

K-12 CAMPUS, LA-STYLE: THE CAMPBELL HALL ARTS & EDUCATION CENTER

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Campbell Hall is an independent, coeducational K-12 day school in Los Angeles that sits on a triangular-shaped piece of land between the Ventura Freeway and the Tujunga Wash, a Los Angeles river tributary. Having increased its population to over 1,000 students, the school recently acquired land to expand the campus.

Gensler and its multidisciplinary design team helped Campbell Hall reconfigure the campus' existing traffic circulation to improve safety and encourage walking. The team also developed a holistic, phased plan for future building development. The first building phase, and the primary topic of this article, included a new 175-car, two-level underground parking structure and a 37,000 square foot two-story Arts & Education Center. A future Phase II will include a 650-seat theater immediately adjacent to the Center; and finally, a 45,000 square foot gymnasium will cap off Phase III.

This design case will discuss the process that led to the Arts & Education Center design in general, as well as how the design team approached several specific project issues. First, the team faced a design program that exceeded the project's site, whose vehicular access was problematic. Secondly, a significant existing feature that impacted many of team's design decisions was the bar-shaped classroom buildings designed by noted mid-century modernist architect A. Quincy Jones. The shape and arrangement of these buildings formed the basis of the Arts & Education Center's "interstitial" outdoor spaces—flexible learning, socializing and circulation areas that promote informal interaction among students and faculty while forming a physical and symbolic link between the new and old parts of the campus. Third, the project's landscape design was ultimately shaped by "value engineering" or cost cutting measures. Through the strength of multidisciplinary collaboration, the design team overcame these hurdles and produced a solution yielding a safer, denser campus with a greater sense of community than had existed before.

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INTRODUCTION

Southern California is known for its climate: year-round mild temperatures, low humidity, and copious sunshine. In the postwar era of the mid 1900s, designers such as Richard Neutra and Charles and Ray Eames built the famous Case Study houses to capitalize on this vaunted climate. The homes had living rooms that opened up to gracious patios using sliding glass doors and full-height glass walls that admitted light and erased the division between indoors and outdoors. They were also carefully integrated into the landscape so they were united with their surroundings rather than foreign objects dropped onto the land.

Commercial and civic architecture soon followed suit, and schools were no exception: rather than the typical double-loaded corridor layout, schools began building classrooms opening to the outdoors, connected by covered walkways. In 1951, the famed architect A. Quincy Jones designed a series of classroom buildings—repeating rectangles in a field of green—for the new Campbell Hall Episcopal school in Studio City, California, about 10 miles northwest of downtown Los Angeles. This private school, which opened in 1951 with 74 students from kindergarten to sixth grade, has always had a dual mission of promoting academic excellence while "nurturing decent, loving, and responsible human beings." While it is ostensibly a Christian school, its student body is interfaith and both racially and

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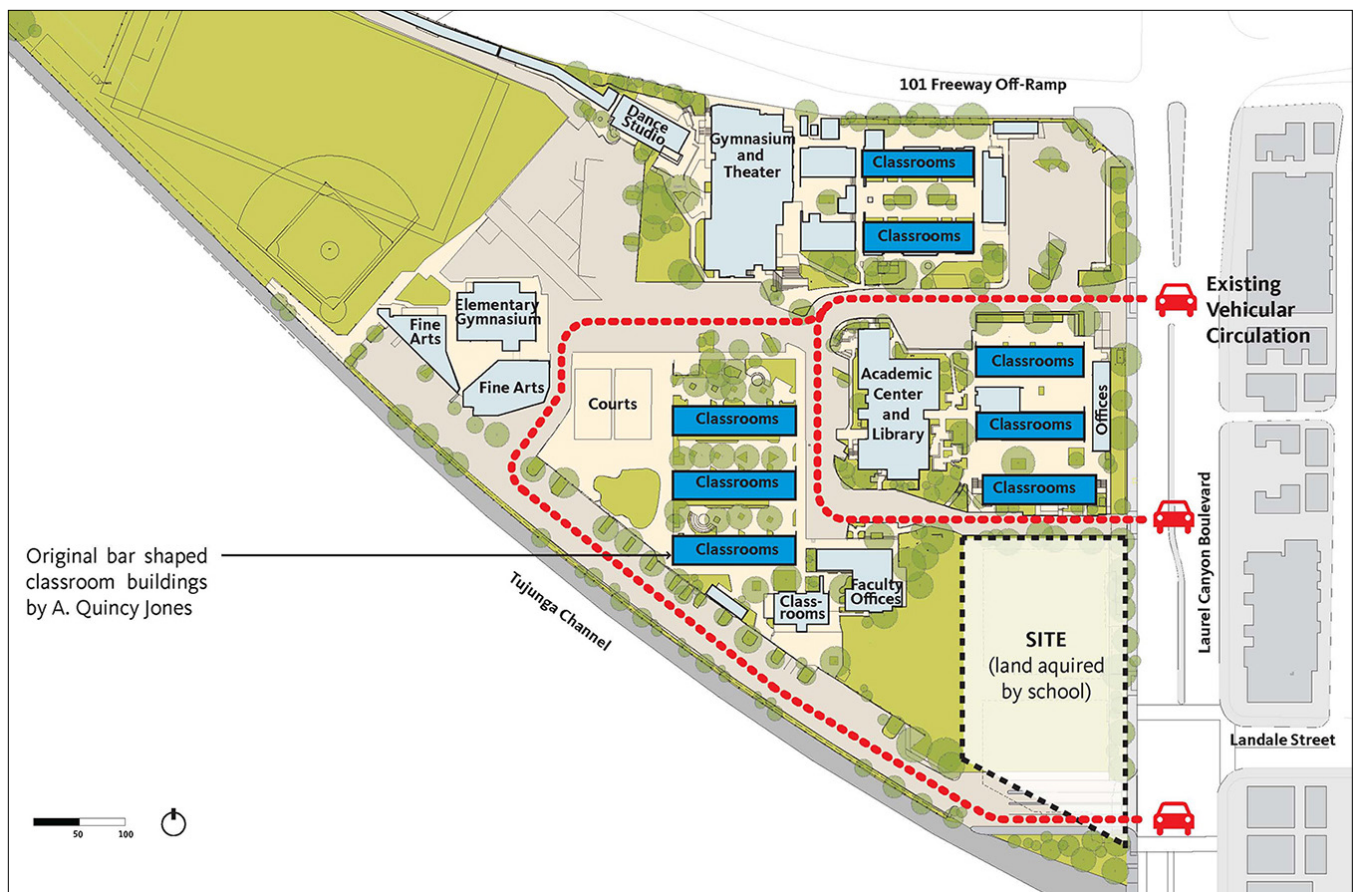


FIGURE 1. Existing campus plan.

socioeconomically diverse—a living testament to the school’s belief in a strong sense of community.

This design case will explore how Gensler and its multidisciplinary design team created an efficient and welcoming campus that is a physical manifestation of Campbell Hall’s mission, which is based on the notion of a community of inquiry. In order to do so, the team leveraged the campus’ original classrooms, the area’s temperate climate, and the parcel’s unique configuration. Facing the inevitable budgetary challenges, the team used a design process that helped the school prioritize among its many goals to arrive at a three-phase plan. This plan maximized construction efficiency and ultimately proved attainable from a fundraising perspective.

Campbell Hall’s long history of growth sparked the need for this project. By 2006, Campbell Hall’s enrollment had grown to 1000 students who now spanned kindergarten through 12th grade. The school was thriving—students and parents alike were attracted to the both its rigorous curriculum and progressive culture—but the campus was quickly running out of room. The vaunted Performing Arts program needed more performance and practice spaces; the Visual Arts program wanted to expand its offerings and required classrooms and studios designed to support the 21st century

curriculum; and the Athletic program needed updated facilities for its winning sports teams. In response, the school acquired a new parcel of land occupied by a retirement home and apartment complex that expanded the site to 15.5 acres.

Gensler, a global architecture, design, planning and consulting firm, had extensive experience in both education design and campus planning. Its Los Angeles office had recently participated in the campus design for St. Matthews Parish School, an Episcopal pre-kindergarten through 8th grade institution in nearby Pacific Palisades. Administrators there suggested to Campbell Hall that they hire Gensler to conduct a “peer review” of their existing campus plan—a formal process of quality assurance whereby an architect’s work is evaluated by a team of professionals for its technical as well as design attributes. This modest scope would later expand, as described in further detail below.

The challenges were immediately apparent to Gensler after a visual inspection of the plan (Figure 1):

- The triangular site was constrained on all three sides: by the Ventura Freeway, the Tujunga Wash (a tributary of the Los Angeles River), and a major 4-lane thoroughfare.

- The current plan allowed vehicular circulation deep into the campus, which cut off large swathes of spaces from each other, limited foot traffic and created safety concerns.
- The original bar-shaped classrooms, designed by the venerated architect A. Quincy Jones, were cherished by the school but needed to be examined for their present-day relevance to the campus.
- There was already insufficient parking on campus, and parking needs were anticipated to grow. This was likely going to be an increasing problem if the school proceeded with plans to build a gym and performance space, which would attract more visitors to the campus.

There was one further challenge that was not spatial in nature: prioritizing the myriad requests from the various departments and the much-needed improvements to the physical plant. Should teaching spaces take precedence over student gathering areas? Which facilities should be new and which could be refurbished? Which buildings should be tackled first and which could be postponed?

PROJECT OBJECTIVES

From the outset, Gensler was committed to achieving specific performance goals for the project, in addition to a creating a beautiful, inspirational learning space that upheld the tenets of sustainable design. As with all its education projects, Gensler team members were committed to the idea that the design solution needed to enhance the campus environment as well as speak to the school's mission and aspirations. After a review of the site plan, a visit to the site, and many discussions with the Head of School and the School Principal, the following broad goals were set:

- Improve land use and vehicular and pedestrian circulation.
- Maintain the intimate character of the existing campus and extend that nurturing feeling to the proposed campus improvements.
- Support the school's highest priorities: allow the students to develop within a higher-education environment in order to better prepare them for life's future challenges.
- Enhance the ability of faculty to teach in a way that celebrates learning and the value of education.
- Incorporate best practice sustainable design strategies.

PROJECT TEAM

Successful projects require significant interaction between the design team (e.g., architects/designers, engineers and consultants) and the client to set initial goals, review progress, discuss challenges, etc. The Campbell Hall project was unique in that it required campus planning, "ground up"

architecture, and a very specific performing arts program. Therefore, this design team was very large and made up of many different disciplines:

ARCHITECT: design director, project manager, project architect, interior designer, and various junior designers. The team was staffed with men and women, some parents of young children, and others without kids.

CONSULTANTS: MEP (mechanical/electrical/plumbing) engineer, civil engineer, structural engineer, waterproofing consultant, traffic consultant, parking consultant, landscape architect, theater consultant, lighting designer, theater/AV consultant, tele/data consultant, and acoustic engineer.

BUILDERS: pre-construction services, cost estimator, and general contractor.

As the architect, Gensler led the design team, and its project principal, project manager, and design director were the team members who interfaced directly with the client most frequently. Because of the specialized nature of the project—the technical audio-visual requirements of the classrooms and the specific indigenous design of the landscape—the traditional design-bid-build project delivery method made sense, as it allows access to the best experts in the field. Campbell Hall agreed with this recommendation and selected the contractor from a short-list of firms based on their relevant experience building independent schools and arts centers.

However, unlike the traditional design-bid-build process in which the consultants and especially the contractor are brought on board once the design was complete, Gensler believes in a collaborative, multidisciplinary approach, in which the many necessary members of the design and construction team work as partners. This way, cost implications can be analyzed throughout the process, the design can be adjusted throughout, and recommendations to improve efficiency can be discussed and vetted in a way that does not stifle design. This approach proved very effective in the Campbell Hall project, which necessitated long-term planning and multiple phases.

On the client side, the Headmaster, Chaplain/Director of Operations, and Chief Financial Officer were the main contacts. Their involvement was crucial at the onset of the project when Gensler learned about the school's history and goals and set the overall goals discussed above. Later, a larger, formal Building Committee was selected by the Headmaster and comprised Campbell Hall-affiliated individuals who reviewed and commented on the design as it evolved:

- Headmaster
- Chaplain/Director of Operations
- Chief Financial Officer

- Chairman of the Board
- Board Member Liaison
- Principals from the Campbell Hall's High School, Middle School and Lower School
- Development Director
- Performing and Visual Arts faculty
- Student Sustainability Committee
- Parents/grandparents of students

FIRST STEPS

As in every design project, programming is the first step: assessing the client's needs and evaluating their project goals. In this case, the stated objective was a peer review of the existing master plan, but upon further examination, several other factors needed to be considered before the architectural design concepts could be defined in detail.

The Client's Master Plan and Strategic Goals

First, to maximize its benefit to Campbell Hall, the master plan needed to be updated with a long-term horizon so that it addressed not only the school's immediate facility and resource issues but also supported the school's strategic goals. It made sense to entitle, or secure legal approvals, for the entire plan at one time so that the school would not need to keep returning to the city planning department every time it wanted to implement another phase in the master plan. And there were the financial realities to contend with as well; Campbell Hall, like all independent schools, relied on a capital campaign to fund the project. This meant that the design team needed to work with the school's development team to strategize how to phase the construction so that it would align with the annual budget and the associated fundraising efforts.

Establishing the Program

The next task was to compile the program—a list of specific design needs—something the school had loosely defined before but had not tackled systematically. The school understood that its wish list of spaces needed to be viewed and assessed through the lens of its master plan and strategic goals. Only then could the difficult decisions be made about which areas would be built first, which later, and which to put aside completely. Fortunately, the notion of soliciting disparate ideas, then synthesizing a joint strategy, is part of both Campbell Hall's and Gensler's DNA. The School's mission statement reads, in part:

In a vast, fractured urban area, one of the strongest tangible assets of the school is that it offers those seeking or longing for community, a place with shared meaning and values... A model of 'wholeness incorporating diversity'... emerged in Strategic Plan 2000 as a central theme of the planning process and a symbol of Campbell Hall's continuing commitment to build and nurture a vibrant and inclusive community in a changing world.

Accordingly, the school reached out to the various constituencies identified above—students, faculty, administration, parents, and board members—and compiled the program. The Building Committee then refined the program and served as the decision makers. The final programming document yielded hard square footage numbers that could be analyzed and prioritized.

There are always differences of opinion within any organization, especially when input is solicited from such a diverse group. Luckily, Campbell Hall is founded upon the notion of community. As its website states, "Parents, faculty and students relish the school's diversity, but also expect coherence." Accordingly, the school's leadership listened and digested all the views that were presented, and then were unafraid to make the hard decisions. With Gensler's help, this group produced a list of prioritized needs that led to the next step, deriving architectural design concepts.

ARCHITECTURAL DESIGN CONCEPTS

Increasing classroom space was the most pressing need raised by all the user groups. The visual, digital and performing arts departments all required expanded teaching spaces in addition to specialized spaces unique to their disciplines. These spaces needed to serve current requirements, incorporate emerging technologies (e.g., a music computer lab) and professional level tools (e.g., theater quality lighting and a video production studio), and offer flexibility for the future. This would allow for new faculty and future changes to curricula.

Balancing Space Requirements and Site Conditions

Each requested learning space was assigned a square footage by Gensler, then all of the square footages were aggregated. This exercise led to one of the designers' first dilemmas: the combined square footage of these learning spaces exceeded that of the site, which could not expand horizontally. This led to the inevitable conclusion that certain elements of the program would need to be considered vertically—stacked one atop another, placed underground, or both of the above. This was the project's first design concept, or spatial organizing idea: *displacing the ground plane*. This implied that landscape that was at grade would need to be recreated on the upper levels of the building, allowing for circulation and other programming beneath (Figure 2).

Gensler explained to the Building Committee that raising and folding the ground plan would not only increase density but also create a positive domino effect of other opportunities:

- Create a greater spatial dialogue between the indoors and the outdoors
- Allow students and faculty walking to class the opportunity to observe classroom activities along

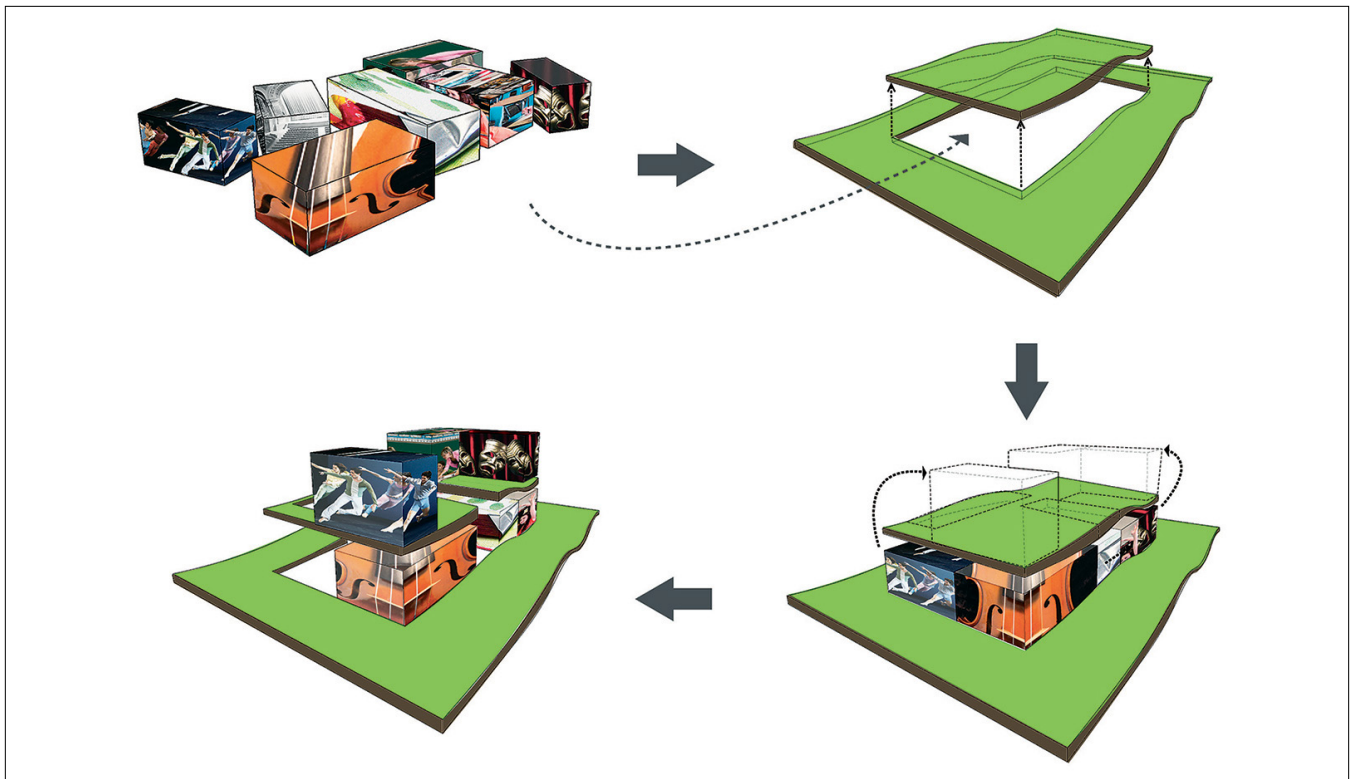


FIGURE 2. Displaced ground plane.

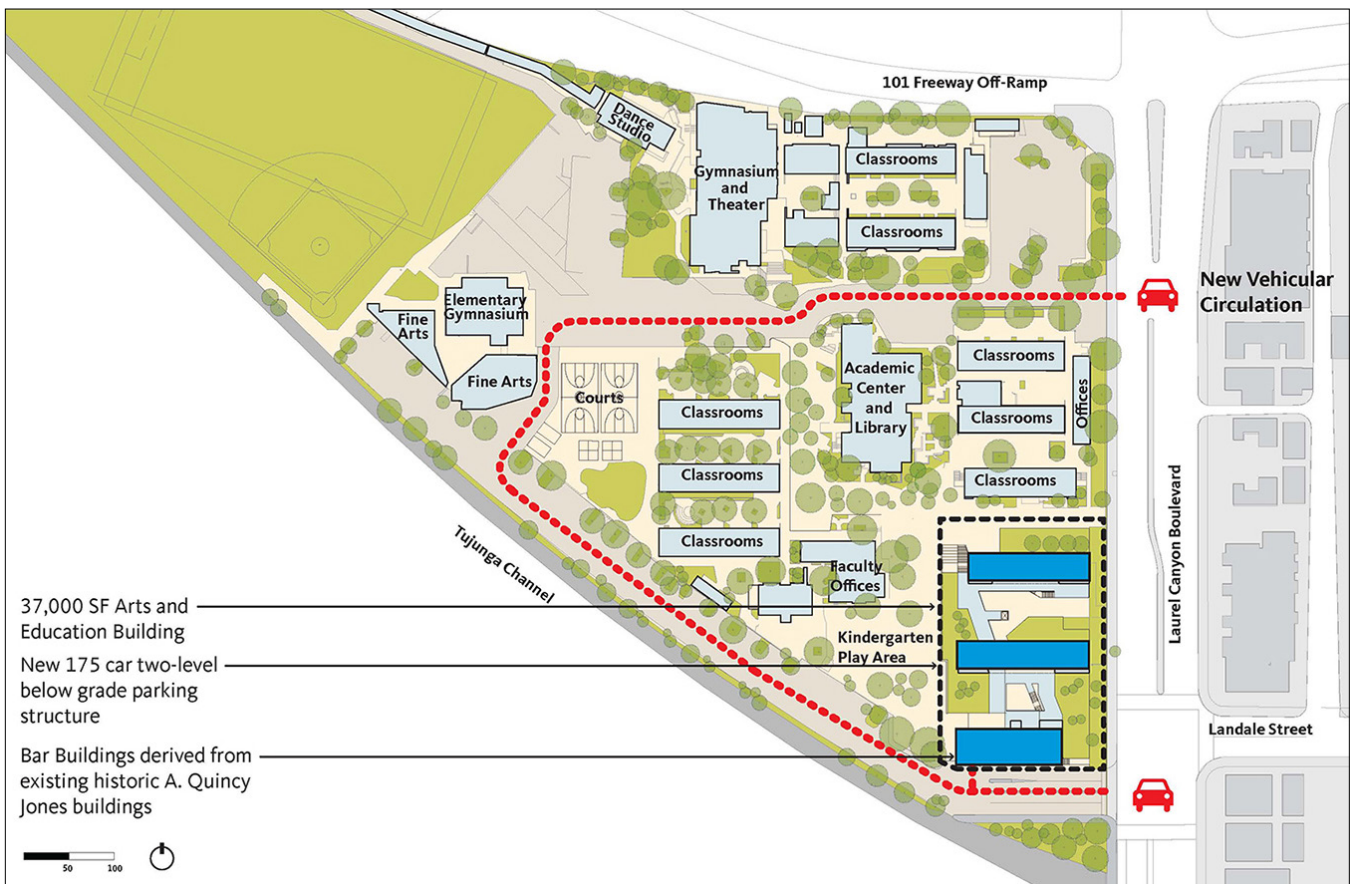


FIGURE 3. New traffic pattern.

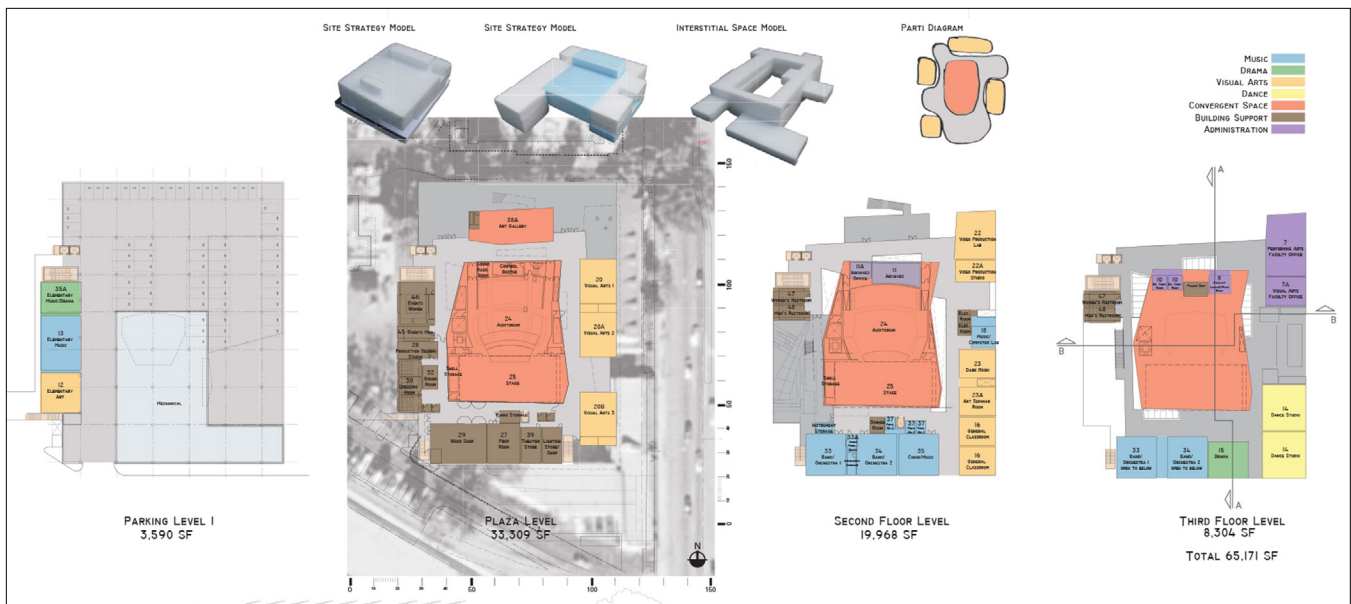


FIGURE 4. Initial schematic design.

the way, in an effort to build a community of visual and performing artists

- Encourage previously segregated groups (administration vs. faculty vs. students; older vs. younger age groups) to intermingle

A second concern discussed by the Building Committee and Gensler related to land use. Campbell Hall had an incredible asset—over 15 acres of property in the heart of a dense urban area. Yet the existing vehicular circulation consisted of a loop cut right through the center of campus, and parking lots took up more valuable real estate (Figure 1). Furthermore, the campus entry was so close to the freeway that the parking queue often extended into the off-ramp and blocked off traffic from the neighborhood.

Working with the traffic and parking consultants, the architects proposed relocating the campus entry to the other side of the site, increasing the space allotted to on-campus queuing, and designing new parent drop-off lanes that would no longer impede the flow of traffic. A new underground parking structure for 175 cars on the southeast corner of the site would solve not only a growing parking capacity issue but also reroute traffic away from the heart of the campus. The area around the Academic Center would then be freed up to pedestrian traffic, thereby alleviating safety concerns and creating a more cohesive campus (Figure 3).

An Initial Schematic Design for the Arts & Education Center

Having solved the vehicular traffic issue, the designers then turned their attention to the potential components of an Arts & Education Center building: a theater, various performing and visual arts classrooms, and a below-ground parking

structure. In keeping with the school's wishes to build the theater and parking first, the 650-seat theater was initially placed over the underground parking lot and surrounded by classrooms. This idea began as five variations on a theme that differed mainly in which corner of the site the theater was situated; since the theater took up so much space and could not be broken up, that left only limited opportunities for the classrooms.

Gensler created elevation drawings, physical models, and 3D visualization models to help illustrate the choices. All the schemes were presented to the Building Committee as well as a group of key faculty members. Together, the group winnowed the five options down to two and finally one, based on faculty input about how they hoped to use the space. The resultant Schematic Design was refined, then presented to the Building Committee, faculty, and others who had contributed to the programming phase (Figure 4).

A Necessary Readjustment

However, a challenge developed: the acoustical engineer, cost estimators, and contractors determined that significant expense would have to be dedicated to the acoustical infrastructure of the theater. This was needed to insulate the theater against the sound of cars passing through the parking structure beneath and the occasional errant car alarm, both of which would be disruptive to performances taking place in the theater. Second, construction logistics concerning scheduling and grading also favored building the theater during a subsequent phase rather than at the outset.

After much discussion between the Building Committee and the design team (particularly the contractor and the engineering consultants), the decision was made to separate the

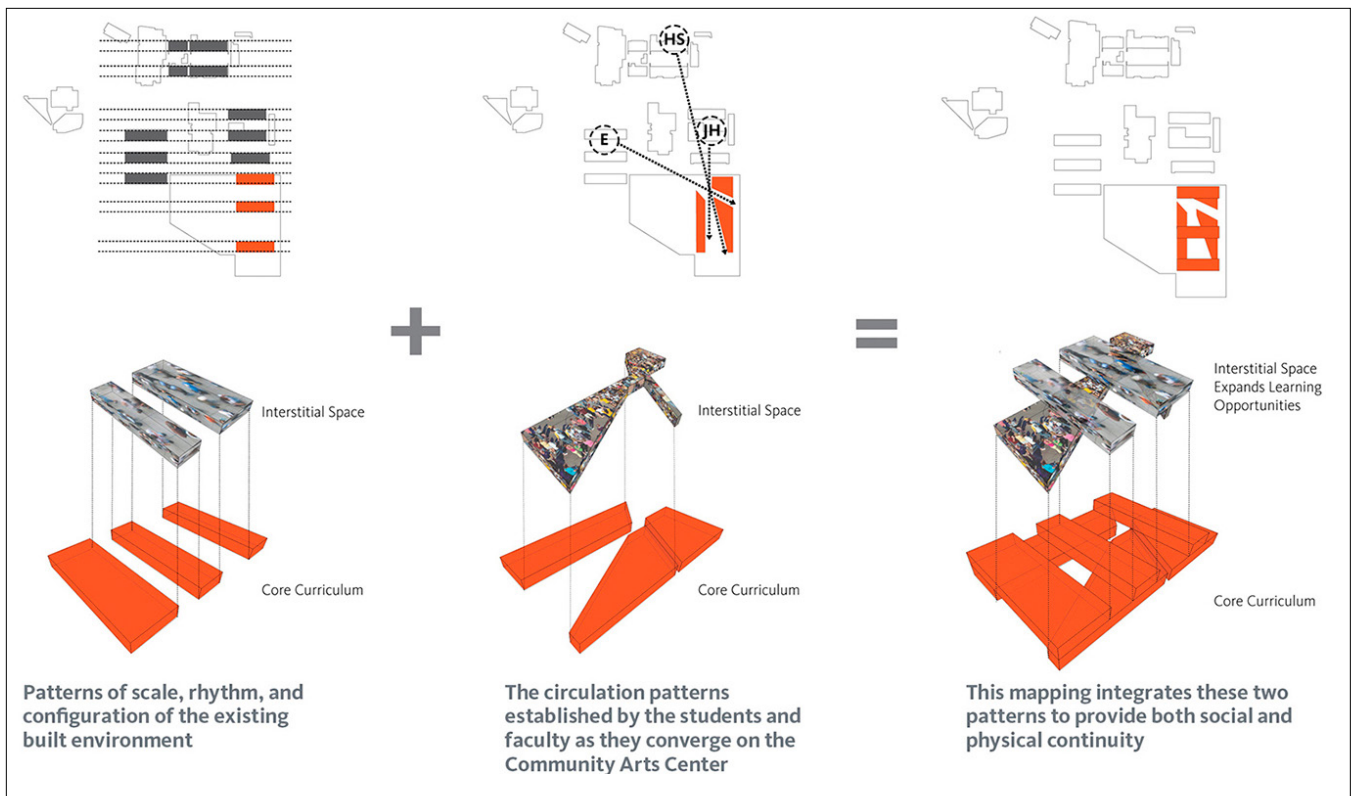


FIGURE 5. Existing classrooms and new circulation.

theater from the classrooms. Instead, the current classroom area would become an Arts & Education Center that would sit atop the underground parking structure, and the theater would be relocated next to the classroom on grade. This way, the parking structure and classrooms could be built first, and the theater could be constructed at a later date.

This was a significant change, not only because it impacted the schedule, but also because it expanded the area in which the construction would take place. This prompted the team to re-review and reevaluate the existing campus design.

The original classrooms were nestled in three groupings around the Academic Center and library amid decades-old plantings. The current scale of the A. Quincy Jones buildings was deliberately intimate: low, one-story, bar-shaped structures connected by outdoor paths and set in a regular pattern. This was a unique design element that fostered the sense of community so valued by the school. Therefore, any new buildings on the site would need to respect the *scale, rhythm, and intimacy* of these elements. The Building Committee also agreed with Gensler's belief that the indoor-outdoor character of the existing campus needed to be preserved and extended into the new, expanded building site.

To accomplish this, the architects transferred the outlines of the original classroom buildings to the new site over the intended underground parking. The buildings were oriented

East-West just like many of the original classrooms, with similarly proportioned open spaces between each bar. A second layer of similarly shaped classroom bars was then criss-crossed atop the first layer, creating balconies, overhangs and open pathways on the second story. Gardens could be planted on the second floor, so that the students moving through those areas would also have the experience of passing through landscape, just as on the original campus.

The New Potential of Interstitial Spaces

Gensler recognized that the new building direction opened up opportunities to capitalize on the campus' *circulation patterns*. The architects drew lines on the plan from the three original classroom groupings converging on the new building. The three resulting angles formed a dynamic radial shape, echoing the overall shape of the site. Superimposing these lines onto the plaza/ground floor level of the Arts & Education Center "sliced" the classroom areas and created not just circulations pathways but dynamic *interstitial spaces*—the spaces between the program spaces (Figure 5.)

The resulting 37,000 square foot Arts & Education Center, while one story taller than the other buildings on campus, would be porous, transparent and energetic, revealing the myriad of arts-related activities occurring inside. By nestling the structure into the hillside, the perceived scale of the new building would remain low, in keeping with the rest of the campus and the residential neighborhood. The three

two-story connected buildings would contain a total of 24 classrooms, extended outdoor classrooms and meeting areas; an art gallery; a drama classroom that would double as a university-quality black box theater; a state-of-the-art TV recording studio; several dance studios; a darkroom; and a faculty resource center. The Arts faculty, after years of making do with discrete, generic spaces, would finally have a facility of their own that would allow them to blur the divisions between the Visual and Performing Arts programs by sharing resources and blending curricula.

As for the style of the new building, the designers wanted to retain aspects of the original classrooms such as their strong relationship between indoor and outdoor space and their integration with the landscape. However, they did not want to be limited to the mid-century vernacular characterized by single pane glass, gravel, and other dated materials. The finishes and systems the designers proposed were modern and sustainable (e.g., double-glazed acoustical windows, permeable pavers, and quartz countertops), the color palette was a brighter version of the original muted neutrals, and the floor-to-ceiling, strategically placed glass bi-fold doors were energy efficient, while still retaining wide open views of the outdoors.

The Building Committee unequivocally agreed this campus and building design with its interstitial spaces was the strongest: it solved all the practical issues and injected a new dynamism, because the new structure would serve as a physical manifestation of its core values of interconnectedness, openness, and inclusivity. Rather than a closed, monolithic volume, which represented the static, traditional model

of schools, the new 33,400 square foot Arts and Education Building and its courtyards would be a living symbol of the dynamic, holistic pedagogy that the school championed. The diagonal circulation patterns that extended into the building were not simply conceptual in nature; instead, the paths would guide students from the three classroom clusters (elementary, middle, and high school) towards the new building, and thus encourage social interaction and bonding across age groups. And the interstitial spaces—the negative spaces between the buildings where the diagonal circulation paths culminated—would become multi-purpose learning, performing, and resting areas (Figure 6).

INTERSTITIAL SPACES

Gensler always looks for ways to maximize real estate in its education projects by accommodating multiple uses. Accordingly, from the outset, the designers envisioned leveraging the outdoor circulation areas to somehow serve as gathering and learning spaces.

One of the obvious benefits of being located in Southern California is the ability to capitalize on outdoor areas, which increased the classrooms' flexibility and their total available area. Large glass garage doors can open up the classrooms to the outside and expanded the classroom's size; messy activities can take place outside—for example, large sculptures can be left outdoors for days while the students work on them; and the courtyards can become the corridors themselves, reducing the amount of indoor conditioned space. (See Figures 7 and 8 for examples). Because the program's spaces varied in size and orientation, this design



FIGURE 6. Interstitial spaces.



FIGURE 7. Gallery photo of the finished space.



FIGURE 8. Courtyard rendering of the proposed space.

feature would allow teachers to choose which space to use depending on the particular lesson plan and activities.

The well-documented learning and health benefits of using outdoor spaces were another reason to consider the interstitial spaces, and one with which both Gensler and the Campbell Hall faculty were familiar:

- Allowing students to move freely rather than being confined to their desks improves attention and focus, which can lead to greater retention of material.
- Being outdoors gives students a greater area to roam and a choice of where to be, which can lead to greater engagement and ownership.

- Exposing students to fresh air and views of nature encourages them to be physically active.

The designers also realized a third reason the partially covered outdoor spaces were important: they could simultaneously serve as both a performance space and an audience space. Students could view the activities on the plaza level from the balcony, or they could sit in the plaza to watch a performance taking place beneath an overhang. The very act of conducting classes outside meant that the students could perform for the audience of people passing by—an abstraction of the essence of both performing and visual arts, which relied on both a creator and a viewer. This last point was a big hit among the Performing and Visual Arts faculty, who immediately grasped its significance.

To accommodate the many purposes of the outdoor spaces, the theater consultant specified a multitude of power outlet locations. Portable lighting and/or sound systems could then be plugged in to create instant performance spaces. Digital touchscreens displaying announcements and current information were also proposed.

The deep overhangs, open plazas, and open gardens might also echo the primal design elements of Jay Appleton's prospect/refuge theory, outlined in his 1975 book, *The Experience of Landscape*. This theory says that people seek spaces that satisfy two opposing desires: prospect or opportunity, which is available in wide open vistas, and refuge or safety, which is offered in snug, secure areas from which people can gaze out. The building's displaced ground planes provided both prospect and refuge spaces.

Luckily, Los Angeles does not experience any of the drawbacks of outdoor learning spaces that occur in other areas of the country—cold/wet weather, mosquitoes, humidity, or blistering heat. The one challenge the School did experience, though, was exterior noise—from the traffic on the neighboring highways and from the planes flying to and from the nearby Burbank Airport.

Landscape Choices and Implications

Given the project's significant orientation to the exterior, landscaping was an important consideration for both the design team and Campbell Hall. While many concepts were proposed, cost considerations came into play, as discussed below.

The determination of the ratio of hardscape to softscape was made early on in the project with input from the civil and structural engineers, the contractor, cost estimator, and the landscape architect. Factors included the amount of foot traffic expected, the shade created by the second floor classrooms, the structural load, the initial costs of green roofs, and overall construction and maintenance costs. The Building Committee agreed with the design team's ultimate

recommendation that the new courtyards would all be paved but punctuated with expansive planters, and that trees would be confined to specific locations on the ground and on the roof.

The school's location on the historic Tujunga Wash, once a thriving waterway, as well as its original incarnation as a flood plain, was the impetus behind a concept that was proposed early in the project's development by the landscape architect. The idea centered around water; specifically, to capture water not only to use on the site but also to serve as a teaching tool. The campus would become a living classroom of catch basins, culverts, and fountains, allowing students to trace the "lifecycle" of a drop of water. The Head of School was a strong proponent of this concept but in the final decision, cost considerations precluded its implementation.

The landscape architect also proposed using drought tolerant native plants, which would flourish in the natural rainfall without consuming additional resources—a basic tenet of sustainable design. The plant species selected were those that had grown years ago along the banks of the original river, in keeping with the Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes, yet were hardy enough to withstand the present day pollution created by the nearby highways.

The new habitat—the plantings and the native indigenous and migratory wildlife they would eventually attract—would eventually become a living connection with Los Angeles' past as well as a link to its ecological future, an awareness shared by not only Campbell Hall's savvy students but also by most young people today. The existing campus was lushly planted in a traditional East Coast manner that is emblematic of many private schools: trimmed shrubbery, neatly planted perennials and clipped lawns, all of which required significant maintenance and water (Figure 9). Being perennials, the flowers bloomed in the spring and summer



FIGURE 9. Existing plantings.



FIGURE 10. Drought resistant native plantings.

and lay dormant in the winter. In contrast, native plantings are by definition more natural and wilder looking, and their coloration is more neutral and monochromatic during most of the year; they bloom brightest in the winter, when rainfall is the most plentiful in Southern California's Mediterranean climate, which happens to be when school is in session.

The landscape architect selected 100% native plants and trees for the landscape buffer around the perimeter of the new site (Figure 10). The flowers would subtly allude to the school's blue and gold colors, and the design would offer a showcase of naturally textured and shaped plants, which would retain their striking character even when dormant.

On the roof planters of the new building, the landscape architect proposed sedums and low grasses to maximize the amount of permeable surfaces, thereby reducing runoff—another tenet of sustainable design. Due to cost concerns, portions of these plantings were replaced by gravel and developed into rock gardens or incorporated into the landscape design in patterns that emphasized the movement within the space. The adjacent ground surface was sheathed with permeable pavers. To create a visual transition between the native plants at the site perimeter and the formally planted interior of the campus, non-native but still drought tolerant plants were chosen by the landscape architect and approved by the Building Committee.

One of the issues encountered in this project was that green roofs, especially those incorporating trees, require client

and design buy-in and support from the outset. Similar to the Leadership in Energy and Environmental Design (LEED) certification process to which all parties should commit from the beginning, the structural, civil and mechanical implications of green roofs need to be considered and the costs and logistics included as early in the planning as possible. In Campbell Hall's case, even though only a single roof planter with one tree was requested for the upper level of the building, it was eventually eliminated because of structural and, by extension, cost implications. (A greater variety of plantings and trees would have required deeper planting medium.) The area is still lovely but could have benefited from the shade created by that lone tree.

Sustainability Considerations

Both the design team and the Building Committee felt strongly that the project conserve the earth's resources and safeguard users' health as much as possible. It was decided early on that the project should aim for a LEED Gold certification, which it eventually attained. In addition to the water conserving characteristics of the native plantings and the green roofs, the project contained many other features intended to conserve energy, improve air quality and minimize disruption to the land:

- Copious amounts of glass result in high levels of natural daylighting within the building.
- The light colored roofs and exterior finishes reflect heat.

- Elimination of corridors and the addition of outdoor break areas reduce the amount of conditioned space within the building, thereby lowering energy costs.
- Deep overhangs—the result of the displaced ground planes—create comfortable shaded outdoor areas.
- The upper floor of the two-level underground garage is nestled into a hillside, so only the lower level needed to be excavated.
- The reduced on-site vehicular circulation freed up open space for landscaping and enhanced pedestrian circulation.
- Rapidly renewing and high-recycled-content materials were chosen wherever possible.

OUTCOME

The project broke ground in October 2010. The parking structure was completed a year later, while the classrooms took an additional eleven months. The entire Arts & Education Center was completed in time for the start of the new school year in August, 2012.

User Reactions

The students and teachers embraced the new space immediately. As expected, the high tech recording studio, video production, and editing studios were a huge hit among the students, and the faculty quickly learned to use the

state-of-the-art AV systems that outfit all the classrooms. The rehearsal, practice, and performance spaces were booked immediately and are always in use. The drama teacher was especially ecstatic:

[The kids on stage] are performing better; they have the focus of the group. Meanwhile the “audience” is having a more pleasant experience, and is able to be still and quiet. Both the audience and the performers feel safe, without being confused, distracted, or feel[ing] self-conscious... I knew having the building would be a good experience, but I did not expect it would raise the bar of the academic achievement!

Regarding the interstitial spaces, the students commented that just being outside made their classes more fun and enjoyable. They also appreciated being asked to give input on how their classrooms are set up, both indoors and outdoors. The teachers then realized that setting up the classroom itself could be worked into the curriculum, so that each semester, the incoming group of students could create a new classroom configuration if desired.

By all accounts, student engagement has increased exponentially. And the exterior noise turned out not to be a problem; the students and teachers alike were already acclimated to these sounds, much as a city dweller is used to

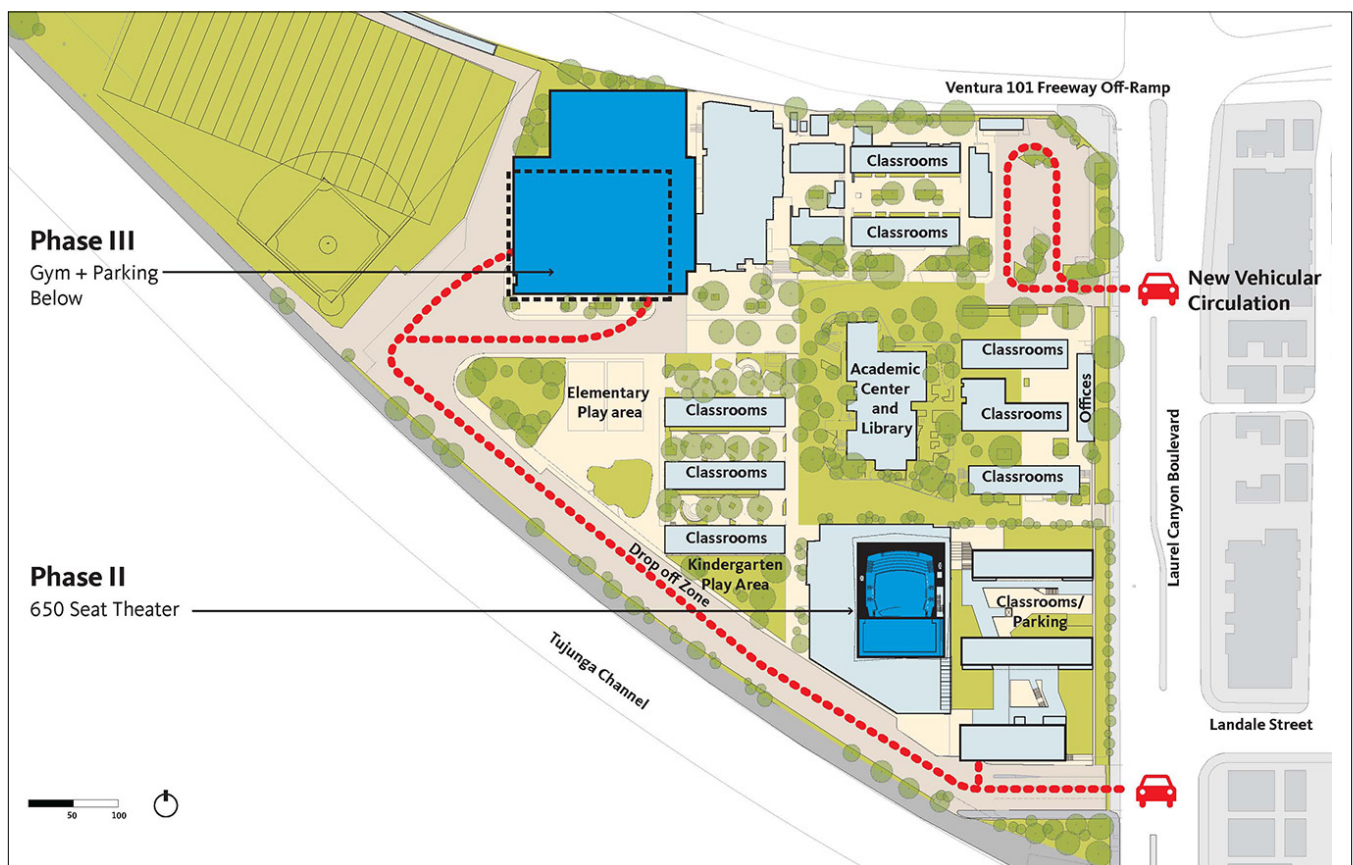


FIGURE 11. Phases II and III.



FIGURE 12. Rendering of the completed campus, including Phases 1, 2, and 3.

the sound of the subway rumbling beneath the ground. The acoustics within the new Arts & Education Center proved not to be a problem as they were superior to that of the 60-year-old original classrooms due to modern construction materials and methods.

The community has also responded enthusiastically to the new building, which now presents a vibrant new face to the surrounding neighborhood. The perimeter landscape buffer of native plants has taken hold, and visible activity on the building's multiple outdoor levels has created a new sense of connection between the school and its environs. The Campbell Hall community has learned to appreciate the unique coloration and texture of the native plantings, which are a big change from the traditional, formal plantings and vivid perennials of the original campus.

Future Project Phases

In May 2008, the entitlements package was presented to the City, and Phases II and III of the project—the Theater and Athletic Center, respectively—were approved (Figure 11). Assuming fundraising efforts are fruitful, Phase 2 is expected to begin in 2014. The theater design has already been

approved by the Building Committee and related Campbell Hall stakeholders. This design has successfully passed through the Design Development phase of the design process, and the electrical and equipment infrastructure is already in place for future live performances to be recorded and broadcast through the Arts & Education Center's sophisticated TV studio. The entire project is expected to be completed by the end of the decade (Figure 12).

CONCLUSION

Throughout the process, the architects, engineers, consultants, and contractor worked as a team, and undoubtedly this was a huge factor in the project's ultimate success. Without the input and expertise of all of the specialists on the team, the project would not have come in within budget, the design would not have been as cohesive, and the building would not be outfitted with the state-of-the-art innovations that it now has.

The Campbell Hall Arts & Education Center design hinged on a delicate balance between the best design solutions and the associated costs. In this case, value engineering resulted in the pursuit of a scheme that was better scaled for the site

and allowed for construction phasing. Interestingly, the final scheme seemed to have been right there all along, but it did not reveal itself until the team had come to terms with the schedule and budget, which entailed weighing input from multiple disciplines.

For example, an early design concept surrounded the theater with classrooms and placing them both over the parking structure; after further analysis by the contractor and cost estimator, this scheme was changed. Similarly, early landscaping visions were well-received but later adjusted because of budget realities. At times, the search for a design solution opened up a new avenue of inspiration, such as the interstitial spaces. As this project demonstrates, this sort of collaboration is possible even within a traditional Design-Bid-Build process; the key in this project was to ensure that the parties trusted each other, had the necessary expertise, and were committed to the project.

The design team was thrilled that the project achieved the aims established at the outset:

- Campbell Hall's new master plan maximized the school's valuable real estate and improved the campus' safety and efficiency. This was achieved by rethinking the pedestrian and traffic circulation and consolidating parking in a single area near the future theater at the southeast corner of the campus. Future visitors will have easy access to public areas while the students and campus will remain safely segregated behind a second, interior gate.
- The new structure maintains the nurturing scale, rhythm, and intimacy of the existing campus, and the welcoming environments in and around the building open up the opportunity for informal interactions among the students and faculty.
- The displaced ground planes of the new building create indoor/outdoor break areas, classrooms, flexible performance spaces, and gardens that reduce energy and maximize space.
- "Smart" classrooms outfitted with technology and well-considered physical infrastructure give teachers new pedagogical tools to enhance the students' learning experiences, while ample daylight improves student concentration and retention. Sustainable strategies, faculty input, and the expertise of the theater and audio-visual consultants and the landscape architect all led to this result.
- The new street frontage allows Campbell Hall the opportunity to present its values to the community while maintaining a sense of security for the students and staff. Phase II, the new Theater, will further enhance the street elevation.

- The native plantings and green roof give the campus a sense of place—Southern California—while minimizing the use of potable water and reducing maintenance costs. The landscape elements also present a learning opportunity for the students.

While Campbell Hall's design clearly reflects and leverages the climate in which it is located, the thought process underlying that design is universal. Gensler believes that any school site, with imagination and good design, can be transformed or developed into a campus that reflects its surroundings while providing an environment that fosters intellectual collaboration and curiosity. The key ingredients are an understanding of the strengths and weakness of that environment, sensitivity to its history, and the support of a visionary client. Sustainable design concepts and the notion of maximizing real estate through multi-purpose learning spaces can be applied everywhere, regardless of climate. And finally, committed multidisciplinary design teams can overcome even the toughest challenges, sometimes finding serendipitous solutions that they might not have otherwise considered.

PROJECT TEAM

Architect	Gensler
Traffic consultant	Crain & Associates
Parking consultant	Choate Parking
Landscape architect	PLACE-E
Civil engineer	KPFF Consulting Engineers
Structural & MEP engineers	Arup
Lighting designer	HLB Lighting Design
Theater/AV consultant	The Shalleck
Collaborative Acoustic engineer	Jaffe Holden
Tele/data consultant	PlanNet Consulting
Waterproofing consultant	Simpson Gumpertz & Heger
Cost estimating	Davis Langdon
Commissioning	Glumac
Pre-construction services	Matt Construction
Contractor	Matt Construction

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