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# **COPPER QUEEN LIBRARY BISBEE, ARIZONA**

*BUILDING CONDITION ASSESSMENT*

*May 20, 2021*

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# Bisbee Copper Queen Library: An Architectural History

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## PROJECT AND PROPERTY DESCRIPTION

### Introduction

As a sub-consultant to the architectural firm Poster Mirto McDonald (PMM), Logan Simpson was tasked with preparing an architectural history of Bisbee's Copper Queen Library as part of a Historic Structure Assessment report. The building is listed in the National Register of Historic Places as a contributing property to the Bisbee Historic District (Wilson et al. 1980). The following section describes the architectural character of the building, provides a summary of its documented history, and includes a discussion of possible grant and funding sources the City of Bisbee may pursue to finance a future rehabilitation.

The Copper Queen Library was constructed between 1906 and 1907 and designed by prominent Bisbee architect Frederic (sometimes Frederick) C. Hurst for the Copper Queen Consolidated Mining Company. The building occupies an irregularly-shaped lot between Tombstone Canyon and Commerce Street near the southern end of Bisbee's commercial core (Figure 1). It was purpose-built to house the city's library and post office and has retained these functions to the present day. Both its exterior and interior design and materials have survived remarkably intact since its initial construction and form an important visual and institutional anchor in Bisbee's downtown core. All of these qualities make the building a central resource in the effective communication of the historic district's architectural and historical significance, as well as a vital community asset to the City of Bisbee and its residents.



Figure 1. Aerial image of the Copper Queen Library showing its location within the context of Bisbee's historic commercial core. North is up. 2019. Courtesy of Google Earth.



# Architectural Description

## Overview of materials and construction

The Copper Queen Library is a three-story building located at 6 Main Street, which fills an irregular polygonal parcel located at the intersection of Main Street, Commerce Street (formerly a railroad spur), and a plaza that serves dual purpose as a parking lot (sometimes called Library Plaza; Figure 2). Owing to its three exposed elevations and prominent downtown location, the library anchors Bisbee's historic commercial core and is one of the first multi-story buildings to greet incoming visitors. Its north and east elevations acknowledge its conspicuous location by ornamenting its primary facades with double-height arcades, decorative cladding, and moderate ornamentation. Its south elevation, meanwhile, originally opened onto an industrial railroad spur and is more utilitarian in construction and appearance. The remaining west elevation is partially occupied by the adjacent two-story Bisbee Review Building (12 Main Street, formerly known as the Phelps Dodge Clinic) to the west, which covers the lower half of the elevation. The upper half is left exposed but consists almost exclusively of a blank wall without fenestration or ornament.

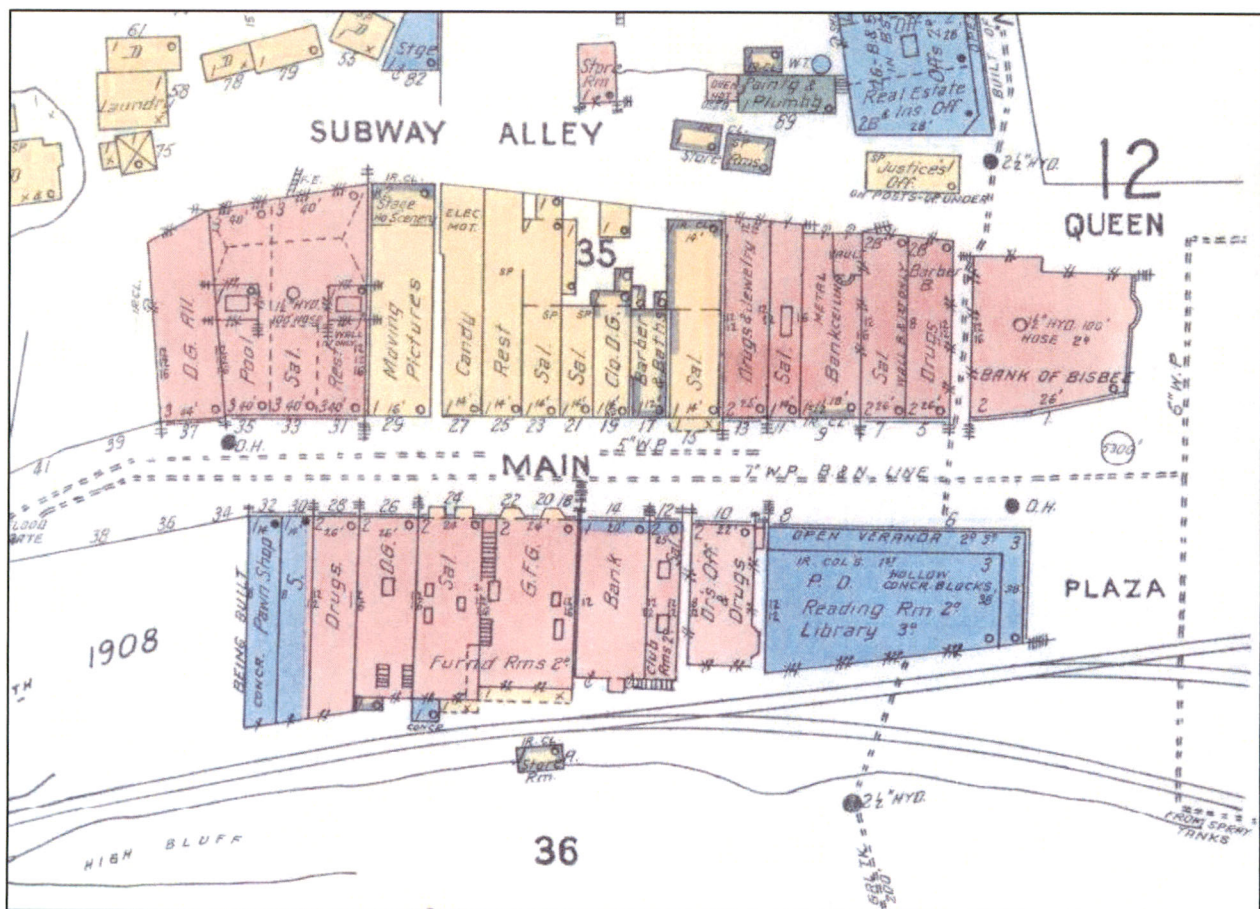


Figure 2. Sanborn Fire Insurance Map showing library building in blue in southeast corner of page. North is up. 1908. Courtesy of the Library of Congress.

Historic newspaper articles indicate that the library building is constructed atop a concrete footing poured 5 ft below grade (*Bisbee Daily Review [BDR]*, 10 June 1906f:3). Within this footing, a partial basement is located in the building's southwest corner and has historically provided access to the building's mechanical systems. Newspaper articles contemporaneous to the building's construction indicate that



“[s]pecial attention” was given to “the strength of the wall on the south side of the building” because of increased danger of flooding (*BDR*, 10 June 1906f:3).

Atop the concrete footing, a combination of brick and rubble stone masonry has been used to create a level surface for the building’s first story. In plan, this story occupies the entirety of the lot running flush against sidewalks to the north and east; a drainage gutter to the south, and an adjacent building to the west. At its furthest extent, the footprint measures 95 ft 3 inches from east-to-west and 53 ft 9 inches from north-to-south (Figure 3).

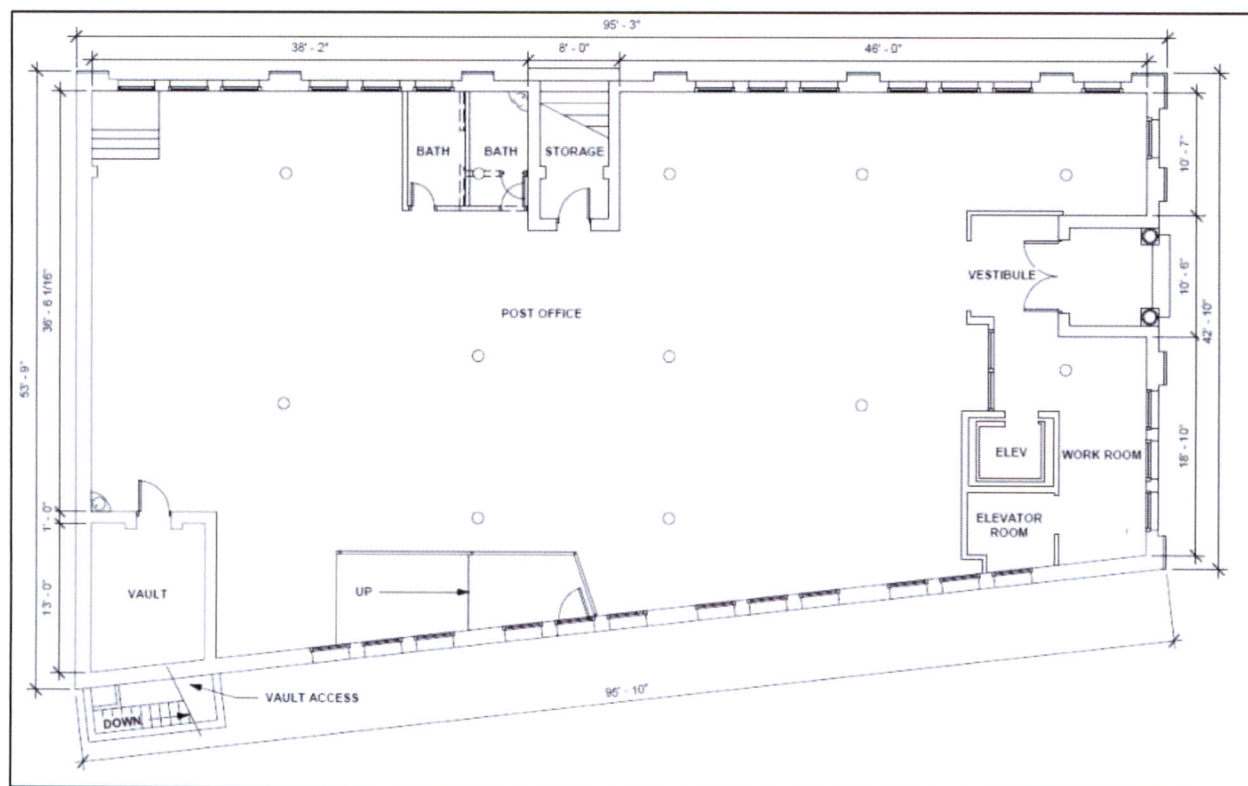


Figure 3. First story of the Copper Queen Library. North is up. 2021. Courtesy of the PMM.

Internally, the building is constructed from hollow precast concrete blocks and steel posts which support steel girders and reinforced concrete floors (*BDR*, 15 August 1906i:8; Sanborn Map Company 1908:9). These materials were chosen in part for their inherent fire resistance which also accounts for the limited woodwork utilized on the building’s interior (*BDR*, 15 August 1906i:8; Sanborn Map Company 1908:9). The blocks are left exposed and unadorned along the south and west elevations of the first story and are defined by their smooth faces, ashlar forms, and light gray coloring (Figure 4). Except where altered during the construction process, the concrete blocks measure 8 inches tall and either 24 or 32 inches long. Along the styled north and east elevations, light gray pilasters covered in a smooth parge coat rise to the second story where they support the freestanding piers of the double height arcade. Set between these pilasters are precast ashlar rusticated concrete blocks identical in dimension to their smooth-faced counterparts (Figure 5). Newspaper reports indicate that these were dyed a “very dark red” (today appearing brown) to give them the appearance of an “old fashioned brown stone front,” creating a pleasing visual rhythm with the smooth massing of the light gray pilasters (*BDR*, 15 August 1906i:8).





Figure 4. Damaged/undamaged gray smooth-faced blocks at ground story of south elevation. March 2021.



Figure 5. Rusticated light brown blocks within the recessed entry on the east elevation. March 2021.

Above the first story, the second story possesses a step back along the north and west elevations, which creates a covered 8 ft wide veranda atop the first story (Figure 6). This is screened by the piers of the arcade and covered by the reinforced concrete floor of the third story veranda. The recessed exterior walls of the north and west elevations and the piers themselves are faced with the same rusticated precast concrete blocks of the elevations below. The south and west elevations similarly continue the smooth-faced light gray blocks of the walls below and possess no further ornamentation to demarcate the change in stories or their visual impression of bulk.

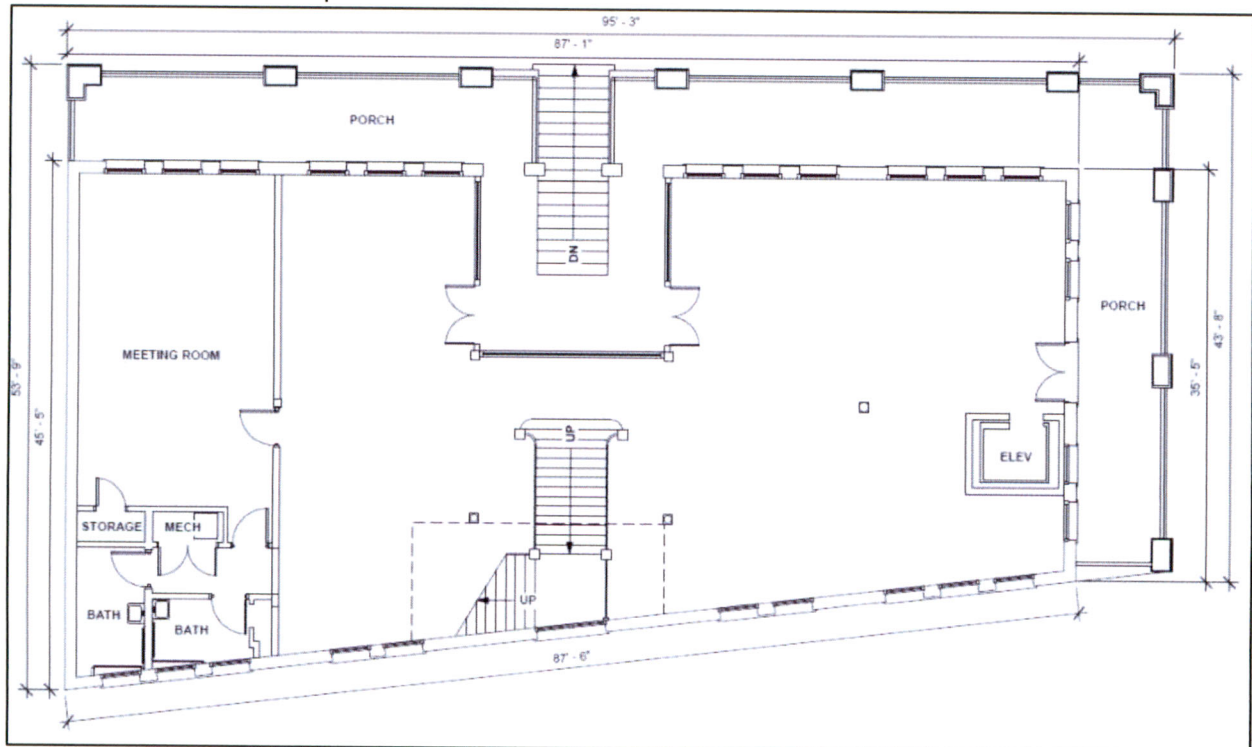


Figure 6. Second story of the Copper Queen Library. North is up. 2021. Courtesy of the PMM.



The third story uses a nearly identical plan to the second story with a step back providing room for 8 ft wide verandas along the north and west elevations (Figure 7). Although the recessed exterior walls of these elevations utilize the same rusticated concrete block, the arcade piers employ a smooth-faced block dyed the same brown as the rusticated blocks beneath it. Some 5 ft above the floor of the third story, light gray molding marks the springing line of each arch. These are carved out of a tall attic story and sheated with a parge coat of light gray concrete. This is topped by a tin cornice capped by a low tin parapet, which is set between raised merlons placed in line with each pier of the arcade below. The south and west elevations, meanwhile, are a continuation of the walls beneath them with the same smooth-faced block which continues up to the line of the parapet. Behind these parapets is a flat roof covered in an unknown white coating and topped with various ventilation pipes, mechanical equipment, and an original metal flagpole. Access to the roof is provided through a small hatch and ladder from the third story interior.

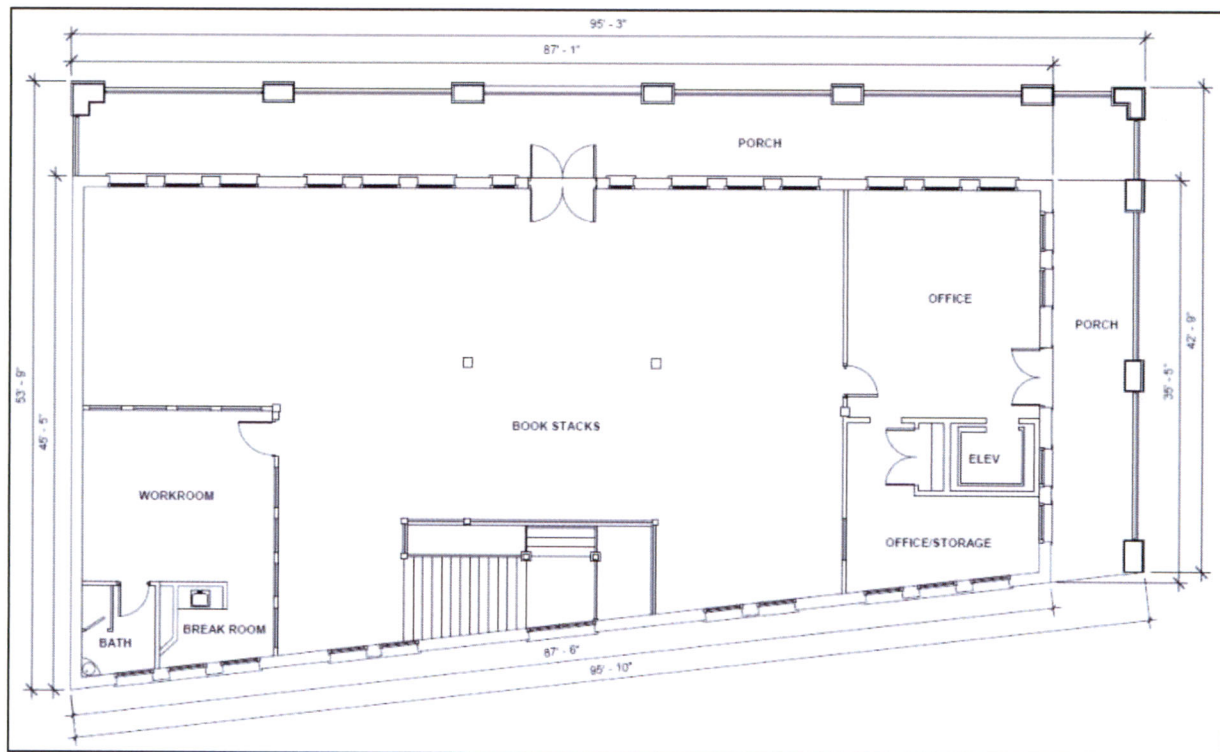


Figure 7. Third story of the Copper Queen Library. North is up. 2021. Courtesy of the PMM.

### *Changes since construction*

The Copper Queen Library has undergone remarkably few changes since its initial construction in 1906. Various upgrades have been made to its mechanical systems including the installation of an evaporative cooling system, the removal of original steam heating, and ongoing electrical and communication upgrades. Other changes have occurred to the building through the installation of an elevator in 1993 and the construction of accessible bathroom facilities at an unknown time. Aside from maintenance and limited restoration activities, no known changes have been made to the materials or structure of the building.

### *East Elevation*

The building's east elevation is one of its two styled elevations and faces out onto a small parking lot formerly known as Library Plaza (*BDR*, 10 June 1906g:3). The elevation measures 42 ft 9 inches wide and is divided into three bays formed by three arches that comprise the arcade (Figures 8-9). The two southern (left) arches are wider, measuring approximately 17 ft each, while the northern (right) arch is far smaller,



measuring approximately 7 ft wide. As noted, the ground story of the elevation is defined by rusticated precast concrete blocks dyed brown, which are spaced between smooth light gray pilasters covered by a concrete parge coat.

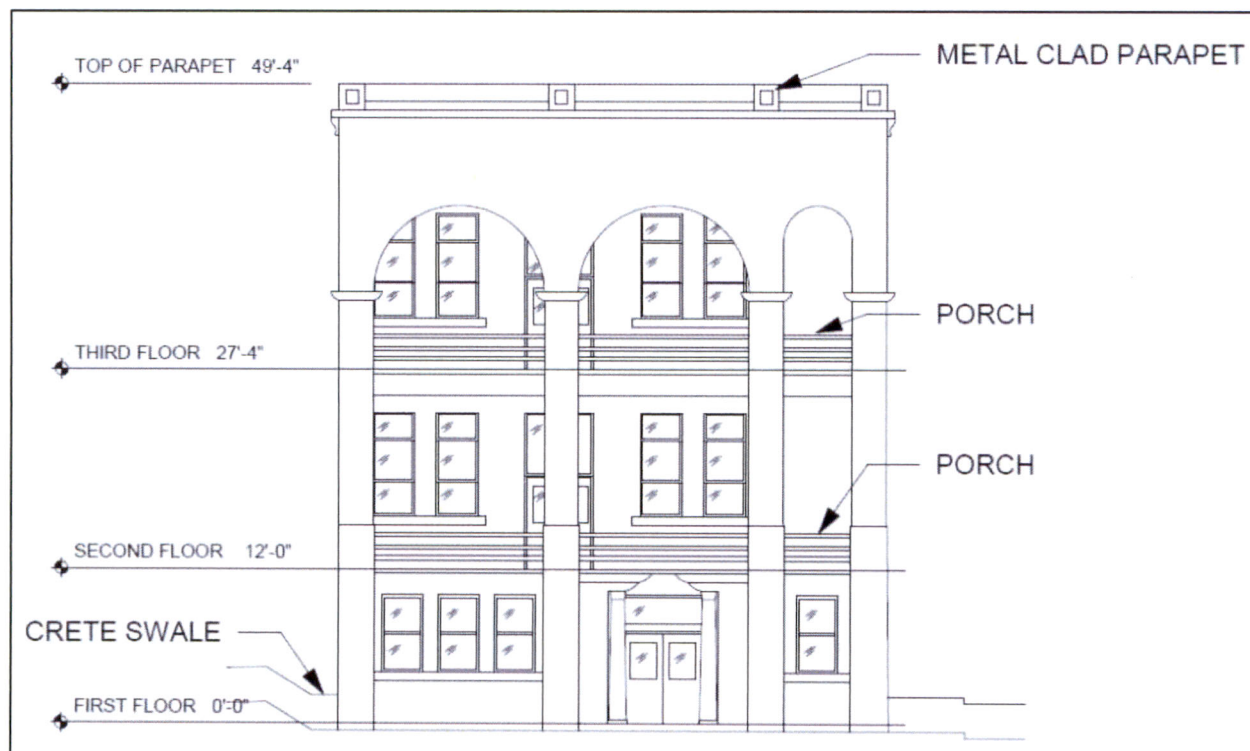


Figure 8. East elevation of the Copper Queen Library. Courtesy of the PMM.



Figure 9. East elevation of the Copper Queen Library. March 2021.

The central bay contains a recessed entry, which provides public access to the first floor post office. The entry is flanked by two precast concrete columns defined by raised bases, striated shafts with perceptible entasis, and decorative capitals reminiscent of Richardsonian Romanesque style. These each support two



light gray blocks with angled molded ends which corbel inwards to support a cast concrete lintel. This lintel is covered with a faded metal sign painted black with yellow lettering stating POST OFFICE / BISBEE ARIZONA 85603. Within the entry, a reinforced concrete floor is flanked by rusticated block walls and leads to a set of flush metal half-glass doors topped by a fixed transom. A metal BOOK RETURN slot is located on the south interior wall and a flush-mounted light fixture is attached to the center of the ceiling (Figure 10).



*Figure 10. Recessed entry in east elevation of the Copper Queen Library. March 2021.*

The recessed entry is accessed by a long concrete ramp set into the sidewalk and bordered by tubular handrails. To its south, the southernmost bay is filled with three double-hung wood sash windows underlain by smooth-faced cast concrete sills and capped by rusticated lintels. In the smaller northern bay is a single window unit treated in the same manner. All of the windows are covered by detachable wood-framed screens covered in bronze meshing. A cast metal plaque commemorating the Arizona suffrage movement is affixed midway up the northernmost pilaster, while a locking message board is placed on the pilaster immediately south of the recessed entry.

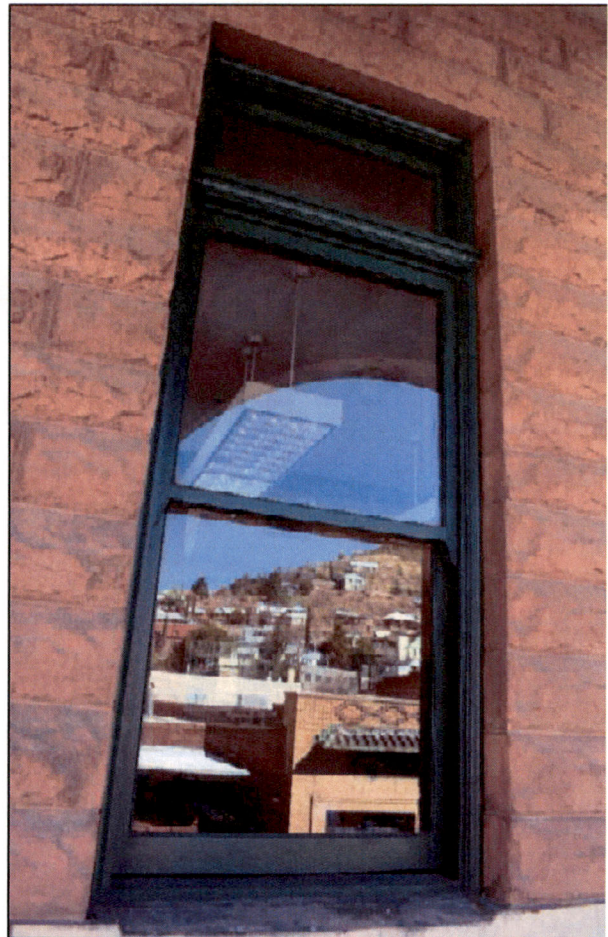
Above the first story, the second and third stories are similarly treated with the primary body of the building recessed behind 8 ft wide verandas. Within each bay, three 2 inch steel pipes are mounted between the piers to create a low railing which was intended to be resistant to graffiti (BDR, 04 May 1906c:5). A flagpole projects from the railing of the second story veranda at a 45 degree angle directly above the entry to the post office. Beneath this, reinforced concrete floors end in shallow lips which create a horizontal line between each pier and help to demarcate the start of each upper story.



Behind the veranda, the main building block is composed of rusticated brown dyed concrete blocks. This surrounds a symmetrical fenestration arrangement centered on a set of flush wooden doors with square upper lights which are set beneath a large operable transom and are protected by an additional set of wood paneled half-glass screen doors (Figure 11). Flanking the doorway on each side are a set of double-hung wood sash windows with fixed transoms girded by smooth-faced sills and rusticated lintels (Figure 12). The windows are ornamented with sash horns and a thin egg-and-dart ovolo separating the upper sash from the transom. Small, flush-mounted spherical frosted glass lights are located in the ceilings of the two verandas where they are centered in the middle of each bay.



*Figure 11. Exterior door in second story of east elevation. March 2021.*



*Figure 12. Example window in second story of north elevation. March 2021.*

Midway up the piers lining the third story veranda, a decorative cast stone egg-and-dart ovolo marks the springing line of each of the elevation's three arches (Figure 13). Above the molded springing line, a light gray attic story is capped by a tin cornice placed beneath a low parapet with paneled merlons.





*Figure 13. Third story veranda along east elevation showing arcade and railings. Looking south. March 2021.*

#### *Alterations*

Since construction, the east elevation has been altered in several ways. After 1909, the current metal post office sign above the first story entrance was added over the original inscribed precast lintel. Later, after 1939, an original revolving door located within the recessed entry was removed and replaced by the current double metal doors (Figure 14). During this same period, scuppers, downspouts, and other ornamentation located on the attic story was also removed but retained on the north elevation where it remains visible today. Other changes include the 1993 blinding of windows in the second and third story to make way for the elevator shaft; the addition of a book deposit drop; and the mounting of a cobra head streetlight between 1991 and 2000 on the second pier from the south.



*Figure 14. Detail of 1939 photo of east elevation showing outline of revolving door and attic story detailing.  
Courtesy of the Arizona State Library, Archives and Public Records.*



### North Elevation

The north elevation of the building fronts onto Main Street and measures 95 ft 3 inches long with a total of six bays behind its arcade (Figures 15-16). Like the east elevation, five of these bays are identical in dimension measuring approximately 17 ft wide. The easternmost bay, however, is reduced in size matching that of its immediate corner neighbor on the east elevation with a width of 7 ft.



Figure 15. North elevation of the Copper Queen Library. Courtesy of the PMM.



Figure 16. North elevation of the Copper Queen Library. March 2021.

As the other of the building's two styled elevations, the north elevation is similar in composition to the east elevation, with the first story defined by rusticated blocks and upper stories by a double-height arcade screening stacked verandas. Along the first story, the fourth bay from the northeast corner contains the library entrance, which is formed by a set of 8 ft wide concrete steps which lead from the street up to the second story. Abutments on either side of the steps formed from painted smooth-faced



blocks fill the remainder of the bay and act as walls enclosing the stairway as it rises towards the library entry. The remainder of the first story bays are filled with double-hung wood sash windows set amidst rusticated concrete blocks. With the exception of the narrower eastern bay, each of the other bays contains groupings of three sash windows which help light the interior of the post office. The easternmost bay contains only a single window.

Above these, the composition of the second and third stories echoes that of the eastern elevation with 2 inch pipe handrails placed between piers, rusticated block exterior walls, and double-hung wood sash windows topped by fixed transoms. These windows mimic the groups of the story below with groupings of three placed in each bay and, on the third story, they flank a set of flush wood double doors with small square lights. The exception to this repetition is found at the top of the concrete entry stair which leads through the center of a triple arch set into the wall of the main building block on the second story. A recessed open air entry vestibule is set behind these arches with entries into the building's interior formed by sets of flush wooden doors with square upper lights placed into the east and west walls of the vestibule. Between these in the south wall is a band of fixed, wood-framed ribbon windows with wood mullions.

The vestibule is paneled with dark wood and crowned by a blank entablature. The ceiling is further ornamented with a picture rail, crown molding, and a brass chandelier with four lamps. Narrow walkways to either side of the stairway lead along the top of the abutments through the side arches of the triple arch and onto the adjacent verandas. The arches themselves are formed from precast rusticated concrete block piers with light-gray precast rusticated voussoirs. Echoing the building's larger arcade, egg-and-dart ovolos mark the springing lines of each arch (Figure 17).



*Figure 17. Library entrance vestibule in north elevation. March 2021.*



Above the second and third story, the attic story of the building retains the large expanse of light gray concrete but is further ornamented with scuppers and downspouts which project through the attic story and terminate at the springing line of the arcade. Above these, a low-relief floral swag is embossed onto the concrete parge coat. Finally, the tin cornice is further ornamented with dentils placed along its length and paired brackets decorated with acanthus leaves placed over each pier and above the swags. Similar to the east elevation, the cornice is capped by a tin parapet with paneled merlons placed over each pier making them visually “supported” by the brackets.

Other surface components include a set of double gates, which are formed from expanded grating, and control entry to the stairway from the street. Locking message boards are hung on the inside of each gate so that they face onto the street when the gates are opened during business hours. Immediately east of these is a small, book-shaped sign mounted on the pilaster of the pier immediately east of the gates which reads COPPER QUEEN LIBRARY EST 1822 in a western-inspired typeface. A larger sign echoing the arched shape of the arch above is placed over the stairway beneath the third story veranda. This sign is constructed from heavily patinated copper and reads in a Copperplate Gothic typeface COPPER QUEEN LIBRARY 1882.

#### *Alterations*

Changes to the north elevation since construction are comparatively few. Among the earliest alteration was the replacement of an exterior door on the far western end of the first story with the window that presently resides there. This change was completed after 1940 but was successfully integrated with the original building fabric that it remains largely unnoticeable today (Figure 18). Other, more recent changes include the addition of the gates around the stairway at some time prior to 2000. The small book-shaped sign was added at an unknown time after 2008, while the large, arced sign was completed by a local Bisbee metalworker in 2020 (Jason Macoviak, personal communication 2021).

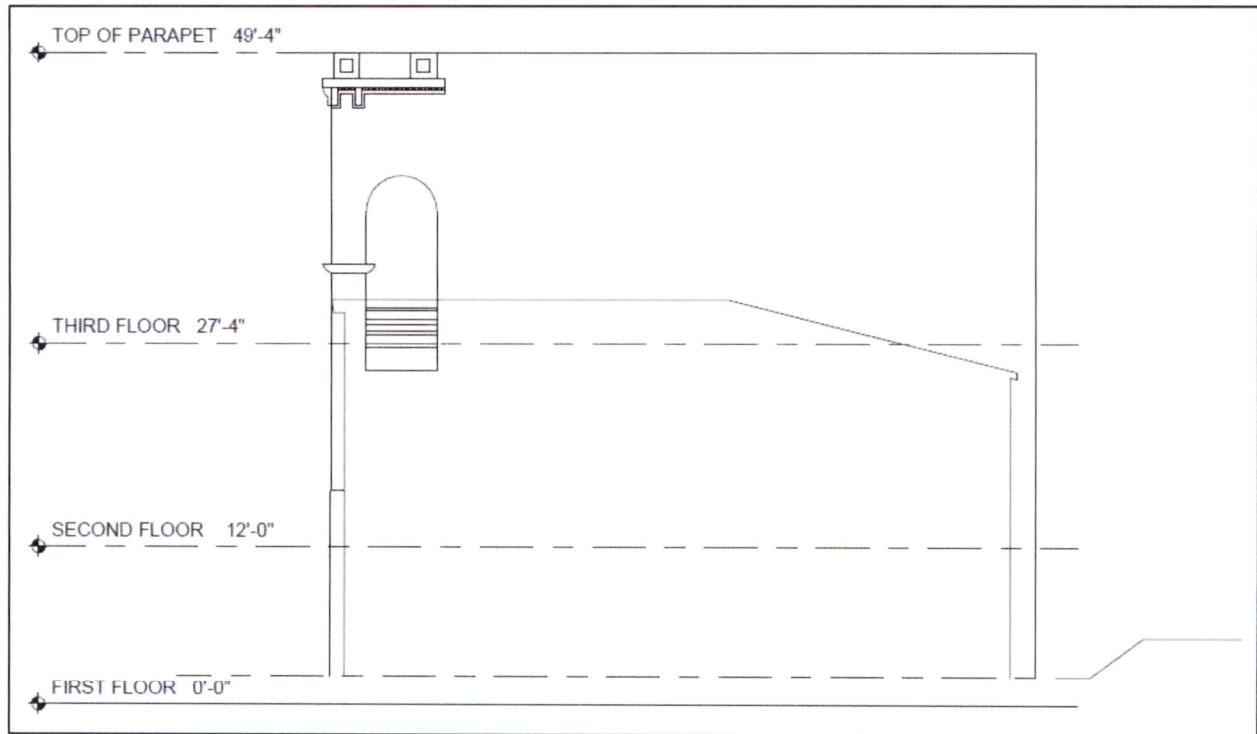


*Figure 18. North elevation showing original configuration door at far right and without gate or signage. Circa 1940. Courtesy of the Pomona Public Library.*



### *West Elevation*

The west elevation of the Copper Queen Library measures 53 ft 9 inches and is largely covered by the adjacent Bisbee Review Building, which conceals its lower half. Notably, Sanborn Fire Insurance maps indicate that the Review Building was not originally constructed to sit flush against the adjacent lot, as the building possesses bay windows which now look out onto the blank wall of the west elevation. A small space remains between the two buildings which has since been roofed (see Figures 2, 19, and 20).



*Figure 19. West elevation of the Copper Queen Library. Courtesy of the PMM.*

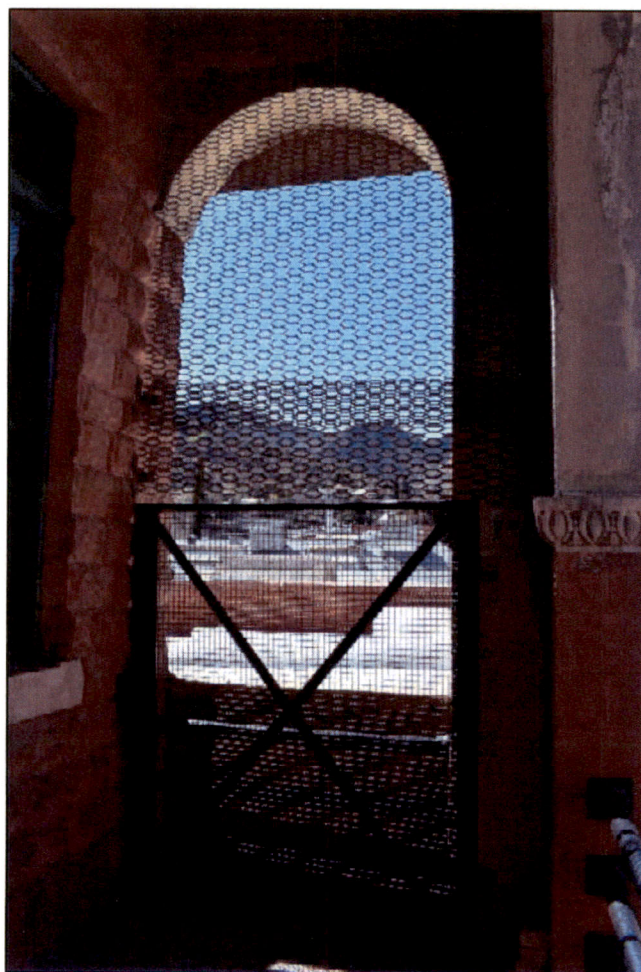


*Figure 20. West elevation of the Copper Queen Library visible on left hand side of photograph. Note the outline of the southerly bay window on the Bisbee Review Building. March 2021.*



The exposed portion of the west elevation is one the building's two un-styled sides and is largely composed of smooth-faced concrete blocks laid without any apertures or ornamentation. This wall rises to the same height as the decorative tin parapet where it terminates in its own unadorned concrete block parapet. The elevation's sole decorative components are found on its north side where the material and stylistic composition of the north elevation's third story wraps around the corner of the building. Here, a single narrow arch spans the 8 ft of the veranda from the building's northwestern most pier to the mass of the main building block. The decorative elements left exposed above the parapet of the Review Building include a small portion of the brown dyed smooth-faced concrete blocks of the arcade piers, the egg-and-dart ovolo of the springing line, the light gray mass of the attic story, and the decorative tin cornice line and parapet. Braces formed from metal panels appear to have been used on the pier and above the arch to contain spalling and cracking along the concrete parge coat.

Within the arch of the veranda, a welded metal gate topped by expanded grating keeps library patrons from accessing the roof of the Review Building (Figure 21). Other components found on the elevation include a pipe chimney and two ventilation pipes which serve the interior of the Review Building but are held against the west elevation with metal braces.



*Figure 21. Gate and grating along third story veranda in west elevation. March 2021.*

### *Alterations*

Changes to the north elevation are few and include the addition of the metal gate and grating at an unknown time; the addition of the metal panel braces after 1940, and the addition of the two smaller ventilation pipes, also at an unknown time (Figure 22).





Figure 22. "Wraparound" façade corner visible on right hand side of street. Note cracking in concrete parge coat which likely explains need for later braces. Lee, Russell, photographer. May 1940. Courtesy of Library of Congress.

### South Elevation

The south elevation measures 95 ft 10 inches long and is the second of the building's two elevations without stylistic ornamentation (Figures 23-24). Like the north elevation, the south elevation possesses six bays defined by columns of grouped windows and the southeast corner of the veranda. Here too, the styled elements of the east elevation wrap around the corner of the building to create an ornamented bay for the end arch of the veranda. This bay possesses the same material composition of the east elevation except that the first story is constructed from (now highly weathered) smooth-faced blocks rather than dyed rusticated blocks. Thereafter, it is identical to the north elevation and terminates at the ornamented tin cornice and merlon-ended parapet.

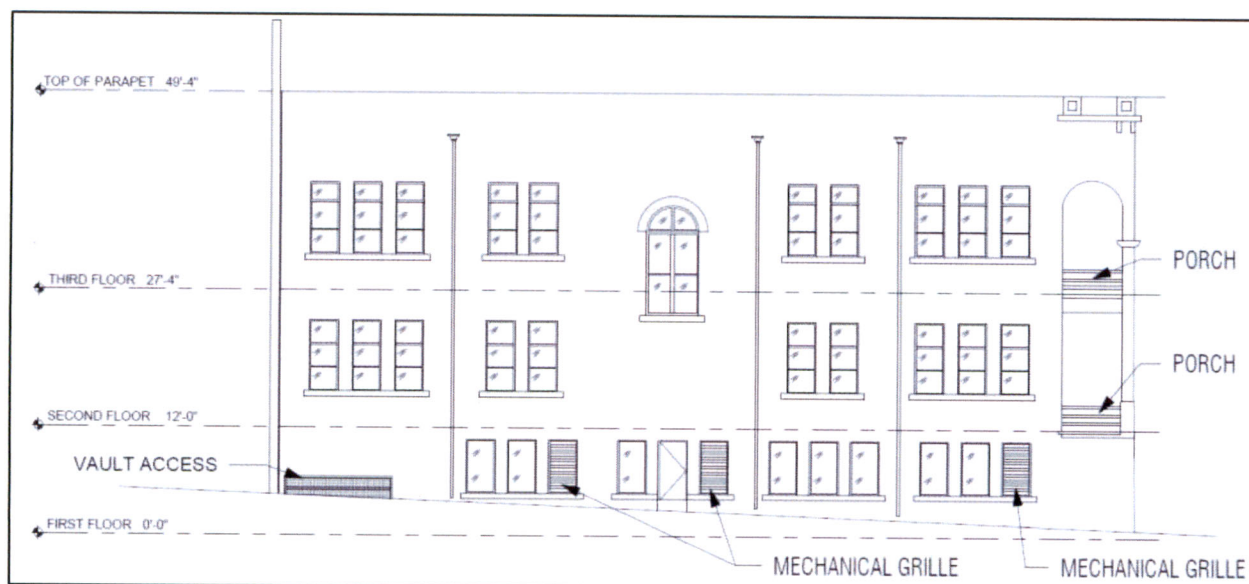


Figure 23. South elevation of the Copper Queen Library. Courtesy of the PMM.





*Figure 24. South elevation of the Copper Queen Library looking down from adjacent hill. March 2021.*

The remaining five bays possess ample fenestration including three levels of windows, one door, and a below-grade access to the building's partial basement. This is entered via a narrow U-shaped concrete stairway recessed into the ground with concrete retaining walls. The stairway is beneath the westernmost bay and is surrounded by a low metal railing covered with metal grating to prevent unauthorized access (Figures 25-26). A reinforced concrete chute covered with a metal panel is located immediately east of the stairwell and may have originally functioned as a coal chute.



*Figure 25. Access stair to partial basement, looking west. March 2021.*





*Figure 26. Base of south elevation along Commerce Street. March 2021.*

The next bay to the east contains three window apertures which have been fitted with metal screens. The lower third of each screen has been fitted with flush metal panels while the upper thirds consist of expanded grating. The middle aperture provides an intake location for a large evaporative cooling unit located against it atop metal legs. The flanking screens, meanwhile, protect shortened double-hung wood sash windows which look into the post office within. Further east, the next bay contains a single screened window to the west, a low flush metal door in the middle, and another aperture occupied by an evaporative cooling unit to the east. The door is accessed via a short ramp with metal handrails which leads over a shallow concrete drainage gutter that separates the road from the building edge. Further east, the next bay contains three grouped windows fully screened with expanded grating while the remaining bay—the second from the east—contains two screened windows to the east and a third aperture covered by a white louvered grate used to ventilate the elevator mechanical room.

Above this, the second and third stories consist almost exclusively of double-hung wood sash windows topped by fixed transoms which are identical to those found throughout the rest of the buildings. These are grouped in clusters of three on the first and fifth bays from the east and groups of two in the second and fourth bays. The middle bay, meanwhile, contains a single window in between the two stories which consists of a large double-casement wood-framed window with two lights per sash topped by fixed half-circle window split down the middle into two lights. The windows along the second story are screened with a light woven steel grating while the windows of the first, second, and fourth easternmost bays of the third story are covered with a light mesh, likely to help diffuse light. The large arched window is unprotected by screening but is covered with a plastic film which approximates the appearance of stained glass from the inside.

Along the surface of the elevation, are three downspouts which are placed after the first, third, and fourth bays from the east. These run from scuppers located beneath the parapet to drain into the gutter but are heavily degraded and not fully functional. Additional surface components include electrical masts and boxes, various wires, and other forms of utility conduit.

#### *Alterations*

The changes to the south elevation are most apparent along its base where the conversion of Commerce Street from an earlier railroad spur resulted in drainage improvements and changes to the adjacent grade.



Both the dates and the results of these changes are not well documented, but they likely precipitated the raising of Commerce Street to accommodate the present underground canal, as well as the construction of the concrete drainage gutter along the base of the building. The formation of these features may have removed earlier flood prevention devices which were vaguely referenced in early newspaper articles discussing the library's construction (BDR, 04 May1906c:5; BDR, 10 June 1906g:3).

Additional changes to the south elevation include the placing of metal screens over many of the windows; the addition of evaporative cooling units, and the wide array of electrical, mechanical, and other utility systems which have proliferated along the wall surface. Of these wires, conduit, masts, and boxes, the only ones which appear to be original are the three downspouts.

### *Interior and Furnishings*

#### *First Story*

The first story of the Copper Queen Library contains the post office, a small bookshop, and the mechanical room for the building's elevator. The entry area includes the bookshop, mechanical room, and two small circulation spaces which connect the primary entry to the elevator and other subsidiary spaces. This entry area consists of dark vinyl coin pattern flooring, and a dropped ceiling with inset boxed fluorescent lights. An electronically-powered roll-up security gate controls access to the elevator and bookshop (Figure 27).



*Figure 27. Elevator vestibule looking towards bookshop with close gate, looking southeast. March 2021.*



After passing through the circulation spaces, the interior floorplan opens to the lobby of the post office which has a light gray asphalt tile floor with dark rubber base molding. Post Office boxes—older than the room's other finishes—line the walls of the lobby, which is similarly lit by boxed fluorescent lights, but possesses a full-height plastered ceiling (Figure 28). An extended built-in desk separates the lobby of the post office from the rear sorting room, accessed through a flush metal door in the room's south wall.



*Figure 28. Post office lobby, looking northwest. March 2021.*

The post office sorting room occupies more than half of the first story's footprint and is largely open with structural cast iron posts spaced throughout it at regular intervals. The southeast corner of the room is occupied by an enclosed vault accessed through a thick locking metal door. The northwest corner, meanwhile, contains a small set of steps leading to a low platform while a wide ramp leading to a landing and exterior door is placed against the south wall (Figure 29). Individual bathrooms are located against the north wall next to a small storage area. Both bathrooms are tiled with light brown 1 ft square tiles and possess modern porcelain fixtures.

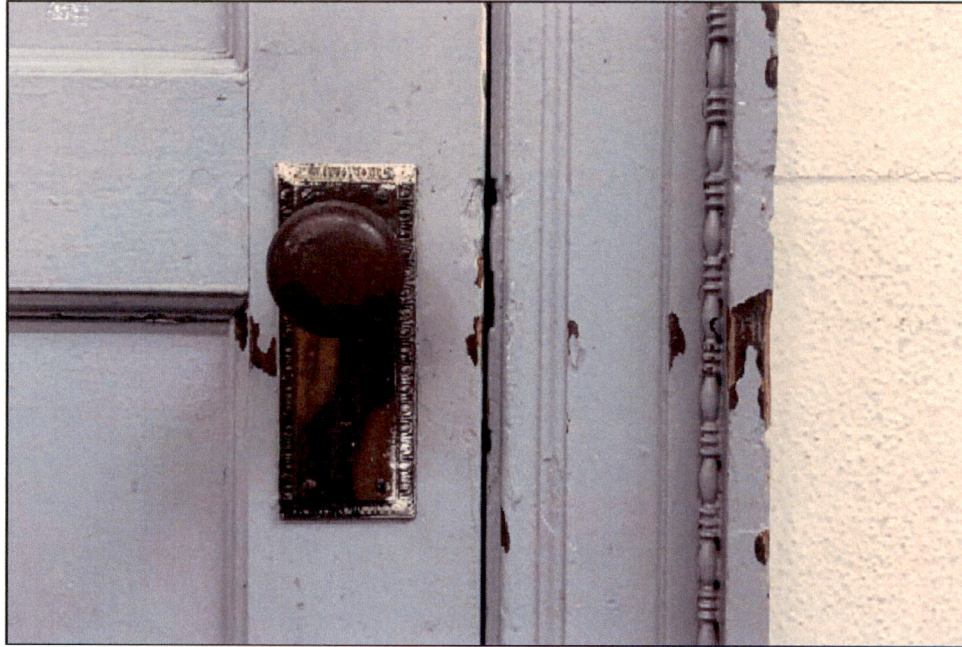
The room's finishes are inconsistent owing to regular changes in layout and intermittent improvements. The room is generally trimmed in a dark wood with painted wooden corner guards found on many of the room's projecting corners. A poured concrete floor is covered by glossy, black-painted wooden tiles which measure 1 ft by 2 ft and are laid in a staggered pattern. Above these, a partial dropped ceiling covers most of the room stopping only above the ramp where the full-height plastered ceiling remains visible.



*Figure 29. Post office sorting room ramp against south wall, looking south. March 2021.*



Along the north and south walls of the room, double-hung sash windows are surrounded by decorative molding with a distinctive bead and reel string course. This molding also surrounds the five-panel wood doors that lead into the two bathrooms and storage room. The storage room door possesses a copper knob and decorative escutcheon plate with an egg-and-dart edge and Japanned copper finish (Figure 30). Both bathroom doors possess brushed stainless steel lever knobs while all three doors are hung with ball-tipped hinges. The ramp-top exterior door in the south elevation is a modern flush door with a wood veneer. It is operated with a brass knob and further secured with crossbar police lock.



*Figure 30. Storage door molding and hardware, looking south. March 2021.*

### *Alterations*

Although no historic photographs have been found to illustrate the first story's original appearance or configuration, a visual inspection of its spaces indicates that it has been substantially altered since construction. Newspaper articles contemporaneous to the building's construction indicate that the original space was defined by a series of desks that appear to have been orientated along an axis running from east to west:

"The entrance to the new post office will be on Main [S]treet. The lobby of the post office will be about 25 feet wide and about 70 feet long. On the left as you enter will be the post master's room, then the assistant post master's room; next the money order department, then the registry and stamp department, next the package and inquiry department, then three general delivery windows, and then a large vault.... At the extreme end of the lobby will be the different letter and package drops. On the right hand side of the lobby there will be twenty-three hundred mail boxes, arranged in a system of alcoves, thus affording much more room for boxes.... There will also be a retiring room for the clerks on the right hand side of the office, and a side door for the employees" (BDR, 02 August 1906h:8).

Of this layout, only the vault remains intact, as do the bathrooms and storage room which all appear to retain their original plan and entries. Other original features include the window molding, baseboards, and corner guards. Historic-age furnishings including oak paneled partition desks, cabinets, and other portable units are located throughout the sorting room, however, conversations with post office staff indicate that these are not original to the building but were more recently transferred from other, since-closed, postal offices.



## Second Story

The interior of the second story operates as the first floor of the library and contains a large multi-purpose room used by patrons and library staff; a meeting room located against the west wall, and two bathrooms reached by a short hallway. With the exception of the bathrooms, the entire story has 2 inch wide oak hardwood floor boards which are polished to a light brown. Heavily varnished dark-stained woodwork proliferates throughout the second story where it is used to create paneled wainscoting; to clad the building's structural iron posts, surround windows and doors, and to create decorative box beams along the ceiling (Figure 31).



*Figure 31. View of second story from stairs showing windows of entry vestibule, children's area, and part of entry to meeting room, looking northwest. March 2021.*

Much of this woodwork possesses the same ornamental elements utilized on the ground floor with the same bead and reel beading. Because it has been left unpainted within the second story, the beading creates unique textural effects in its reflection of the light. Additional decorative woodwork includes a picture rail along the upper portion of the wall; ornamental corbels which support the box beams, voluted capitals atop the wood-clad posts, and ornamental drops of husks between the ribbon windows of the entry vestibule (Figure 32). The insides of the building's exterior doors are flush without panels or ornament but are stained and varnished to match the surrounding woodwork (Figure 33). Interior doors consist of stained panels with decorative hardware knobs, escutcheon plates, and hinges.





*Figure 32. View of woodwork on wood-clad post adjacent to staircase showing box beams, ornamental beading, and capital. March 2021.*



*Figure 33. View of east entry door, looking west. March 2021.*

A combination of original brass chandeliers, hanging fluorescent box lights, and contemporary hanging brass chandeliers provide artificial lighting to the building's interior. Ventilation and heating is provided through a large round duct which hangs from the ceiling along the building's central east-west axis. Older cast iron radiators with ornamental flourishes are located along the exterior walls of the second floor but are no longer operational. Similarly inoperable are push-button switches found throughout the building.

The two bathrooms are accessed via a small hallway with a dropped ceiling and raised hardwood flooring. This ceiling continues into both bathrooms which are floored with dark hexagonal tiles and possess square tiled wainscoting with modern porcelain sinks and toilets. Custom graphic wallpaper made from historic



images of Bisbee covers one wall of the hallway and portions of the bathroom walls. Dark stained four-panel doors lead into both bathrooms and are operated with brushed brass lever handles. Fluorescent lights placed into the dropped ceiling provides light to the hallway and bathrooms (Figure 34).



*Figure 34. Hallway leading to bathrooms, looking east. March 2021.*

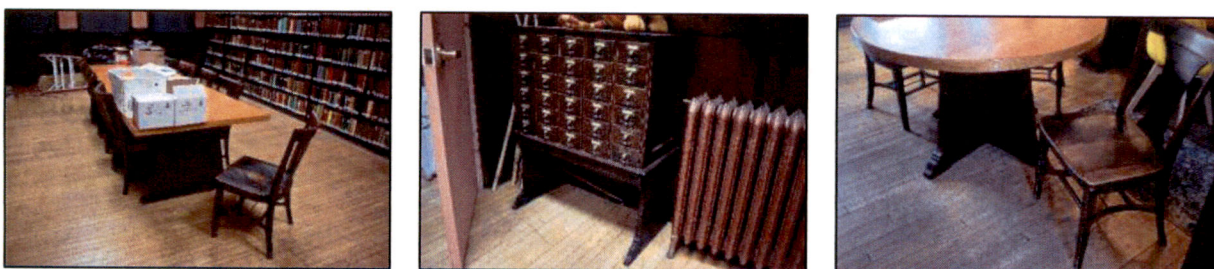
Opposite the second story's exterior entry vestibule, a wide L-shaped staircase provides access between the second and third stories (Figure 35). This staircase is constructed with oak treads and risers while an oak balustrade terminates in decorative newel posts. From the landing upwards, oak wainscoting parallels the open balustrade, while similar paneling is used to line the stairway's exposed underside. Stamped metal dust corners are placed in each corner of the stairway's risers and weathered dark particle board edged in brass is used on each tread and the landing to protect it from excessive use. The large arched window in the southern elevation provides light at the staircase landing. An expandable metal gate affixed to a wooden post provides the option to block the landing and prevent public access to the third story.





*Figure 35. View of newel post, balustrade, stair treads, and risers. March 2021.*

Furnishings throughout the library include both newer and older items. Many of these items are thought to date to its early history and were selected for their durability and their compatibility with the original interior design. These early furnishings include tables, chairs, desks, shelves, and other miscellaneous pieces (Figure 36). Although only the central librarian's desk was found to possess a maker's mark from the Library Bureau, it is likely the majority of the other pieces were produced by the same manufacturer. The company, also called Library Bureau Sole Makers, was founded by Melvil Dewey in 1888 and provided furnishings and other equipment to libraries through the first quarter of the 20<sup>th</sup> century (Gangewere 2011:112). After the turn of the 20<sup>th</sup> century, Library Bureau furniture was noted for adopting the aesthetics of the Arts and Crafts movement and was widely used in Carnegie-funded libraries (Gangewere 2011:112). Numerous examples of furniture similar to that found in Bisbee may be found throughout the United States. In 1941, Library Bureau furniture was used to furnish the new Bisbee High School (*BDR* 18 August 1914:5)



*Figure 36. Examples of original Library Bureau furnishings in first story meeting room and main room. March 2021.*



### *Alterations*

The second story of the library has undergone few changes since its construction. The most obvious of these changes include the diminishment of the story's open floorplan to accommodate an elevator and shaft; the construction of the new rear bathrooms, and changes to various building systems including new light fixtures and HVAC ducts (Figure 37). Smaller-scale changes include the addition of new light fixtures such as hanging fluorescent box lights and, more recently, hanging brass chandeliers, new ceiling fans, light switches, and other utility features.



*Figure 37. Modern elevator shaft and air duct, looking southeast. March 2021.*

### *Third Story*

The third story contains a large open room with book stacks; a smaller meeting room in the east end; a small office in the southeast corner, and an office with a glazed window in the southwest corner that has been converted to a smaller reading room (Figure 38). The southwest corner of the smaller reading room contains a kitchenette and the remains of a bathroom, now used for storage. Roof access is provided through a hatch in the ceiling of the small reading room by an extension ladder. With the exception of the smaller-scale spaces, the finishes of these rooms are identical to those used on the second story with dark-stained wood, extensive molding, original brass chandeliers and hanging fluorescent box lights, and an HVAC system implemented through a large hanging duct (Figure 39).





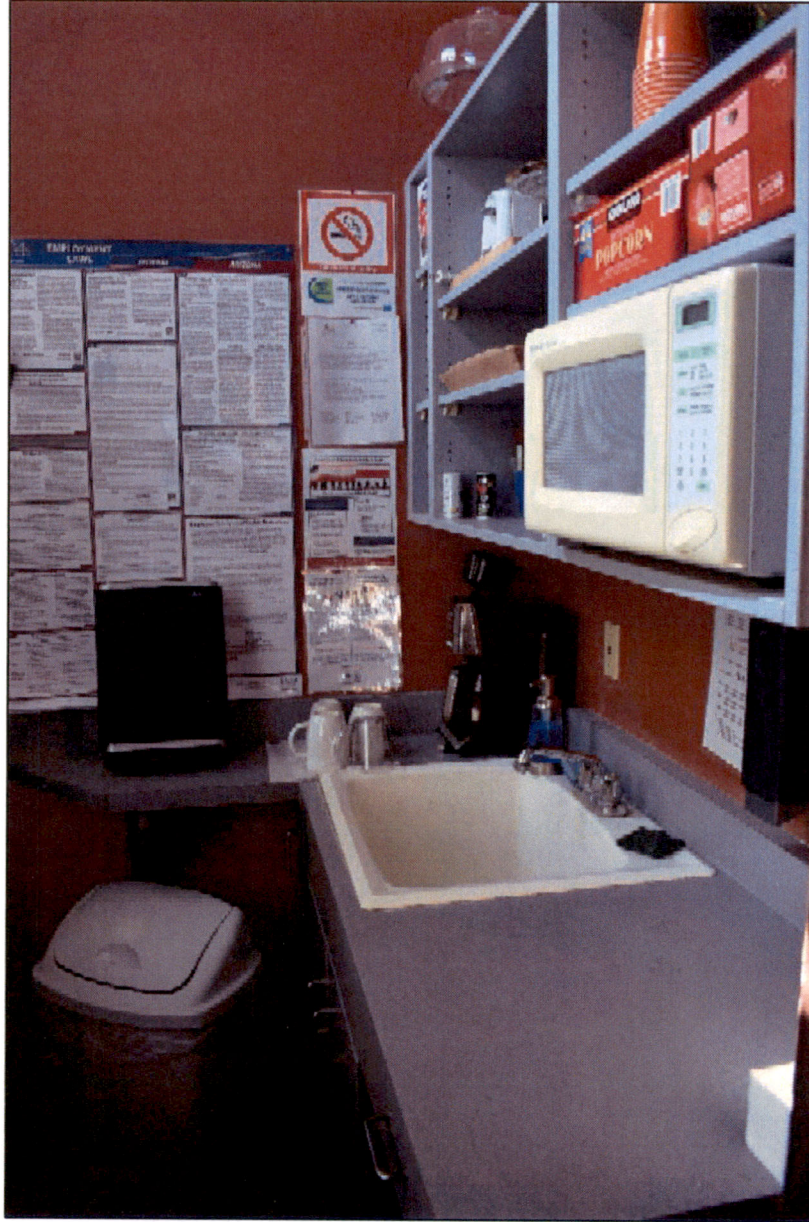
Figure 38. View of office-cum-reading room with shelves inserted over original intact glazing. March 2021.



Figure 39. View down aisle of shelving, looking east. March 2021.



The kitchenette (Figure 40) is finished with built-in cabinets constructed from particle board which is covered in a light gray sheeting. The adjacent former bathroom, meanwhile, retains a wood-paneled stall, linoleum flooring, and several original fittings including electricity breakers, a toilet roll holder, and a corner sink (a toilet may also be present but, if so, was buried beneath storage boxes). Other original furnishings are found throughout this floor including built-in and standalone shelving, additional tables, chairs, desks, and a library book cart.



*Figure 40. Kitchenette in office-cum-reading room, looking west. March 2021.*

### *Alterations*

Like the second story, the predominant interior changes to the third story have been in the form of new partition walls to create subsidiary spaces and includes a kitchenette, an elevator shaft, and a small office. Other changes encompass the addition of new hanging box light fixtures, shelving along the east-facing glass partition wall, and other small-scale electrical components. Original steam radiators, although still present, have been functionally replaced with a more modern forced air system utilizing an overhead air duct.



## CHARACTER-DEFINING FEATURES

The National Park Service's Preservation Brief 17 defines character-defining features as "elements includ[ing] the overall shape of the building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment" (Nelson n.d.:1). A three step process is recommended for identifying these features which start with overall visual aspects; follows with visual character at close range; and concludes with interior spaces, features, and finishes (Nelson n.d.:1-2).

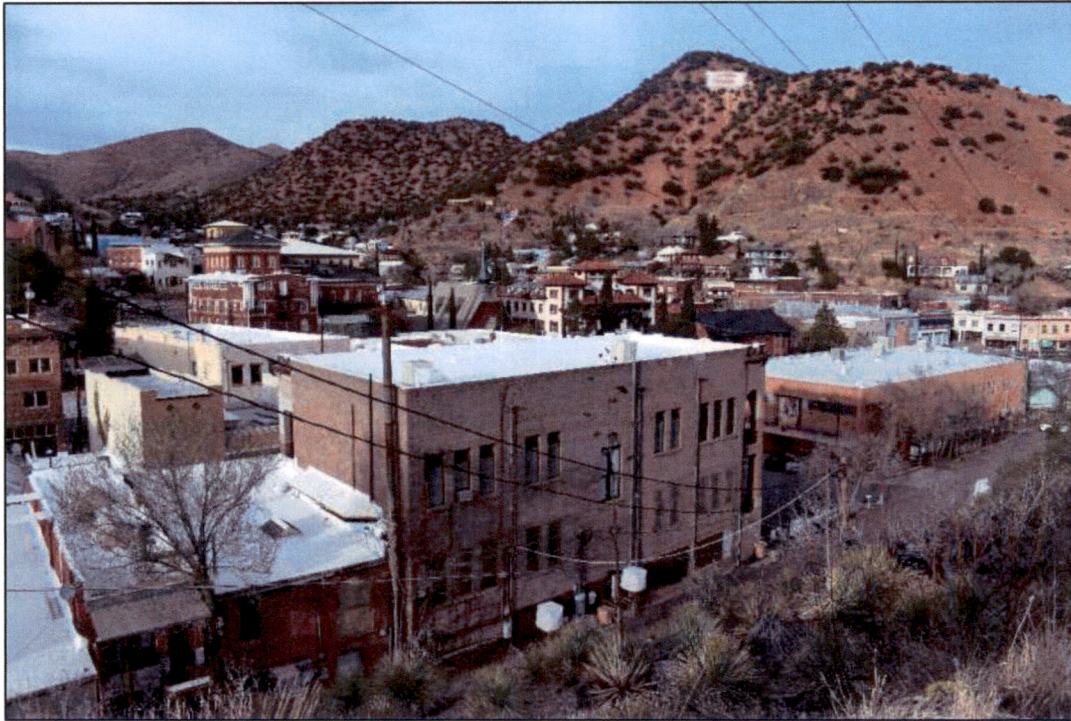
### Overall Visual Aspects

The overall visual character of the Copper Queen Library is initially defined by its boxy form which characterizes it as a three-part vertical block placed flush against the street and adjacent properties (Figure 41; Longstreth 1987:93). Defining features include this block-like form, the building's polygonal footprint, its use of the entire lot, its perpendicular sides, and its flat roof (Figure 42). Within this form, more nuanced elements of the building's visual aspect include its double-height arcade placed atop a full first story and its internal building block girded by two open verandas to the north and east. All of these components are character-defining and should be retained through any future improvements.



*Figure 41. View of Copper Queen Library showing north and west elevations, looking southeast. Note the building's boxy form in the context of the street, its flush walls with the street edge and adjacent property, its perpendicular sides, and its flat roof. March 2021.*

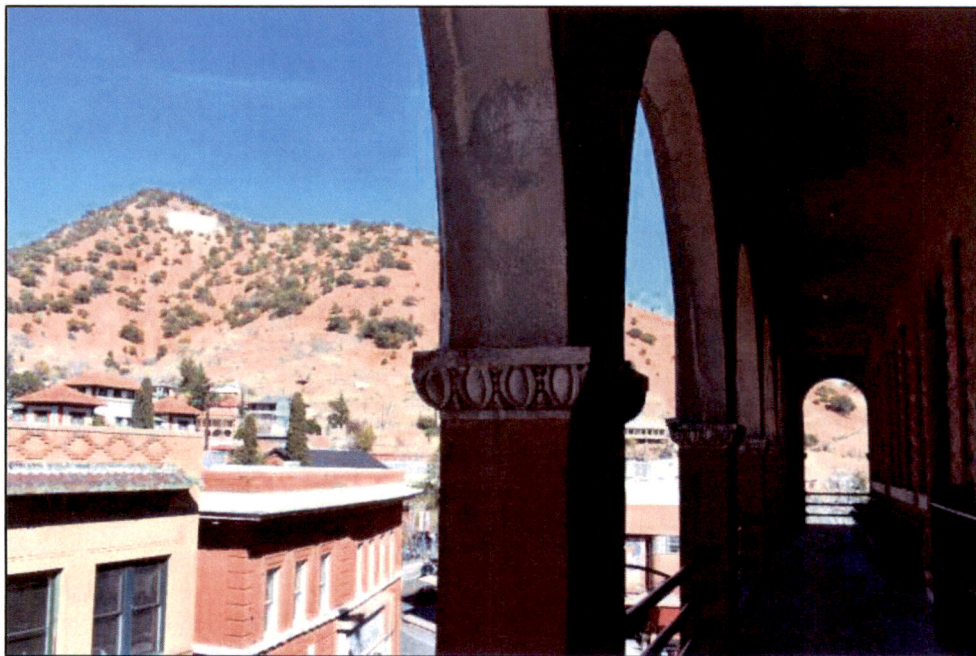




*Figure 42. View of Copper Queen Library showing south and east elevations. March 2021.*

### **Visual Character at Close Range**

At closer range, the building's visual character is rich with its use of highly varied surface treatments to create a striking visual rhythm (Figures 41, 43). This is most apparent along the building's north and east elevations where the use of dyed rusticated concrete block plays against the light gray concrete parge coats of the pilasters and attic story. The strong vertical lines of the building's piers are offset by the horizontal lines of the verandas and pipe railings; an interplay which is further annunciated by the downspouts and brackets placed between each arch (Figure 44).



*Figure 43. View of third story veranda along north elevation showing egg-and-dart ovolo, rusticated and smooth surface treatments, and the visual rhythm of the arcade. Looking east. March 2021.*





*Figure 44. View of entablature, scupper, downspout, and ovolo along north elevation. March 2021.*

The light use of ornamentation, including the egg-and-dart ovolo, tin entablature, floral swags, colonnaded front entry, and arcaded library entry, all provide further visual interest for users of the building. These details lend the building a formal sobriety appropriate to its civic purpose. Similar attention to detail is carried over to the building's original exterior fenestrations through its windows and doors which show a refinement of material and form visible to the user (Figure 45). All of these features are considered character-defining and should be retained and preserved.



*Figure 45. View of window along third story veranda of north elevation showing sash horns and ovolo molding. March 2021.*



## Visual Character of Interior Space, Features, and Finishes

The interiors of the Copper Queen Library are remarkably well preserved and retain much of their original spatial configurations, woodwork, hardware, and even furnishings. Many of these features speak to the quality of materials that were used in the library and the care involved in its original design. Although the Copper Queen Library is listed in the NRHP as part of a historic district, its interiors do not impact its status as a contributing building and may be altered as needed. The continued preservation of these spaces into the present day is highly notable and it is strongly urged that any changes are undertaken with the utmost care to preserve the original historic design and materials.

Should the building's interior be preserved as a character-defining feature, important elements to retain are largely limited to its second and third stories. Frequent alterations and minimal historic fabric within the post office render its interiors largely devoid of historic integrity. Above it, however, the spatial arrangement of the upper two stories, as well as their materials and finishes including woodwork and hardware should all be considered to be character-defining (Figures 46-48). This includes such items as floors, intact fenestration, molding, doorknobs, and original overhead lights. Early furniture is not necessarily character-defining although its preservation and continued use is strongly encouraged. Later changes to the building's interior are not character-defining and may be removed or adjusted as needed.



*Figure 46. View of main stairway looking down from third story. The L-shaped circulation pattern of this stairway including its banister, woodwork, and lower gate should be preserved. Later elements including the metal hand rail or particle board flooring are not character-defining and may be removed or altered. Note that although these features are not representative of the building's original architecture, they are illustrative of its history and age and could be retained as a testament to the library's long-standing use. Library Bureau issued tables and chairs are original to building and should be preserved and retained. View looking east. March 2021.*





*Figure 47. Character-defining molding along second story entry vestibule. Note bead and reel string course and dropped drops of husks, with view looking north. These elements are character-defining and should be preserved or restored. They should not be painted or otherwise altered. March 2021.*





*Figure 48. Doorknob on second story door beneath stairway. Small-scale features such as door hardware should, where possible, be retained and preserved. March 2021.*

## HISTORIC CONTEXT

The town of Bisbee, Arizona traces its history back to prospector John Dunn who made the first recorded mining claim in the Mule Mountain's "Bisbee District" on August 2, 1877 (Cox 1938:21). Following Dunn's claim, mining activity in the district continued to increase prompting the creation of a small mining camp to serve as a waylay station and resource distribution point. The first of several smelting furnaces that would come to mark and help grow the camp was established on August 20, 1880 (Douglas 1899). In that same year, the camp was informally christened Bisbee in honor of Judge DeWitt Bisbee, of the mining firm of Williams and Bisbee of San Francisco (Cox 1938:23; Graeme 1999:39).

Prior to 1880, the community's postal service was privately operated by an individual named John Watson who "ran a buckboard from Charleston to Mule Gulch, carrying mail and passengers three times a week" (Cox 1938:23). The town's first postal office was established by 1881 and was housed in the Copper Queen Company (CQ) general store (Cox 1938:23; Langton 1940; Graeme 1999:49). Founded in that same year, CQ was largely controlled by "an old line New York mercantile firm" of Phelps, Dodge & Company ([Phelps Dodge] Graeme 1999:39). At the time of its founding, CQ's sole asset was a group of contiguous mining claims in the Mule Mountains that included the original Dunn claim. In the early 1880s, CQ and Phelps Dodge attempted to acquire all of the properties immediately surrounding the Dunn claim, making Phelps Dodge the district's sole producer (Graeme 1999:41). In order to avoid litigation over conflicting property rights, CQ merged with the Atlanta Mining company in 1885 to form the Copper Queen Consolidated



Mining Company ([CQCM] Graeme 1999:39). The newly formed company would prove to be a formative element in the history of Bisbee's social institutions.

Along with the foundation of the CQCM came the promotion of the brothers Ben and Lewis Williams to company superintendents (Graeme 1999:45). Lewis' wife, whom newspapers refer to as "Mrs. Lewis Williams," was a prominent advocate for a library and reading room and worked to obtain "the first contribution of books" for such use (*Tombstone Weekly Epitaph [TWE]* 06 March 1892:6). Local legend and company newsletters describe the library as an effort of mining company executives to "civilize" the mining town, following the gruesome aftermath of a local lynching (*BDR*, 16 May 1906d:4; Cox 1938:77). Although there is evidence to support the veracity of the lynching, the event occurred in 1884, one year before corporate consolidation brought the Williams brothers to such a prominent role within the company (Duncan 1911). It is therefore uncertain whether this particular event actually precipitated the push for a community library. Nevertheless, sources agree that the first lending library was located in Ben Williams' office where it was said that "whoever wished was welcome to go there and read at his leisure" (*TWE* 06 March 1892:6).

The new library proved to be popular among Bisbee residents, so much so, that it was transferred to a larger location and housed within the town's general store. Following this move CQCM "took entire charge of the matter" (*TWE* 06 March 1892:6). The institution's growing patronage soon prompted the construction of a separate building which would be fully devoted to the library and the community's social affairs (*TWE* 06 March 1892:6; *BDR*, 03 August 1931a:B-1; Cox 1938:127). A two-story wooden building designed for these purposes was completed in 1887 on Main Street, fronting a small plaza in the same location as the current library (Figure 49; Graeme 1999:49).

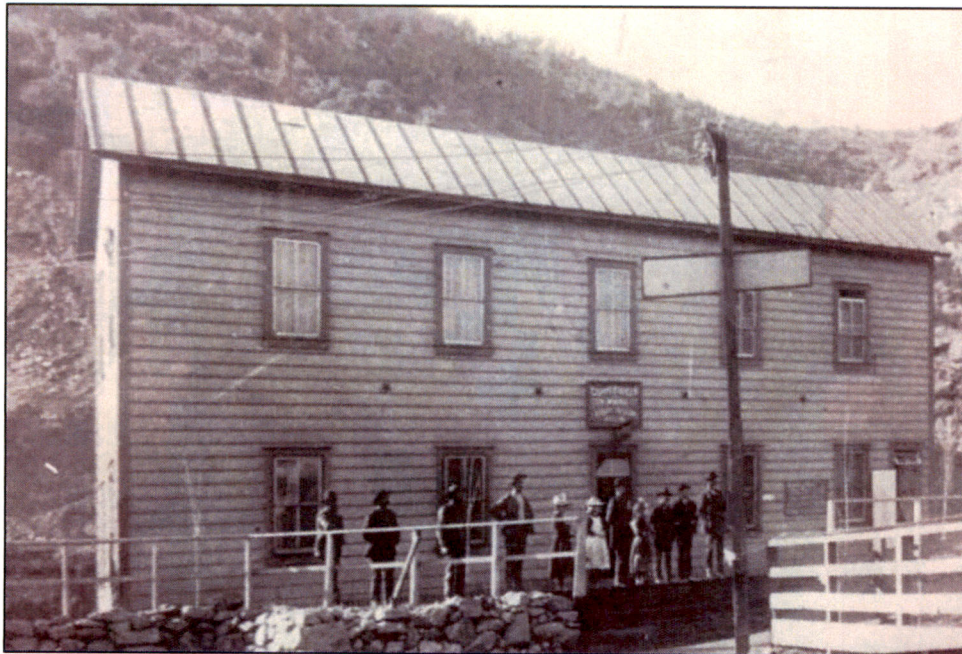


Figure 49. Bisbee's first building dedicated to the library and the community's social affairs. Circa 1885-1891. Courtesy of Copper Queen Library archives.

Five years later, in 1892, the building was clad in a brick veneer in the Italianate style (Figure 50; *TWE* 06 March 1892:6; McMahon 2020). The library rose two-stories in height with a wraparound porch; a large hall on the second story, and bay windows fronting onto Main Street (Sanborn-Perris Map Company 1901:2). In addition to its role as a book lender, by 1901 the building also housed the Bisbee Post Office and was noted as a perennial gathering place for local residents. A 1902 article in the *Bisbee Daily Review*



(BDR) stated, “there has never been any place in Bisbee more popular than the Copper Queen library. It has always been a free public forum, where all were welcome” (BDR, 09 January 1902:1).



Figure 50. Brick-clad Italianate façade of Copper Queen Library. Circa 1893. Courtesy of the City of Bisbee.

Following the incorporation of a territorial township in 1902, plans were made to demolish the Italianate library building in favor of “a modern structure, one what will be the handsomest in the city from an architectural point of view” (BDR, 04 May 1906c:5; BDR, 03 August 1931a:B-1; Cox 1938: 127). The library was part of a larger construction plan on Main Street involving paved roads, sidewalks, and modern buildings with the goal of converting the image of Bisbee “from that of a mining camp into that of a city” (Figure 51; BDR, 28 February 1906a:6).

The new Copper Queen Library was designed by Frederic Charles Hurst (b. 1864–d. 1923), a Canadian who had relocated to Bisbee to work as an architect for CQCM (BDR 08 December 1905:5). While employed at CQCM, Hurst designed the Bisbee Woman’s Club (1902), the Copper Queen Hospital (1902), and the Central School (1902; McMahon 2020). In 1905, he started working as partner in the architectural firm of Perkins, Holden and Hurst, and would go on to draft designs for many buildings within Bisbee’s downtown core, including Old City Hall, Fair Store, Orpheum Theater, the fire station, Elks Lodge, and a number of private residences (BDR, 08 December 1905:5; McMahon 2020).





Figure 51. Main Street during construction, looking northwest. 1906. Courtesy of the City of Bisbee.

Later historians have described Hurst's designs for the library as influenced by Second Renaissance Revival style, but at the time of its construction it was reported as having classical design reminiscent of the Greco-Roman architectural tradition (*BDR*, 21 March 1906b:5; Wilson et al. 1980:94). The building is challenging to categorize, and is an eclectic mix of Italianate, Commercial, and Second Renaissance Revival styles (also called Renaissance Revival).

What is clear, however, is that Hurst clearly sought to maximize the building's size, by enlarging it to three stories, and expanding upon the footprint of the previous library through elongating it to the south. The plan was designed to border flush against an existing railroad spur that was built at an acute angle and contributed to the building's unusual polygonal footprint.

Hurst's plans sought to accommodate Bisbee's unique setting in other ways, as well. A multistory arcade was designed around the second and third stories of the new building to create two stories of covered wraparound verandas on the north and east elevations. These provided patrons with airy usable space during the heat of summer and helped to shade the building's interior from direct sunlight. Double-hung sash windows were used on each of the three stories and could be employed to create a cross breeze through the building's interiors, while the operable ground story windows were placed in such a way as to prevent water infiltration during Bisbee's frequent flood events (*BDR*, 04 May 1906c:5). As the *BDR* explained in May 1906:

"On the lower floor will be the new post office, with a large entrance in the east end. There will be over 4,200 feet of floor space, and large windows on all sides. On the south the windows will be placed high enough to prevent flood water getting into the room. The entire second floor will be turned over to games and the reading room of the library. This will be reached by wide stone steps placed in the middle of the Main-street front. On the third floor will be located the library proper... Surrounding the second and third floors on the north and east sides will be an eight-foot balcony partly enclosed. The floor of the second-story balcony will be the roof of the post-office, or at least that part of it. This will give the first floor a greater floor space than either the second or the third stories" (*BDR*, 04 May 1906c:5).



All of this would be constructed from modern fire-resistant materials including a combination of poured concrete, gypsum blocks, and rusticated concrete blocks stained to look like a fashionable brownstone (Figure 52; *BDR*, 02 August 1906h:8; *BDR*, 15 August 1906i:8). Building materials were transported from the nearby town of Douglas where they were produced by the Southwestern Cement and Construction Company and the Cast Stone Company (*BDR*, 02 August 1906h:8; *BDR*, 15 August 1906i:8). Local newspapers enthusiastically reported that the arcaded balconies would “[give] to the front an appearance of strength and stability” (*BDR*, 21 March 1906b:5). While, inside the building:

“Woodwork will be avoided as much as possible, in order to lessen the danger from fires. ... The interiors of all rooms will be finished in white oak, highly polished. Plans call for large windows and adequate ventilation. All railings in any part of the building will be 2-inch pipe, thus preventing their marring by those who insist on pulling out their knives and whittling whenever the chance presents itself” (*BDR*, 04 May 1906c:5).

The reports also explained that these were “the best material to be had” and the whole library was expected to cost between \$60,000 and \$75,000—a sizable public investment in a company town (*BDR*, 21 March 1906b:5; *BDR*, 04 May 1906c:5).



Figure 52. Stone block staging process during construction. 1906b. Courtesy of Copper Queen Library archives.

Construction began with the demolition of the old library in May 1906. The library’s collections were temporarily relocated to the Central School during the construction process (*BDR*, 16 May 1906d:4). The last of the building was demolished in late May and the *BDR* reported that “as fast as the lumber in the building is torn loose it is sold for firewood and hauled away” (*BDR*, 27 May 1906e:5). The erection of the new building commenced the following month when trenches were dug five feet below grade to prepare for a modern concrete foundation (Figure 53; *BDR*, 27 May 1906e:5; *BDR*, 10 June 1906f:3).





Figure 53. Postcard showing the foundations of the new building in the lower left corner. 1906a Courtesy of Copper Queen Library archives.

After months of delays caused by material scarcity, an announcement was published in January 1907 that proclaimed the building's ground story was finished and that the "finest postoffice [sic] in Arizona" was consequently ready for occupation (*BDR*, 24 January 1907a:8). The remainder of the building was completed in April and was officially opened shortly thereafter (*BDR*, 07 April 1907b:Mining-1). The new Copper Queen Library gave the streetscape "a most metropolitan appearance" (*BDR*, 07 April 1907b: Mining-1).

With the building's unveiling, it immediately proved to be an important community asset. The new post office quarters had incorporated novel elements including a concrete floor partially overlaid by wood where it was trod upon by clerks, a large vault, and an innovative placement of "drops" so that "people can mail their letters without entering the building" (*BDR*, 24 January 1907a:8). These features were both progressive and practical. Even as Bisbee's population approached 9,000 in 1910, the town remained without home mail delivery because of its steep topography (McMahon 2020). By 1908, the post office boasted an all-female staff and "the greatest number of rented locked boxes (3,200) [P.O. boxes] of any postal department in the country" (*Los Angeles Times*, 04 February 1907:4; City of Bisbee n.d.).

The next few years would test the building's durability, as a major flood and nearby fire threatened to destroy the city's new library. The building, however, survived both events largely intact (Figure 54; City of Bisbee n.d.). Overcoming these calamities, the library continued to be immensely popular and in 1912 patron attendance totaled 104,809 for the year, with an average daily attendance of 287 (*BDR*, 20 January 1912:3). A review in 1913 shared a statistic that showed the extent of the library's impact on the town: "with a population of 18,000 people, 6,998 of them are regular borrowers from the Copper Queen Library" (*BDR*, 11 January 1913a:3). These patrons borrowed from a meticulously documented collection which, since the 1890s, included works from the traditional canon of Western literature (including the plays of Euripides and the works of Dickens), as well as those describing the experience of the American West (e.g., Bret Harte and Roosevelt's *Winning of the West* [Copper Queen Library 1896-1897]). These items were read and borrowed from the library on the third story while the second story provided space for reading, "correspondence," and gaming (Figures 55-56; *BDR*, 11 January 1913a:3).





Figure 54. Photograph of debris around the Copper Queen Library after a flood, looking southwest. 1908. Courtesy of the City of Bisbee.



Figure 55. The second story of the Copper Queen Library, looking southwest. N.d. Courtesy of Bisbee Mining & Historical Museum Archives.





Figure 56. Third story of the library showing the west end which held a reading room and the card catalog. Circa 1917. Courtesy of Copper Queen Library archives.

Because of the high volume of patrons, both the post office and library were repeatedly updated with technological and storage improvements over the course of their history. The first recorded improvement came in 1911 when it was reported that new 60 watt “[t]ungsten electric light globes” had been installed in the reading room (*Arizona Daily Star [ADS]*, 11 February 1911:1). In 1913, overcrowding and large numbers of new books necessitated installation of new shelving and book racks (*BDR*, 14 February 1913b:8). Two years later, the walls of the circulation department were “retinted,” its woodwork refinished, and “new window shades were put up” (*BDR*, 09 January 1916:3). During this time, changes to the library’s interiors were overseen by librarian Carrie G. Vail, who administered library affairs from 1903 to 1919 (*BDR*, 31 March 1918:8; *BDR*, 09 March 1919a:2).

In 1968, a new main post office building was established in the San Jose neighborhood south of Old Bisbee. The Copper Queen Post Office became a substation known as the Copper Queen branch (*Arizona Republic*, 24 October 1968:8). In December 1974, Phelps Dodge announced they were ceasing mining operations within Bisbee and began dissolving their assets (City of Bisbee n.d.). Open pit and underground mining operations were officially ended in 1975, and in the spring of 1976, the mining company gave the Copper Queen Library to the City of Bisbee (Brinkley-Rogers 1981; City of Bisbee n.d.). Four years later in 1980, the Copper Queen Library was designated as a contributing resource to the Bisbee Historic District and listed in the National Register of Historic Places (Wilson et al. 1980).

Throughout the following decades, the library underwent a series of minor renovations. In 1987, librarian Marge Rodriguez announced that “the main portion of the library will be moved to the second story, to make it more accessible to handicapped people,” and the third story would be converted to storage



(*Bisbee Gazette*, 19 August 1987). With the passage of the Americans with Disabilities Act (ADA), signed in 1990 by President H.W. Bush, public facilities were improved to provide access for people with disabilities. By the late 1990s, the library was faced with the challenge of Mexican free-tail bats, a protected species, which had taken up residence in the attic of the library building. A report from 1993 stated that:

“A huge dark stain seems to rain down from the ceiling and down the white wall above the stairs, but it is the overpowering smell at the circulation desk that signals something is rotten at Bisbee’s public library. It’s the bats – or more precisely the hundreds of pounds of feces and urine they have deposited in the attic and subceiling of the building – that have had city officials scratching their heads and holding their noses for years” (Ibarra 1993a).

According to city administrator Jeri Duster, removal of the roof skin was the only possible way to remove the “hundreds of pounds” of fecal matter (Ibarra 1993a). Plans were developed and \$11,000 in funding was requested from the State Historic Preservation Office (SHPO) to help pay for the work, which would include a new roof and a securely sealed attic (Ibarra 1993a). These upgrades were initiated in December 1993 when a local contractor repaired the deteriorating walls, sealed some of the exterior walls, and installed a one-way vent to encourage the bats to leave, and deter their re-admittance to the building (Ibarra 1993b). Additional work on the roof and attic vents was also reported, but details of these repairs remain unknown (Ibarra 1993b; Widmann 1993).

In 1995, the City of Bisbee submitted a request for proposal for architectural services to rehabilitate the architectural, structural, mechanical and electrical components to meet ADA requirements (ADS, 30 January 1995:C-8). Using this money, local architects Todd Bogatay and Brian Lockhard provided phased plans for the library’s improvement (McBride 1995:A1-A3). Improvements were largely completed by 1997 with the installation of the elevator and upgraded HVAC system (Figure 57; *Bisbee Observer* 1997:9; City of Bisbee n.d.).

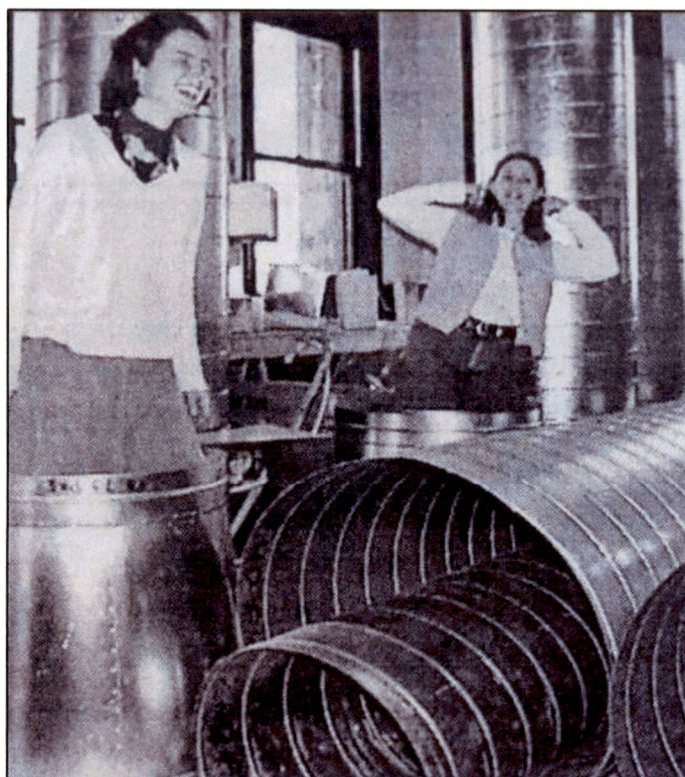


Figure 57. City Librarian Lise Gilliland (right) and new hire Jan Bervin stand inside un-installed air ducts. February 1997. Cathy Murphy, photographer. Courtesy of the City of Bisbee.



In 1999, the non-profit, Friends of the Copper Queen Library, was formed and hosted several fundraisers to support continued rehabilitation of the building (Nonprofit Metrics 2021). By 2003, public funds in tandem with grants provided by the SHPO helped to restore all of the library's windows and many of its screens (Waters 2003:A1).

Even to the present day, the Copper Queen Library has remained an integral part of community life in Bisbee. The library earned wide recognition for its "innovative efforts to expand services to the community, including early literacy programs, a seed library for gardeners, and a slate of unconventional items available for checkout, such as sports equipment and Wi-Fi internet hot spots" (Brean 2019). The Copper Queen Library's reputation for community service earned it first place in 2019 as the "Best Small Library in America" from *Library Journal* and was the first library in Arizona to win such a prize (Brean 2019).

## FUNDING SOURCES

Although available funding sources are limited in Arizona, there are federal programs that would provide financial assistance towards the future rehabilitation of the Copper Queen Library. Among these programs, is the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant (CDBG) program. Municipalities are eligible for CDBG funds towards historic preservation activities if they meet a national objective. The activity must benefit low and moderate-income persons; prevent or eliminate slums or blight; or be designed to meet an urgent community development need. Because Bisbee has a relatively high poverty rate, a low median income, and the building serves a community need and function, the City of Bisbee may apply for CDBG funds to help in the future rehabilitation of the library. CDBG funds have been used effectively in other Arizona cities, including Tucson, where several buildings have been rehabilitated as part of this program. To learn more about how to effectively apply for and utilize this program, HUD has provided guidance available online at: [https://www.hud.gov/sites/documents/DOC\\_14211.PDF](https://www.hud.gov/sites/documents/DOC_14211.PDF).

Other federal programs include the Historic Tax Credit, however, the credit is only applicable for historically certified income-producing properties. Because the library is not considered an income-producing property, it is not currently eligible, but in the event that the City wants to change or add to the building's uses through a lease or sale to a private entity for income-producing purposes, it may be eligible for a 20% rehabilitation tax credit. Similar to CDBG funds, there are several requirements that need to be met in order to qualify for the tax credit. The National Parks Service, which oversees the federal tax credit program, provides a description of the program and its requirements at: <https://www.nps.gov/tps/tax-incentives/taxdocs/about-tax-incentives-2012.pdf>.

As a Certified Local Government, the City is also eligible for yearly grants upwards of \$25,000 to go towards additional planning and survey work. These funds would not pay for rehabilitation costs, but would be available to pay for additional structural assessments and documentation efforts towards its future rehabilitation.



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1997 City Librarian Lise Gilliland (right) and new hire Jan Bervin stand inside un-installed air ducts. Photograph. Cathy Murphy, photographer.

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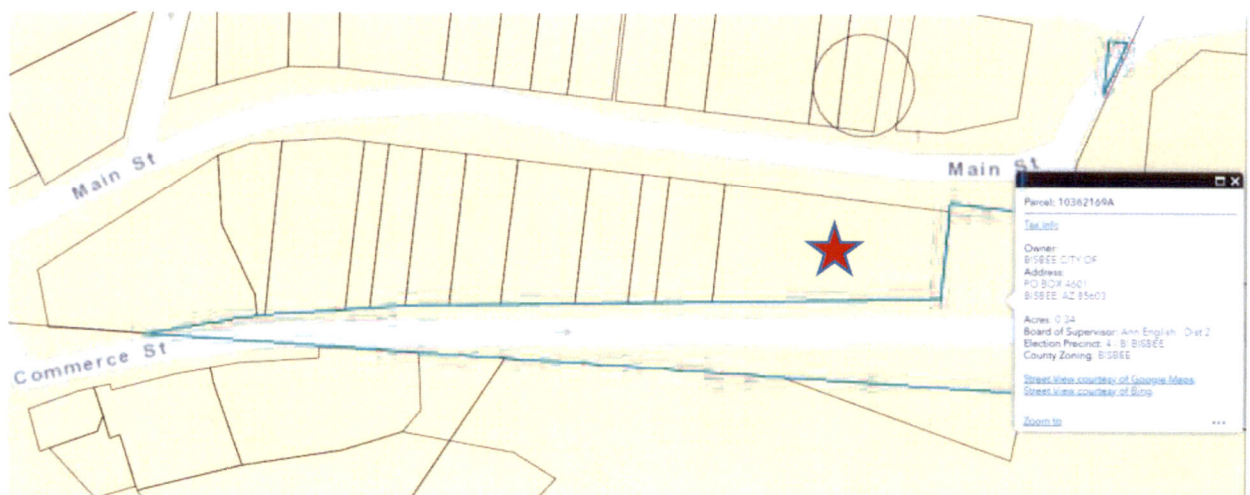
## 2. SITE ISSUES



### Site

The Copper Queen Library is located at the downhill west end of Tombstone Canyon (Main Street) with Commerce Street as its southern boundary. Its footprint is largely zero lot line on all sides. It sits nestled below Highway 80 with a steep natural slope down to the north.

Oddly, its southern boundary is not public right-of-way *per se*, but rather a long triangular listed parcel that wraps around to the south and to the west and is City of Bisbee property. That parcel in turn functions both as a street, a pedestrian, area and a parking lot.



Cochise County GIS



The hillside parcel to the south, between Commerce Street and US 80 is owned by the Phelps Dodge Corporation.



Cochise County GIS



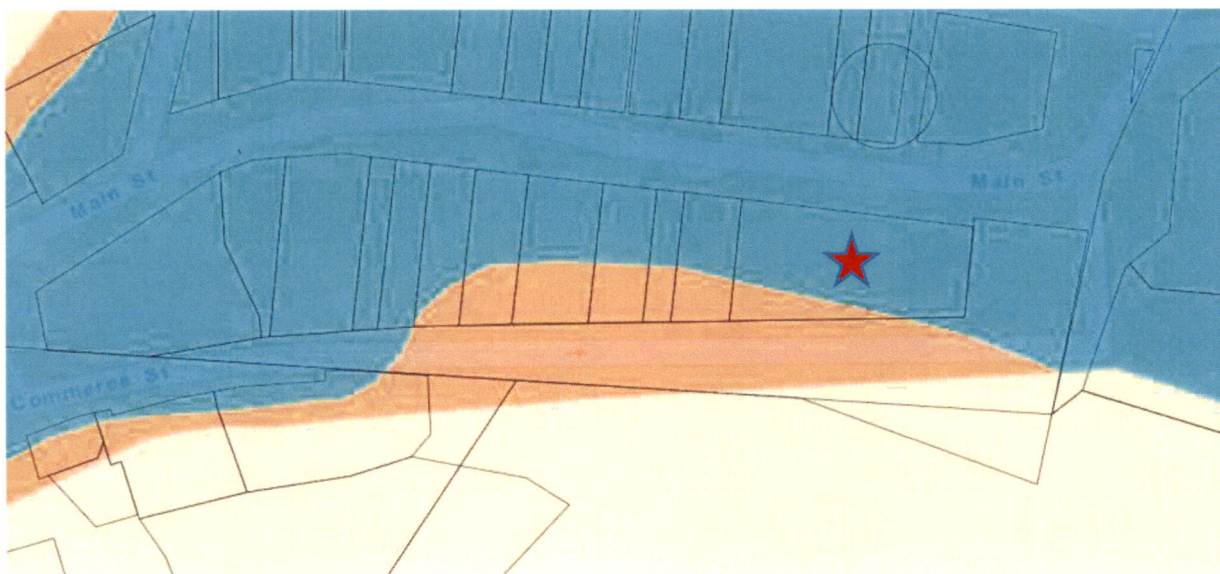
Google Maps 2021, Street View



### Topography and Drainage

The Copper Queen Library sits in a steeply sloping area with a steep hill to the south and with Commerce and Main sloping substantially to the west. Drainage is from the south and then down to the west. The bulk of drainage run-off adjacent to the building is on Main and on Commerce.

The Library is bisected by two Flood Hazard Zones. In blue is the **AE Flood Zone**. This is in essence the 100 year storm flood zone with an Annual Chance of Flood Hazard. In buff color is the **X Flood Zone**, the 5000 year storm flood zone with a .2% Annual Chance of Flood Hazard. The Library has a small basement, so the two flood zones may present a significant hazard. The first floor is occupied by the US Post Office, but a visual inspection indicates the first level Finish Floor level is probably above the Flood Zones.



Cochise County GIS Flood zones

While there is no immediate threat, the phot to the right is just a reminder that Main Street in Bisbee has experienced flooding in the past. With climate change a real issue, we have no good way of projecting future flood danger. Obviously, flooding has a potentially a greater impact to the US Post Office than it does to the Copper Queen Library occupancy on the upper two floors.

### 1908 Floods and Fires

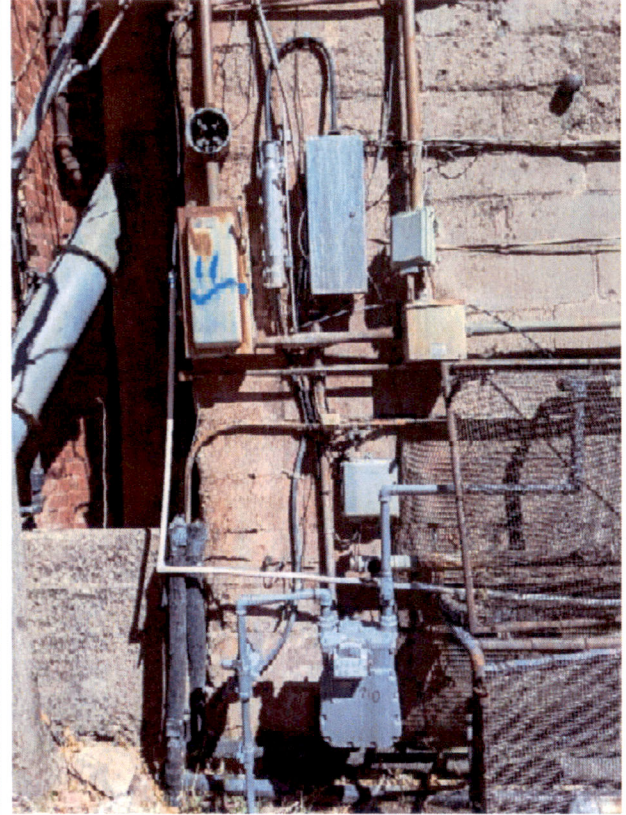
In 1908, Bisbee experienced two disasters in quick succession. In August, excessive rainwater running down the mountains caused a flood which damaged homes and local businesses, and in October 1908, a fire destroyed much of the town's commercial district. The Library survived both disasters.





### Utilities

The site distribution of water, sewer, gas, and power arrive from the south along Commerce Street. See Electrical and mechanical reports for more detail. There is no fire sprinkler system in the building and therefore no fire water line to the building. By current code, a fire sprinkler would be required for an 'A' occupancy library space. However, since the rehabilitation planned does not change of use or occupancy, it is likely that the City of Bisbee will not require a fire sprinkler system.



### Parking Area, Paving, Curbing, Sidewalks

The site parking facilities are public in nature. There is no on-site parking on the Library site *per se*, but there is parking to the east and the south of the building in public right-of-way, on street parking to the northeast and several large municipal and private lots nearby.



East parking area.



Commerce Street parking area.



There are good sidewalks and curbing along Main Street.

ADA access to the building is provided at the east entry to the Post Office. The Post Office Entry has appropriate and ADA-compliant automatic door openers. Once inside there is elevator access available to the two floors of the Library above. For security reasons, there is a rolling gate that has the ability to isolate the elevator, so management of ADA access becomes a staff-operated activity.



ADA access to the *veranda* from the Library on the upper two floors is not available because of 2.5" steps at all doors leading from the Library to the outer porch. The front doors of the library do exit at grade to a portion of the porch, but that area is ADA isolated from the remainder of the *veranda* with the same grade change. We recommend a platform at the eastern doors of the Library on the 2<sup>nd</sup> and 3<sup>rd</sup> floors with a 1:20 sloping sidewalk heading north from that western door platform of the Library.



*Library to veranda at east Library exit*



*Grade change from entry veranda to wrapping verandah.*

### **Landscape, Irrigation**

There is no landscape on the site.



### 3. ARCHITECTURAL AND ACCESSIBILITY ISSUES

The inspection of the site yielded the following observations:

#### Post Office versus Copper Queen Library

The occupancy of the Copper Queen Library building presents a stark difference in condition, integrity, use, management, and control and will likely lead to very different recommendations in this report.

The Copper Queen Library occupying the upper two floors has a very high degree of integrity, to use the formal preservation term. What that means is that the key architectural elements of the two floors of the Library are in very much the same condition, configuration, materials, uses, etc. as they were when the building was built. Over the years very little was changed, except for some lighting, some HVAC, and the elevator installation for ADA. In other words, the historic character of the building is in “mint condition.” In addition, the architectural/preservation future of the Library is in complete control of the City of Bisbee, which has already demonstrated that it has been an excellent historic steward over all of these decades.

The US Post Office, on the other hand, presents a very different scenario. It has been severely modified with a poor condition dropped ceiling, major remodeling of the layout and plan, and generally poor maintenance throughout. The floor, made of an unusual “running bond” composite material, is one of the few remaining items with historic integrity. It is occupied by the Post Office on a long term lease that provides significant income to the City of Bisbee. It is unlikely, in this reviewer's opinion, that the Post Office will invest in any significant preservation/rehabilitation. And the scope of that rehabilitation to return to its original integrity would be a challenge on all fronts – historic documentation of original features, functional design, cost, and bureaucratic obstacles.

As such, the bulk of the architectural analysis will focus on the two levels of the Library. The structural, mechanical, and electrical assessments will discuss the entire set of building systems. At the conclusion of the architectural assessment, there will be a brief discussion of some key issues in the Post Office, but it will not be at the level of the Library Discussion.

#### Library Exterior Walls

Because three of the four sides of the upper two levels of the Library have been protected by the veranda, the exterior walls of the Library inside the veranda are in generally very good condition, including the wood panel areas.



*Protected exterior walls*



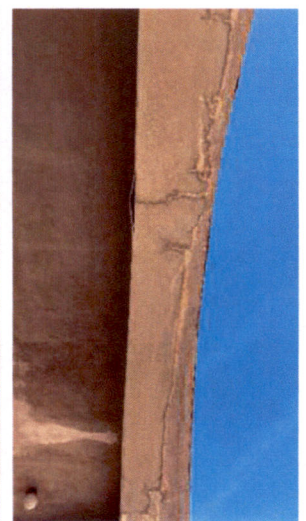
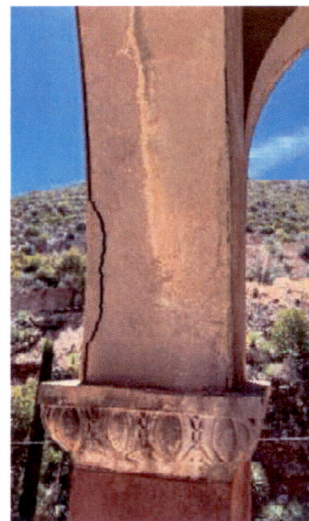


*Protected exterior walls*

By contrast the portions of the three sides not protected by the veranda has some minor damage, and the south wall facing Commerce, unprotected by the veranda, has significant damage



*Unprotected exterior walls*



*Delamination of unprotected exterior walls*





*Unprotected and utilitarian south wall in need of more substantial repairs.*

In general:

- walls protected by the veranda need minor cleaning and repair
- walls on the north, east and west exterior walls need substantial cleaning, repair, and especially repair of delamination of exterior plaster coats
- the south wall needs major improvements, starting with removal of obsolete piping and conduit, panels, meter bases, etc.

### Windows

The windows in the Copper Queen Library follow the pattern of the walls described above. The windows protected by the veranda are in extraordinarily excellent condition. The windows on the east and north at the lower level (not protected by the veranda) are in good condition, and the windows on the south wall are in fair condition with several of the windows covered with security screens at the lower level.



*Windows covered by veranda*



*North windows facing Main*



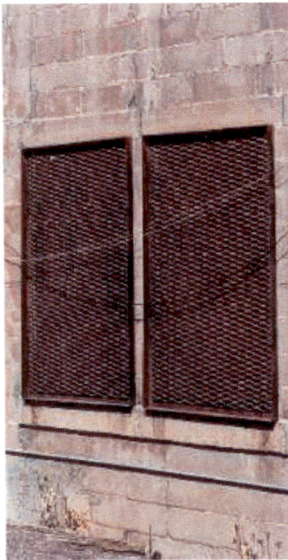
*East window at Post Office*



*South windows facing Commerce (1<sup>st</sup> floor, 2<sup>nd</sup> floor and 3<sup>rd</sup> floor)*







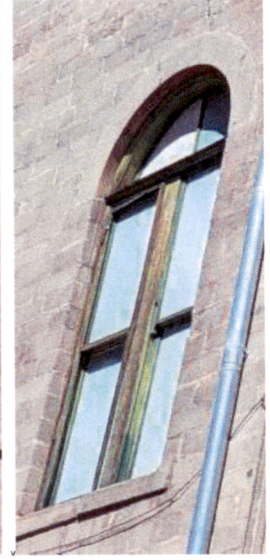
*1<sup>st</sup> level metal security*



*2<sup>nd</sup> level metal security*



*3<sup>rd</sup> level wood windows in poor condition*



In general:

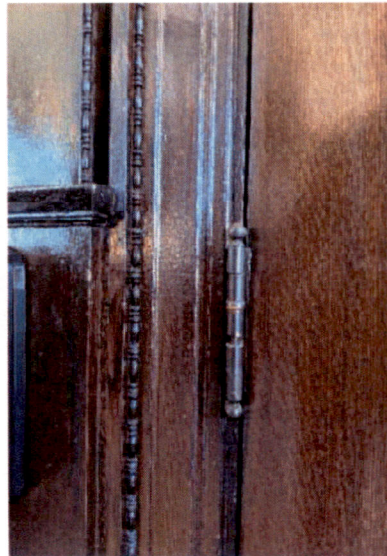
- the windows that face onto the veranda need light sanding (check for lead-based paint content) and repainting, inside and out.
- the windows on the north side that face onto Main Street and the four windows on the east side need some repair, more substantial sanding (check for lead-based paint content), and repainting inside and out.
- the windows on the south wall should receive the following treatment: lower level windows into the Post Office should keep their steel expanded metal security screens (these should be repainted dark green.) The interior of these windows need sanding and repainting. The windows on the second level should have their tabbed security screens removed. The wood windows beneath the security screen, damaged by extensive exposure to south sun, should be repaired as necessary, scraped (check for lead-based paint content), and repainted, inside and out. The windows on the 3<sup>rd</sup> level are in poor conditions and will need extensive repair and repainting, inside and out.

### **Doors**

Most interior and exterior doors are in excellent condition with irreplaceable materials, ornamental trim, and hardware. These doors just need routine maintenance and preservation.



*Entry door*



*Entry door detail*



*Interior door*





*Interior door hardware*



*Entry door detail*



*East exterior door to veranda (veranda view)*

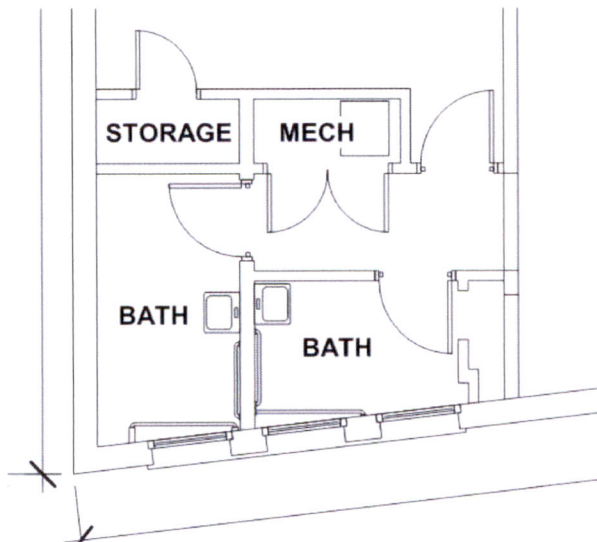


*East exterior door to veranda (interior view)*

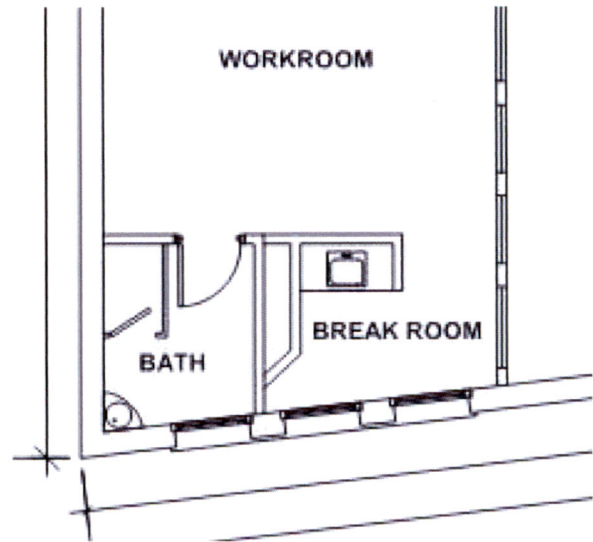


## Bathrooms

The bathrooms on the 2<sup>nd</sup> floor seem to be in good order and are both ADA accessible. The 3<sup>rd</sup> floor bathroom is not accessible.



*2<sup>nd</sup> floor accessible bathrooms (WC not shown)*



*3<sup>rd</sup> floor bathroom not accessible (WC not shown)*

## Flooring

The flooring in the library is high quality wood flooring (maple?) that appears rough, but is simply in need of a machine re-sanding and refinishing. It looks as if it has not been refinished before, so it should easily handle the sanding without endangering the top tongue of the tongue and groove. It can be beautifully restored. The scuff marks and damage should be easily repaired. The open joints will close in wetter season and the floor will do better with a more stable HVAC system. Evaporative coolers are very rough on wood floors.







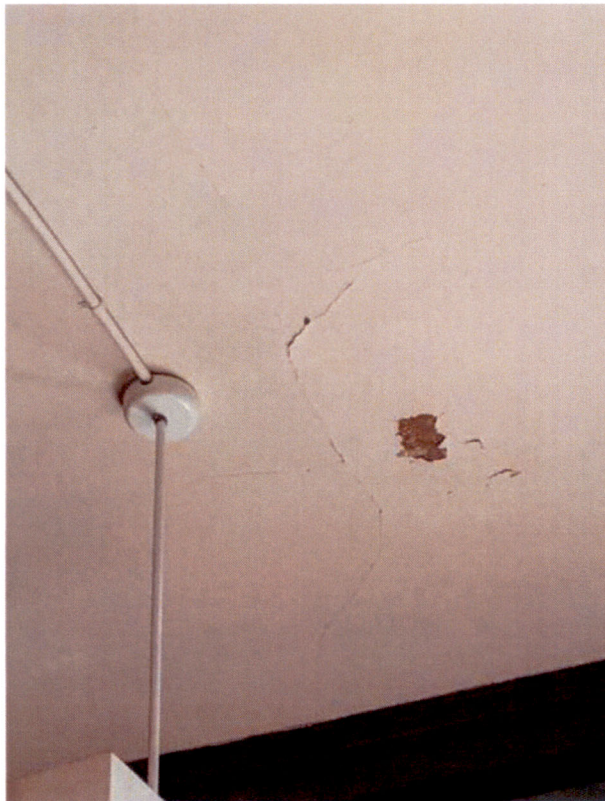
The exterior deck of the veranda has substantial cracking. It is recommended that a new 1/2" cementitious topping with appropriate score spacing be placed on top of the existing veranda surface. This will restore a good quality walking surface outdoors and provide waterproofing to prevent leakage to the ceiling below.





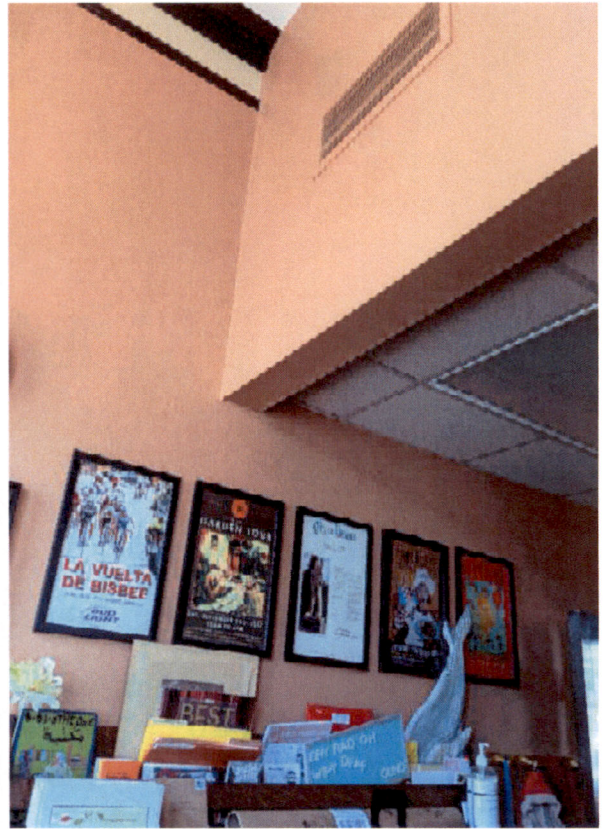
## Ceilings

The ceilings in the Library interior are in generally very good conditions. They simply need to be cleared of electrical conduit and repainted.





The dropped ceiling in the office on the east end of the 2<sup>nd</sup> floor is not original but can stay as it is.



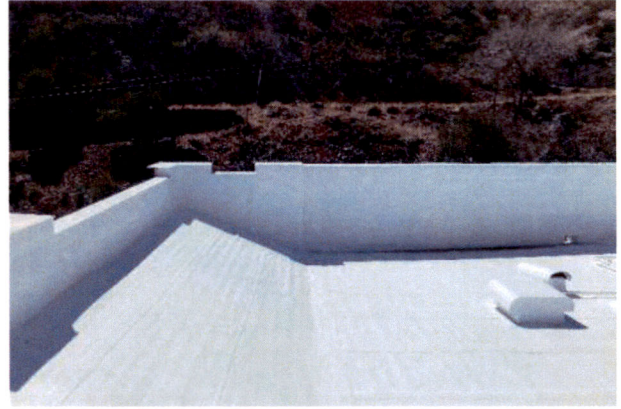
The exterior veranda ceiling is substantially damaged for water infiltration. The leakage from above needs to be repaired. These exterior ceilings should have a new finish coat of cement plaster and then be repainted.





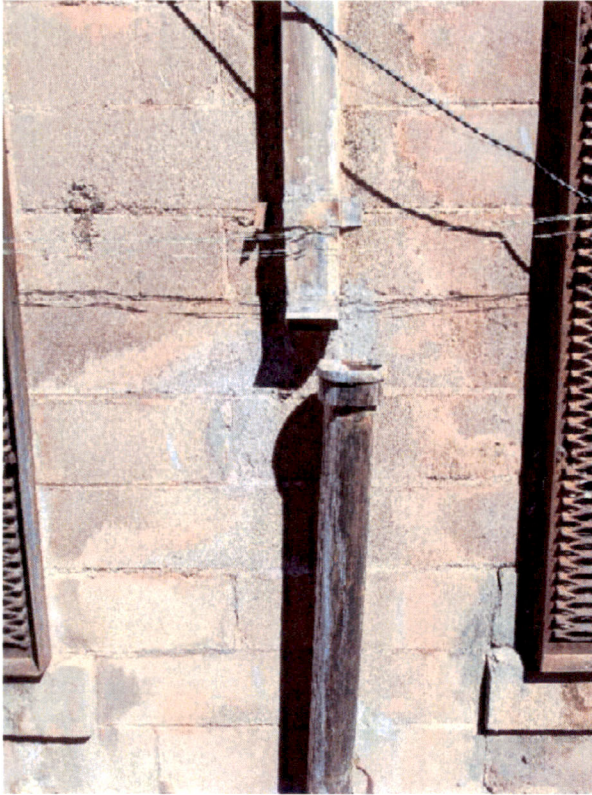
## Roofing

The roof is in excellent condition. Given the change in HVAC systems that will likely be roof mounted. The roof should be inspected for areas of repair and then recoated with a white acrylic coating.





The roofing downspouts are in very poor shape with serious deficiencies in the connections of the roof piping and poor delivery of roof water to the channel running east for drainage. The downspouts need to be replaced with "like-for-like" and the channel that carries the roof water east needs to be clarified and cleaned.





### Stairs and handrails

The exterior stairs from Main Street are up to the Library entrance are in good condition and the railing height (@+42") meets current IBC requirements.





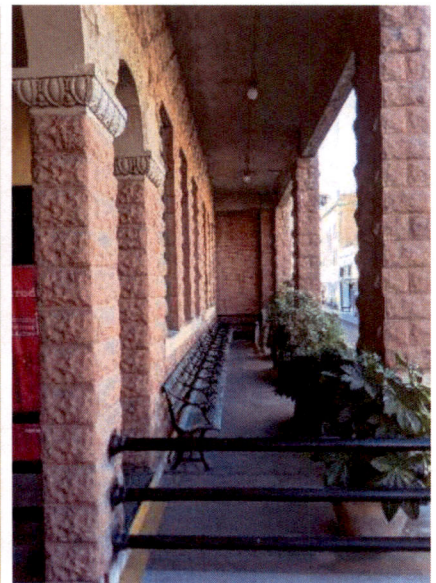


There is a required run-off (extension of the railing past the staircase) that does not meet code, but that would put the railing into the public right-of-way as a dangerous obstruction. This conflict will require a discussion with the building official.





The railing of the veranda is the most significant code issue presenting a significant danger to users. It is recommended that the public not be allowed to access the veranda until this danger is eliminated. danger to users. The railing has two problems: it is 29" tall compared to the code required 42" tall. In addition, the code requires that a "4 inch ball shall not pass," meaning that no opening in the railing itself should be larger than 4". The current railing meets neither of these requirements for the full length of the veranda.





The solution is complicated by the fact that the pipe rails are a character-defining element of the exterior design of the veranda railing. From an historic preservation perspective, it would be best to maintain the material, scale, proportion, and character of the railing.

PMM had a similar challenge in our rehabilitation of Old Main on the University of Arizona campus. With the enthusiastic approval of Arizona SHPO, PMM created a nearly invisible free-standing rail inside the historic railing. Building users were clearly able to understand that the railing was contemporary and installed for safety. Yet from the exterior. The historic material, scale, proportion, and character of the railing are maintained.



*Old Main new safety railing*

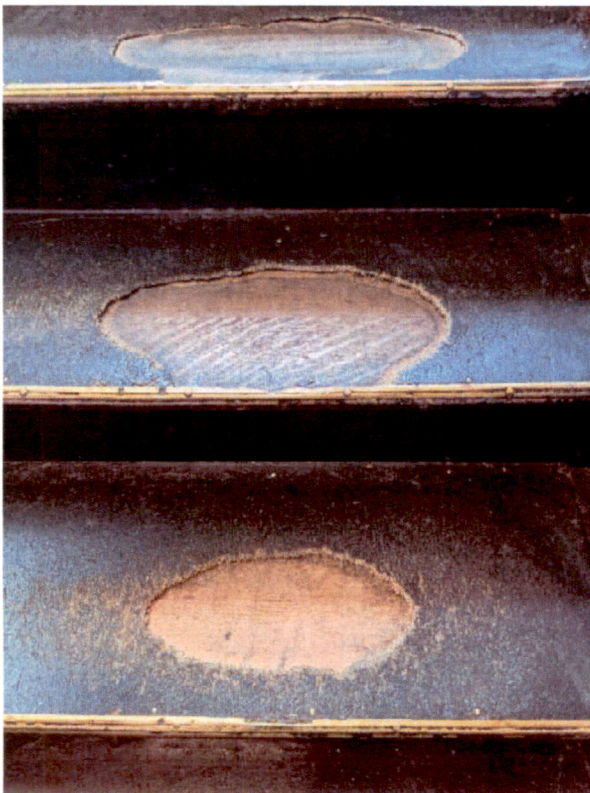


*Old Main new safety railing*



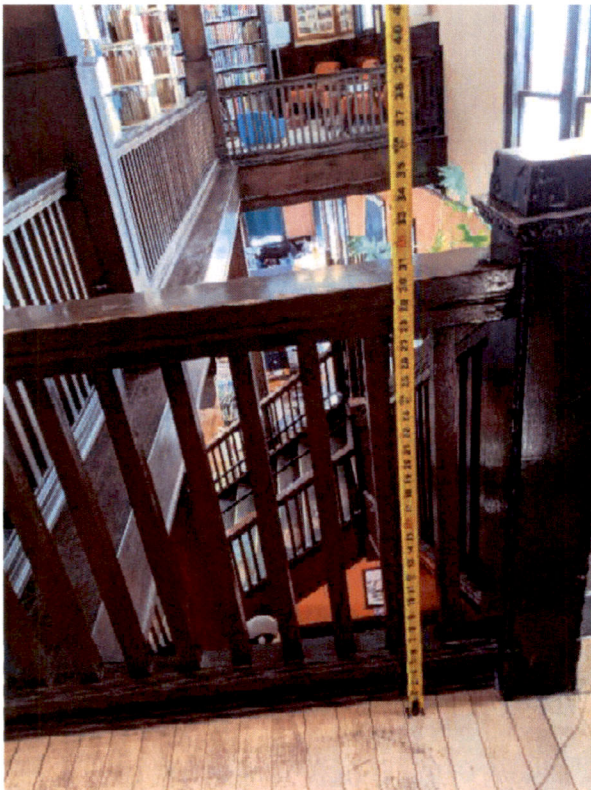
The interior staircase is generally in good condition except for two significant issues:

- The stair treads are seriously worn out and should be replaced for the entire staircase with a comparable composite material in thickness and color to match the original. Care should be taken to leave the exposed existing wooded tread for the last several inches. The brass nosing should be repaired or replaced as necessary to match existing. Care should also be taken to not compromise the unique “dust corner” inserts.





- The stair railing is also a significant code violation and presents a danger, particularly on the 3<sup>rd</sup> floor. The railing is 29" tall in most locations. The code requires a much higher railing at 42". On the upper half of the stair where the wainscoting sits behind the handrail, the handrail can simply be raised to the appropriate height using the existing hardware. At the other three location where there is a low slat rail, a simple pipe rail (similar to the center rail) can be added. This needs to be studied, by our initial recommendation is to "L"-shape a bracket and attach it to the side, not the top of the square top rail, at the appropriate height. The height of the center pipe rail may need to be raised as well. At the 3<sup>rd</sup> floor, a similar pipe rail needs to be added all around the stair opening. That top rail also needs to comply with the 4" ball shall not pass, although there may be some code leniency in this regard.





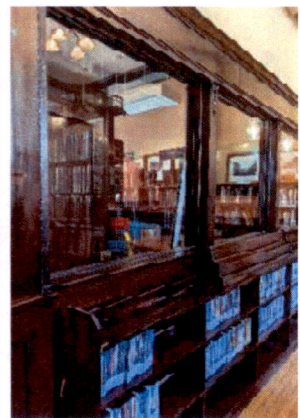
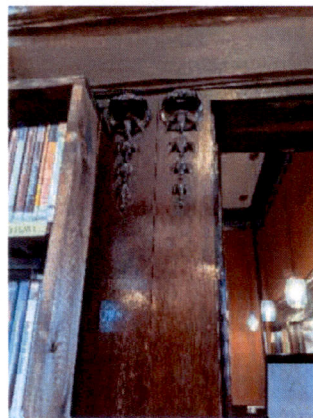
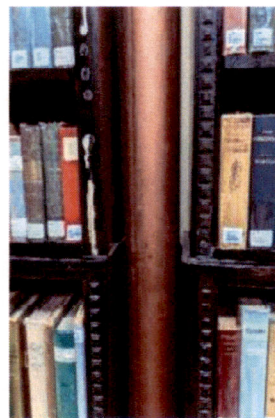
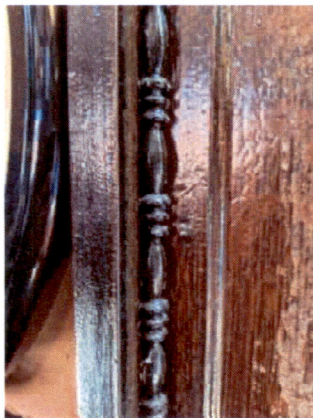
### Window coverings

There are not window coverings on all windows. But where there are, they should be consistently installed. The roll-down, green, black-out shades seem to work well with the existing interior and it is recommended that they be installed as needed.



### Interior cabinet work, wood work, and furniture

One of the most valuable aspects of the Copper Queen Library is the extraordinary woodwork and the high level of integrity in those materials. The same is true for much of the furniture, which is original and must be maintained and preserved. It is recommended that all of the cabinet work and furniture be repaired and restored to its original quality, including shelving, trim, window trim, and furniture, etc.





Furniture

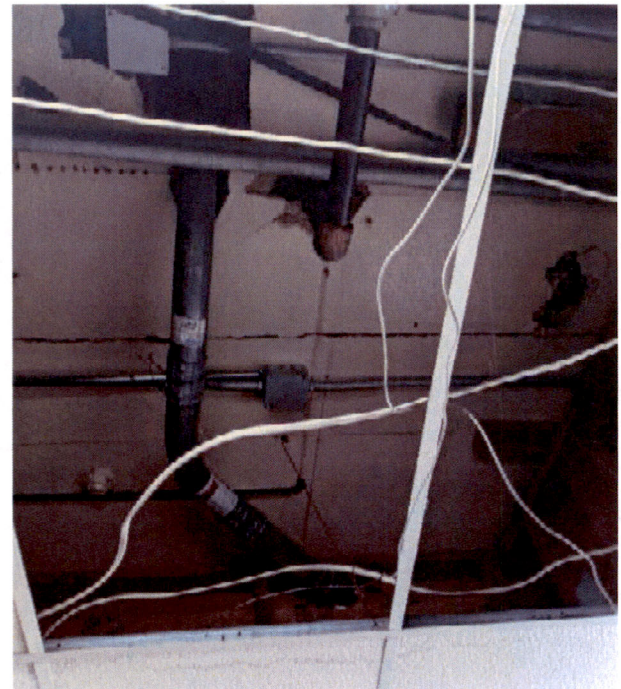




## COMMENTARY ON THE US POST OFFICE

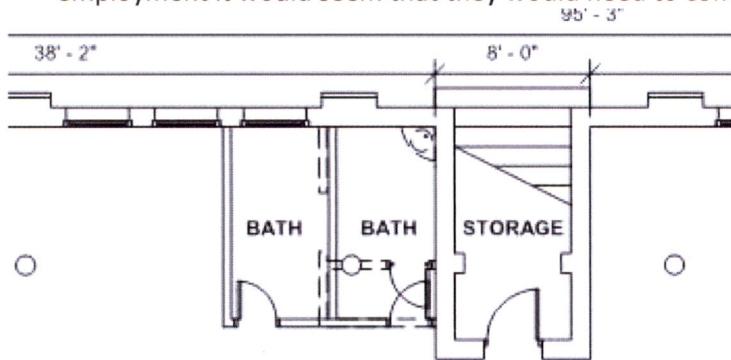
This study did not address the US Post Office space with the same rigor of the upper two floors of the Library because of the severely reduced integrity of the first level after years of haphazard and non-preservation modifications. It is also true that the Post Office is unlikely to invest in any major restoration of the lower level space. Restoration of that space would also be difficult because there is little documentary evidence of its original condition. However, there are three main recommendations that should be considered for the improvements of the Post Office space so that it may more closely comply with building code and more closely comply with the spirit and extraordinary historic status of the building as a whole.

- The ceiling of the Post Office is in terrible condition and has dramatically reduced the spatial quality of the lower level space. There are additional recommendations in the lighting and mechanical sections of this report. There is currently a dropped ceiling at 24" below the original plaster ceiling. It is recommended that, to the extent allowable by the need of lighting and mechanical ductwork, the ceiling be raised by as much as 12". This will improve the spatial quality of the Post Office and the new dropped ceiling will reduce the shabbiness of the Post Office appearance.





- The Post Office does not have an accessible bathroom on the first level. Given the varied population employment it would seem that they would need to comply. There is room to remodel for ADA.



- The floor in the Post Office is an interesting composite running-bond material that is in poor shape. Amazingly there is a stash of extra flooring material in the deep basement accessible from Commerce Street. This extra material could be used to repair damaged areas. The entire floor could be repolished and brought back to an interesting finish.



Corky Poster  
Architect and Planner  
**Poster Mirto McDonald, Inc.**  
Architecture – Planning – Preservation



#### **4. Bisbee Library Assessment Report Structural**

The Bisbee Copper Queen Library was observed and walked through on March 11, 2021. The structure was originally built in 1906. As-built drawings are not available for review and structural observations were limited to those areas readily observable and exposed to view.

The following is a summary of observations made during the building walk-through.

##### **Foundations:**

The foundation system supporting the building is unknown. It is most likely a conventional spread footing system however, without as-built drawings, it remains unknown. Exploratory methods such as potholing around the perimeter was not performed and outside of the scope of this study. It appears from observations made of the building exterior, the foundations have been performing reasonably well over the years with minor evidence of settlement and foundation movement.

##### **Basement Level:**

A small lower-level vault, approximately 8 feet square, is located below the southwest Level 1 portion of the building. The south wall is the exterior CMU wall for the structure. The remaining three walls of the vault appear to be stone. It appears the vault may have been installed after the initial construction, but it is not definite. It is assumed a reinforced structural concrete slab spans over the basement level. It is not known if the perimeter walls of the basement are reinforced nor their thickness.

##### **Level 1:**

Level 1 floor is assumed to be a concrete slab-on-grade. The portion of slab that spans over the basement area is assumed to be a reinforced one-way or two-way flat slab.

Throughout level 1 are steel pipe columns approximately 8" diameter, supporting the floor framing above.

The exterior walls are CMU for the entire height of the building. It is unknown if it is reinforced or unreinforced masonry. It was common practice for the masonry to be unreinforced for this construction era. At various locations on the south wall, some cracking was observed. Most cracks propagate from wall openings and are the result of minor foundation settlement and lack of crack control joints in the wall. The cracks do not appear to pose significant risk to the structural integrity of the walls but should be repaired. Control joints in the wall



construction appear to be nonexistent that would have helped in relieving temperature change stresses in the wall.

### **Level 2:**

The level 2 floor system appears to be framed with wood joist and beams throughout the interior space. Wood columns support the floor above, presumably aligned with the steel pipe columns below. The wood columns may be steel pipe columns that are encased in wood or may be heavy timber sections.

The north and east exterior porch is an 8" thick concrete slab that spans between the masonry walls. Perimeter CMU pillars extend above the perimeter walls below.

### **Level 3:**

The flooring system at level 3 appears similar to level 2. It consists of a wood framed floor system in the interior, with a concrete deck around the north and east exterior porch. The exterior deck spans between concrete beams and exterior CMU wall. The north and east exterior porch is an 8" thick concrete slab. Perimeter CMU pillars extend up from the perimeter walls below. It is assumed a perimeter edge beams spans between the pillars to support the edge of the porch slab. It is unknown if the beams are concrete or steel as they are concealed in a cement parged enclosure.

The level 3 deck was observed to have some cracks occurring on the underside in alignment with the exterior pillars. There is evidence of moisture seeping through the crack from exposure to rain on the top surface. A surface applied sealer over the top surface of the exposed decks would help mitigate moisture seepage through the deck that can promote corrosion of slab reinforcing.

### **Roof Level:**

The roof level is all wood framed. Limited access was available to view the framing which is composed of a rafter system of sawn timber. The roof deck appears to be composed of 1x6 straight sheathing or planks. The wood framed roof is supported from below by wood posts or steel encased by wood.

The perimeter edge over the porch is a series of formed arches spanning between the masonry pillars. It is assumed to be masonry construction that is covered with a cement parging.

There it was noted during the site-walk that the cement parging over the masonry pillars and spandrels has been cracking and may be losing its bond to the substrate, creating a falling debris public safety issue. Repairs to the parging should be implemented to improve its watertightness and secure it from spalling off the building.



### **Summary and Recommendations:**

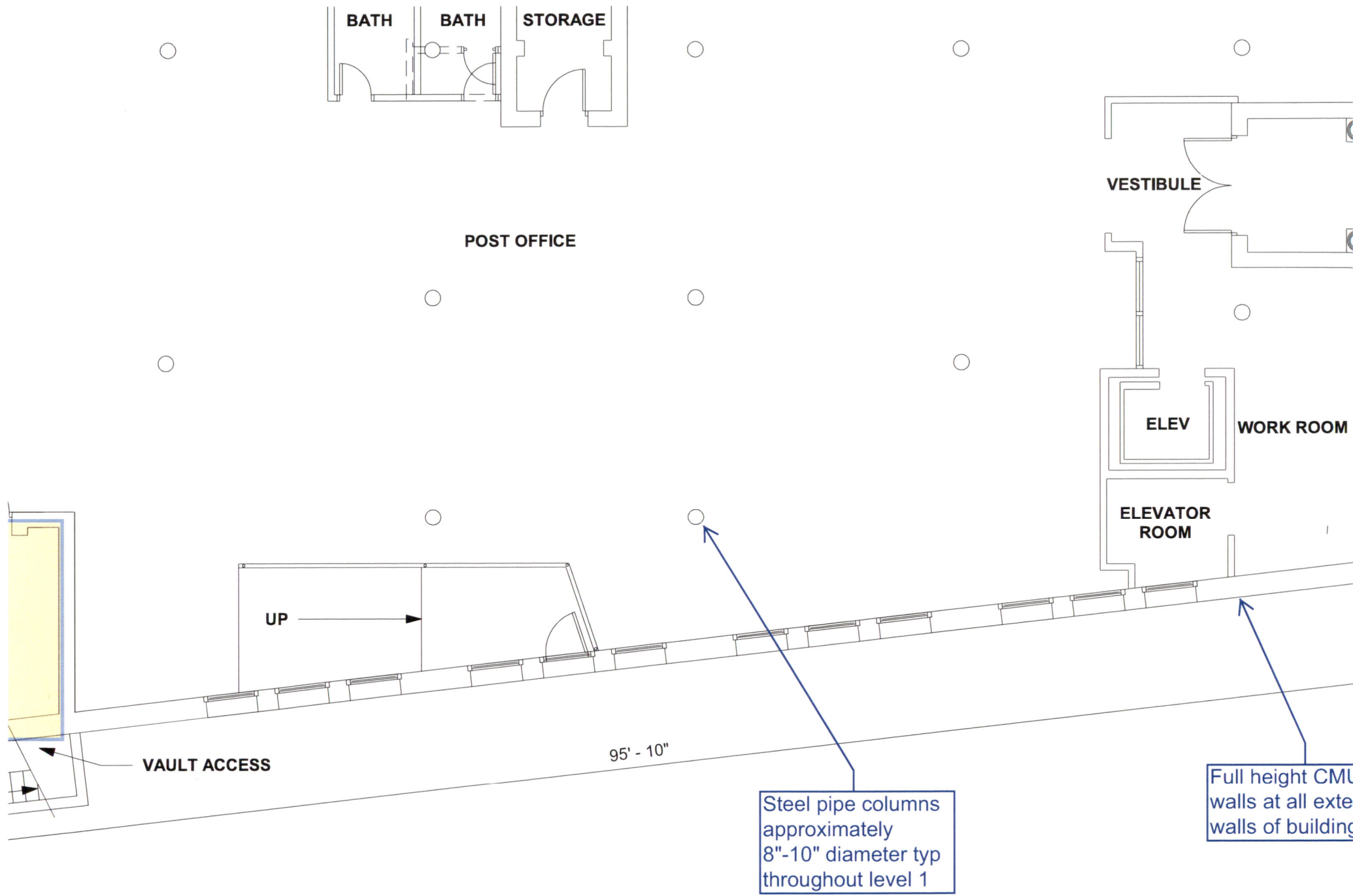
Considering the age of this building of 115 years, the existing structure has performed reasonably well and appears to be in good serviceable condition with minor issues that are not necessarily structural in nature. The following summarizes the items observed that should be repaired or improved to preserve and extend the life of the building.

1. The south masonry wall that has experienced cracking should be repaired. It appears there have been attempts at patching some of the cracks, but do not appear to have been performed by an experienced masonry repair contractor. The cracks should be cleaned out and filled with a cement base mortar by an experienced masonry repair contractor.
2. The exterior porch slabs appear to be allowing moisture from the weather to seep through and potentially causing corrosion of the reinforcing steel. It is advised to apply a surface sealant that will mitigate surface moisture from migrating through the slab.
3. The exterior cement parging should be repaired to prevent further water damage and risk of large falling pieces that are a risk to public safety.
4. New loads applied to the roof structure, such as mechanical units or solar panels, should have a structural engineer's evaluation before proceeding.

### **Limiting Conditions:**

The investigation was limited to those areas of the structures that were exposed and readily observable to view without the removal of existing construction and finishes. Visual observations of both the interior and exterior of the structure were performed on elements of the structure accessible at the date and time of our investigation. No attempt was made to determine if hidden defects exist or what conditions may manifest over time. No engineering calculations and/or quantitative analysis were performed for this assessment. This report does not address non-structural portion of the building.

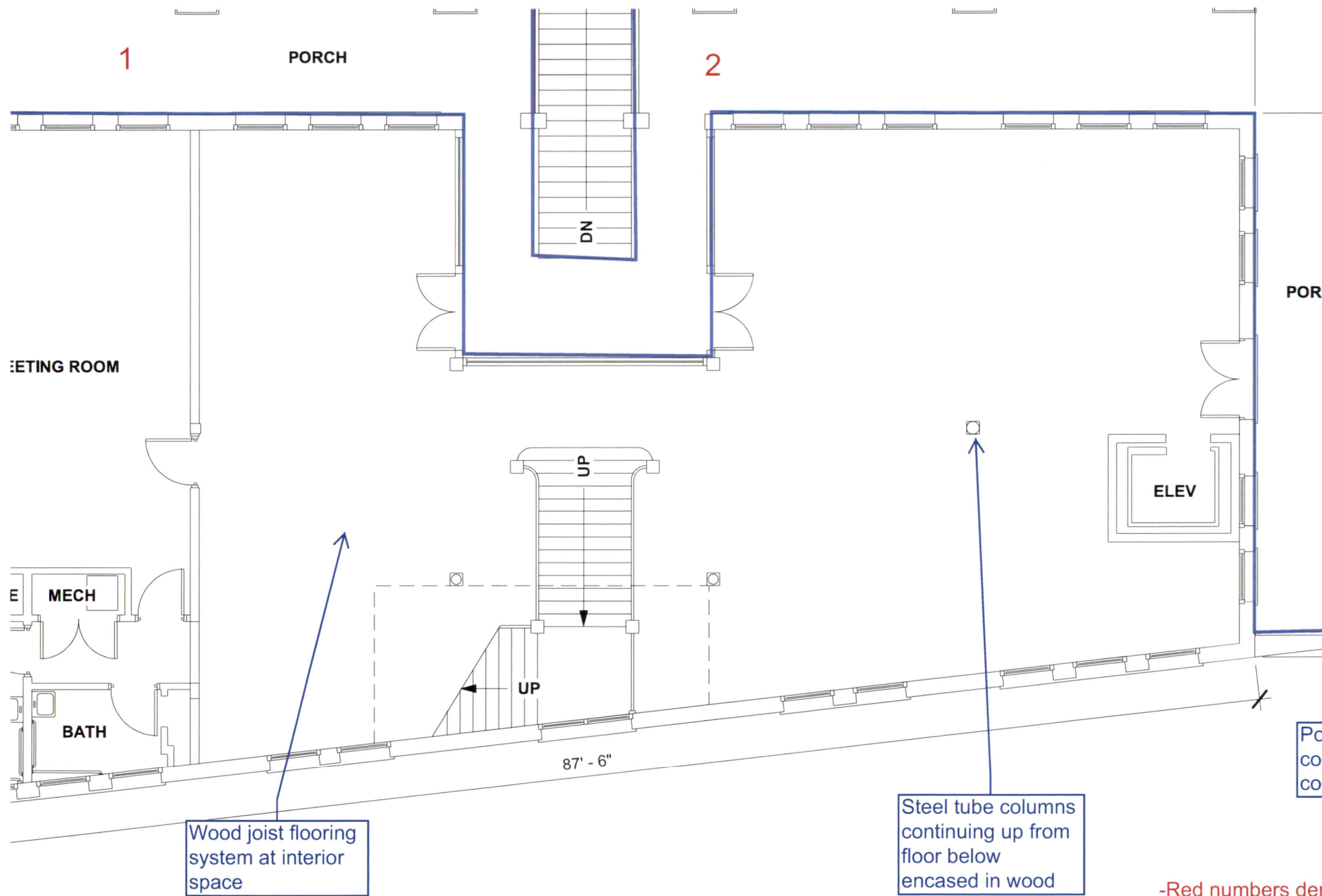




.0"







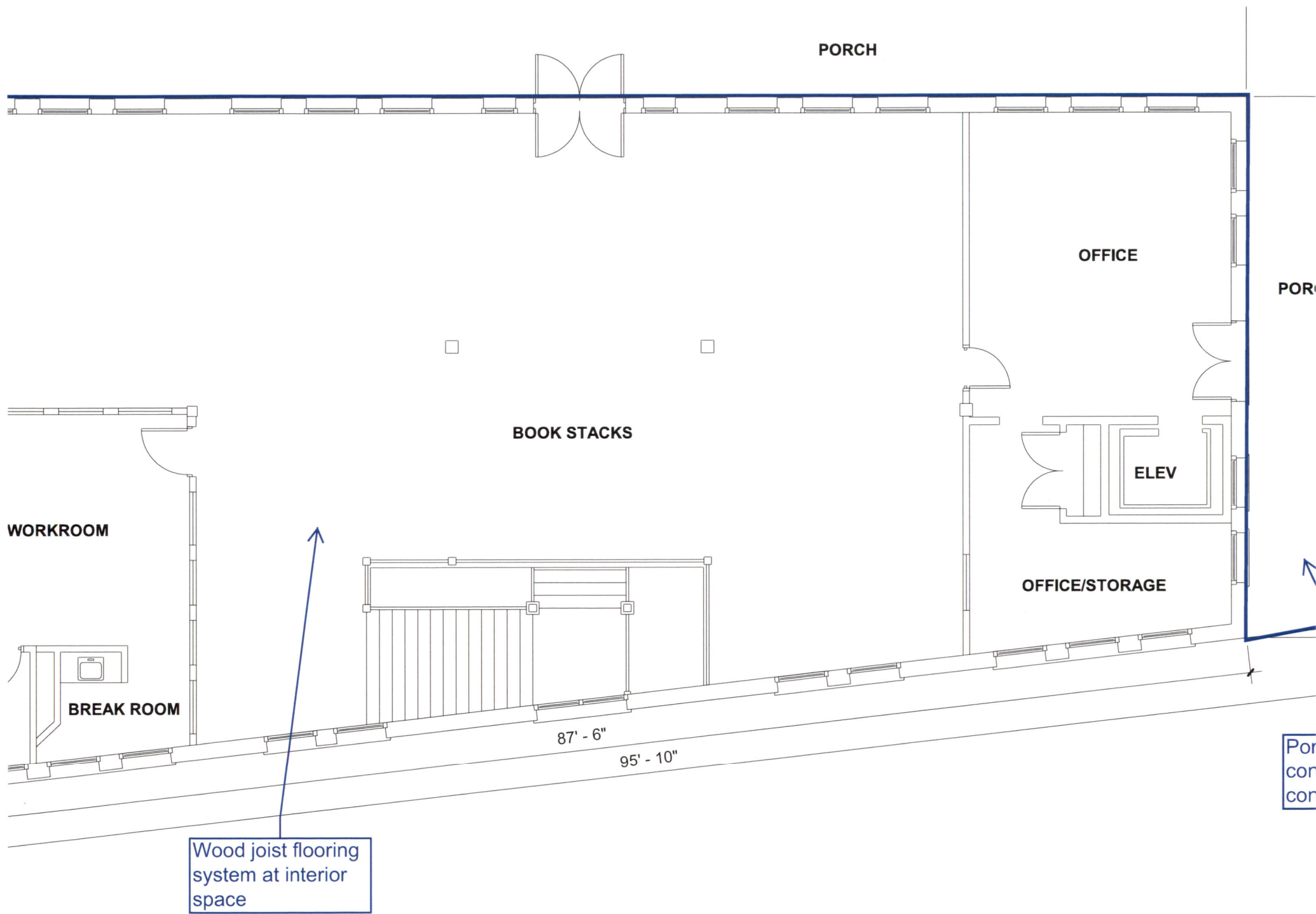
= 1'-0"

DRAWING #:  
2212

PROJECT:

-Red numbers der  
seen on subseque

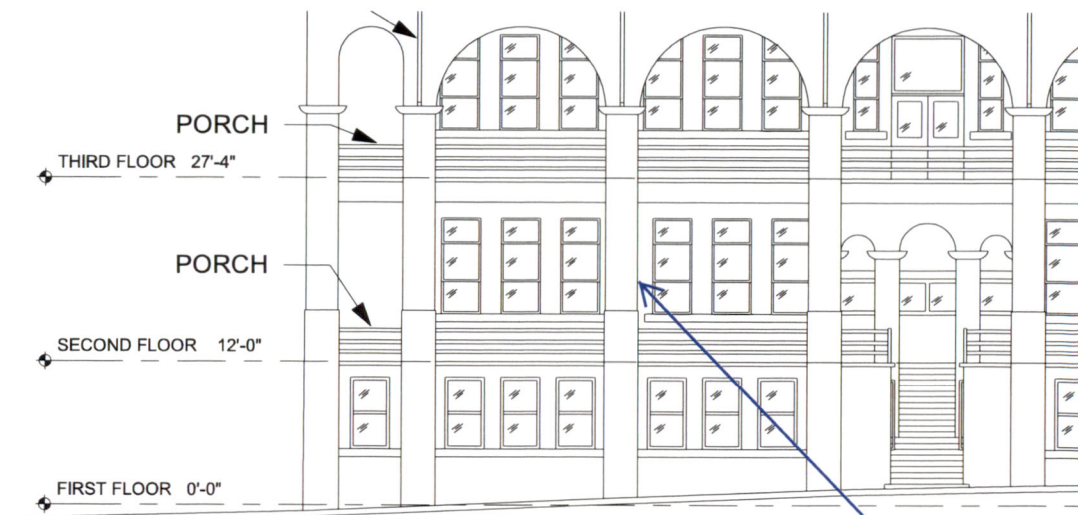
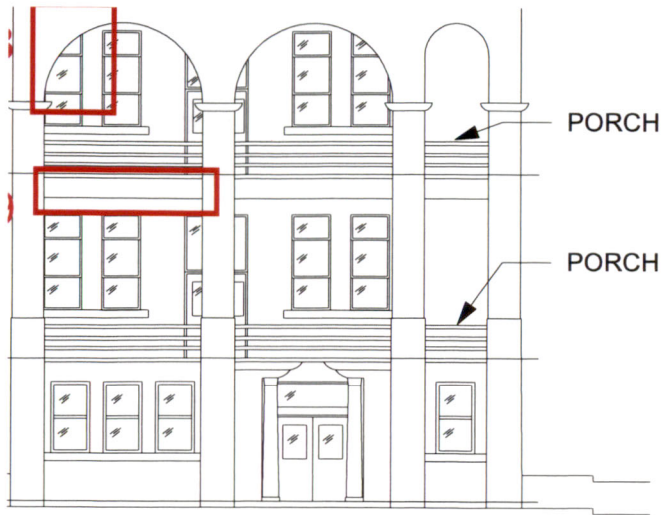




= 1'-0"

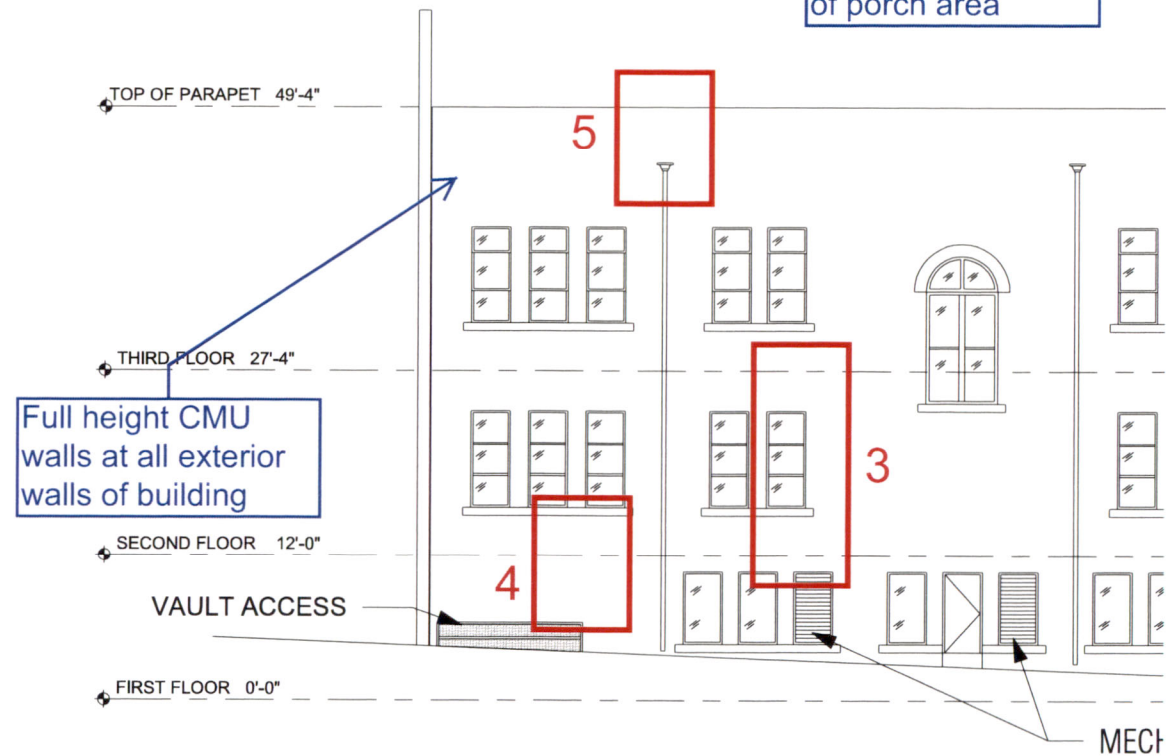
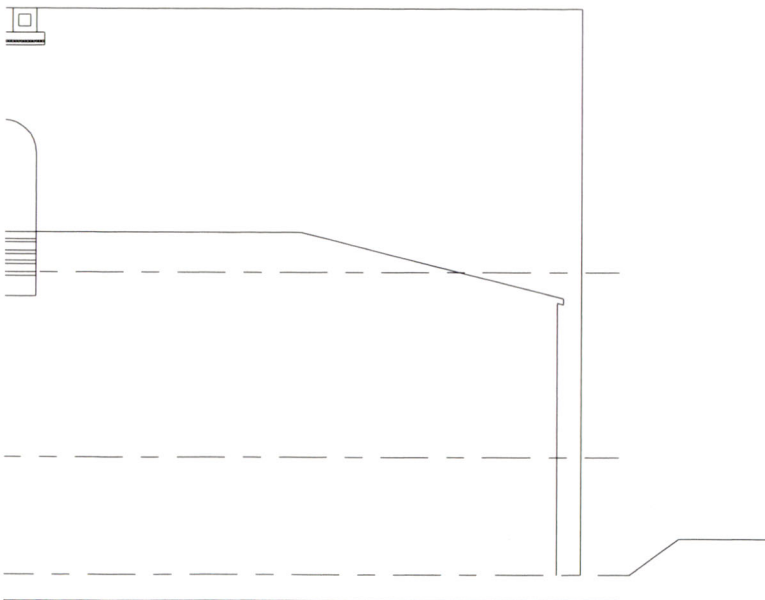






1 NORTH  
SCALE: 1/16" = 1'-0"

CMU pillars around  
outside perimeter  
of porch area



2 SOUTH  
SCALE: 1/16" = 1'-0"

-Red numbers denote photo locations. Photos can be seen on subsequent pages of this report.

DRAWING #:

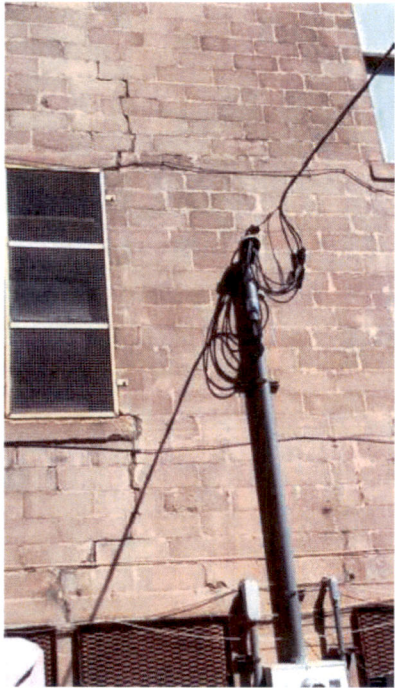
PROJECT:







1 and 2 above were taken from the level 2 porch looking up at the underside of the level 3 porch concrete deck. Cracking was observed spanning in the north/south direction from the CMU pillars to the CMU wall. See plan view for photo locations.



3, 4, and 5 show cracking observed on the south facing exterior CMU wall. See elevation view for photo locations.



6 and 7 show what can be seen of the wood roof framing from the roof access hatch.





Photo 9 shows cracking in concrete beam s  
concrete porch deck. See elevation view for





## 5. MECHANICAL AND PLUMBING SYSTEMS

March 31, 2021

Mr. Corky Poster  
Poster Mirto McDonald  
317 North Court Ave.  
Tucson, Arizona 85701

Re: Bisbee Copper Queen Library and Post Office Building Report  
KC Mechanical Project Number 21-150

Dear Corky,

This report provides a description of the existing mechanical and plumbing systems at the Bisbee Copper Queen Library and Post Office Building and a narrative description of the proposed mechanical modifications for this building. The description of the existing systems is based on a review of the available as-built documents dated February 29, 1996, and a site visit on March 11, 2021.

### EXISTING BUILDING MECHANICAL SYSTEMS

The building was constructed in 1907 and originally used a steam boiler and cast-iron steam radiators to heat the building while ventilation and cooling were provided by opening the windows to the outside. The boiler was located in a small unfinished basement at the southwest corner of the building with the vent running west through the basement to rise up on the exterior west wall. Radiators were originally located on all three floors with six radiators per floor located along the perimeter wall, beneath or beside the windows. The steam piping was arranged in a one-pipe system with horizontal piping distribution in the basement, crawl space and seemingly direct buried to the six riser pipes located along the perimeter walls beside the radiators.

A renovation of the building was performed in 1997. The steam system was abandoned in place and the radiators were removed from the 1<sup>st</sup> floor. Two radiators were also removed from the 3<sup>rd</sup> floor. A total of four evaporative coolers and three natural gas fired furnaces were added to condition the building.

Two side draft evaporative coolers and one vertical furnace were added to serve the 1<sup>st</sup> floor. These two evaporative coolers are located on angle iron stands on the south exterior wall along Commerce Street to blow into the 1<sup>st</sup> floor through old window openings and the cooler fan and pump are controlled by 5-position switches. The eastern cooler duct connects to the furnace supply duct while the western cooler duct extends just into the room and terminates as a free opening without any grille or safety screen. The furnace is installed exposed in the 1<sup>st</sup> floor with combustion air from the room and type 'b' vent for the furnace ducted out the south wall and up the south exterior wall to a



roof cap. The furnace has a return plenum beneath with low return grilles. The furnace supply is ducted above the 1<sup>st</sup> floor ceiling to ceiling supply air devices. The air devices were noticeably dirtied at the time of visit. The furnace is controlled by a non-programmable thermostat. The 1<sup>st</sup> floor restrooms do not have exhaust or supply. The elevator machine room is located on the 1<sup>st</sup> floor vented to the exterior by a wall louver on the south wall and does not have any mechanical heating or cooling.

Two rooftop evaporative coolers and two vertical furnaces were added to serve the 2<sup>nd</sup> and 3<sup>rd</sup> floor with one cooler and one furnace serving each floor. The east rooftop cooler is downdraft with a rectangular duct through the roof connected to round duct exposed running thru the middle of the 3<sup>rd</sup> floor. The west rooftop cooler is side draft with rectangular duct on the roof, down thru roof and 3<sup>rd</sup> floor to connect to round duct exposed running thru the middle of the 2<sup>nd</sup> floor. The cooler fan and pump are controlled by wall switches. The windows have to be opened by the occupants for relief air while the cooler fans are running. The furnaces are located in elevated mechanical closets with combustion air ducted from roof hoods to high and low openings in the closet and type 'b' vent for the furnace ducted to a roof cap. The furnace closets have a return plenum beneath with low wall return grilles. The 2<sup>nd</sup> floor furnace supply is ducted to the 2<sup>nd</sup> floor round duct; the 3<sup>rd</sup> floor furnace supply is ducted to the 3<sup>rd</sup> floor round duct. Each furnace is controlled by a non-programmable thermostat. The two 2<sup>nd</sup> floor restrooms each have a ceiling exhaust fan ducted up thru the 3<sup>rd</sup> floor and to a roof hood. The exhaust fan is operated with the light switch. A plug-in 'window' air conditioning unit was added at the 3<sup>rd</sup> floor break room window. Numerous portable space heaters and fans are used throughout the building by occupants to supplement the building systems.

#### Summary of the existing mechanical units:

##### Basement Level – Boiler Room

- (1) Abandoned Steam Boiler, natural gas fired, not in use

##### 1<sup>st</sup> Floor – Post Office

- (2) Evaporative Coolers, side draft, ~2,370 CFM
- (1) Furnace, natural gas fired, vertical, ~2,370 CFM

##### 2<sup>nd</sup> Floor – Library

- (1) Evaporative Cooler, side draft, ~6,500 CFM
- (1) Furnace, natural gas fired, vertical, ~2,000 CFM
- (6) Cast-iron Steam Radiators, not in use, historical

##### 3<sup>rd</sup> Floor – Library

- (1) Evaporative cooler, down draft, ~6,500 CFM
- (1) Furnace, natural gas fired, vertical, ~2,000 CFM
- (1) Window AC unit at break room, assumed ½-ton
- (4) Cast iron steam radiators, not in use, historical



All mechanical equipment in use appears to be from the 1997 renovation and nearing the end of its expected maintainable lifecycle. During our site visit it was noted that round duct at the 3<sup>rd</sup> floor has rusted through the bottom beneath the cooler duct thru roof. Personnel for the post office and library indicated that the furnaces do not provide adequate heating in the winter and the evaporative coolers do not provide adequate cooling for most of the summer. High humidity in the building from evaporative cooler operation also causes expansion issues with the library's original wood floors and the book collection. In the February 18<sup>th</sup> 2021 conversations between PMM and librarian Jason Macoviack he stated, "The heating and cooling is a huge mess. The glazing in the historic windows is single pane; so, the spaces with lots of glass are cold in the winter and hot in the summer. There is no passive solar gain on cold cloudy days. The building is heated by two gas fired furnaces. In summer, there are two swamp coolers. They bring a huge amount of moisture into the Library. Moisture and Libraries do not mix well. And they do not cool the space at all in late summer. The moisture is so bad that wood floors swell and have buckled/heaved. Glazing and HVAC is the biggest concern."

## EXISTING BUILDING PLUMBING SYSTEMS

The building contains the following fixtures:

Basement Level – Boiler Room

(1) Sump Pump, disconnected

1<sup>st</sup> Floor – Post Office

(2) Water closets, floor mount, tank type

(2) Lavatories, china wall hung, manual metered faucet

(1) Utility Sink, wall hung with wall mounted faucet.

(1) Water Heater, under-counter, 4 gallon tank type, 1440 W input, 120V/1 Ph/60Hz  
– serves the 1<sup>st</sup> floor lavatories only.

2<sup>nd</sup> Floor – Library

(2) Water closets, floor mount, tank type, ADA

(2) Lavatories, china wall hung, manual metered faucet,

(1) Refrigerated single station drinking fountain with bottle filler, wall hung,  
120V/1 Ph/60Hz

(1) Water Heater, tank type, 30 gallon, assumed 4500 W input, 240V/1 Ph/60Hz –  
serves the 2<sup>nd</sup> and 3<sup>rd</sup> floor lavatories and sinks.

3<sup>rd</sup> Floor – Library

(1) Breakroom sink, drop-in mount, single basin with two handle faucet

(1) Lavatory, china wall hung, manual metered faucet, fixture in place but not in-use

(1) rough-in for a Water Closet, fixture has been removed

The 1<sup>st</sup> floor plumbing fixtures are in fair condition. The 2<sup>nd</sup> and 3<sup>rd</sup> floor plumbing fixtures are in good condition.



Water is supplied to this building by a water meter located at the southwest exterior corner along Commerce Street. No backflow preventer was located between the meter and the building. It appears one or two 3/4" water lines are routed up from underground after the meter to the building, although one line may be abandoned. The exterior lines have some existing insulation which is damaged by weather. The distribution water piping is a mixture of galvanized iron and copper and has unused branches where fixtures were added and removed in the past. The piping is routed above ceiling on the 1<sup>st</sup> floor but exposed on wall and ceiling in the 1<sup>st</sup> floor restrooms. The piping is routed concealed on the 2<sup>nd</sup> and 3<sup>rd</sup> floors.

The 1<sup>st</sup> floor water heater is a small under-counter 4 gallon tank type electric unit located on the floor in the restroom and connected to the two 1<sup>st</sup> floor lavatories only. The 2<sup>nd</sup> floor water heater is a 30 gallon vertical tank type electric unit with a 2 gallon expansion tank, located in a closet off one of the restrooms on the 2<sup>nd</sup> floor and serves the 2<sup>nd</sup> and 3<sup>rd</sup> floor lavatories and sinks. The temperature and pressure relief valve for the water heater is routed to terminate at the south exterior wall.

It is understood the building has one 4" sewer line leaving the building to the north to the sanitary sewer under Tombstone Canyon Road. The sewer and vent piping is cast iron where observed on the 1<sup>st</sup> floor and assumed to be ABS for the 2<sup>nd</sup> and 3<sup>rd</sup> floors and appears to be adequately sized for the fixtures.

The roof drains by wall scuppers at the south side of the roof to rectangular downspouts on the south exterior wall. The rectangular downspouts connect to underground public storm drainage. Some downspouts were disconnected from the storm drainage risers at the time of the visit.

The basement boiler room has a drainage sump but the sump pump had been disconnected and abandoned in place. The drainage piping is routed up to discharge at grade along Commerce Street.

Natural gas is supplied to this building by a meter located at the southwest exterior corner of the building along Commerce Street. Gas piping is routed from the meter along the south exterior wall and into the building above the 1<sup>st</sup> floor ceiling with distribution piping to the three furnaces concealed above ceiling or in wall cavities. Some old abandoned gas piping lines were observed at the 1<sup>st</sup> floor.

This building does not have a fire sprinkler system. There is a public fire hydrant located just in front of the building at the northeast corner along Tombstone Canyon.

## PROPOSED RENOVATION

The proposed renovation includes replacement of the building mechanical and plumbing systems as described below. Cooling/heating load calculations are estimated as part of



this evaluation and include scenarios for the building with existing windows and replaced with current code compliant dual pane windows.

## MECHANICAL

### Basement – Boiler Room

- Abandon existing boiler and steam systems in place. Inspect for safety deficiencies and decommission as required.

### 1<sup>st</sup> Floor – Post Office

- Remove existing evaporative coolers, furnaces, all associated ductwork, air devices and controls.
- Provide two (2) new ducted high efficiency furnaces with 5-ton cooling coils located above ceiling. 80 MBH input / 78 output, two stage heat, 96% efficiency with sealed combustion and ECM motor; 1 HP, 12.6 MCA, 20 MOCP, 115V/1Ph/60Hz, 200 lbs.
- Provide two (2) 5-ton condensing units on roof, 16 SEER, 28 MCA, 230V/1Ph/60Hz, 350 lbs.
- Provide supply and return duct distribution to new ceiling air devices, locations coordinated with architectural ceiling plan. Provide outside air intake louver in existing window opening and connect outside air duct to return duct near furnace inlet. Provide combustion air and vent ducts to furnace, terminate at roof.
- Provide programmable thermostat with auto changeover to control heating and air conditioning
- Provide two (2) new ceiling exhaust fans for the restrooms and duct to the south exterior wall to terminate with a wall cap. 100 CFM, 0.35" ESP, 1/10 HP, 115V/1Ph/60Hz

### 1<sup>st</sup> Floor – Post Office with windows replaced

Same as described above except mechanical equipment reduces as follows:

- Provide two (2) new ducted high efficiency furnaces with 3.5-ton cooling coils above ceiling. 60 MBH input / 58 output, two stage, 96% efficiency with sealed combustion and ECM motor, 3/4 HP, 11 MCA, 15 MOCP, 115V/1Ph/60Hz, 200 lbs.
- Provide two (2) 3.5-ton condensing units on roof, 16 SEER, 24 MCA, 230V/1Ph/60Hz, 300 lbs.

### 2<sup>nd</sup> and 3<sup>rd</sup> Floor - Library



- Remove existing evaporative coolers, furnaces, all associated ductwork, air devices and controls. Remove the furnace flues and combustion air ducts and roof hoods. The furnace closets can be repurposed for storage or other use. Remove window air conditioning unit.
- Provide two (2) new 12.5-ton package rooftop air conditioning units with gas heat. One rooftop unit will condition each floor. Units to be provided with air economizer with controller, roof curb, condenser coil hail guards. 192 MBH input / 148 output, two stage heating and two stage cooling, 11.0 EER/12.8 IEER minimum, 68 MCA, 80 MOCP, 230V/3Ph/60Hz, 1850 lbs.
- Provide supply duct distribution following the existing routing to new round duct mains running the middle of each floor. New supply duct will be smaller than the existing, with a maximum 30" diameter for the main. Provide new supply grilles mounted on round supply duct. Provide new return grilles at 3<sup>rd</sup> floor ceiling for both units. On-roof or in-curb sound attenuators may be provided for the supply and return as determined necessary.
- Provide programmable thermostat with auto changeover to control heating and air conditioning staging. Wireless thermostat are suggested.
- Provide two (3) new ceiling exhaust fans for the restrooms and reconnect to existing duct. 100 CFM, 0.5" ESP, 1/10 HP, 115V/1Ph/60Hz.

#### 2<sup>nd</sup> and 3<sup>rd</sup> Floor – Library with windows replaced

Same as described above except mechanical equipment reduces as follows

- Provide two (2) new 7.5-ton package rooftop air conditioning units with gas heat. One rooftop unit will condition each floor. Units to be provided with air economizer with controller, roof curb, condenser coil hail guards. 120 MBH input / 112 output, two stage heating and two stage cooling, 11.0 EER/12.8 IEER minimum, 38.8 MCA, 50 MOCP, 230V/3Ph/60Hz, 1250 lbs.

The total required cooling capacity for the building is approximately 35-tons. This capacity could be reduced to approximately 21-tons, a 14-ton reduction, if the single-pane windows were replaced with current dual pane assemblies.

If solar panels are to be added to the building then it should be considered if heat pumps with supplemental electric heat should be provided in lieu of air conditioners with gas heat to consolidate utilities and provide more utilization of the solar power generated onsite.

A dedicated outside air system (DOAS) with additional ductless fan coils could also be considered for the Library to provide localized zone control. Two rooftop DOAS units would replace the rooftop AC units described above, supplying conditioned outside air into



the building for ventilation. Ductless fan coils would be distributed throughout the 2<sup>nd</sup> and 3<sup>rd</sup> floor for local heating and cooling with associated condensing units on roof.

## PLUMBING

### Basement – Boiler Room

- Replace sump pump and reconnect to existing discharge piping.
- Decommission any unused piping as required for safety.

### 1<sup>st</sup> Floor – Post Office

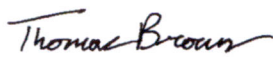
- Replace existing restroom fixtures. Provide two (2) floor mount, 1.6 gallon per flush maximum tank type toilets. Provide (2) wall hung lavatories with 0.5 gallon per minute maximum, metered lavatory faucets. Provide one (1) new wall hung utility sink with wall mount faucet. Provide new electric water heater to match existing.
- Provide new water distribution piping on 1<sup>st</sup> floor including new piping to the water meter and a backflow prevention device. Remove abandoned piping.
- Inspect sewer and vent piping for deficiencies and correct as required.

### 2<sup>nd</sup> and 3<sup>rd</sup> Floor - Library

- Replace electric water heater to match existing.
- Reconnect existing water piping to new supply from 1<sup>st</sup> floor. All 2<sup>nd</sup> and 3<sup>rd</sup> floor piping is to remain for the current renovation.
- Inspect sewer and vent piping for deficiencies and correct as required.
- Determine if 3<sup>rd</sup> floor restroom should be provided with fixtures at existing locations where removed or if space should be remodeled for other use.

Please review this evaluation and let us know if you have any questions or if clarifications are needed.

Sincerely,  
KC Mechanical Engineering, LLC

  
Thomas Brown, PE



# Hy-Lite Design

Hyman Kaplan, IALD, PE

April 12, 2021

## 6. ELECTRICAL SYSTEMS ASSESSMENT

### COPPER QUEEN LIBRARY BUILDING, Bisbee, AZ

#### EXISTING CONDITIONS:

1. The 3 story plus basement building was built about 1907 and is presently being used as a Post Office on the 1<sup>st</sup> floor and basement boiler room and a Library on the 2<sup>nd</sup> and 3<sup>rd</sup> floors. There was a complete renovation of the 2<sup>nd</sup> and 3<sup>rd</sup> floors for the Library in about 1997.
2. This report is being prepared with information obtained as part of a field observation and the 1997 renovation plans, though they are not in good condition and difficult to read. There have been additions to the building interior since the renovation that include replacement and addition of décor light fixtures and addition of receptacle and data outlets using exposed Wiremold that are not documented.

#### RECOMMENDED ELECTRICAL WORK:

1. The renovation work in the Library on the 2<sup>nd</sup> & 3<sup>rd</sup> floors is approximately 25 years old and the Post Office on the 1<sup>st</sup> floor is even older. With technology improvements in the past 10 years the electrical systems in the building are energy excessive and in need of updating. Work in the building will have to comply with all applicable Codes, including National Electrical Code, I.E.C.C. Energy Code and Bisbee Outdoor Lighting Code.

#### 2A. Electrical Service:

- a. The present electrical services are on the west exterior wall of the building, in the alley way, and are overhead service drops from the street above. The service for the Post Office is 200 amp, 120/240 volt - 3 Ø – 4 wire which was existing at the time of the 1997 renovation. The service for the Library, part of the 1997 renovation, is 400 amp, 120/240 volt - 3 Ø – 4 wire with a 200 amp feeder for the Library electrical loads and a 200 amp feeder for the elevator.
- b. There is a considerable amount of abandoned existing electrical installation along the entire exterior west wall that should be removed for appearance and safety concerns to distinguish from active installation.



- c. All of the service and distribution equipment are surface mounted on the west wall of the building, exposed to weather and the heat from the afternoon sun. Any equipment to remain should be thoroughly cleaned and fuses and feeder conductor should be replaced due to the effects on their operating condition.
- d. The services are adequate for the present loads of the building. Should air conditioning systems be added they may not be adequate, see 2C. Power item c for this issue.

2B. Lighting:

- a. The majority of the existing interior and exterior lighting is old technology, either fluorescent or incandescent sources.
- b. The Post Office on the 1<sup>st</sup> floor is U. S. Government standards and it will be their responsibility for upgrading the operational portion of the floor. It is recommended that the public lobby of the space be updated with modern appearing LED recessed lights in the grid ceiling.
- c. The Library on the 2<sup>nd</sup> & 3<sup>rd</sup> floors has old 2' X 4' fluorescent light fixture that were installed as part of the 1996 renovation, they should be removed and replaced with a system of side wall mounted LED indirect lights aim at the ceiling to provide complete general lighting for a more comfortable and efficient lighting environment. These will also be a better reading and studying environment. The existing décor fixtures should be saved for possible reconditioning and reuse in strategic locations to maintain the environmental appearance of the space.
- d. All of the other lights in the library should be should be retrofitted with screw-in LED lamps and where this is not possible they should be replaced with LED light fixtures.
- e. A system of emergency/egress lighting should be provided on the 2<sup>nd</sup> & 3<sup>rd</sup> floors to allow persons a safe way to exit the building, especially at the stairways between floors and to the street level.
- f. Though the I.E.C.C. energy code requires automatic controls of the lighting equipment, a case can be made not to include them as both of these spaces are controlled by operational personnel and the public enters and uses the spaces when they are open for business and closed by the operational personnel.
- g. The exterior lighting, especially those on the public balconies on the 2<sup>nd</sup> & 3<sup>rd</sup> floors, should be changed to full cut-off fixtures and the egress and security lighting around the building should also meet the Bisbee Outdoor Lighting Code.



2C. Power:

- a. There are some places in the building where exposed Wiremold has been used to serve added receptacles and data outlets where needed. Most of these runs are at or near the tops of partitions and not appealing, these runs should be studied for new run near the base of the partitions and they should be finished to match the finishes so that they are not as noticeable. We have to presume that all of the receptacles on the 2<sup>nd</sup> & 3<sup>rd</sup> floors are part of the 1996 renovation and that they are properly grounded and no change is necessary.
- b. New power and data for use by electronic equipment should be planned to be added in locations that are accessible for new raceway installation.
- c. The mechanical engineers are proposing the addition of air conditioning equipment to the building. The electrical service for the Post Office on the 1<sup>st</sup> floor may be adequate for the added loads indicated for this space, an electrical load calculation should be performed. The service for the Library on the 2<sup>nd</sup> & 3<sup>rd</sup> floors is definitely not adequate for the projected added loads of approximately 100 amps for this equipment and the electrical service should be increased to 600 amps size.

2D. Other Systems:

- a. There does not appear to be a fire alarm system for the building. Though the building is "grandfathered" without a fire alarm system, it may be something that should be considered for the building in the future.
- b. Low voltage systems such as telephone, intercommunication, data and security are existing and should remain. All existing Wiremold should be rerouted in the least visible manner possible.
- c. There is some abandoned electrical wiring, notably knob-and-tube installation in the attic access to the roof, this should be removed.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Hyman Kaplan', with a long horizontal line extending to the right.

Hyman Kaplan, EE





## 7. COST ESTIMATE (based on report)

|    |                                                                               |                     |
|----|-------------------------------------------------------------------------------|---------------------|
| A. | Mobilization & General Requirements (@8%)                                     | \$ 61,494           |
| B. | Site (ADA Access) (Miscellaneous)                                             | \$ 5,000            |
| C. | Structural (from MGW) (estimated Lump Sum)                                    | \$ 25,000           |
| D. | Library Architectural                                                         |                     |
|    | • Walls                                                                       | \$ 65,600           |
|    | • Interior plaster, patching, ceilings                                        | \$ 44,900           |
|    | • Flooring                                                                    | \$ 43,900           |
|    | • Doors                                                                       | \$ 3,300            |
|    | • Windows                                                                     | \$ 84,400           |
|    | • Roofing                                                                     | \$ 36,300           |
|    | • Stairs and handrails                                                        | \$ 70,100           |
|    | • Window coverings and furniture                                              | \$ 18,500           |
|    | • <u>Library Bathrooms</u>                                                    | <u>\$ 12,600</u>    |
|    | Total Architectural Costs                                                     | \$ 379,600          |
| E. | US Post Office Limited Work (ceiling, ADA-plumb, floor)                       | \$ 88,345           |
| F. | Non-Post Office Plumbing (from KC)                                            | \$ 10,442           |
| G. | Mechanical (from KC)                                                          |                     |
|    | • Basement and 1 <sup>st</sup> Floor                                          | \$ 34,277           |
|    | • <u>2<sup>nd</sup> and 3<sup>rd</sup> Floors</u>                             | <u>\$ 77,267</u>    |
|    | Total HVAC Costs                                                              | \$ 111,544          |
| H. | Electrical (from HyLite)                                                      |                     |
|    | • Remove abandoned electrical                                                 | \$ 2,000            |
|    | • Clean. Fuses and feeders replaced                                           | \$ 4,000            |
|    | • Lobby of PO updated with LED                                                | \$ 3,000            |
|    | • LED upgrade lighting 2 <sup>nd</sup> & 3 <sup>rd</sup> Library              | \$ 60,750           |
|    | • Exterior lighting to meet Outdoor code                                      | \$ 5,000            |
|    | • Replace Wiremold to match base                                              | \$ 6,000            |
|    | • New power/data for elec. Equipment                                          | \$ 4,500            |
|    | • Increase Library service to 600 A.                                          | \$ 20,000           |
|    | • Recommended fire alarm system                                               | \$ 40,000           |
|    | • <u>Remove attic abandoned knob &amp; tube</u>                               | <u>\$ 3,500</u>     |
|    | Total Electrical Costs                                                        | \$ 148,750          |
|    | Hard Construction Costs                                                       | \$ 830,175          |
|    | Contingency (5%) and Escalation (6%) and Bond (1%)                            | \$ 99,621           |
|    | Tax @.65 x 9.6% =                                                             | \$ 58,019           |
|    | Subtotal Construction                                                         | \$ 987,815          |
|    | <u>A &amp; E and soft costs (permits, special inspections, testing) @ 12%</u> | <u>\$ 118,537</u>   |
|    | <b>Total Project Development Cost</b>                                         | <b>\$ 1,106,532</b> |