

MIRA MESA HIGH SCHOOL

MUSIC BUILDING

SAN DIEGO UNIFIED SCHOOL DISTRICT
San Diego, CA



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1 EXECUTIVE SUMMARY

Mira Mesa High School, part of the San Diego Unified School District (SDUSD), was originally constructed in 1976. The campus, designed with the era's characteristic minimal glazing and stark geometry, consisted of single-story masonry block buildings. Over the past five decades, the school has undergone numerous alterations, modifications, and additions.

The most recent additions to the campus are the Music Building and Classroom Building 700, conceived through an SDUSD facilities bond program. This initiative aimed at renovating, repairing, and revitalizing district schools and their learning environments. The projects included the construction of new classrooms, upgrades to safety and security systems, enhancements in plumbing, installation of solar panels, improvements to Visual and Performing Arts (VAPA) facilities, and upgrades to athletic facilities.

During the initial site assessment and master planning phases, faculty and community input significantly influenced the school's programming priorities. These discussions took place during District Design Task Force (DTF) meetings, where parents and community members expressed their support for the music program. This vocal backing led the school district to adjust its modernization priorities to include a new Music Building, addressing a strong community desire.

The design team collaborated closely with the district to ensure that the new Music Building was incorporated into the campus plan. The result is a facility that not only meets the school's academic vision but also celebrates the accomplishments of its nationally recognized and award-winning music program.

The completed building is a state-of-the-art facility aimed at enhancing the music education experience for students. This project accommodates a 270-member band and a 70-member orchestra, offering two distinct practice volumes designed to meet stringent acoustic standards. It has received local and national acclaim for its exemplary design.



2 SCOPE OF WORK AND BUDGET

The scope of work for the Mira Mesa High School Music Building involved designing and constructing a new facility to enhance the school's distinguished music program. The new building includes two high-volume practice rooms, various support spaces, an outdoor parade area, and a loading dock. Essential program requirements also featured instrument storage units, several small rehearsal rooms tailored for different ensembles, and teacher offices with high visibility to facilitate effective supervision and surveillance.

Key Project Goals:

- Accommodating a Large Number of Musicians: The building needed to provide acoustically optimized spaces to ensure high-quality sound for practice and performance.
- Outdoor Practice Areas: Provision for outdoor rehearsal spaces was crucial for accommodating large group practices.
- Efficient Logistics: The facility required efficient circulation for equipment and instrument logistics, including a dedicated loading dock.

Building Placement and Integration:

To ensure the building harmonized with and contributed to the existing campus layout, a campus master plan was reviewed. Key considerations included:

- Proximity to the Stadium: Ensuring convenient access to the adjacent stadium for performances and events.
- Service Access: Designing a service drive to facilitate easy loading and unloading of instruments and equipment.
- Pedestrian Connectivity: Maintaining seamless pedestrian connectivity to the campus core, enhancing the overall campus flow.
- Welcoming Entrance: The building's main entrance was designed to be inviting and visible, promoting a sense of connectivity and school spirit.
- Elevating school spirit was a priority, with the building intended to serve as an iconic structure that embodies the school's identity and reflects the vitality of its premier music program.

Budget Planning and Execution:

The budget for the project was meticulously planned and allocated across various components, including:

- Design: Ensuring the architectural and aesthetic aspects met the school's vision.
 - Construction: Executing the build with high-quality materials and workmanship.
 - Acoustic Treatments: Implementing advanced acoustic solutions to optimize sound quality.
 - Site Improvements: Enhancing the surrounding area to integrate seamlessly with the new facility.
- Cost-effective solutions were employed throughout to ensure the project stayed within budget while delivering high-quality results.

Completion Date June 2020

Owner San Diego Unified School District

Building Area 15,480 SF

Type New Construction

Construction Cost \$8.5M

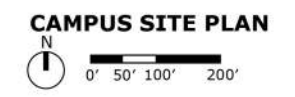
Cost per Square Foot \$549/SF



- 100 ADMINISTRATION
- 200 CLASSROOMS
- 300 MEDIA CENTER
- 400 ARTS AND FOOD SERVICES
- 500 GYM
- 600 CLASSROOMS
- 700 CLASSROOMS
- 800 MUSIC BUILDING**
- PC PORTABLE CLASSROOMS

- 1. MARCHING PRACTICE
- 2. MARCHING BAND STAGING
- 3. MARCHING BAND PROCESSION
- 4. VISIBILITY FROM STADIUM
- 5. ACTIVITY NODE
- 6. SERVICE ACCESS
- 7. CENTRAL QUAD

- P COMMUNITY PARK
- C COMMERCIAL AREA
- R RESIDENTIAL AREA



3 SCHOOL & COMMUNITY RESEARCH AND ENGAGEMENT

Context

Mira Mesa is a diverse and vibrant community in San Diego, recognized for its dedication to education, cultural richness, and active community participation. This community highly values educational excellence and has a strong tradition of supporting arts and music programs. Mira Mesa High School (MMHS) stands as a true neighborhood school, hosting a culturally diverse population where more than 51% of students speak a language other than English at home. The students are actively engaged in academics and extracurricular activities, with over 1,900 students participating in athletics, AFJROTC, clubs, music, drama, cheer, or band.

MMHS boasts one of the most robust music programs in California, featuring 270 band members and 70 orchestra members. The band participates in numerous on-site and national events throughout the year, including performances at the Rose Parade in Los Angeles and Carnegie Hall in New York City. The orchestra performs at distinguished concert venues across the nation.

However, the music program faced significant challenges, primarily due to its rapid growth, which rendered the existing facilities undersized and programmatically deficient. The building could no longer adequately accommodate the large number of musicians and their specific acoustic requirements. Instrument storage was insufficient, resulting in instruments being stored in hallways, access ramps, and on the floor during class. Additionally, no suitable outdoor parade area for large groups, and the procession areas were available for use. Moreover, the existing buildings lacked character and did not reflect the school spirit or the dynamic nature of the music program and the school's identity.

To address these challenges, the scope of work for the new Music Building at Mira Mesa High School included designing and constructing a facility with two high-volume practice rooms, various support spaces, an outdoor parade area, and a loading dock. Critical program requirements included sufficient instrument storage units, multiple small rehearsal rooms for various ensembles, and teacher offices with high visibility to ensure effective supervision and surveillance.

Key stakeholders in the project included:

- Students: The primary beneficiaries who provided input on their needs and preferences.
- Parents: Involved in providing feedback and supporting the project.
- Faculty: Music teachers and school staff ensured the design met educational goals.
- School Administration: Provided strategic direction and oversight.
- Local Government: Ensured the project aligned with community planning and development goals.
- Community Organizations: Helped in mobilizing community support and engagement.

The project leveraged several key assets:

- Strong community support and involvement.
- A well-established and successful music program.
- Experienced architects with expertise in designing educational and performance spaces.

The collaborative efforts of all parties involved resulted in a new Music Building that not only meets the academic and programmatic needs of the school but also embodies its spirit and pride.



MIRA MESA BAND AND ORCHESTRA



PREVIOUS MUSIC PROGRAM FACILITY

Process

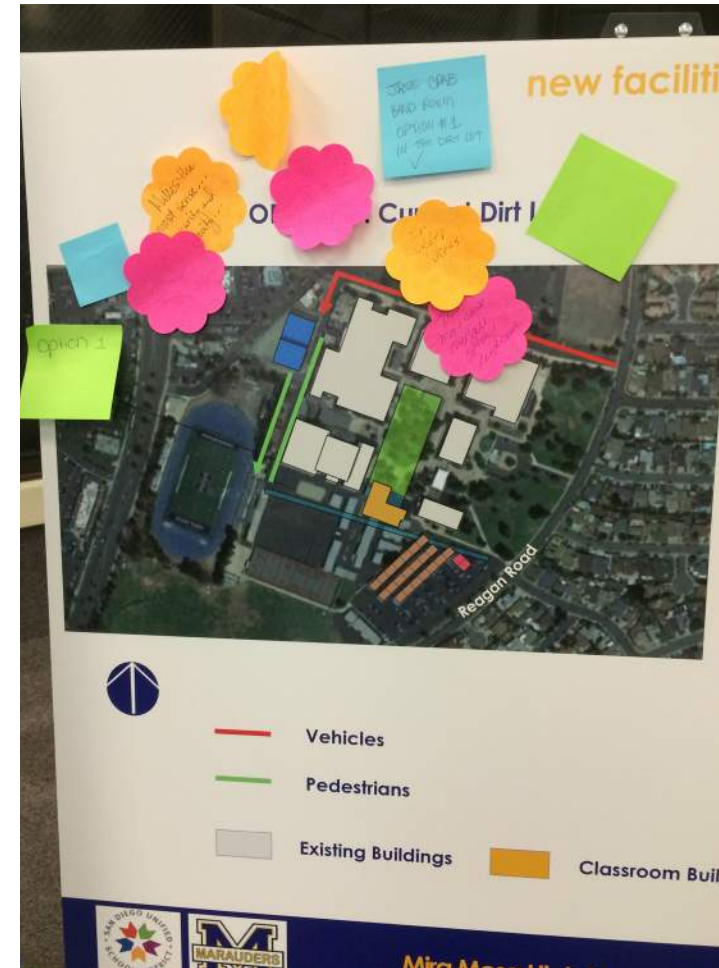
As the design team performed site assessment and early master plan concepts, programming discussions with faculty and the community modified priorities from only providing classrooms to inclusion of a new Music Building, creating a home for the School's nationally-recognized and award-winning music program. The design team worked closely with the District to re-prioritize the campus program to include a new music building.

The dialogue occurred during parents and community outreach sessions, identified as District Design Task Force (DTF) meetings. Vocal support for the music program influenced the District decision to modify the modernization priorities and support this important community desire. The resulting solution celebrates the accomplishments of the music program and has received local and national recognition for exemplary design meeting academic vision.

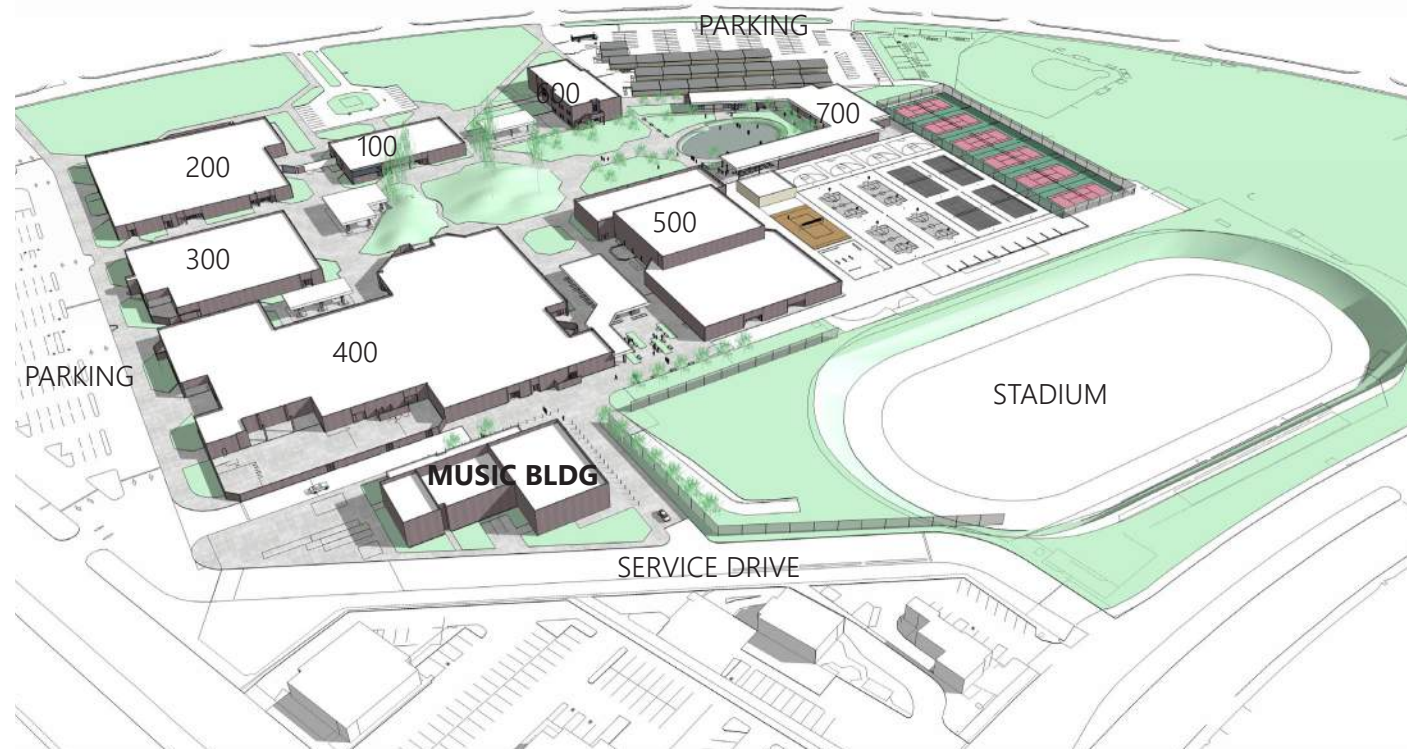
The visioning process involved comprehensive community engagement through a series of meetings, workshops, and surveys. Stakeholders were actively involved in providing input on their needs, goals, and design preferences. This collaborative approach ensured that the project reflected the collective aspirations of the community.

The engagement process fostered a sense of ownership and pride among stakeholders. The project not only enhances the school's music program but also serves as a cultural and educational hub for the community. The facility provides a venue for community events, performances, and other cultural activities, promoting inclusivity and diversity.

The design and engagement process prioritized accessibility and inclusivity. The facility includes features that accommodate diverse needs, such as accessible entrances, flexible spaces for various group sizes, and design elements that reflect the community's cultural diversity.



EARLY PLANNING - COMMUNITY GROUP ENGAGEMENT

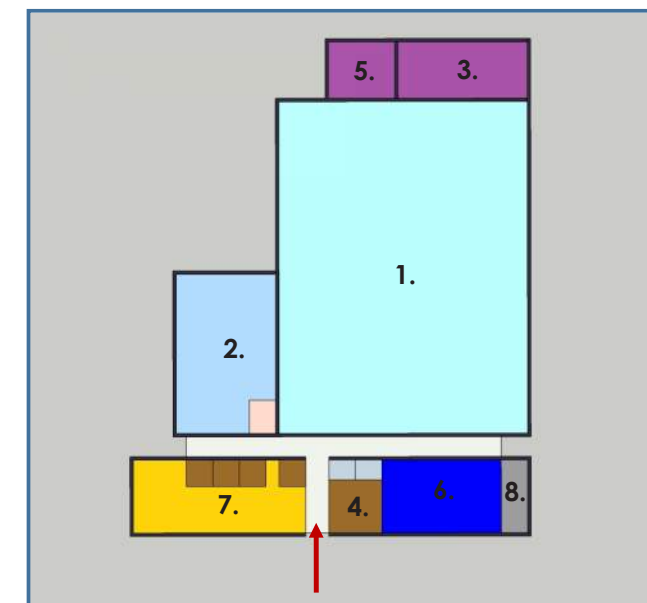


PRESCHMATIC CAMPUS LAYOUT STUDY

Floor Plan

GROUND LEVEL

1. Band Practice Room
2. Instrument Storage
3. Color Guard Storage
4. Ensemble Room
5. Uniform Storage
6. Lockers/Restrooms
7. Band Faculty/ Library
8. Utility Room



CAMPUS PLAN

FLOOR PLAN

PRELIMINARY MUSIC BUILDING PROGRAMMING AND PLANNING DIAGRAM

4 PHYSICAL ENVIRONMENT

Context

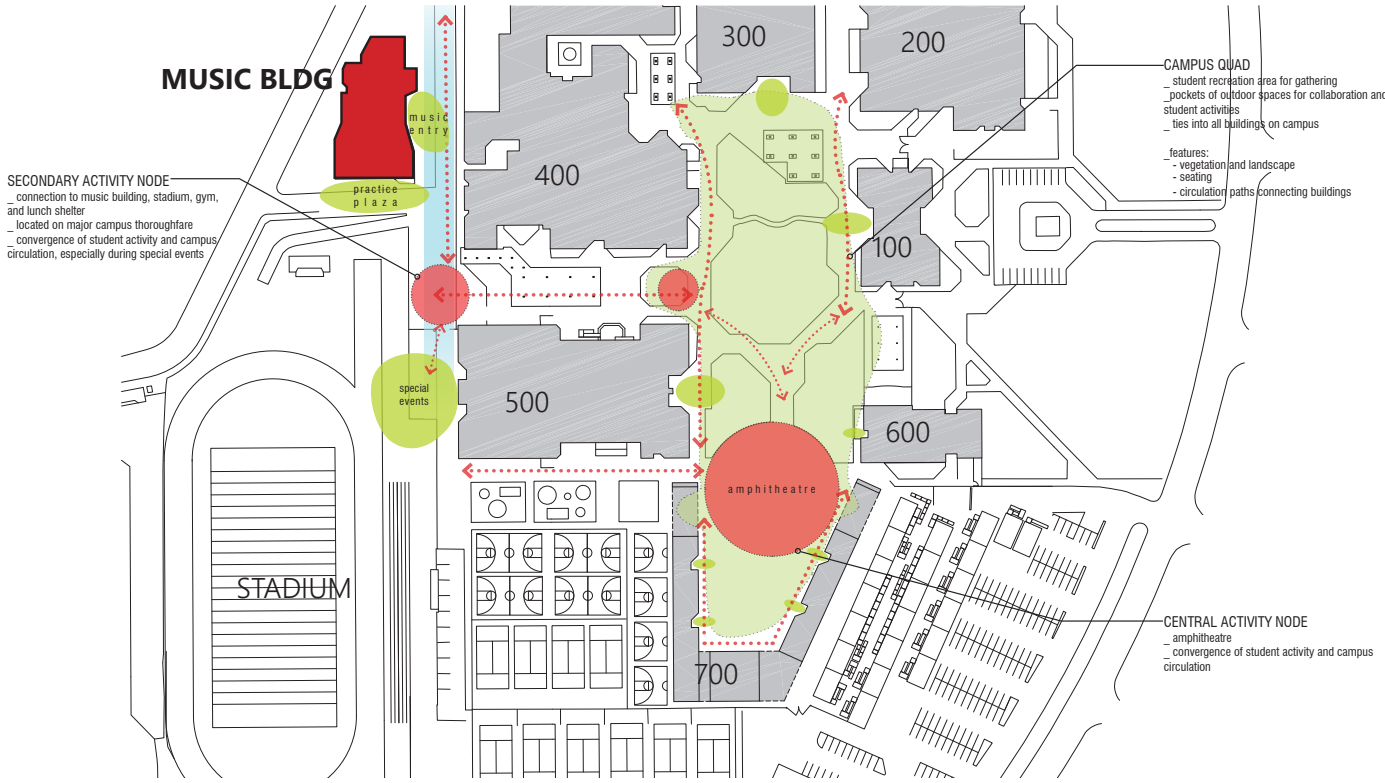
The Mira Mesa High School Music Building is strategically located to integrate seamlessly with the school campus and the surrounding community. This facility provides spaces for performances, practice, and community events, reinforcing the school's role as a cultural center. The design respects the existing architectural context while adding a modern and dynamic element to the campus. Active student outdoor spaces, including areas for band staging and marching practice, are seamlessly integrated with the building's overall design, supporting the student learning experience.

Inspiring Design

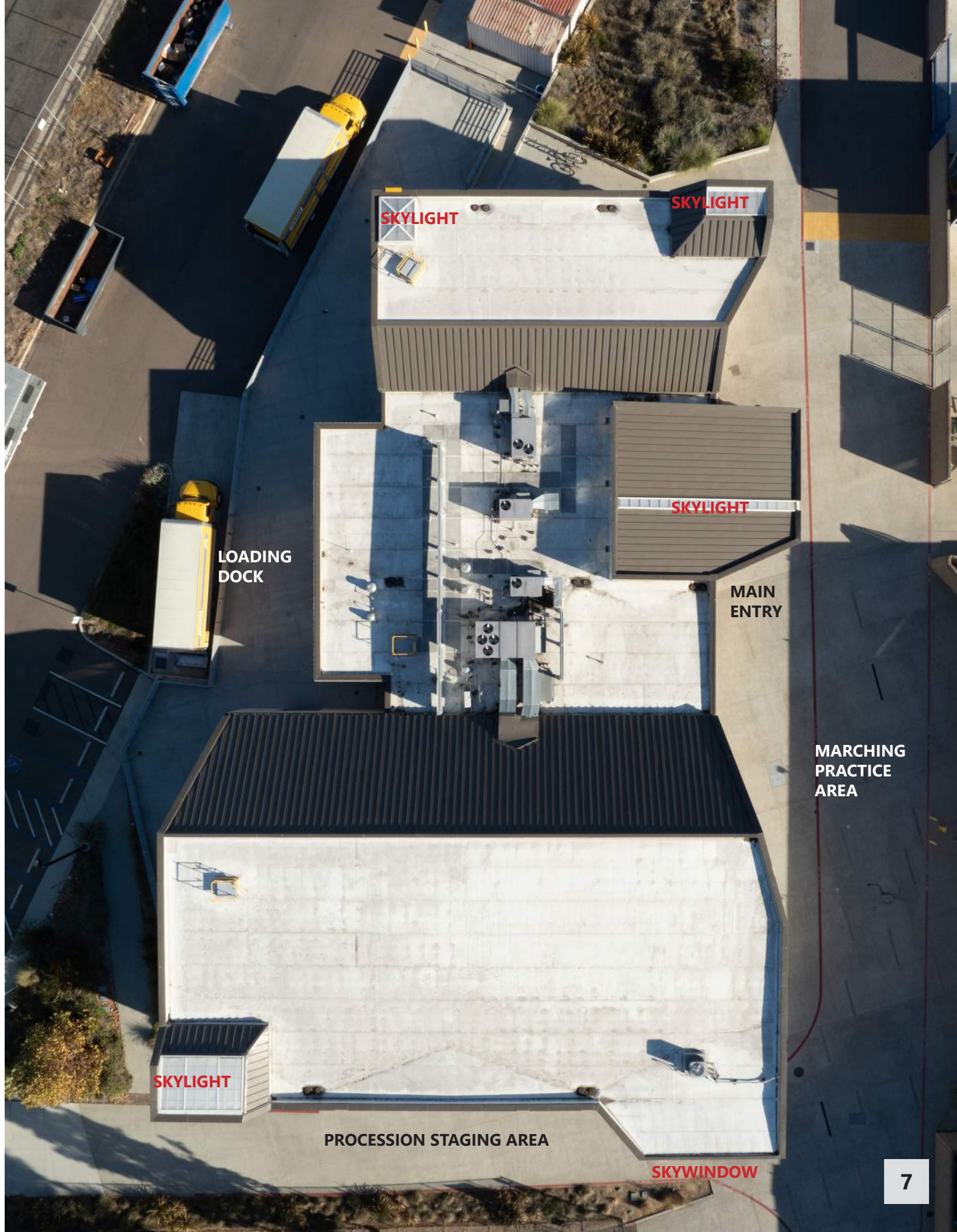
The building's design aims to inspire students and the community. The dynamic forms and integration of natural light create an uplifting and motivating environment, encouraging creativity and excellence in music.

Innovative Features

- Dynamic Building Forms: The high-low-high volume configuration enhances acoustics and reflects the dynamism of music.
- Acoustic Treatments: Angled walls and ceilings prevent echo and ensure sound clarity.
- Natural Light Integration: Skylights and clerestories provide indirect daylight, enhancing the visual experience without distracting the musicians.



QUAD AND OUTDOOR CONCEPT



Functional Layout

The plan layout is designed to optimize functionality and acoustic performance:

- **Acoustic Separation:** The two large classrooms, which have acoustic incompatibility, are separated by functional support spaces, such as restrooms, storage areas, and small practice rooms.
- **Efficient Circulation:** Circulation is designed to maximize flow during class, ensuring that students can efficiently access instrument storage without delay or disruption.
- **Strategic Office Placement:** Teacher offices are strategically located to have views of classrooms, corridors, and the main lobby, facilitating supervision and interaction.

Accessibility and Inclusivity

The facility is designed to be accessible and welcoming to all:

- **Accessible Entrances:** Ensuring ease of access for all students and visitors.
- **Flexible Spaces:** Designed to accommodate various activities and events.
- **Inclusive Design Elements:** Features that promote inclusivity and cater to diverse needs.

Sustainability and Wellness

The building incorporates sustainable practices to enhance the well-being of students and staff and to create a healthy, sustainable environment:

- **Energy-Efficient Systems:** Reducing the building's energy consumption.
- **Sustainable Materials:** Use of environmentally friendly materials in construction.
- **Natural Daylighting:** Maximizing natural light to create a pleasant and energy-efficient environment.
- **Indoor Air Quality:** Fabric ducts are provided as a method to preserve clean air within the main practice space. They avoid vibration (which is good for acoustics) and the collection of dust particles, which can present a health hazard for students.

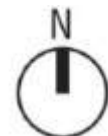
FLOOR PLAN KEYNOTES

MUSIC BUILDING (800)

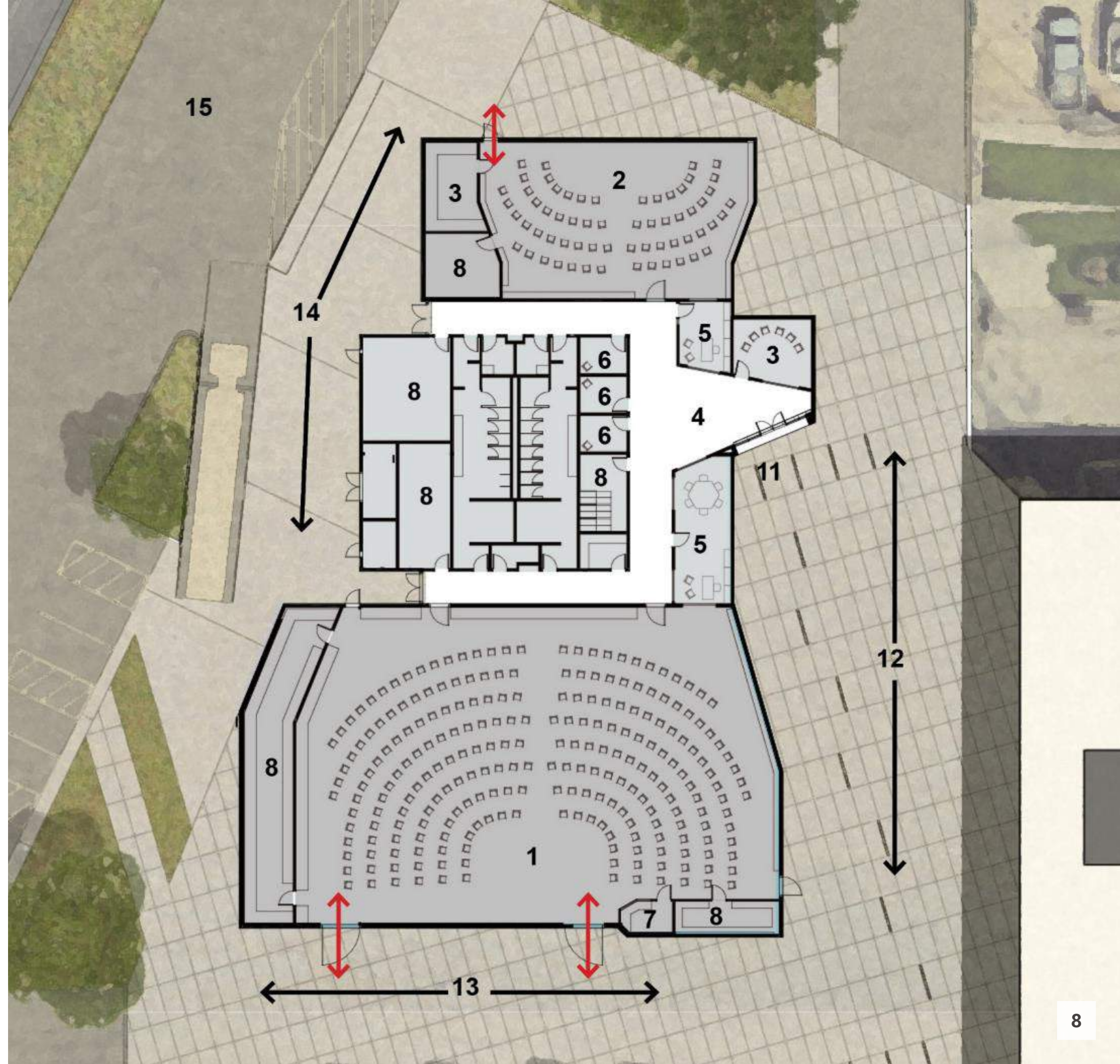
1. BAND ROOM
2. ORCHESTRA ROOM
3. EMSEMBLE ROOM
4. LOBBY
5. OFFICE
6. REHEARSAL
7. CONTROL ROOM
8. INSTRUMENT AND SPECIAL EQUIPMENT STORAGE

SITE

11. MAIN ENTRY
12. SIMULATED PARADE ROUTE
13. MARCHING BAND STAGING AREA
14. INSTRUMENTS AND EQUIPMENT LOADING AREA
15. SERVICE DRIVE

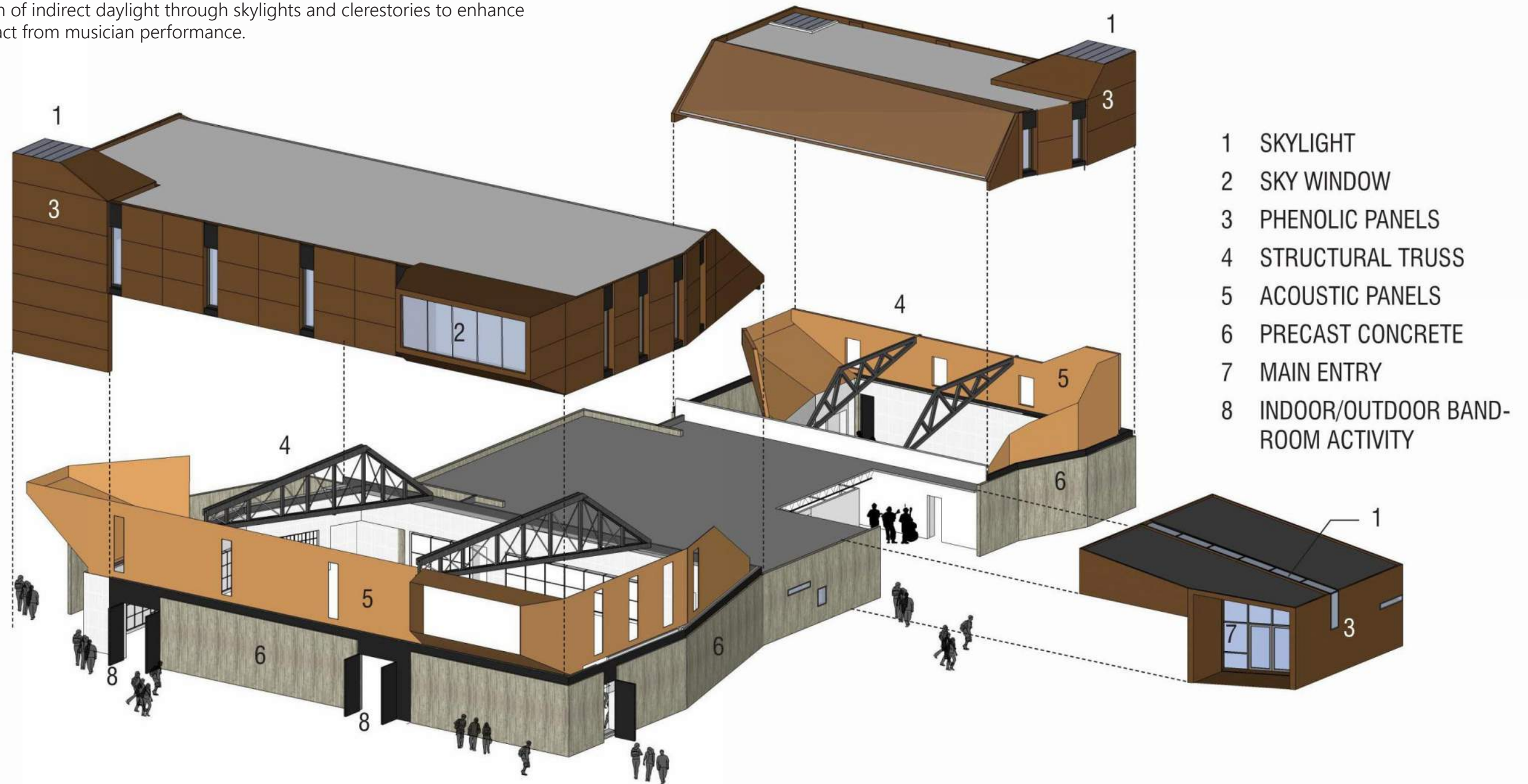


FLOOR / SITE PLAN



Music practice facilities for K-12 education often follow 'shoebox' organizational shape to fit traditional campus settings. The new Mira Mesa High School Music Building is intended to be 'musical' in form respectful of the stringent technical qualities for acoustics and controls for large instrumental ensembles.

The building is composed internally of two primary high-volume practice rooms formed by angled walls and ceilings acoustically treated for sound deflection and absorption to ensure optimum musical performance. The rooms serve a diversity of group sizes, one for a band of up to 270 musicians and a second for an orchestra of up to 70 musicians. The rooms are connected by low volume support spaces, the composition of high-low-high forms that is kinetic in appearance and protective from acoustic overlap between the rooms. Each of the volumes are multi-faceted spaces, each created to meet simple rules to marry acoustic performance with architectural expression: changing exterior wall alignments that relate to the interior conditions of acoustic treatment and avoidance of parallel surfaces to avoid echo; and incorporation of indirect daylight through skylights and clerestories to enhance the visual experience and not detract from musician performance.



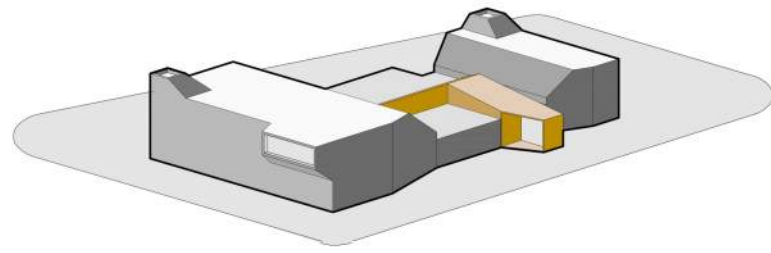
EXPLODED AXONOMETRIC



BAND ROOM VOLUME, SKY WINDOW, MAIN ENTRY & OUTDOOR ASSEMBLY AREAS



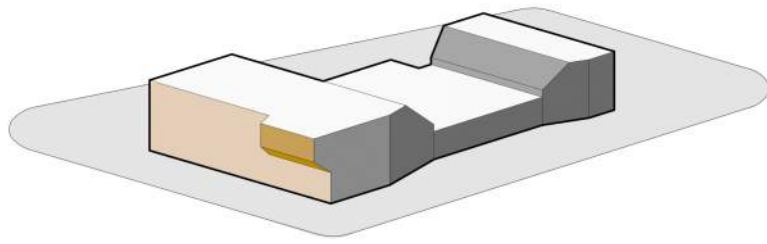
VIEW OF THE BAND & ORCHESTRA VOLUMES AND EAST PARADE STAGING AREA



ENTRANCE

A volumetric expression extends out to guide students towards the main entrance into the building. The shape is guided by the trapezoid-pyramidal geometries drawn from the school campus and are further applied to main sources of natural daylight access (skylights and sky window). Laminate panels with saturated school colors highlight the lobby from afar and support school spirit.

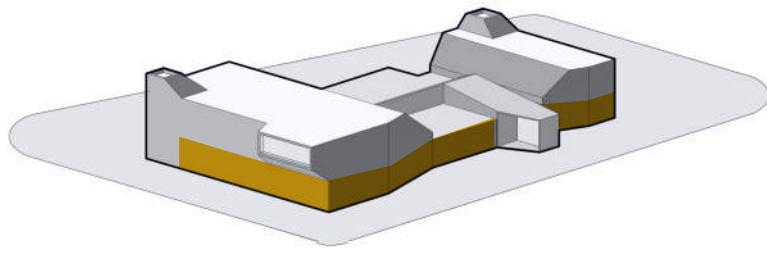




SCHOOL SPIRIT AND ICONOGRAPHY

The south facade of the building is an iconographic statement that faces the stadium. It's mass, volume, materials and light articulations act as a supporting component to that involve band processions into sport events.

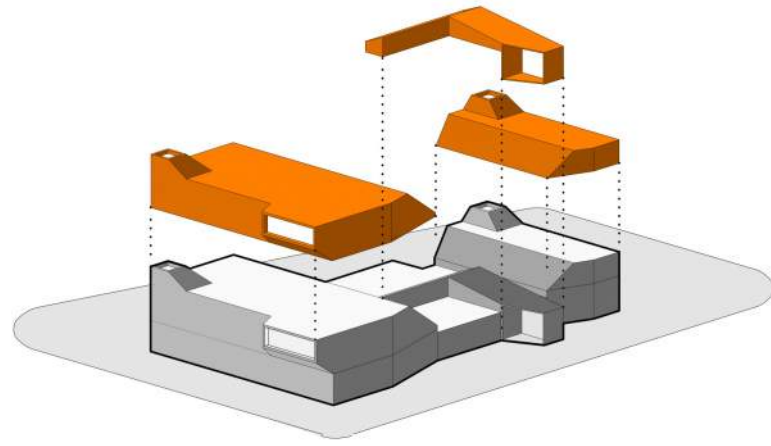




MATERIALS

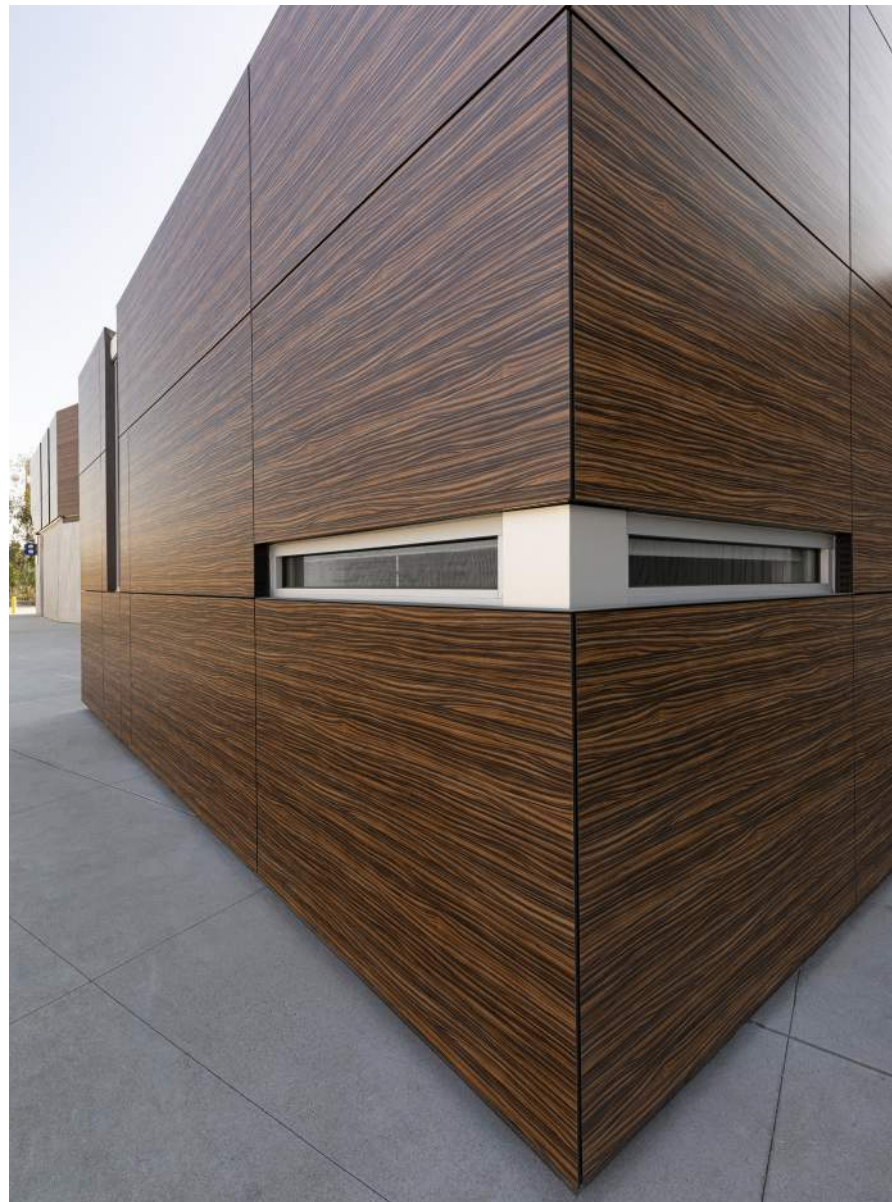
A pre-cast concrete base was selected to fit within the school campus context, which is defined by single story buildings and 1970's vertical fluted block. The concrete base creates a datum line which carries to the interior walls within the band and orchestra rooms.





MATERIALS

Light access into the main interior spaces (lobby, orchestra room and band room) is defined by phenolic panels. This material was designed for efficiency by virtue of modularity and was utilized for with environmental criteria because of its durability and recycled content (wood fiber)



5 EDUCATIONAL ENVIRONMENT

Context

The educational vision for the Mira Mesa High School Music Building is to provide a high-quality environment that supports music education and fosters student creativity and achievement. The facility aims to prepare students for future success in music and other disciplines by offering a space that encourages exploration, practice, and performance.

Key Features:

- Acoustically Treated Surfaces: Walls and ceilings are treated to deflect and absorb sound, ensuring optimal acoustic performance.
- Skylights and Clerestories: Indirect daylighting creates a comfortable and inspiring environment without glare.

Manipulation of Natural Light

The Mira Mesa High School Music Building features two state-of-the-art performance spaces that require a focus on music and coordination of the ensemble. High-volume practice rooms with angled walls and ceilings are designed for optimal acoustics, while the building's form incorporates dynamic shapes and thoughtful detailing to enhance both visual appeal and functional performance.

Natural Light Strategy:

Controlled natural daylight is critical to avoid distracting glare or heat gain. Direct or disturbing light is avoided to create a calm and inspiring environment. Incorporating natural daylight enhances the human experience and fosters comfort for the ensemble. The design solution utilizes skylights and clerestory windows to manipulate daylight through building projections that collect and redistribute light. This strategy results in a series of sculpted building form projections that inform both the internal and external expressions of the building architecture, performance function, and musical movement.

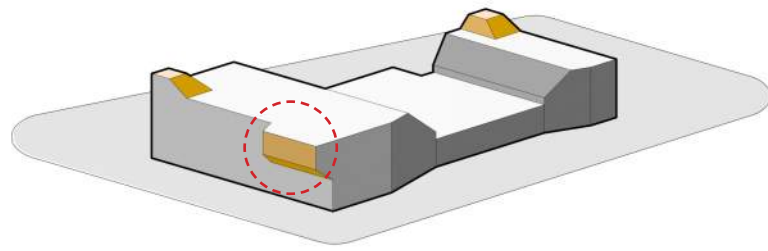
- Band Room: The dominant clerestory window faces south, guiding significant light into the space through a horizontal building form projection. Internal sloping surfaces create depth and shading protection, reflecting and softening light rays. Clerestory windows use fritted graphics for glare diffusion or blackout screens for increased light control. Skylights use vertical building form projections and internal sloping surfaces to deflect light, creating a pleasing composition of illuminated surfaces of acoustic wood panels. Frosted glass in the skylights enhances architectural expression while meeting functional criteria.
- Orchestra Room: Indirect light enters through two skylights. One faces west, inviting a warm, glowing light in the morning, while the other has a vertical trapezoidal shape that diffuses light throughout the day. Frosted glass ensures the light remains soft and calming, preventing glare for the students.

Acoustic Treatments

The acoustic treatment of the performance spaces is tailored to the specific needs of each room to ensure optimal sound quality.

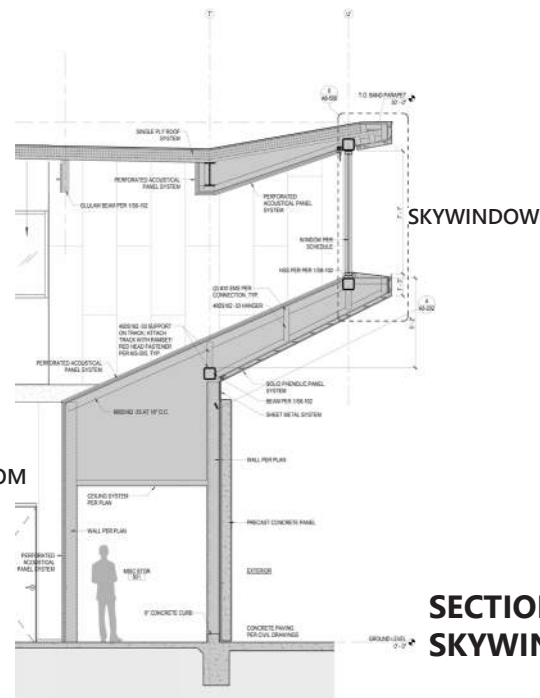
- Band Room Acoustics: The band room is designed with a focus on sound absorption to manage the high volume produced by the band. Walls and ceilings are treated with materials that absorb sound, reducing echo and reverberation to create a controlled acoustic environment suitable for loud performances.
- Orchestra Room Acoustics: The orchestra room requires a more nuanced acoustic treatment. It features selective sound absorption to maintain clarity of the refined notes while also diffusing sound through ceiling treatments known as "sound clouds." These sound clouds scatter sound waves, enhancing the richness and depth of the music while preventing unwanted echoes.





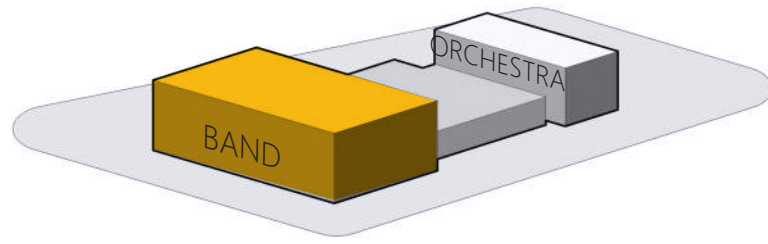
SKY WINDOW
NATURAL AND INDIRECT LIGHT

To optimize wall space use for instruction and instrument storage, natural day lighting for this building is to be high and indirect will be provided through skylights and clerestories.



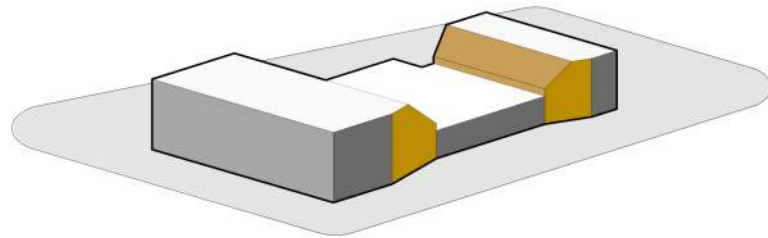
SECTION THROUGH SKYWINDOW





VOLUMES AND MASS

Of the two main volumes of the building, the band room was planned for over 260 students at time. The acoustic demands required great volume and space for acoustics and instrument storage.



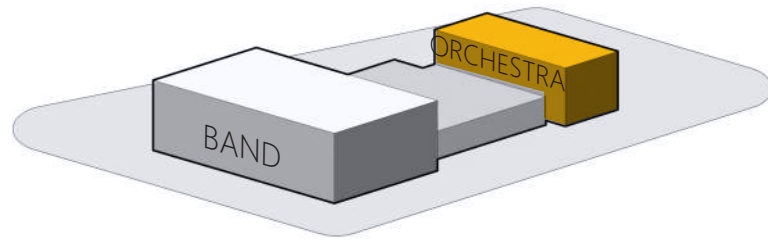
ACOUSTICS

Non-parallel planes provide an optimal acoustic performance for practice rooms of this magnitude. The shape of the building, with angled walls and ceilings for absorption, is a direct consequence of the acoustic needs of the spaces.

INTERIOR AIR QUALITY

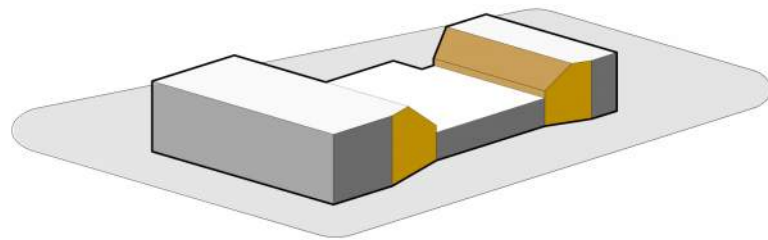
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VOLUMES AND MASS

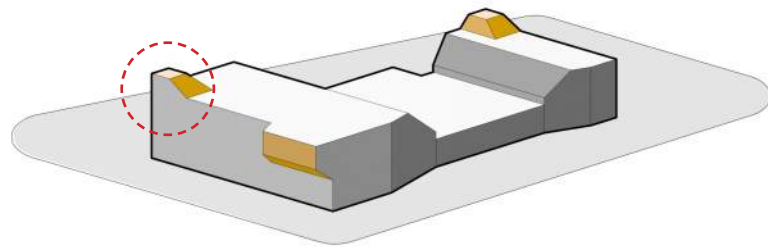
Of the two main volumes of the building the Orchestra Room was planned out for over 60 students. It's dimensions and scale reflect the need for a controlled, low-volume room and was separated from the loud band room to avoid acoustic conflicts.



ACOUSTICS

Non-parallel planes provide an optimal acoustic performance for an orchestra room of this caliber. The shape of the space was defined by angled walls and suspended bi-radial panels for diffusion of sound.



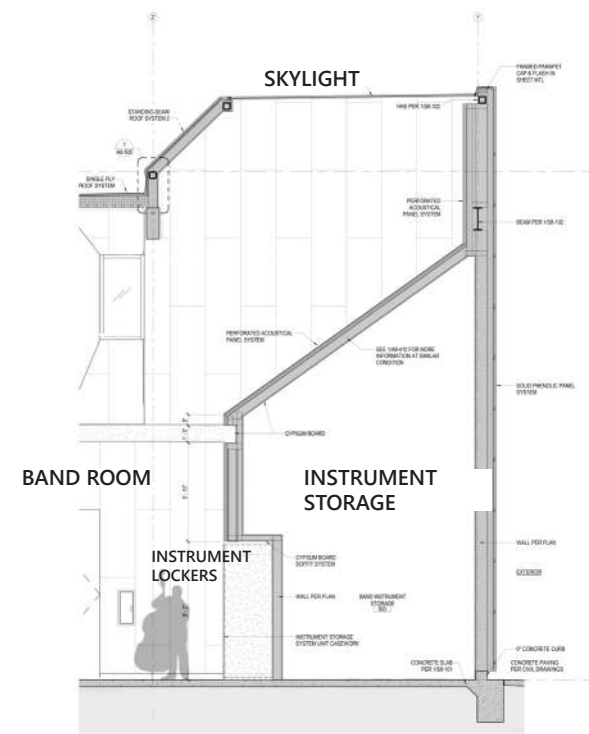


NATURAL AND INDIRECT LIGHT

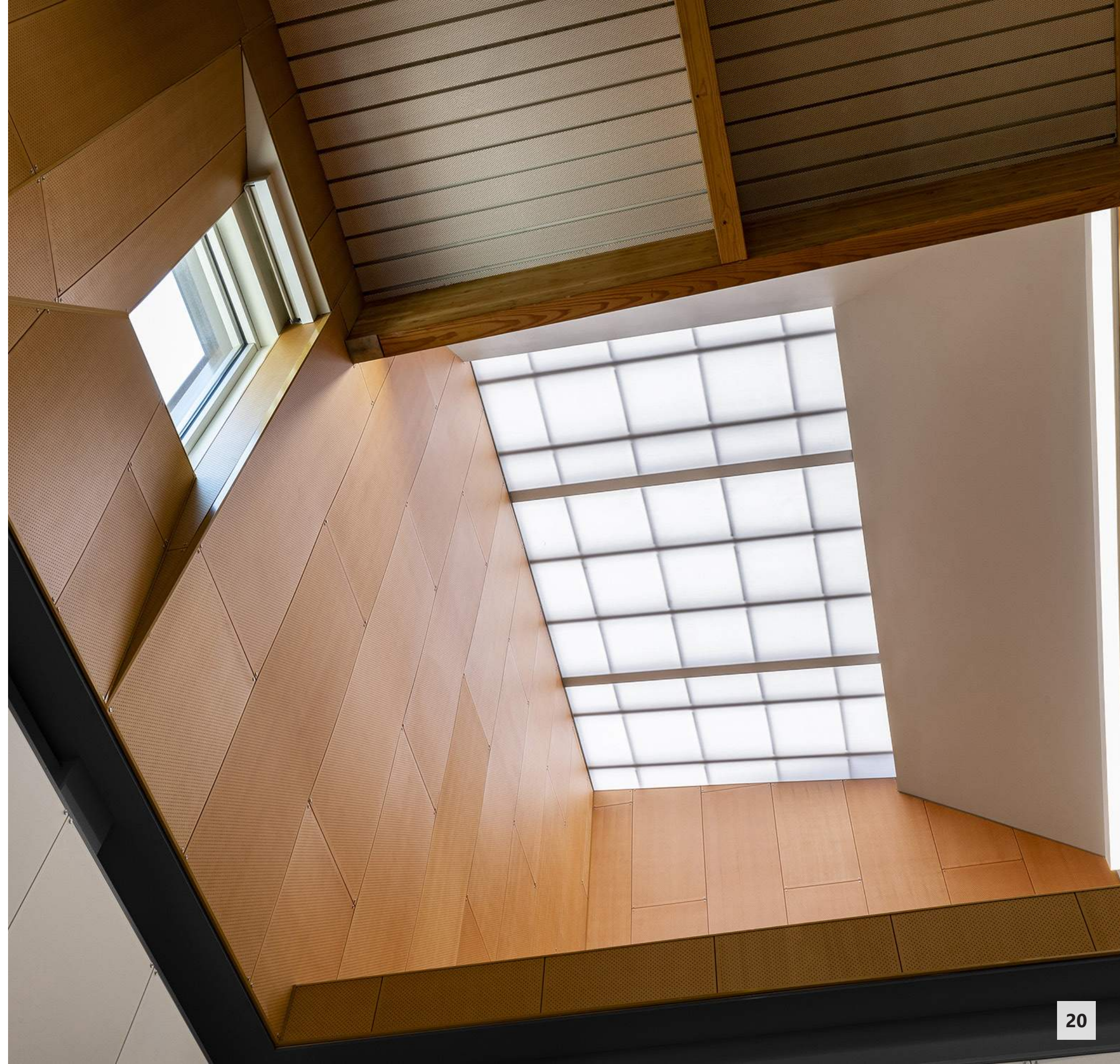
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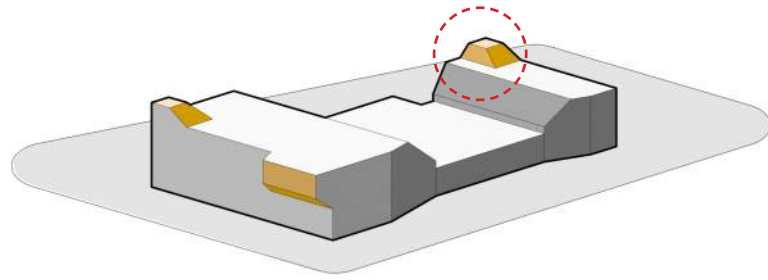
MANIPULATION OF NATURAL DAYLIGHTING

Through reflectivity of light that bounces off diverse surfaces, the spaces benefit from a natural daylighting system that contributes, not only to improved visibility, but also to a stimulating and spiritual learning environment.



SECTION THROUGH SKYLIGHT



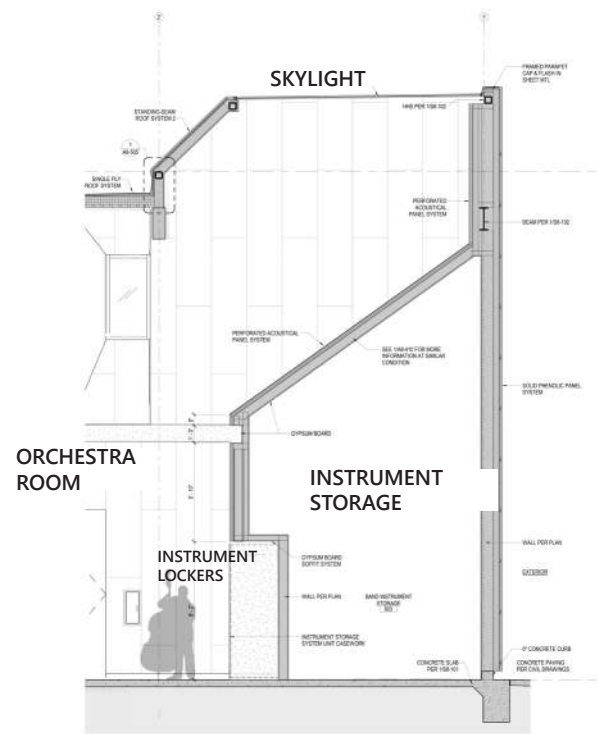


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SECTION THROUGH SKYLIGHT



The design accommodates various teaching styles and group sizes, offering flexible spaces that can be reconfigured for a range of activities, from individual practice sessions to large ensemble rehearsals. This flexibility ensures that the facility meets the diverse needs of both teachers and students.

The spaces are designed to be highly adaptable, featuring movable acoustic panels, flexible seating arrangements, and multipurpose support areas. This adaptability allows the facility to evolve with changing educational requirements, supporting a variety of learning and teaching styles.

Additionally, these spaces are utilized for multipurpose events beyond academic activities, serving as versatile venues for community events and performances.



6 RESULTS

The Mira Mesa High School Music Building successfully meets the educational goals by providing a high-quality environment that enhances music education. The facility supports the school's vision of excellence and fosters student achievement.

The project aligns with the school district's goals by offering a state-of-the-art educational space that supports student success and community engagement. The facility enhances the school's reputation and contributes to the district's overall educational mission.

The project strengthens the community by providing a cultural and educational hub. It fosters pride and involvement among residents, creating a sense of ownership and belonging.

Unexpected positive outcomes include increased community interest in the music program, enhanced school reputation, and the building's use as a venue for various community events and performances.

The project demonstrates good stewardship of financial resources by delivering a high-value facility within budget. The careful planning and execution ensured that the project maximized benefits for students and the community while staying within financial constraints.

The building promotes sustainability through energy-efficient design, use of sustainable materials, and natural daylighting. These features contribute to the well-being of students and staff, creating a healthy and sustainable environment that supports learning and performance.



The Architects Mosher Drew Team has been great to work with on Mira Mesa High School Site Modernization Project. The Project has a new Music Building, a Classroom Building and extensive Site Modernization. The Mosher Drew Team has created a pair of buildings that go beyond just being good learning spaces. The Music Building is unique in design and will serve to inspire students for years to come. The classroom building has incorporated the latest teaching pedagogy concepts into the design while being responsive to the project budget. The Mosher Drew Team has had excellent client contact and has always been responsive to the needs of the district.

- Michael Hernandez, Project Coordinator
San Diego Unified School District

"The architects at Mosher Drew were able to take the priorities from both our school and the community to create a design for our site that will serve our students not only academically, but will also help change the social geography of the campus. I was incredibly impressed with their ability to put my vision for how I want people to feel when they step on the campus into a cohesive design that blends the current look and feel of the campus with a more modern and functional design. Their attention to detail and responsiveness to concerns during the construction process are second to none, and I look forward to continue working closely with Mosher Drew as we complete our site modernization."

Jeffrey Sabins
Principal, Mira Mesa High School





The Mira Mesa High School Music Building is a testament to the power of thoughtful design and community engagement. It provides an exceptional environment for music education, fosters community pride, and stands as an iconic representation of the school's commitment to excellence. The project not only meets but exceeds educational, district, and community goals, ensuring a lasting positive impact on students and the broader community.

This detailed dossier highlights the architectural, educational, and community-focused aspects of the project, demonstrating its significance and success in creating a world-class music facility for Mira Mesa High School.

