AES Audio Engineering Society - Pacific Northwest Section

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Marion Oliver McCaw Hall

A Tour

With

Richard Erwin

Seattle Center Sound Department

Monday, November 17, 2003, 7:30pm

Directions and Map to Seattle Center

On the site of the old Seattle Civic Auditorium, newly transformed Marion Oliver McCaw Hall stands as the centerpiece of the performing arts community at Seattle Center. Join us at 7:30pm in the Nesholm Family Lecture Hall for a guided tour of the new facility.

Nesholm Family Lecture Hall
Marion Oliver McCall Hall
Seattle Center
Enter off Mercer Street just east of the skybridge.
7:30pm

N.B. For security reasons, you must arrive at the Nesholm Family Lecture Hall before 7:45pm. We will station someone at the doors until that time, after which time the doors will be locked and unattended.

A Bit of History

Originally constructed around 1929, the Civic Auditorium was home to the Seattle Symphony and various visiting artists. In 1956, the Civic Center bond issue was proposed and approved by voters to upgrade the Civic Auditorium into a performance space for the 1962 World's Fair. The bond issue provided $2.75 million to the Civic Auditorium for improvements to the exterior and public areas however no improvements were made to the mechanical, technical and backstage areas.

The architect for the remodeled hall, B. Marcus Priteca (1889-1972), also known as "Uncle Benny" or "Mr. Architect" is considered to be the Dean of American Theatre architects. During his career, he designed over 150 theaters and was the primary architect for the Pantages Theatre chain. In the Northwest, he designed Pantages Theatres in Seattle(1911) and Tacoma(1918), (the Seattle Pantages later renamed the Palomar Theatre), Coliseum(1916), Orpheum(1927), the Paramount(1929) Admiral(1938) Seattle Center Opera House(1962) and Portland Civic Auditorium(1968).

More about Benny Priteca

pstos.org cinematreasures.org historylink.org

The Seattle Center Opera House

In 1959 construction began to transform the aging Civic Auditorium into a 3,100-seat Opera House in preparation for the 1962 Seattle World's Fair. The remodeled hall was a fan-shaped room, with two balconies, seating about 3,100 persons. It had a three-channel (left/center/right) sound system that was the first of its kind in the country according to the acoustician, Paul Veneklasen. Priteca convinced Veneklasen to design and incorporate variable acoustics in the hall using movable shutters (tonal walls to the cognoscenti) that opened into additional absorption in the sidewalls, reducing the RT60 to a range more suited to speech.

In the late 1970s, the sound system was modified for increased output, improved coverage, and a mixing location created at the rear of the hall. The three-channel format again remained, but the high-frequency devices were moved to carriages that could be lowered for use. This was necessitated by an obstruction added by another user. A Yamaha PM-2000-24 became the FOH console The revamped hall served for nearly four decades as home of a revitalized Seattle Symphony and the new Seattle Opera and Pacific Northwest Ballet companies, but in the end, no amount of remodeling could disguise its inadequacies and accelerating deterioration.

Marion Oliver McCaw Hall

Under the leadership of then Mayor Paul Schell, plans were drawn up to rebuild the Opera House as part of a package of other Seattle Center improvements and new community centers. On November 2, 1999, Seattle voters approved $72 million in bonds, including $38 million dedicated to the Opera House, in anticipation of an additional $90 million in private and community contributions.

The former Arena was remodeled to become the Mercer Arts Arena so it could serve as an interim home for the Opera and Ballet during reconstruction of the Opera House. Bruce, Craig, John, and Keith McCaw of McCaw Cellular Communications gave $20 million to the project, the largest arts or cultural capital gift ever made in the region, to recognize their mother's lifelong arts support in the community. They named the hall after her -- Marion Oliver McCaw Garrison (Garrison is her current married name). The Kreielsheimer Foundation gave $10 million, and the first floor garden in the lobby is named the Kreielsheimer Promenade.

The architectural team for the new hall was LMN Architects, led by Owen Richards and Mark

Reddington. The $127 million refurbishment saved about 30 percent of the original building, part of that being the old ceiling. The rebuilding of the auditorium improved the sight lines for the audience by staggering the seats and steepening the rake (the angle of grade of the auditorium floor). To improve acoustics and to make the performance space more intimate, the hall's side walls were brought 30 feet closer together. The Opera House, although adequate for ballet and opera acoustics, had many weak spots in certain seating areas, and did not work well for symphonies performing on the stage. Jaffe Holden Acoustics of Norwalk, Connecticut, designed the acoustics.

Besides the new auditorium, McCaw Hall refurbishments include a five-story lobby with a floor-to-ceiling curved glass wall overlooking the Seattle Center and Mercer Street, an indoor garden on the main floor, state-of-the-art backstage technology, an improved backstage and orchestra pit, a new lecture hall, a coat check, a gift shop, and an indoor-outdoor café. Some heating, ventilation, wiring, and plumbing systems that dated back to the 1928 Civic Auditorium were replaced, and the new building has the latest in seismic safety and disabled patron access. The new hall also increased the number of women's restroom stalls from 35 to 90 -- a welcome relief.

In this latest remodel, the building's sound systems finally got the updates they deserved. The three channel format was preserved, but with multiple full-range systems covering the space for each channel, stage lip and balcony fill channels, a multitude of individually addressable surround speakers that can be used as individual effects speakers or as part of a 5.1 surround system, multiple subwoofers, and numerous backstage and lobby systems. A Yamaha PM1D with dual control surfaces serves as the FOH and monitor console.

Interesting Links

Anatomy of a renovation Demolition Crews Keep Danger At Bay At McCaw Hall, the Performance Begins Outside Bracing For A New Future A Breath of Fresh Air A Centerpiece for Seattle Center Mechanical Moxie Thumbnail History of Seattle Center Time Capsule Opened

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B. Marcus Priteca (1889-1971)

Marcus Priteca onsite at the Coliseum Theatre, c. 1916

Benjamin Marcus Priteca was born and raised in Scotland. He moved to the United States at a young age, and settled in Seattle after becoming an architect. He is widely regarded as one of the great theater architects in the United States, though he considered himself "just an old vaudeville architect." As such, Priteca was a devotee of the old-style theater interior--graceful curving balconies, sloping floors and good sight lines. "Seeing is hearing," he said, in partial explanation of his acoustical talents.

Priteca designed sixty major theaters and did many more minor theater jobs in cities from Vancouver, British Columbia and Winnipeg, Manitoba to Memphis, Tennessee and Los Angeles, California. He designed such theaters as the Pantages Theater in Tacoma, Washington, Pantages Theater in Seattle, the Coliseum Theatre in Seattle, the Mercy (Capitol) Theatre in Yakima, and the Hollywood Pantages in Los Angeles, where the Academy Awards were held for many years. Many of his most striking theaters still stand today, including the Pantages (Warnor's) Theatre in Fresno.

Coliseum Theatre, Seattle c.1917

Priteca was the personal architect to theater magnate Alexander Pantages, and designed all of Pantages' theaters between 1910 and 1929.

An inspiration for Seattle's Coliseum Theatre was Priteca's earlier Crystal Pool building (1914) at 2nd and Lenora. According to Historian Larry Kreisman, "Both buildings had high-relief, neoclassical facades fashioned of glazed terra cotta and corner entries with domes (now missing from both buildings)."

Crystal Pool, c.1915

After the silent movie era, Priteca designed several Art Deco houses including the 1942 nautical-theme Admiral Theatre on California Avenue SW in West Seattle. The Admiral was built on the site of the old Portola Theatre. This photo shows the front of the Admiral Theater in 1946. Moviegoers could see the main feature, "My Gal Sal," along with a newsreel on atomic power. The atomic bomb had ended World War II the year before.

Mr. Priteca also collaborated on the 1947 Art Deco 4th Avenue Theatre in Anchorage, Alaska.

Admiral Theatre, c.1946


June, 1967

Priteca designed more than 150 theaters in all, and he served as a consultant on the Seattle Opera House. He also worked on several synagogues and Longacres Race Track.

In his later years, Mr. Priteca had the unfortunate experience of witnessing the demolition of several of his masterpieces including the Seattle Pantages (Palomar) and Orpheum. He is shown here (left) making a champagne toast from a Louis XIV chair that once graced the Orpheum's Grand Lobby. This chair was later sold at auction along with other art objects. Marcus Priteca died in Seattle, Washington, in 1971.

Jewish Synagogue of Chevra Bikur Cholim designed by Marcus Priteca. Now operating as the Langston Hughes Center for the Performing Arts and listed in the National Registry as a historical landmark.

About this site

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Coliseum opens in Seattle on January 8, 1916.

On January 8, 1916, the Coliseum Theater, advertised as "the world's largest and finest photoplay palace," opens to capacity crowds. (Films, at this time, are called photoplays.) The new venue draws thousands of first-day patrons, some of whom must endure several hours lined up outside in a cold drizzle. Located at the northeast corner of 5th Avenue and Pike Street, the house is designed by renowned theater architect and Seattle resident B. Marcus Priteca (1889-1971). Ticket prices are 15 cents for general admission, 30 cents for seats in one of the many loge boxes, and 50 cents for reserved loge seating.

Coliseum Theatre (B. Marcus Priteca, 1916), Pike Street and 5th Avenue, 1920s
Postcard

Source of Local Pride

With a terra cotta exterior and "Byzantine" orange interior, the Coliseum was built by the Gottstein interests in conjunction with the Greater Theatres Company, a local firm headed by Claude Jensen and John von Herberg (1880-1947). The theater boasted an impressive array of luxury features, including a large smoking room for men, spacious restrooms for women, a children's playroom, recessed floor lighting and, according to one journalist, "a symphony of upholstering."


B. Marcus Priteca in on-site office at Coliseum Theatre, 1916
Courtesy MOHAI (Neg. SHS 19,111)

Lavish floral arrangements decorated the house from top to bottom, all but obscuring the workmanship of many local craftsmen, whose efforts could be seen virtually everywhere, from the plaster work and electrical fixtures down to the plumbing.

Coliseum (B. Marcus Priteca, 1916) lit up on a snowy night, February 2, 1916

Boasting an eight piece house orchestra

(three violinists, a bassist, a cellist, a pianist, a drummer, as well as an organist to helm the giant Moller Pipe Organ), the Coliseum's musicians -- all Russians -- were reportedly the highest paid in all the United States. The theater also boasted some additional, largely unintentional musical effects -- a collection of songbirds in wicker cages that hung throughout the interior. On opening day, the birds were startled into a chirping frenzy at the start of each musical number.

"God Save Anita King"

Lasky-Paramount actor Anita King (1891-1963) arrived from Hollywood to help dedicate Seattle's newest photoplay palace, which debuted with Cecil B. DeMille's feature film *The Cheat*, starring Fannie Ward and Sessue Hayakawa. (The Coliseum was Seattle's exclusive venue for Paramount output, which included films from Paramount, Famous Players, Jessie L. Lasky, Oliver Morosco, and Pallas Pictures. In addition to King, the talent pool of these studios alone boasted such early box-office draws as Mary Pickford, Geraldine Farrar, Marguerite Clark, John Barrymore, and Blanche Sweet.)

Upon Anita King's entrance, the Russian orchestra humorously serenaded her to a version of "God Save the King," bringing all 2,400 patrons to their feet. In a slight geographical muddle, King dedicated the theater:

> "To you lovers of silent drama,
> and to the great city of Seattle,
> I dedicate the most complete,
> the most beautiful and the most
> artistic photoplay theatre, not
> alone in the United States, but
> in America" (Sayre).

In addition to *The Cheat*, onscreen attractions during the Coliseum's opening run included brief motion pictures of Anita King taken in and around Seattle, scenes from a cross-country motor tour she had recently completed, and a short comedy

Postcard

Coliseum Theatre (B. Marcus Priteca, 1916), Pike Street and 5th Avenue, 1934
Courtesy MOHAI

Banana Republic store, former Coliseum (B. Marcus Priteca, 1916), 2001
Photo by Alan Stein

film. Offscreen, the theater's luxurious features had to compete with the spectacle of a 236-pound fruitcake in the lobby, a gift to the Coliseum from the Northern Pacific Railway's Dining Car Bakeshop.

From Motion Pictures to Merchandise

Although the Coliseum was for decades one of Seattle's most lavish and popular downtown theaters, the structure eventually went into decline. Once the city's premier venue for motion pictures, by the 1980s it was an aging relic -- a large, single-screen theater in the midst of a declining downtown, expensive to maintain and quickly losing ground to a host of suburban multiplexes.

The Coliseum shut its doors in 1990 with a very uncertain future, until downtown revitalization efforts managed to save the structure, albeit in altered form. In 1994 the Coliseum was transformed into a Banana Republic clothing store. The terra cotta exterior still looms large at the corner of 5th Avenue and Pike Street, and a portion of the venue's old balcony is tucked away in the upper recesses of the building,

Sources:

Coliseum Advertisement, *Seattle Post-Intelligencer*, January 8, 1916, p. 4; J. Willis Sayre, "Thousands Attend Grand Opening of Magnificent New Photoplay Theatre," *Seattle Daily Times*, January 9, 1916, pp. 5, 13; Charles Eugene Banks, "Reviews and News of Photoplays," *Seattle Post-Intelligencer*, January 9, 1916, p. 16; "Coliseum Opens to Vast Crowds, Filling Theater," *Seattle Post-Intelligencer*, January 9, 1916, p. 18; "Theater Nearly All Home-Made," *Seattle Post-Intelligencer*, January 9, 1916, p. 18; Marsha King, "Curtain to Fall on Shows at Historic Coliseum," *The Seattle Times*, March 10, 1990, p. A-11; Sylvia Wieland Nogaki, "Banana Republic Opens to Rave Reviews in Theater," *The Seattle Times*, November 19, 1994, p. C-1.

By Eric L. Flom, July 12, 2000.

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B. Marcus Priteca (1889-1971), 1961
Photo by Joseph Scaylea, Courtesy Richard F. McCann Collection

John G. von Herberg (1880-1947), n.d.
Courtesy Susan Edgerly

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Anatomy of a renovation

In its third incarnation, the former Civic Auditorium and Opera House will be reborn as Marion Oliver McCaw Hall. It will house both the Pacific Northwest Ballet and Seattle Opera, plus concerts and community events. Its larger, better-equipped backstage area, more intimate seating arrangement and dramatic lobby are designed to improve the theatrical experience for both artists and audiences.

MARION OLIVER MCCAW HALL

Primary changes to the new hall, which still retains 30 percent of the old structure, include: Bringing the auditorium walls in 15 feet on either side; doubling the stage lighting with 960 dimmer lights; and expanding the stage and backstage areas to accommodate larger productions.

The rigging system is made up of 112 ropes that are spaced 6 inches apart. They can raise and lower multiple backdrops simultaneously during a production.

Grid iron

Flyloft

100 feet

The curtain is now motorized with variable speed control and equipped for vertical travel ("guillotine").

The stage floor is resilient for dancing and covered with maple, rated for 250 pounds per square foot.

The proscenium (visible stage area) was raised 8 feet to be 35 feet tall.

Susan Brotman Auditorium

Second tier upper boxes

Second tier seating

First tier boxes

First tier seating

Dress circle seating

Gallery seating

Orchestra seating

Orchestra pit

Second tier lobby

First tier lobby

Grand lobby

Box office

Kreielsheimer Promenade

Trap room (pit level)

Trap room (lower level)

25 feet, 10 inches

Sound shop

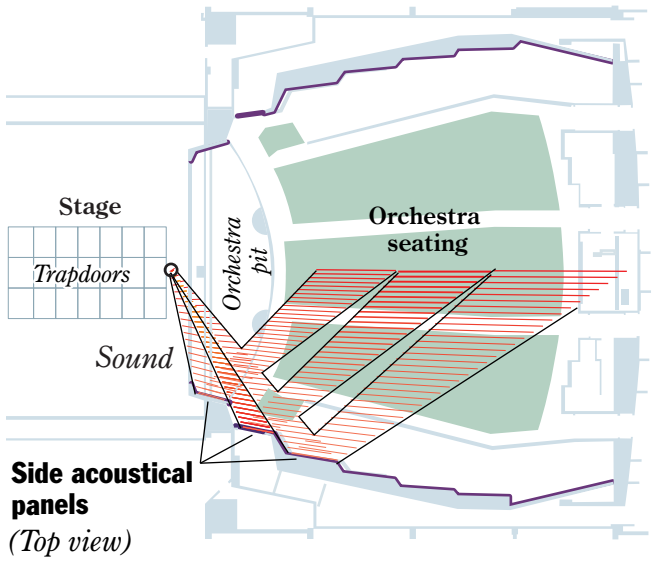
Sound storage

Stage department shop

Mechanical room

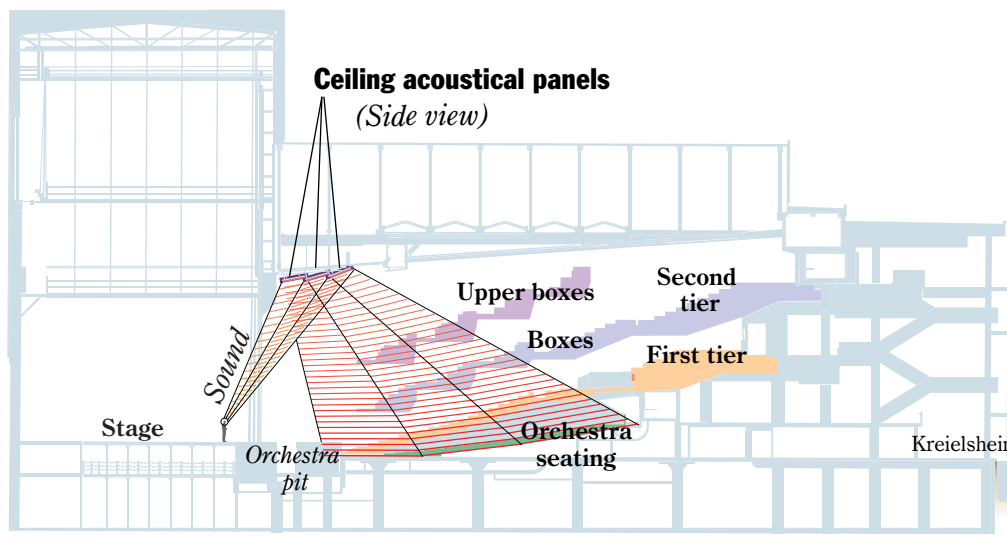
The stage floor trapped area is 42 feet long by 25 feet wide. Props and performers can be raised or lowered in any portion of this area.

The orchestra pit houses a maximum of 90 musicians (usually less) and a conductor, in an area that is beneath the stage but open in the front to allow the sound to reach the audience.



ACOUSTIC ENGINEERING

Acoustical panels on the ceiling and along the sides of the auditorium direct sound throughout the space. Most of the panels are made of multiple layers of drywall on metal framing with embedded metal angles for sound diffusion. There are wood panels on the faces of the boxes and balconies, and the existing ceiling is plaster. Fabric-wrapped acoustical panels are judiciously located to control echoes.



DREAMING IN COLOR

Nine 30-foot tall metal scrims will reflect four sequences of computer-programmed light.

The light is projected from mounted fixtures on the overhead beams.

BACKSTAGE

This is where the opera will stash its extras (there were as many as 580 in a Prokofiev's massive "War and Peace.") It's also home to the gigantic fire-breathing dragon and the live bear from the "Ring," and the corps de ballet in "Swan Lake," and all the opera and ballet sets which "fly" up to overhead positions.

Receiving area

Paint closet

Scenery handling

The scenery elevator has a weight capacity of 3,300 pounds.

Wing curtain

Kathy A. Magiera Stage

Trapdoor areas

Orchestra pit

Therapy/makeup room with ice machine, makeup mirrors/counters, space for massage table.

Dressing rooms: There are 15 principal dressing rooms with a capacity of one to four performers. They have private restrooms with showers, wardrobe racks and direct stage access. On the lower level there are five chorus dressing rooms with a capacity of 15 to 20 each.

Props room

Dressing room 2

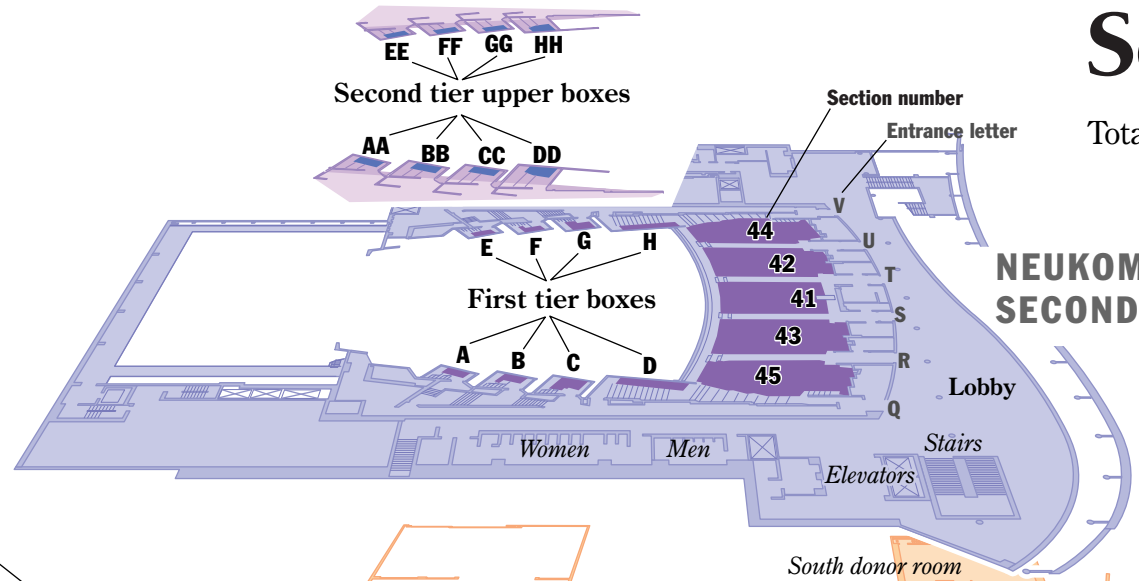
Dressing room 1

Green room *with sink, refrigerator and microwave.*

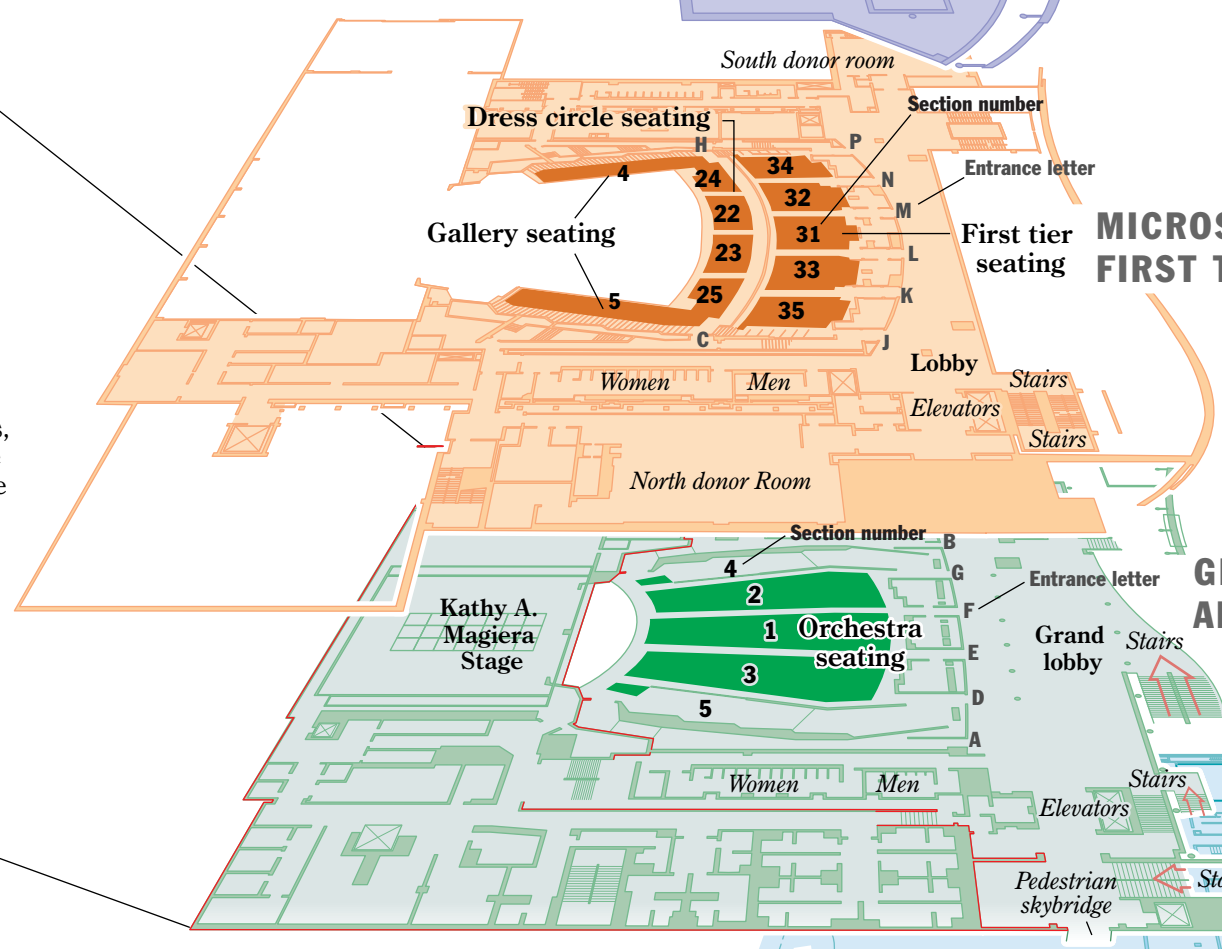
Wardrobe room *with laundry facilities at stage level.*

Seating

Total seating: **2,900**

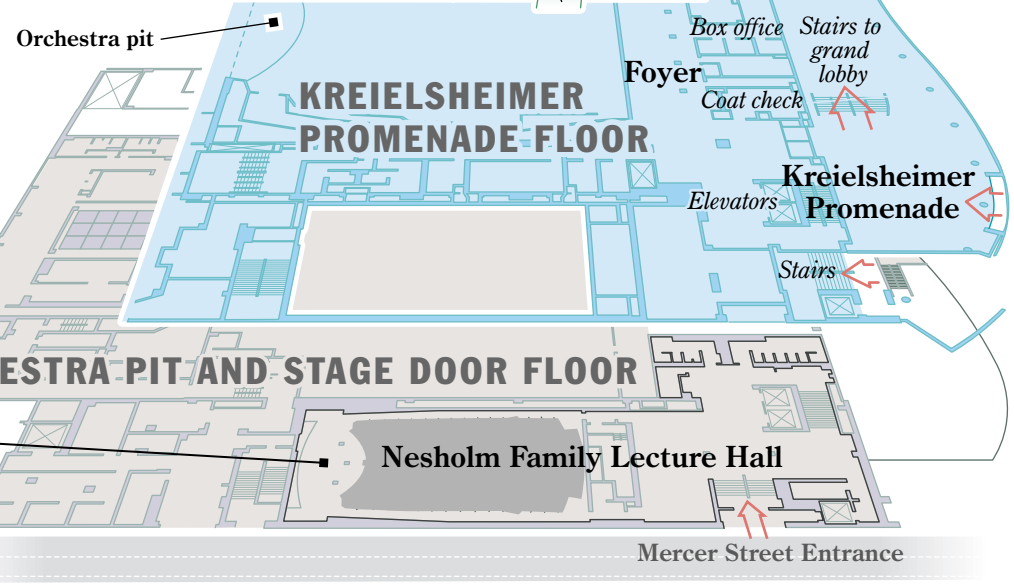


NEUKOM FAMILY SECOND TIER FLOOR



MICROSOFT FIRST TIER FLOOR

GRAND LOBBY AND STAGE FLOOR



NESHOLM FAMILY LECTURE HALL

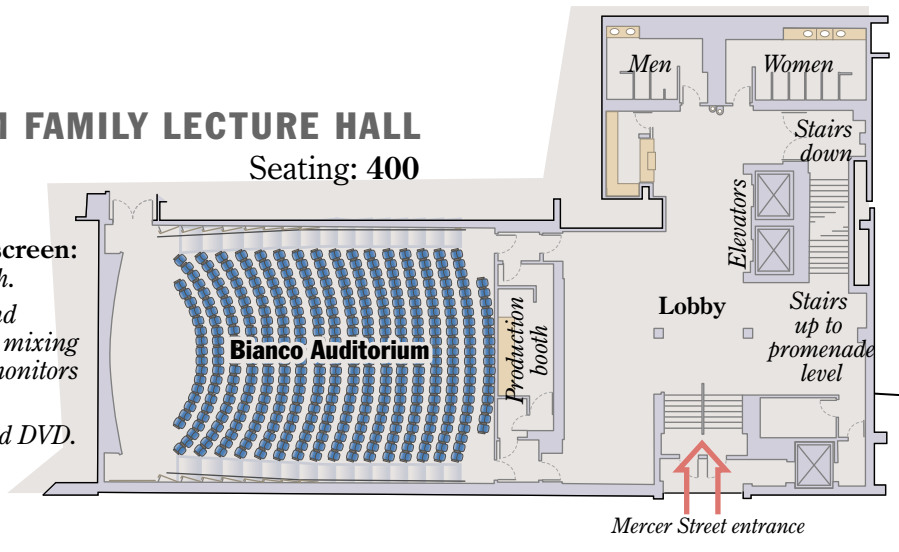
Seating: **400**

Stage: *10 feet wide by 20 feet high.*

Motorized projection screen: *15 feet wide by 11 feet high.*

Audio: *Main speakers and ceiling delays, 16 channel mixing console, playback decks, monitors and A/V interfaces.*

A/V projector: *Video and DVD.*



Sources: Seattle Center Foundation; Jaffe Holden Acoustics

MARK NOWLIN / THE SEATTLE TIMES

June 5, 2003

Demolition crews keep danger at bay

Seattle Opera House dismantled amid close quarters and tight schedules

By SUSAN CANNON
Nuprecon

As arts enthusiasts looked on, Seattle Mayor Greg Nickels broke open a 1928 time capsule originally sealed in the old Civic Center, and ceremonially kicked off the demolition and abatement of the 74-year-old Seattle Opera House.

This was the first stage in the historic building's dramatic $127 million transformation into Marion Oliver McCaw Hall. Nuprecon performed the demolition work for Skanska, the general contractor.

Photos courtesy of Nuprecon

A tethered worker helps dismantle the Seattle Opera House building for Nuprecon, which used a safety team to deal with the dangers of performing demolition work at high elevations with multiple construction crews.

A Russian nesting doll

The project was difficult due to a very compressed and highly linked schedule, technical complexity and unforeseen field conditions.

The structure was unique and difficult to renovate because it had been added to

twice before.

Originally built as the Civic Center in 1927, the Opera House structure was built around the open-air auditorium, entombing the old seating bowl. For the 1962 World's Fair, a shell was built to enclose the Opera House, creating buildings within buildings like a Russian nesting doll.

Further, because some of the structures being removed provided integral support to the remaining structure, preparations for the demolition work required careful planning with Skanska's structural construction divisions.

Skanska added Nuprecon to the project design-build team meeting six months prior to demolition. The planning paid off — nine months of work was finished in 65 days.

High danger potential

The demolition was rather unconventional due to unusual sequencing requirements with ongoing construction. In order to meet the deadlines of the performance season, the contractor interwove the bracing plan, erection plan and demolition plan rather than perform them sequentially.

For example, a structure would be selectively demolished, and the contractor would intercede to build the new structure (eliminating the need for temporary bracing and shoring), followed by completion of the demolition activity.

The project had a high danger potential, since major structural demolition was performed at high elevations while multiple construction crews were working nearby.

For most of the project, six separate demolition crews worked simultaneously in different areas. At times, over 100 field workers were scheduled on a single day, with multiple cranes and advanced heavy equipment including demolition robotics.

Working safely

Workers contended with traffic, dust and noise restrictions. Construction crews working in close proximity on all sides, above and below the demolition work, created a three-dimensional chess board for project management and safety.

To address this, a "safety hit team" was chartered to install safety equipment and protection as required. In one case, the demolition crew stopped using red tape as a barrier and erected fencing to ensure that a dangerous area was not traversed.

A substantial amount of unexpected asbestos was uncovered during demolition, including unusual materials such as a woven rope used as a sound cushion on ductwork. Friable hair batt insulation in the auditorium attic had to be abated without interfering with the normal daily operation and performances in the auditorium.

A complex scaffolding platform within the attic space was engineered to contain and abate the insulation. Spot lead removal was performed on existing structural steel to accommodate the contractor's seismic upgrades.

Mercer Arts Arena

The scope of the demolition work also included selective demolition at the Mercer Arts Arena to prepare the facility to temporarily house performances while the Opera House renovation was under way.

In the early phase, Nuprecon worked with Skanska to demolish slab on grade below the Opera House while performances were ongoing. The work was coordinated around “quiet times,” with late shifts and seven-day workweeks. The 62,000-square-foot Opera House was completely gutted while preserving the 60-foot high historic plaster ceiling.

Nearly 150 tons of steel were lowered from the 70-foot-high fly loft with construction crews working nearby. The rehearsal hall was demolished to allow for an additional 15 feet of building space underneath, requiring five coordinated demolition/construction phases to eliminate the need for shoring.

The long-reach tool on this modified Hitachi excavator helped demolition crews take apart the structure while preventing damage to nearby buildings and public areas.

While the structure was held in place, foundations and pilings were removed below. The Opera House seating bowl demolition constituted heavy concrete removal inside a structure that was being partially preserved; raker beams were temporarily left for support during the west end total demolition.

An innovative abatement technique had to be developed to economically remove the asbestos-coated ground-level steel seating bowl (the old hockey arena).

The trickiest work

Some of the trickiest work came with the removal of the entire west end of the building. Careful engineering and coordination with the contractor was mandated because the west end was integral to the remaining structure.

The integrity of the entire building was dependent upon a massive beam supported by two columns that stood directly on the 250-foot line of separation for total removal. If the beam had been compromised in any way, the entire structure could have collapsed.

The removal had to be performed 60 feet up in a public area near adjacent buildings. A state-of-the-art 80-foot Long Reach demolition excavator was used to take apart the structure in a controlled, surgical manner.

The Long Reach can simultaneously cut and pulverize structural concrete and steel, creating neat debris piles for easy removal in an urban environment. The constraints of the work area required an 11-step process to remove each bay.

Recyling and salvaging

Nuprecon’s recycling division recycled the construction and demolition debris and provided the consolidated diversion reporting required for LEED silver

certification.

Throughout the demolition phase, debris recycle rates were over 95 percent, easily meeting the 75 percent project target. Items including marble, carpeting, theater seats, light fixtures, doors and doorknobs, brass handrails and plumbing fixtures were salvaged for reuse in the renovated facility.

The demolition and abatement were finished on schedule in anticipation of the eagerly awaited grand opening this season.

Susan Cannon is vice president of planning and development for Nuprecon, a national demolition firm based in Snoqualmie.

Other Stories:

- At McCaw Hall, the performance begins outside
- Bracing for a new future
- A breath of fresh air
- A centerpiece for Seattle Center

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June 5, 2003

At McCaw Hall, the performance begins outside

A colorful outdoor light display takes art into the street

By MARK REDDINGTON
LMN Architects

Photo by Mike Zens

McCaw Hall's five-story glass curtain wall and colorful metal scrims are designed to light up Mercer Street and offer an inviting backdrop for the action inside.

Marion Oliver McCaw Hall will become the centerpiece of the Seattle Center performing arts district, and home to two of the nation's premier performing arts companies, the Pacific Northwest Ballet and the Seattle Opera.

The performance hall will also provide a new venue for touring artists, civic events and community lectures, and cultural festivals such as the International Children's Festival, Northwest Folklife and Bumbershoot.

McCaw Hall, formerly the Seattle Opera House, defines the urban edge of the Seattle Center — a 74-acre civic, cultural and entertainment campus, much of which was built for the 1962 World's Fair.

The $127 million, 295,000-square-foot redevelopment includes a new arrival court and public lobbies; complete restructuring of the interior plan; replacement of the five-story building envelope; extensive life-safety and seismic improvements; new mechanical, electrical and theatrical systems; a renovated rehearsal hall; new backstage spaces; and a redesigned 2,900-seat performance hall.

Although portions of the auditorium shell core embrace both the original auditorium structure of 1928 as well as the 1962 renovation, the hall was significantly reconfigured to improve sightlines, acoustics and intimacy. A 400-seat lecture hall, cafe and lounge spaces for performers and patrons have also been added.

An immersion experience

The experience of attending a performance is enhanced by the architecture of the venue, which provides the form for the experience. Arrival at McCaw Hall transforms the act of attending a performance into an immersion experience by drawing the ephemeral qualities and sensations of the performances beyond the stage and out into the streetscape.

The grand lobby faces a pedestrian corridor that connects Mercer Street, an urban traffic arterial, to the Seattle Center campus. The historical building footprint left no allowance for a traditional public sequence leading to the performance hall, making it necessary to use an alternative design strategy.

The design approach creates a contemporary architectural expression for the classic forms of theater, reinterpreted by an architectural medium relevant to contemporary culture. Blurring the threshold between performance and reality, the new lobby is defined by a five-story serpentine glass wall that is intersected by a field of nine three-dimensional metal scrims.

Compositions of choreographed color and light are projected on and through the textures to cast a series of visual events, flooding the artistry into the streetscape and inviting the entire community to participate. Underfoot, thin sheets of water swathe the walkway, reflecting the movements of each passerby.

The experience is extended into the lobby through a series of spaces characterized by overlapping curvilinear shapes and light-interactive surfaces. Metal scrims penetrate the exterior window wall, interlocking the exterior court and interior lobby spaces, framing a grand stairway inside the space.

The colors and materials of the lobby progress to increasingly deeper, richer colors as they approach the stage, culminating in a black proscenium framing the performance.

The performance hall was reconfigured to reduce its width by 30 feet, creating two new rows of box seats on each side. New gallery seating connects the first balcony to the orchestra level with steeply stepped seating tiers along the sides of the room. The hall is animated by intricate patterns of multicolored metal grills and wood paneling.

Adaptive reuse

The Seattle Civic Auditorium, designed by Schack-Young and Myers Architects, celebrated its opening in 1928, establishing an important venue for the performing arts in Seattle. Renovated in 1962 by Priteca and Chiarelli Architects, and renamed the Seattle Opera House for the World’s Fair, the exterior of the building was masked by a brick skin for a modern appearance.

Circulation and lobby spaces were added, and the auditorium received traditional treatments such as sloped seating tiers, two additional balconies, and larger stage and orchestra pit spaces.

Core elements, dating to 1928 and 1962, are still valuable. The 2003 renovation reused portions of the lower level support areas, the main hall and the building frame.

The redesign involved 70 percent new construction, combined with the reused building elements. The entire project will be completed for about two-thirds the cost of a new building with identical spaces.

Sustainable design

As one of the few performance halls in the nation to seek a LEED silver certification, the renovation implements numerous sustainable design strategies, which include with a commitment to the cultural and natural environment as well as energy conservation, reuse, and integration.

Green-design principles have been vigorously researched, evaluated and applied since the earliest schematic design phase of McCaw Hall.

The building achieves improved energy performance by using wide-ranging strategies integrated into the design, such as low-energy theatrical lighting and a dynamic lobby that will incorporate a naturally ventilated “chimney” created by motorized internal blinds.

About 25 percent of the project materials included recycled content, and as much as 75 percent of the construction waste and debris is expected to be recycled. Featured as a case study for the LEED training session at the 2002 “What Makes It Green” conference, McCaw Hall received attention and analysis that has contributed to the development of sustainable design measures.

Mark Reddington, a design partner at LMN Architects, began programming and developing the conceptual design for McCaw Hall in 1995. He was the lead designer throughout the project’s design and construction.

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June 5, 2003

Bracing for a new future

Seismic improvements will help McCaw Hall stand the test of time

By KEN DAHL
Magnusson Klemencic Associates

Photo by Michael Dickter, MKA

Steel support beams attach to the lobby's concrete-filled steel columns to create a structural support system for the 65-foot-high glass wall.

The redevelopment of the Seattle Opera House is an example of how — given modern, efficient upgrade solutions — an existing structure with weaknesses can be reborn to provide enjoyment for generations to come.

The renovation keeps the original 1927 Civic Auditorium (and later the Opera House auditorium) structure and uses it as the link that connects many newly expanded areas that encircle the original auditorium space. It is in these new areas many of the building's new amenities exist.

Seismic assessment

The evolution of this building's redevelopment started nearly 10 years ago.

In 1994, the Seattle Center commissioned a seismic assessment of the Opera House/Mercer Arena complex. The assessment was to determine the anticipated performance of the building during earthquakes of different magnitudes and to

provide upgrade recommendations for structural elements that did not exhibit an acceptable seismic response.

The assessment found that significant seismic upgrades would be needed to meet "life safety" performance in the event of an earthquake. The recommendations were to add seismic elements such as concrete shear walls throughout the building.

The Seattle Center agreed with the need for the seismic upgrades and started assessing the impact to the building. The study found the cost to remove and replace the building's interior elements would be at least as expensive as the seismic upgrade.

The study, however, considered only the building's existing configuration and level of finish. It was only after the Seattle Opera and Pacific Northwest Ballet came forward to propose a public-private partnership that plans for the project grew beyond their seismic component.

New building configuration

After the newly expanded building program had been developed, many new program features and load requirements were established.

It was decided to demolish the front third of the existing building and replace it with an exterior promenade and a grand multi-story lobby. Large multi-story expansions were added to the north and south side of the auditorium where new donor rooms and expanded restrooms are located.

In order to meet state-of-the-art production capacity and standards, the stage framing was replaced, doubling the loading capacity of the system. This was accomplished while still maintaining a floor-to-floor height of 9 feet 8 inches to the orchestra level below.

The fly loft above the stage and its rigging gridiron were raised 25 feet to provide over 100 feet of usable height and volume needed for contemporary scenery space requirements.

South of the new stage, a scenery-handling area provides a clearance height up to 40 feet. A new loading dock and elevated access ramp behind the Mercer Arena, adjacent to the scenery handling area, was also added.

Seismic upgrade

Even with the new building program, the most important structural requirement was to seismically upgrade the structure. Before the seismic system could be defined, an understanding of the future building configuration and its interface with the remaining existing building had to be established. To appreciate the needs for the old and new construction interface, research into the earlier construction had to be done.

Review of the original 1927 building documents helped to define the basic building structure. Also, documents from a major renovation in 1960 show how the renovation not only added many new elements to consider, but that many portions of the original structure had been entombed behind the newer brick exterior walls. The hidden portions became added challenges that had to be understood and dealt with as the new renovation began.

After it was determined which portions of the original building were to remain, lateral elements had to be located so that the older construction elements would exhibit acceptable performance in a seismic event.

Because the expansion basically encircles the original structure, it was determined that an entirely new lateral bracing system would be designed for the building.

Most new elements were located in the new construction areas and linked elements to the older construction were incorporated to tie them together. Special care was given to make sure the design assumptions and load paths of the earlier constructions were not compromised in the design of the new system.

Photo by Michael Dickter, MKA

Changes to the auditorium included new side boxes and balcony extensions. The cantilevered framing, shown here, supports the side boxes.

It was also found that not only had there been one major renovation to the building, but a number of specific upgrade renovations had been made since 1960. In some cases, these other upgrades required up to five sets of drawings from different construction periods to be used to coordinate certain parts of the building during the new design.

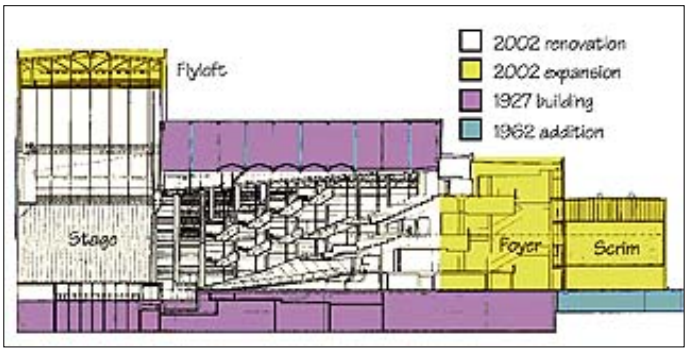
Lobby and auditorium

In the lobby, a 65-foot-tall serpentine glass wall defines the new front of the building. Because of the wall system chosen, an intermediate structural framing system was needed to laterally brace the wall for wind and seismic forces.

An girt system was incorporated behind the wall system to provide the needed support. The girt system was then attached to the lobby's concrete-filled steel columns to complete a lateral-restraining support system for the glass wall.

The use of the hanging rod, narrow channels and incorporation of the building columns provided a backup structure that does not interfere with the openness of the glass-walled lobby.

Outside the serpentine wall, scrims were added to provide a surface to project artistic light imagery. These metal screens are supported by tensioned cables above and below the elements that span across the new promenade.



McCaw Hall incorporates numerous elements from its previous incarnations, including the original 1927 Civic Auditorium structure and additions from the 1962 Seattle Opera House.

The cables have been tuned to a tension that will prevent the scrims from moving more than 18 inches in a severe wind storm. The restriction prevents the images on the scrims from becoming distorted.

Inside the auditorium the seating configuration was significantly changed. New

side boxes and balcony extensions were added to enhance the best seating views.

Cantilevered steel framing was incorporated to provide the new amenities, yet still remained shallow enough to steer clear of sight lines in the lower seating areas. Also, a new sloping floor system was added to improve sight lines and seismic reliability in the seating area.

Ken Dahl is a senior associate with Magnusson Klemencic Associates.

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- A breath of fresh air
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June 5, 2003

A breath of fresh air

McCaw Hall's efficient HVAC system keeps patrons (and staff accountants) breathing easy

By NORM BROWN
CDi Engineers

"The best acoustics in the world."

That was the goal of Speight Jenkins, general director of the Seattle Opera, when the Opera House was being transformed into Marion Oliver McCaw Hall.

"LEED silver certification for exemplary energy efficiency."

That was what the city of Seattle wanted for the hall, helping the municipality achieve its sustainable-building goals.

Mechanical engineers worked to attain both of these ambitious goals: an ultraquiet and energy-efficient HVAC system that has only been adopted in a couple of other performing arts centers in the nation, and a host of design innovations that is expected to help earn the project a LEED silver rating later this year.

Photo courtesy of CDi Engineers

Special low-velocity ducts in McCaw Hall restrict noise and enhance energy efficiency.

Ductwork that whispers

Noisy blasts from the heating and air conditioning system are the last things operagoers want to hear.

The new hall features low-velocity air supplied to acoustically sensitive spaces through sheet-metal rectangular ducts, sized larger than normal to meet restrictive allowable noise levels. A special duct liner absorbs unwanted crosstalk, equipment and air rush sounds.

Energy economies

Designers created distinct HVAC zoning for the orchestra, first and second balcony levels in the auditorium. Air flow and temperature in these areas can be regulated separately, allowing operators a great deal of flexibility for making minor adjustments for comfort levels.

The system also permits energy savings by throttling when a performance has less than a full house, since air flow can be throttled to match the number of people in attendance.

The auditorium system has an unusual specialized heat-recovery system that should help contribute to LEED silver certification. During a performance, all of the auditorium's air comes from the outside to provide superior air quality to the occupants, and is filtered and heated (or cooled) before delivery.

But in winter it can be expensive to heat vast quantities of fresh air. The recovery system captures heat from air that is being exhausted to the outside after use, stores it in a coil, and transfers it to the fresh air coming in. This reduces the building's heating energy costs by about 15 percent.

Super-clean ducts

LEED requirements focus heavily on indoor air quality. To ensure that the air-delivery system remained as clean as possible, McCaw Hall's engineering project team specified that ductwork be maintained in pristine condition from the sheet-metal fabrication shop during transportation and storage at the site, and during installation.

A rotary-based fiberglass liner with a moisture-resistant surface enhancement contained an EPA-registered antimicrobial agent to reduce possible microbial growth.

In addition, all ductwork was sealed with visqueen at both ends during fabrication. The visqueen stayed in place until each piece was ready to be erected, and was then removed on one end when the ductwork was placed.

In this way, the building's duct system always remained hermetically sealed, preventing construction dust from contaminating the duct's liner.

Trimming air-flow

The lobby and exterior promenade of McCaw Hall boast huge expanses of glazing, which catch afternoon sun. Upper levels would normally require extensive cooling in summer. Even with a specially designed shading device in place, the upper balcony will require extensive cooling on a warm day.

The engineering team installed a control damper on the air supply to the conditioning system for the second balcony zone. During most of the year, sensors throttle the fans back so that upper levels are not over-chilled. Only on the hottest summer days does the system function at full capacity, cutting energy consumption by about $4,000 per year.

Also in the lobby, a radiant heat system will provide warmth in the ground-level entry space during chilly winter evenings. Although used relatively infrequently in commercial construction, the application in McCaw Hall was a natural.

The radiant floors will provide heating comfort to only the ground-floor portion of

the lobby rather than all of the air throughout the large foyer. Radiant heat slabs work especially well in transition spaces, where doors are constantly opening and air is passing in and out, saving about 10 percent in heating energy for the lobby.

Cooking and flushing

McCaw Hall has a full kitchen in its basement. Industrial kitchens typically waste energy with hood ventilation systems that stay on full speed whenever the kitchen is occupied. McCaw Hall's kitchen features a Melink system for hood vents, which uses optical and temperature sensors to detect when the grill or burners are in use.

When no one is cooking, the system throttles fans for both the exhaust and inflow air systems, working at full capacity only when necessary.

Female visitors to McCaw Hall will probably never appreciate (or even see) one of its more remarkable resource-saving innovations — namely, the waterless urinals. These use a fluid that is lighter than urine to create a seal between waste and the atmosphere. McCaw Hall is the largest public project to date to implement waterless urinal technology.

When the project is granted LEED silver status, as anticipated, it will be one of the first large projects in Seattle to achieve this coveted rating. And the sustainable building practices incorporated in its design will be instrumental in helping the city cement its reputation as one of the most energy-efficient municipalities in the nation.

Norm Brown is an associate at CDi Engineers, a mechanical engineering consulting firm in Lynnwood.

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June 5, 2003

A centerpiece for Seattle Center

There's more to McCaw than performing arts

By VIRGINIA ANDERSON
Seattle Center

Seattle Center is a 74-acre campus enjoyed by more than 10 million visitors each year. Home to world-class performing arts groups, major sports teams and attractions, it features some of the city's most recognized architecture.

Photo by Michael Dickter, MKA

A five-story serpentine glass façade provides a grand entrance to the hall.

From the towering Space Needle to the Frank Gehry-designed Experience Music Project, Seattle Center spans the decades creating architecture that connects both the passerby and patron with the space around them.

Marion Oliver McCaw Hall is the centerpiece of this vision — engaging the entire community with its public promenade and eye-catching design. What adds even more to its dramatic architecture are the opportunities for the community to celebrate and congregate there.

Whether you are attending a performance or a more intimate reception, the major design objective of McCaw Hall is to engage the entire community while honoring the patron it serves.

You don't need a ticket to experience the drama. Designed to incorporate a theatrical experience from the outside-in, it is nothing like the blank brick façade of its predecessor with chained doors when not in use.

Today, a five-story serpentine glass façade provides a stunning entrance to the hall as it faces a public promenade that connects Mercer Street to the heart of the Seattle Center campus.

With 372 panes of the clearest glass, the five-story façade and promenade are designed as a theatrical threshold, lined with a field of three-dimensional metal scrims. During the evening hours, compositions of choreographed color and light are projected on and through the scrims to cast a series of visual melodies, bathing a passerby in colored lights as they become immersed in the art.

A look inside

Inside the hall features a grand staircase that leads to a 12,000-square-foot grand lobby. Two additional balcony levels are accessible by elevator or stairways and include open spaces with views of the hall, scrims and the Seattle Center campus.

The colors and materials of the lobby take their inspiration from the beauty of Northwest skies, creating a union between the light that baths the hall through the glass wall and the interior spaces. As local artists have noted, the clouds, moisture and northern latitude of the Northwest create "oyster-shell" skies, a luminous, silvery quality reminiscent of the inside of an oyster-shell.

This reflective quality is captured in the hall's shimmering interiors, which are created with 132 colors taken from the palette of the Northern light, those sumptuous sunset hues. The effect has created interiors that subtly react to changes in the outside light and the rhythm of the scrims. Again, blurring the lines between indoor and outdoor spaces.

Amenities

Each lobby has concessions, family restrooms, and women's and men's restrooms on each side of the lobby. The lobbies are designed as the perfect setting during intermission or host private and corporate events including weddings, receptions and banquets. In addition, two upper level reception rooms afford a greater level of privacy hosting banquets of 100-150 or receptions for 250-300 guests.

Inside the Susan Brotman Auditorium, design modifications have significantly reconfigured the 2,900-seat auditorium to improve sight lines, acoustics and create a more intimate relationship between the artists and audience.

The walls of the auditorium have been moved in 15 feet on each side, reducing the total width by 30 feet in order to create two new rows of box seats on each side. There are a total of 16 new boxes, eight on each sidewall with seats that face the stage, not the auditorium.

New gallery seating connects the first balcony to the orchestra level with seating tiers rising along the sides of the room. Together, the narrowed walls, elevated galleries, side boxes and extended balconies give audience members a more intimate relationship with the performers.

Although not visible to the general public, the backstage changes are as dramatic as the public spaces. The new stage will feature a proscenium opening that is 10 feet taller, making the stage more of a square than rectangle.

This change allows more flexibility with sets, bringing the hall in line with European standards for proscenium height. The stage now has a state-of-art rigging system and a sophisticated trap door system. In addition, the fly loft has been raised to 100 feet to completely pull the scenery out of view when the in the "up" position over the stage.

New lecture hall

Another new feature is the 400-seat Nesholm Family Lecture Hall with a raked floor, built-in video/DVD system, and modern sound and lighting equipment. It can equally host lectures, readings and multi-media events.

The hall is designed by Jaffe Holden Acoustics, the same acousticians that engineered the auditorium. With its own lobby, restrooms and entrance, the lecture hall is a prime location for speaking engagements, presentations and films.

On the south side of the lobby, Café Impromptu awaits diners with an indoor seating capacity of 160 and an outdoor foyer for 40. Catering and concessions for the cafe are provided by The Westin Seattle.

Visitors can enter the promenade lobby even when there is no performance in the hall, Wednesdays through Sundays, 11 a.m.-5 p.m.

Virginia Anderson is the director of Seattle Center. For booking information on McCaw Hall rental spaces, contact Seattle Center event sales at (206) 684-7202 or eventsales.seattlecenter@seattle.gov.

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November 15, 2001

Mechanical moxie: Innovations at the new Opera House

Performing arts hall features rare below-the-seat heat

By NORM BROWN
CDi Engineers

Rendering by LMN Architects

Marion Oliver McCaw Hall features a curving glass lobby with an adjacent outdoor courtyard. Vertical screen-like "scrims" will display artwork or images from performances under way.

When the curtain goes up on the Nutcracker Suite and you sit enraptured with the Pacific Northwest Ballet's pirouettes, the last thing on your mind is the heating, ventilating and air-conditioning (HVAC) system.

Yet HVAC and other mechanical solutions are important factors in making the Marion Oliver McCaw Hall at Seattle Center a world-class performing hall. Providing enhanced audience and performer safety, environmental sensitivity and overall aesthetic quality, it will be a suitable home for both the Pacific Northwest Ballet and the Seattle Opera for decades to come.

Originally constructed as the Civic Auditorium in 1927 and remodeled for the 1962 World's Fair, the Opera House has been in need of seismic and structural upgrades as well as life-safety improvements for many years. Now it is being completely renovated and given a facelift to boot.

When the McCaw family generously contributed $20 million, the decision was made to name the new performance hall in honor of their mother, Marion Oliver McCaw. The project construction budget is $80 million.

And under your seats, folks...

Of special interest to engineering types is a displacement ventilation system for the 2,890-seat auditorium. CDi Engineers, mechanical consultants on the project, designed an air supply system with vents located beneath audience seating. This meant that careful attention had to be given to conditioned air delivery temperatures and velocities. We couldn't have blasts of hot (or cold) air searing (or freezing) the feet

and legs of opera and ballet devotees.

Would under-seat ventilation be the best solution? It was hard to say in advance, since systems like these are such a rarity. So, CDi staffers for this facility traveled to New Jersey to visit the one U.S. performing arts center that uses a similar system. They also went to Atlanta to conduct testing in a displacement airflow laboratory. They spent several hours in mock theater seats, testing the effects of various air delivery alternatives on their lower extremities.

The CDi team reported it was very tough work, but someone had to do it. Information gathered from the tests is currently being incorporated into the final design.

Power in the pit

The orchestra pit, just below and in front of the stage, is traditionally very difficult to condition in a performance hall. The situation was complicated at McCaw Hall because the design includes a split mobile lift platform that can be moved up to extend the stage, or down to create a larger musician's pit.

The mechanical engineering crew came up with a unique answer. Once again, it involved a displacement ventilation system. We created air plenums beneath the movable stage platforms.

The plenums are served with supply ducts that can accommodate all possible positions of the lifts.

It was a challenge to coordinate the HVAC system with lift framing, hydraulic lines, stabilizing cables and electrical elements. Figuring that two heads are better than one, we turned to LMN Architects, the project architect, to work out the details. Use of displacement ventilation in the pit is an approach that will influence the design of future performance spaces in North America.

Here comes the sun

Sometimes a gorgeous architectural design demands extra creativity from mechanical engineers behind the scenes. This was the case with the hall's lobby and exterior promenade, where an expanse of clear glazing 200 feet wide and 65 feet high makes a showcase statement. Facing west, it also catches a lot of afternoon sun, causing potential problems with solar heat gain in summer months.

Traditional HVAC load calculations would require more than 125,000 cfm of conditioned air, an expensive and environmentally inefficient proposition. Instead, a computational fluid dynamics analysis was used to model an interior shade device. The cavity between the shade and the glass is ventilated to remove solar gain before air warms the space. This reduced supply air requirements by more than 40 percent.

Similarly, the vast lobby glasswork could cause high heating costs in winter. To conserve resources, CDi focused on providing comfortable conditions only where people will congregate. Several hydronic and air heating schemes were examined, but rejected due to either appearance or cost concerns. Instead, we determined that the best solution was to use a hydronic radiant floor, which will heat the ground floor portion of the lobby.

A firm foundation — fast

Baugh Construction, who was selected to be the general contractor and construction

manager for the project, found there was a need to accelerate foundation work by six months in order to meet an aggressive overall schedule. This would require providing access to the current Opera House building's basement six months before it was scheduled to be closed for demolition and renovation.

We discovered there were many mechanical services that were routed through the Opera House basement. And these same services were necessary for providing water, fire, chilled water and steam to the Mercer Arts Arena located next door, where both the opera and ballet will perform for 17 months while their new home is being finished.

The owner requested CDi document these existing mechanical services in all areas scheduled for early foundation work. We pored through old drawings, and performed field investigations for positive identification.

Per our recommendations, new dedicated service lines are now being meticulously routed through the lower level of McCaw Hall. Then they can easily be run through a wall and remain undisturbed during hall construction. We are confident that mechanical services will be completely operational for all performances in the arena, despite ongoing activities of numerous subcontractor groups.

Grand opening of the new Marion Oliver McCaw Hall is slated for mid-2003. Until then, mechanical engineers from CDi will be working hard as part of the project team to make sure everything goes smoothly.

Perhaps you'll think of us as unsung heroes for a moment when you enjoy your first performance at McCaw Hall — and take note of the comfy temperature, fresh-smelling air, smooth platform transitions, safe fire systems and luxurious lobby ambience we helped create.

Norm Brown is an associate at CDi Engineers, a mechanical engineering consulting firm in Lynnwood.

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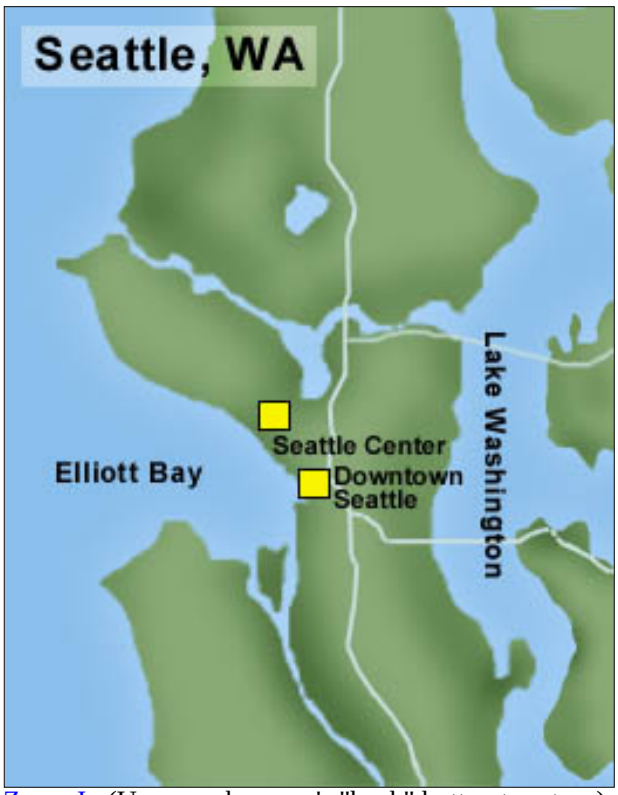
Seattle Center -- Thumbnail History

The Seattle Center, located north of downtown at the foot of Queen Anne Hill, is a cultural and entertainment campus built in 1962 for the Seattle World's Fair. The World's Fair helped to transform Seattle from a rather provincial backwater into a genuinely cosmopolitan port city, and it created a lasting legacy of important civic buildings for the arts, professional sports (the Seattle Supersonics play at KeyArena), and major community events, such as the annual Bumbershoot arts festival that takes place over Labor Day weekend.

The early settlers dubbed the site of the present-day Seattle Center "Potlatch Meadows" in the mistaken belief that the natives held their tribal festivals on the land. More likely the Indians cleared the area in order to snare low-flying ducks commuting between Lake Union to the east and Elliott Bay to the west.



Zoom In (Use your browser's "back" button to return)

Roses and a Few Mules

The area's first white residents, David and Louisa Denny, simply called it "the prairie." Until 1928, little grew there other than Louisa's sweetbriar roses and forage for cattle, horses, and mules. That year the city opened a new Civic Auditorium (now Opera House), funded with a bequest from the estate of Pioneer Square saloonkeeper James Osburne. An ice arena and a 35,000-seat athletic field were added soon after. In 1939 the army built a large armory (now the Center House) and in 1948 the Seattle Public Schools completed Memorial Stadium for high school football games.


David Denny's Potlatch Meadows, future site of Seattle Center

When planning got under way in the late 1950s for the "Century 21 Exposition," as the Seattle World's Fair was known officially, the Civic Center offered a natural location for the event. Millions in public and private funds were raised under the leadership of Eddie Carlson, Joseph Gandy, and Ewen Dingwall to expand the site and build both temporary pavilions and permanent facilities.

Paul Thiry served as supervising architect for the Fair, and Lawrence Halprin directed the original landscaping. The old Civic Auditorium was remodeled and sheathed in brick to create the Opera House, and the playhouse was built in hopes of attracting a permanent drama company. The armory was

drafted into K-P duty as the "Food Circus."

"It Happened at the World's Fair"

The state built the Coliseum (Key Arena) to house its "World of Tomorrow" exhibit. The federal government financed construction of what is now the Pacific Science Center (designed by Minoru Yamasaki). Sweden's Alweg Systems subsidized a double-tracked Monorail line from the fair to Westlake Mall in downtown Seattle, and local investors underwrote erection of Seattle's civic totem, the Space Needle. The fair opened on April 21, 1962 and closed 10 million visitors later on October 21, 1962.

Gayway at 1962 Seattle World's Fair Postcard

The Seattle World's Fair was widely publicized and most of the nation was aware of its quaintly futuristic attractions. For example, Elvis Presley starred in a popular film, "It Happened at the World's Fair," which was filmed on location in Seattle and released in 1963.

A Lasting Legacy

The World's Fair helped to transform Seattle from a rather provincial backwater into a genuinely cosmopolitan port city, and it created a lasting legacy of important civic buildings for the arts, professional sports (the Seattle Supersonics play at Key Arena), and major community events, such as the annual Bumbershoot arts festival that takes place over Labor Day weekend.


Century 21 Exhibition, 1962

Bumbershoot attracts an estimated 125,000 people annually to listen to pop and rock performers and to attend literary readings by more than a hundred authors from the Pacific Northwest and around the country. The annual Northwest Folklife Festival is a free event featuring music and crafts that draws an estimated 200,000 to the Center grounds. In addition, the Seattle Repertory Theatre presents a full season of performances in theaters at the northwest corner of the Center.

Between 1962 and the 1990s, Seattle Center has gone through periods of neglect and revitalization. In the 1990s, the Coliseum has been substantially renovated as Key Arena. Paul Allen's Experience Music Project, a paean to Jimi Hendrix and other music icons, is under construction. On April 19, 1999, the Space Needle officially became a city historic landmark, perpetuating the legacy of the Seattle Center as a distinctive local institution.

Sources:

Walt Crowley, *National Trust Guide Seattle* (New York: Preservation Press, John Wiley & Sons, Inc., 1998);
(http://www.nwfolklife.org/folklife/P_F/FestGeneral.html);
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By Walt Crowley and Patrick McRoberts, June 1, 1999

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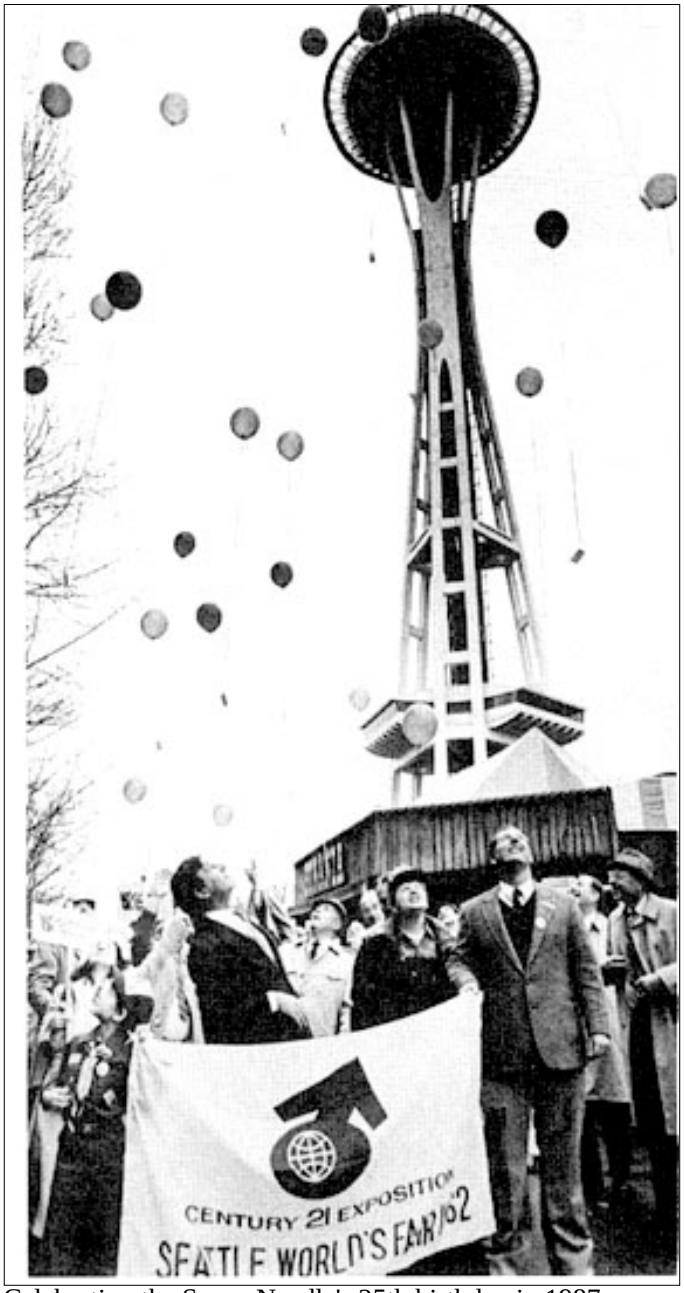

Celebrating the Space Needle's 25th birthday in 1987

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Seattle Opera House time capsule opened

Thursday, January 17, 2002

SEATTLE POST-INTELLIGENCER STAFF

A 75-year-old time capsule, thought to be lost, has been unearthed with "extremely well-preserved" original items dating to 1889 at the site of the old Seattle Center Opera House, which will be transformed into the new Marion Oliver McCaw Hall.

The discovery was unveiled Thursday at groundbreaking ceremonies for the $125 million McCaw.

The items in the time capsule include rare sweetbrier rose seeds from the garden of Louisa Denny, wife of city founder David Denny, and the original plat map from 1889 of the Denny family land donated to the city.


A Fair to Remember
Celebrate 40 years of the Seattle Center. Photos, fun and more...

1962 (World's Fair) Capsule Contents

Envelope with one World's Fair Trade Dollar

Invitation to April 21, 1962 Opera House dedication ceremony

Seattle Daily Times, April 9, 1962

Seattle Post-Intelligencer, April 9, 1962

Daily Journal of Commerce, April 9, 1962

Folder with a letter from each of the city of Seattle departments, dated 1962. Each letter writes about the department's concerns at the time and hopes for the future.

1928 Capsule Contents

Small letter box with a rose on the cover containing sweetbriar seeds from Mrs. David T. Denny's garden (Louisa Boren Denny brought the sweetbriar seeds from Illinois)

Photostat copy of September 1851 letter from David T. Denny to his brother Arthur, who was in Portland, which resulted in the founding of Seattle. The letter says, "Dear brother, come as soon as you can."

Portrait of Louisa Denny (Mrs. David T. Denny)

1889, April 16, Map (in blueprint) of David T. Denny's Home Addition, which deeded land to the city, and shows the location of Civic Auditorium. The land south of Harrision Street (currently south of the International Fountain) is noted as David Denny property.

Typed Cornerstone Ceremony speech given by Mayor Bertha K. Landes, May 18, 1928

Copy of Dedication prayer

HEADLINES
Regents reject deal in UW billing case

3 surrender after a long standoff at Bellevue hotel

Getting There: Look! City sinks 'teeth' into some crosswalks

Family business up in flames

Suit over WTO arrests settled

Planting of new Colman Park begins this Saturday

Parents don't want son's death to be end of story

What would King say today?

Our Man in Iowa: Finding soul amid the selling of Iowa candidates

Plans would ban teacher strikes

Check it out: Libraries inside malls

Brass bands will boom out at music festival

Finalists chosen for building golf course

Teens get a taste of law enforcement

Community Calendar

Getting Involved: Redmond

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OUR AFFILIATES

Memorial Half Dollar in an envelope from Oregon Memorial Trail Association

Seattle Year Book Annual Report of Mayor Bertha K. Landes, dated June 6, 1927

City of Seattle department head list

Specifications for Civic Auditorium project, including Civic Arena (now Mercer Arts Arena) and Civic Field (now Memorial Stadium)

Envelope with photo and newspaper clipping of worker who died during construction of the Civic Auditorium project

Ordinances from the City of Seattle to submit the bond vote of $900,000 for the Civic Auditorium project and the subsequent ordinance to ratify the loan for the project

Seattle Post-Intelligencer, May 18, 1928

Seattle Daily Times, May 18, 1928

The Seattle Star, May 18, 1928

Daily Journal of Commerce, May 18, 1928 & October 13, 1927 (which noted the call for bids)

Book -- Pioneer Seattle and its Pioneers by Clarence B. Bagley

Book -- Blazing the Way by Emily Inez Denny, copywrite 1899, published 1909

Photos

--National Guard Armory at Union Street Between 3rd & 4th avenues. (What is now Seattle Center House, was built to house the Armory in 1939)

--Yesler's Pavilion at 1st & Cherry. Built in 1866, destroyed by fire in 1881

--Drawing of Yesler's Cook House. Built in 1852, destroyed by fire in 1866

thinking of ways to redevelop park and ride

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