

**EARLY LEARNING CENTER**  
SHENZHEN, CHINA





## EXECUTIVE SUMMARY

In Shenzhen's Tanglang Industrial Zone, an urban village in the Nanshan district, the **Early Learning Center** is an adaptive reuse of a three-story warehouse and its parking lot.

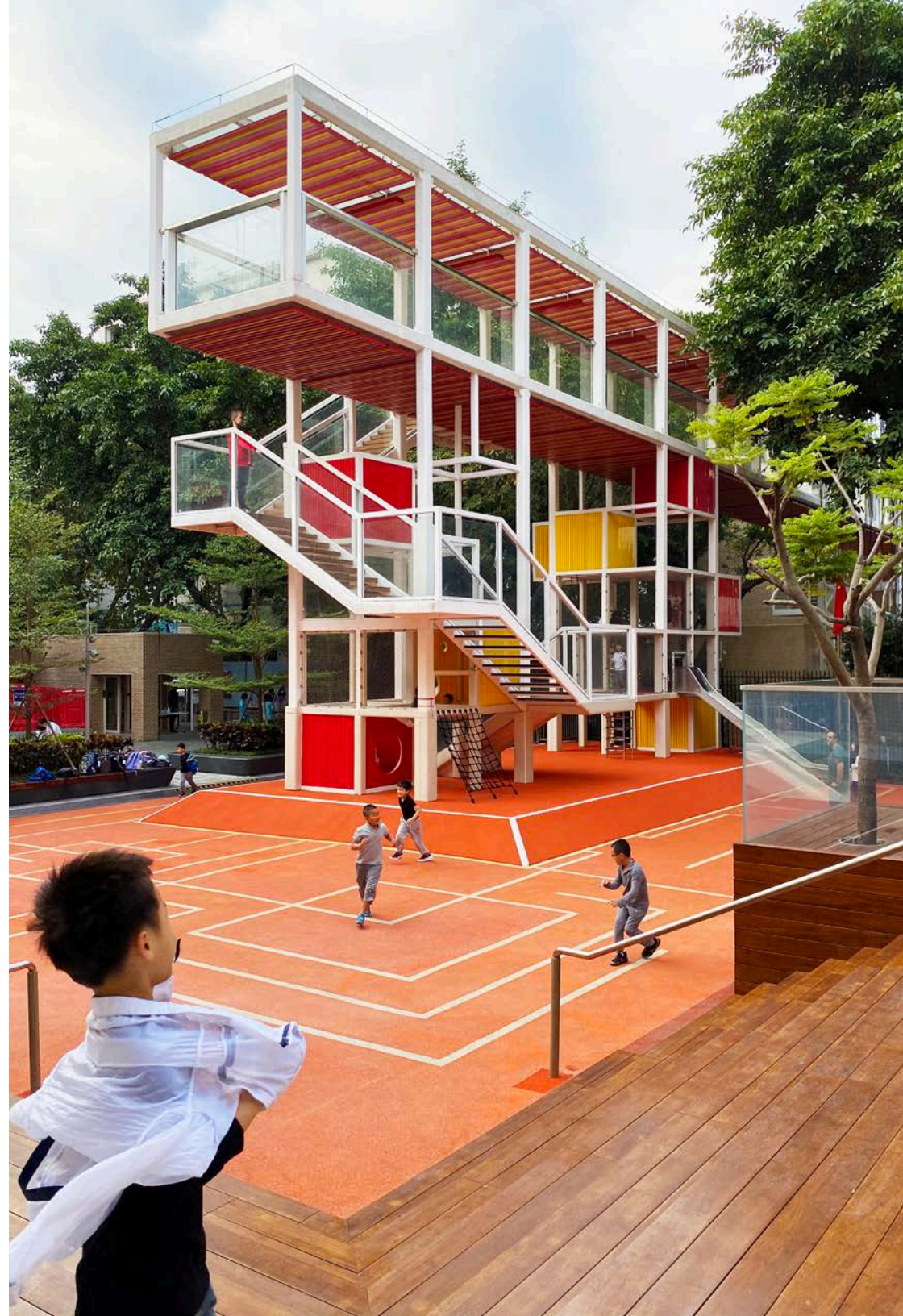
In the last decade, the Shenzhen Government has taken measures to encourage adaptive reuse projects for Shenzhen's Urban Villages, a stark contrast to past developments, which demolished aging structures to make space for new buildings. The Tanglang area has been slated for redevelopment as an education and research zone.

We were commissioned to design a **master plan for seven buildings to create an educational campus**.

Weaving these seven formerly industrial buildings into a welcoming environment for learning, our concept centers on the idea of 'connections' — from physical connections in the form of bridges and pedestrian walkways, to visual connections enabled by carefully choreographed atriums carved from the existing warehouse structure, and an immersive connection to nature to teach students about the importance of a positive relationship with the natural world.

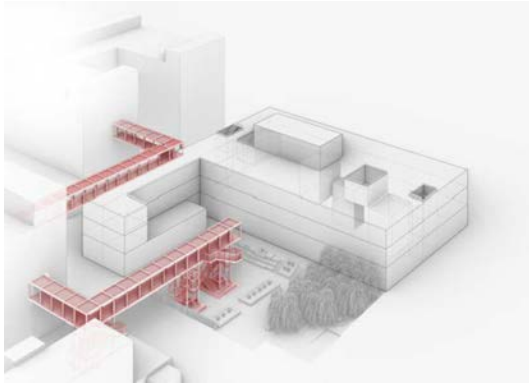
We approached the project from the perspective of subtraction and addition. A strategic addition is a bridge that passes through the site's native Banyan trees, providing a unique path for entering the facility. A vertical playstructure descends from the bridge, forming a sort of rooftop treehouse that weaves through the root structure of the trees. The bridge immerses students in the lush surrounding environment.

Inside the **Early Learning Center** — part of the first phase of the master plan construction — precise cuts in the existing building facilitate visual connections. Multi-level atria are cut from floor slabs to create a series of openings with diagonal views across all three floors. Color-coded learning pods, thresholds, and niches provide children with both partial seclusion and visual connectivity — a flexible learning environment.



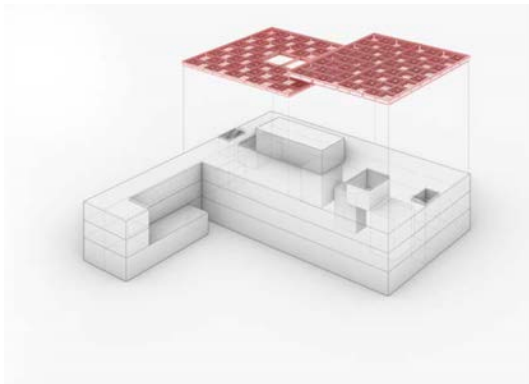


## Adaptive Reuse Design Strategies



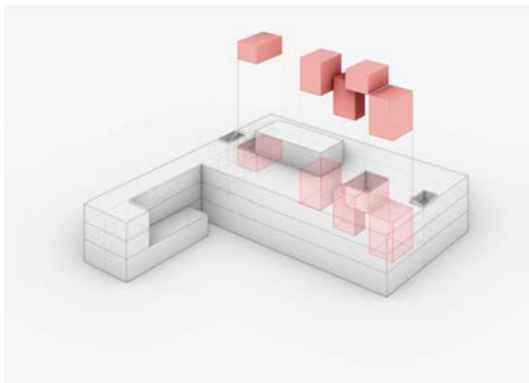
### Connections

Bridges weave together the various portions of the overall educational campus master plan.



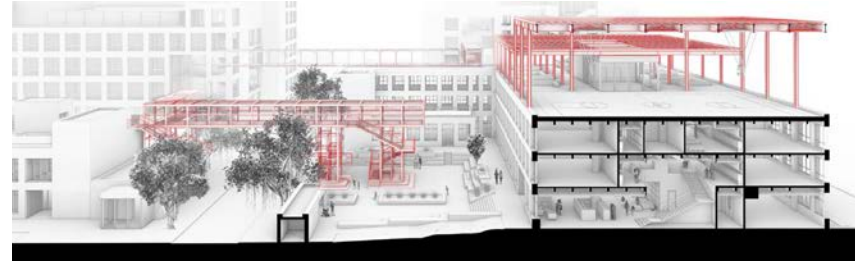
### Additions

Canopies offer protection from sun and rain. The roof is designed to serve as additional playgrounds and learning spaces.



### Strategic Cuts

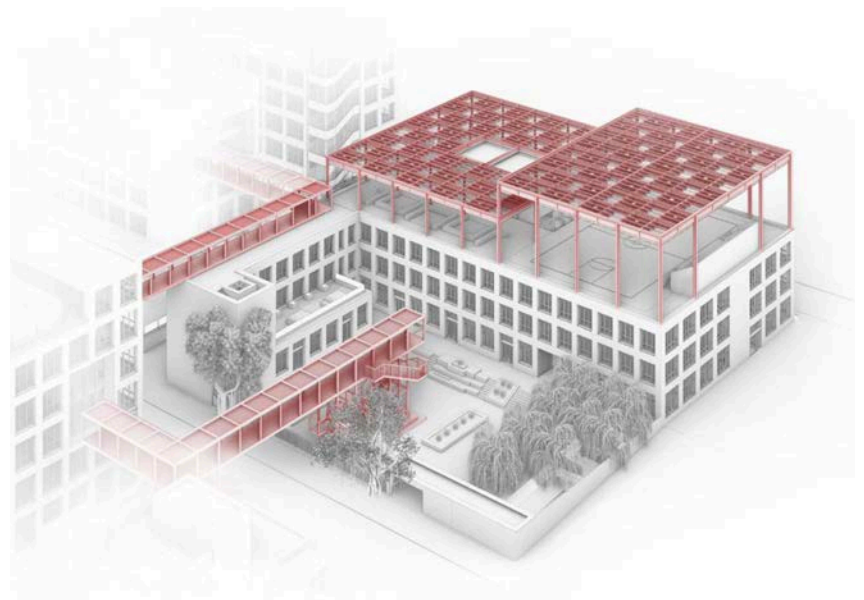
New cuts within the former industrial building create interconnected atria facilitating visual connections across levels.



### Section perspective view

#### Through the Early Learning Center and Administrative Building

The new elevated walkways span across public roads to connect the campus buildings and create a safe pedestrian circulation network. The bridges meander among the existing Banyan trees, offering a unique path of travel into and between buildings.



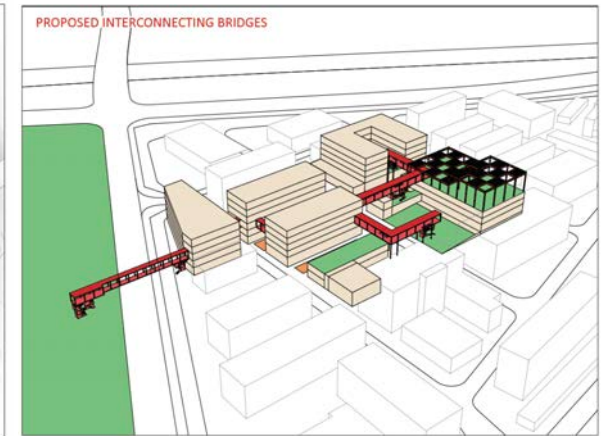
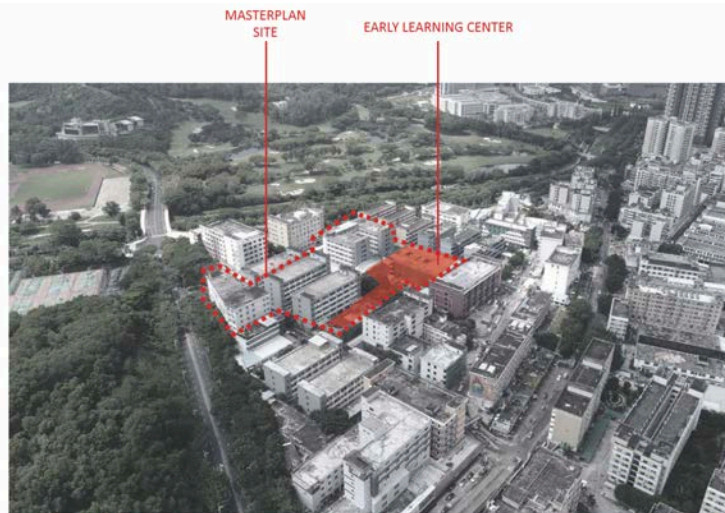
## SCOPE OF WORK AND BUDGET

We created a master plan for the school's new campus, repurposing seven buildings of the Urban Village. The buildings are connected by a network of elevated walkways and bridges, their roofscapes are programmed with outdoor learning spaces and gardens, and a bridge connection to the nearby Sports Complex and Park will shape a campus that is interconnected with the community.

The campus is designed for nursery through 12th grades for up to 1,600 students. The final build-out floor area of the campus is approximately 300,000 gsf. The Early Learning Center is part of Phase I work on the master plan, and was completed in Fall 2019.

The cost for the project was 280 \$/sf.

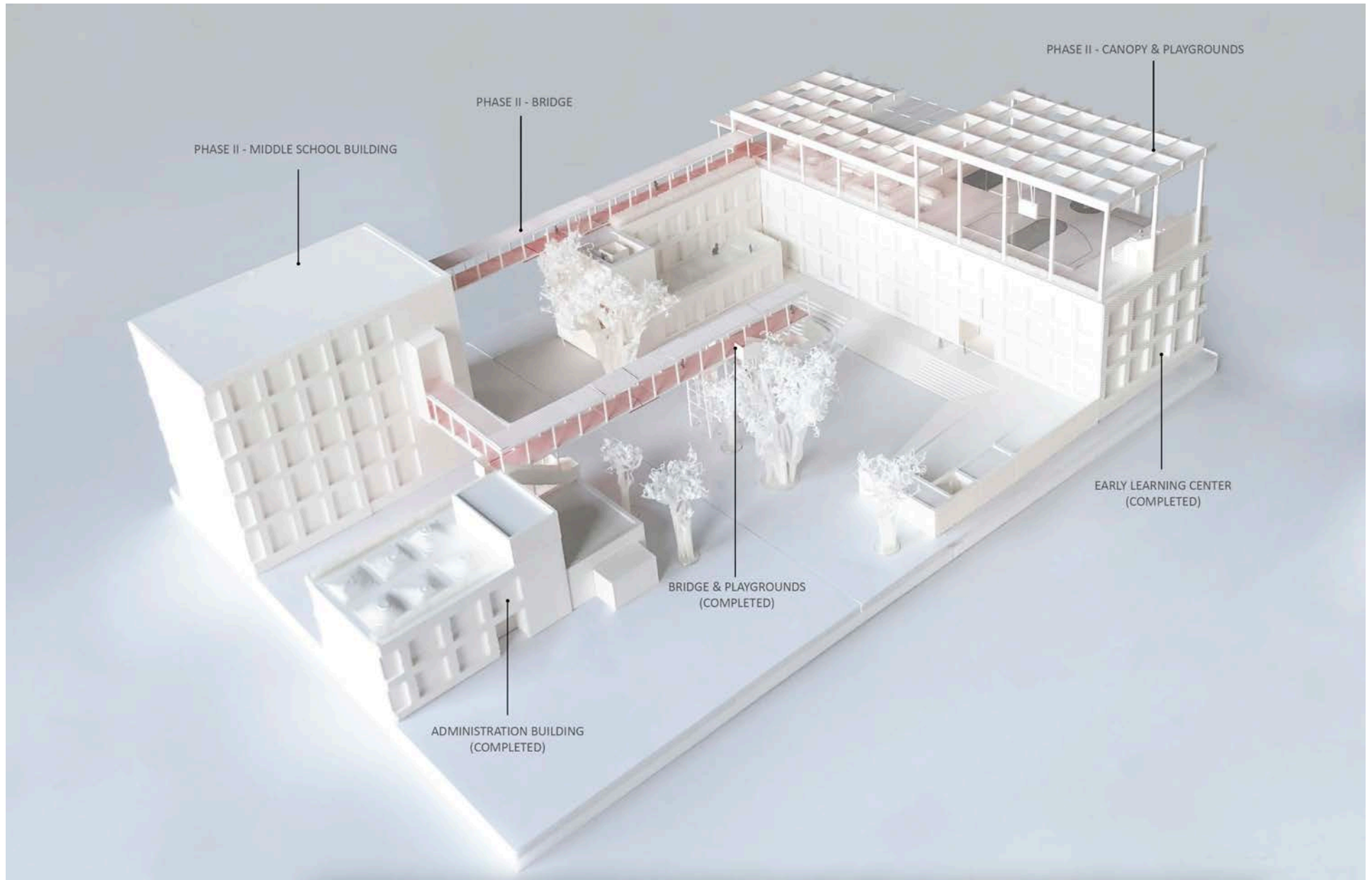
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### Project Model

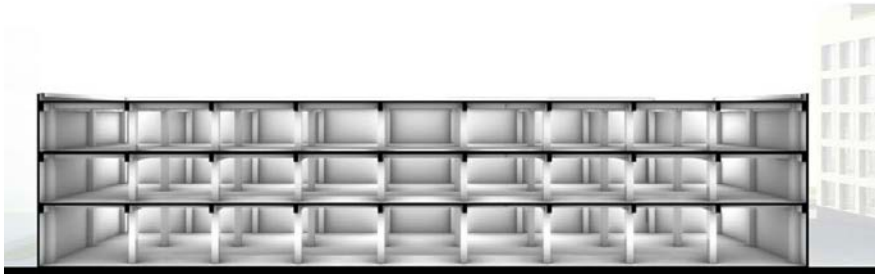
Phase I (completed) includes the renovation of the Administration Building and the Early Learning Center building, as well as the new Bridge and Playgrounds. Phase II includes the Middle School Building and the Bridge that connects it to the new Early Learning Center Canopy and Roof Playgrounds.



### Visual Connections

Inside the Early Learning Center, new slab openings are cut into the existing concrete frame [left] to facilitate new visual connections and multi-level atria [below].

We approached this transformation from an educational perspective, breaking free from the rigid grid of the existing building to allow for dynamic spaces that offer a range of unexpected spaces for teachers to use, and pique curiosity and a sense of discovery in the children.







### Adaptive Reuse

Existing warehouse buildings of the Urban Village [left] were repurposed for the school's program. New building enclosures and MEP systems were installed. The parking lot was given new life as the school's playground, and new pedestrian bridges were added to connect the buildings of the campus [below].









## SCHOOL AND COMMUNITY RESEARCH AND ENGAGEMENT

The Tanglang Industrial Zone is part of a unique urban ecosystem in Shenzhen. It is an Urban Village. The buildings are owned by individual Villagers, but the overall industrial zone is managed by a co-op real estate entity. As a tenant, the school develops these buildings and has a long-term lease.

The project relied on strong community engagement, including ongoing meetings with Villagers to ensure their consent on the transformation of the neighborhood. All changes to the streetscapes and public infrastructure were negotiated with the co-op.

We worked closely with the school local leadership and teachers to ensure their feedback was incorporated into the development of the design.

The use of the Entry Portals, as conspicuous visual markers across the campus, gives a clarity of direction for the school community, as well as they act as welcoming place markers for the neighborhood.

Since the completion of the Early Learning Center in 2019, we have also reengaged with the school to receive feedback on the spaces in use on a daily basis. We have made several tweaks to their design, especially given the pandemic, allowing different circulation routes and greater separation between class groups.

















## EDUCATIONAL ENVIRONMENT DESIGN

Our long-term client has a unique educational model. It is one school with many campuses, providing transformative, world-focused learning experiences to students around the globe. The Early Learning Center is their first school in China, and therefore had significant importance.

Seven existing buildings of the Urban Village are allocated for the campus. Connections are the key concept for the project, and it happens at many levels such as: the physical connections in the form of bridges that shape a network of pedestrian walkways weaving the entire campus together; the visual and physical connections enabled by carefully choreographed atriums and interconnecting stairs carved out from the existing warehouse structure; and the connections to nature bringing in the most remarkable landscape features found on site like the Banyan trees, or the newly landscaped spaces that engage the campus life.

The classroom building has terraces that overlook into the playgrounds.

Multi-functional tiered seating creates important nodal points in the school, as forums. They are located both in exterior and interior areas of the building, becoming places of assembly.

The floor slabs of the existing building are cut to create multistory openings, arranged to allow for diagonal views across the three floors. This shapes multi-functional spaces that allow teachers the ability to take their lessons outside of the classrooms — they can teach in the school yard, in the common lounge areas, in the flexible transitional zones.

For the students, we designed the interior and exterior areas as spaces for discovery, engaging curiosity and allowing the children a sense of interest and ownership in their physical environment. Colorful learning pods not only allow them a way to navigate through the large building, but these areas are specifically designed for them — scaled to suit their bodies, rather than for adults. Their engagement with the design was a crucial consideration.

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**Interconnected Atria**

Multi-level atria are cut from floor slabs to create a series of openings with diagonal views across all three floors.

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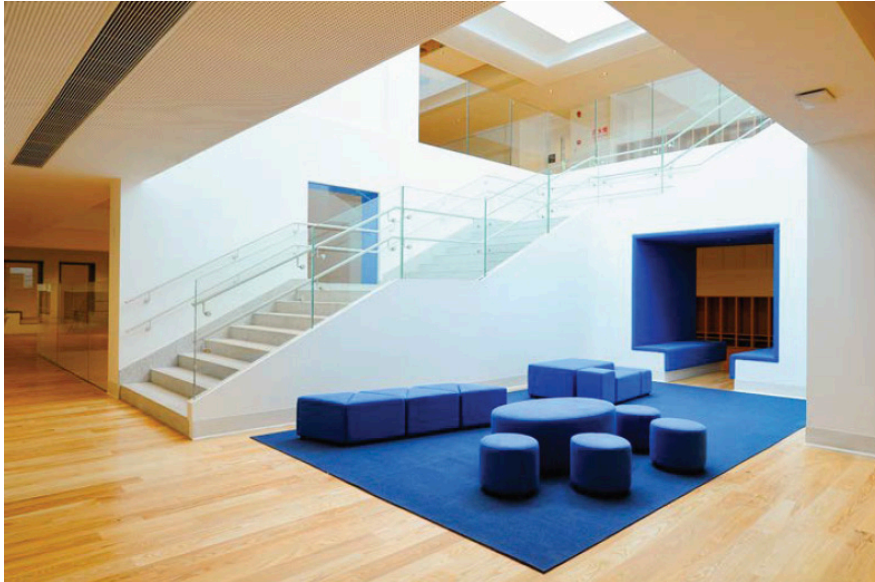
**Learning Pods**  
 Color-coded learning pods, thresholds, and niches provide children with the duality of partial seclusion and visual connectivity. Their writable glazing creates a fun and interactive learning surface [right].











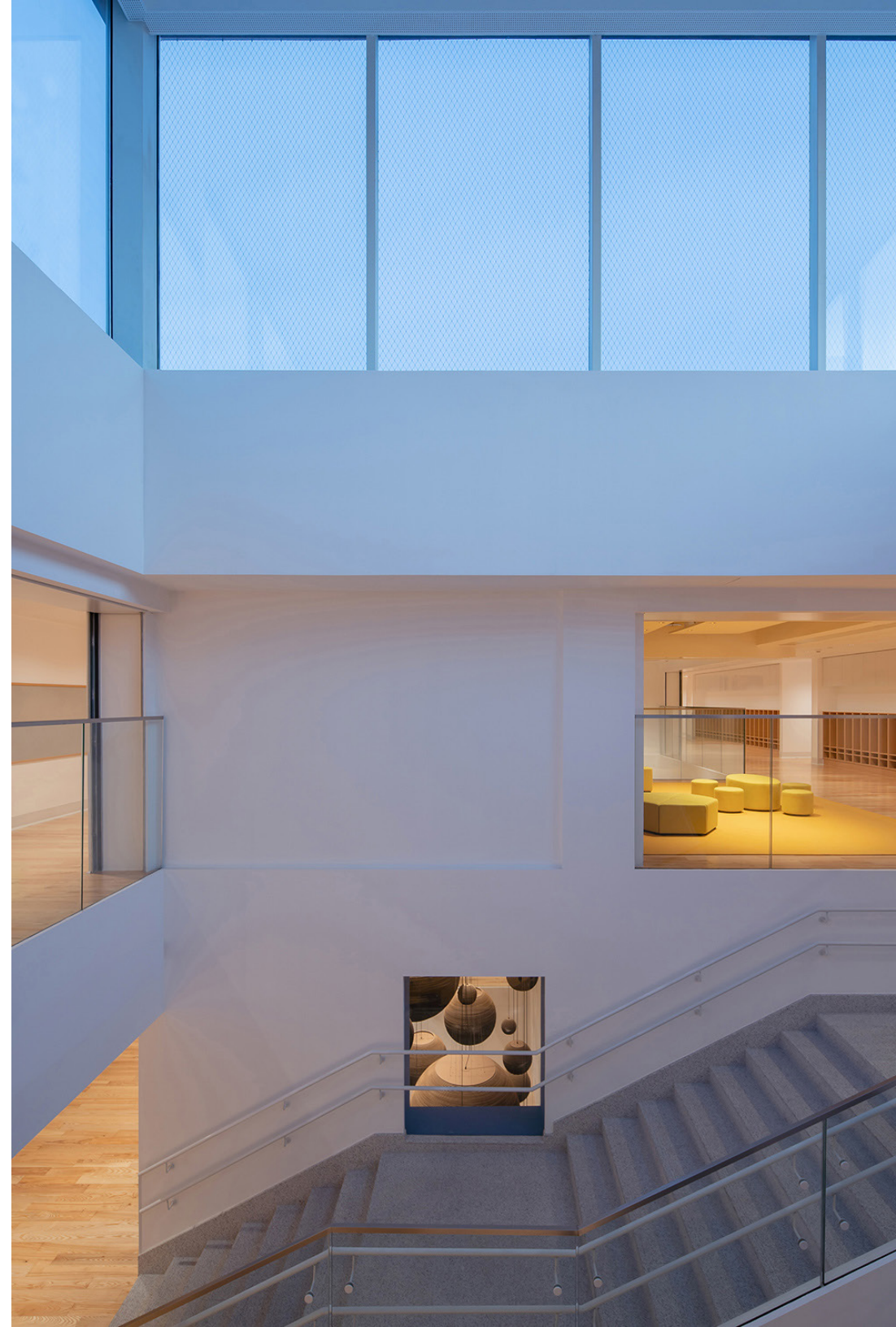
### Blue Keyhole

Next to the Student Commons and underneath the clerestory windows, the keyhole acts both as a gateway entry and a fun discovery area for the children.

### Central Atrium

The central atrium brings natural light to the spaces below, and connects the building up to the roof playgrounds [right].

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## PHYSICAL ENVIRONMENT DESIGN

### How can a former industrial site be transformed into an engaging, safe, and flexible learning environment?

This was a central question as we approached this adaptive reuse educational project. Working within and between large-scale industrial warehouses, our aim was to shape an entirely new and unexpected environment, that would offer maximum flexibility and functionality for the school, and a fun and dynamic space for children.

The design of the Early Learning Center and its bridge infrastructure allows a constant sense of discovery for the students, while shaping a protective space in the middle of the city.

### Connections

The design, first and foremost, is about making 'connections,' from physical connections in the form of bridges and pedestrian walkways, to visual connections enabled by carefully choreographed atria carved from the existing warehouse structure, and an immersive connection to nature.







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### **Subtraction and Addition**

A hybrid of urban infrastructure and playstructure, vertical playgrounds descends from the bridge, forming a sort of rooftop treehouse that weaves through the trees. The bridge immerses students in the lush surrounding environment, but also provides a safe route between buildings — students can have a sense of independence as they move from one space to the next, as they are removed from the street-level chaos of the city.













## RESULT OF THE PROCESS AND PROJECT

The Early Learning Center has become a catalyst of change in the Tanglang Industrial Zone, by successfully and respectfully converting old warehouses to educational use. As a campus it engages the local context. The project creates unique spatial experiences and learning spaces.

Ecologically, it has integrated with the local context, nestled between Banyan trees and creating an environment that is immersive with nature. The campus has created an ecosystem of connectivity at multiple scales. Following the successful construction of Phase I of the project, Phase II has been given the greenlight to move forward.

Our design team works with the school globally, in multiple campuses, and this immersive relationship with the client provides our designers comprehensive post-occupancy review opportunities. Since the completion of this project, the design team has conducted multiple meetings with the local school leadership and the department heads. Based on these discussions, a few rounds of design refinements have been implemented during the school summer break. The design team is continuing to monitor how the spaces are being used, and implementing revisions to parts of the building.





## SUSTAINABILITY AND WELLNESS

The project is located at a previously developed and dense urban site. The project transformed the existing warehouses into school without adding new building footprints.

Accessible horizontal surfaces such as roof terraces are valuable assets in urban campuses. This master plan re-purposes all the existing roofs and courtyards into playgrounds, sports-courts, recreational areas, and outdoor learning pods. These outdoor spaces are carefully designed with integrated landscaping, canopies, shading devices, and passive & active strategies to increase air flow and cross ventilation, improving outdoor thermal comfort for the students during Shenzhen's hot and humid days.

Native plants are used for the landscaping. The Banyan trees within and adjacent to the site are incorporated to the overall campus design.

The subtropical climate of Shenzhen creates pleasant conditions to be outdoors. However, certain months during the school year, the hot and humid days need to be mitigated, so that the usage of outdoor spaces can be extended throughout. The project offers a series of environmental mediators throughout the campus. Canopies integrated with landscaping are used on all roof terraces across the campus, creating comfortable outdoor play areas.

The ceiling fans encourage the air flow, to help mitigate the thermal comfort in humid days, and the strategically located landscape elements throughout create a pleasant outdoor environment, as they help improve the air quality.

Designing for wellbeing is a key consideration for educational design. The project is designed to be a healthy learning environment, immersed in green spaces, with abundant daylight and natural ventilation. The choice of materials and finishes are carefully selected to enhance the Early Learning Center as a healthy space. A high level of light controls and window share treatments allow teachers to easily transform the classroom through the day.





