

**UNITED STATES CONSULATE GENERAL**

**RIO DE JANEIRO, BRAZIL**

US STATE DEPARTMENT  
BUREAU OF OVERSEAS BUILDINGS OPERATIONS



Main Entry Plaza

**SITE** CONTEXT

FAVELA

RAIL YARD

TRANSIT BRIDGE

MANGUE CANAL

CENTRO

CITY HALL

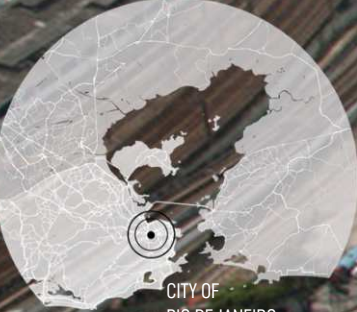
SAMBADROME

METRO STATION

FAVELA



STATE OF  
RIO DE JANEIRO



CITY OF  
RIO DE JANEIRO



CIDADE NOVA



**SITE: 3.7 ACRES**

CONVENTION CENTER

## INTRODUCTION

- New U.S. Consulate General designed to replace the existing and aging facility located in Rio de Janeiro, Brazil.
- Scope includes a secure compound of five support buildings and on-site below grade parking structure surrounding a central office building.
- Project goal is to provide a campus that expresses American ideals of dignity, strength, and good will, while demonstrating respect for the culture and environment of the host city and country.
- Integrated design approach of whole-building performance incorporating functionality, security, art, safety, sustainability, accessibility, durability, and operability for each building.
- Targeting LEED Silver
- Design-bid-build delivery method. Currently engaged in bidding and permitting process. Early demolition and site work began in April of 2019.
- 18-month design phase featured continuous involvement of management and subject matter experts from the USG with periodic roundtable reviews. Executives and foreign service staff at the existing Consulate in Rio were consulted at each phase encouraging input on operations and programming.



Compound view looking North – long views to mountains of Tijuca National Park. Christ the Redeemer on ridgeline left of center

## IDENTITY APPROACH

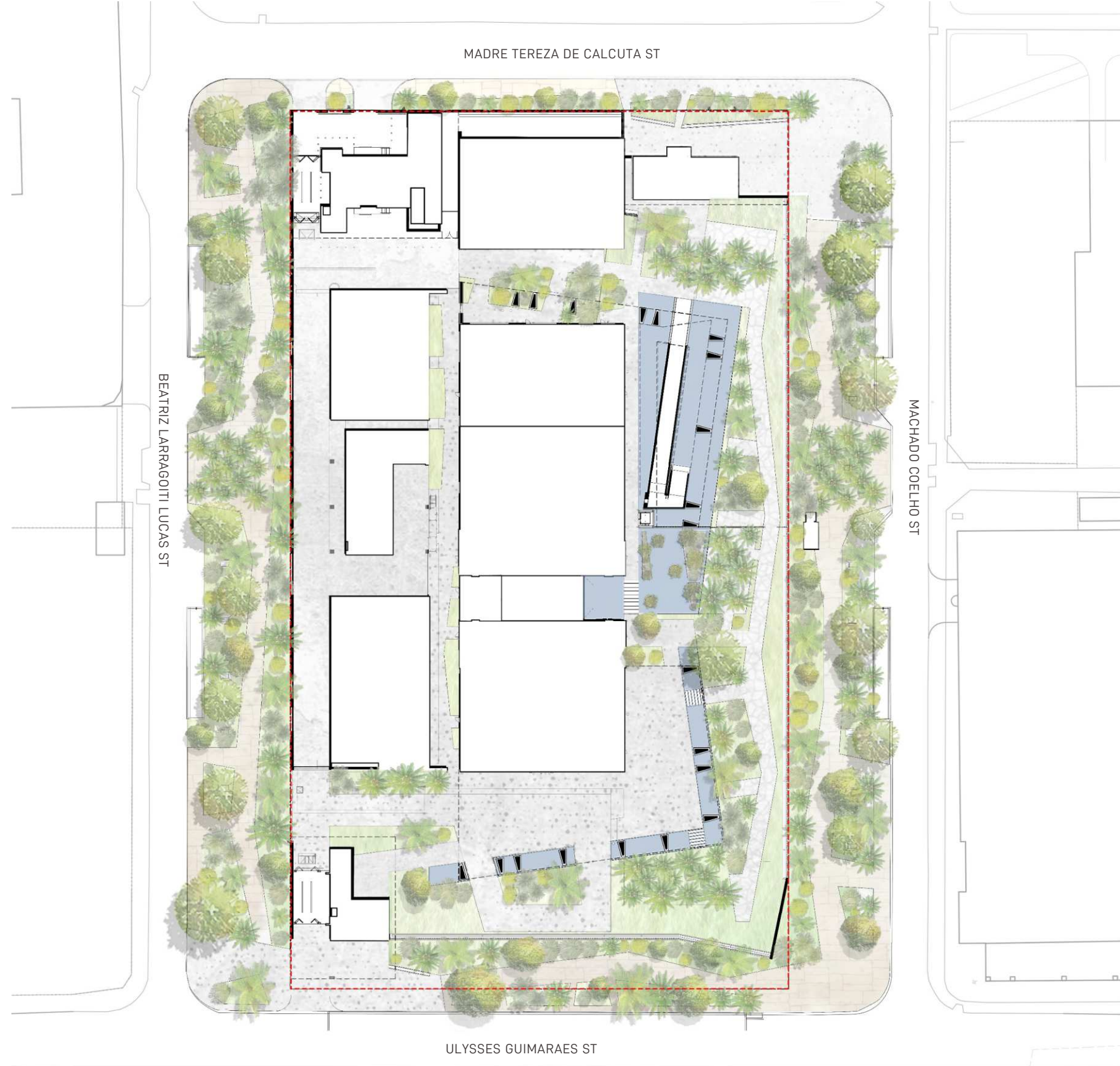
- The geologic promontories of Rio are reinterpreted as two structural towers of varying height set atop a two-story plinth.
- After engaging with the city then compound gardens in a more intimate way, the movement of entering the building at the base then rising up through the towers to re-engage with the wider surroundings is reinforced.
- Glazing is maximized at the three outward facing sides of the towers for daylight and views.
- Vertical aluminum shade fins are attached to steel framework extending from the towers as a solar response and to create the angular geometry, perceived massing of the towers.
- Locally sourced stone granitic gneiss, the same that composes the surrounding mountains, clads the lower plinth, canopy piers and service cores of the towers.

View from southeast – “identity corner” at primary public street frontage



## CONCEPTUAL SITE PLAN

- With an already confining site on only 3.7 acres, building setbacks due to security requirements further limit the buildable area for the office building resulting in a necessarily compact building footprint and vertically distributed program.
- Service access for compound is from the NW corner with support buildings occupying the W. and N. edges of the site connected by a service drive.
- Consular visitor access is through the pavilion at the Northeast corner of the site from the connected plaza, adjacent to public transportation and greenspace.
- Passage through the consular garden leads to a processional ramp to consular services located at the second floor of the office building
- East and South edges of the site are the representational frontage and identity of the facility developed with formal gardens and water features along primary street frontages.
- Covered entry and event plazas occupy the Southeast corner adjacent to the entry and public access spaces.
- Site development extends into public r.o.w. to create a common landscape that visually bridges the perimeter and provides a gesture of shade for the public sidewalks



## ARRIVAL GARDEN

- Representational event plazas and native gardens inspired by the intimacy between architecture and nature as expressed in the work of prolific Brazilian landscape architect Roberto Burle Marx define the South and East edges of the site adjacent to the main entry and public access functions as well as the public r.o.w.
- Monumental shade canopies extend from the building to provide shade and rain cover for plaza areas and consular access ramp



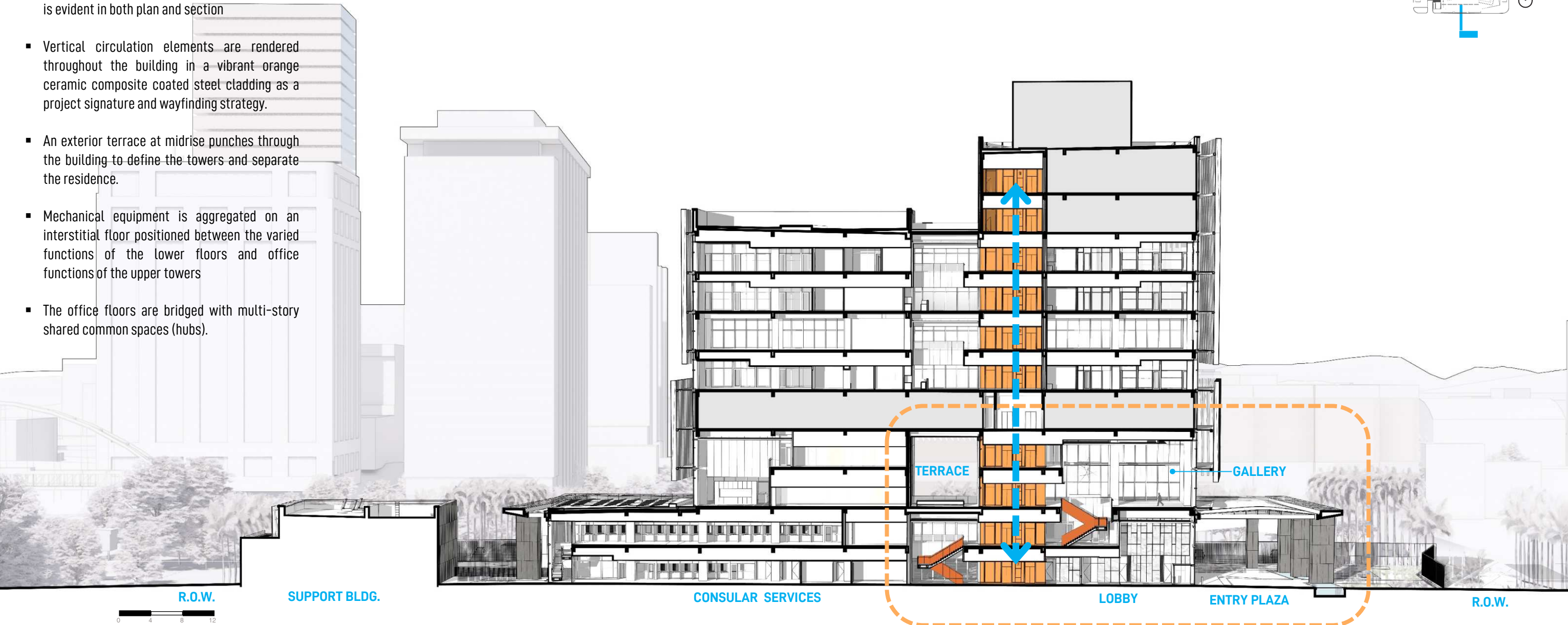
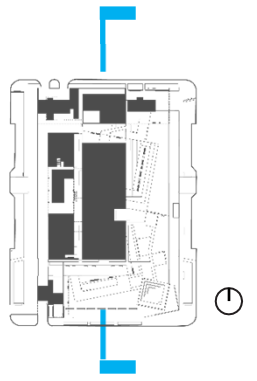
Roberto Burle Marx studio



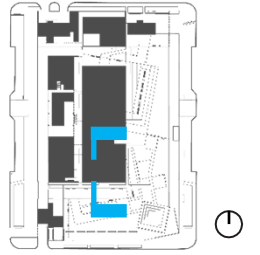
Representational plaza/gardens – consular access ramp beyond

## SECTION DIAGRAM

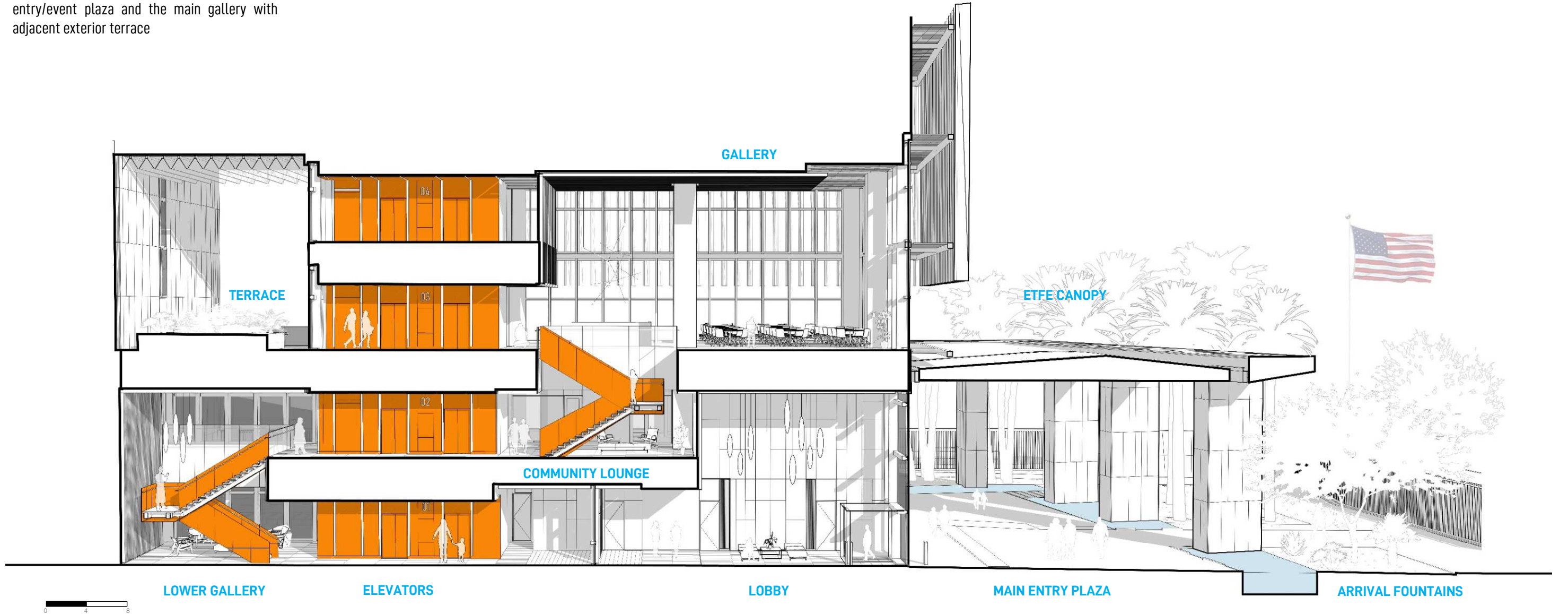
- The plinth and tower parts of the office building is evident in both plan and section
- Vertical circulation elements are rendered throughout the building in a vibrant orange ceramic composite coated steel cladding as a project signature and wayfinding strategy.
- An exterior terrace at midrise punches through the building to define the towers and separate the residence.
- Mechanical equipment is aggregated on an interstitial floor positioned between the varied functions of the lower floors and office functions of the upper towers
- The office floors are bridged with multi-story shared common spaces (hubs).



## DIPLOMATIC ENTRY



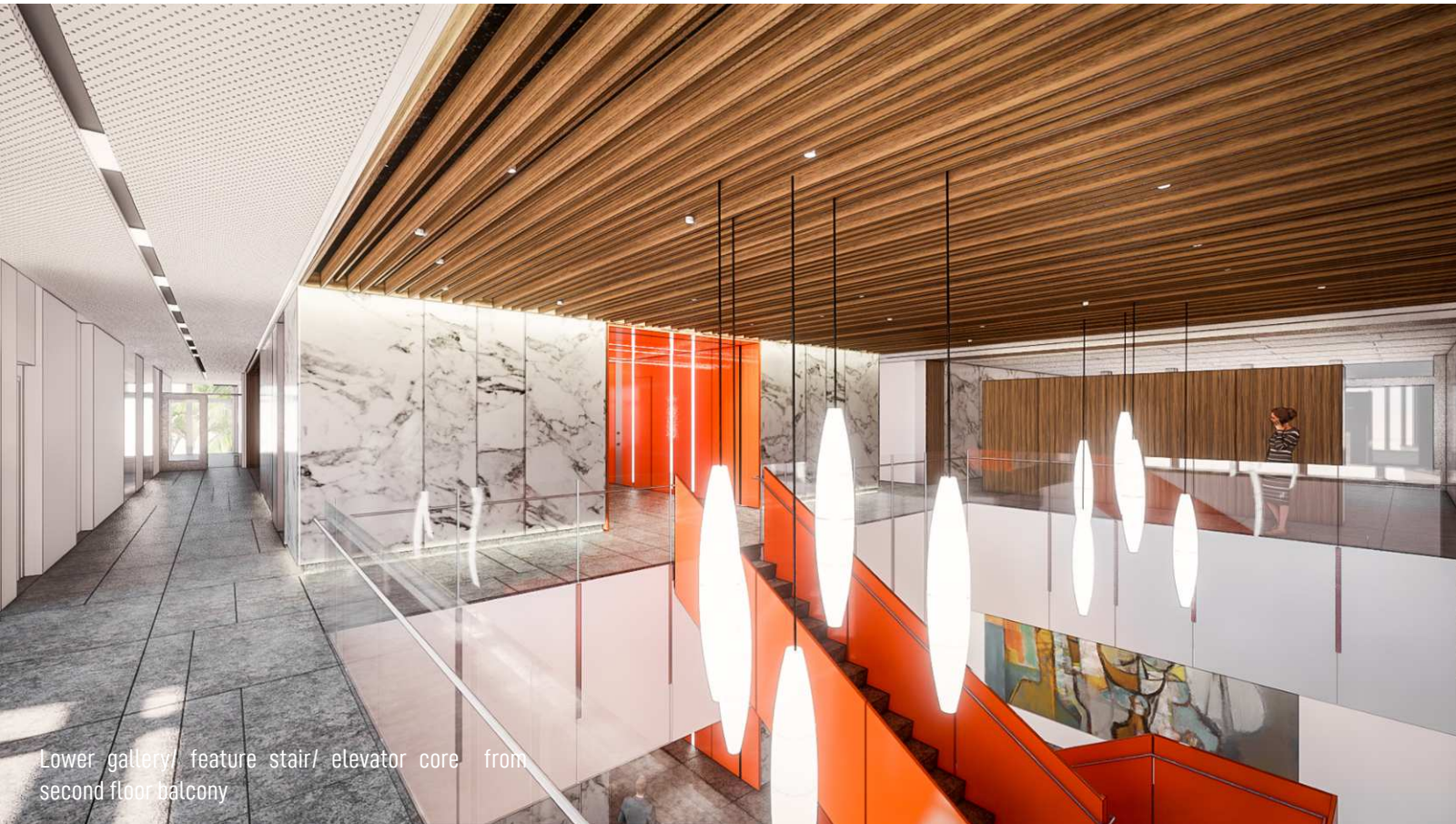
- The diplomatic and staff entry is a sequence of visually and physically interconnected common spaces at the lower levels of the office building unfolding between the covered exterior main entry/event plaza and the main gallery with adjacent exterior terrace





**INTERIOR** LOBBY / LOWER GALLERY

- The lobby introduces the interior materials palette. Stone flooring using the same local stone, locally sourced white marble and a linear wood veneer acoustic baffle ceiling system are the primary elements of the representation of spaces



Lower gallery, feature stair/ elevator core from second floor balcony



Lobby with glass vestibule- Main Entry Plaza beyond

## INTERIOR COMMUNITY LOUNGE

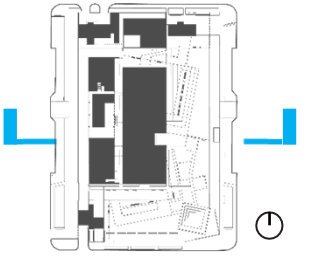
- The community lounge at the second floor provides a common space to access amenities for staff and visitors such as banking services and fitness center.
- Overlooking the lobby below and entry plaza beyond the lounge is vertically connected to the main gallery above with a cantilevered featured stair.



## INTERIOR GALLERY

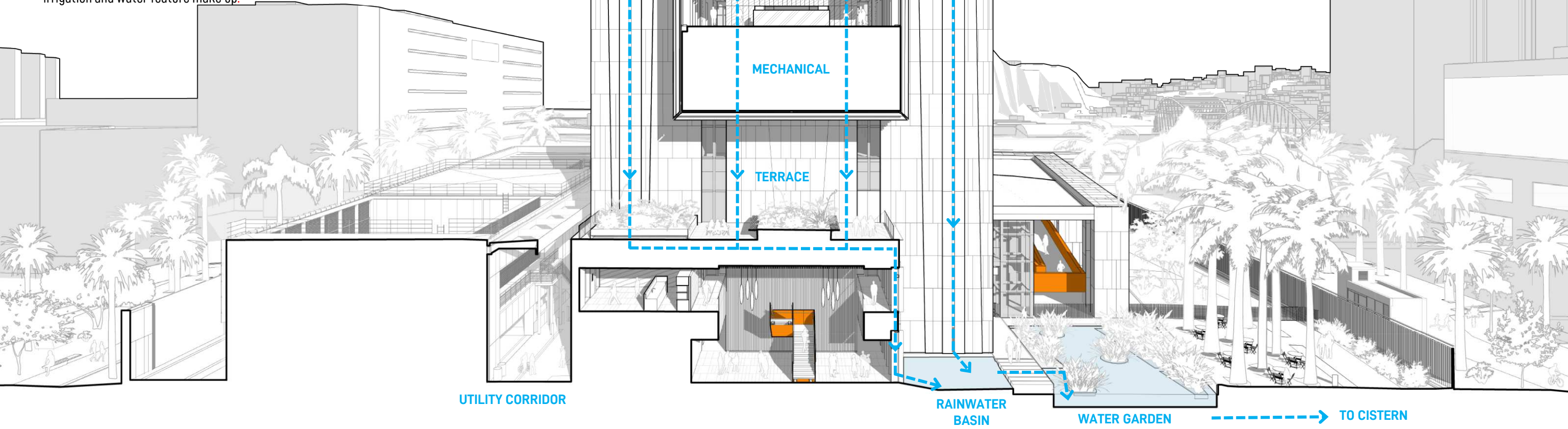
- The main Gallery typically serves as a dining area, but can also be configured as an event space.
- Commissioned artwork sourced from both American and Brazilian artists is displayed as a permanent collection.
- Extensive glazing in conjunction with aluminum shade fins provides daylight and views to the city and mountains.





### WATER COLLECTION

- Storm water is collected and managed on-site with little impact to the inadequate municipal system.
- A connected series of water feature basins work in concert with a large cistern to provide retention and storage capacity
- Rainwater from the office building roofs is directed to and collected in central water garden accessed from the representational gardens/ plazas and viewable from overlooks at the consular access ramp and terrace.
- Stored water in the cistern is used for on site irrigation and water feature make up.



## BRIDGE

- The two office towers are bridged at the upper floors by multi-story interaction spaces called hubs connecting the office areas in the North and South towers.
- Adjacent to elevator core/ primary vertical circulation.



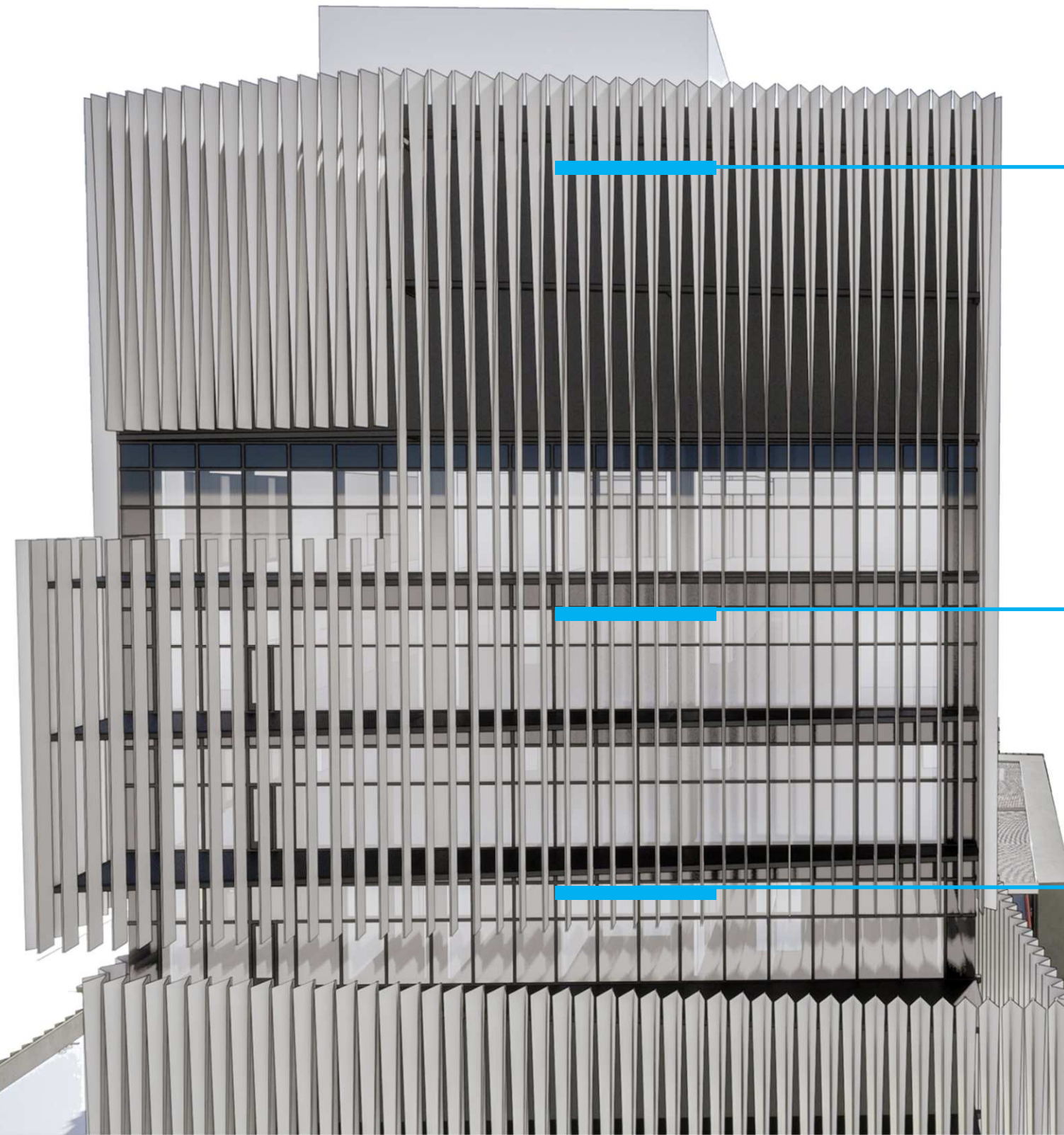
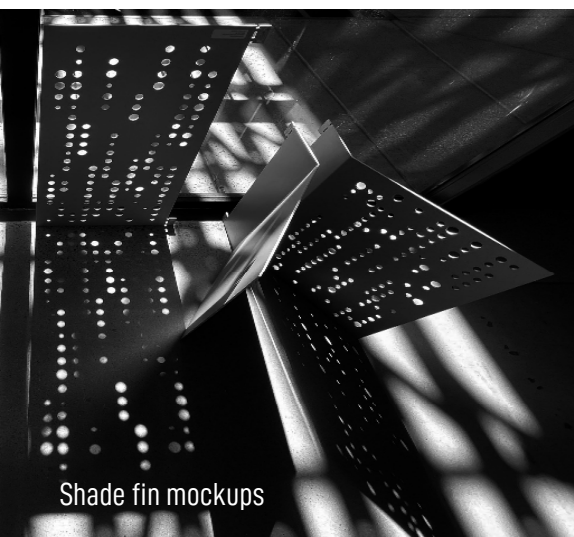
Double height hub common space at bridge



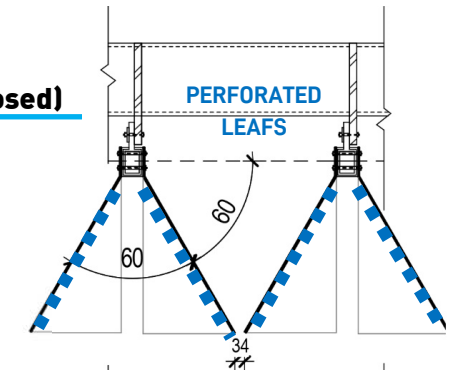
Bridge at upper office towers- terrace and lower gallery below

## FAÇADE SHADE FINS

- Aluminum shade fins are arrayed across the facades of the towers as a solar control strategy overlaying the glazed curtainwall system.
- The fins are attached to projecting steel framed platforms used as maintenance access and horizontal shading elements giving form and perceived mass to the towers.
- Each fin is comprised of a central aluminum extrusion spanning vertically between floor levels with two formed aluminum plate leaves attached.
- The profile of the leaves transitions over the length of the fins to modulate the permeability of the façade.
- The leaves are selectively perforated to increase light transmission/ visibility with minimal impact on shading performance.

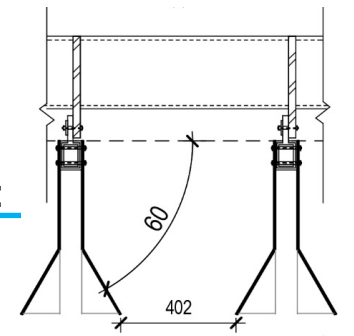


**TOP (closed)**



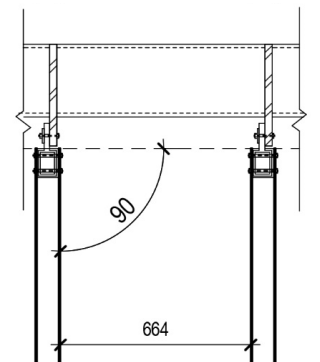
MINIMIZED  
VIEW/DAYLIGHT

**MIDDLE**



INCREASED  
VIEW/DAYLIGHT

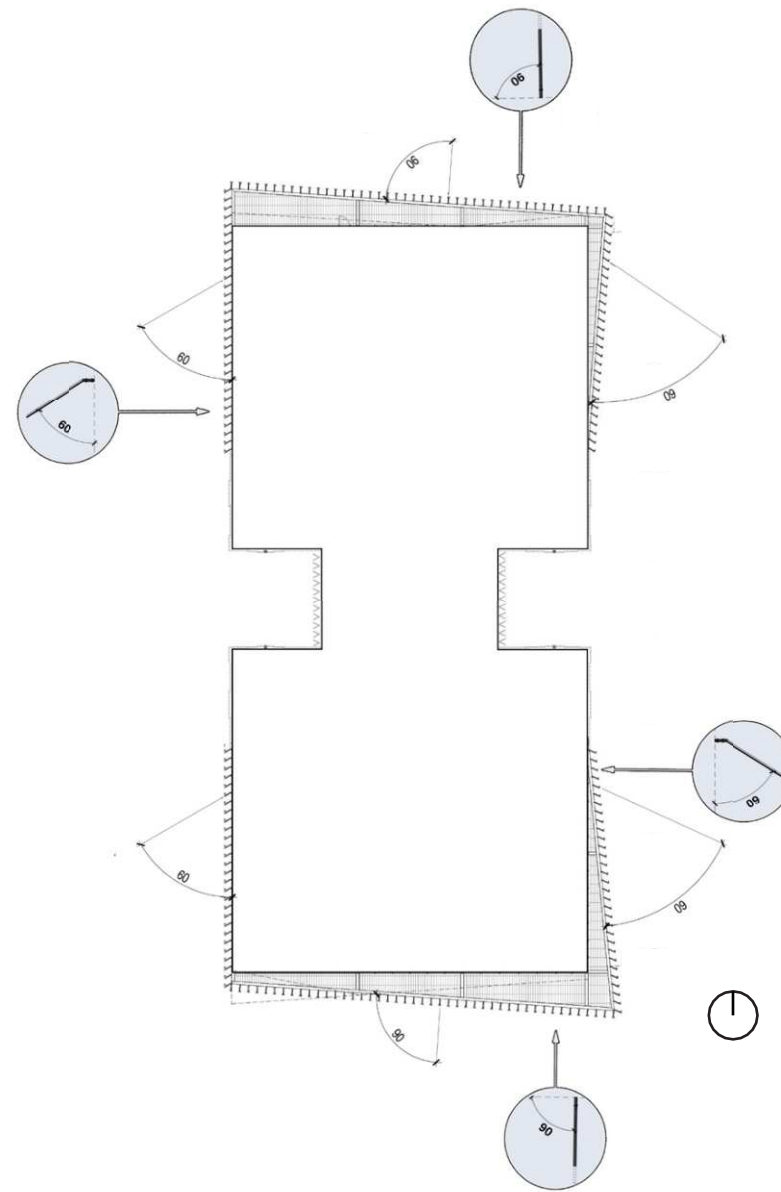
**BOTTOM (open)**



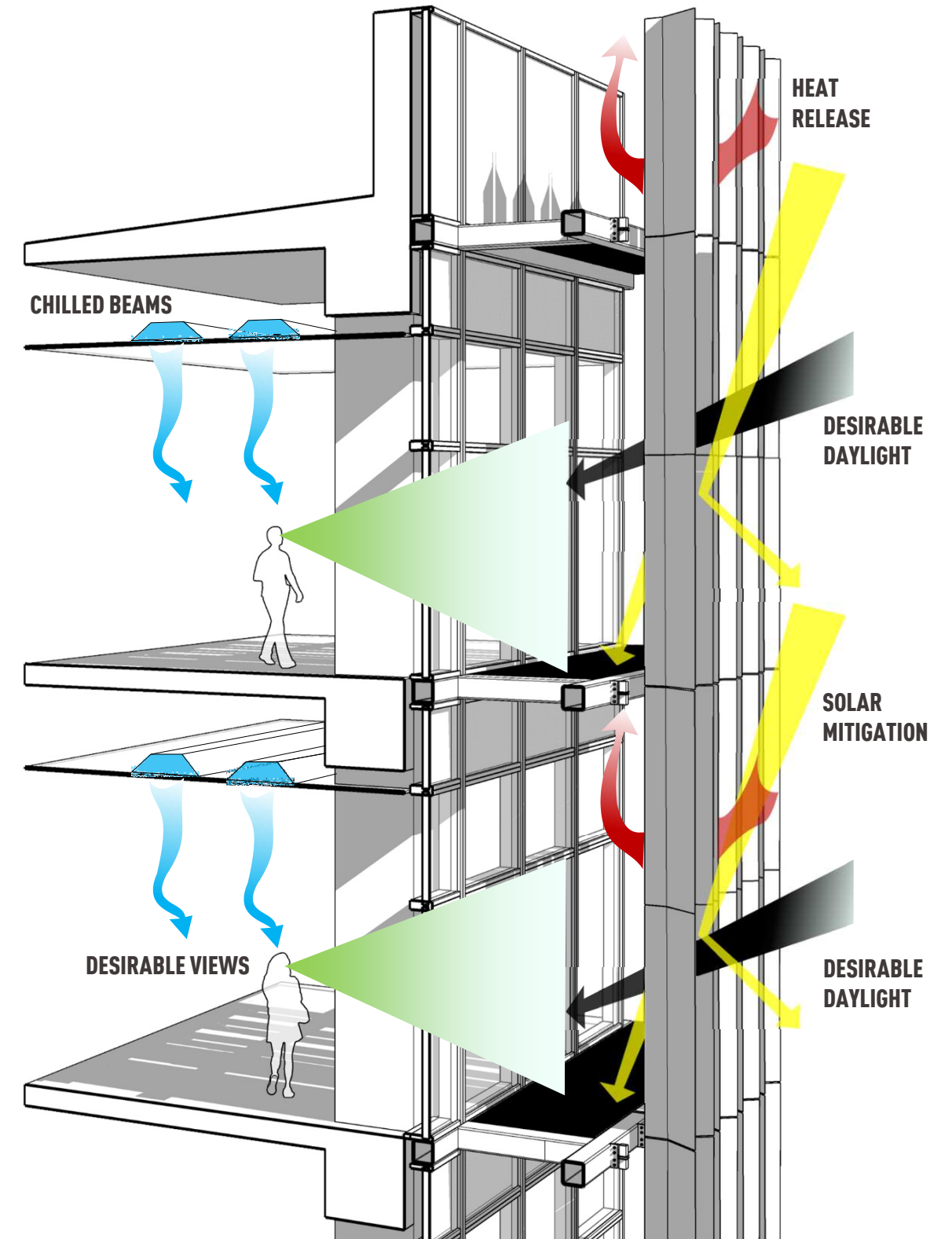
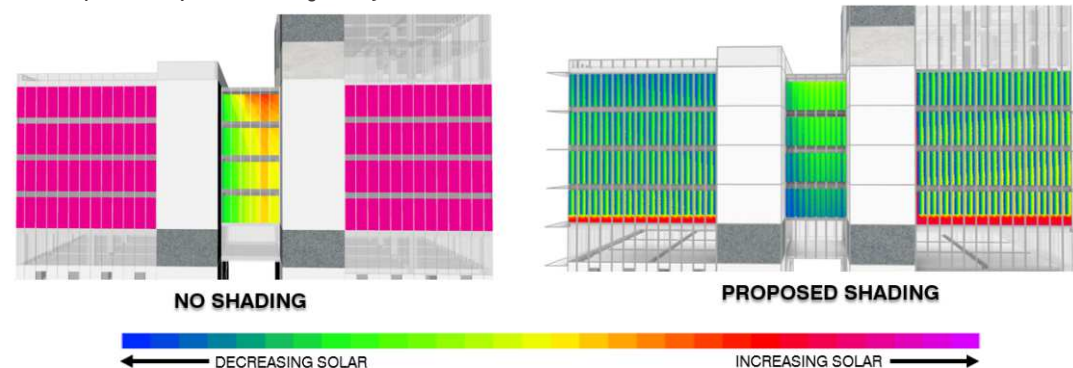
MAXIMIZED  
VIEW/DAYLIGHT

## FAÇADE PERFORMANCE

- The façade assembly is part of an integrated design approach balancing desirable daylighting and views with solar heat gain, visual comfort, and HVAC performance.
- Shade fin configuration is optimized for each façade. The leaves are angled, and perforations attenuated in response to the most direct solar exposure.
- Shade fins reduce solar gain on the glazed façades by **44%** overall
- Thermal comfort for occupants is increased by **21%** and visual comfort by **52%** while maintaining views and providing usable daylight to **58%** of the primary work areas of the towers
- A passive chilled beam systems supplements HVAC performance by reducing cooling loads at perimeter spaces.
- The comprehensive project strategy for energy performance results in **32%** below ASHRAE 90.1 baseline. (30% targeted)

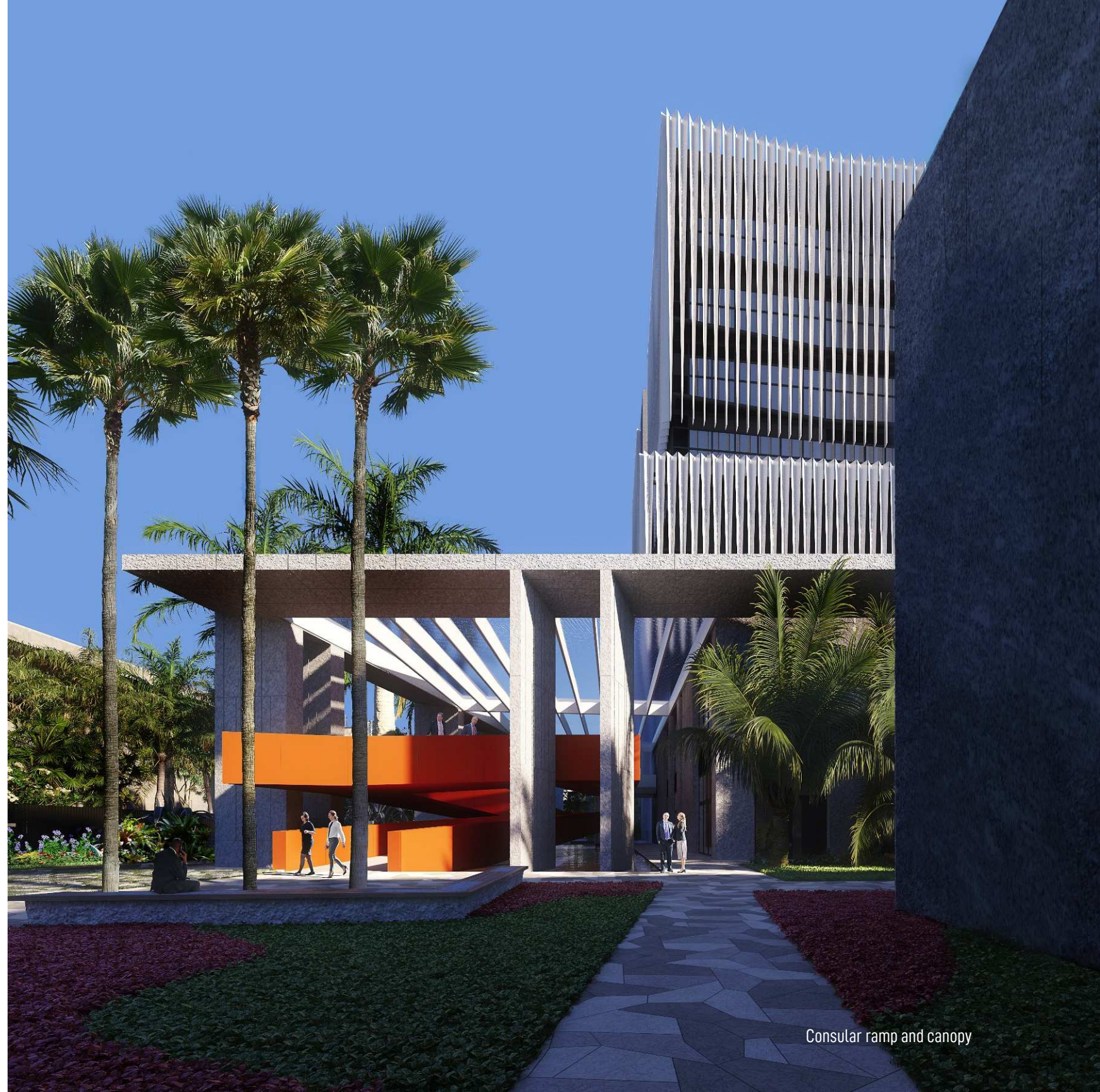
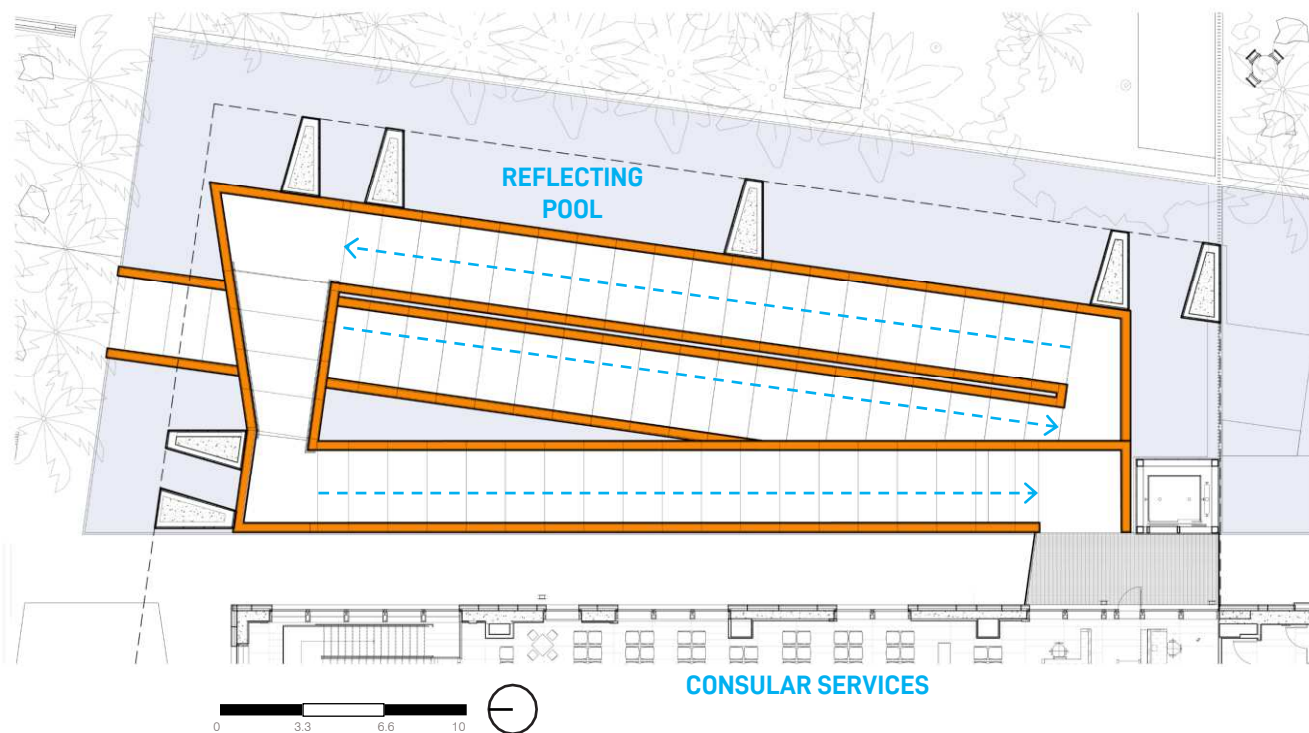


Example W. façade shading analysis



## ARRIVAL CONSULAR

- Consular services, for most visitors, are located on the second floor of the office building and accessed by an exterior ramped walkway.
- The walkway is a processional pathway overlooking the compound representational gardens and provides queuing space for visitors during peak visitation times.

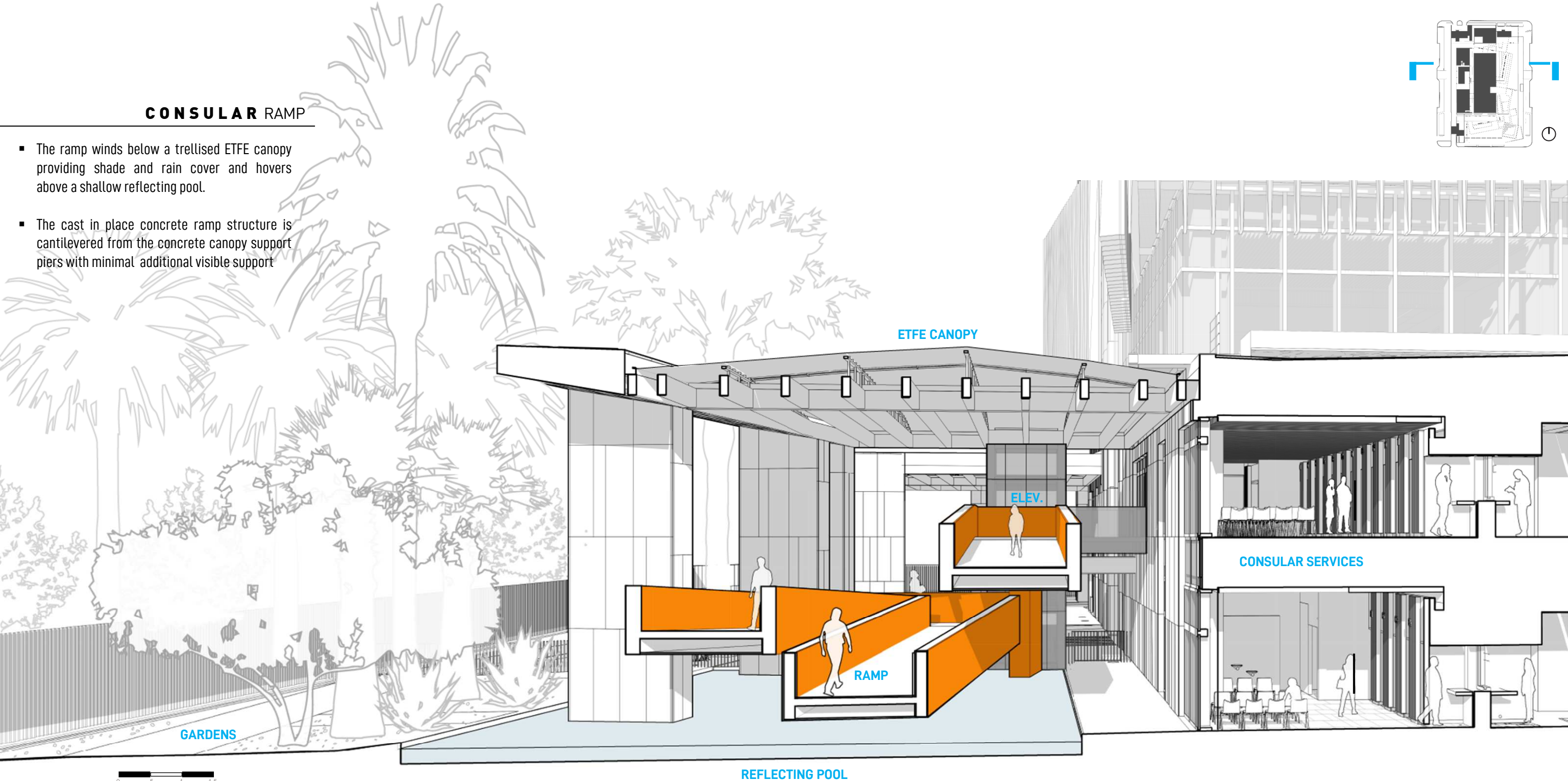
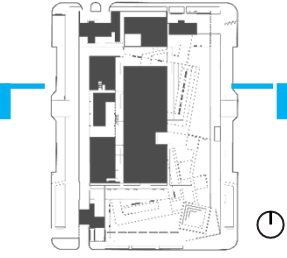


Consular ramp and canopy



## CONSULAR RAMP

- The ramp winds below a trellised ETFE canopy providing shade and rain cover and hovers above a shallow reflecting pool.
- The cast in place concrete ramp structure is cantilevered from the concrete canopy support piers with minimal additional visible support



0 5 1 1.5

REFLECTING POOL

ETFE CANOPY

ELEV.

RAMP

CONSULAR SERVICES

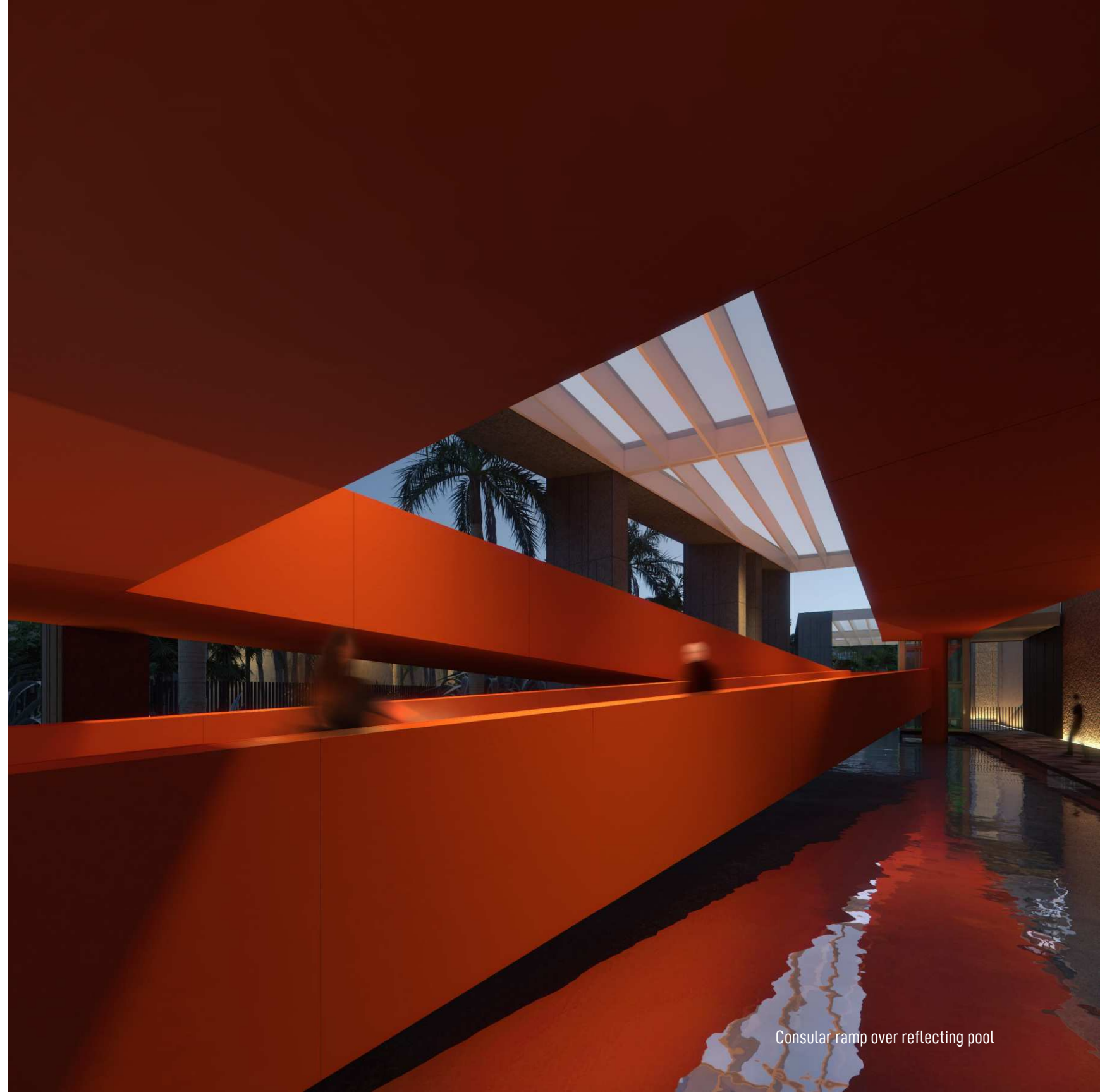
GARDENS

## CONSULAR RAMP

- Consistent with the building interior, the ramps, as a vertical circulation element, is clad with orange ceramic composite coated steel panels creating a singular streamlined form.



Consular services waiting area and interview windows



Consular ramp over reflecting pool

