

REHABILITATION OF AN ICONIC SKYSCRAPER POISED TO SPUR REVITALIZATION OF A DOWNTOWN NEIGHBORHOOD

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INTRODUCTION

The revitalization of downtown Richmond, Virginia, in the 21st century has been a slow process, beginning in the financial center near the State Capitol Building and migrating slowly westward along Broad Street, the traditional retail avenue of the City. One by one over the course of the past several years, large, iconic buildings have been rehabilitated for new and exciting uses. These buildings have long been associated with the history of the City itself: the Miller & Rhoads Department Store, the John Marshall Hotel, the First National Bank Building, and the Hotel Richmond among others.

The Central National Bank (CNB) Building was built at the dawn of the Great Depression and eventually became one of the last Art Deco style skyscrapers remaining in downtown Richmond. Its location in the neglected western fringe area of Broad Street made it the next logical target for rehabilitation.

When Douglas Development purchased the vacant building in 2005, they were buying the crowning piece of architecture that they hoped would become the linchpin project to spur the revitalization of the surrounding neighborhood. That lofty goal was not without challenges, of course, and it took 8 years to put the project together and start the building's renovation. The complications inherent in the rehabilitation of any iconic 75-year old building listed on the National Register of Historic Places to suit continued use for contemporary life also clearly came into play.

KEYWORDS:

historic rehabilitation; contextual architecture; urban revitalization; sustainable strategies; iconic architecture; embodied energy

EVOLUTION OF THE PROJECT

History of the Site

The history of the institution that became known as the Central National Bank began in 1911 when several leading merchants in the Broad Street retail district of downtown Richmond

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determined that they needed a financial institution that would serve their direct needs. By the end of the summer, these founding merchants, led by local jeweler William Harry Schwarzschild and also including a respected furrier, a leather goods dealer, and an up and coming department store owner, had sold stock to fellow neighborhood businessmen, purchased an existing branch bank, and applied to the Department of the Treasury for a national bank charter. In September, 1911, the Bank was open for business as the twentieth banking institution in Richmond and the first national bank in that part of the retail district.

FIGURE 1: View from the corner of Third and Broad Streets, Richmond, VA, toward the Central National Bank Building. Post card c.1930s.

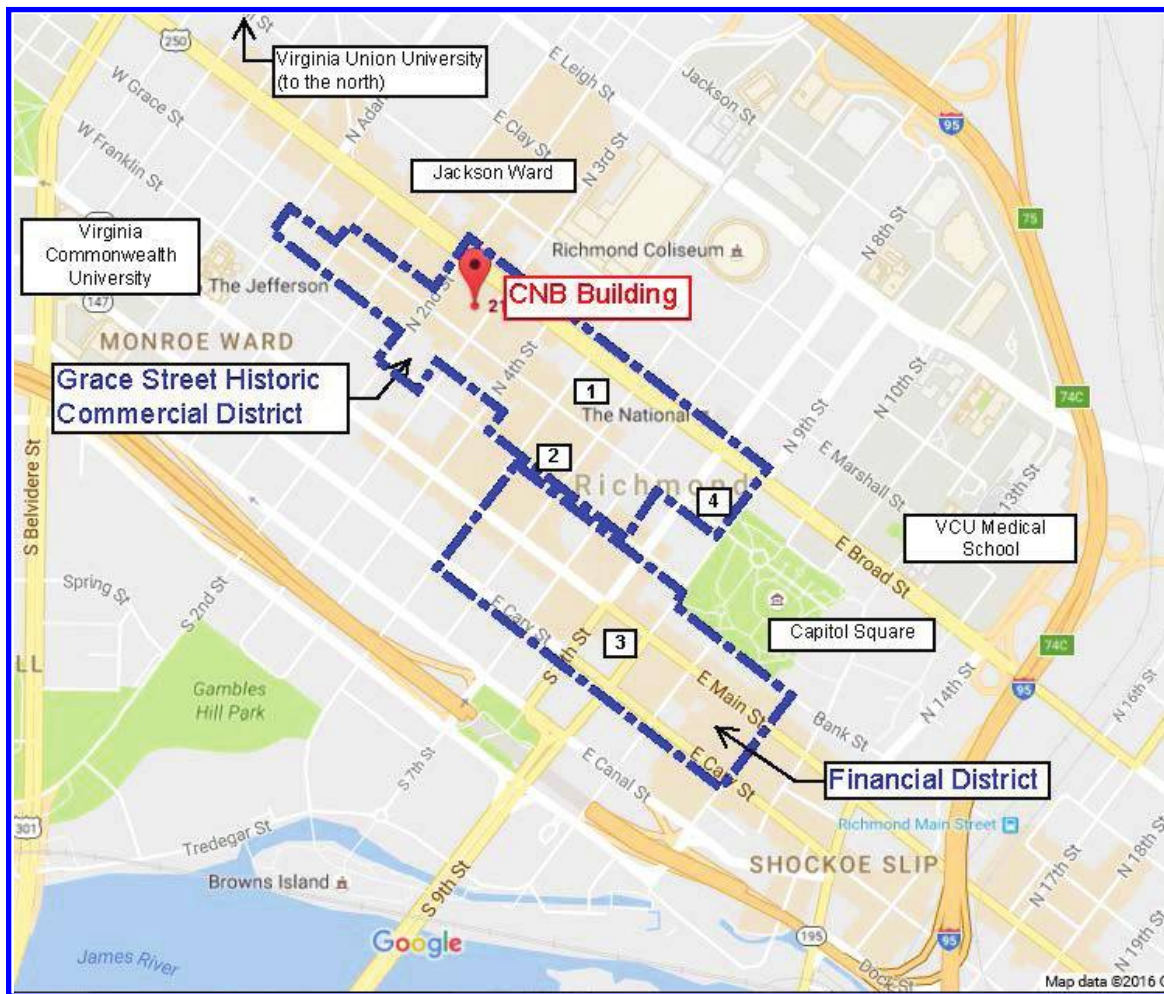


The Central National Bank was an immediate success. By the spring of 1912, deposits totaled in excess of \$500,000 and on November 2, 1914, the bank became a charter member of the Federal Reserve Bank System, which was incidentally two weeks before the Richmond Federal Reserve Bank opened. By 1921 the bank had grown to become the sixth largest bank in Richmond.

By 1928, the CNB was ready to expand and the bank's board of directors purchased a site at 219 East Broad Street and engaged famed New York architect John Eberson, in association with local firm Carneal, Johnston, and Wright, to design a new ten-story office building. The selection of Eberson was no coincidence as he had just finished work on the Lowe's Theatre

movie palace in Richmond and was in the planning stages for a new indoor shopping arcade to connect Broad and Grace Streets, right next to the new bank building site. It was the intention of the bank's board that the arcade would work in harmony with the new bank building and CNB would come to occupy over one third of the arcade's original interior frontage. The bank business continued to be very good, the plans expanded, and the Richmond construction firm of Doyle and Russell broke ground in March, 1929, for a new twenty-four story office building.

FIGURE 2: Downtown Richmond, VA. ★ Central National Bank (CNB) Building. 1. Miller & Rhoads; 2. John Marshall Hotel; 3. First National Bank Building; 4. The 9th Street State Office Building.



That autumn of course, the stock market would collapse and the Great Depression would come down hard on the entire country. Despite the extremely difficult economic times, however, the CNB persevered and construction of the new building continued, to be completed in June 1930. Upon completion, the Central National Bank Building would become the tallest in Virginia, and would remain such until 1971 when the new Richmond City Hall was completed.

FIGURE 3: Construction Progress
Photo, October 12, 1929. ©Wolfsonian
P180217.



FIGURE 4: CNB Grand
Opening, June, 1930.
©Wolfsonian P180211.



The forward thinking and optimism of the CNB Board of Directors was second to none. Keying on the prevailing mood for economic optimism and social prosperity of the mid to late 1920's, CNB utilized the newly developed architectural symbol of prosperity, emerging technology and economic growth: the skyscraper. Coupled with this overt architectural symbol of reaching for the sky was the new architectural design vocabulary of the Art Deco movement, an exuberant and highly stylized compositional style featuring strong geometric forms contrasted with sometimes exotic flourishes. We would argue that it was this adaptation

of the skyscraper form and the Art Deco style, both symbols of the pre-Depression prosperity of Richmond, that helped carry the bank through the Great Depression.

The Central National Bank was successful in Richmond for many years, growing to over \$1-billion in assets by 1983. CNB reorganized as Central National Corporation in 1968 and then merged with Commonwealth Banks, Inc. to form Central Fidelity Bank (CFB) in 1979. CFB merged with Wachovia Bank in 1997 and following a brief stint as a Wachovia branch bank, the CNB Building was finally closed for banking operations and shuttered in 2000.

DEVELOPMENT OF THE HISTORIC BUILDING DESIGN

As designed by Eberson and ultimately constructed by Doyle and Russell, the CNB Building is a 24-story steel frame structure clad in limestone, brick masonry and terra cotta. Although Eberson was better known for his lively theater building designs, such as the contemporary Lowe's Theater, he showed remarkable restraint in the design of the new bank building. CNB was designed in a more controlled version of the Art Deco style, intended to promote a greater sense of stability for the banking institution which would prove critical in weathering the coming Depression.

The main façade fronting on Broad Street is composed of a dominant limestone two-story arched entry with a multi-paned glass transom over a substantial bronze and marble-framed entrance featuring a central revolving door. Carved low-relief voussoirs border the arch to frame the main entrance, which is balanced on either side by lower arched windows that are bordered by their own low-relief carving, this time in a zig-zag pattern. These flanking window openings are protected by ornamental bronze grillwork. We can see that every aspect of the careful and sober design of the building entrance, from the selection of sturdy limestone as the dominant material to the use of symmetry as a compositional theme, is crafted to provide a sense of strength and stability for the new bank.

FIGURE 5: Broad Street Entrance Facade. c.1978. ©Virginia DHR Archives



FIGURE 6: Broad Street Entrance Revolving Doors. c.1978. ©Virginia DHR Archives.



The upper stories of the tower façade are marked by vertical strips of windows and brick pilasters with decorative brick panels used to separate the windows horizontally. The brick pilasters soar upward into the sky until they reach their termination as pinnacles against the uppermost two floors of the building, crowned by an ornamental band of brick in a diamond pattern. As it approaches the sky, the building steps back in a ziggurat type configuration found on many Art Deco skyscrapers.

FIGURE 7: Broad Street Tower View from Northwest. c.1938. ©Virginia DHR Archives.



Adjacent to and surrounding the main tower building on three sides, Eberson designed the smaller three-story structure designed to house individual retail tenants, which was known as the Broad-Grace Arcade. Clad in limestone to match the adjacent entrance to the bank building on Broad Street, the arcade building is capped by a denticulated cornice line that is an inferred extension of the cornice found on the Broad Street entry façade and serves to visually unify the two buildings façade design. While the individual shops fronting the streets each had their own entrances, public entrances to the interior portion of the arcade were also provided on Broad, Grace and 3rd Streets. These public entrances to the interior retail areas of the arcade were composed of smaller scale simplified arches reminiscent of the main entrance on Broad Street, with casement type transom doorways flanked by brass lanterns and cast bronze grillage to mark the entrances. A fourth story was added to the Arcade in 1938 and the Broad-Grace Arcade later became known as the Annex.

FIGURE 8: Broad-Grace Arcade viewed from the corner of Grace and 3rd Streets. c.1938. ©Virginia DHR Archives.



The original First Floor plan of the Arcade included a continuous hall connecting the public entrances and extending from Broad Street to Grace Street. Fronting on this hall were individual shops that provided retail amenities of different types. It is perhaps ironic that the success of the banking business over time necessitated the removal of the retail shops for an expansion of the banking operations, as well as the addition of the fourth floor.

The interior design of the CNB building was also extremely distinguished, as banks are meant to be. The design and appointments of the original building Lobby on Broad Street and the adjacent Banking Hall were second to none in their day and remain largely intact today. The building Lobby on Broad Street is a fine example of Art Deco design and embellishment, including the handsome etched bronze and glass elevator doors.

FIGURE 9: Broad-Grace Arcade Interior. c.1978. ©Virginia DHR Archives.



The Banking Hall is an even greater example of rich Art Deco design and detailing. A vaulted, three-story space, the Banking Hall includes significant features such as a deeply coffered vaulted ceiling and a geometric patterned terrazzo floor, and makes extensive use of cast bronze for lamps and other furnishings, all designed in the Art Deco style. Arched glass transom windows flank the Banking Hall on the long sides and flood the space in beautiful natural light, giving the Banking Hall a monumental quality.

DESCRIPTION OF THE CURRENT PROJECT

As noted above, when Douglas Development purchased the vacant 237,000 square foot building in 2005, they were looking to buy the final piece of architecture that they hoped would become the catalyst that would spur the redevelopment, and ultimately the revitalization, of the surrounding neighborhood. That forward thinking goal was not without challenges, of course, and it took 8 years to put the project together and start the building's renovation.

The current renovation project was envisioned as a mixed-use development that would provide the function and amenity of modern living within the historic fabric of this significant and important work of architecture. The upper floors of the 24-story Tower and the adjacent four-story Annex were reconfigured to accommodate over 200 residential units. As is often the case with historic rehabilitation projects, 51 unique apartment unit types were required to accommodate the configuration of the original historic fabric. The target market for the building residents is expected to be graduate and international students of Virginia Commonwealth University (VCU), Virginia Union University and the VCU Medical School, all within walking distance of the building, and so the unit blend is mostly studio and one-bedroom units with a handful of two-bedroom units mixed in.

The original Broad-Grace Arcade was restored to provide the various amenity spaces for the building residents including a fitness center, clubhouse, conference facilities, lounge,

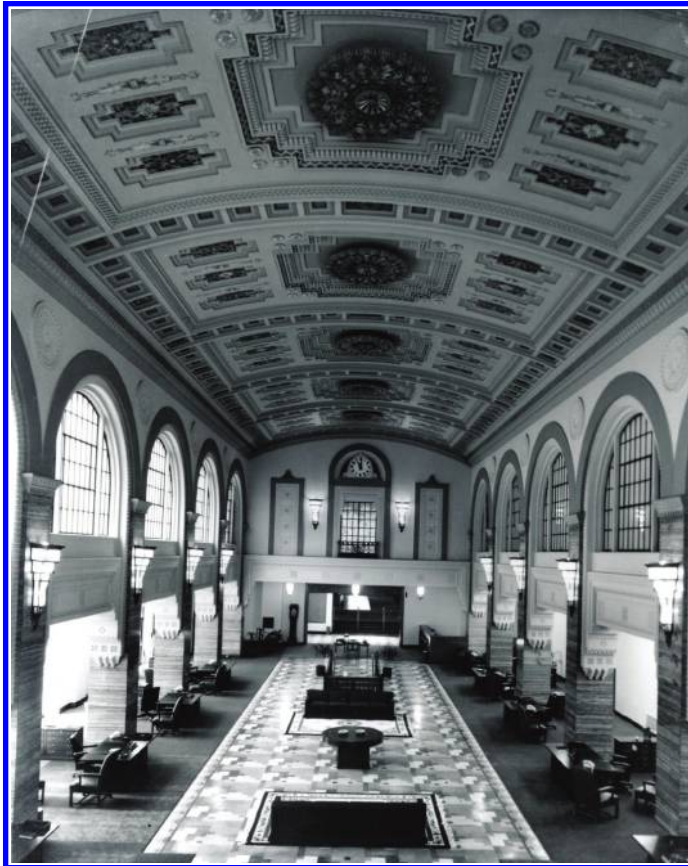


FIGURE 10: Banking Hall. c. 1930.
©Virginia DHR Archives.



FIGURE 11: View to Broad
Street Entrance from Banking
Hall, undated. ©Wolfsonian
P180213.

kitchen, and leasing offices, while the third and fourth floors above the arcade were redeveloped to provide 10 residential units and additional conference/meeting areas for residents.

The restored Banking Hall, now returned to its original splendor of rich colors and Art Deco appointments, will become a restaurant with garden seating, currently scheduled for completion in the Fall of 2017. Future plans still include construction of a pool and spa area on the fourth floor roof of the annex, along with an outdoor lounge space for residents. All new work on the project is intended to be true to the original design intent of John Eberson.

FIGURE 12: Before and After photographs of the vaulted ceiling of the Banking Hall. After photo shows the restored plaster detailing and historically accurate color scheme.



HISTORIC PROJECT REQUIREMENTS

The rehabilitation of the Central National Bank Building would certainly not have been possible without the use of both Federal and State Historic Investment Tax Credits (HITCs) as a financing tool.

Administered at the Federal level by the Department of the Interior, the HITC program allows developers of historic properties to take tax credits proportional to the associated qualified cost of the project (currently 20% of eligible project expenses), which can then be used to either offset the developers' own income tax liabilities or, more frequently, can be syndicated

to investors. In the latter case, the historic project developer can use the potential credit syndication value as part of the initial equity in the project for the purpose of obtaining development loans from various financial institutions.

In certain states, State HITCs are also available. The Virginia Department of Historic Resources (DHR) currently administers one of the more robust state programs, offering developers of historic properties an additional 25% of eligible project expenses. (http://www.dhr.virginia.gov/tax_credits/tax_credit.htm).

The ability of developers of historic properties to take advantage of the benefits of the tax credit program does not come without associated responsibilities and requirements. As a result of the project developer's participation in the State and Federal HITC programs, the CNB Building project falls under the review authority of the Virginia DHR, which is tasked with review of all historic work associated with the project to ensure compliance with the federal Secretary of the Interior's Standards for Rehabilitation, which is the recognized standard for guidance in the proper means and methods for the rehabilitation of historic buildings. (<http://www.nps.gov/tps/standards/rehabilitation/rehab/index.htm>).

CATALYST FOR REVITALIZATION OF THE NEIGHBORHOOD

Occupying a prominent location in what is now known as the culturally diverse and rich Grace Street Commercial Historic District, the rehabilitation of the Central National Bank Building is truly central to the revitalization of its surrounding neighborhood. The CNB Building is located between the edge of the downtown Financial District and Jackson Ward and the spot can be seen as a gateway connecting the two adjacent neighborhoods.

Along with many urban areas across America, the Grace Street District fell on hard times in the early 1990s and many of the iconic retail stores in the area closed, falling quickly into disrepair. Urban blight inevitably followed and the District remained depressed for well over a decade.

Meanwhile, by the early 21st century the downtown revitalization boom in Richmond was slowly making its way westward through the financial district. Following a number of smaller historic renovations and adaptive reuse projects, one of the first major pieces of the revitalization puzzle was the Miller & Rhoads rehabilitation in 2006. The iconic department store is located two blocks away from the CNB Building at 5th and Broad Streets, on the western edge of the downtown financial district. Originally built in the late 19th century, and expanded and added to many times over the course of the 20th century, the renovation of the Miller & Rhoads building included conversion of the retail building into 130 residential units, retail shops and a 250 room Hilton Hotel.

Next in line for rehabilitation was the 16-story John Marshall Hotel, built in 1928, and located near Miller & Rhoads at 5th and Franklin Streets. The renovation of this Neoclassical style skyscraper into 238 residential units and retail space was completed in December 2011.

The 19-story First National Bank Building at the corner of 9th and Main Streets, again within the downtown financial district, came next. The renovation of this 1913 Classical Revival style high rise included 154 apartment units and associated amenities and was completed in 2013.

What we quickly notice is that none of these large, high profile historic rehabilitation projects are located west of 5th Street, the figurative western boundary of the downtown financial district. Although there were certainly some smaller tax credit renovations in the CNB neighborhood, the Grace Street Commercial Historic District continued to lag behind.

Enter Washington, D.C. developer Douglas Development, quietly acquiring properties along the Grace and Broad Street corridors west of 5th Street of various shapes and sizes with an eye toward future rehabilitation. As a company, Douglas Development has built an extensive corporate portfolio of rehabilitated downtown properties (mainly in the Washington DC area), generally focusing on the holistic redevelopment of neighborhoods.

By 2005, when they acquired the CNB Building, Douglas Development already owned at least a dozen properties within four blocks of the bank building, including a variety of storefront retail, office buildings and parking lots, totaling approximately 225,000 square feet of built space. They saw the redevelopment of the CNB Building as the necessary catalyst to spur the future revitalization of the entire neighborhood.

Even though the residential portion of the CNB project was only recently completed in 2016, and it is still too early to make a full evaluation of the success of the CNB Building rehabilitation as a catalyst for the overall neighborhood revitalization, the importance of the project is not lost on the City of Richmond. Lee Downey, Director of the City's Economic and Community Development Department, told the *Richmond Times-Dispatch* in July, 2015, that the redevelopment of the CNB Building would be profoundly transformational to the neighborhood and also to the City's Arts and Cultural District as a whole:

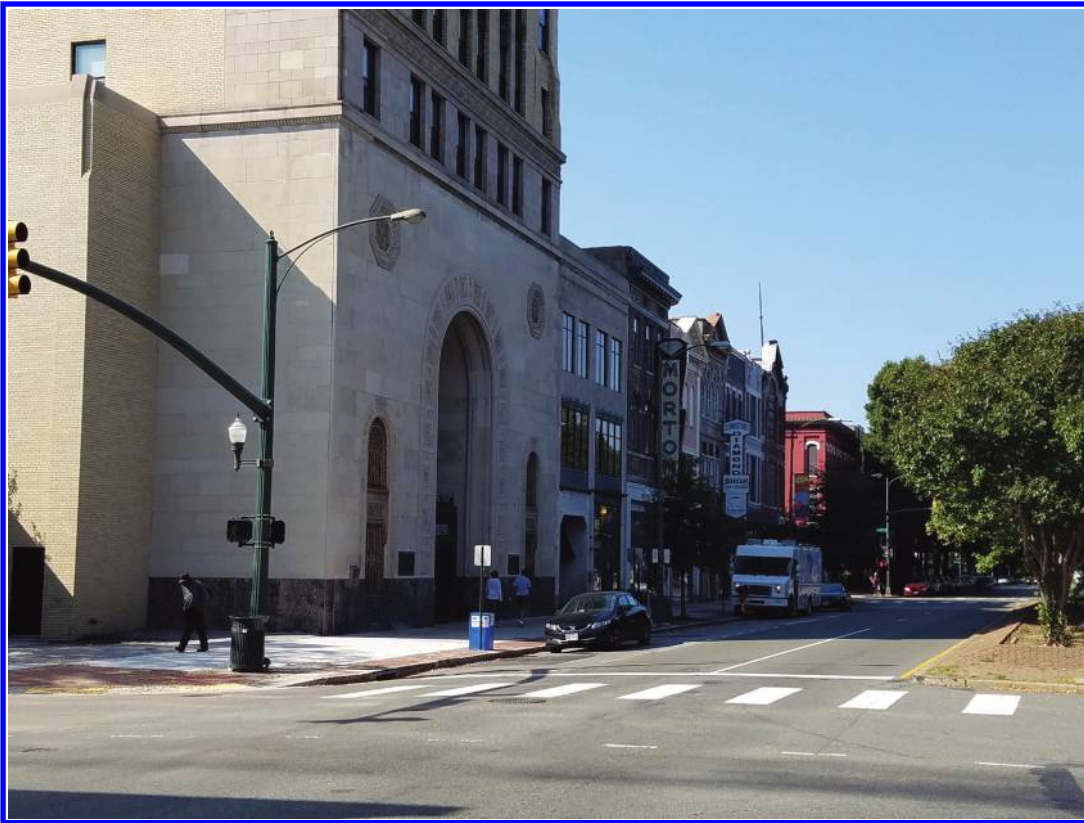
"In addition to the dramatic improvements to one of our downtown's iconic buildings, the new residential opportunities that it represents will bring more activity to the city's core," Downey said. "The Broad Street corridor has seen a resurgence over the past few years, and this redevelopment will bring additional vibrancy to Richmond's front door.

"The health of downtown depends upon people living and working in the district, enhancing opportunities for restaurants, stores and events that weave together a community."

FIGURE 13: Broad Street, c. 1964. ©Virginia DHR Archives.



FIGURE 14: Broad Street today.



It should also be noted that, although completed last year prior to the completion of the CNB Building project, Douglas Development moved forward with the renovation of the former United Way building at the northwest corner of Broad and Third Streets across from the CNB Building for use as the new headquarters for the VCU Police Department. This move is surely an indication of their belief in the continued and ongoing resurgence of the neighborhood.

THE BALANCE BETWEEN SUSTAINABLE AND HISTORIC ARCHITECTURE

Sustainable Historic Rehabilitation

The greenest building is the one that is already built. Although not developed specifically as a “green” building renovation, the CNB Building project nevertheless took advantage of several sustainable principles inherent in the rehabilitation of large historic buildings. The recapture of the embodied energy that was used to originally construct our existing buildings, the repurposing of historic and perhaps functionally obsolete buildings and structures for new programmatic uses, and even the maintenance of the architectural heritage of our communities, all play important roles in the long term sustainability and redevelopment of downtown neighborhoods across the United States and are all at their core fundamental sustainable principles to be found within historic rehabilitation projects.

Even though at first glance historic mandates and sustainable principles may appear to be in conflict with one another, the responsibility shifts to the design team to determine the

FIGURE 15: The CNB Building today with neighbors awaiting rehabilitation.



best way to incorporate the best of both the historic and sustainable approaches into a cohesive and holistic design that is environmentally, socially and fiscally responsible. As with any project, it should be understood at the outset that not all sustainable strategies may be available or appropriate and that flexibility on both the historic and sustainable sides is necessary. An integrated design approach offers the best chance for a successful solution. Below are some of the sustainable principles used in the historic rehabilitation of the CNB Building.

Urban Projects

Historic preservation and rehabilitation projects are often found in areas that have long been developed. Rehabilitation of buildings within these areas is responsible development at its most basic level.

The Central National Bank Building is of course located in a prime urban area of downtown Richmond and the rehabilitation of the building takes many cues from its urban site. Direct access to public transportation with a city bus stop right in front of the building on Broad Street lends itself to the proposed college student tenant demographic. The proposed restaurant in the former Banking Hall will have garden seating on a patio fronting Broad and Third Streets which will provide a lively interaction with the life on the street. The activity in the tenant Fitness Area along Grace Street will also be visible from the street. Capitol Square, the Greater Richmond Convention Center, the Financial District, numerous restaurants and hotels, and even the Carpenter Center for the Performing Arts are all within walking distance from the building.

Restoration of the Historic Fabric

The guidelines for historic preservation and rehabilitation projects as outlined in the Secretary's Standards for Rehabilitation will generally require preservation and maintenance of any existing historic fabric that contributes to the historic character of the building.

For the CNB Building rehabilitation project, this requirement is completely consistent with a sustainable design approach as the existing historic building envelope offered great opportunities for sustainable upgrades. The design team chose to keep as much of the historic fabric as possible. The condition of the exterior limestone and brick masonry at the Tower and Annex was carefully evaluated and repaired as specified in the Secretary's Standards, resulting in improved performance of the building's exterior skin. Except where damaged beyond repair, the majority of the existing limestone, marble, brick, and terra cotta was repaired and retained and the masonry mortar joints were repointed as necessary. Materials damaged beyond repair were replaced in kind with materials matching the original historic fabric.

One challenging issue often encountered in this context is the potential for the addition of thermal insulation to the existing exterior enclosure assembly. While this is normally desirable from an energy standpoint, historic conditions may preclude the addition of insulation to the walls themselves. In this case, the goal is to do whatever is feasible within the limitations of what the DHR will allow to provide an overall increase in the energy efficiency of the building envelope.

In the Tower portion of the CNB Building, the historic steel windows, extant from 1929, were in excellent condition, as was the interior plaster surface of the original exterior masonry walls. Because of this admittedly good historic news, the Virginia DHR required the project to repair and refurbish the windows and the interior plaster surfaces. In order to improve energy efficiency of the overall exterior enclosure, interior storm windows were installed behind the refurbished, but uninsulated, historic steel windows. The use of the storm units at the window penetrations of the masonry wall (even without any additional insulation added to the walls themselves) created an increase in the overall design efficiency of the mechanical systems by nearly 40%. By contrast, the existing interior plaster finish at the exterior walls of Annex was far beyond repair and so the project was allowed to install a new furring cavity of steel studs at the interior of the exterior walls, which was filled with new R-13 batt insulation to improve the thermal resistance for the wall.

The existing ballasted black single-ply membrane roof was at the end of its useful life, and so a new roof was required throughout the building. This allowed the installation of a new white, high reflectivity, adhesively applied thermoplastic polyolefin (TPO) membrane on polyisocyanurate rigid insulation roof system on the Tower and Annex. This new roof system provided a code compliant R-value and also contributed significantly to a reduction of the mechanical equipment load requirements.

Selection of Materials

In any project, whether sustainable, historic, new construction or rehabilitation, the selection of materials will play an important role in the project's overall success. Generally, the selection of materials can be accomplished with complete consistency between sustainable and historic preservation goals. Ecologically friendly, local and renewable materials can easily be specified, as can low VOC materials.

FIGURE 16: Before and after photographs of historic plaster walls in the Tower. After photo shows refurbished plaster and steel windows with “invisible” insulating interior storm units.



Natural Ventilation and Daylighting

Like other buildings built in the early 20th century, the CNB Building was originally designed to take full advantage of what we today consider to be fundamentally sustainable features such as natural passive building ventilation and daylighting. In turn, the rehabilitation project offered great opportunities to improve daylighting within the interior building spaces. The design team took advantage of the building's perimeter window configuration and designed each unit so that every unit living room and bedroom has a window. Existing wire glass found in the historic operable steel windows in the Tower and Annex was removed and replaced with new single pane low-e clear glazing to improve visibility from within the residential units and also improve energy efficiency.

Mechanical / Electrical / Plumbing Systems

Since historic rehabilitation projects often have to deal with antiquated or even non-existent M/E/P systems as the baseline existing condition at the start of the project, these projects often present the opportunity for complete replacement of those systems, which at minimum allows for the selection of new highly energy efficient systems and equipment.

For the rehabilitation of the CNB Building, the project team was able to incorporate all new M/E/P systems into the design, such as a highly efficient HVAC system and low flow plumbing fixtures.

In this project, the use of a state-of-the-art water cooled Variable Refrigerant Flow (VRF) HVAC system was selected for the resident units and Common Area spaces including corridors, elevator lobbies, clubhouse, fitness center, lounge, business center, mail room,

FIGURE 17: Before and after photos of Annex walls w/ insulated metal stud and gypsum board furring and refurbished steel windows



and leasing offices. The use of this system not only provided an extremely energy efficient result, but also limited the number of rooftop units (an important consideration for historic rehabilitation projects) and allowed the installation of most outdoor units within the existing mechanical penthouse. The selection of the VRF System also allowed the design team to minimize the space required for the system distribution runs (where we are running refrigerant piping in lieu of air ducts) throughout the historic building, which in turn allowed the preservation of more of the existing historic fabric and limited the impact to the building's existing structure. Low flow plumbing fixtures were incorporated into the design to help reduce water consumption for the building.

BEYOND DESIGN

Construction / Implementation Challenges and Lessons Learned

As the construction phase for the rehabilitation of the CNB building is wrapping up and residents are moving in, we are in position to evaluate some of the lessons learned on the project. As with many projects of this scale and complexity, the value of coordination between the design and construction teams, in conjunction with the participation of the Owner, is of critical importance. The location of the Architect's office within walking distance of the project site was useful in facilitating the daily interaction on site between all team members as existing unknown conditions were uncovered. Weekly Owner/Architect/Contractor meetings were held on-site as well, with new and ongoing issues discussed and

resolved in real time whenever possible. Flexibility in approach by all parties during this implementation phase is also of critical importance.

For the CNB Building project, the Construction Manager at Risk (CM@R) project procurement model mandated by the Owner lent itself perfectly to this critical need for flexibility. In major renovation projects, especially an historic rehabilitation project of our project's complexity, the CM@R procurement method is an appropriate and valuable approach. In the CM@R approach, the Construction Manager (CM) is selected early in the design process and is put under contract in a Guaranteed Maximum Price (GMP) arrangement with open book accounting. By incorporating appropriate cost allowances and contingencies into the GMP, flexibility in design approach is maintained while accommodating costs for unknown conditions yet to be uncovered. This serves to limit the need for unnecessary construction cost change orders. Sub-contracts are still bid out to multiple bidders under the CM's umbrella, which maintains the benefits of competitive bidding for the Owner. This approach allows for meaningful real-time input by the CM into constructability and budget issues while the design work is being completed, as well as important construction support, such as for selective forensic demolition of various historic conditions, as may be needed to inform the ongoing design work.

Among the biggest challenges for this project were related to the coordination among all design and construction disciplines to ensure that any new work did not jeopardize any of the requirements predicated by the use of Historic Investment Tax Credits. As discussed above, the use of HITCs as a financing tool was critical to the financial viability of the rehabilitation project and without the credits, there would have been no project in the first place. For example, one of the primary requirements for the HITCs was to rehabilitate and maintain the historic conditions of the windows throughout the building. Extensive interdisciplinary coordination was required to ensure that any new systems installed overhead would not impact the windows, since many of the existing window heads were inches from the historic plaster ceilings above. Exposed ductwork was not going to be allowed by the Virginia DHR in our project, so dropped soffits to enclose the various M/E/P components had to be carefully placed and coordinated for each of the 51 different residential unit types to avoid impact to the historic window conditions and configurations.

Another complication involved the construction of the project in several distinct phases, which was required in order to assist the CM in mobilizing and starting work on the project as quickly as possible. Originally, the project was not designed to be built in phases and so the project documents had to be repackaged to reflect the revised phasing AFTER the building permit was received from the City, which in turn caused some coordination issues with the City Building Department. The lesson here is to try and determine the project parameters early in the process.

Of significant concern in the rehabilitation of many historic buildings are considerations for how well the existing historic construction will comply with modern building and fire safety codes, or whether the historic construction would need to be adjusted or otherwise supplemented in some way in order to comply. This is especially true of Means of Egress issues such as existing exit stair configurations where the tread and riser dimensions, stair widths, handrails, or even the stair locations themselves, may not comply with current code.

The configuration of the existing Means of Egress was certainly a major issue in the CNB project. The Tower portion of the building only had one stair that extended continuously from the First Floor to the roof, so additional enclosed stairs had to be constructed to provide

a second means of egress, one stair from Floor 4 to 14 and one stair from Floor 15 to 20. The Annex had similar issues with the existing egress configuration in that there was only one enclosed stair that extended from the First Floor through the Fourth Floor in the Annex. In this case a second enclosed stair had to be placed in the Annex as well.

Another area where existing archaic materials are frequently a concern is related to fire separations between mixed building uses, stair enclosures, structural component protection or other areas where reliance upon the specific characteristics of the historic materials or configuration is required. In the CNB project for example, since the building is of Type I construction, a code modification was required to allow us to use the existing terra cotta masonry construction for the stair and elevator shafts as fire rated construction equivalent to modern construction.

In cases such as these, it is critical that a dialogue is established early in the design process with the City Building Department and Fire Marshal to determine which historic conditions may be “grandfathered” in for code compliance and which historic conditions would require some sort of supplementary work in order to comply with code. Often, a portion of these negotiations will require the determination of “equivalency” of the archaic materials or construction methods in comparison to modern materials, means and methods. This equivalency would need to be proven to the satisfaction of the Building Official, generally by the use of calculations or other direct analysis, based on the characteristics of the antique materials and subsequent comparison with the corresponding modern materials.

Of key importance during this negotiation of code compliance of course is that there is no undermining or other reduction to the actual life safety of the building occupants or the public-at-large. This should always remain the primary concern.

Finally, as conditions warrant variance from approved historic rehabilitation plans, it is important that ongoing contact with the Virginia DHR (or other governing historic authority) is maintained to facilitate the open dialogue of teamwork established over the course of the project. This will help to avoid surprises at project completion and ensure that there is no threat to the ability of the project to achieve certification for Historic Investment Tax Credits.

CONCLUSION

The Central National Bank (CNB) Building was built at the dawn of the Great Depression and stands today as one of the last great Art Deco style skyscrapers in downtown Richmond. A tribute to the forward thinking and successful efforts of local merchants to establish a financial institution to suit their own particular needs, the CNB Building’s central location within the Grace Street Commercial Historic District also made its rehabilitation critically important to the overall revitalization of its surrounding neighborhood.

Using an Art Deco style that was at once both a beacon of progressive thought (a sign of future things to come for the neighborhood) and also a forceful statement of strength and stability (for the Bank customers negotiating the depths of the Great Depression), the building’s historic design was carefully and skillfully crafted by renowned New York Architect John Ebersson.

As we have seen, the CNB Building project successfully negotiates the balance between historic and sustainable criteria to create a building that will serve its residents and community for many decades to come. Ultimately, how well the project performs after the construction dust has completely settled and residents have fully adjusted to their new home, will be

FIGURE 18: The Central National Bank Building, 2016.



the true test of the level of success that we are able to achieve. Likewise, how well the CNB Building fulfills its goal of catalyzing the revitalization of its surrounding neighborhood also remains to be seen. The building is completely immersed in its neighborhood and intrinsically linked to the neighborhood's success. Success or failure will be borne out only by future projects and their own successes. We look forward to performing this analysis when the time comes, so that the case study of the Central National Bank Building rehabilitation project can be concluded and the effectiveness of our approach for future projects can be validated. Ongoing evaluation, validation and adjustment of our approach are a continuous process.

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The Project M/E/P Engineer is Dunlap and Partners Engineers, PC. The Construction Manager is W.M. Jordan Company of Newport News and Richmond, VA.

A portion of the research for the history of the Central National Bank Building is from the National Register of Historic Places Nomination, 1978, prepared by the Virginia Historic Landmarks Commission.