

SHAPING FUTURES

Bonita Center for the Arts

Award Winning 700-Seat Theater,
Bonita Unified School District

Architect: Rachlin Architects

29,250 square feet

"We picked Tilden-Coil because we felt they had the best combination of experience and talent to build this facility."

Ann Sparks
Bonita Unified School District

 **Tilden-Coil**
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Tilden-Coil Constructors is proud to present the Bonita Center for the Arts—a new 700-seat performing arts center designed to support local school programs in the Bonita Unified School District as well as visiting theatre companies. This state-of-the-art performance theatre will serve the local community with a broad selection of artistic programming including musical theatre, drama, vocal and instrumental performance, dance and lectures. Twenty-five years in the planning, the communities of San Dimas, La Verne and the Bonita Unified School District aligned together to make this artistic gem a reality.



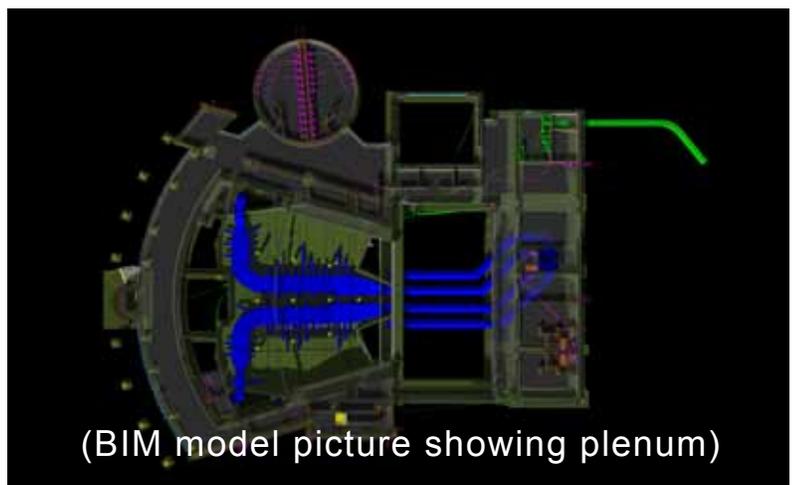
Employing a Lease-Leaseback/Integrated Project Delivery method, Tilden-Coil partnered with Bonita Unified and Rachlin Architects, taking the lead in weekly IPD meetings to ensure that client objectives were met. The team established and tracked deliverables weekly throughout the design process with the client's budget and performance criteria as the end goal. This collaborative process yielded a beautifully designed and functional performance space all within budget parameters.

The 29,000 square foot, poured in place concrete, steel and metal deck structure incorporates a blending of glass, exposed concrete and metallic mesh exterior finishes. The building is punctuated with a near thirty foot high curved glass curtain wall to bring natural light into the lobby space. To meet sustainability and energy efficiency objectives, a computerized exterior louver system automatically adjusts to follow the sun's angle throughout the day to provide protection from direct sunlight inside the lobby assembly area. The louvers automatically adjust to accommodate more light on cloudy days.

The acoustical system includes floating ceiling clouds and basket-weave shaped interior walls to enhance reverberation time. This acoustic wall system was fabricated in shop to achieve consistent dimensional and finish quality. Polished colored concrete comprises the flooring throughout the lobby, orchestra, parterre and balcony levels. Tilden-Coil accommodated client desired changes in scope and coordinated client's theatrical sound and lighting systems while still accomplishing the desired completion date.

A key tool in the success of the IPD process was BIM (Building Information Modeling.) Tilden-Coil's in-house BIM department developed and utilized the 3D BIM model extensively throughout the design and construction process, enabling the client and project team to visualize the project elements and their relationship to one another. Key subcontractor trades were engaged early to provide specialized design perspective and cost efficient solutions. Using "live cost" estimating within the BIM model, Tilden-Coil provided weekly pricing updates so that the client and project team could make informed decisions in design development, know the cost impacts of those decisions, and stay on budget.

Just one example of the benefit of utilizing BIM related to the mechanical system. During design development, it was determined that a displacement ventilation mechanical system was desired for the main auditorium of the theater. This system supplies air from below the slab to the orchestra, parterre and balcony level seating, and requires an underfloor plenum space of significant size to achieve equal pressurization and desired performance. Initial cost estimates showed this system to be cost prohibitive within the project budget. The team used BIM to analyze multiple design scenarios to minimize the plenum sub-structure, bringing cost down and allowing the displacement ventilation system to remain as a design feature.



Later during construction, Tilden-Coil performed a 3D high definition laser scan of the seating risers to show how the 600+ air diffuser core locations overlaid the rebar in the concrete floor, thus avoiding any damage to the rebar integrity when the cores were cut into the concrete. The



outcome was a mechanical system designed to maximize cost efficiencies while still meeting the performance criteria around equal pressurization, acoustic parameters, energy efficiency, aesthetics and comfort for the audience.

The fifty-five foot high cast in place concrete radius walls demanded meticulous calculations to achieve desired quality objectives. Tilden-Coil performed three separate 3D high definition laser scans of the structure to coordinate steel embeds and concrete structural walls during construction. These scans provided critical as-built dimensions for comparison with the BIM model and enabled the steel subcontractor to make necessary adjustments for accurate shop drawings, fabrication, and subsequent installation.

Effective collaboration, a solution oriented mindset and met objectives earned the client's trust. The project received recognition for its exceptional contribution to the Los Angeles Community's urban environment with Los Angeles Building Council's 2015 Award of Excellence in the Education Category.



3D High Definition Laser Scan





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