

Biographical Sketch



Jacquelin Lee was completing her third year in Mississippi State University's School of Architecture before she began her Aydelott Award travels and research. Lee, who is from Madison, Mississippi, has always had a love and appreciation for design. Her family owns a small interior design business in Ridgeland, Mississippi, and as a child she always enjoyed going to work with her mother, admiring the samples of wallpaper, fabrics, paint, and flooring. In high school, she worked with her family at their business, and her love of design continued to grow. At Mississippi State, Lee is a member of AIAS and Young Women

and Architecture and is a teaching assistant for Passive Building Systems.

The Aydelott Award allowed Lee to learn more about areas of architecture that inspire her. Spending the summer researching and traveling across the United States was an experience she will never forget, and she hopes to continue researching and learning about areas of architecture that interest her. She would like to thank everyone that helped her along the way, especially her mentor, Professor John Poros, who guided her on how to express her ideas and discoveries. Lee also wants to thank her mother, sister, and friends who traveled with her this summer; she would not have been able to do it without their constant support.

Student:

Jacquelin Lee

Mentor:

John Poros

Buildings:

1. Colorado State Capitol Building in Denver, Colorado
2. The Armory Annex in Portland, Oregon
3. The Cobb Building in Seattle, Washington
4. Trinity Church in Boston, Massachusetts

Institution:

Mississippi State University, College of Architecture, Art, and Design

The Sustainability of Culture and History

An Investigation of the Relationship Between Historic Preservation and Sustainability



Fig. 1. H.H. Richardson, front elevation of Trinity Church during the weekly farmers market, Trinity Church, Boston, MA, 1877.

In the prophetic words of 2018 AIA president Carl Elefante: “the greenest building is... one that is already built.”¹ Compelling and succinct, this quote embodies the idea that architecture should be created to withstand years of growth and development within a community. Maintaining buildings that are already revered and culturally significant is the most sustainable practice in existence. Though typically viewed as two distinct facets of architecture, there is an intrinsic relationship between historic preservation and sustainability.

Gaging the sustainability of a structure is typically seen as a quantitative study: a series of different numbers and measurable sums that lead to a definitive answer. While this quantitative study is

crucial, it is also essential to look at sustainability through a qualitative lens. The cultural impact and historical significance of a building is what truly allows a structure to continuously exist and thrive, which is the core idea of sustainability. A building, even if it is quantitatively sustainable, will not last if it is unable to meet the needs of its community. Similarly, an antique piece of furniture passed down from generation to generation - which holds sentimental value and is well maintained - is significantly more sustainable than a piece of furniture bought with the intention of throwing away after a few years, even if the piece is made from recycled materials or "sustainable" means.

In order to illustrate the necessity of historical and cultural significance to sustainability, my research focused on four buildings across the United States that are over 100 years old and either on the National Register of Historic Places or are a National Historic Landmark. Each of these four buildings have met at least LEED Silver certification, with the exception of Trinity Church in Boston, which has recently implemented green building strategies into the original structure and addition. The analysis of the cultural and historical significance of these buildings came from observations within their context, conversations with experts on the building, and research into the history of each building.

The four buildings investigated are made sustainable by four distinct values of our culture:

- Civic Importance

Colorado State Capitol Building | Denver, Colorado

- Importance of Community
 - The Armory Annex | Portland, Oregon
- Importance of Place
 - The Cobb Building | Seattle, Washington
- Architectural Importance
 - Trinity Church | Boston, Massachusetts

By analyzing each of the buildings within their context and researching the historical development, cultural significance, and sustainable practices, I identified several key factors that led to their sustainability. The building's status within the community, place within the urban fabric, and ability to adapt and/or maintain cultural relevancy are crucial to the sustainability of each building. Each of the four buildings I studied give back to their community in some way; in turn, the community supports and maintains the building. The essence of each building is preserved while adaptations are made to respond to the contemporary needs of the community.

With growing threats of climate change and the substantial impact of the building industry on the environment, sustainable design is becoming increasingly pertinent in the architecture profession. This research investigated the relationship between the cultural and historical significance of a building and its sustainability, asserting that incorporating green strategies into an already beloved structure is one of the most sustainable architectural practices.

Colorado State Capitol Building



Fig. 1. Elijah Meyers, exterior looking toward main façade, Colorado State Capitol Building, 1908.

Introduction

Designed by Elijah Meyers in the early 1890s, The Colorado State Capitol Building was created as a representative of Denver and the state of Colorado as a whole. Situated at the eastern edge of the Denver Civic Center in downtown Denver, the Colorado State Capitol Building is the principal civic space in Colorado. The Denver Civic Center, including the Colorado State Capitol Building, was designated as a National Historic Landmark in 2012, asserting the cultural and historical significance of this space. The Colorado State Capitol was renovated in 2008, earning it LEED Gold certification. The Colorado

State Capitol Building's status within Colorado, prime location at the Civic Center in downtown Denver, and ability to maintain adoration by Coloradans has allowed for the Colorado State Capitol Building to sustain through years of growth and development within Denver and the state of Colorado. The civic importance of these spaces is integral to their continued sustainability.

Historical Development

In the early 19th century, whispers of gold being found out west traveled along trade routes to the eastern United States. The discovery of gold in California brought prospectors who, unbeknownst at the time, passed a territory with this same treasure tucked away in its mountainous terrain. In the summer of 1858, the confluence of Cherry Creek and the South Platte River became a new spot for gold discovery in the West. Gold rumors brought a party of prospectors to the area in November of 1858, and the city of Denver was established as a gold mining town on the banks of the South Platte River.

As a mining town, Denver remained small and relatively unknown in the greater context of the United States for a short period of time. A sudden boom in growth happened only a few years after its establishment, and Denver's connection with the rest of the United States grew. In the foothills of the Rocky Mountains, Denver existed in an area that was hundreds of miles away from any other major urban development within the United States. Travel to the town of Denver was difficult due to not only the mountainous barriers of the Rockies to the west but also the desolate and flat land of the Great Plains to

the east. In order to be connected to these far-reaching hubs of civilization, Denver needed a link via the transcontinental railroad system. This connection would come in 1870 and influence the development of Colorado's new capitol city and the development of the Colorado State Capitol Building and the Civic Center.

Denver's ability to link to the rest of the developed United States via the transcontinental railroad led to its importance as a hub of manufacturing, industrial, and financial development within the United States. As a result, Denver was granted capitol status within the state of Colorado in 1876. Not only did this link to the rest of the developed nation bring revenue for Denver due to its exports - specifically the gold ore found in the mountains - but it also brought in a crucial, yet intangible good to the capitol city: ideas of design and city development from the eastern United States. This knowledge became invaluable to a city like Denver, where the closest "neighboring" cities, such as Santa Fe, New Mexico and San Francisco, California, were hundreds of miles away.²

This eastern influence is seen in the development of the Colorado State Capitol Building, which began construction in the early 1890s. Elijah Meyers, the original architect of the structure, gained inspiration from the United States Capitol Building in Washington, D.C. The derivation from the United States Capitol Building can be seen in the Colorado State Capitol Building's form: a neoclassical-style building featuring a prominent central dome, portico at the entrance, and wings extended in either direction from the center of

the structure. At the time, the Capitol Building sat at the intersection of Colfax Avenue and Broadway Boulevard, two of the most prominent streets in Denver. This placement, at the crux of two important roads, was awkward for the capitol building in the context of the city. Though the Colorado State Capitol Building and Civic Center appeared at the intersection of two important roads, it was not conveniently located to other important civic structures. This resulted in its disconnection from the rest of the cultural centers of the city, even with its stature and relatively central location. Because of this, the development and prominence of the structure was heavily changed during the turn of the 19th century, with the new development of Colorado's Civic Center.

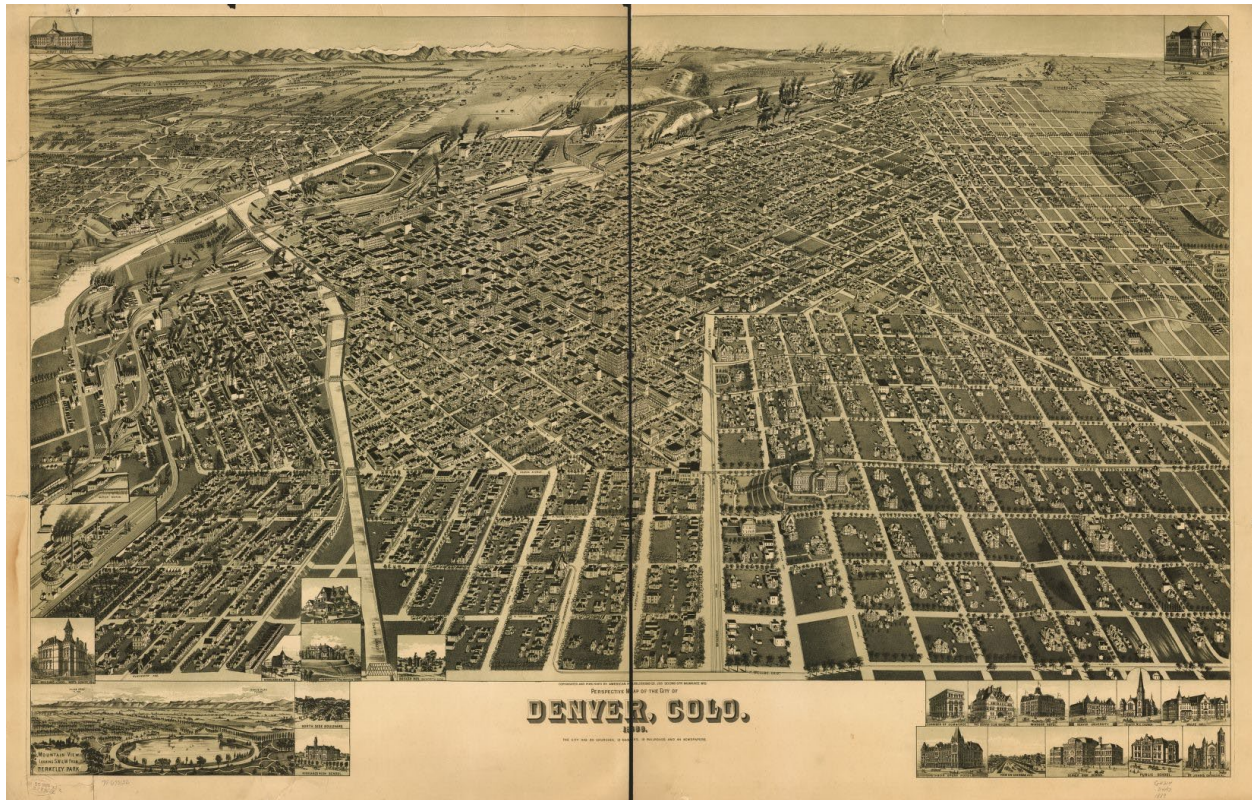


Fig. 2, Perspective Plan of Denver, Colorado before the Denver Civic Center development, Colorado State Capitol Building, Denver, CO, 1889. Source: <https://www.loc.gov/item/75693132/>



Fig. 3, Denver Civic Center Plan as it is today, Denver Civic Center, Denver, CO, 2021. Source: https://www.denvergov.org/content/dam/denvergov/Portals/747/documents/planning/master_plans/CivicCenterPark-MasterPlan-2005.pdf.

In 1908, Denver city planners felt it necessary to create a relationship between the main civic structures for the city and to establish a location for these prominent buildings within the local context. The proposal of the Civic Center in Denver focused on the idea of a public plaza, with important structure such as the Colorado State Capitol and Denver Library framing the area. The concept for the Civic Center was described by William Wilson as, "emphasizing accessibility, utility, harmony, and celebration."³ This concept can be

seen in the proposed plan of Civic Center, where the idea was to create a space of balanced form in plan while also maintaining accessibility for the citizens. The central plaza's cruciform shape marked a significant central location at the intersection of the north-south and east-west axes of the city. The north-south axis was terminated at each end by a semicircular frame, opening up the plaza and introducing a distinctive Beaux-Arts plan not yet seen in the city of Denver. Though the shape of the complex was seemingly unprecedented, it maintained the ideas of beauty and symmetry seen throughout the rest of the city plans of Denver. The complex's development created a space for community gathering and celebration. The addition of the Civic Center makes the complex sustainable in that it connects the citizens to the Capitol, making people want to preserve the entire complex rather than demolish it. The place becomes important to everyone in the city.⁴

Cultural Impact & Historical Significance



Fig. 4, Street Art in Denver Civic Center, Colorado State Capitol Building, Denver, CO, 2021.



Fig. 5, People playing soccer in Denver Civic Center, Colorado State Capitol Building, Denver, CO, 2021.

When I visited the Colorado State Capitol and Civic Center in Denver, I immediately noticed that this place was created for the entirety of the local community, not just the few who make legislative decisions. The Civic Center was created over a century ago, with the purpose and goal of being a public gathering space. When it was designed in 1908, visions of every Denverite and Coloradan being able to congregate and celebrate together in one space filled the minds of the city planners. The Civic Center was situated to frame the beauty of Denver's context. Charles Mulford Robinson, one of the original planners, stated that the location, "... would emphasize and dignify the State Capitol [with] ... the preservation of a very grand mountain view..."⁵ Though Robinson's plan would soon be changed and updated, the notion of creating a location for the State Capitol that was open to the public, connected with other notable civic structures, and formed wondrous view of the Rocky Mountains remained the driving forces of the development of the Civic Center.



Fig. 6, View from Colorado State Capitol Building, Colorado State Capitol Building, Denver, CO, 2021.

The historical significance of the Colorado State Capitol and Civic Center runs deeper than just the neoclassical planning of the structure and park. This place is truly notable as a piece of architectural and urban design because of its significance to its local and regional context. Even before the Civic Center plan was fully finalized, the draw to this centralized green space in the middle of a growing city brought the community together and became a spot for numerous festivals and activities throughout its history.

The Colorado State Capitol and Civic Center exist as the primary green space in the center of Denver. Large festivals such as the "Festival of Mountain and Plain" as well as smaller gatherings such as "Bike to Work Day" and "Theater in the Park" occur in this centralized location, connecting Denverites to one another. The Civic Center was created as a space to connect the citizens of Denver to one another. These gatherings would not exist without the development of the Civic Center, further illustrating the cultural sustainability of this space as a whole.



Fig. 7, Elijah Meyers, interior rose onyx, Colorado State Capitol Building, Denver, CO, 1894.

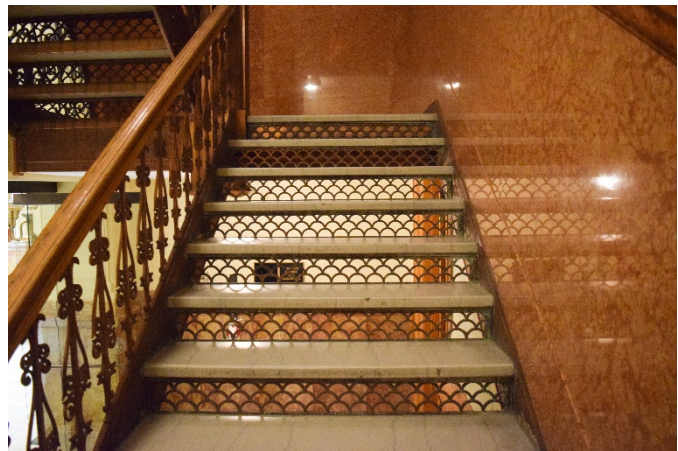


Fig. 8, Elijah Meyers, interior stairwell, Colorado State Capitol Building, Denver, CO, 1894.

The Colorado State Capitol Building itself provides another aspect of sustainability to this development. Though influenced by East coast cities and their capitol structures, the Capitol Building represented everything Colorado. The building was made using as many locally sourced materials as possible. The interior features include Colorado Rose Onyx, adorning the walls and stairs of the building. The use of this rose marble is especially significant because the entire supply of this specific marble is believed to be in the capitol building.⁶ Another prominent feature of the Colorado State Capitol building is its gold dome, which not only makes a particular distinction between this capitol buildings and the ones on the east coast but also uses gold found in the state of Colorado. The gold dome represents the Colorado Gold Rush, the event that created the draw to Colorado in the first place. Using local materials and references to history throughout the materiality of this structure makes it representative of the community.

Though the Colorado State Capitol Building and Civic Center is a renowned and beloved work of architecture, unsightly changes have been made over the years that have obscured some parts of the building's rich history. In 2011, a maintenance request made for a crooked radiator cover revealed a part of the Colorado State Capitol's history that had been hidden for over half a century. Before this discovery, one would enter the house or senate chambers and be faced with a drab, beige acoustical tile that enveloped the entirety of the room, from wall to wall to ceiling. No one quite understood why these rooms had such a dull, droning interior cladding, but the walls were not

questioned because they were all anyone had ever known. This all changed in 2011, when a repairman peeled back one of these dreary tiles to reveal a vibrant green wall and ornate stenciling that had once been on full display, now concealed and covered in globs of horse glue.

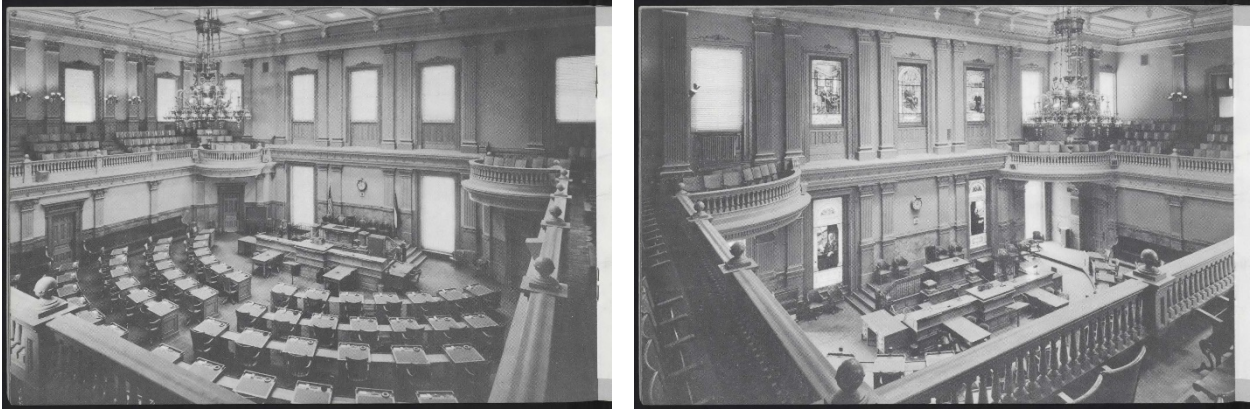


Fig. 9 & 10, Interior of House and Senate Chambers with acoustical tile, before renovation, Colorado State Capitol Building, Denver, CO, 1894. Source: <https://www.coloradovirtuallibrary.org/resource-sharing/state-pubs-blog/renovations-at-the-capitol/>.

The discovery of these walls uncovered more than just opulently painted fine details; it revealed how important representing history and culture through architecture can be to a community. As a result of this unexpected finding by a maintenance man, locals came together to understand more of this history and to honorably restore the two chambers. The stencils on the lower levels of the house and senate chamber were restored from the originals; however, to maintain the sound insulation, the upper levels of these two chambers featured new acoustical tile. These tiles were then painted in the same bright red and green as the originals and ornamented with recreations of the stenciling. The restoration of the House and Senate Chambers of the

Colorado State Capitol represents how important historical context is to civilians and the valuable connection between cultural significance and sustainability.⁷

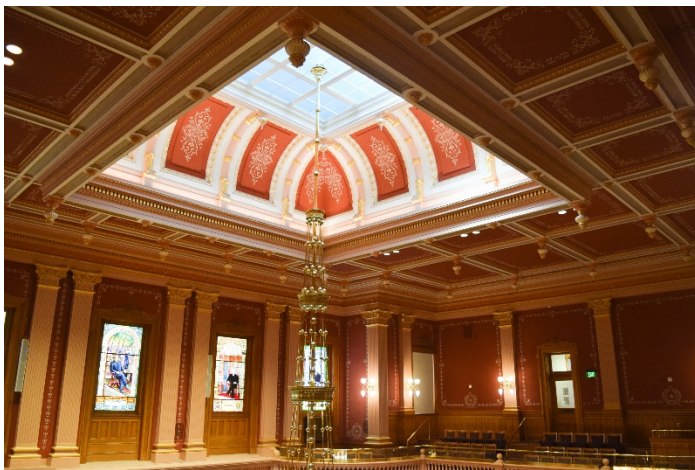


Fig. 11-15, interior of House and Seante Chamber after Renovation, Elijah Meyers, Colorado State Capitol Building, Denver, CO, 1894.

What Makes it Sustainable?

The Colorado State Capitol Building and Civic Center act as an icon for not only the city of Denver but also the state of Colorado as a whole. Knowing the cultural impact of the Civic Center and the Colorado State Capitol is paramount in understanding why this building has existed for over a century. Looking at this development through both a qualitative and quantitative lens gives the bigger picture of the true sustainability of the Colorado State Capitol. For my research, I investigated the connection between the importance of the Civic Center and Colorado State Capitol within its context, its use of sustainably sourced materials, and, more recently, the implementation of green technology.

The addition of the Civic Center makes the complex sustainable in that it connects the citizens to the Capitol, making residents want to preserve the entire complex. The place has become important to everyone in the city. The Civic Center provides a space for street art, food vendors, and outdoor events to occur, bringing people to its core: the Colorado State Capitol Building. Throughout my tour of the Capitol, everyone working there - even the security guards - spoke about how the restoration of the House and Senate Chambers to their original glory has made them enjoy the spaces more, giving them a sense of pride and a clear desire to continue maintaining them.

In addition to the cultural sustainability of the Civic Center and Capitol Building, the original design of the building used local materials, making it not only sustainably sourced but also even more

important as an icon of Colorado. The two most iconic materials used in the Colorado State Capitol Building are the rose onyx on the interior and the gold of the gilded dome on the exterior, both materials sourced within Colorado. The rose onyx features a distinct pink coloration, unlike any other onyx found in the world. This rosy stone is seen throughout the main spaces of the Capitol Building, adorning its walls and creating unique patterns throughout the interior. Rose onyx is not only exclusive to Colorado but is also exclusive to the Colorado State Capitol itself, with all of the known rose onyx being used within the Colorado State Capitol.



Fig. 16, Elijah Meyers, Exterior showing gilded dome, Colorado State Capitol Building, Denver, CO, 1894.

The gilded dome features 200 ounces of gold gifted to the Colorado State Capitol by Colorado gold miners. This gift reveals the importance of the civic structure to the whole of Coloradans and also represents a tribute to Colorado's heritage and past. Visitors and locals alike can visit the Capitol Building and make the connection between the gold dome and Denver's past as a gold-mining hub. The sustainability of the materials used in the Colorado State Capitol can be measured in a quantitative way; one may exactly pinpoint the location of these materials and the environmental impact of using these locally sourced materials versus imported materials. More notably for my research, the materiality can be viewed through the qualitative lens of sustainability, showing how using finishes that are representative of a community makes the community want to maintain a structure for as long as possible. This illustrates the important connection between preservation and sustainability.

In recent years, the restoration of the House and Senate Chambers occurred in tandem with the implementation of newer green technologies to the Capitol building. This restoration has brought a culturally and historically significant structure to modern standards of sustainability. Achieving LEED Gold in 2008, the Colorado State Capitol Building has been a pioneer in the implementation of clean energy. Improvements did not end in 2008; in 2013, the Colorado State Capitol became the first capitol building in the United States to be cooled by geothermal power. The installation of a geothermic well allowed the House and Senate Chambers to be heated and cooled by this technology, improving the overall quality and energy performance of

the structure. Retrofitting clean energy into an already beloved building allows for a historic building to meet modern standards of green technology, enabling it to sustain with less environmental impact than even a new construction that implements this green technology from its conception.⁸



Fig. 17, Geothermal well, Colorado State Capitol Building, Denver, CO, 1894. Source: <https://capitol.colorado.gov/projects/geothermal>.

Conclusion

The Colorado State Capitol Building stands as an icon of Colorado culture and heritage, and its sustainability is heightened by its importance to Coloradans. Between observations of how people interact with the Colorado State Capitol Building, as well as conversations with locals, it is apparent that this building is highly respected and

celebrated by its community. Because of this, the community is determined to preserve and maintain the Colorado State Capitol Building, proven by the restoration of the House and Senate Chambers to their original glory. Existing within the Denver Civic Center, the location of the Colorado State Capitol has also allowed it to maintain prominence in Denver's urban fabric, with locals and tourists frequently visiting and utilizing the Civic Center Park and Capitol Building. The most important civic building in Colorado, the Colorado State Capitol Building has been able to maintain cultural relevancy, with restorations and upgrades being made to the building to adapt to the structure to contemporary ideals of design and sustainability.

The Armory Annex



Fig. 1, Martin & McCaw, Main façade of the Armory Annex, the Armory Annex, Portland, OR, 1891.

Introduction

Originally designed in 1891 as an annex to an existing National Guard Armory in Portland, Oregon, the Armory Annex now stands as an arts hub in Portland. Located within the Pearl District, the Armory Annex has experienced substantial change throughout the urban development of Portland. Even in the face of the wrecking ball in 1968, it remained standing. The Armory Annex represents a distinct facet of Portland's culture, and in the year 2000, the Armory Annex was placed on the National Register of Historic Places, affirming its cultural and historical significance to the community. After its transition and renovation into a theater, the Armory Annex received

LEED platinum certification from the United States Green Building Council. The Armory Annex is the first performing arts center and building on the National Register of Historic Places to achieve this rating, a significant achievement. The Armory Annex continues to sustain because it is a prime example of how a building's adaptability to the needs of the community is essential to its sustainability.

Historical Development



Fig. 2, Martin & McCaw, Exterior view showing the date of the Annex, Portland, OR, 1891.

In 1803, the United States' purchase of the Louisiana Territory from France doubled the young nation's size and created the desire for exploration and travel out west. The intrigue of western discovery continued with the Lewis and Clark Expedition's exploration of the Louisiana Territory and Pacific Northwest. Part of this exploration

would lead them through an area on the Willamette River that, in just a few decades, would be known as Portland, Oregon.

After Lewis and Clark, many other travelers from the eastern United States would find themselves stopping on the banks of the Willamette, making it a renowned rest stop on the Oregon Trail. New immigrants traveling and staying in this area turned it into a financial success. In 1843, business partners William Overton and Asa Lovejoy purchased 640 acres on the west bank of the Willamette River, marking the origin of Portland as a city. The downtown design of Portland originally featured 16 city blocks and the population was at a mere 800. In 1903, plans for a Lewis and Clark Exposition, along with the "City Beautiful" movement implemented as a part of the Exposition, led to new strategies for the city to thrive.

During the time of Portland's initial boom in the late-nineteenth century, violence against the Chinese population in Portland began to rise, and the continual hostility against this group called for action. Oregon leaders began to sanction armories across the state as locations for the National Guard to train and practice. The first Portland Armory, which was designed by Richard Martin in 1888, was seen as too small for training. This issue called for the creation of an annex to this armory, completed three years later by Richard Martin and William F. McCaw. The addition featured a wood-truss system for the roof support that created a hundred-foot clear span. A mezzanine gallery was also constructed, enabling audiences of 5,000 to gather in the space. This annex made the new building more spacious and

accommodating, allowing it to support a number of activities including not only military drills but also concerts and other community events. Performances from well-renowned musicians, including the New York Symphony and performers such as Opera singers Lillian Nordica, Mary Garden, and Walter Damrosch brought thousands of Portlanders to the Armory. In addition to musical performances, boxing matches and circus performances also occurred within the Armory Annex, bringing even more locals to this space. The Annex's use as a National Guard Armory continued into the mid-twentieth century; its use became more integrated with the general community because of the public events occurring within it.



Fig. 3, Martin & McCaw, The Armory Annex Whitewashed, The Armory Annex, Portland, OR, 1891. Source: <https://vintageportland.wordpress.com/2012/10/15/oregon-national-guard-armory-1953/>

The Armory Annex stopped its public use in the late 1960s, when the Blitz-Weinhard Brewing Company purchasing the building, transforming it into a warehouse and bottling plant. With the Blitz-Weinhard Brewing Company now owning the Armory, changes were made to the structure. The original Armory building was demolished in order to become a parking lot, and the prominent arch over the 11th Avenue entrance was torn down as well. The Armory Annex would remain a warehouse/bottling plant for brewing companies until the late 1990s; over the course of three decades, the area around the Armory would gain some cultural notoriety. Only a block south of the Armory, Powell's Books opened in 1971. Powell's Books is the largest independent book store in the United States to this day, and its opening garnered interest in the area from locals and tourists alike. Another key event during the three-decade period of the Armory as a brewing warehouse was the coinage of the term "Pearl District." This term was used to describe this neighborhood of Portland featuring gritty, industrial warehouses housing artists and their art. The Armory was situated within the Pearl District, making it a prime location for art institutions.

The end of the Armory Annex as a brewing warehouse comes with its purchase by Gerding/Edlen in 1999 as a part of the Brewery Blocks package: a five-block area at the site of the Blitz-Weinhard Brewery, which now acts as a shopping and professional transition district between the Central Business District and the River District. A few years earlier, Portland Center Stage became an independent theater company. In 1993, Portland Center Stage needing a new home for their

theater productions. At the time, the Armory, with its open, expansive floor plan and central location, had sat empty for over 5 years. The institution and the space became the perfect marriage.⁹

Cultural Impact and Historical Significance



Fig. 4, Martin & McCaw, Interior of lobby, the Armory Annex, Portland, OR, 1891.

When visiting the Armory, I immediately noticed the importance of this building as a hub for the arts in Portland. The National Guard Armory Annex was created in 1891 amidst a surge of violence towards Chinese Portlanders. The Armory Annex, training members of the National Guard to protect the community, represented a place of safety in Portland. This feeling of security is continually felt within the

walls of the Armory, and this has allowed it to grow and change over time, constantly serving the needs of Portland.

Even when the program of the building was still a National Guard Armory, the structure called for community gathering and performances due to its scale and open layout. The wooden truss system provides a large, column free space, allowing for many activities to occur, from the necessary military drills, to more romantic instances of opera and symphony performances, to rowdy wrestling matches and baseball games. In "Voices of the Armory: A Chronicle of the Transformation of a 19th Century Icon into a 21st Century Theater," John Terry, a retired Portland journalist, recalls such events with nostalgia and admiration. When reminiscing on the wrestling matches he would watch as a child, he notes that:

Though they now may be loath to fess up, there will be those applauding the building's reincarnation as legitimate theater who cannot help but relish the delicious memory, the decadent drama of attending rasslin' in person, or sneaking in a match or two late Saturday on Channel 12 after mom and dad went to bed.¹⁰

These unique and intimate moments between Portlanders of all backgrounds with the Armory Annex allowed it to withstand years of change and development in downtown Portland. From the late 1960s to the early 2000s, the Armory Annex existed as a either warehouse for brewing companies or as nothing at all, sitting abandoned and empty. Despite these decades of abandonment, the Armory Annex stood proud, with locals still respecting and admiring the structure, unwilling to tear it down.



Fig. 5, Martin & McCaw, Interior showing wooden truss system, The Armory Annex, Portland, OR, 1891.

During the same period of the Armory Annex's abandonment, the Pearl District also experienced a great boom. Now renowned as an example of great urban neighborhood design, the Pearl District was not always as vibrant and lively as it is today. Originally, it was filled with remnants of Portland's industrial roots, with half-abandoned warehouses and rail yards dominating the neighborhood. The development of the Pearl district to what it is today was a group effort, with public and private initiatives coming together to create a sustainable, all-encompassing neighborhood near the heart of Portland. The Pearl District features iconic pieces of Portland culture such as Powell's Books, the largest independent book store in the country, as well as numerous local businesses, galleries, and restaurants. Within the Pearl District is the Brewery Block development of Gerding/Edlen, and the Armory Annex is nestled in the middle of this development.

Existing within a neighborhood experiencing a boom in population and community-based initiatives allowed the Armory Annex to find a new meaning as a hub of the arts in Portland.



Fig. 6, Martin & McCaw, Exterior showing street art displayed at the Armory, the Armory Annex, Portland, OR, 1891.

The Gerding Theater at the Armory Annex stands as a representative of Portland itself, combining sustainability, arts and culture, and community outreach all in one space. In addition to putting on a number of theater productions, from *West Side Story* to Chekhov's *Seagull*, the Armory Annex also hosts art exhibitions to concerts to the occasional wedding. During my visit at the Armory Annex, theater productions were not occurring due to the COVID-19 pandemic, but the Gerding Theater was still hosting a summer camp for

local high schoolers to partake in the art of theater. No matter the situation, The Armory Annex continues to act as a centerpiece in the culture of Portland, and with approximately 350 events a year, the Armory Annex serves as a cultural hub for local Portlanders and visitors alike.

What Makes it Sustainable?



Fig. 7 & 8, Martin & McCaw, LEED and National Register of Historic Places signages at entryway, the Armory Annex, Portland, OR, 1891.

The Armory Annex and Gerding Theater is a safe space in the heart of Portland. Created as a space for protection of civilians, this feeling of security is continually felt within the Armory. From its use as a National Guard armory to its time as a warehouse and to its current success as theater, the Armory Annex has continued to positively impact Portlanders. The Armory has beckoned for people to gather, and it has always provided something for the community by way of protection, artistic performances, community gathering spaces, and simply existing as unique work of architecture to admire. In turn, the

community has chosen to preserve it. Knowing this cultural significance of the Armory Annex is necessary to understand why it has stood, even amidst abandonment, for over a century. For my research, I examined the connection between the Armory's importance within Portland, as well as its implementation of green design and environmentally friendly practices.



Fig. 9, Martin & McCaw, Interior of Theater Space, The Armory Annex, Portland, OR, 1891.

In addition to the cultural sustainability of the Armory Annex, the building itself represents a feat in green building design. The Armory Annex is not only the first building on the National Register of Historic Places, but also the first and oldest performing arts facility to achieve LEED Platinum: the US Green Building Council's

highest certification level. Some notable aspects of the building's green design include its energy efficiency, natural ventilation, and use of lighting and heat. In order to maintain energy efficiency, the renovation of the Armory Annex carefully integrated mechanical, electrical, and information systems to allow for the building to perform 30% more efficiently than code requirements. The use of natural ventilation via air flow cavities under the seating risers in the theater and underfloor air flow under the modular flooring nine inches above the upstairs' foundation allow for the building to maintain a comfortable temperature, even in spaces that are typically hard to ventilate. When lighting and heating the building, different strategies are used in different parts of the structure. In the lobby spaces, radiant heat from hot water tubes placed in the cement flooring allow for comfort for guests and employees alike. In the upstairs offices and rehearsal areas, chilled beams are utilized for individual user comfort. Operable skylights and windows throughout the building allow for fresh air throughout the structure.



Fig. 10, Martin & McCaw, interior showing chilled beam supply, the Armory Annex, Portland, OR, 1891.

In addition to the systems implemented within the Armory Annex to maintain LEED status, the renovation also utilizes recycling. The day-to-day operations of the building are environmentally conscious, reflecting the sustainability goals of the city of Portland itself. Over 95% of construction materials for the renovation were saved from going into landfills, 25% of all materials contain recycled content, and 45% of all materials were regionally sourced, making the Armory Annex not only sustainable on paper but also representative of the sustainable mindset of Portlanders as a whole. The materials in original construction of the Armory were also locally sourced, with the iconic wooden trusses created from laminated Douglas fir. In addition to the sustainable materiality, the day-to-day operations of the Armory Annex strive towards a more environmentally conscious atmosphere, with the use of only environmentally friendly cleaning supplies, misprinted paper, and the majority of employees biking, carpooling, or taking public transportation to work.¹¹

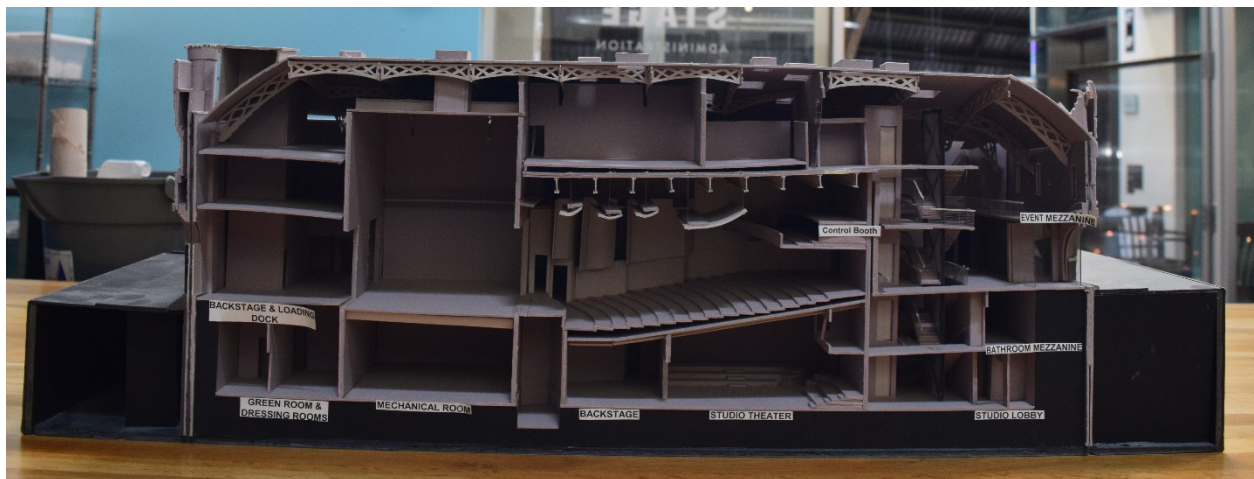


Fig. 11, scale model showing section of the Armory, the Armory Annex, Portland, OR, 1891.

But the Armory would not experience this integration of green technology into its core without its ability to stand as long as it did. The Armory exists in the hearts of Portlanders and always means something to them, whether it was part of fond childhood memories of sporting events or simply its statuesque and powerful presence as a work of architecture. When referencing the Armory, historian Bob Kingston admirably states that:

The Armory is fascinating for having survived repeated attempts over 110 years to either abandon it or to tear it down. On the one hand, the structure was adapted to suit a variety of needs, and as a result, it established itself as a fixture in the neighborhood. On the other, it seems that no matter how many times the Armory faced the wrecking ball, no one could actually demolish it. The building hung on just long enough to get a new lease on life, and to my mind, it's a good thing that it did.¹²

How could the Armory Annex be a beacon of current sustainable practices without its ability to withstand the test of time? It could not. The cultural significance of the Armory is the most necessary aspect to its sustainability. Without its continual impact on the community, it would not be able to reach the status that it has today.

Conclusion

"The Portland Armory is an experiment in growing a culture of sustainability. It is a community hub, a crossroads, a center for the arts, and an abandoned castle reinvented as an intelligent structure."¹³

-Stuart Cowan, *Voices of the Armory*

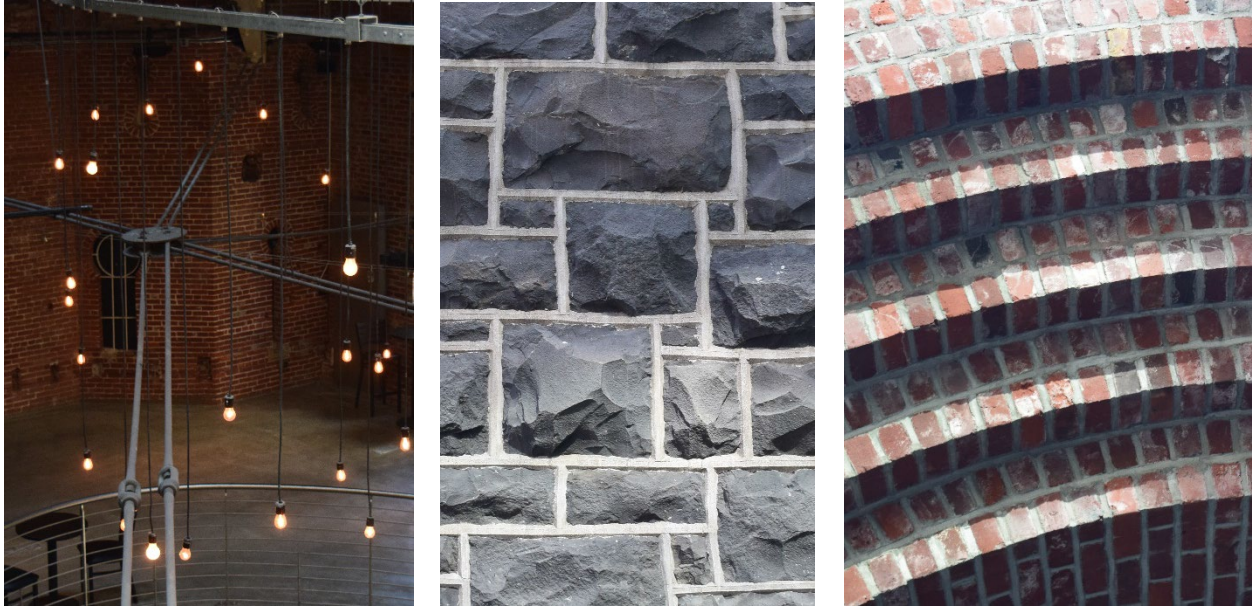


Fig. 12-14. Martin & McCaw, architectural details of the Armory, the Armory Annex, Portland, OR, 1891.

The Armory Annex is central to the Portland community, standing as a hub of the arts and symbol of Portland culture. Conversations with the people who work at the Gerding Theater at the Armory, as well as observations of how the Armory is used - even during the height of the COVID-19 pandemic - reiterated the Armory's mission as a cultural center in Portland. Because of the Armory's continual status as gathering space for Portlanders, the community is determined to preserve it and see it stand as Portland continues to grow. Located within the Pearl District, a bustling neighborhood that is focused on arts and community, the Armory Annex's place within Portland's urban fabric has led to its continual adaptation and preservation, sustaining years of development and change in Portland. With community members having personal connections and fond memories of the Armory, either as a place of communal gathering or an iconic building,, it

retains cultural relevancy and is a fine example of link between preservation and sustainability.

The Cobb Building



Fig. 1, Howells & Stokes, Exterior facing main corner of the Cobb, The Cobb Building, Seattle, WA, 1910.

Introduction

One of the only remaining buildings of the Metropolitan Tract, and innovative urban development scheme in the late-nineteenth century, the Cobb Building embodies a history of Seattle that has almost entirely been demolished. Located at the intersection of 4th

Avenue and University Street, the Cobb Building has been renovated into luxury apartments, providing a space for comfort and community within downtown Seattle. The Cobb Building was to the National Register of Historic Places in 1983, affirming its cultural significance as a representative of the Metropolitan Tract development in Seattle. With its renovation to luxury apartments in 2005, environmentally conscious design strategies were implemented; the building achieved LEED Silver certification by the United State Green Building Council. The Cobb Building's prime location in Seattle's urban fabric, as well as its ability to remain standing despite its contemporaries being torn down for new development assert the building's sustainability. The Cobb Building has sustained because of the importance of place within the community and urban fabric.

Historical Development

Approximately 90 miles east of the Pacific coastline and 113 miles south of the U.S.-Canadian border, exists a narrow strip of land. The Puget Sound, an inlet of the Pacific Ocean, frames the western edge of this area, and Lake Washington, one of the largest lakes in the state of Washington, frames the eastern edge. Less than sixty miles to the south, active volcano Mount Rainier towers 14,410 feet above sea level, dominating the southern skyline on a clear day. Sixty miles to the west, the rugged Olympic Mountains are visible, with their jagged, snow-capped peaks creating another picturesque skyline. The area is surrounded by geological wonders. This beauty

would eventually bring settlers to the area in the mid-nineteenth century, eventually naming it "Seattle."

From the 1850s to 1880s, Seattle remained a small, isolated town in the Pacific Northwest. When Northern Pacific Railway Company added a connection between Tacoma and Seattle in 1883, Seattle saw a boom in population. The new immigrants to Seattle mainly worked in the lumber and coal industries; the later growth in fishery, shipbuilding, and shipping industries brought more economic prosperity to the city, causing an even greater boom in population. This acceleration slowed with the great fire in 1889, which leveled 116 acres of the core of Seattle. However, this fire did not deter citizens of Seattle; in fact, it brought opportunity for improvements on Seattle's infrastructure and sparked new urban developments, including the Metropolitan Tract.¹⁴

The Metropolitan Tract was an innovative urban development plan created with the intention of designing a city within a city. Developed by New York architecture firm Howells and Stokes and owned by the University of Washington, the Tract development began in 1904. At that time, the Tract was the largest downtown urban development of its kind in the United States at the time. The Metropolitan Tract was developed when the University of Washington moved its campus to the banks of Lake Washington, leaving behind 10 acres of land in the heart of Seattle. The Metropolitan Building Company signed a 50-year long lease for the area, becoming the site of the Metropolitan Tract. This developments' intent was to create a commercial center in downtown

Seattle, with plans for housing, offices, a department store, a hotel, and a public plaza.

The original master plan for the Metropolitan Tract focused on the design of 10 buildings, all to be built in a similar style and scale. Each of these buildings were to be 11 stories tall, featuring a terra cotta base and cornice ornamented in a combination of Beaux-Arts and Chicago School styles. Between the terra cotta ornamentation at the street and cornice are brick façades with evenly spaced sash windows. Further showcasing their combination of architectural styles is the attention to symmetry and use of terra cotta ornamentation to denote the storefronts at the street level. With financial and social pressures on the rise, only 5 of the original 10 buildings purposed in the original master plan were actually constructed. In the first two decades of the twentieth century, the Cobb, Douglas, Henry, Olympic, Skinner, Stimson, Stuart, and White buildings were constructed within the area of the Metropolitan Tract. The Cobb, White, Henry, Stuart, and Douglas buildings were the five buildings represented in the original plans for the Tract. The 8 buildings constructed stood as the foundation for the iconic Seattle skyline as we know it today; however, in the 1970s, five of these buildings in the Tract - the Douglas, Henry, Stimson, Stuart, and White buildings - were torn down to make way for a more modern development known as Rainier Square.¹⁵ The design of Rainier Square would feature Minoru Yamasaki's notorious Rainier Bank Tower, as well as Rainier Square Mall, a controversial shopping center also designed in part by Yamasaki. Rainier Square Mall

was developed to make downtown Seattle competitive with its suburbs, a common practice in urban development in the 1970s.¹⁶



Fig. 2, Original Plan of the Metropolitan Tract, Metropolitan Tract, Seattle, WA, 1910. Source: University of Washington's Special Collections. <https://www.lib.washington.edu/specialcollections/collections/exhibits/site/metro>

On the Northwest corner of Fourth Avenue and University Street, one remaining building constructed in the original style of the Metropolitan Tract remains: The Cobb Building. The Cobb is an all-encompassing example of the initial building plans for the Metropolitan Tract. The Cobb, an 11-story structure symmetrical in design and ornamented at the base and cornice with terra cotta detailing, matches the original combination of Beaux-Arts and Chicago School architectural styles. Beyond the architectural features of the

building, The Cobb was one of the first high-rise structures in Seattle, and possibly the West, to be designed for a single-professional practice such as medical and dental offices. It maintained this function up until 2005. Today, the Cobb Building is a sought-after apartment complex in downtown Seattle.

Cultural and Historical Significance

"In the years to come there are sure to be many expressions of regret that this old 'cradle' of the University of Washington was allowed to be torn down and destroyed."¹⁷

-Edmond S. Meany, Metropolitan Bulletin, March 12, 1910

The demolition of the White, Henry, Stuart, and Stimson buildings in the 1970s disappointed many of the local residents of Seattle. The design of Rainier Square Mall was especially upsetting to the people who wanted to preserve the four structures constructed with the original design intent of the Metropolitan Tract plan. Rainier Square Mall was created to emulate the designs of suburbia, attempting to make downtown Seattle competitive with its suburbs. However, this created a mishmash of low-profile "architectural" styles, which contrasted greatly from the original unified design of the Metropolitan Tract.

Being one of the few remaining buildings of the Metropolitan Tract, and the only remaining building in the style of the original master plan, the Cobb Building has since become a symbol of this development and of early Seattle design. With the exterior of the Cobb

Building having remained mostly unchanged over the past 90 years, it has preserved a part of Seattle's built environment that has almost entirely disappeared. Though it still stands today, the Cobb Building faced the same 1970s threat of demolition as other structures on the Metropolitan Tract. Each of the buildings on the Metropolitan Tract, including the five buildings torn down to make way for new developments, faced a debate about whether city landmark protection should extend to these properties. All buildings were still owned by the University of Washington's property management agency, Unico Properties. Unico Properties is owned by the state of Washington; it was ultimately decided that these properties could not be landmarked because of their tie to the state. This ultimately led to the demolition of multiple buildings on the Tract.

During this time, Seattle also saw a growing support of Historic Preservation within the community, and notable renovations such as Pike Place Market and Pioneer Square attracted more funding to preserving historically and culturally iconic buildings. The plan was to demolish the Cobb Building and nearby Skinner Building, both of which were office buildings that still generated revenue for the property owners. After the lack of community support for the demolition of the previous buildings and because the Cobb and Skinner Buildings continued to contribute to the local economy, they remained standing in order to avoid worse press. Because of the Cobb Building's importance as a representative of the Metropolitan Tract, it was placed on the National Register of Historic Places in 1984, giving it more validity as a vital building to Seattle's urban fabric.¹⁸



Fig. 3, Howells & Stokes, Exterior showing Native American Chief Cartouches, The Cobb Building, Seattle, WA, 1910.

Beyond the Cobb Building's position as a representative of the Metropolitan Tract, specific details in the design of the building are also significant to the history and culture of Seattle. Craftsmen Victor Schneider created a stylized version of a Native American chief's face within the cartouches of the Cobb Building. Seattle, developed on Duwamish land and named after tribal Chief Si'ahl, faced rapid change when white populations began to settle in the areas around the Puget Sound in the 1850s. Becoming a center of trade, the new white settlers would soon take over this land, and the Indigenous

people of Washington State would not be able to stop the changes brought by Europeans at such an accelerated rate. Descendants of the Duwamish people still live in the Seattle area, but much of their land was taken over by white settlers in the nineteenth century. The cartouches, originally designed by a white craftsman, are a reminder of a less pleasant side of Seattle's history, one where a group of people took over land already occupied by another. The preservation of the faces on the Cobb Building, as well as the one's salvaged from the other demolished buildings of the Metropolitan Tract, serve as an important reminder of Seattle's past.¹⁹

To maintain relevancy in downtown Seattle, the Cobb Building was renovated into luxury apartments by Unico Properties in 2005. At this point, urban developers began to realize that, to make downtown Seattle competitive with its suburbs, it did not need to emulate the tenets and aesthetics of suburbia. Instead, it needed to embrace dense, downtown living, which in turn would make the building more attractive and sustainable. The desire to live in a downtown apartment, especially one with history and character, began to grow, while offices, especially in the dental or medical fields, began to desire more modern and updated spaces. It made financial sense for the Cobb Building to become housing for residents of Seattle. Keeping people within the heart of the city, as opposed to living in the suburbs, promotes a livelier and more vibrant downtown, making the Cobb Building increasingly important to Seattle's culture and urban environment.

The Cobb Building represents an era of Seattle's history and built environment that has almost completely disappeared. With the demolition of nearly the entirety of the Metropolitan Tract to make room for modern developments causing a controversy between developers and the citizens of Seattle, the desire for the Cobb Building to remain standing became increasingly important to the community. From details in the overall design of the Cobb Building being reminiscent of Seattle's past, to the Cobb Building being renovated into apartments in order to bring more residents and activity into downtown Seattle, the Cobb Building represents the importance of historical context to the people of Seattle. This illustrates that the cultural significance of a building is vital to its sustainability.

What Makes it Sustainable?



Fig. 4-5, Gardens around Seattle revealing the city's dedication to sustainability, Seattle, WA, 2021.

Environmental sustainability is incredibly valued by communities throughout the Pacific Northwest, and Seattle is no exception. As Seattle is a city that is focused on creating a more sustainable

future, the implementation of green design strategies being into the Cobb Building reflects this facet of Seattle's identity and culture. The 2005 renovation of the Cobb Building implemented environmentally friendly design that would ultimately earn the building LEED Silver certification from the United States Green Building Council. The fact that this renovation was part of the preservation of a historic structure granted points towards the Cobb Building's certification, but the implementation of more modern functionality is what truly brings the Cobb Building to a level of environmental sustainability valued by the community. During the renovation of the building, 95% of construction waste was recycled, with many items being reused during construction. In addition to recycling of construction waste, there was a great focus on using recycled materials in the construction/renovation of the Cobb Building, including wallboard, insulation, metal, and ceiling tiles. The indoor air quality is also made cleaner by the integration of low VOC finishes, such as paints, adhesives and sealants, carpets, and composite wood. The implementation of a heat system that reduces the spread of allergens, as well as the installation of energy efficient lavatory fixtures and dual flush toilets, also greatly reduce the impact of the Cobb Building on the environment. These features not only tick boxes for LEED certification but also make the Cobb Building a place that people will want to live in and ultimately preserve for years to come.²⁰

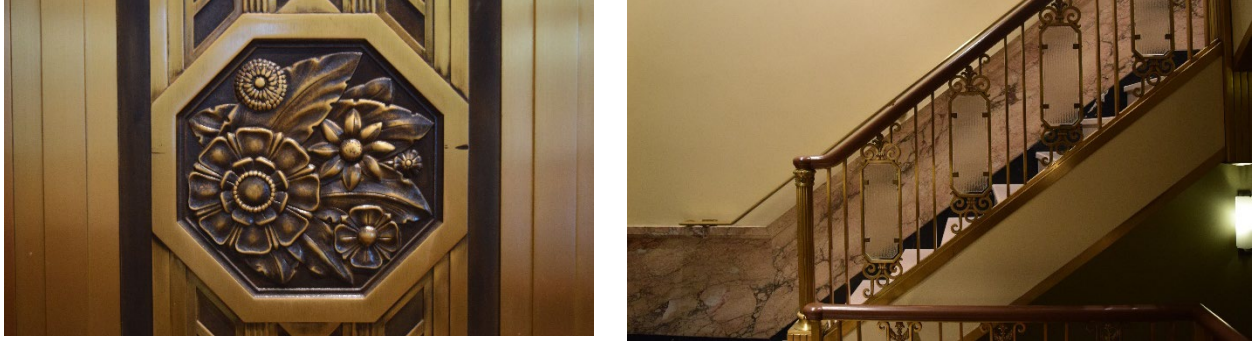


Fig. 6-7, Howells & Stokes, Interior details of the Cobb Building, The Cobb Building, Seattle, WA, 1910.

The Cobb Building's ability to sustain through years of development throughout Seattle became increasingly apparent when I interviewed with Unico Properties Assistant Property Manager Stephanie Cain. Before anything else, she made it clear that the Cobb Building was not the only surviving building on the Metropolitan Tract, but the only surviving building of its kind. This information is pertinent, showing that the Metropolitan Tract is still influential in the urban fabric of downtown Seattle and that most of the original structures are lost. Both of us noted that the fact that the Cobb Building is still standing is an incredible feat in and of itself. When discussing the programmatic change of the Cobb Building from office spaces to luxury apartments, we also agreed that the ability for the Cobb Building to adapt to whatever the current needs of the city are adds significantly to its sustainability.

I started the conversation by asking Stephanie Cain what impact she believes the Cobb Building has had on downtown Seattle, and she provided an answer that reaffirmed my opinions on the Cobb building. She provided an answer that reaffirmed my opinions on the Cobb

Building, stating that, "in my personal opinion, I believe that preserving historic buildings in the downtown core is essential to preserving the history of Seattle."²¹ Preserving the Cobb Building is vital to retaining the history of Seattle and maintaining the Cobb Building will only becoming increasingly more important with time. Because preservation is key to sustainability, I also asked Stephanie Cain if she believes that the historical significance of the Cobb building adds to its sustainability, and if she thinks that the people of Seattle would care to maintain the structure if it was not so historically and culturally significant. She responded, "I would hope so. The architectural features are still fascinating regardless of historical status."²² Though it may not be entirely what she intended with her answer, she provided insight into the cultural significance of the features of the Cobb Building. The details in the design, such as the cartouches featuring the head of a stylized Native American chief, the terra cotta ornamentation at the street level and cornice, and the large sash windows, all work together to provide considerable intrigue to the building. This illustrates that the sustainability of a structure is largely reliant on how the public feels about it.

This importance is also reinforced by my next question to Cain, when I asked her whether she believes that the Cobb will survive for another 100 years. She was succinct and confident with her answer, stating, "I do believe it will survive another 100 years. It is well maintained and has had seismic upgrades."²³ The seismic upgrades she is referring to were part of the 2005 renovation, when Unico Properties implemented a design that brought the Cobb to modern earthquake-code

requirements while also preserving the graceful beauty of the Cobb Building. A reinforced-concrete tower separate from the original structure was tied to the existing building, providing the strength it would need to combat the twisting forces of an earthquake. The new structural elements allow for the Cobb Building to stand safely and sustain for decades to come. Her answer also reveals that the structure itself, even with strength to withstand earthquakes and other natural disasters, is not the only way for a building to sustain. The Cobb Building is well maintained, and this is the case because the people of Seattle desire to maintain it. After the controversy of the demolition of the other buildings on the Metropolitan Tract, preserving the Cobb Building garnered increasing support from the community. This support and maintenance of the Cobb Building proves its cultural significance as well as its sustainability.

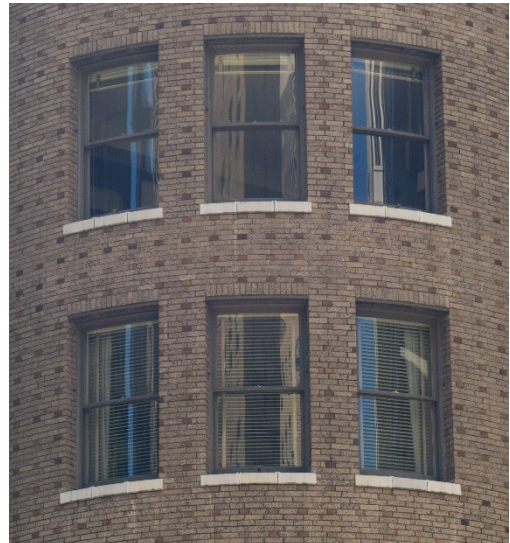


Fig. 8-9, Howells and Stokes, exterior details of the Cobb, The Cobb Building, Seattle, WA, 1910.

Conclusion

The Cobb Building is integral to the urban fabric of downtown Seattle. It stands as an icon of a history that is almost entirely demolished. Research into the history of the Cobb Building, observations of the building within its context, and conversations with people who are closely tied to the building reveal its enduring status in Seattle and clarifies why it has sustained throughout the years. Citizens of Seattle value historic preservation and sustainability and want to maintain a lively downtown. While important, the recent environmentally conscious renovation of the building has not been the primary factor contributing to why the Cobb Building has been able to sustain for over a century. The citizens of Seattle wanted to see the building remain a part of the urban fabric because of its historical and cultural significance. The importance of place within the community and urban fabric allows the Cobb Building to continue to sustain through years of growth and development.

Trinity Church



Fig, 1, H.H. Richardson, Exterior of Trinity Church, Trinity Church, Boston, MA, 1872.

Introduction

Designed by Henry Hobson Richardson and a prime example of the American architectural style Richardsonian Romanesque, Trinity Church is not just an iconic building of Boston; it is an iconic building of the United States. Located at Copley Square in Boston, Trinity Church is part of the Episcopal Diocese of Massachusetts and is a sacred space amid the hustle and bustle of city life. Since 1885, Trinity Church has been viewed as one of the most important buildings in the United States. It received National Historic Landmark status in 1970, establishing the cultural and historical significance of Trinity

Church not only to Boston but also the United States as a whole. Trinity Church's prime location in Copley Square, status as a symbol of American architecture, and ability to maintain cultural relevancy by serving the community has allowed for Trinity Church to sustain through years of growth and development in Boston and the United States.

Historical Development

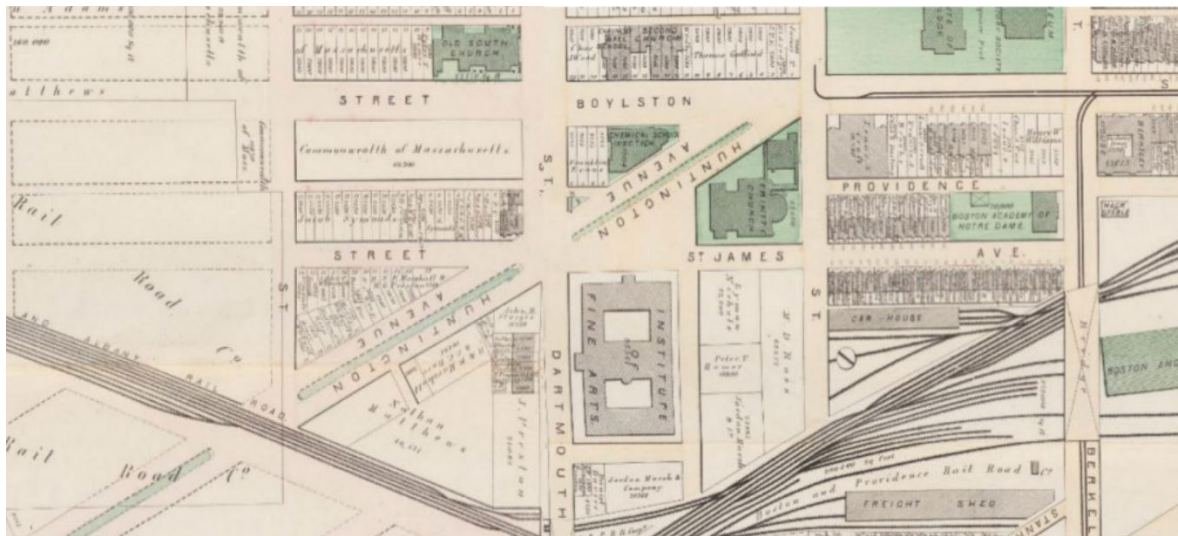
The capital of Massachusetts and one of the most distinct and lively cities in the United States, Boston is an epicenter of historical and cultural development within the Northeast and country as a whole. Founded in 1630 and originally a Puritan town, Boston would eventually be the birthplace of numerous historical figures, the location of major historical events, and the grounds for a distinctive urban fabric featuring various renowned buildings, plazas, and other built forms, including Boston Common. Established in 1634 by the Puritan community that founded Boston, Boston Common is recognized as the oldest public park in the United States. The townspeople of Boston felt they needed a large public space to serve the community; they voted that every household be taxed in order to buy William Blackstone's farm to use as a community common. Since its conception, Boston Common has served the Boston community in a number of ways. From the seventeenth century to early nineteenth century, Boston Common served as space for agricultural uses, such as cattle farming, as well as public and military uses, from military training on the Common to public hangings and whippings. In addition to the

agricultural, military, and civic uses of the Common, recreational use was also frequent during the early days. Recreational activities would eventually dominate the Common. Because of the history and significance of Boston Common to the people of Boston, it has become an exemplar of conservation movements throughout Massachusetts and the United States. Time and again Bostonians prove their vigilance to maintaining Boston Common, opposing destructive developments on the Common such as a trolley system. Throughout its history, Bostonians have used and improved the Common, making it a popular public meeting space as well as a space for leisure and relaxation within the city. The Boston Common is integral to the history of city planning in Boston, emphasizing the importance of public space to Bostonians.²⁴

With Bostonians valuing conservation and quality public spaces since the founding of Boston, it may be difficult to believe that Copley Square, which contains some of Boston's most iconic works of architecture, is not a part of the city's original plans. Despite Copley Square being seemingly integral to Boston's city planning, a large change in Boston's urban development had to occur before Copley Square became what it is today. Following a significant boom in population in the early nineteenth century, development and redevelopment of Boston became paramount. The developments were privately funded and focused on housing the increasingly growing population, and city planning centered around designing new and improving existing residential areas. These early-nineteenth century developments would become particularly influential in how Boston would grow as a metropolitan area, but a second population boom in the late-

nineteenth century would bring a shift to how the city tackled urban development. Instead of being privately funded, city planning projects were now in the hands of the public sector. With Boston's city government now in control of city planning, projects were focused on creating a transit system, public works projects, and developments to landscapes and parks. Among of the most notable of these projects was the development of Copley Square in the heart of Boston.

At the intersection of Boston's South End and Back Bay districts, the location of Copley Square was a jumble of colliding street grids. In the mid-nineteenth century, the area was blend of seven different parcels of land, all under different ownership and creating a muddled combination of different plots of land and alleyways. This was the condition of Copley Square when Trinity Church was constructed in the 1870s, and the iconic nature of Trinity Church would soon call for a change in the layout of Copley Square.²⁵



Fig, 2, Old Plan of Copley Square, Copley Square, Boston, MA, 1872. Source: <http://web.mit.edu/chenxing/www/time.html>.

Trinity Church was designed by Henry Hobson Richardson, a Louisiana native and graduate of Harvard University. Lively, generous, and charming, Henry Hobson Richardson, more often referred to as H.H. Richardson, would eventually change the course of American architectural history. Though his architecture career would only last two decades, those twenty years would bring innovative, profound works of architecture that would influence the design field for over a century. In his early career, his charisma and connections from college would bring him many design commissions, but these works were not particularly remarkable. Though his career started off with a degree of mediocrity, he would soon find his place as an American icon.

The first glimpses of Richardson's unique style occurred in his design of the Brattle Square Church in Boston. Richardson adopted the Romanesque style with the development of this church, incorporating deep Roman arches with heavy masonry. H.H. Richardson continued to design in a Romanesque style, and the Richardson Olmstead Complex in Buffalo, New York would be the first building to showcase his distinct design style, referred to as Richardsonian Romanesque. With Richardson continuing to find his voice and distinctive architectural language, his name and style would become increasingly renowned and respected with his design for Trinity Church in Boston, a famous and celebrated example of Richardsonian Romanesque style. Richardson brought a new and fresh perspective to ecclesiastical architecture in the United States with his design for Trinity Church, and he would become one of

the first architects to bring international recognition to American design.²⁶



Fig, 3, H.H. Richardson, Exterior Courtyard of Trinity Church, Trinity Church, Boston, MA, 1872.

Cultural and Historical Significance

“Richardson was the grand exteriorist.”

- Frank Lloyd Wright

The first major work of Henry Hobson Richardson, Trinity Church represents a newly American architectural style: Richardsonian Romanesque. H.H. Richardson found architectural inspiration in the Romanesque style buildings he saw when visiting southern France. He

was also inspired by medieval revival styles made popular by renowned designers William Morris, John Ruskin, and others. Richardson's unique manner of combining elements from these architectural movements made for a more personal and unique style of architecture. The primary characteristic of a Richardsonian Romanesque building is its sense of grounded heaviness. This feeling is created by architectural features such as rock-faced stone, contrasting colors, scarce fenestration, and, most distinctly, the round roman arches that would create deeply recessed openings. Trinity Church is one of the first buildings designed by H.H. Richardson to fully embody the Richardsonian Romanesque style, and the construction of Trinity Church changed the course of American architectural history. For over a century, Trinity Church has been recognized as one of America's top ten buildings. In 1885, Trinity Church was voted the most important building in the United States, and it is the only building from the original 1885 list to still be included in the American Institute of Architect's current top ten. The importance of Trinity Church to the development of American architecture also granted it National Historic Landmark status in 1970, with efforts to preserve the building continuing to this day.²⁷

The cultural and historical significance of Trinity Church is further enhanced by the site that it sits upon. Nearby, Brattle Square Church, one of H.H. Richardson's earlier church designs in Boston, is the first building that features Richardsonian Romanesque characteristics. Though this building is monumental in Richardson's career and the development of a distinctly American architectural

style, it is often overlooked and overshadowed by Richardson's significantly more renowned Trinity Church. Though this could be attributed to its full embodiment of the Richardsonian Romanesque style, it is more likely that Trinity Church has received so much more recognition because of its location in Copley Square. Copley Square was not a part of the original city plans of Boston, but the growing number of iconic buildings in this area called for an urban redesign. Existing at the collision of two different street grids, the area was known as Art Square until the City of Boston designated the spot as Copley Square in 1883. The City of Boston continued to acquire the parcels of land that make up Copley Square, and without the city's intervention, the square today would be fill with large towers, blocking the view of the Boston Public Library, Trinity Church, and other significant works of architecture. With the development of Trinity Church impacting the development of Copley Square, and the development of Copley Square providing a site that enhances the cultural significance of Trinity church, the mutually beneficial relationship between the two acts as a catalyst to the transformation of this urban square to a cultural hub in Boston. Trinity Church, the Boston Public Library, and the Hancock Tower are some of the most architecturally significant buildings in Boston, and their existence in Copley Square further cement this area as a cultural hub in Boston.



Fig. 4, proposed plan of Copley Square, Copley Square, Boston, MA, 2021. Source: <https://www.bostonglobe.com/2021/04/29/business/heres-look-copley-square-redesign-plan/>.

Trinity Church not only stands as an icon of a distinctly American architectural style but also continues to function as a church with the welcoming congregation of the Episcopal Diocese of Massachusetts. Providing a space of worship for locals, tourists, faithful Christians, questioners, and people of different cultural and ethnic backgrounds allows Trinity Church to support and be supported by the community. Trinity Church's website states that, "thriving outreach ministries have been as much a part of Trinity's DNA as its architecture, preaching, teaching, and pastoral care," indicating that the congregation of Trinity Church has always sought out to serve the local community.²⁸ Striving for peace, justice, and respect among all people is a part of the historical mission of Trinity Church. The congregation at Trinity Church has continued its dedication to serving

the community, providing quality education to underserved communities, working to relieve hunger and homelessness throughout the Boston metropolitan area, and offering economic and social support to those in need.

During my visit to Trinity Church the interior was closed to the public due to COVID-19 restrictions. Though there were no church services or interior tours of the church during this time, Copley Square Park still provided services and community activities. From May to November, Copley Square Farmers Market, Boston's largest farmers market, is open on Tuesdays and Fridays. This farmers market offers a wide selection of local produce and meat in the heart of Boston's Back Bay district. Community events and activities held at Copley Square Park expose tourists and locals alike to Trinity Church. Though visiting Trinity Church is seen as staple in Boston tourism, without services or tours of the interior many people have stopped making the visit to Trinity Church due to the pandemic. Creating a space that maintains a lively atmosphere and significance to the community allows for Trinity Church to remain an icon, despite the recent COVID-19 pandemic. Though I was unable to tour the interior of Trinity Church during my trip, I still felt the church's presence as I explored and took note of the building's context and exterior elements. The spirit of Trinity Church remains strong.



Fig. 5, H.H. Richardson, Weekly farmers market in front of Trinity Church, Trinity Church, Boston, MA, 1872.

What Makes it Sustainable?

Trinity Church is one of the United States' best examples of how the cultural and historical significance of a building can be the key factor in its sustainability. Being the icon of an architectural style that is not just Bostonian but also representative of American architecture as a whole gives almost everyone a reason to want to preserve Trinity Church. H.H. Richardson's development of the Richardsonian Romanesque style is fully realized and recognized with his design of Trinity Church, and the church itself acts as a marker for one of the first architectural styles developed in the United States to achieve international praise. This granted Trinity Church National Historic Landmark status, as well as a spot on the list of top ten most important buildings in the United States. Trinity Church sustains the test of time because it is considered as historically and

culturally significant enough to put in the time and effort to maintain and preserve it, to the point that the City of Boston changed its city plans to better accommodate the church.

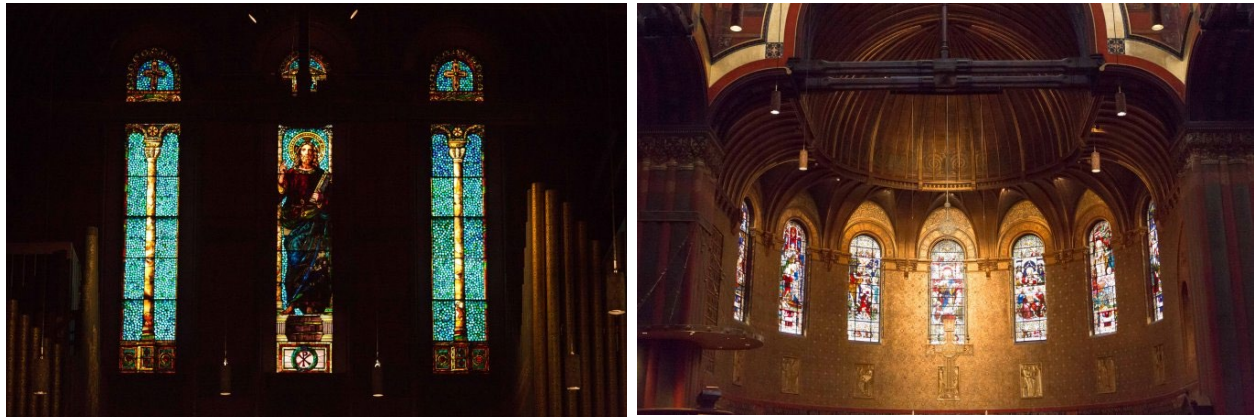


Fig. 6-7. H.H. Richardson, interior views of Trinity Church, Trinity Church, Boston, MA, 1872. Source: <https://www.trinitychurchboston.org/art-and-architecture>.

Not only is Trinity Church a symbol of the Richardsonian Romanesque style, but it still functions as a church, with the core values of Trinity's Episcopal congregation maintaining the social sustainability of the building. One of the builders of Trinity Church, Phillips Brooks, was the Rector from 1869-1891 and is noted as one of the greatest American preachers of the nineteenth century. The congregation of Trinity Church has always strived to serve the community of Boston, and it is valued as a church even without its architectural significance. Trinity Church continues its status as a gathering space in Boston, welcoming all to tour the church and worship with the congregation, encouraging people from all backgrounds to visit Trinity Church. In addition, the congregation of Trinity Church gives back to Boston, striving to support every member of the community the best they can. The fact that Trinity Church has maintained its original function as a place of worship and community

has made it more socially sustainable, with people supporting and visiting the church not only for its art and architecture but also because of the people that make Trinity Church what it is today.

Even when the interior of Trinity Church was closed to the public due to the threat of COVID-19, community events and activities still occurred in Copley Square Park, with the most notable and recurring being the Copley Square Farmers Market. Occurring twice a week from May to November, Copley Square Farmers Market promotes sustainable buying and eating habits for the people of Boston, with local farmers selling their crops and meat. Buying local food is environmentally friendly, with each item having a significantly smaller environmental impact than imported goods, and is largely considered better for one's health. Trinity Church acts as a backdrop for the Copley Square Farmers Market, and it is indicative of a culture that values the environment and sustainability.

Though Trinity Church is not LEED certified by the U.S. Green Building Council, a 2002-2006 revitalization effort for the church by the architecture, planning, and preservation firm Goody Clancy implemented sustainable design strategies into the already beloved building. This allows the original structure of Trinity Church, as well as its expansion, to meet modern standards of green building strategies while still preserving its historical and cultural significance. Goody Clancy's efforts integrated and expanded a highly efficient mechanical system to accommodate the mechanical loads of the building. The mechanical loads now rely on a new geo-exchange system,

making Trinity Church more environmentally friendly. The work by Goody Clancy provides a starting point for more sustainable strategies to be implemented into the building, and continual efforts to integrate these strategies and maintain Trinity Church will allow the building to stand for centuries more. The cultural and historical significance of Trinity Church is why it has remained standing for as long as it has, but Goody Clancy's addition and implementation of environmentally friendly design provides a starting point for the future of sustainability of Trinity Church.²⁹



Fig. 8-10, H.H. Richardson, Exterior details of Trinity Church, Trinity Church, Boston, MA, 1872.

Conclusion

Trinity Church has remained an icon of United States art and architectural history, with its sustainability significantly enhanced by its significance to its local community. There is no argument that

Trinity Church is culturally and historically significant in a broad sense, but what truly sets Trinity Church apart from other buildings of this status is its ability to maintain relevancy to the local community. Trinity Church's involvement in the local community, as well as its architectural importance, has allowed it to sustain through years of growth and development.

The Sustainability of Culture and History

An Investigation of the Relationship Between Historic Preservation and Sustainability



Fig. 1, H.H. Richardson, exterior view of courtyard, Trinity Church, Boston, MA, 1877.

Conclusion

Through this investigation of the important relationship between historical preservation and sustainability, consistent qualitative factors continued to appear, revealing the intrinsic connection between cultural significance and a building's ability to sustain. Status within the community, place within the urban fabric, and ability to adapt and maintain cultural relevancy emerged as themes in each of the four buildings I studied. Examining each building within the framework of historical development, cultural significance, and sustainability provided a metric of comparison for buildings, and it revealed the individual significance of each building.

The Colorado State Capitol Building has sustained because of its civic importance, acting as a centerpiece of political change and growth within Colorado. The Armory Annex has sustained because of its importance to the community, being a hub of community gathering within Portland. The Cobb building has sustained because of the importance of place, being integral to the downtown fabric of Seattle. Trinity Church has sustained because of its architectural importance, representing a distinctly American style, making it a place people want to visit and preserve.

Each of these buildings reveal something unique about our culture; studying them provides a wide scope of how cultural and historical significance play an integral role in the sustainability of a building.

Endnotes

1. Carl Elefante, "Existing Buildings: The Elephant in the Room," *Architect*, October 1, 2018, https://www.architectmagazine.com/aia-architect/aiaperspective/existing-buildings-the-elephant-in-the-room_o.
2. Caitlin Anne Milligan, "Gold, Iron, and Stone: The Urban and Architectural History of Denver, Colorado" (dissertation, 2015), 1-94.
3. William H. Wilson, *Denver's Civic Center: Park Master Plan*. Accessed October 2021. https://www.denvergov.org/content/dam/denvergov/Portals/747/documents/planning/master_plans/CivicCenterPark-MasterPlan-2005.pdf, 5.
4. *Denver's Civic Center: Park Master Plan*. Accessed October 2021. https://www.denvergov.org/content/dam/denvergov/Portals/747/documents/planning/master_plans/CivicCenterPark-MasterPlan-2005.pdf, 1-10.
5. Charles Mulford Robinson, *Denver's Civic Center: Park Master Plan*. Accessed October 2021. https://www.denvergov.org/content/dam/denvergov/Portals/747/documents/planning/master_plans/CivicCenterPark-MasterPlan-2005.pdf, 6.
6. VISIT DENVER STAFF, "Only in Denver: Rose Onyx at Colorado State Capitol: Visit Denver Blog," *Visit Denver* (Visit Denver, April 20, 2018), <https://www.denver.org/blog/post/rose-onyx/>, n.p.
7. Jared Foretek, "Hidden for 50 Years, Colorado Capitol's Beauty Is Revealed Again: National Trust for Historic Preservation," *National Trust for Historic Preservation*, May 17, 2017, <https://savingplaces.org/stories/hidden-50-years-colorado-capitol-beauty-revealed-again#.Yb4Wwr3MI2x>, n.p.
8. "Colorado State Capitol," U.S. Green Building Council, accessed December 18, 2021, <https://www.usgbc.org/projects/colorado-state-capitol>, n.p.
9. Bart King, *Voices of the Armory: A Chronicle of the Transformation of a 19th Century Icon into a 21st Century Theater* (Portland, Oregon: Friends of the Armory, 2006), 8-15.
10. John Terry, *Voices of the Armory: A Chronicle of the Transformation of a 19th Century Icon into a 21st Century Theater* (Portland, Oregon: Friends of the Armory, 2006), 45.
11. "About the Armory," *Portland Center Stage*, February 4, 2021, <https://www.pcs.org/about/about-the-armory>, n.p.
12. Bob Kingston, *Voices of the Armory: A Chronicle of the Transformation of a 19th Century Icon into a 21st Century Theater* (Portland, Oregon: Friends of the Armory, 2006), 17.

13. Stuart Cowan, *Voices of the Armory: A Chronicle of the Transformation of a 19th Century Icon into a 21st Century Theater* (Portland, Oregon: Friends of the Armory, 2006), 123.
14. "Brief History of Seattle," *Brief History of Seattle - CityArchives*, accessed December 18, 2021, <https://www.seattle.gov/cityarchives/seattle-facts/brief-history-of-seattle>, n.p.
15. "Cobb Building--Seattle, Washington: A National Register of Historic Places Travel Itinerary," *National Parks Service (U.S. Department of the Interior)*, accessed December 18, 2021, <https://www.nps.gov/nr/travel/seattle/s17.htm>, n.p.
16. Feliks Banel, "Hidden Layers of History Uncovered by Demolition of Rainier Square," *MyNorthwest.com*, January 24, 2018, <https://mynorthwest.com/878751/hidden-layers-rainier-square/>.
17. "Ix. The Metropolitan Tract (the Original Campus)," *IX. The Metropolitan Tract (the original campus) - UW Libraries*, accessed December 18, 2021, <https://www.lib.washington.edu/specialcollections/collections/exhibits/site/metro>, n.p.
18. "The Cobb Building," *The cobb building*, accessed December 18, 2021, <https://www.u-s-history.com/pages/h3177.html>, n.p.
19. Walt Crowley, "Those Indian Heads," *Seattle's Cobb Building is dedicated on September 14, 1910. (Unico)*, accessed December 18, 2021, <https://www.historylink.org/File/7872>, n.p.
20. "The Cobb Apartments Seattle - Past and Present," *The Cobb*, February 24, 2016, <https://cobbapartments.com/past-present/>, n.p.
21. Stephanie Cain, Interview with Jacquelin Lee. Email interview. Seattle, July 6, 2021.
22. Stephanie Cain, Interview with Jacquelin Lee. Email interview. Seattle, July 6, 2021.
23. Stephanie Cain, Interview with Jacquelin Lee. Email interview. Seattle, July 6, 2021.
24. "Boston Common (U.S. National Park Service)," *National Parks Service (U.S. Department of the Interior)*, accessed December 18, 2021, <https://www.nps.gov/places/boston-common-ma.htm>, n.p.
25. "The Creation of Copley Square," *Friends of Copley Square Copley Square Comments*, accessed December 18, 2021, <https://friendsofcopleysquare.org/copley-history/>, n.p.
26. James F. O'Gorman, *H.H. Richardson: Architectural Forms for an American Society* (Chicago: Univ. of Chicago Pr., 1990), 3-27.

27. "History," History | Trinity Church Boston, December 1, 1970, <https://www.trinitychurchboston.org/about/history>, n.p.
28. "Serve," Serve | Trinity Church Boston, accessed December 18, 2021, <https://www.trinitychurchboston.org/serve>, n.p.
29. "Architecture, Preservation and Planning That Inspire Transformation," Goody Clancy Sustainable Preservation Project Category, accessed December 18, 2021, <https://www.goodyclancy.com/project-category/sustainable-preservation/>, n.p.

Bibliography

- "About the Armory." Portland Center Stage, February 4, 2021.
<https://www.pcs.org/about/about-the-armory>.
- "Architecture, Preservation and Planning That Inspire Transformation."
Goody Clancy Sustainable Preservation Project Category. Accessed
December 18, 2021. <https://www.goodyclancy.com/project-category/sustainable-preservation/>.
- Banel, Feliks. "Hidden Layers of History Uncovered by Demolition of
Rainier Square." MyNorthwest.com, January 24, 2018.
<https://mynorthwest.com/878751/hidden-layers-rainier-square/>.
- "Boston Common (U.S. National Park Service)." National Parks Service.
U.S. Department of the Interior. Accessed December 18, 2021.
<https://www.nps.gov/places/boston-common-ma.htm>.
- "Brief History of Seattle." Brief History of Seattle - CityArchives.
Accessed December 18, 2021.
<https://www.seattle.gov/cityarchives/seattle-facts/brief-history-of-seattle>.
- "The Cobb Apartments Seattle - Past and Present." The Cobb, February
24, 2016. <https://cobbapartments.com/past-present/>.
- "Cobb Building--Seattle, Washington: A National Register of Historic
Places Travel Itinerary." National Parks Service. U.S. Department
of the Interior. Accessed December 18, 2021.
<https://www.nps.gov/nr/travel/seattle/sl7.htm>.
- "The Cobb Building." The cobb building. Accessed December 18, 2021.
<https://www.u-s-history.com/pages/h3177.html>.
- "Colorado State Capitol." U.S. Green Building Council. Accessed
December 18, 2021. <https://www.usgbc.org/projects/colorado-state-capitol>.
- "The Creation of Copley Square." Friends of Copley Square Copley
Square Comments. Accessed December 18, 2021.
<https://friendsofcopleysquare.org/copley-history/>.
- Crowley, Walt. "Those Indian Heads." Seattle's Cobb Building is
dedicated on September 14, 1910. Unico. Accessed December 18,
2021. <https://www.historylink.org/File/7872>.
- Denver's Civic Center: Park Master Plan \$. Accessed October 2005.
[https://www.denvergov.org/content/dam/denvergov/Portals/747/docume
nts/planning/master_plans/CivicCenterPark-MasterPlan-2005.pdf](https://www.denvergov.org/content/dam/denvergov/Portals/747/documents/planning/master_plans/CivicCenterPark-MasterPlan-2005.pdf).

- Elefante, Carl. "Existing Buildings: The Elephant in the Room." Architect, October 1, 2018. https://www.architectmagazine.com/aia-architect/aiperspective/existing-buildings-the-elephant-in-the-room_o.
- Foretek, Jared. "Hidden for 50 Years, Colorado Capitol's Beauty Is Revealed Again: National Trust for Historic Preservation." National Trust for Historic Preservation, May 17, 2017. <https://savingplaces.org/stories/hidden-50-years-colorado-capitol-beauty-revealed-again#.Yb4Wwr3MI2x>.
- "History." History | Trinity Church Boston, December 1, 1970. <https://www.trinitychurchboston.org/about/history>.
- "Ix. The Metropolitan Tract (the Original Campus)." IX. The Metropolitan Tract (the original campus) - UW Libraries. Accessed December 18, 2021. <https://www.lib.washington.edu/specialcollections/collections/exhibits/site/metro>.
- Lozano, Norris, Bart King, Chris Coleman, Stuart Cowan, and Bob Gerding. *Voices of the Armory: A Chronicle of the Transformation of a 19th Century Icon into a 21st Century Theater*. Portland, Oregon: Friends of the Armory, 2006.
- Milligan, Caitlin A., "Gold, Iron, and Stone: The Urban and Architectural History of Denver, Colorado" (2015). Graduate School of Architecture & Urban Design Theses. 2. https://openscholarship.wustl.edu/samfox_arch_etds/2.
- O'Gorman, James F. *H.H. Richardson: Architectural Forms for an American Society*. Chicago: Univ. of Chicago Pr., 1990.
- "Serve." Serve | Trinity Church Boston. Accessed December 18, 2021. <https://www.trinitychurchboston.org/serve>.
- STAFF, VISIT DENVER. "Only in Denver: Rose Onyx at Colorado State Capitol: Visit Denver Blog." Visit Denver. Visit Denver, April 20, 2018. <https://www.denver.org/blog/post/rose-onyx/>.