EMERSON COLLEGE
LOS ANGELES

Bringing student housing, instructional facilities, and administrative offices to one location, the new Emerson College Los Angeles (ELA) facility establishes permanent home in the heart of Hollywood for Emerson College's undergraduate internship program. Evoking the concentrated energy of East-coast metropolitan centers in an iconic Los Angeles setting, a rich dialogue emerges between students' educational background and their professional futures. Anticipated to achieve a LEED Gold rating, the new center champions Emerson's commitment to both sustainable design and community responsibility.

Housing up to 217 students, the domestic zones frame a dynamic core dedicated to creativity, learning, and social interaction. Composed of two slender residential towers bridged by a multi-use platform, the 10-story square frame encloses a central open volume to create a flexible outdoor "room." A sculpted form housing classrooms and administrative offices weaves through the void, defining multi-level terraces and active interstitial spaces that foster informal social activity and creative cross-pollination. Looking out onto the multi-level terrace, exterior corridors to student suites and common rooms are shaded by an undulating, textured metal scrim spanning the full height of the towers' interior face.

Architect's Statement

"The building is designed to expand the interactive, social aspect of education. We focused on creating with the broader community in mind—both in terms of public space and sustainable design."

PROJECT INFORMATION

LOCATION Los Angeles, California USA

CLIENT Emerson College

SIZE 120,000 gross ft^2 (not including parking) / 11,148 gross m^2

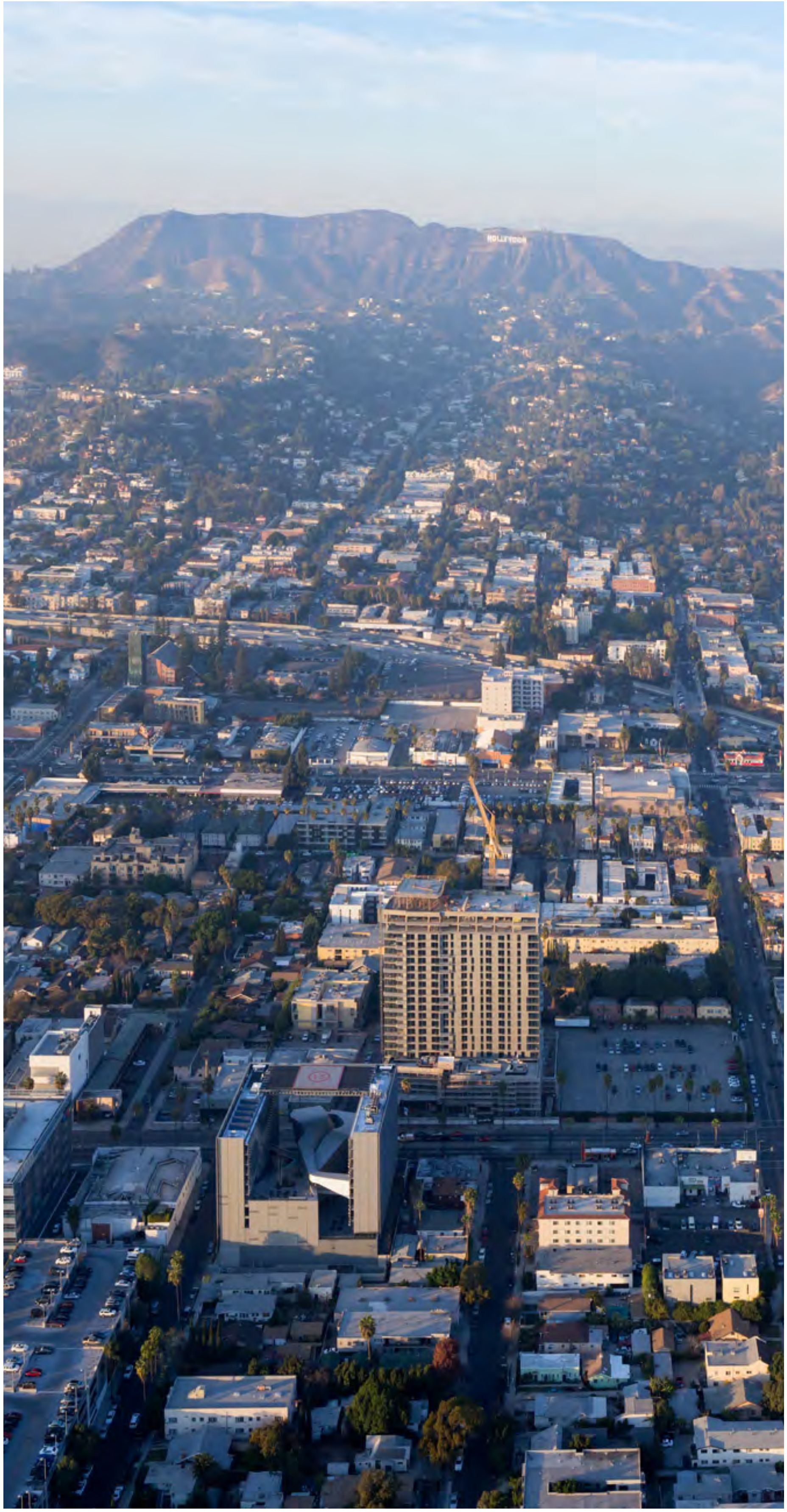
COMPLETION Date January 2014

LEED RATING Gold

TYPE Educational

PROGRAM The Center's program includes ground floor café and retail; classrooms, screening and mixing rooms; outdoor terraces; housing for approximately 220 students, along with faculty and staff; amenities, including a fitness center, lounge and kitchen; bike facilities and three levels of below-grade parking.

PROJECT GOALS



Emerson is committed to the surrounding community:

Neighborhood input played a key role in the development of the design for ELA. The new building aims to be a catalyst for positive urban development, creating welcoming public space in an area of Los Angeles where pedestrian access has historically been underserved. With landscaping and greenery, a pedestrian promenade, and café/ retail spaces open to the public, the school's new facility enhances the streetscape and engages the local community

Landmark Destination - Identity

ELA establishes Emerson College's identity in Los Angeles, the center of the entertainment industry and home to many Emerson alumni. The school is set to be a magnet for industry activity, providing a iconic setting for premiers, events, and student showcases that bring together the general public, students, and industry professionals. Open to Sunset Boulevard, the outdoor screening area in particular was developed as an urban 'drive-in' engaging the school with the broader Hollywood community.

State-of-the-Art Facility

ELA is a state-of-the-art facility pushing the technological advancement of Emerson College, providing unparalleled resources for learning and creativity as well as first-class screening facilities to showcase student talent. The campus' proximity to the professional industry will allow for synergetic relationship between current students and alumni.

Emerson Community and Outreach

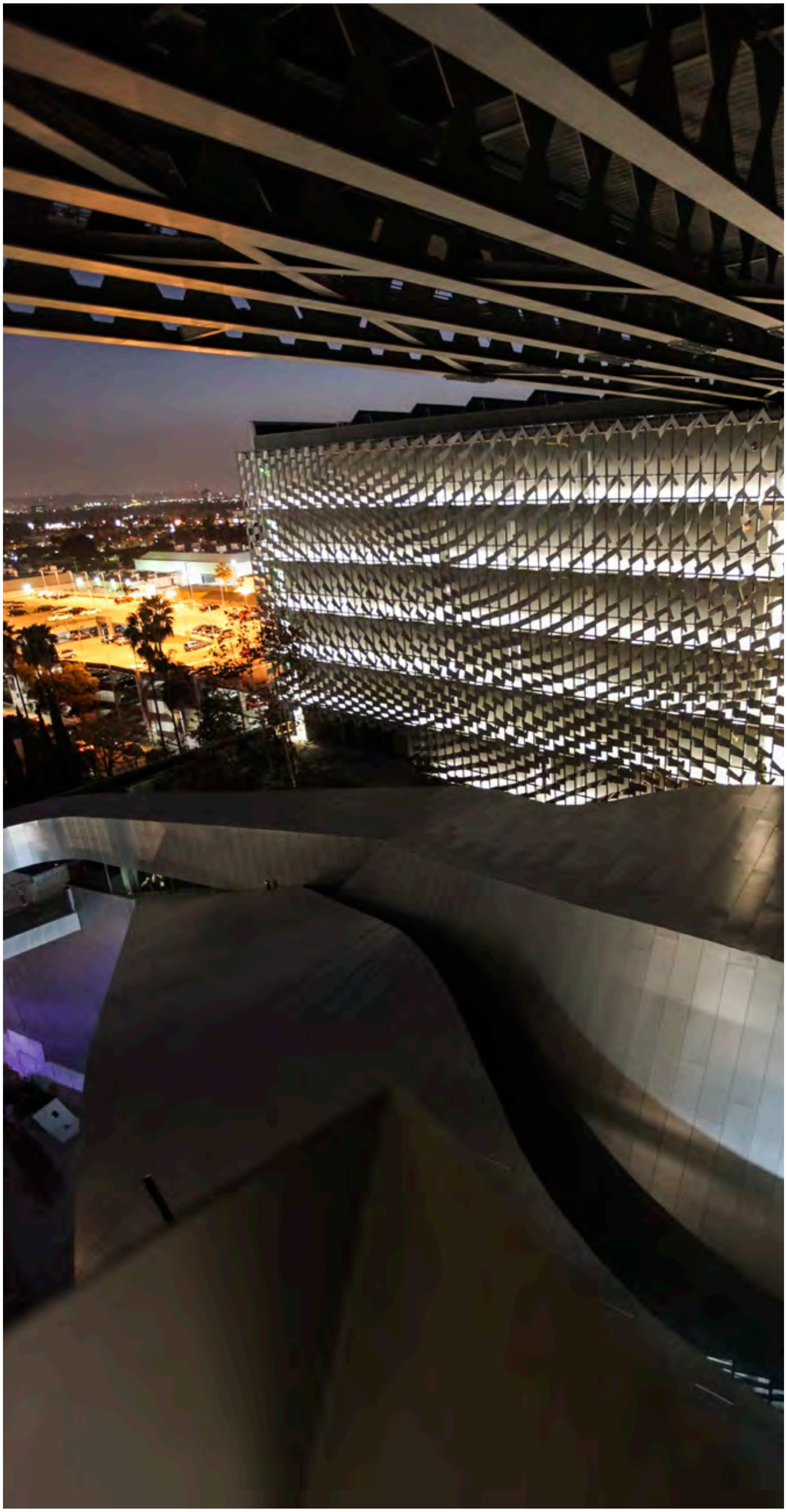
ELA establishes a new base for networking and resourcing for Emerson's large alumni population in Los Angeles; a professional and transitional link between the graduating students in Boston and the alumni in Los Angeles; and a place to gather for events, film screenings and development resources.

Intra-Connectivity

Instant and continuous connectivity between the campuses is critical to the success of ELA as a satellite of Emerson College. With video conferencing technology throughout common student areas as well as distance learning/mentoring/ conferencing capabilities in lecture rooms and classrooms, the new facilities are truly a direct extension of the College's main campus in Boston.

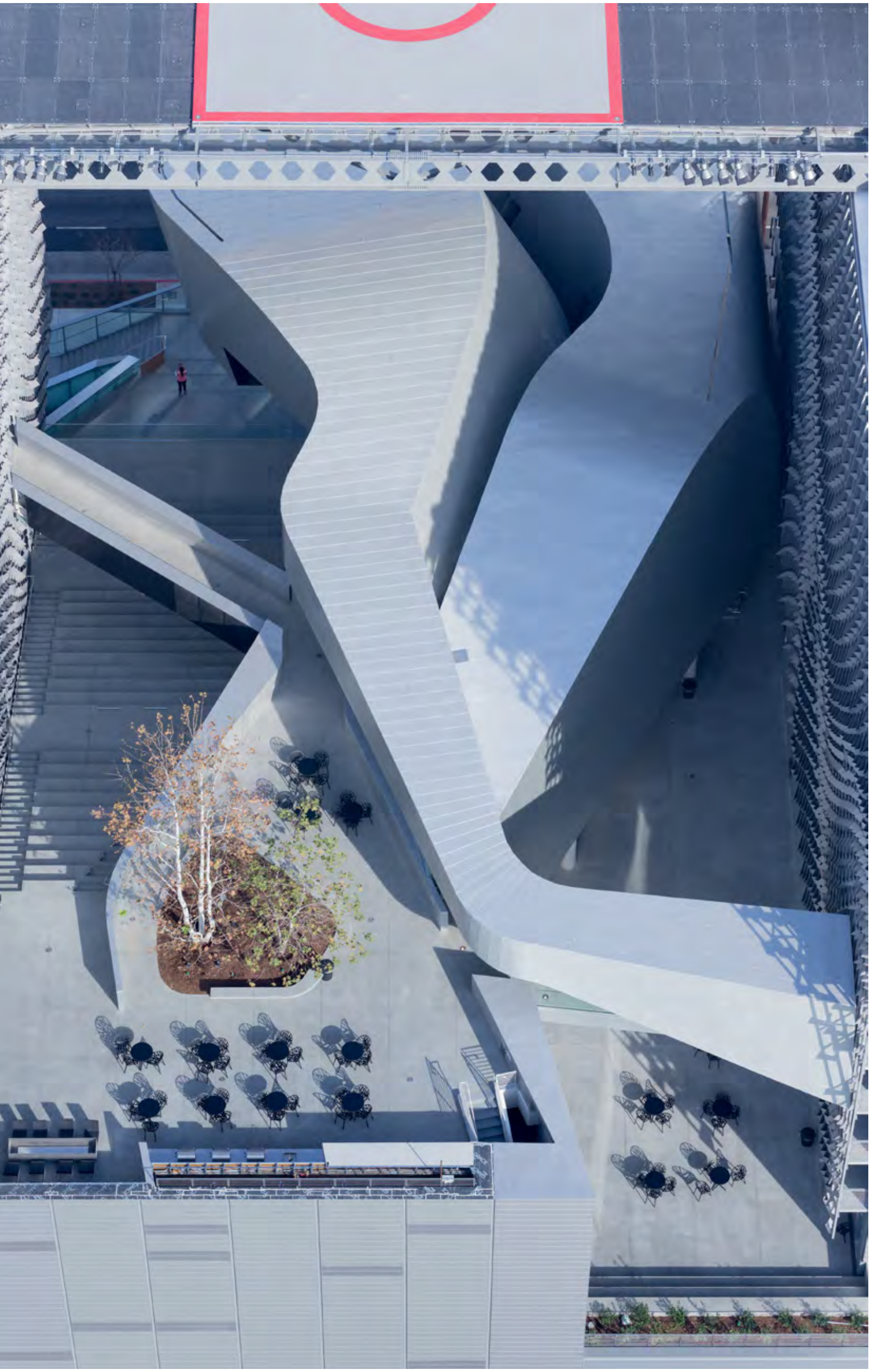
Live/Work

ELA challenges the conventional integration, synergy, and cross-pollination of residential and educational programs to create a new model for a live/work environment. The density of population on the 0.8 acres site creates a vibrant and active community for students, staff, faculty and the general public.



Emerson College adheres to the American College and University President's Climate Commitment (ACUPCC). As such, the College began the process of pursuing campus opportunities that will help it reach the goal of carbon neutrality by the year 2030. Targeting a minimum LEED Gold rating, the ELA Center delivers advanced green building initiatives including radiant heating and cooling, window contacts to facilitate natural ventilation, operable sunshades, user controllability, and solar thermal collectors. The project is expected to achieve a 15% energy cost savings over baseline figures and a 31% reduction of potable water use in all fixtures.

SUSTAINABILITY



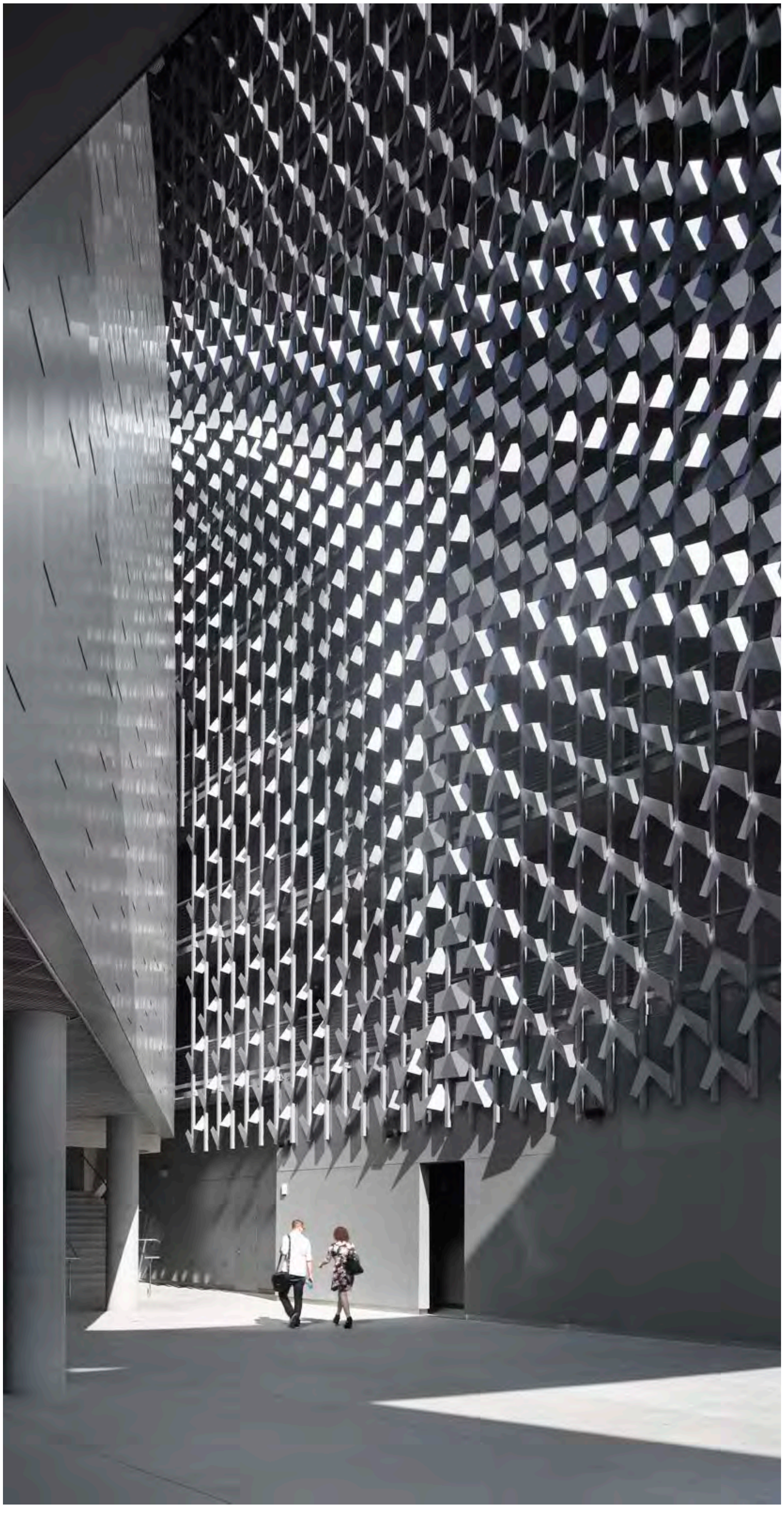
Achieving a LEED Gold rating, the new center champions Emerson's commitment to both sustainable design and community responsibility. Defining the building's facades to the East and West, the residential towers feature an active exterior skin. Responding to local weather conditions, the automated sunshade system opens and closes horizontal fins outside the high-performance glass curtain-wall to minimize heat gain while maximizing daylight and views. Further green initiatives include the use of recycled and rapidly renewable building materials, installation of efficient fixtures to reduce water use by 40%, energy savings in heating and cooling through a passive valence system, and a building management and commissioning infrastructure to monitor and optimize efficiency of all systems.

Sustainability & Engaging the Local Community

Advanced green building initiatives include:

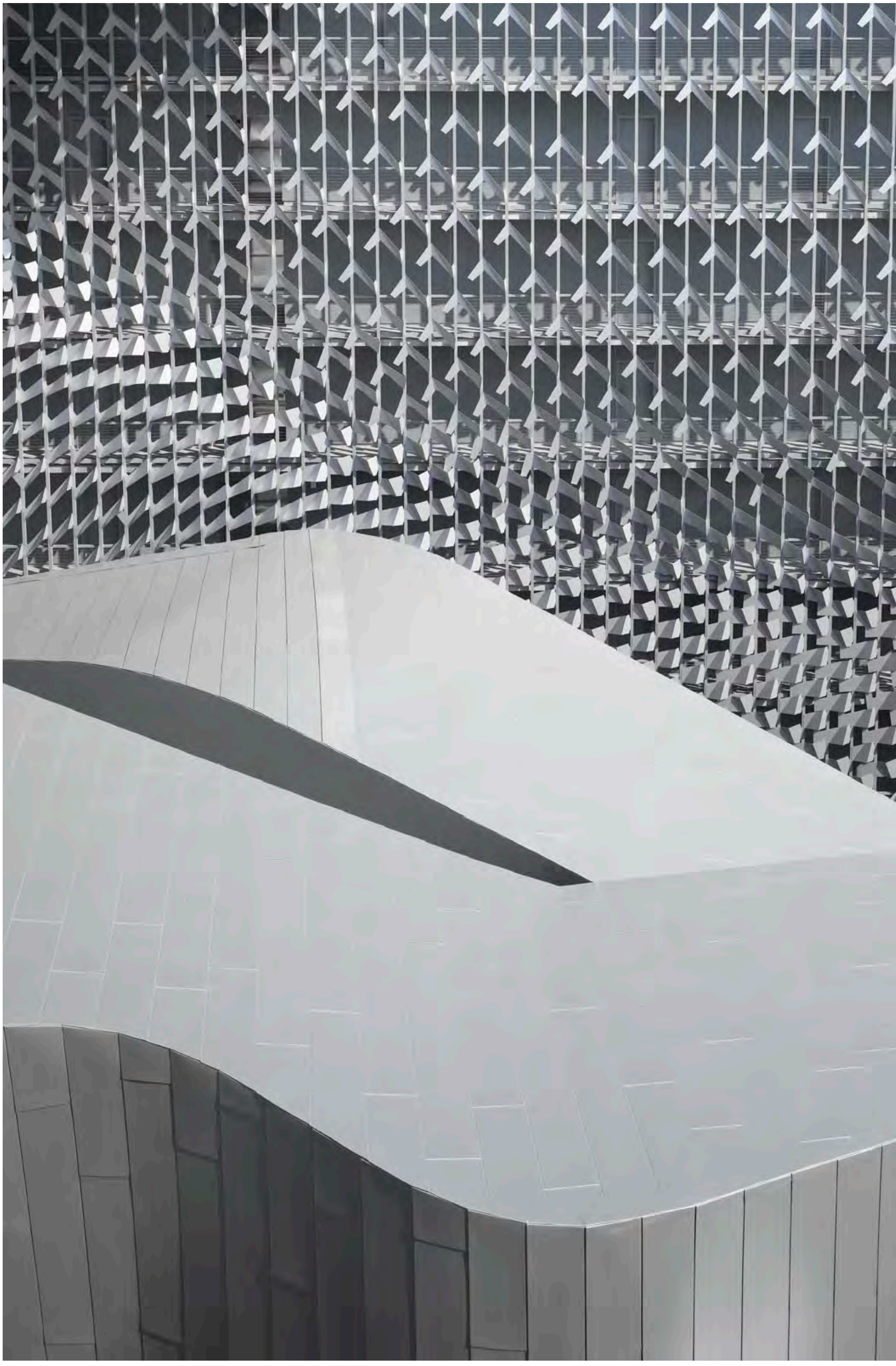
- Energy and water saving strategies that also maximize operational cost savings
- Natural ventilation via patterned screens shade semi-outdoor residential corridors and academic circulation spaces and residential suites with operable windows
- Automated sunshades: horizontal fins outside the high-performance glass curtain-wall are connected to weather stations that track the local climate, temperature, and sun angle, to minimize heat gain while maximizing daylight and views
- High-efficiency passive heating and cooling via radiant chilled beams, to ensure a comfortable work and study environment
- Solar Energy is used to heat hot water through solar tubes on the roof of the residential towers
- Storm water filtration system removes impurities using onsite landscaping prior to returning water to the city sewer system
- Water savings via efficient fixtures that reduce water use by 40%
- Recycled and rapidly renewable building materials
- Waste recycling
- Building management and commissioning system to monitor and optimize efficiency of all systems

FOLDED PANEL SOLAR SCREEN

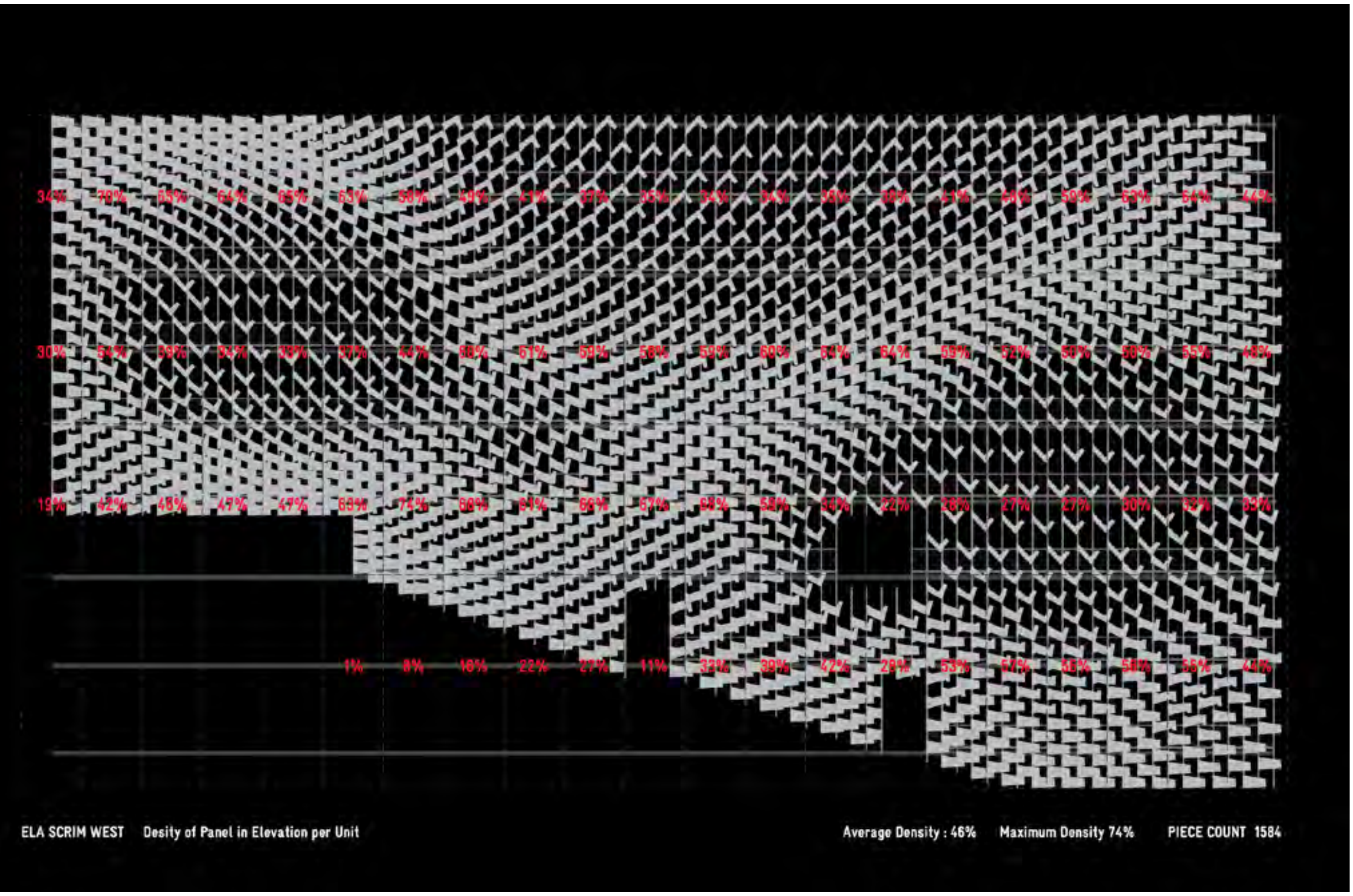


Folded Panel Solar Screen

The residential towers employ a natural ventilation strategy to help control the indoor environment. A key element in the system is the Folded Panel Solar Screen which helps to shade and lower the temperature (pre-conditioning) of the air in the exterior corridors and circulation spaces around the academic and residential spaces. The parameters of the solar screens design only required that it provide enough shading and open area to allow for successful natural ventilation of interior spaces. While its intent is functional the design team used the screens as an opportunity to create an aesthetically dynamic façade that change with the surrounding environment. As the sunlight changes throughout the day the shadows and reflections of each panel transform activating the façade's surface and enclosing the exterior plazas in vibrant surface.



To develop the design Morphosis created a custom computational tool that would layout a series of panels based on their relationship to programmatic and formal elements in the design (i.e. pathways, the landscape, bridges, etc). The result is an aesthetic surface that relies on panel size and density to create a smooth, gradient pattern.


34% 70% 65% 64% 65% 63% 58% 49% 41% 37% 35% 34% 34% 35% 38% 41% 46% 50% 63% 64% 44%
30% 54% 39% 34% 33% 37% 44% 50% 61% 59% 58% 59% 60% 64% 64% 59% 52% 50% 50% 55% 48%
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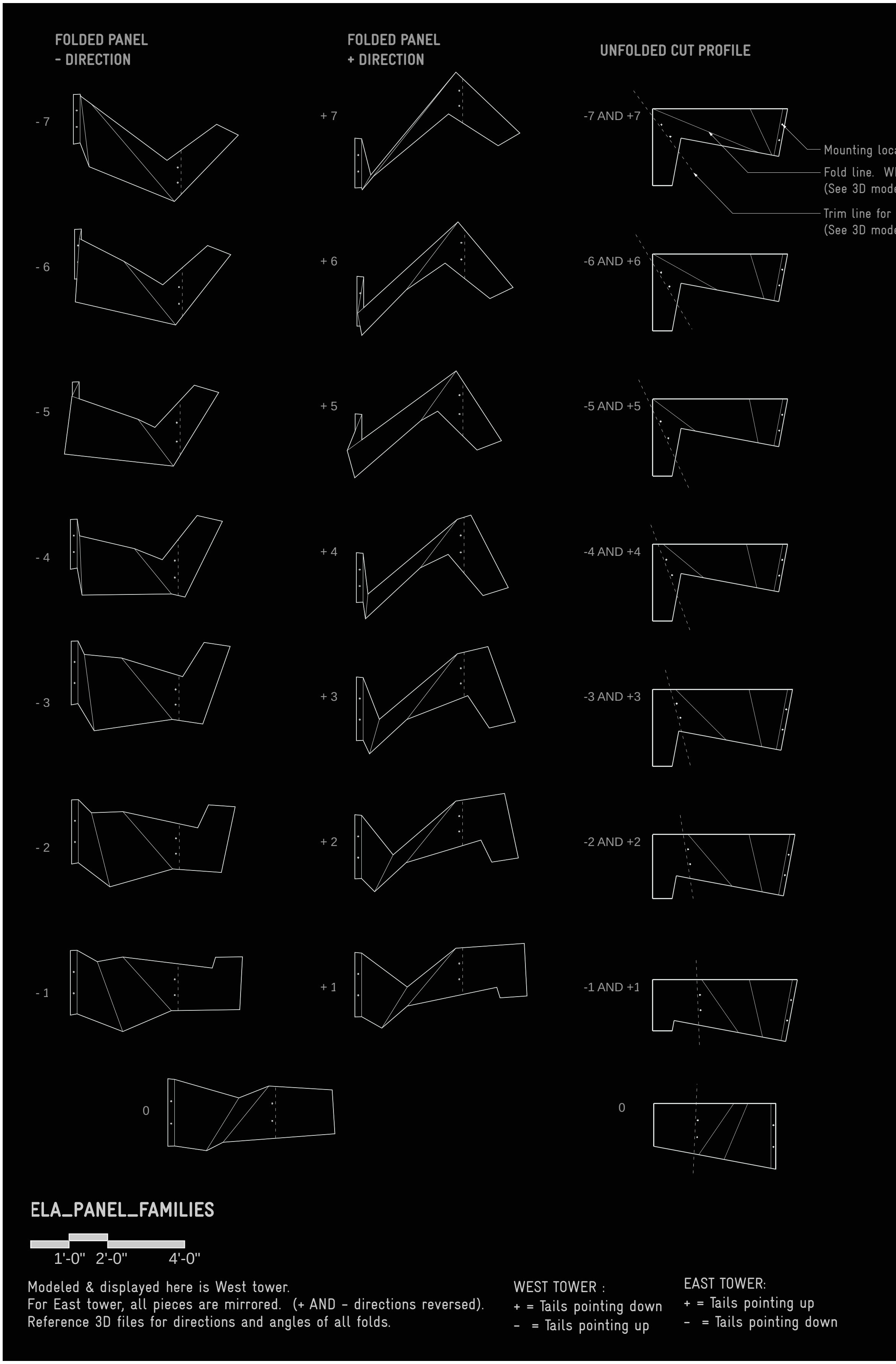
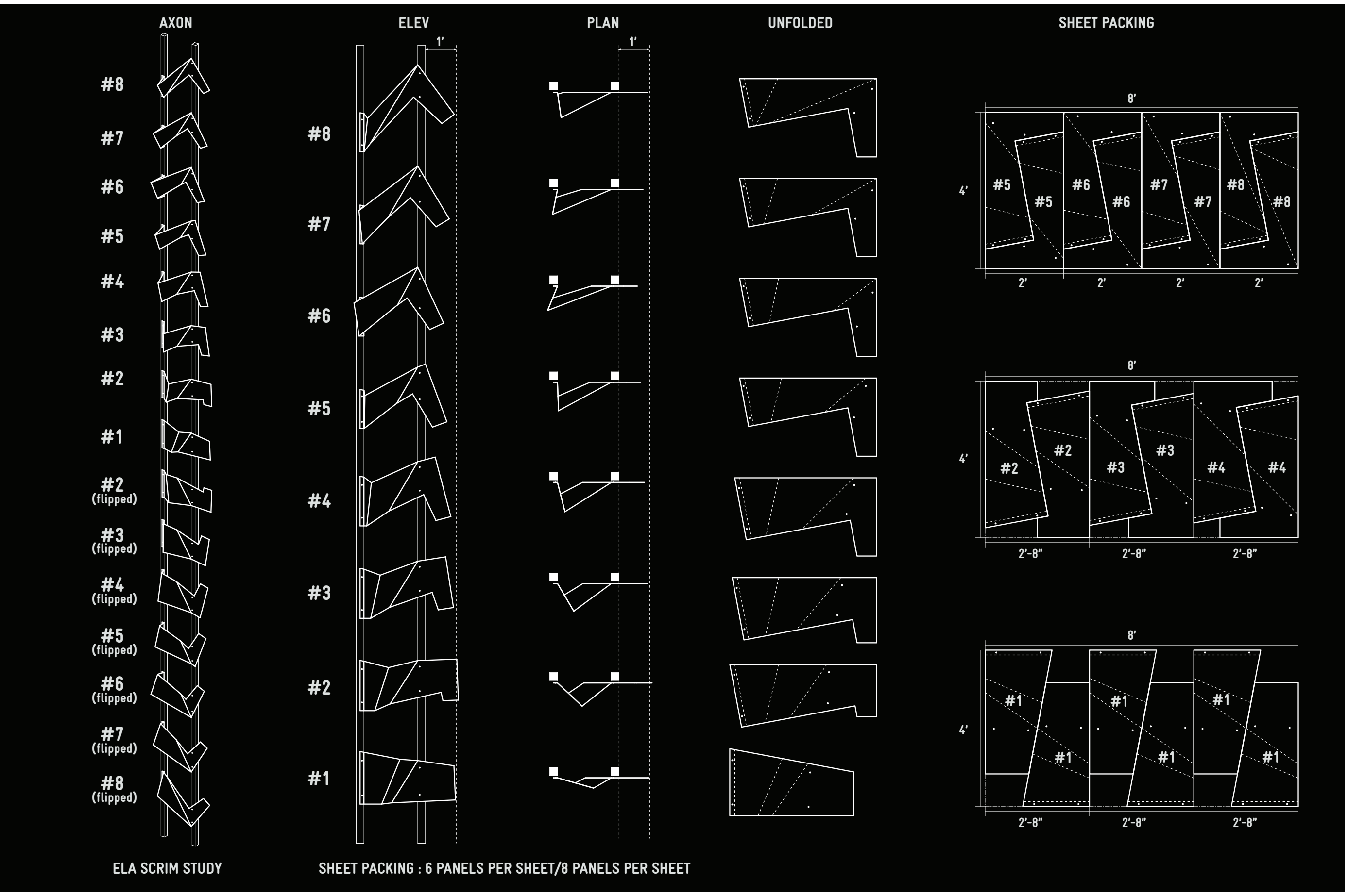
1% 8% 16% 22% 27% 11% 33% 39% 42% 28% 53% 57% 56% 56% 56% 44%
ELA SCRIM WEST
Desity of Panel in Elevation per Unit
Average Density : 46%
Maximum Density 74%
PIECE COUNT 1584

These panels could then be unfolded to flat cut patterns and documented. Through a series of iterative studies the design team was able to accommodate the environmental parameters and limit the number of unique panels to 18 panel types. However when the solar screen went to cost estimation the system came in over budget due to the larger quantity of material needed to accommodate the panel geometries; resulting in 28% material waste.



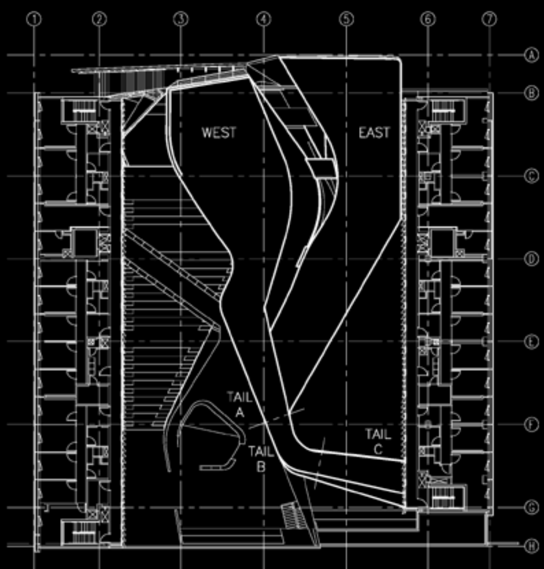


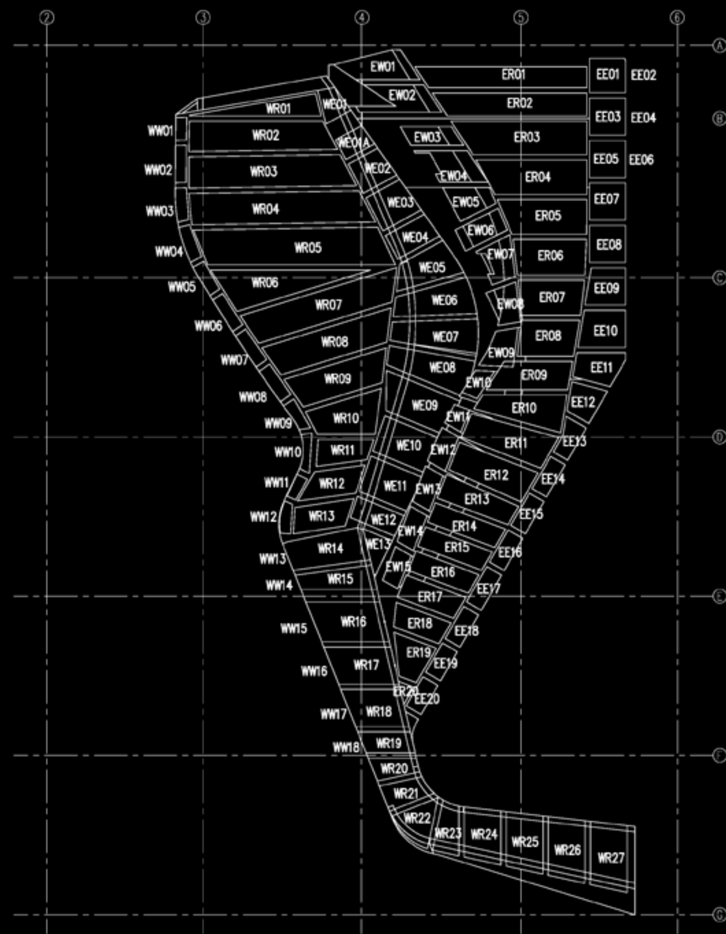
To ensure that the design criteria could be achieved the team redesigned the façade panels based on the standard 4'-0" x 8'-0" aluminum panel that was to be used during fabrication. The individual panels were laid out ("nested") on the standard sheet to evaluate the material effieciency of the new system. In the end the design team was able to realize the same design intent with minimal changes to the performance and aesthetics while reducing the number of unique panels to 17 and resulting in approximately 9% material waste.

PANELIZED FACAADE SYSTEM (ZEPPS)

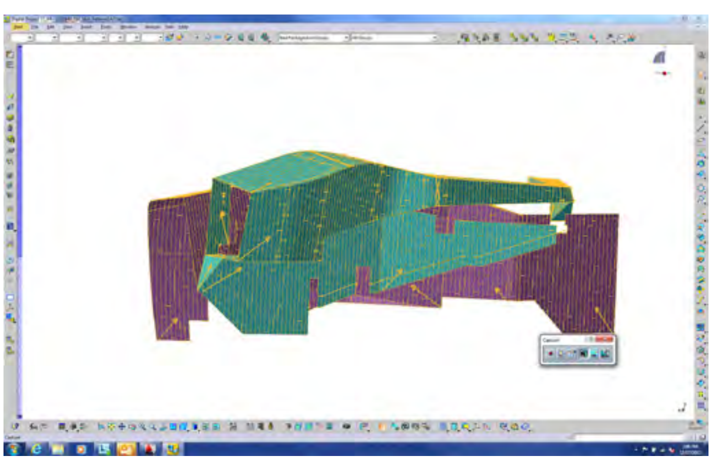
With its fluid sculptural form, the central academic building is by far the most geometrically and structurally complex element of the design. The building's dual volumes weave through the void between the residential towers, defining multi-level terraces and active interstitial spaces that foster informal social activity and creative cross-pollination.

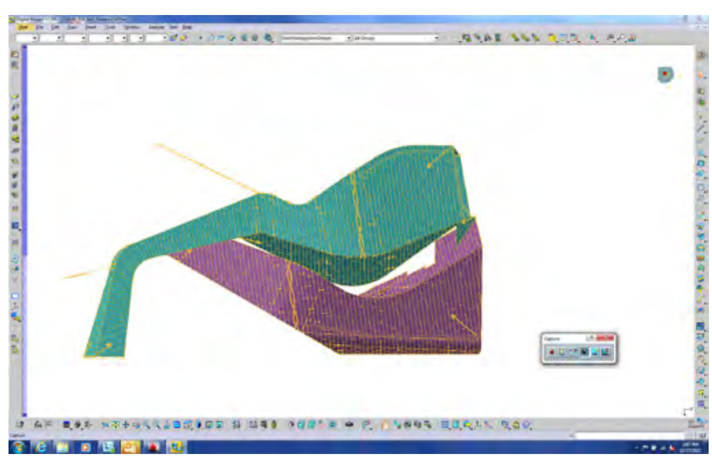
The upper volume of the academic building hovers two stories above the entry plaza, approaching the street with a dramatic 30 foot cantilever.

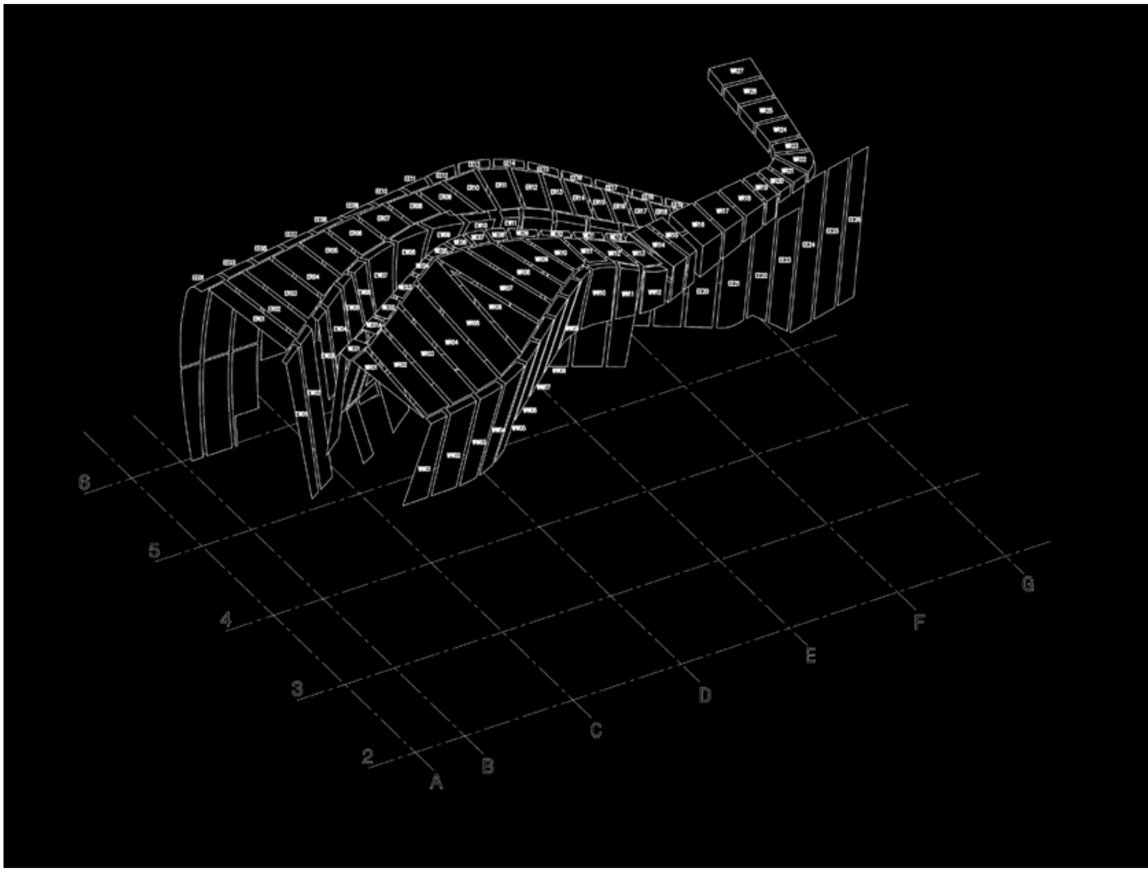


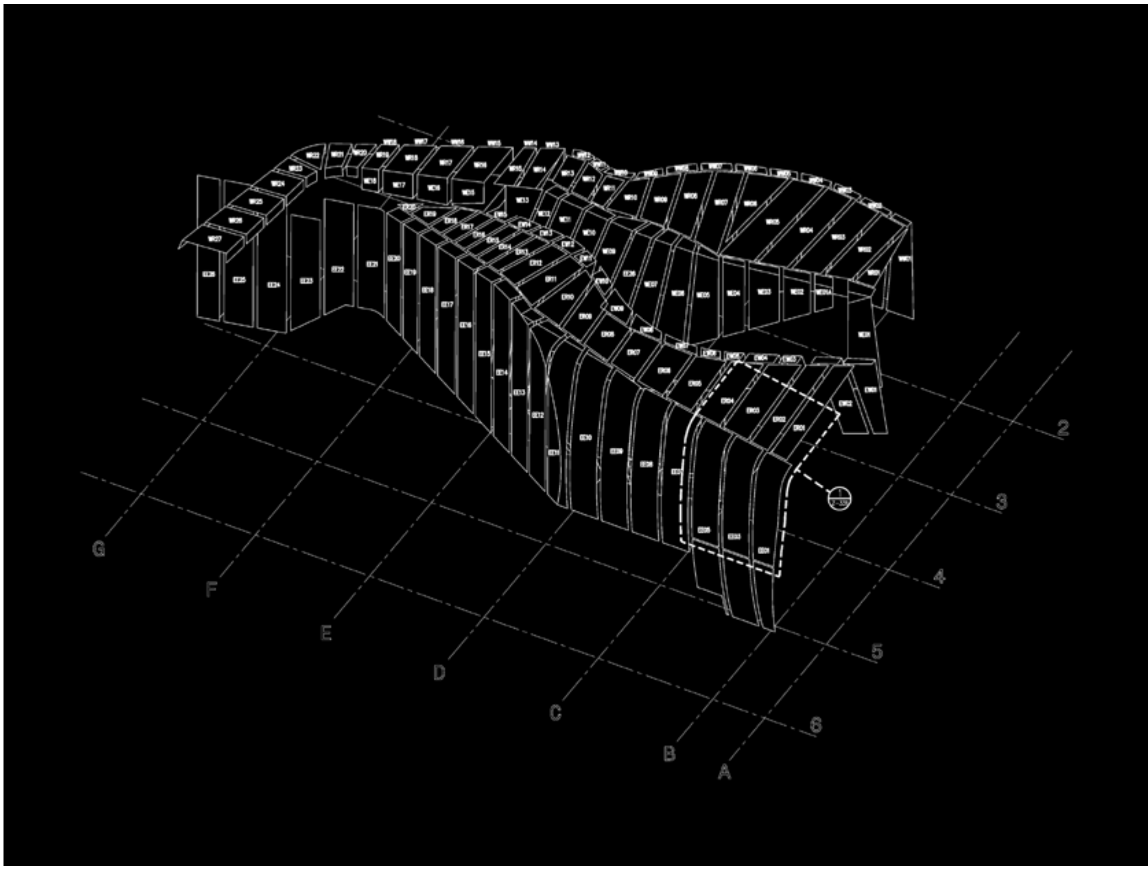


The intricate form and inherent complexity of the building's in-field construction and installation required the team to employ alternate methods of construction. To accommodate the design intent, the design team worked directly with the fabricator to utilize their ZEPPS (Zahner Engineered Profiled Panel System) technology, a system that uses a series of metal panels specifically developed for the construction of curvilinear and otherwise complex forms.









The ZEPPS panels were digital engineered, yielding the blueprints for streamlined construction. The process creates a profile where each panel aligns on the same plane with its neighboring panels, so that the total effect is a continuous, smooth form.

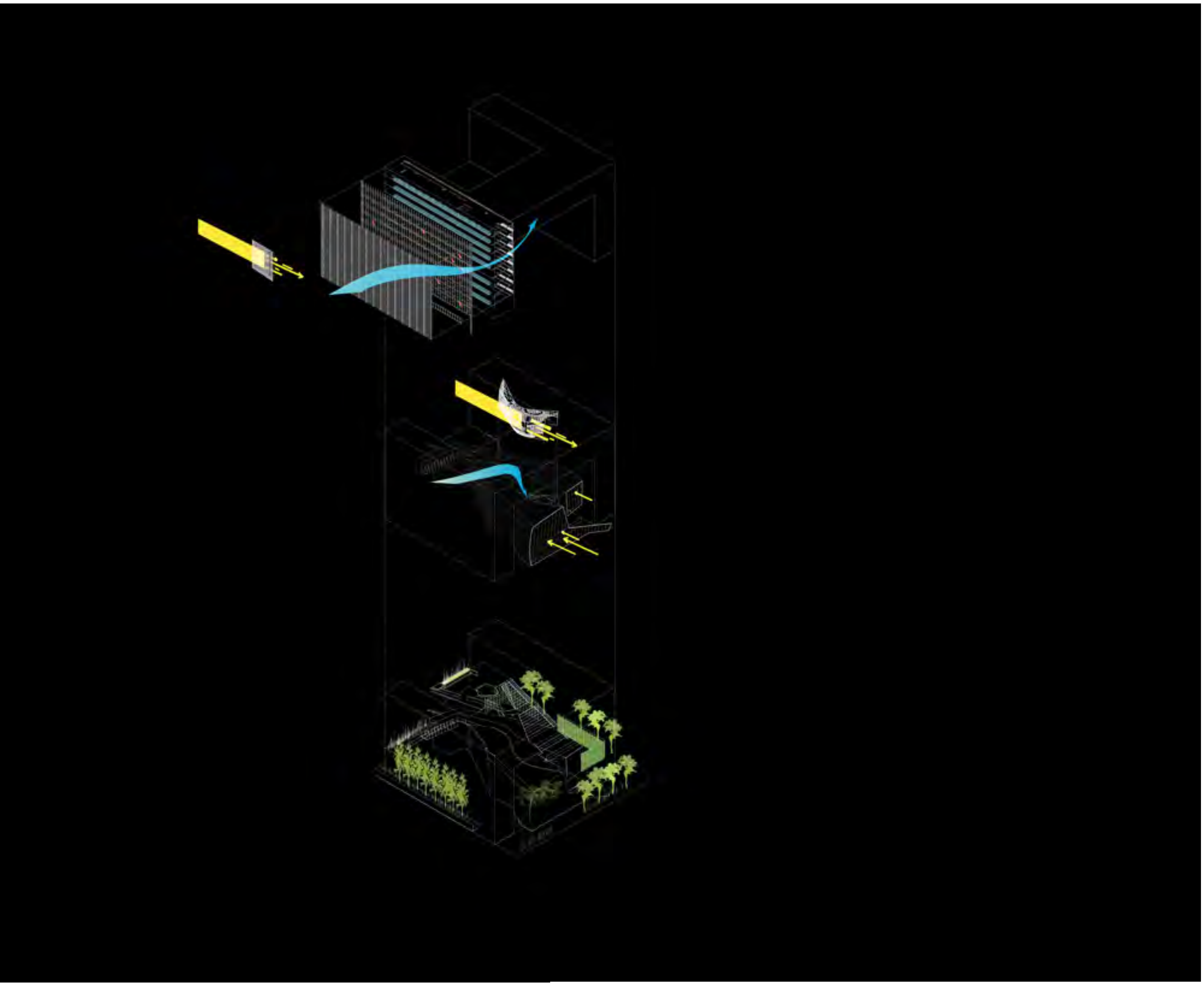
The benefits of utilizing prefabricated ZEPPS include:

- Reduced schedule for on-site construction of the exterior envelope.
- Accurate and efficient construction of complex forms.
- Elimination of need for large scale construction platforms and scaffolding.
- 20% -30% reduction in construction costs over tradition stick-built systems.

KINETIC SHADING SYSTEM

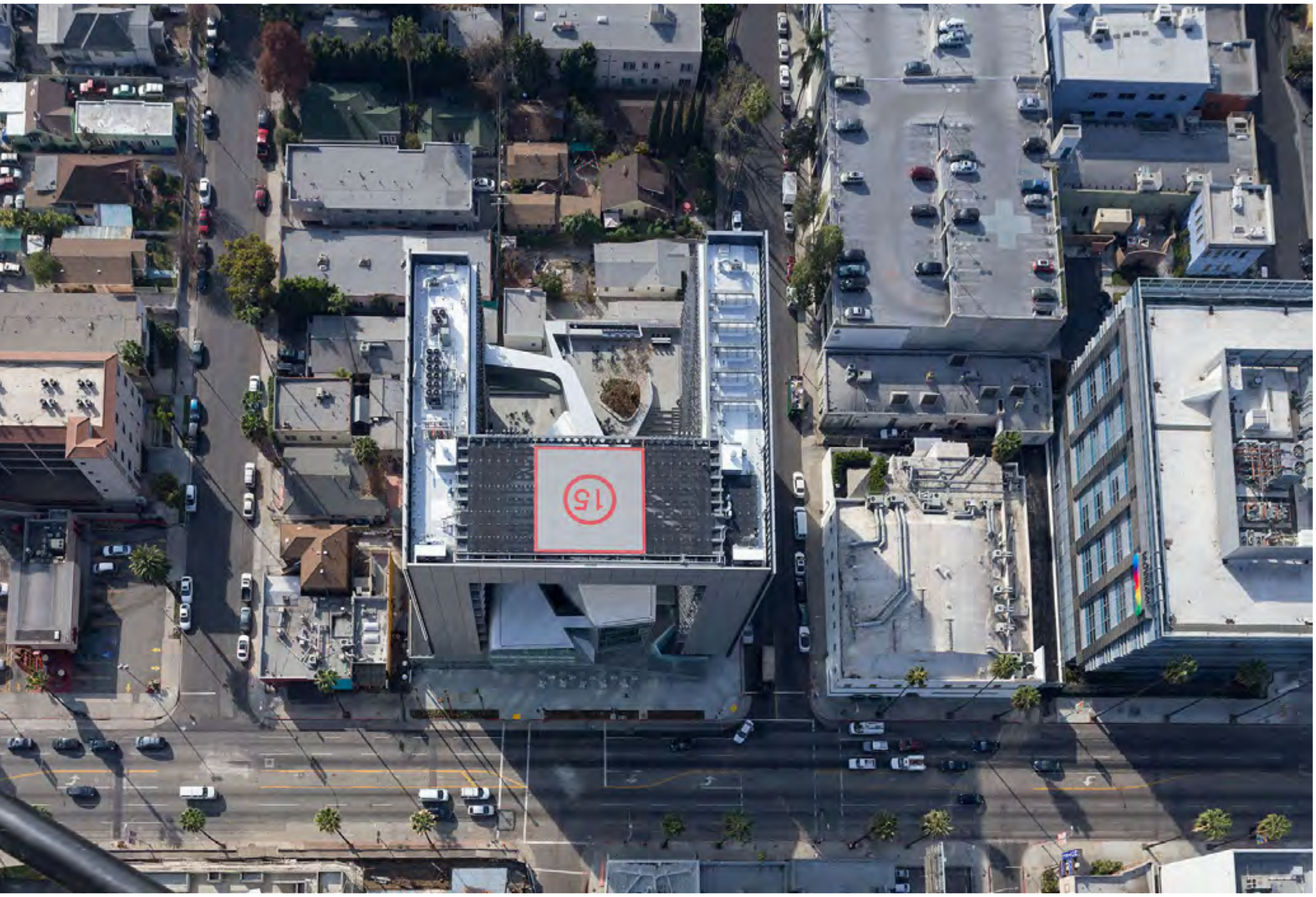
Early on in the design, sunlight path analysis and massing studies were used to assist in determining the optimum arrangement for the building program to avoid overshadowing and excessive solar gain. By doing these studies the design team was able to optimize the performance of the building facades.

To mitigate low angle east and west sunlight, the design incorporates a kinetic shading system on the residential towers that reduces solar gain and maximizes daylight.



The sun shades are programmed to track the position of the sun and respond to local weather conditions monitored by four weather stations on the building's roof.

In addition, the shading system's louvers connect to the building's Automated Building System to promote natural ventilation within the residential towers.



HELIPAD - SMART BEAM

By code, certain buildings in Los Angeles are required to provide a helipad for fire and life safety access. Due to the small footprint of the residential towers and the desire to maintain the entire plaza level for social functions, the design team needed to address this requirement at a different location of the site. To accommodate the Helipad the design team chose to create an architectural element that spans between the residential towers along the street side elevation.

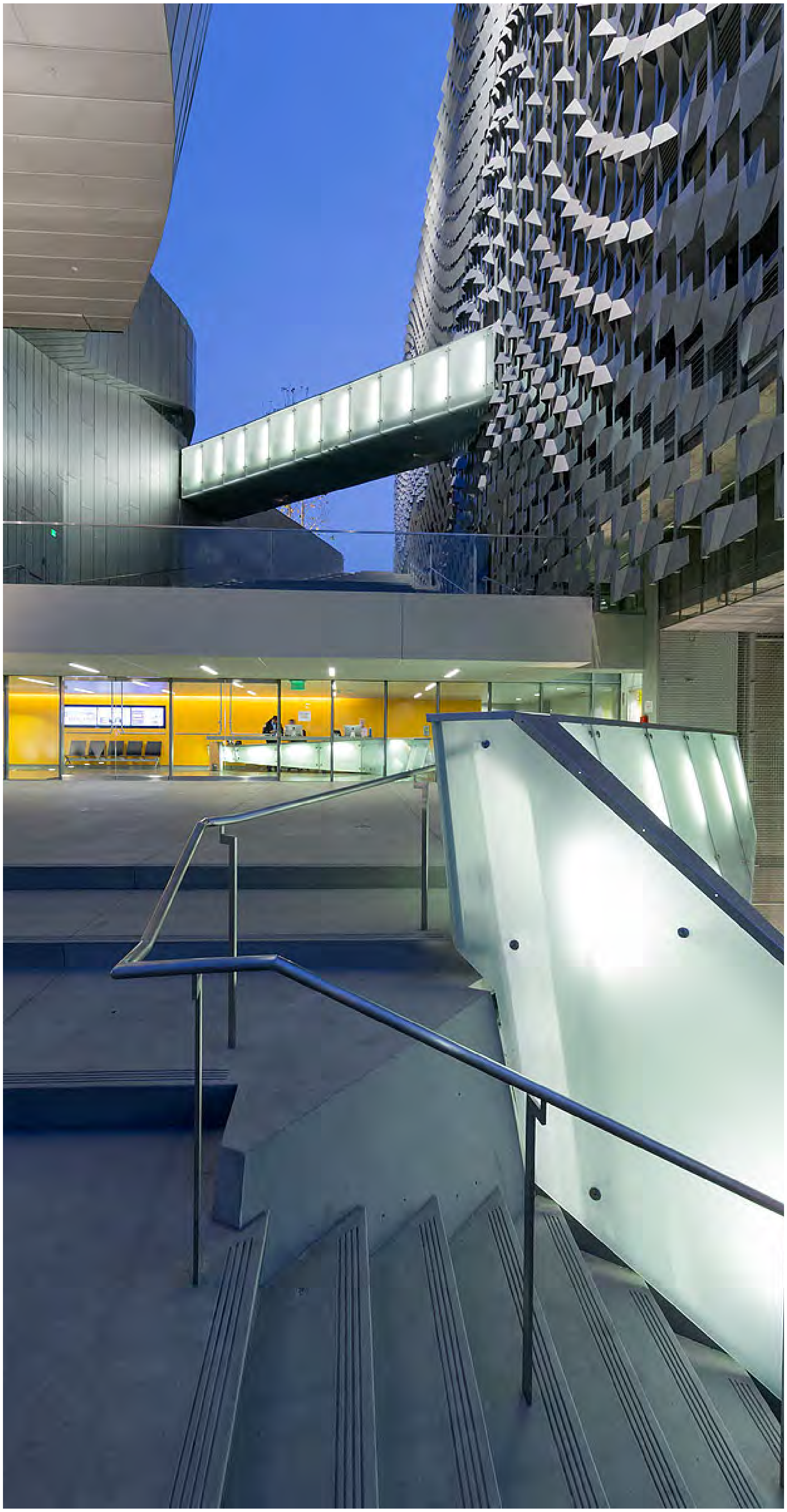
The addition of the Helipad element frames the academic buildings from street level, while framing a view of the iconic 'Hollywood' sign from the interior plaza. To achieve the 100' single span the design team used Castellated SmartBeams.

The benefits of utilizing Castellated SmartBeams:

- Minimal impact on the primary structure of the residential towers.
- 100' span achieved with a single member.
- Simple and efficient installation requiring no temporary supports or bracing.

Contractor's Statement

"An innovative project like Emerson LA would have been impossible without a strong BIM effort from the design and construction teams. For us, Emerson College was more challenging to coordinate than most projects, which was due to the boundary-pushing nature of the design, and was anticipated well in advance of the effort. The design team's participation in BIM coordination meetings helped us resolve issues faster and supported a collaborative approach to project delivery."

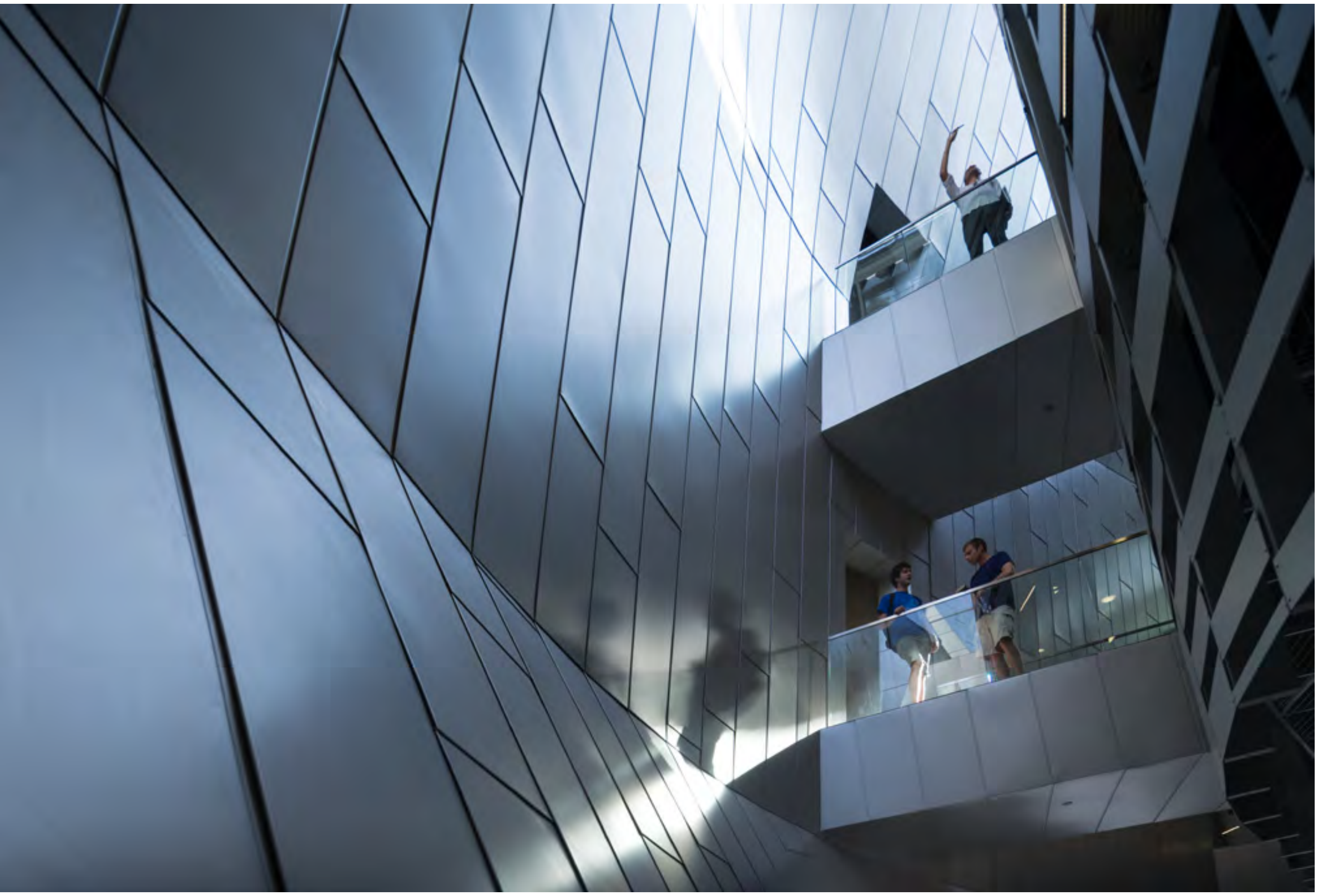


COLOCATION

One of the most critical elements to the success of this project was colocation. When the architect, and the general contractor were in a shared office environment it enabled and created opportunities to collaborate—at any point in the day, on any subject—without having to schedule specific meetings around busy calendars at off-site locations. Colocation was the enabler of collaboration and the center of the project's integrated approach. Colocating key stakeholders at the ELA job site integrated people, systems, business structures and practices into a process that collaboratively harnessed the talents and insights of all participants which optimized efficiency through all phases of design, fabrication and construction, eliminating waste and maximizing value throughout the project life cycle.

BIM

Through the architectural specifications the architect requested that the GC provide a BIM model from all major trades prior to the start of construction. The exposure to BIM platforms allowed the design team to run effective BIM clash detection and coordination meetings with every trade involved on the project. The architect, trade superintendents, and project managers were in the BIM meetings together, which allowed trade superintendents and project managers to comprehend the architect's vision at each stage of the project. This unique process ensured that all the subcontractors, superintendents, and project managers were thinking in 3D instead of 2D. The use of technology created a shift with those subcontractors and their ownership of the project. This state-of-art approach coupled with the inclusion of all trades from the beginning had the team engaged in the process.



REDUCING PROJECT SCHEDULE

During the design phases, the use of an integrated 3D process allowed the design team to communicate design ideas to the client and consultants in an efficient and effective manner. By incorporating all consultant trades into the model the design team created a holistic view of building. This use of federated BIM provided a single source of information for the project from early concepts through construction administration. The integrated model increased the design team's productivity and reduced the staff required to design, document, and coordinate the deliverables.

The benefits of a detailed BIM became more apparent during preconstruction, shop fabrication and installation of complex project components. The development of an advanced architectural model allowed the design team to realize complex geometries and custom components that were originally thought to be outside of the project budget. The design and construction team used both digital and physical mock-ups derived from these models to develop and eventually fabricate components including the folded panel solar screen, the panelized façade system, exterior curtainwalls including the Kinetic shade facade, and the Helipad. The BIM was used to design and document these elements in an integrated process through collaborative design meetings. These meetings ensured that all parties were involved in the decision making process and agreed to the documentation, fabrication, and installation techniques. This integrated approach to the design and development of key architectural components of the building ensured that the project would finish on budget and within in the tight schedule.

REDUCING PROJECT COSTS

The Integrated BIM approach allowed the project team to deliver this complex building within the project budget. A series of cost savings were realized through the full investment and commitment to an Integrated BIM by all stakeholders. During preconstruction the collaborative and transparent approach employed by the design and construction team created an environment of trust. This in turn allowed for open dialogue throughout the design process ensuring accurate pricing in the initial GMP. The reliance on an integrated BIM model further guaranteed the success of the project by eliminating opportunities for miscommunication. The collective investment in the model by all stakeholders provided the open platform necessary for coordination and communication throughout the project.

QCP THROUGH TECHNOLOGY

By employing iPad's the construction technology quickly moved from the office trailer to the field. The architect implemented the use of Projectwise and Newforma for monitoring the quality control processes on a project. The project team used these technologies to access information in the field and to monitor quality related items by creating an issue and immediately notifying the related subcontractor of the issue. The subcontractors were provided access to the system to acknowledge how the issue was addressed and provided photos and notes to document this resolution. The general contractor and the design team would intermittently check items to verify they were in fact addressed and closed as needed. The project team also used this technology exclusively for the punch list phase of the project. The general contractor prepared their own internal punch list utilizing this system and pushed this information out to the subcontractors to address. Once complete and verified, the GC and architect produced the architect's punch list. This allowed GC to push this information out to the subcontractor in real-time with no lost time waiting for the architect and engineer to formally issue a punch list document.

Owner's Statement

"The Architect was commissioned by Emerson College to design a building that made the statement – Emerson College is here, and we are here to stay. The magnificent design more than met that objective and Emerson's new home in the heart of Hollywood makes a statement as bold as the institution itself. Working with this team of Designers and Project Architects was a pleasure and an honor."

PROJECT CREDITS

CLIENT TEAM

Development Consultant
Robert Silverman

CONSULTANTS

Structural
John A. Martin Associates, Inc.

MEP
Buro Happold

Civil
KPFF

Landscape Architect
Katherine Spitz Associates

Sustainability
Davis Langdon

Cost Estimator
Davis Langdon

Facade
JA Weir Associates

Geotechnical
Geotechnologies

Lighting
Horton Lees Brogden Lighting Design, Inc.

Acoustics
Newson Brown Associates LLC

Audiovisual/IT
Waveguide Consulting Inc.

Code
Arup

Specifications
Technical Resources Consultants, Inc.

Vertical Transportation
Edgett Williams Consulting Group, Inc.

Technology & BIM
Synthesis

Theater Design
Auerbach, Pollock, Friedlander

Graphics
Follis Design

Smoke Control
Exponent

Waterproofing
Independent Roofing Consultants

Exterior Building Maintenance
Olympique

Architectural Visualization
Kilograph

CONSTRUCTION TEAM

General Contractor
Hathaway Dinwiddie Construction Company

Metal Façade Subcontractor
A Zahner Company

Curtainwall Subcontractor
Walters & Wolf