

Malibu High School

Santa Monica-Malibu Unified School District



EXECUTIVE SUMMARY

The goal of the architectural design for Malibu High School is to create a lasting new facility that would be both a sustainable laboratory and a teaching tool for students and the neighborhood while responding to the unique site conditions, programmatic needs, and regulatory requirements of the project. Many design features integrate sustainable strategies emphasizing energy efficiency and optimal learning environments. Features such as operable windows, an emphasis on daylighting in classrooms, library and

office spaces, heated floors, and solar tubes, along with protective overhangs and extensive vertical shading fins, all promote optimized learning environments while reducing reliance on mechanical and electrical systems. The revitalized student courtyard improves the campus's stormwater management while creating various scaled-use opportunities for students and supports outdoor teaching environments that are highly suitable to the climate of Malibu.





SCOPE OF WORK AND BUDGET

The school has an extensive athletic program that includes a large field, outdoor swimming pool, tennis courts and a competition gym. The library and auditorium have functions that extend beyond the school, serving as public event spaces. The school shares its campus with the Boys and Girls Club. Garden areas and riparian projects on the school serve as education, training, and joint-use tools.

- / Building Area (SF): 45,700
- / Construction Cost: \$53,725,600
- / Cost per square foot: \$1,175
- / Completion Date: June 15, 2021

SCHOOL AND COMMUNITY ENGAGEMENT: Community

MALIBU, CALIFORNIA

34 MILES WEST OF LOS ANGELES

With sweeping views of the Pacific Ocean and the Santa Monica Mountains, Malibu High School sits on a hillside ¼ mile from Zuma Beach and the Pacific Coast Highway. While visually dramatic, the existing school sits in an increasingly environmentally sensitive area. Malibu community's heightened awareness of the fragility of its coastal habitat became the foundation and inspiration for its new Classroom, Library, and Administration building.



SCHOOL AND COMMUNITY ENGAGEMENT: Stakeholders

Malibu High is the center of a community that is located in a city famous for its captivating beaches, canyons, surf, and sun. The community consists of students and parents mostly of the Malibu community, but some come from Santa Monica, Los Angeles and Oxnard. There are also the local residents who value the education provided by the school and the natural environment of Malibu. Additionally, entities such as the City of Malibu, the Malibu Foundation for Youth and Families, Pepperdine University, Malibu Chamber of Commerce, and the Malibu Special Education Foundation, all contribute to the community's involvement in the success of Malibu High School. The presence of the Boys and Girls Club on campus further integrates the school with the community, providing after-school programs and youth

development opportunities. With the original campus being designed in the 1960s, this new building piqued the interest of all involved. Students were engaged during construction, tours with the design and construction team provided insight into the behind-the-scenes process of designing and constructing a building that would impact the students and community of Malibu for generations to come. The structure, building systems, and photovoltaic system are all on display and continue to tell stories on how the building comes together and operates, allowing for ongoing educational opportunities.

484

Students

93%

Students Pursue
Post-Secondary Studies

#146

In California High
Schools



EXISTING CAMPUS ENTRY



EXISTING CAMPUS

SCHOOL AND COMMUNITY ENGAGEMENT: Challenges

The planning process centered on three overlapping issues:

- / The intelligent use of the site.
- / The creative resolution of program
- / The concern for the client's budget and schedule
- / The existing schools location in an environmentally sensitive area was of critical concern to the district and the design team.

The process is an investigation of the functional, programmatic and technical requirements of the project. The architect sought to discover the school's full potential while making responsible contributions to the environment. To create a school that would respond to all user and community needs, the architect began the planning process by establishing a site building committee (SBC). Led by the school principal, the SBC includes representatives from the District, students, parents, the Measure BB advisory committee, and the architect. The group's goal: to share project goals, explore costs and budgets, and establish priorities and a unified campus vision. This process led to a complete revitalization of the site, which includes Malibu High School, Middle School, and an adjacent Elementary School. The SBC ensured that all visions toward this campus revitalization would be reviewed and incorporated in the final solution.



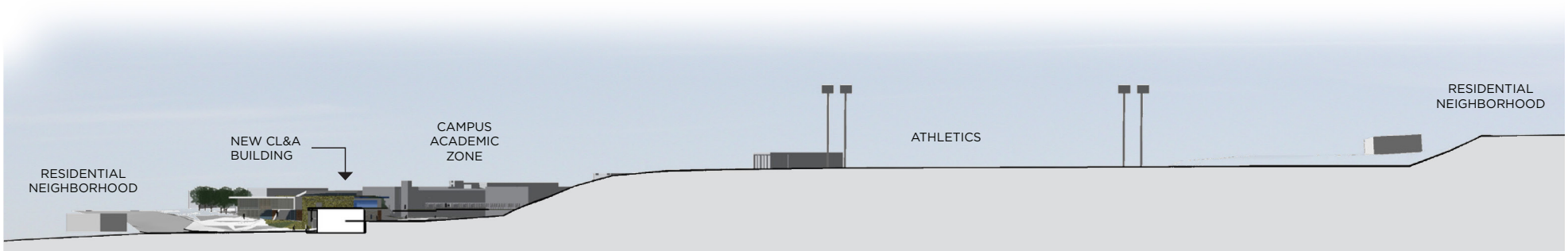
SCHOOL AND COMMUNITY ENGAGEMENT: Process and Project to Community at Large

This new addition to the Malibu High School campus will educate local teens, but still preserve the beautiful and natural environment. The design team carefully analyzes the height of the two-story structure to ensure minimal impact on the surrounding neighborhood. The roof garden allows the building to blend into the rolling hillside community. The team also administers traffic studies to find the best option to alleviate local traffic congestion at school pick-up and drop-off. The library and outdoor space were also designed with input from local emergency responders to accommodate staging and gathering needs in times of crisis.



Justice, Equity Diversity and Inclusion

The new addition to the Malibu High School campus has been designed to blend in with the surrounding neighborhood by utilizing topography and incorporating roof gardens, which helps preserve the natural landscape for the local community. Additionally, the new structure includes larger meeting spaces for community groups, which can be utilized by nearby residents. The outdoor space on campus has been designed in collaboration with local emergency responders, ensuring it can accommodate staging and gathering needs during times of crisis and making it a valuable community asset.



SITE SECTION

EDUCATIONAL ENVIRONMENT DESIGN: Environment Supports Curriculum

The designed environment at Malibu High School strongly supports the curriculum. The expanded library includes computer labs, conference rooms, project rooms, a café, and additional book storage, providing resources that directly align with the curriculum. The larger reading area and centralized circulation desk promote literacy and research skills. Facilities such as the flexible conference room, career center, and tech office on the courtyard level enhance curriculum-related activities. Joint-use and community programs, along with renovated facilities, further enrich the learning environment.



SCIENCE LAB



LIBRARY READING AREA



MEDIA LAB

EDUCATIONAL ENVIRONMENT DESIGN: Educational Vision and Goals of the School, Environment Supports Learning & Teaching Styles

The designed environment at Malibu Middle/High School supports a variety of learning and teaching styles. Features such as the new library, renovated facilities, athletic spaces, joint-use programs, and outdoor learning areas create an interactive and diverse learning environment. This allows for different teaching approaches, including independent study, group collaboration, technology integration, physical education, interdisciplinary approaches, and hands-on experiences.



EDUCATIONAL ENVIRONMENT DESIGN: Adaptability and Flexibility

EXTERIOR VIEWS

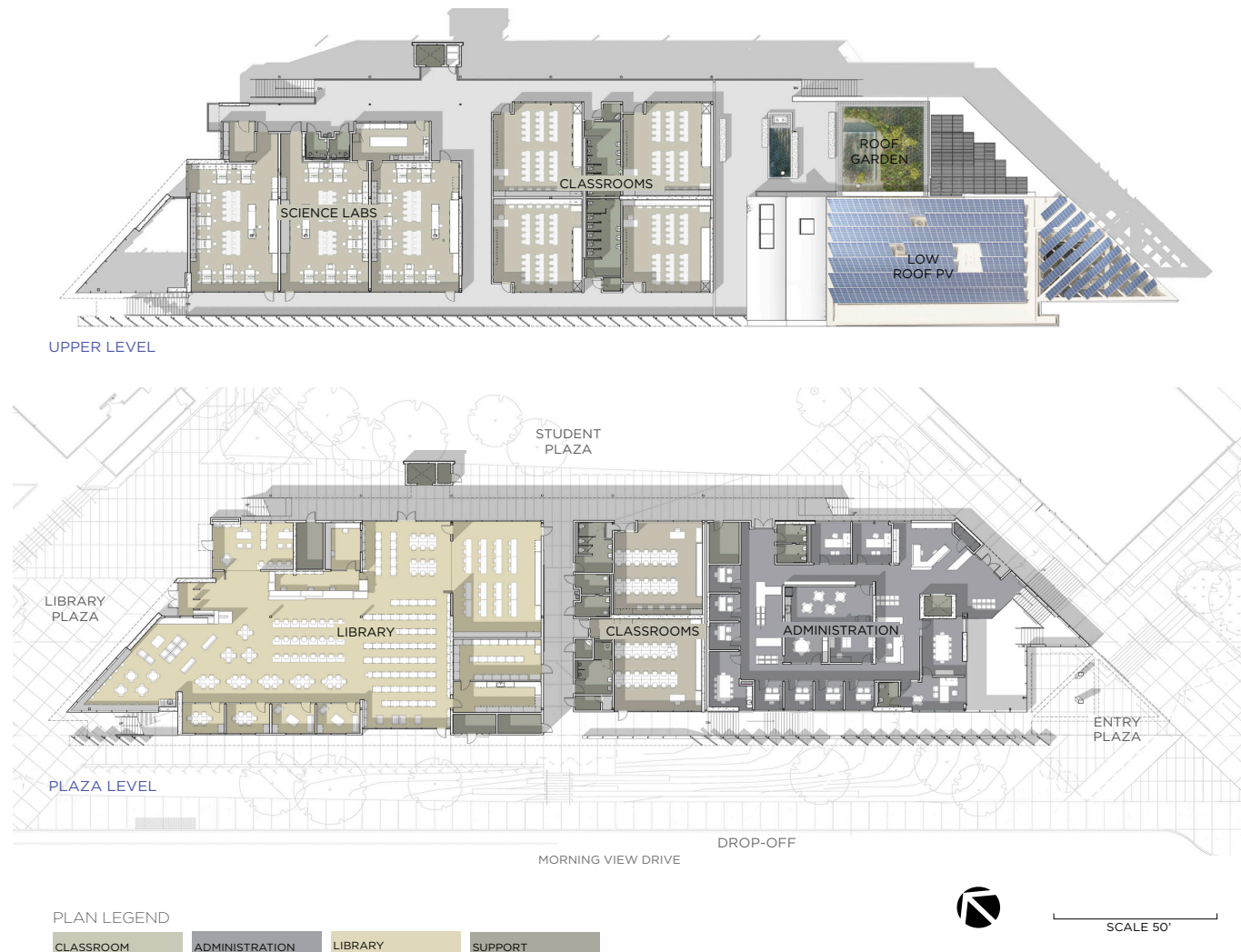
The new building and site improvements in Malibu and the Santa Monica Mountains are designed to be a flexible assets during challenging times brought on by climate change, including fire, flooding, and mudslides. The centrally located parking and open spaces on campus serve as a command center and staging area for emergency response teams, facilitating swift action during crises. Additionally, the site includes 90,000 gallons of stormwater retention built into the parking and open spaces to mitigate the effects of infrequent yet heavy storm events. The new building features flexible spaces with moveable walls and adaptable furniture, allowing for long-term student and community needs. Spaces like the library and media lab can easily transform as needs change. Moreover, the building provides community meeting spaces and services, exemplified by hosting a vaccine clinic in 2021 for students, families, and the larger community. These resilient design elements and community-focused features demonstrate the commitment to addressing climate challenges and supporting the well-being of the local community in Malibu and the Santa Monica Mountains.



EAST STREET VIEW

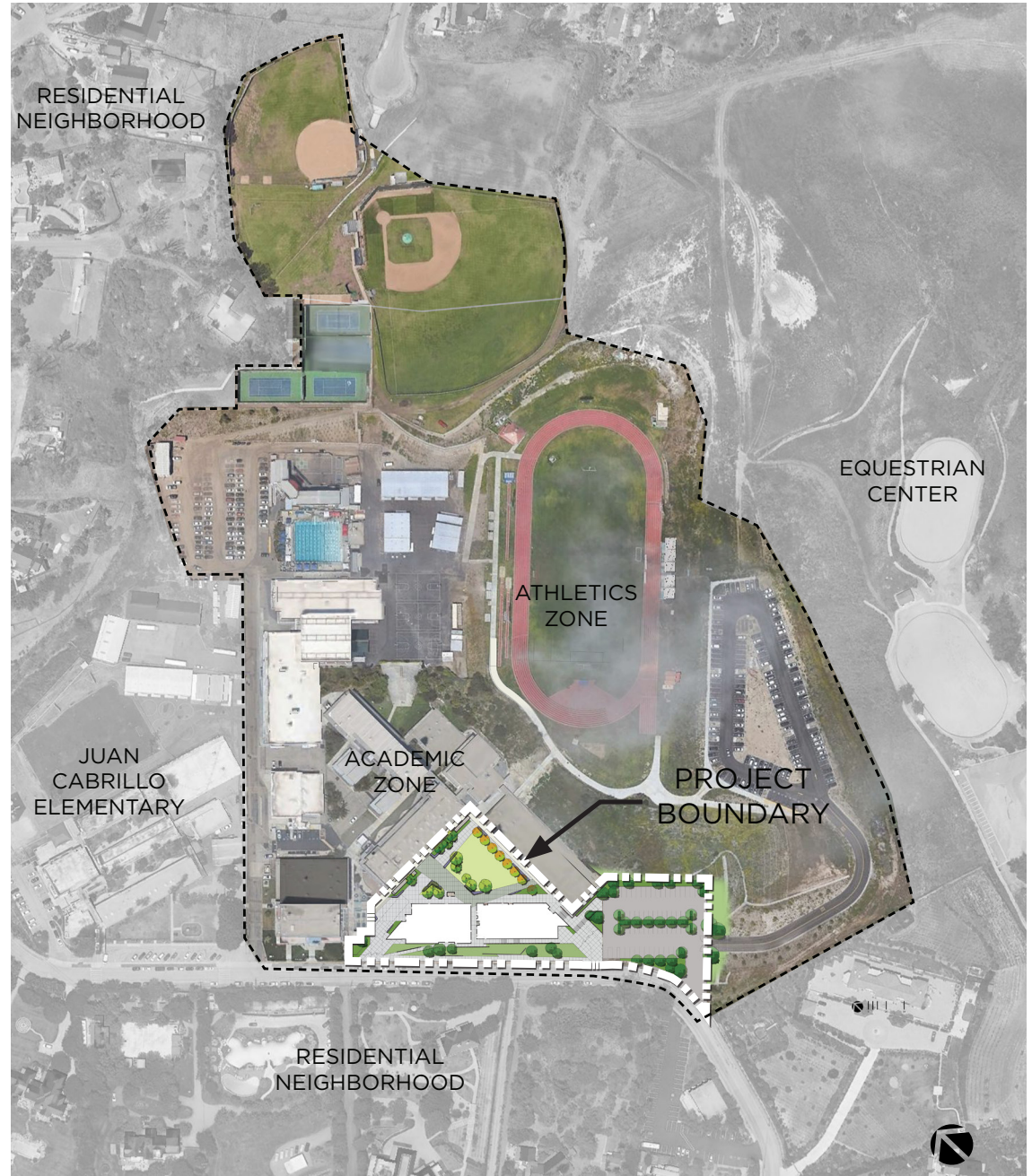
RESULTS OF THE PROCESS & PROJECT: Project Achieves School District Goals, Educational Goals and Objectives

Through the construction of a new library, administration offices, and athletic facilities, and the renovation of existing facilities and configurations, Malibu Middle/High School seeks to create a memorable campus to enhance the learning environment for its current, 1,380-student enrollment and future generations. Based on a traditional 6-8 and 9-12 curriculum, the campus also accommodates shared middle school facilities and will house various joint-use and community programs throughout the calendar year. The result is an interactive learning environment that connects students with their surrounding neighborhood in a safe, dynamic campus.



RESULTS OF THE PROCESS & PROJECT: Community Goals

The new addition to the Malibu High School campus is designed to educate local teens while preserving the beautiful environment. The design team carefully considers the height of the two-story structure to minimize its impact on the neighborhood. By incorporating a roof garden, the building seamlessly blends into the rolling hillside community, maintaining the natural landscape. Traffic studies are conducted to alleviate congestion during school pick-up and drop-off, addressing the needs of the local community. Furthermore, the library and outdoor space are designed in consultation with local emergency responders, ensuring they can serve as staging and gathering areas during crises. This addition not only enhances the educational environment but also provides larger meeting spaces for community groups, benefiting nearby residents and establishing the campus as a valuable asset for the entire community.



CAMPUS PLAN

RESULTS OF THE PROCESS & PROJECT: Unintended Results and Achievements

California is also known for its wildfires. On November 8th, 2018, the Woolsey Fire ignited, burning nearly 100,000 acres in Malibu and surrounding Los Angeles and Ventura Counties. The campus initially served as a community rally point, and later as a staging area for fire department operations. Eventually, the fire burned most homes and hillsides surrounding campus, including portions of the campus and construction site, but the new building was spared. The vital role the campus played in serving the community during the fire, and the survival of the new building construction has become a symbol of resilience and hope for the community.

WOOLSEY FIRE IMPACT

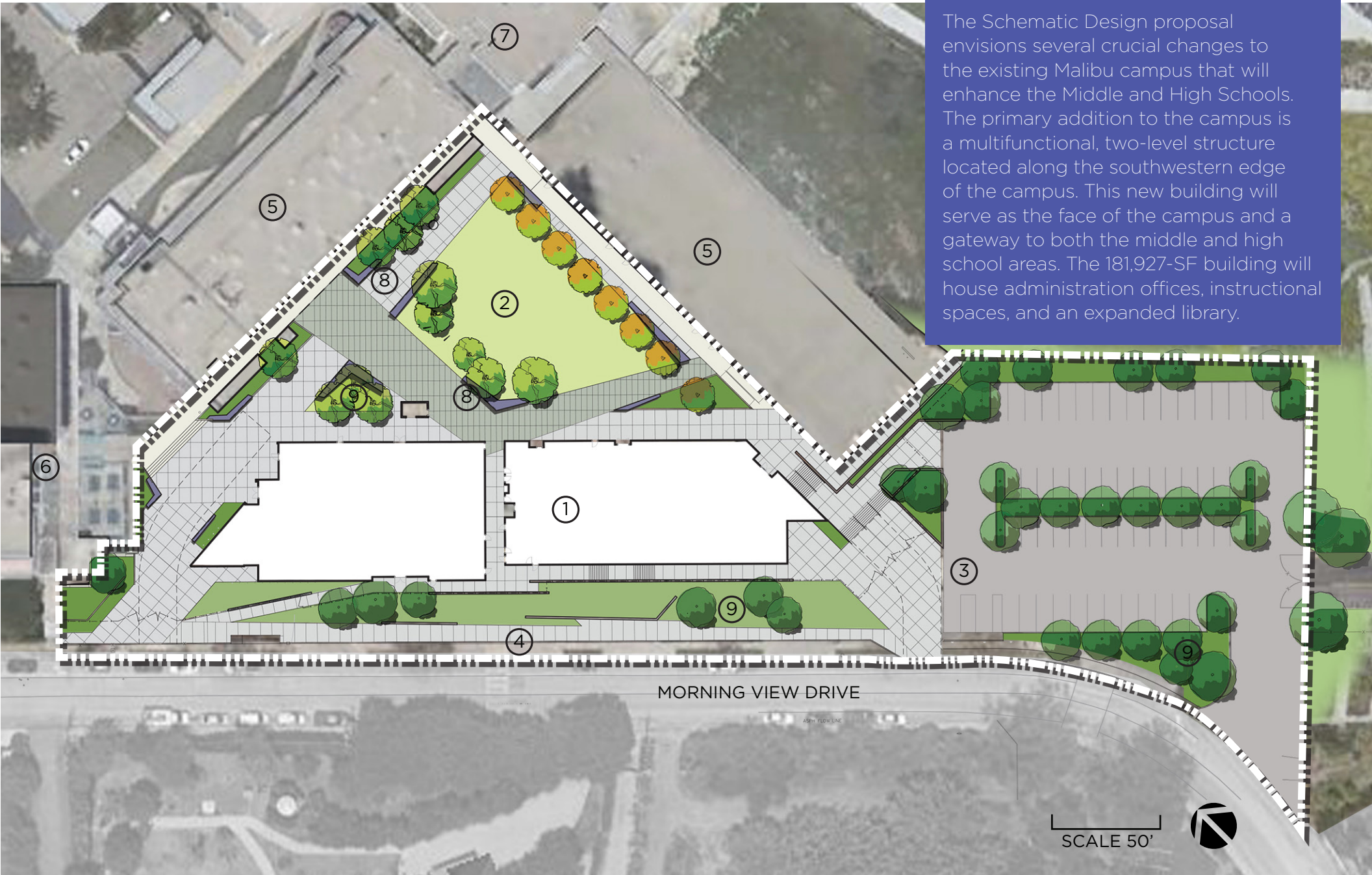


Physical Environment Design: Site Plan

- ① NEW CLASSROOM, LIBRARY, AND ADMINISTRATION
- ② STUDENT ACTIVITY LAWN
- ③ NEW LOWER LEVEL PARKING & DROP-OFF
- ④ NEW PLAZA LEVEL DROP OFF
- ⑤ EXISTING CLASSROOM BUILDINGS

- ⑥ EXISTING THEATER BUILDING
- ⑦ EXISTING ARTS BUILDING
- ⑧ SOCIAL SEATING AREAS
- ⑨ PLANTING AND BIO-SWALES

The Schematic Design proposal envisions several crucial changes to the existing Malibu campus that will enhance the Middle and High Schools. The primary addition to the campus is a multifunctional, two-level structure located along the southwestern edge of the campus. This new building will serve as the face of the campus and a gateway to both the middle and high school areas. The 181,927-SF building will house administration offices, instructional spaces, and an expanded library.



MORNING VIEW DRIVE

SCALE 50'



Physical Environment
Design:
Physical Attributes of the
Environment



SOUTHEAST ELEVATION

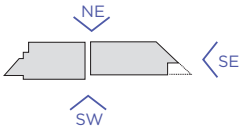


SOUTHWEST ELEVATION

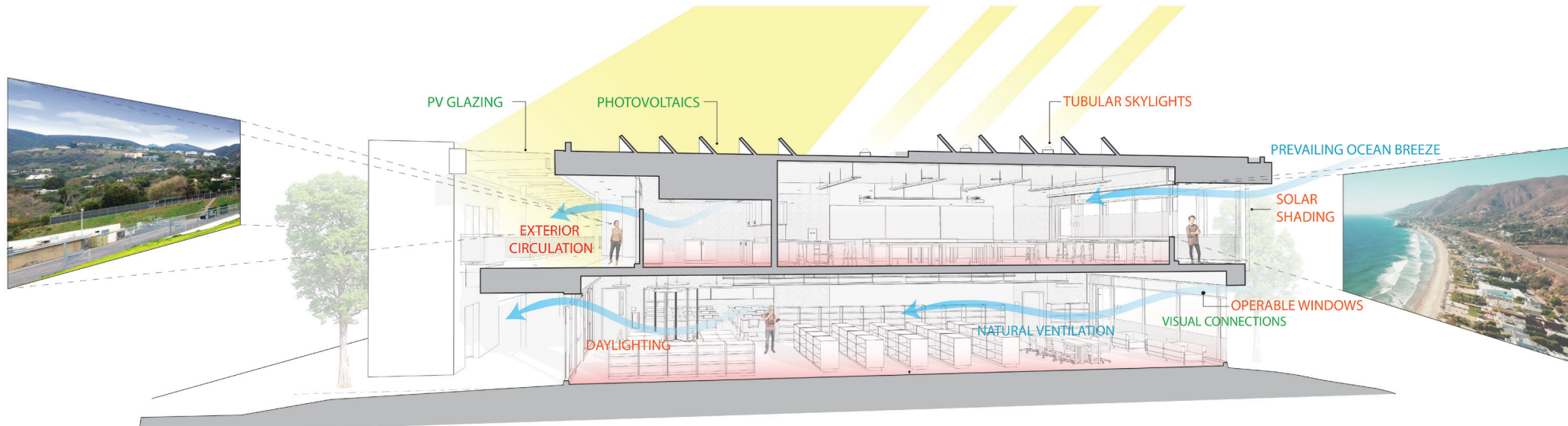


NORTHEAST ELEVATION

SCALE 50'



- / The new two-level administration building serves as a prominent gateway to the middle and high school neighborhoods, replacing the outdated structure.
- / The building design integrates with the terrain, utilizing a stepping two-story program and a sloping PV-covered roof that follows the street and existing topography.
- / An outdoor demonstration garden enhances the connection between architecture, education, and the environment.
- / Planted green roofs provide outdoor learning spaces, improve building performance, and manage storm runoff.
- / Strategic placement of skylights and floor-to-ceiling glazing maximizes natural daylight and reduces energy consumption.
- / The design minimizes the visual impact of the building's massing in the residential neighborhood, blending harmoniously with the native hillside contours.
- / The administration wing anchors the main campus entry and accommodates administrative functions on two levels, serving both the public and students.
- / The library's location at the northwest corner creates a secondary campus entry and complements the existing theater building for shared public use.
- / New classrooms and labs are situated on the courtyard and upper levels, along with the inclusion of a roof garden.



BUILDING SECTION DIAGRAM

Physical Environment Design: Larger Context of the Community

The facility at Malibu High School is carefully designed to fit within the larger context of the community. Here's how it depicts and illustrates its integration:

Location: Situated on a hillside, the school enjoys scenic views of the Pacific Ocean and Santa Monica Mountains. It shares land with Cabrillo Elementary School and Malibu Equestrian Park, fostering a sense of community connection.

Surrounding Neighborhood: The school is located in a Rural Residential Zone, where large dwellings with spacious properties of over two acres are prevalent. This zoning designation aligns with the local coastal program of the City of Malibu.

Blending with the Neighborhood: The new addition to the campus is designed to harmonize with the surrounding neighborhood. The utilization of topography and the incorporation of roof gardens help the structure seamlessly integrate into the natural landscape, preserving its beauty for the local community.

Collaboration with Emergency Responders: The outdoor area on campus is designed in collaboration with local emergency responders. This ensures that the facilities can effectively accommodate staging and gathering needs during times of crisis, reinforcing the school's role as a community asset and promoting safety and preparedness.

By considering the unique characteristics of the location, preserving the natural landscape, providing community-oriented spaces, and collaborating with emergency responders, the facility at Malibu High School effectively fits within the larger context of the community, fostering a sense of belonging, connectivity, and resilience.



Physical Environment Design: inspires and motivates

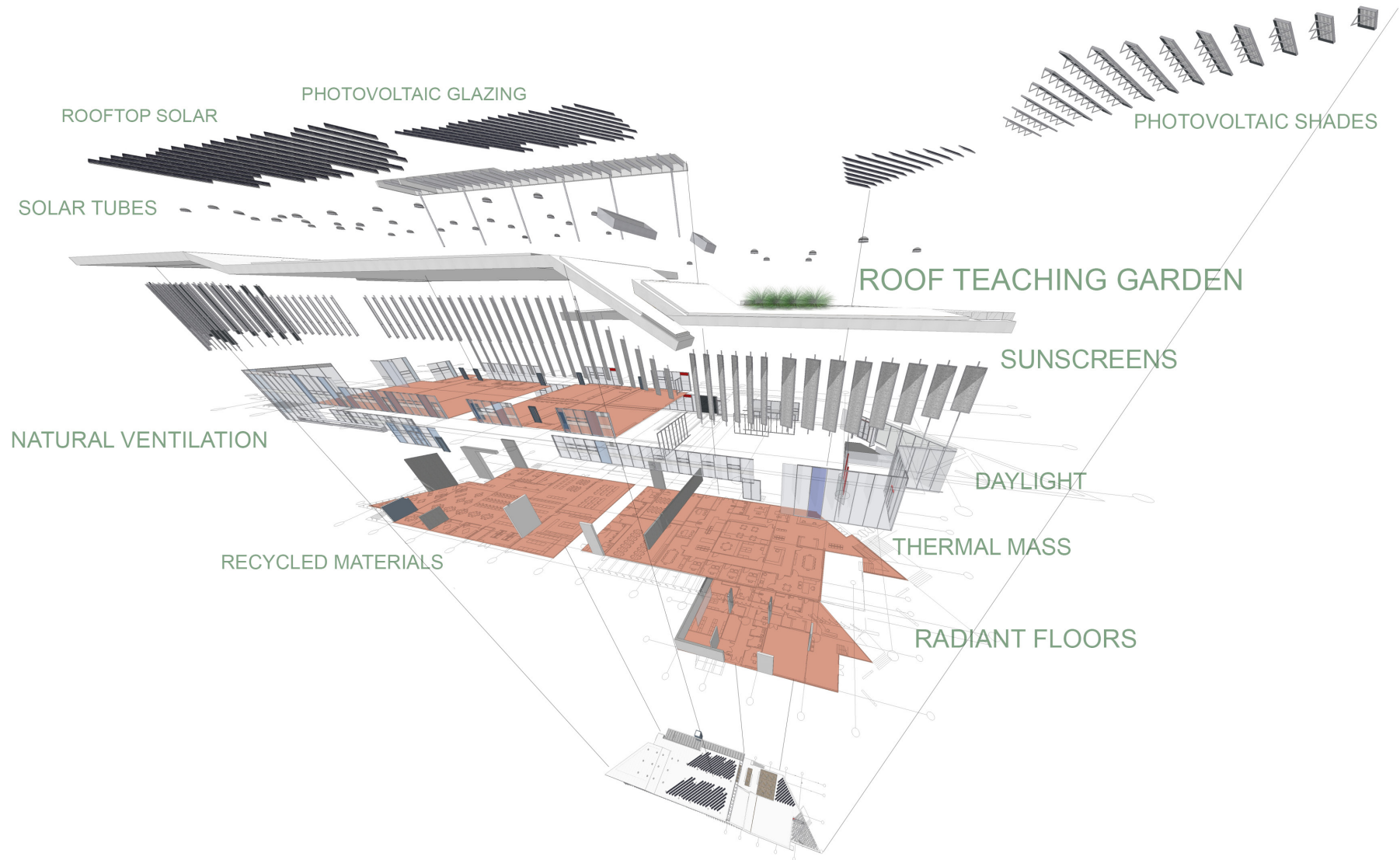


“It is a whole new Malibu High, a whole new feel. The modern buildings better match the high levels of learning and care that happen daily in our classrooms. They are buildings the entire Malibu community are extremely proud of”

Malibu High School Principal Patrick Miller.

SUSTAINABILITY AND WELLNESS: Energy-Efficiency Within the Solution

Many design features integrate sustainable strategies that emphasize energy efficiency and optimal learning environments. Features such as operable windows, an emphasis on daylighting in classroom, library and office spaces, heated floors, solar tubes, protective overhangs and extensive vertical shading fins, all promote optimized learning environments while reducing reliance on mechanical and electrical systems. The revitalized student courtyard improves stormwater management for the campus while creating a variety of scaled use opportunities for students and supports outdoor teaching environments that are highly suitable to the climate of Malibu.



SUSTAINABILITY AND WELLNESS: Durable and Green Materials

Conservation of resources was a constant consideration in the design of the Malibu High School Classroom, Library, and Administration Building. A minimalistic approach was taken when materials were considered. In many areas of the project, the structure was left exposed, used as a finish material, and celebrated for its function and simplistic beauty. The ceilings have also been left open, showing off the structure, mechanical systems, lighting, conduit, and so much more. Driven by many factors - practicality, economy, reduced floor-to-floor heights - the exposed structure and systems have become a learning opportunity while lessening the number of materials brought on site and minimizing the amount of waste leaving the site. The project was able to divert waste throughout construction, while countless tons were avoided with the reduction of overall material use. Materials that were incorporated into the project we thoughtfully chosen with a consideration for renewable and recycled materials that would be easy to maintain and stand the test of time in a school environment where maintenance and operations staff often face challenges.



01 Polished Concrete Floors

02 Exposed Concrete Retaining and Shear Walls

03 Exposed Steel Structure

SUSTAINABILITY AND WELLNESS:

Healthy Environmental Aspects

The landscape design for Malibu High School emphasizes a sustainable and healthy learning environment by designing with natural systems. Managing stormwater on site, shading outdoor gathering areas, and using shrubs and trees native to the Southern California coast contribute to local habitat restoration. With thoughtful plant selection and smart irrigation controls, water needed to maintain the landscape is significantly reduced. Much of the plants were designed to be taken off irrigation lines after their second year, further reducing irrigation needs. Long term maintenance was also a deciding factor in plant selection, with specific species being chosen and strategic placement and spacing to reduce maintenance needs over time. The grading was designed to minimize the amount of soil transported to and from the site and manages stormwater on site to the extent possible. A green roof reduces the amount of stormwater runoff, captures air-borne particulates, and reduces the amount of noise entering the buildings. Paved areas on site are sloped to direct stormwater towards planting areas and/or dry wells for retention and percolation. And the new parking lot is designed to drain into bioswales to capture runoff.



- 01 Native and Drought Tolerant Landscape
- 02 Rainwater Capture
- 03 Wellness Activity Lawn
- 04 Roof Garden
- 05 Outdoor Student Social Spaces
- 06 Operable Classroom Windows

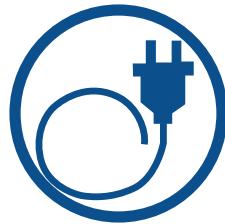
PERFORMANCE HIGHLIGHTS:



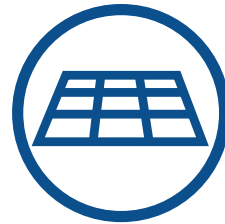
SOUTH ENTRY



NATURAL VENTILATION UTILIZED IN
CLASS, OFFICE, AND LIBRARY SPACES



58.8 EUI (56% REDUCTION
FROM BASELINE)



ANTICIPATED 14,366 KWH/YEAR
GENERATED BY PHOTOVOLTAICS



90,000 GALLON STORMWATER
COLLECTION SYSTEM