synthetic slate shingle system, designed to look like the original slates, may be a viable option to achieve the historic look for a lower up-front cost, but will likely require additional maintenance and will require replacement far sooner than a slate system.

Non-original galvanized metal flashings, copings, gutters and downspouts throughout should be replaced, in particular where damaged or showing signs of rust or other deterioration. Remaining original sheet metal ornament, where not significantly deteriorated, may be retained, cleaned and refinished. Missing ornamental features and trim should be replaced with new materials to match the existing trim to remain, and detailed to match the historic design as closely as possible. The sheet metal cornice at the base of the mansard roof should be reintroduced. This cornice should incorporate an internal gutter and drainage to catch rainwater from the mansard roof, to protect the masonry walls below. At the north, east and west elevations, copings, gutters and downspouts may be replaced with pre-finished aluminum fabrications, similar to those recommended for the standing seam metal roofing. All gutters and downspouts should be detailed and installed to properly conduct water away from the building and either safely deposit it at grade or direct it into a proper storm-water system. Missing cresting, finials and other cast decorative roof features should be replaced. Factory-finished cast or machined aluminum may be considered for these elements.

Masonry

Masonry restoration efforts should focus on stabilization of the existing masonry first, to prevent loss of historic fabric or the continued deterioration of the structure's integrity. Stabilization of masonry should be conducted concurrent with or immediately following repair, stabilization or replacement of roof and rainwater management systems, which appear to be the root cause of most of the masonry deterioration issues observed. The primary stabilization concern observed is the face brick of the south elevation, which appears to require substantial rebuilding and installation of new masonry ties. The masonry restoration work should be performed by a qualified mason with demonstrated experience in the restoration of historic brick buildings.

Approximately twenty-five percent of the existing face brick on the south façade appears to require dismantling and rebuilding, particularly at the upper portion of the façade where the masonry has been displaced, and the masonry over the entrance arch. The bricks should be methodically removed and cleaned, the backup masonry examined and if necessary repointed. Any nails or other failed masonry ties should be removed. Stainless steel restoration masonry ties should be installed and the face brick reinstalled in its original configuration. Where the face brick is still stable, it should be repointed in

place. Mortar should be a soft, lime-based repointing mortar utilizing local aggregates matching the color, gradation and proportions of the original mortar as closely as possible. Laboratory analysis of existing mortar samples will be required to ascertain these proportions. A small amount of Portland cement may be used in the mortar mix to improve workability, but its use in the mix should be minimal. Damaged, cracked or missing units should be replaced with brick to match the size, color and surface texture of the existing brick. It may be possible to mine replacement brick from the top portion of the façade, where it will be concealed by the restored sheet metal cornice.

Spalled, eroded, cracked or otherwise deteriorated common brick at the secondary facades should be replaced with brick matching the appearance and properties of the original units. Open joints should be repointed. Mortar used for replacement or repointing of the brick should match the appearance and properties of the existing original mortar, with mix requirements similar to those given above for the face brick. Concrete, asphalt, unused metal anchors and other foreign matter should be removed.

Open joints in cast stone courses should be repointed, and displaced units reset. Small spalls and cracks may be repaired with a factory-formulated cementitious restoration mortar compound specially formulated for patching masonry. Significantly-damaged or deteriorated units should be replaced with new cast stone units to match the color, texture and profile of the existing original units to remain.

Open and deteriorated mortar joints in foundation walls should be repointed. Where foundation stone has settled due to loss of mortar joint material, the stones should be properly reset in mortar beds. Where basement areas are intended to be used as habitable areas, the foundations should be excavated, open joints repointed and damp-proofing applied, to prevent ground moisture infiltration into these areas. The top faces of foundation walls, where exposed, should be protected from rainwater. Ideally this would be done with an aluminum or stainless steel flashing set into a reglet at the masonry wall, but this solution will likely not be visually acceptable. The previously-applied mortar wash may be repaired or replaced, possibly installed over a flashing, or after sealing the sky-facing exposed joints of the foundation walls with an elastomeric sealant.

Windows and Doors

The remaining original wood windows and doors appear to be in very poor condition and beyond the point where restoration is practical. Replacement is recommended.

Plywood temporary enclosures and existing wood window sashes and frames should be removed, at least to sound material. Replacement windows should match the original sizes, profiles, opening dimensions and sightlines. Wood windows are recommended. Aluminum-clad wood windows may be considered if the sightlines and profiles of the original windows can be matched. New windows should be designed for modern energy efficiency requirements, incorporating insulating glass, weather stripping and thermal breaks. Low-E glass may be considered for the windows but color and reflectance must be maintained within acceptable limits for the restoration work.

Acoustical performance of the windows may also be a consideration, depending on the design of the building interior. Window openings into the stage and House will likely not be desirable due to issues with light and sound control.

The historic entrance doors should be replaced with new custom wood doors to match the profiles, size and configuration of the original doors. New doors should incorporate weather stripping and insulating glass to improve their thermal and acoustical performance. The entrance steps should be replaced with new stone or concrete. The current design calls for extending the entry in to the public right-of-way. This may require an encroachment permit from the City of Menominee, since the steps will encroach over the building property line into the sidewalk. The fan light, is intact behind its enclosures, will be restored. Incorporating interior storm windows for thermal and acoustical performance will be reviewed.

Existing exterior doors at the House and Stage house should be replaced, or the openings enclosed. If new doors are not required to service the building, the openings should be infilled with compatible construction, such as brick masonry to match the original, or other suitable infill construction, leaving the blind opening expressed. Opening infills should be designed to provide adequate acoustic performance. Where doors are replaced with new doors, these doors will be required to perform thermally and acoustically, incorporating modern weather stripping and/or acoustical seals and complying with STC ratings specified by the Acoustician. Because these openings are on secondary facades of the building, hollow metal doors and frames may be used for these applications. The arched masonry openings should be expressed and retained.

Retention of the existing stage loading doors is not recommended. If they are to be retained, they should be completely repaired and refinished. Hardware should be replaced, and acoustical seals introduced to eliminate light and sound leaks.

Miscellaneous

Existing fire escape components, brackets and anchors should be removed, and anchor holes repaired. A new enclosed stair tower will provide balcony and gallery level egress on the east side of the building. This stairway will be held within the property lines of the lot and the alley, constructed to meet current building code and life-safety requirements. Means of egress for the west side of the House will be incorporated into the design of the planned building addition.

A canopy or marquee will be re-introduced above the historic entrance. The design should reflect the low profile, simplicity, and features such as supporting tension rods featured in the original design, as indicated by the historic photographs.

Additions

Additions will be required to accommodate the programmatic needs of the rehabilitated Opera House. Space is available for a significant addition on the vacant lot west of the building, and possibly on the north (rear) side, if the public alley behind were vacated to permit its construction.

Additions to the building should be respectful of the massing and character of the building, particularly its ornamental south façade. Materials or forms used in the addition's design may reflect or relate to those found on the historic building, but the design should clearly communicate that it is a contemporary structure. These considerations are more important for an addition on the west lot. Any addition on the north side of the building would have a very minimal impact on the character of the building as viewed from the street, although property restrictions will serve to limit the practical size of a north addition anyway.

The west addition could readily accommodate a new functional entrance for the theater complex. This strategy has the added advantage of permitting barrier-free accessibility without altering the historic character of the original entrance. The original entrance should be restored and maintained in any case, even if not considered to be the primary or functional entrance to the building.

INTERIOR

Lobby Areas

Floor structures within the lobby areas of the opera house are either in a state of collapse or are otherwise structurally compromised. The main floor lobby floor will require complete removal and replacement. Upper-level lobby floors may be removed and replaced, or may be reinforced if practical for purposes of the rehabilitation. Floor systems should be designed for appropriate live and dead loads for the uses intended. The existing projection room and its supporting elements should be completely removed.

If terrazzo or a similar finish is contemplated, the floor structure will need to be adequately strong to support this additional dead load without unacceptable deflection. It should be noted that this may preclude the use of a wood floor structure in this area, although a concrete or composite steel and concrete floor system may not be outside the realm of the practical at this location. For the upper-level lobby floors, wood-framed structures are recommended to avoid imposing too much dead load on the supporting existing structural elements.

The new design should respect the formal qualities of the original design, with regard to symmetry, procession, and organization. However, the rehabilitated lobby interior need not be an exact replica of the original design, because of the significant loss of original building fabric.

Floor finishes may be of a variety of materials. The design of the original terrazzo floor may be reflected in the design of the new main lobby floor. Walls, likewise, may be finished in a variety of ways, but in any case should be finished. While there is significant exposed brick currently, this was not the historic condition, and to leave it as such may prove too far a departure from the historic character of the space.

House

The raked original main floor and stage could be restored, if required for the new design. This will require removal of the existing concrete slab, excavation of the sand fill underneath, and reconstruction of the floor structures. Reinforced concrete is recommended for the reconstructed floor systems, to provide acoustical dampening and a durable structure. A new sloped floor will be constructed in the House creating a plenum for a displacement air system. The floor of the plenum will be a concrete slabs on grade will be installed on drainable granular fill or provided with a vapor barrier to prevent moisture migration from the ground through the slab. Alternatively, the existing flat floor system could be maintained and repaired, to provide more flexibility in the space. If not installed immediately, provisions should be made for a wood finish stage floor on a resilient substrate system. Aisles in the Orchestra should be carpeted to soften patron footsteps. Under the seats, a durable, hard, cleanable surface finish is recommended. The most economical finish for this application will likely be to seal or epoxy-paint the fully-cured concrete.

The walls and ceiling of the house should be finished with gypsum board, plaster, or a similar treatment. The Secretary of the Interior's Standards for Rehabilitation indicate that there is no obligation to reconstruct missing historic fabric and that when reconstruction of missing elements is done, it should be based on documented evidence of the historic conditions. Given the nearly complete loss of the original ornamentation and the lack of available documentation of the original design, a reconstructive approach is not recommended. Rather, the new design should reflect the volume and materials of the original design, but this may be done in a clearly contemporary fashion. Because there is so little existing historic fabric left, the house interior can be considered a clean slate, with broad flexibility in the new design. Remaining character-defining features, such as the upper balcony fascia, the proscenium arch opening, and the ventilator dome, should be preserved and celebrated. Alterations to the volume of the space for acoustic purposes, such as altering angles of walls or ceilings, may be considered to ensure proper acoustical performance of the space. The overall volume and form of the space, and the proportions of the proscenium arch, should be respected so that they are not inappropriately diminished.

A new main balcony should be constructed, based on the location and design of the original main balcony. As with the decorative finishes, the balcony is lost, and therefore it is not recommended that a reconstructive approach be taken here. The new balcony should be sympathetic to the original design, but should be designed to provide proper sightlines, safety and audience comfort.

Lighting and technical positions may be incorporated into the ceiling over the house, or in the upper balcony. Proper lines of sight to the stage will be required for these installations. Exposed gridirons, ladders or catwalks may be incorporated into the design, but should be carefully integrated into the final solution so that they are not overly obtrusive or visually overwhelming.

Seating should be designed to accommodate good sightlines and patron comfort. Additionally, aisle width, row depth, and row length must be calibrated to meet life-safety code requirements while maximizing the available seat count. While it is tempting to pack in as many seats as possible to maximize capacity, there is value in the quality of the view to the stage and the comfort of the seats, and these factors should be carefully balanced to ensure that patrons have a good experience and will wish to return.

Stage House

The stage house as it stands provides a lot of advantages over many of its contemporaries, with significant depth, available wing space, a tall stage house, and ready access to loading. Improvements are still necessary to provide a fully-functional stage operation which meets contemporary operational demands. These requirements are outlined in more detail under the theatrical systems sections.

Automatic smoke ventilators will be required at the stage house roof. Additionally, fly gallery gridirons and lofts may be required to accommodate servicing of lighting and rigging. Accommodations will also be required for off-stage crossover by performers and technicians, as well as loading and unloading of larger trucks than the current stage door may permit.

Dressing Room Wing

The dressing room wing interior has deteriorated to the point of total collapse, and while demonstrative of the typical facilities provided for performers at the time of the theater's opening, the original layout is inadequate for contemporary needs. The collapsed interior construction should be removed. The available space could be reclaimed for managing circulation between the house, stage and additions, as green room space, or stage-related functions, in support of the rehabilitation design.

Design Goals

The following design goals were established for the reconstruction of the Historic Operas House and the new addition.

Historic Opera House

1. Review and use the Renovation Goals
2. The seating count is flexible around 600 is OK. The quality of the view and comfort of the audience should come first.
3. Seating should try to match the historic wood chairs
4. The main floor will have a center aisle.
5. The orchestra pit should be rebuilt.
6. Side boxes should be handicap accessible.
7. The historic front doors will be kept in use.

Addition

1. The ball room should be on the first or second level
2. The ball room will be a double height space.
3. The addition will have all the public rest rooms and support areas
4. The addition "Should" contrast the solid heavy brick of the historic Opera House. This could allow an open glassy exterior.
5. The materials of the addition will be local stone, wood and glass
6. A new entry lobby will have a grand stairs that tie all the levels together. The levels will align with the levels in the historic opera house. A new elevator will connect all the levels.

The program for the spaces to be put back into the Opera House was determined from the Business Planned written by the Opera House Committee. This program was added to insure aa modern working center for the performing arts. The program was confirmed at a design workshop with the building committee. The following spread sheets outline the ideal program and the program defined in the proposed plans.

Tabular Program

Menominee Opera House

Program Spaces

Page 1

Area		new	existing	MOH	addition	size	notes
Front of House						Square footage	
Audience Chamber	600 seats		X	X			
	Main floor, 400 seats					3900	
	New 1st Balcony, 200 seats					1800	
	2nd balcony benches, not in count					1500	
Lobby Total Area required 600 x 7sf + 4,200 sf							needed
Historic Lobby							
	entry level		X	X		1000	
	1st balcony level		X	X		1000	
	2nd balcony level		X	X		1000	
New Lobby	200 x 7sf = 1,400 sf part of 4,200 sf						
	entry	X			X	1400	
Concession stands		X		X	X	300	multiple locations
Concession storage							
Public Rest rooms	600/25 = 24 stalls		14 stalls women, 10 stalls men			1400	multiple locations
		X			X		
Box Office		X			X	200	
Retail Area		X			X	200	
storage		X			X	150	
Grand Ball Room	180 x 25 sf = 4,500 sf					4500	
		X			X		
storage		X			X	250	
Meeting Room	50 x 25 sf = 1,250 sf					1250	
		X			X		
storage		X			X	100	
Brides Room		X			X	300	
Catering Support		X			X	500	
Net Total Front of House						20750	

Area	new	existing	MOH	addition	size	notes
Back of House					Square footage	
Stage		X	X		1800	
Orchestra Pit	X		X		420	
Trap Room	X		X		400	
Loading Area	X		X		200	
Set Up	X	X	X	X	300	
Stage equipment storage	X			X	300	
Dry Trash	X			X	200	
Wet Trash	X			X	150	
Recycling	X			X	150	
Dressing Room						
30 people Chorus room	X		X	X	1500	
2 room Star, double	X		X	X	600	
dressing rms include showers and toilets						
Green room	X			X	300	
Recording booth	X		X	X	250	
Control Room					500	
Sound	X		X			
Light	X		X			
Projection	X		X			
remote & tech positions in house and on stage						
Net Total Back of House					7070	
Net Total Front of House					20750	
Net Total					27820	
Grossing Factor 25%					7000	
Circulation						
Equipment and Mechanical rooms						
Gross Building Area					34820	
Existing MOH estimate with new floors					15,900	
Addition					18,920	

vacant lot 4800 sq give or take basement + 3 levels?

Menominee Opera House

Final Plan Page 1

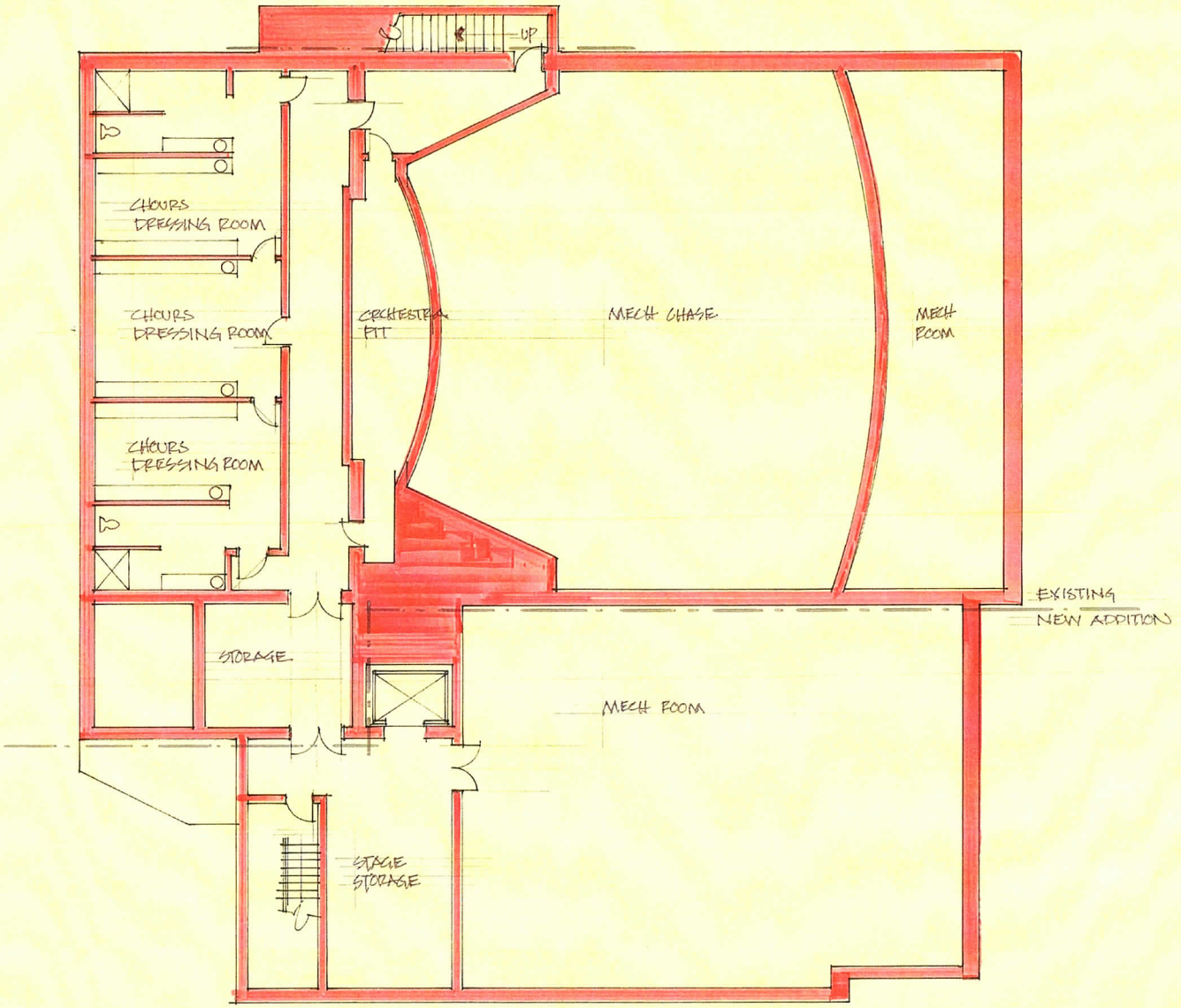
Area	new	existing	MOH	addition	size	notes
Front of House					Square Footage Net	
Audience Chamber 632 seats		X	X			
Main Floor, 322 seats					3194	
New 1st Balcony, 150 seats					2129	
2nd balcony benches, 150+/-					994	
Lobby Total Area required 600 x 7sf = 4,200 sf						
Historic Lobby						
entry level		X	X		968	
1st balcony upper		X	X		832	
2nd balcony level		X	X		616	
New Lobby						
1st entry level	X			X	1235	
2nd 1st balcony lower	X		X	X	562	
3rd 1st balcony upper	X			X	400	
4th 2nd balcony level	X			X	670	
Public Rest rooms 13 stalls women, 5 stalls 8 urnials men, total						
1 set on each level	X			X	1839	
Box Office	X			X	42	
Office	X			X	182	
Retail Area	X			X	195	
Entry Area	X			X	165	
Storage	X		X		156	
Ball Room	X			X		
2nd level					1886	
3rd level overlook	X			X	766	
set-up area both levels	X		X		476	
4th Level						
Meeting Room	X			X	352	
ɔnor Room	X			X	330	
Offices	X			X	558	
Storage	X			X	238	
Net Total Front of House					18785	

Area	new	existing	MOH	addition	size	notes
Back of House					Square Footage Net	
Stage		X	X		2439	
Orchestra Pit	X		X		420	
Stage equipment storage	X		X		170	
Loading Area	X		X		outside dock	
Set Up stage level	X	X	X	X	192	
Storage lower level	X			X	345	
Loading Gallery, upper stage level		X	X		550	
Dimmer room, upper level	X		X		232	
Electric storage, upper level	X		X		384	
Misc storage, upper level	X		X		180	
Dressing Room						
30 people Chorus room	X		X		1408	
2 room Star, double	X			X	472	
Green Room	X		X		255	
Control Room 4th level sound, light, recording	X		X		154	
Lower Level					2668	
Equipment and Mechanical rooms						
Trash Rooms						
					9869	
Net Total Back of House					9869	
Net Total Front of House					18785	
Net Total Assignable Area					28654	

Total Building Gross Area

	Existing MOH	Addition	
Lower level, incl. mech chase	7824	4232	
ground level	7824	4232	
2nd level	3042	4232	
3rd level	2398	2066	
4th level	2546	3908	
Gross Building Area	23634	18670	42304

Net area/gross area 0.677335 33% building area for circulation, mech equipment, walls



LOWER LEVEL

LOWER LEVEL

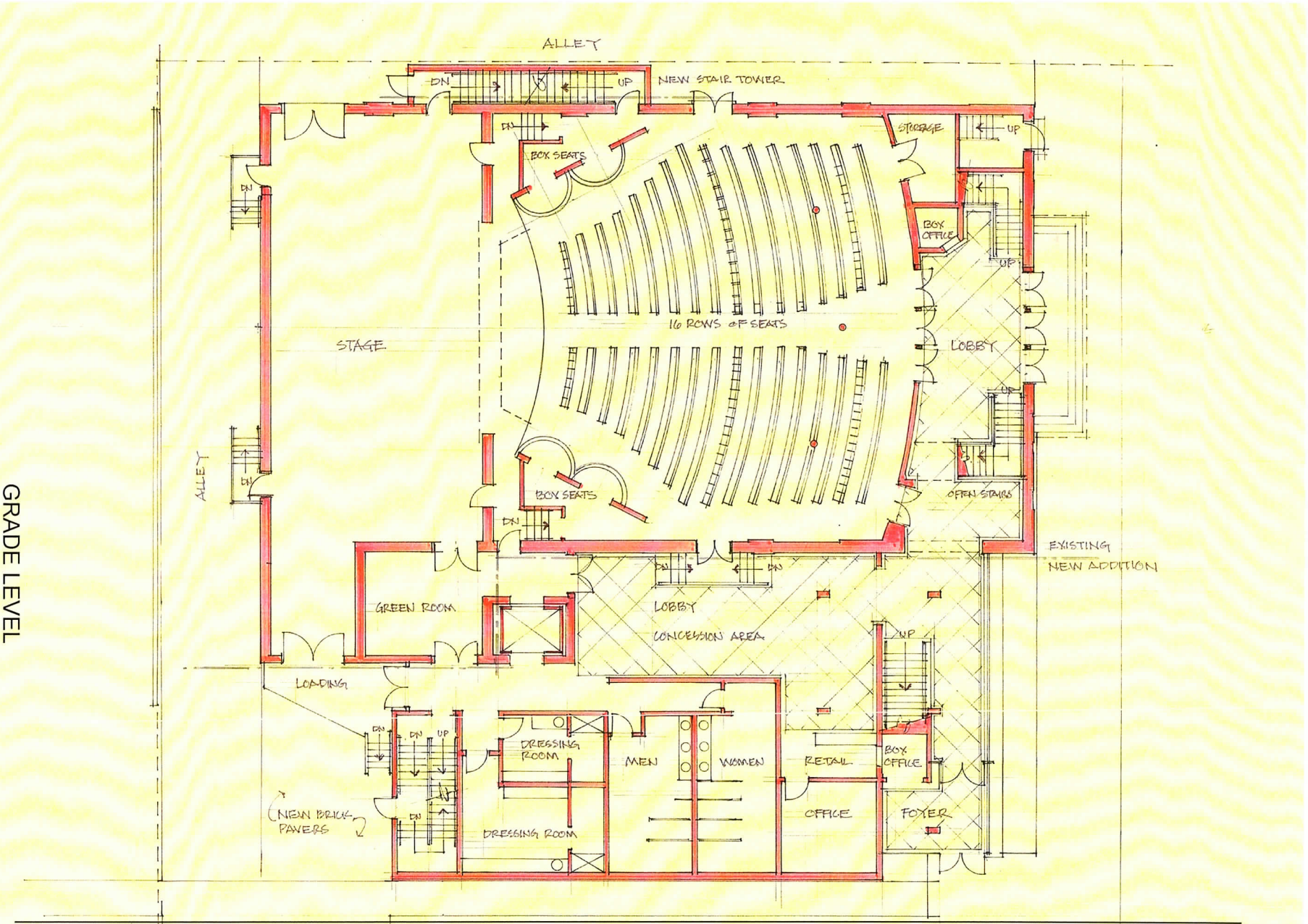
JULY 2008

PROPOSED WORK

THE MENOMINEE OPERA HOUSE

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GRADE LEVEL



GRADE LEVEL

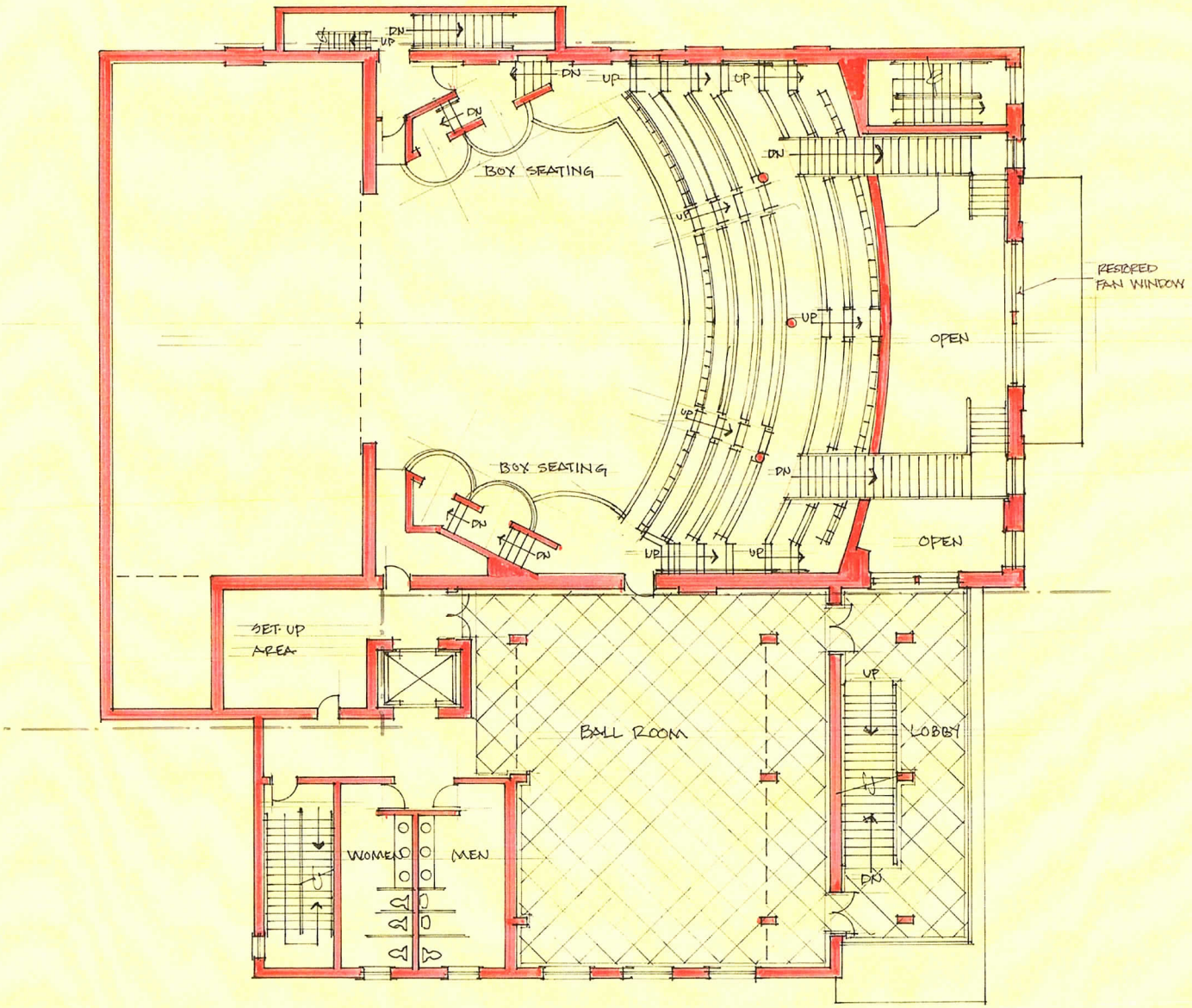
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PROPOSED WORK

THE MENOMINEE OPERA HOUSE

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1ST BALCONY LEVEL



FIRST BALCONY LEVEL

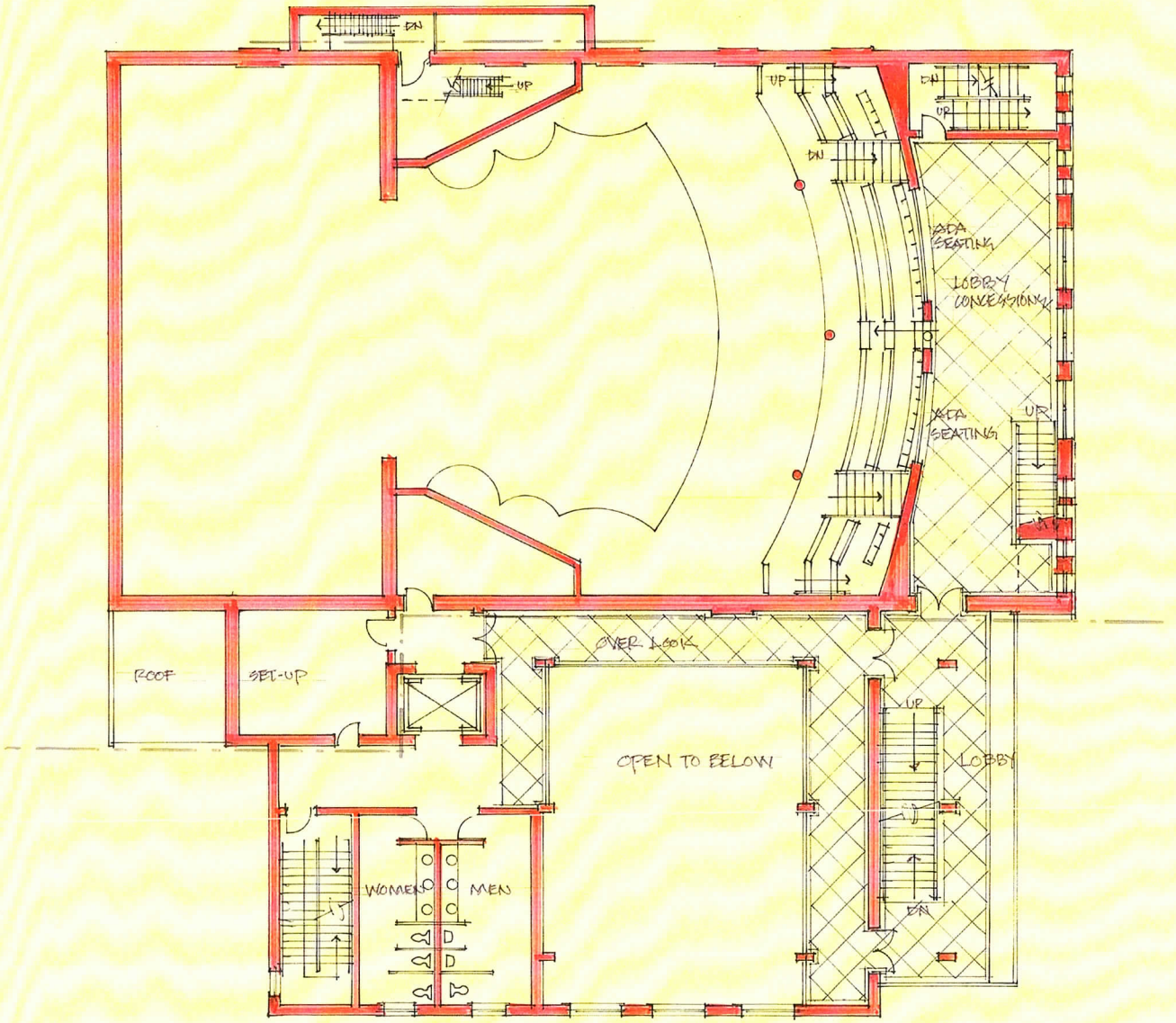
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THE MENOMINEE OPERA HOUSE

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MEZZANINE LEVEL

MEZZANINE LEVEL

JULY 2008

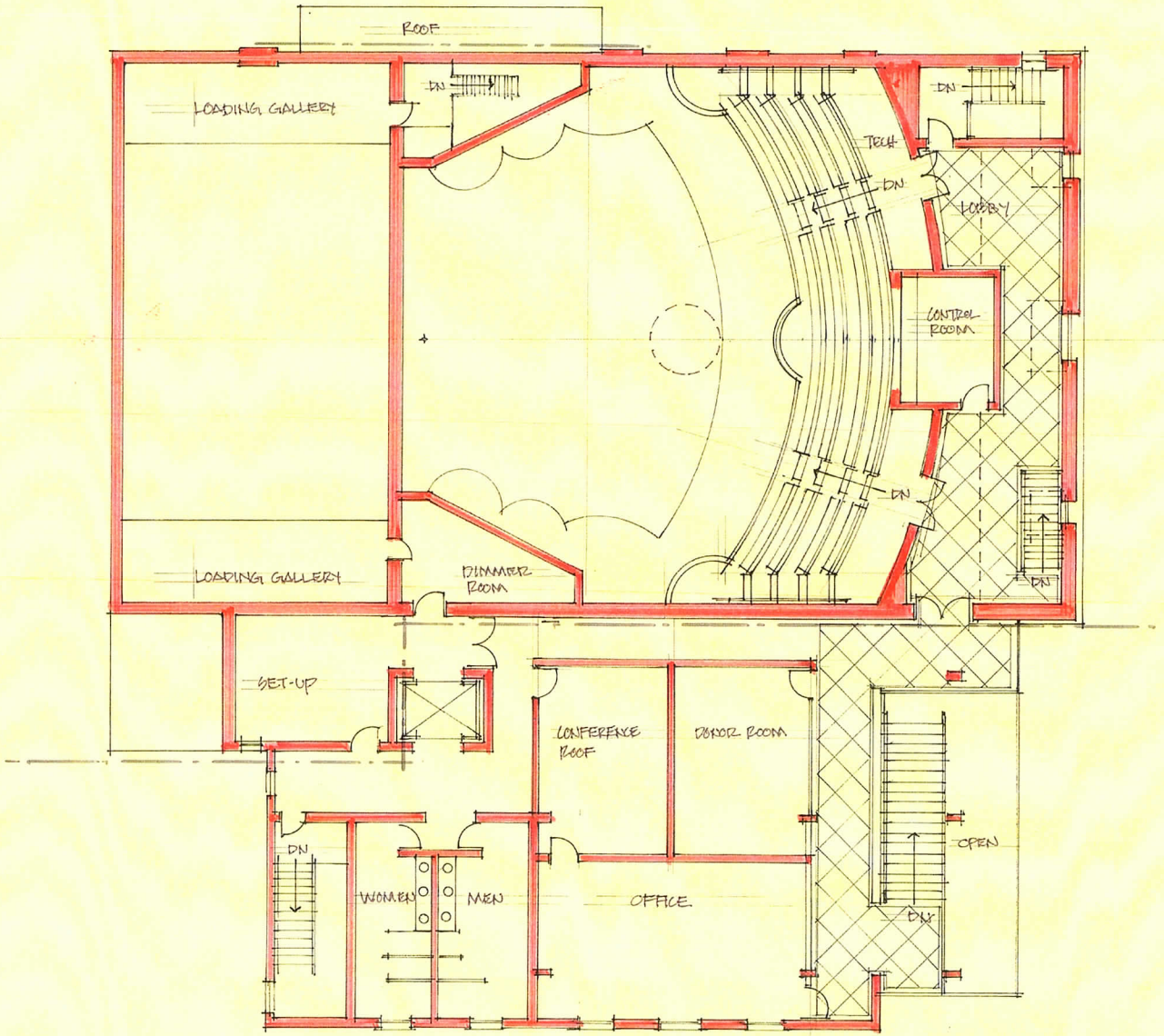
PROPOSED WORK

THE MENOMINEE OPERA HOUSE

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2ND BALCONY LEVEL



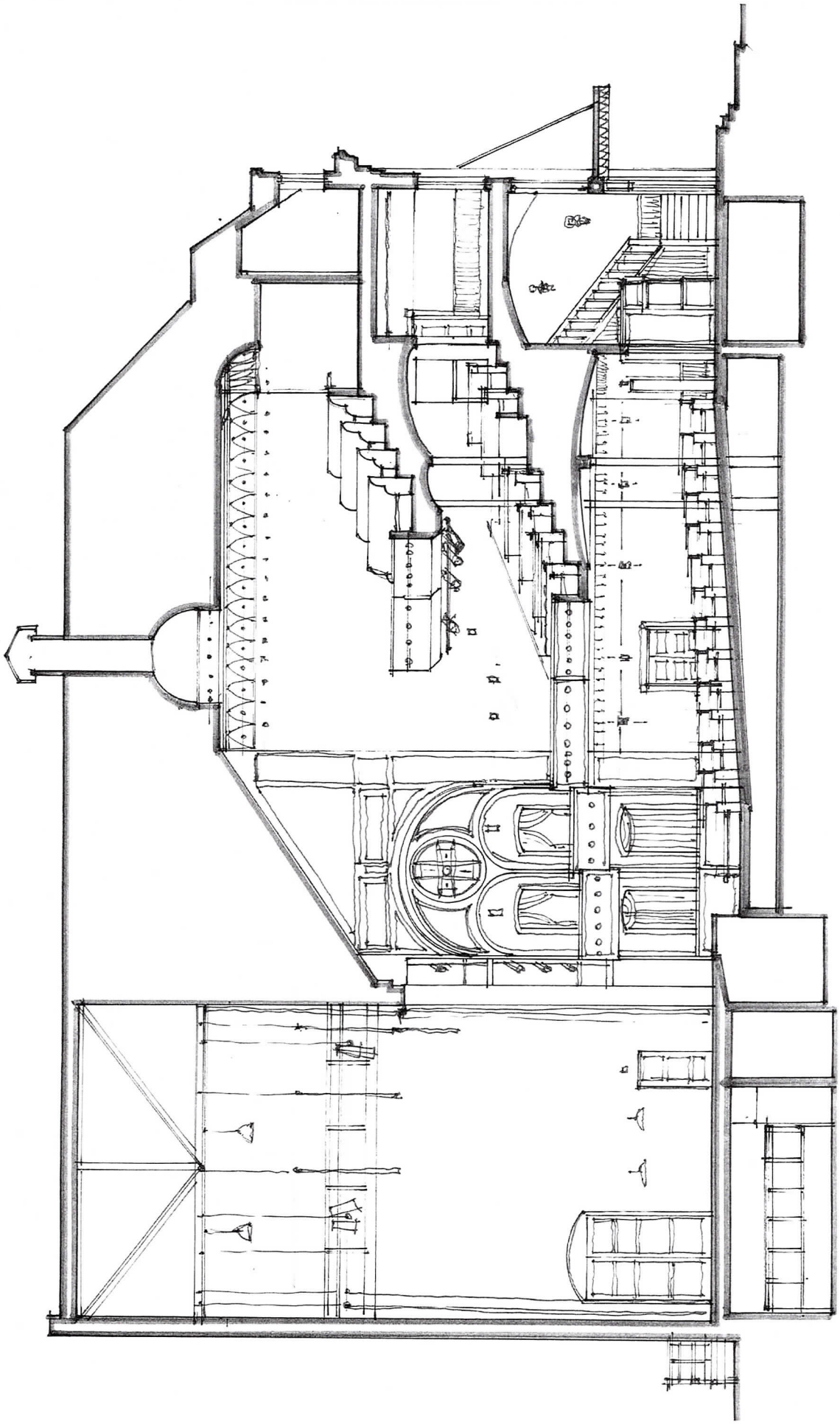
SECOND BALCONY LEVEL

JULY 2008

PROPOSED WORK

THE MENOMINEE OPERA HOUSE

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threshold

1 August 2008

Menominee Opera House Restoration
Acoustic Evaluation and Recommendations for Improvements

Introduction

The plans for restoration of and addition to the historic Opera House in Menominee, Michigan establish a new point in the life of the building. These plans allows the vision of the Board to be articulated, as well as establish a reaffirmation of the expectations for what can be done to secure the future of the building for coming generations. This document addresses the anticipated acoustic performance of the space after the restoration and outlines the issues to be addressed as the project moves from a feasibility study toward design. Aspects of the acoustic issues include: interior acoustic performance, especially as compared with the historic acoustic character, accommodations for audio and video systems, sound isolation, and noise control of mechanical systems.

Intended Programming

During initial meetings and evaluation visits, wide-ranging discussions anticipated many performance uses of the building that would require more significant intervention or reinterpretation of the architectural envelope and technical support aspects of the building than was initially anticipated. User meetings throughout the evaluation process have narrowed those goals to include the following:

- Amplified music of the "unplugged" or lightly amplified style in country, folk, bluegrass, etc.
- Combination amplified and unamplified performance types including jazz or big band performances
- Unamplified performance that may include ensembles from the Milwaukee Symphony, and would support chamber music, recital, or solo concerto performances that are typical for tours reaching venues of this size
- Touring children's theatre
- Weddings
- Corporate meetings and lecture/presentation
- Cinema

This list of desired uses will each have a different level of acoustic impact on the redesign of this space. The amount of effort placed on creating or augmenting elements to support these uses will ultimately be emphasized based on the priority placed on their importance in the business plan.

Interior Acoustic Character

Configured in the tradition of an opera house, the vertical arrangement of the audience establishes an interior acoustical environment that is moderately reverberant and responsive. The bench seating and potential for the second balcony to be unseated for some performances will lead to a level of unpredictability in the interior acoustics. The reverberation time for unamplified performances will swing dramatically between a relatively live condition with no patrons in the 2nd balcony compared with a relatively drier sound when the 2nd balcony is seated.

The upper balcony seats, as is typically the case, will be some of the best seats in the house acoustically. However, they may not be physically comfortable, nor have the desired sightlines. All of the upper side wall and most of the ceiling surface work to support the natural sound from stage, and make this area the best place in the house for listening to an unamplified performance.

The front rows of the first balcony are not supported by sound from the ceiling, and the walls behind the box areas provide limited acoustic support to the balcony because of the open entryways, and the tight curvature of the box fronts that spreads sound over a wide area. However, what is lost in supportive reflections is given back in proximity to the stage. The first rows are within 40' of the stage, and have the best view in the house.

The main floor is well served by the intersection of the upper boxes with the cheek walls, and even the rear of the underbalcony has enough of a view to the room that the sound of the underbalcony area can be rewarding. On stage, performers will hear themselves first from the curved fronts of the lower boxes, then from the upstage wall or any scenery or shell in place, followed by the rear wall of the main floor, and then by the cove over the 2nd Balcony. This support stretched over a long period of time is useful for unamplified performers if the strength of the reflections is not too great. The focused shape of the main floor's rear wall could potentially provide the most distracting reflections to a performer.

Recommendations for future development

As the design progresses from this feasibility phase, the following considerations will take advantage of the best properties of the historical configuration of the Opera House, and will help adapt it to the performance styles under consideration:

- Provide a retractable curtain at the rear wall of the 2nd Balcony that will allow the control of sound for low occupancy conditions in the 2nd balcony, or for use with heavily amplified performances or cinema
- Minimize the openings in the box entryways to provide maximum surface area at the boxes for support of sound to the 1st balcony
- Provide diffusive shaping at the rear of the main floor through offsets in the wall areas around door ways or tilt the top of the interior surface of the wall back to reduce the strength of the rear wall reflection back to stage
- Provide curtains or banners at the rear of the main floor to more fully control amplified sound back to the stage
- For unamplified ensembles that do not fit downstage of the proscenium, consider orchestra shell towers and/or some form of shell ceiling
- All interior plaster surfaces will benefit from the weight and stiffness of plaster systems. Where possible, plaster should be directly tied to the masonry to provide full frequency reflections and maintain bass response in the room

Audio and Video (AV) Systems

The recommended AV systems provide amplification complementary to the natural acoustics of the room.

Loudspeaker Systems & Control

A left/right system suspended downstage of the proscenium serves the performance needs of most of the identified users. Front-fill loudspeakers and under balcony loudspeakers will be required at both balcony levels, as well as systems to serve the 2nd balcony. Foldback systems will be provided in addition to portable stage monitors to provide permanent monitor of the amplified signal to performers on stage upstage of the proscenium. and in the pit. A control location will be required on the main floor to support the type of events that are described. It can be removable for events that do not require in-house mixing capability.

Cinema, Video, and Presentation

Video presentation of movies will be most readily supported through the use of a rear-projection screen. An 18'x10' projection screen will provide an appropriately-sized image for the size of the house, and can be displayed from a projector mounted on the upstage wall, and can also serve the lecture and corporate use of the Opera House. Cinema audio systems will be most readily augmented through the use of a center channel rolled into place behind the screen on the stage, and by clustering small surrounds with the underbalcony fill speakers.

Technical Production Systems

Stage view and house view cameras are recommended to support back-of-house functions and late arrival views of the show in progress. 2-channel technical intercom systems are recommended to allow for communications among staff and crew. Audio/Video systems will require input panels in the stage floor, at the left and right wings, and on the upstage wall. Control of simple functions can also be provided at the control room on the second balcony. Connectivity for audio and video is also recommended for the pit.

Monitor Page, Hearing Assistance, and Archival Recording

Monitor/Page systems will serve both front-of-house and back-of-house paging throughout the facility and will allow the program in the house to be heard by guests or staff in much of the facility. The same monitor signal will feed the hearing assistance systems and will allow for archival recording of events (both audio and video).

Support of Touring Productions

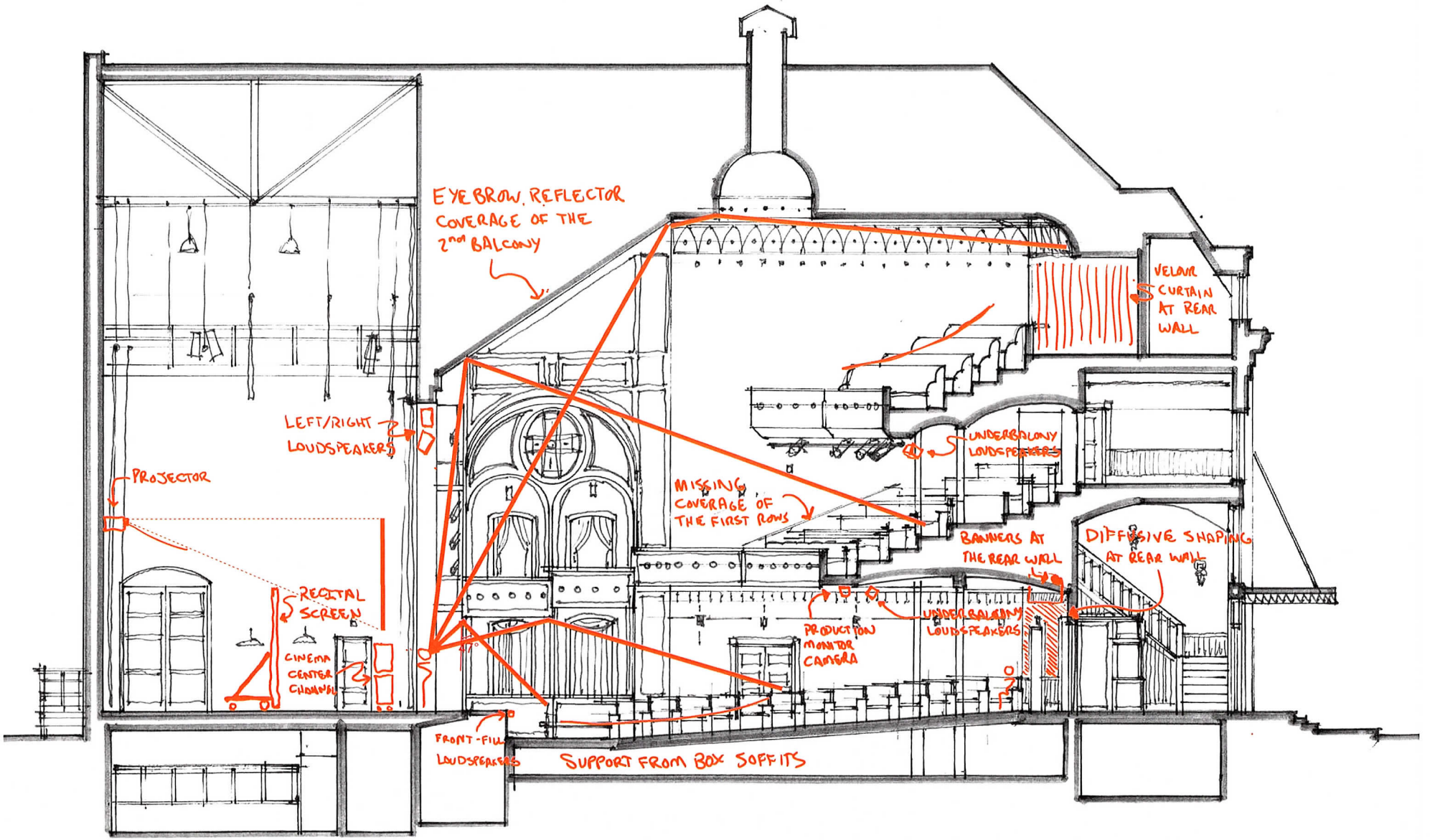
Systems will allow for the use of a visiting artist's main loudspeaker system and mixing console, and will provide for ready access to the house auxiliary systems, including front-fill, underbalcony, technical intercom, monitor page, hearing assistance and foldback systems.

Sound Isolation

The historic audience/lobby relationship does not lend itself to providing good separation between the lobby and the house. Open vomitoria at the 1st balcony level and single doors between the house and adjacent function areas such as the ballroom, concession area, and exterior expose the performances to distractions, and reduce the ability to use the ballroom simultaneously with the Opera House.

Noise Control

The arrangement of the physical plant provides space for the major equipment under the new addition. This, plus the displacement ventilation system, can assure quiet delivery of heating and cooling for the house and stage. Good practice maintained in vibration isolation of installed systems, care in penetrations of the acoustic volume, and slow-moving air delivery will contribute to the low background noise that enhances the performance experience. Dimmers and other noise-making theatrical equipment should like-wise be located well away from the acoustic volume of the house and stage.


EYEBROW REFLECTOR COVERAGE OF THE 2nd BALCONY
VELOUR CURTAIN AT REAR WALL
LEFT/RIGHT LOUDSPEAKERS
UNDER-BALCONY LOUDSPEAKERS
PROJECTOR
MISSING COVERAGE OF THE FIRST ROWS
BANNERS AT THE REAR WALL
DIFFUSIVE SHAPING AT REAR WALL
RECITAL SCREEN
PRODUCTION MONITOR CAMERA
UNDER-BALCONY LOUDSPEAKERS
CINEMA CENTER CHANNEL
FRONT-FILL LOUDSPEAKERS
SUPPORT FROM BOX SOFFITS

Building Systems

Heating Ventilation Air Conditioning (HVAC)

The conceptual design goals for the Opera House's new HVAC system

The source of heating and cooling has yet to be determined. Every effort will be made to provide a system that is highly energy efficient. Alternative source will be looked into as the project moves ahead.

The Opera House will be zoned to minimize the size and running of the HVAC equipment.

All equipment, fans, pumps, chillers etc will be located in the basement level of the addition. Placing it in new construction will allow for proper room sizing and acoustical separation.

The auditorium will be designed as a displacement air system. Condition air is supplied low through the floor at a very low velocity. As the air heats up it rises in the space and takes advantage of the historic roof venting. This is a system that has acoustical benefits and can maintain audience comfort with less energy.

The HVAC system will take advantage of the latest innovations in delivery systems. The historic rooms of the opera house are a prefect location for the use of a "chilled beam" system. This will minimize the use of large ducts and still provide comfort.

Plumbing

The plans call for all public rest rooms to be located in the new addition. With a possible assembly of over 700 people a large number of rest rooms will be required. HGA recommends at a minimum: Women's 12 stalls, Men's 5 stalls and 8 urinals. The proposed plans show these located on each of the four public levels.

The two dressing rooms on the main level will each have a shower, toilet, and sink. The choral dressing rooms under the stage will have two sets of toilet & shower rooms and multiple sinks in each dressing table grouping.

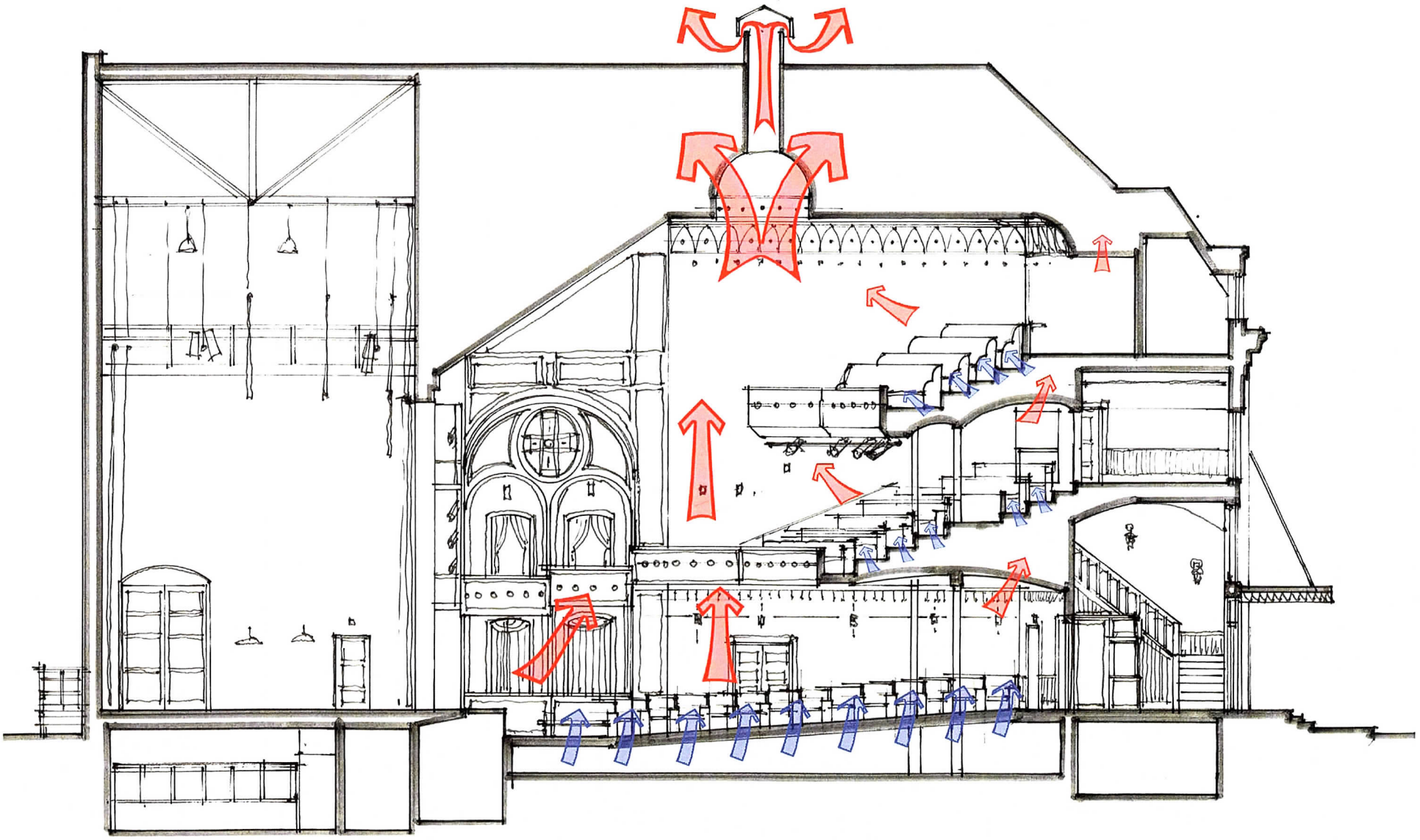
All water systems will be low flow.

Fire Protection

A fully operating sprinkler system is planned for the entire Opera House.

Electrical

The sound and lighting systems of modern stage productions have large power requirements. (Refer to the theatrical and sound system section for power requirements.) New electrical service is required for the Opera House. However every effort will be made to reduce the energy required to operate the house lighting and building power systems.



Displacement Air System

THEATRE PLANNERS
Schuler Shook

MENOMINEE OPERA HOUSE RESTORATION

31 July 2008

PERFORMANCE SYSTEMS AND EQUIPMENT DESCRIPTIONS REPORT

Schuler Shook visited the Menominee Opera House site with HGA, Quinn Evans Architects, and Threshold Acoustics earlier this year. We examined the configuration of the stagehouse, auditorium and surrounding spaces, as well as the Opera House's setting in downtown Menominee.

This report will address use of the restored Menominee Opera House and suggest means for equipping it to meet those uses. See other sections of the Master Plan report for discussion of the building's condition and for suggested building additions.

Programmed Uses

We understand the intended uses of the Opera House to include, in rough priority order:

- Live amplified music events: folk, country, big band and other music
- Assemblies for corporate meetings, lectures and other group meetings
- Rentals for wedding events
- Touring Children's Theatre productions
- Appearances by the touring arm of the Milwaukee Symphony
- Film presentations

The master plan designs indicate a direction of restoring the Opera House, using a great deal of its original layout and seating schemes. Basic floor elevations are near the originals, and the stage height has remained unchanged. Seating tiers have been reworked for some improvement of the original sightlines. The building addition accommodates new lobby access to these levels. Seating sightlines to the stage will require further study for their application above the needs of music events.

The uses noted above can be suitably supported within the restoration design. Certain augmentations would be necessary to support increased usage ,such as professional touring theatre, stage musicals, dance and other production-intensive performances. We understand that such performances are not within the anticipated uses of the Opera House.

The following areas of building and equipment design and accommodation will address the planned uses.

Stage Floor

The stage area floor will be a resilient floor, employing neoprene pads, 2x4 sleepers, plywood sub-floor, and a top surface of Plyron (hardboard bonded to plywood). The floor will accept fasteners for attaching scenery and effects, and it can be painted and re-painted as part of productions.

Touring Production Support

Many touring acts will bring their own equipment and need to suspend it over the stage, or from the auditorium ceiling at points extending mid-way into the seating zone. Onstage, the structural steel will be designed to anticipate the range of loads imposed by this equipment. In the auditorium, a series of concealed openings and strong connection points will be required to support touring audio equipment, lighting trusses, and scenic elements. This requires further study for integration into the auditorium overhead areas.

Unassigned electrical power ("company switches") are required to power touring equipment such as portable dimmer racks, temporary stage winches, and chain motors. We recommend three (3) 400-amp three-phase 120/208v switches and one (1) 200-amp switch to accommodate lighting/video/production power. These switches will be distributed in the backstage support areas and the overhead catwalk spaces. See Threshold Acoustics' report for confirmation of power required for audio equipment. In addition, ample convenience power receptacles will be located at the stage and support spaces.

Certain walls and floors may require integrated pass-thru elements to allow for temporary power and signal cable use without affecting fire ratings.

Stage Lighting System

The stage lighting system will be planned and sized to support the range of anticipated events, and its capability will be expandable for larger events. The system will consist of five (5) integrated sub-systems:

- House lighting
- Production lighting
- Work/Rehearsal lighting
- Data distribution
- Power distribution

Stage dimmer racks will control the lighting sub-systems. The racks will be located in a room acoustically isolated from the performance space and will have required special cooling requirements. Other components of the stage lighting system are control consoles, DMX translation devices, remote control panels, wiring devices, and lighting fixtures.

The house lighting system will be comprised of incandescent downlights incorporated into the architectural layout. The intensity goals will range between 10-and 15-foot candles, which matches many professional theatres. The houselighting will be dimmable and centrally controlled through a portable auxiliary console, the stage lighting console, stage

managers panel or entry panels distributed throughout the auditorium. The houselighting will include a subset of fixtures fed through an emergency transfer system. In a loss-of-power condition, these fixtures will go to full.

The work lighting system will consist of standard lighting fixtures to illuminate the stage, flying zone, and attic catwalks. The stage work lights will be quartz flood lights located on electric battens, catwalks, and the ceiling above the side stages. Quartz floodlights located on the pinrail galleries will provide illumination of the flying zone, and fluorescent lamps will illuminate all catwalk areas. Work light master control panels will be located at the stage manager location and in the lighting control room, and individual on/off switches will be located for local control at all areas.

The theatrical lighting system will consist of 20-amp circuits distributed on plugging strips and plugging boxes throughout the theatre. An individual dimmer will power each circuit. Connectors will be stage slip pin. The control console will be high capacity, state of the art, and will provide for control of automated lighting fixtures ("moving lights") as well as static fixtures. Control system accessories will include power conditioners, remote displays, hand-held remote controller, and off-line editing hardware and software. The stage lighting system will include approximately portable stage lighting instruments in the form of ellipsoidal spotlights, wash lights, and cyclorama lights.

The data distribution system will provide for the flexible distribution of both DMX-512 and Ethernet protocols throughout all potential lighting and control locations in the theatre. The Ethernet network will provide accessibility to all lighting control system functions—focus remotes, designer remotes, remote displays, etc.—from virtually anywhere in the theatre.

Stage Rigging System

The stagehouse is not shaped to support contemporary manual stage rigging. Issues include:

- A modern-day replacement of the failed flyloft roof with a steel truss system
- The addition of concrete side galleries that block potential counterweight zones
- The desired loading doors on both sides of the stage
- The cross-section shape of the upper flyloft zone

These issues can be overcome with a stage rigging system that employs a combination of "dead-hung" rigging and motorized operable rigging. This system will use a fixed set of overhead teasers (horizontal curtains) and masking legs on dead-hung tracks for operability. Heavy overhead loads (stage lighting and scenery) will be hoisted using motorized linesets installed in the stagehouse roof. These motorized sets do not require the use of counterweights. Their loading can be designed as a straight downward force on the building, which may integrate optimally with the existing structure. The motorized rigging will have a capacity of 1,500 pounds per lineset. The motorized riggings will be controlled by an onstage controller.

The structural support of the existing stagehouse and the clearances at the side galleries require further study to coordinate this system.

Curtains and Tracks

The stage curtain set will consist of a main curtain (operating as a bi-parting drape), border and leg masking curtains, midstage and rear full-width traveler curtains, cyclorama, black scrim, and projection screen. The masking curtains will be black velour. The cyclorama will be white muslin material, and the projection screen will be front-projection material.

Miscellaneous Rigging

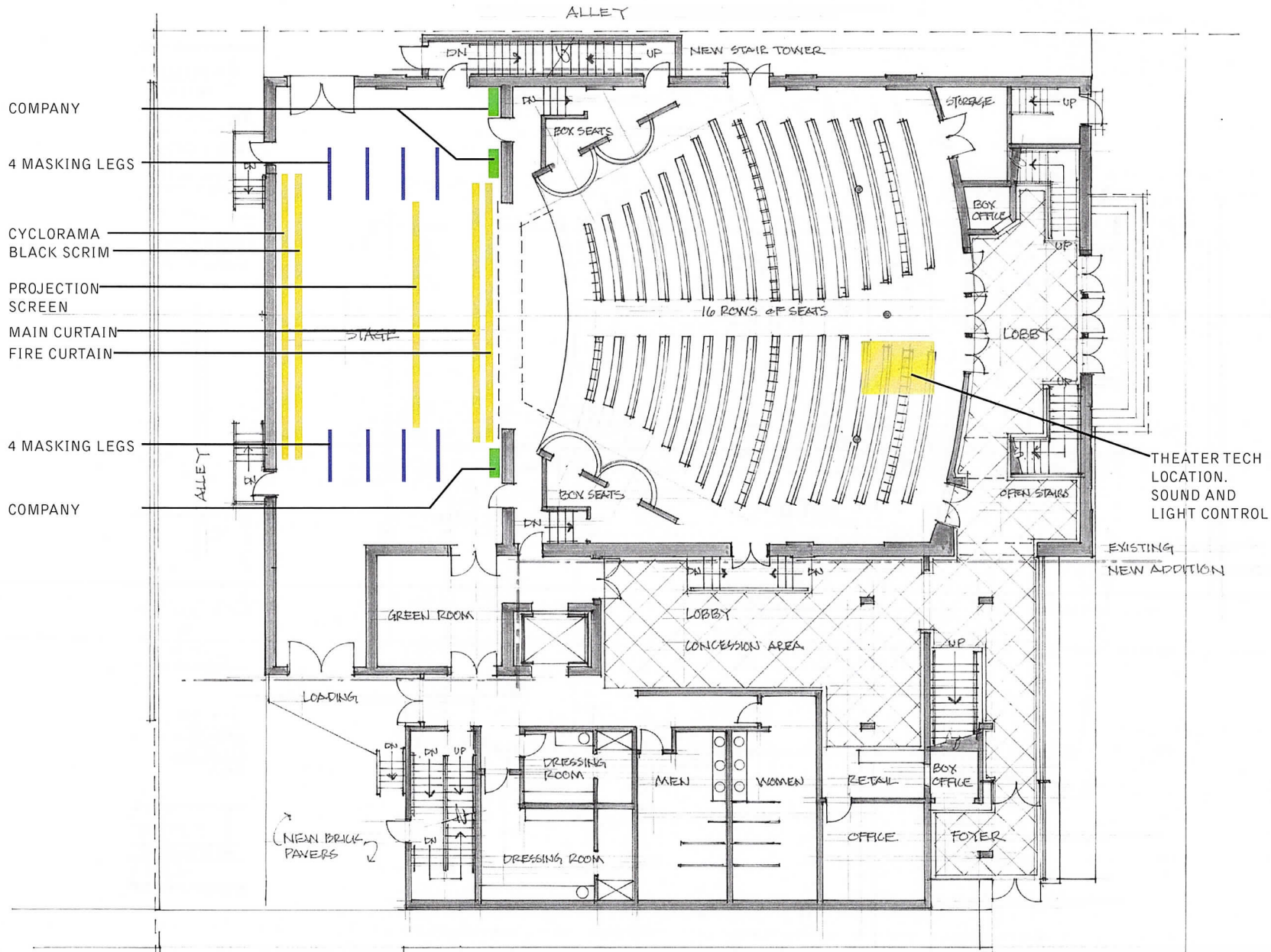
Stage circuits may be provided to any rigging batten with the use of multiconductor cables and circuit drop boxes. These drop boxes will be manually rigged by single rope lines and tied off at the pinrail galleries.

Other Equipment

A stage manager console will be located backstage and will contain all the following equipment and functions:

- Headset intercom main station
- Paging controls
- Video monitors
- Houselight and worklight controls

A personnel lift and ladders will be necessary for access to stage battens, lighting instruments, and scenery.



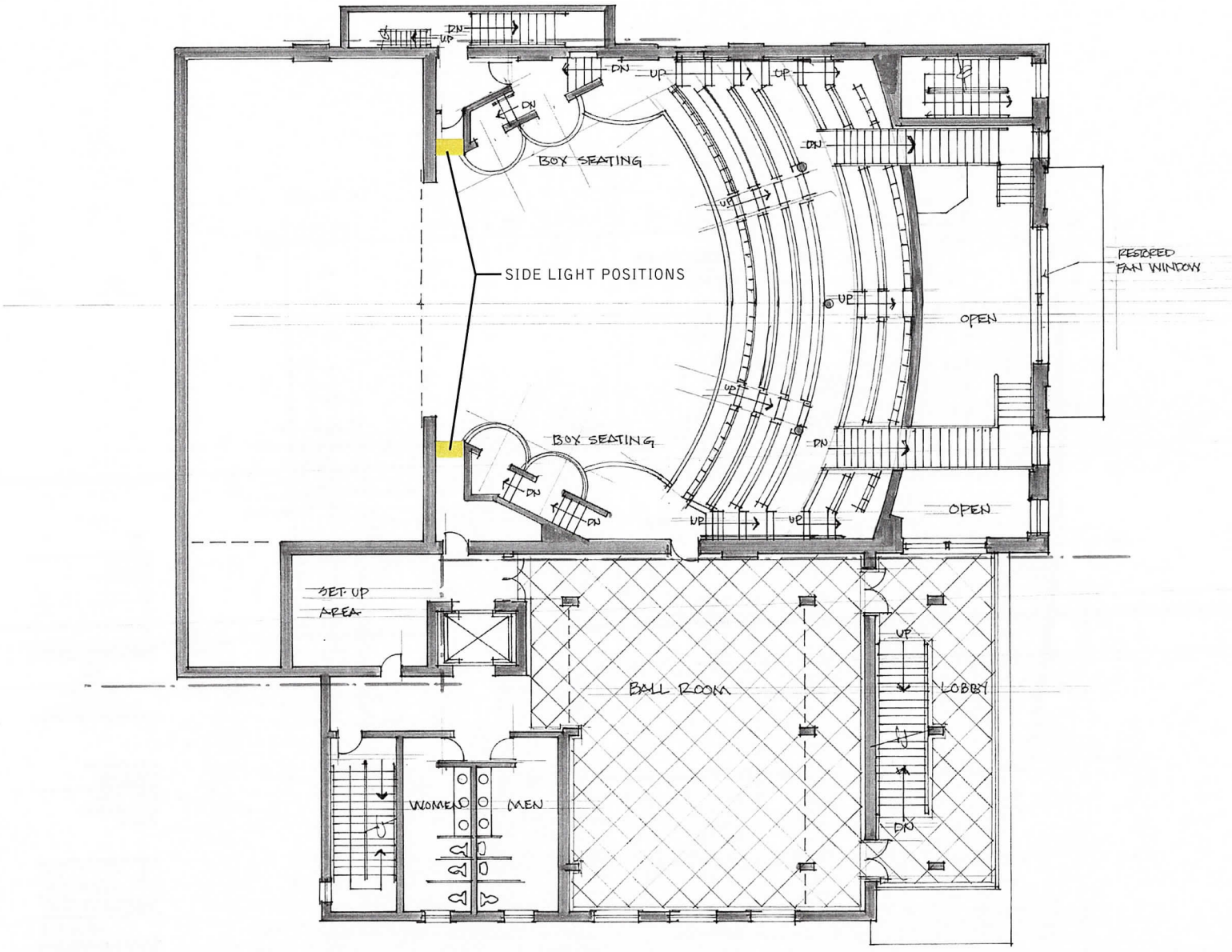
GRADE LEVEL

JULY 2008

PROPOSED WORK

THE MENOMINEE OPERA HOUSE

HGA Architecture | Engineering | Planning



FIRST BALCONY LEVEL

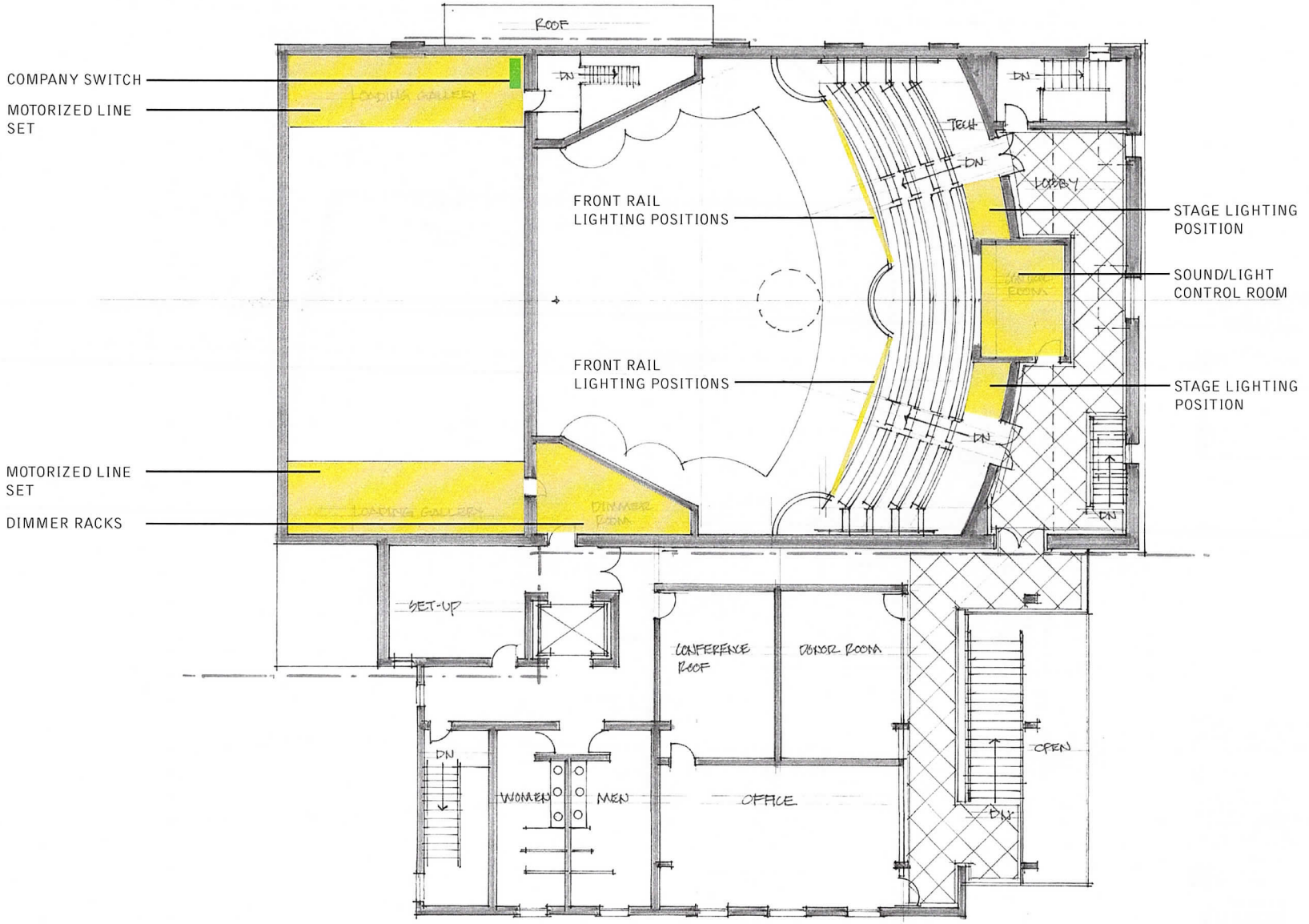
JULY 2008

PROPOSED WORK

THE MENOMINEE OPERA HOUSE

HGA

Architecture | Engineering | Planning



SECOND BALCONY LEVEL

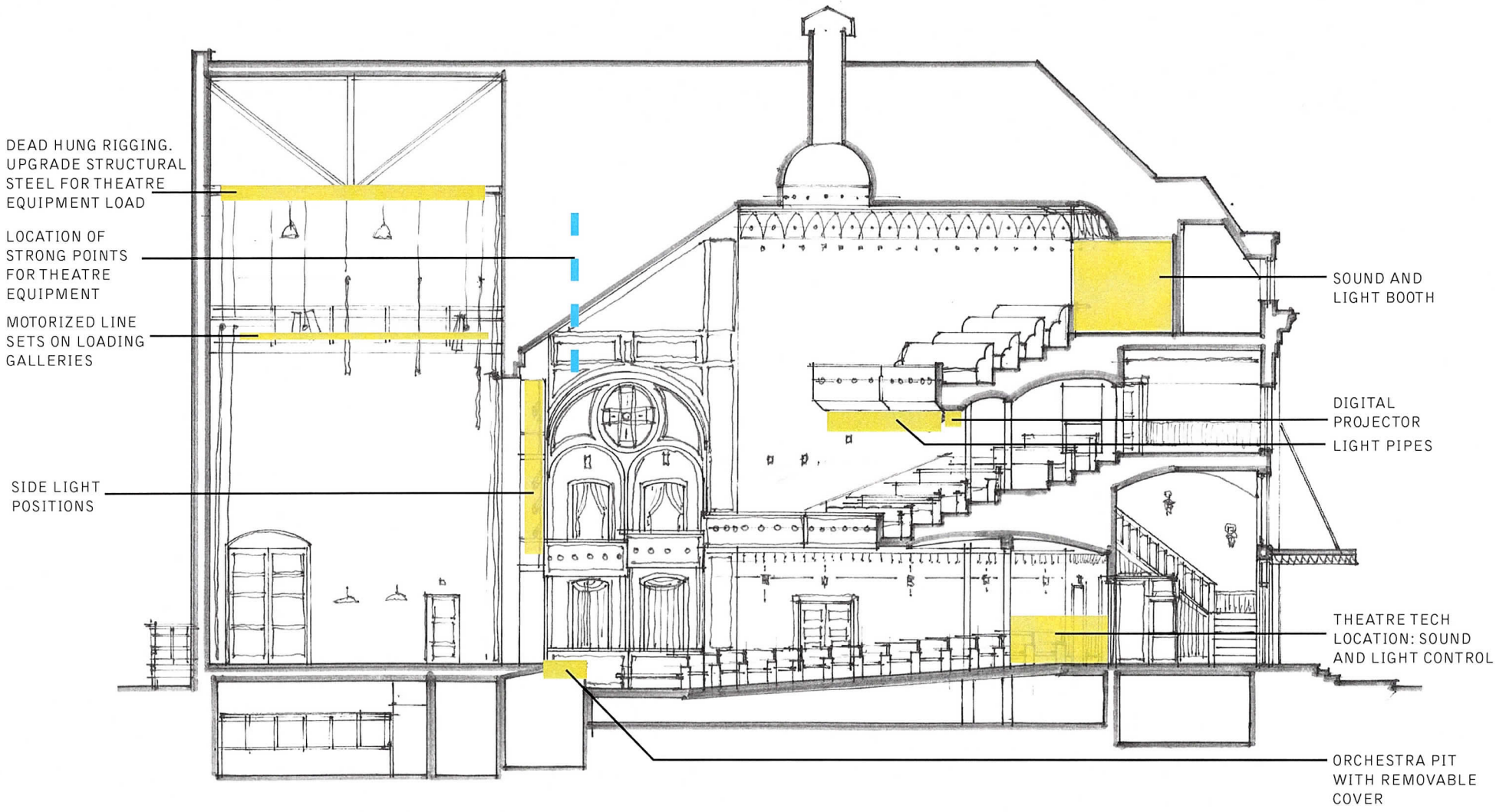
JULY 2008

PROPOSED WORK

THE MENOMINEE OPERA HOUSE

HGA

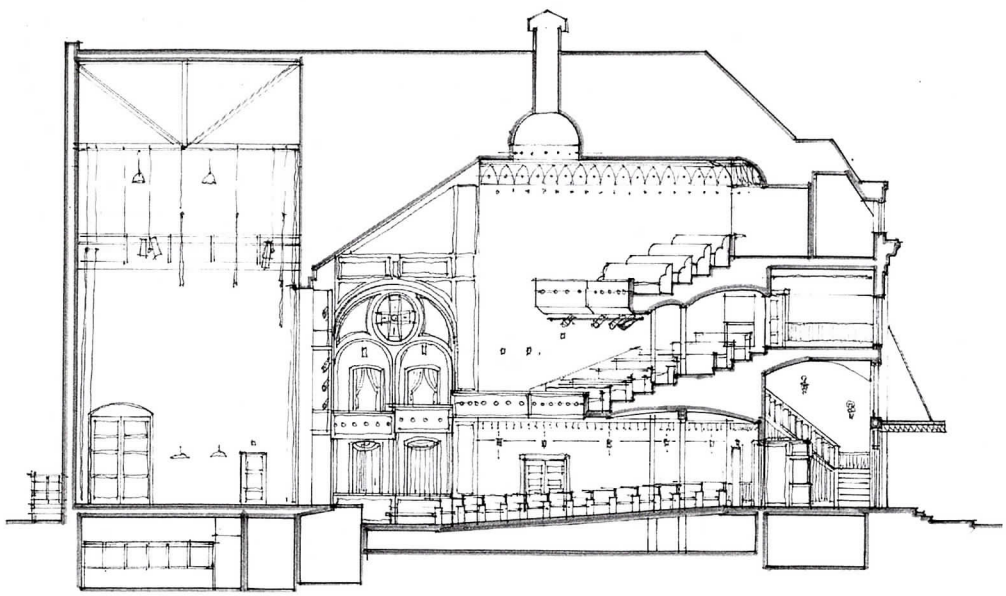
Architecture | Engineering | Planning


DEAD HUNG RIGGING. UPGRADE STRUCTURAL STEEL FOR THEATRE EQUIPMENT LOAD
LOCATION OF STRONG POINTS FOR THEATRE EQUIPMENT
MOTORIZED LINE SETS ON LOADING GALLERIES
SIDE LIGHT POSITIONS
SOUND AND LIGHT BOOTH
DIGITAL PROJECTOR
LIGHT PIPES
THEATRE TECH LOCATION: SOUND AND LIGHT CONTROL
ORCHESTRA PIT WITH REMOVABLE COVER

MENOMINEE OPERA HOUSE

THE WHOLE PROJECT

The scope of the plans outlined in the Restoration Master Plan is for a complete rebuild of the existing Opera and a new addition. This work will fulfill MHO's programmatic needs to support the artist requirements of future stage productions and their business plan to operate a successful Opera House. The project budget assumes that all work will be completed in a single step. Phasing of the plan is possible and most likely will be required. The scheduling, timing and scope of any phases will depend on fund raising and community support. It is not usual for projects like the Menominee Opera House to take several years to start a major renovation.



SCHEDULE OF WORK

(assuming single phase for design & construction)

Architectural and Engineering design and documentation of all work

12 to 18 months depending on approvals and reviews

Construction of renovation of Historic Opera House and new addition

12 to 14 months plus one month of system tech

IMMEDIATE NEEDS

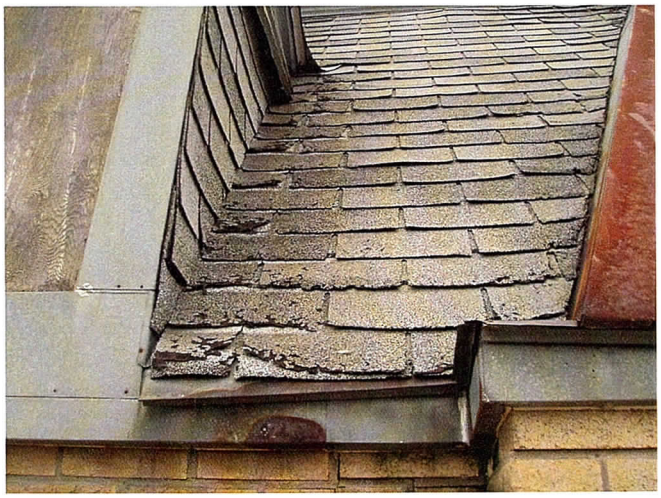
START AS SOON AS POSSIBLE

The Opera House is in stable condition. However, water damage and cracking in the front façade is visible. It is the recommendation of this design team that immediate work take place on the front façade and roof to prevent further long term damage to the building.

* This work would be completed to National Park Service standards for preservation of historic buildings. It would be a long term investment.

BUDGET FOR IMMEDIATE NEEDS

Tuck point and stabilization of front façade.*	$250,000
Tuck point and stabilization of other façades*	$ 50,000
Rework roof drainage, gutters, downspouts	$ 30,000
New membrane roof, non-historic temporary sheet metal, asphalt shingles	
OR	
Rework roof drainage, gutters, downspouts*	$120,000
New membrane roof, historic sheet metal, slate tiles	
A&E fees	$80,000
Range for Immediate work	$410,000 to $500,000





COMPLETE RENOVATION AND NEW ADDITION

Demolition and site preparations, temporary work		$90,000
Existing building Renovation		
All architectural, structural and MEP work		
23,634 square feet @ $270/ sf		$6,381,180
Includes installation of 482 salvaged theatre seats		
New historic theatre seats "recreation of original seats"		
482 @ $270 each		$130,140
Theatre Systems		
Theatre Lighting: controls, lights, dimmers	$240,000- $310,000	
Theatre Rigging: dead hung pipes and motorized sets	$175,000- $240,000	
Theatre Soft goods: Stage drapery, cyc, main curtain	$ 40,000-$ 60,000	
House drapery, acoustical	$ 15,000- $35,000	
	$470,000 - $645,000	
	($557,500 average)	$557,500
Sound Systems		
House system	$120,000	
Production intercom	$ 30,000	
ADA Hearing Assist	$ 10,000	
	$160,000	$160,000
Audio Visual system		
Projector, screen, digital playback	$120,000	
House monitors, cameras, decoders	$ 40,000	
	$160,000	$160,000
Digital Cinema Connection		$ 40,000
New Addition		
All architectural and structural and MEP work		
18,670 square feet @ $210/ sf		$3,920,700
Total building with theatre & sound systems		**$11,439,520**

Total Building with theatre & sound systems		**$11,439,520**
Furnishing and misc equipment		$ 200,000
Chairs, tables, displays cases, concessions/bars		
Ticketing, computers, etc.		
Architectural, engineering, specialty consultant fees		$1,200,000
10% +/-		
Contingency 10%		$1,200,000
Contractor general conditions 7.5%		$ 860,000
Total project cost		**$14,899,520**
Excluding; utility hook up, new services permit fees,		
legal fees, fundraising, no escalation		
Immediate Needs work addition	$410,000-$500,000	$500,000
Project Grand Total		**$15,399,520**

All numbers are based on historical data from HGA and design team members.
All work is completed by professional contractors and assumes that all materials and labor are purchased at market prices.

