connected living

Steven Holl’s Linked Hybrid in Beijing provides a vision of mixed-use development that engages the city around it and operates sustainably

BY CLIFFORD A. PEARSON
With more than 17.4 million residents and a growing middle class eager to trade in its Mao-era housing for new apartments, Beijing has been building residential towers at a breathtaking clip for much of the past decade. In the process, it has erased entire neighborhoods of single-story, courtyard houses on the old streets and lanes known as hutong, unraveling the tight social fabric that connected residents, shopkeepers, and other local businesses. While a few rich Chinese and foreigners have lovingly restored or modernized old courtyard houses, most middle-income families have moved into new apartment towers that stand alone or in gated clusters.

Steven Holl’s Linked Hybrid complex offers an alternative model of residential development—one that applies striking, modern architecture to the age-old pattern of housing mixed with shopping, dining, education, and entertainment. Holl and his Beijing-based partner Li Hu made a concerted effort to open the 2.37-million-square-foot development to the surrounding area, welcoming nonresidents to its grassy perimeter and landscaped central plaza. And throughout the project, the architects employed an impressive set of sustainable design strategies, pointing this heavily polluted city in a new direction.

Built by the Modern Green Development Company—a Beijing-based developer that has worked with foreign architects such as the Austrian firm Baumschlager Eberle—Linked Hybrid comprises eight apartment towers ranging from 14 to 21 stories that are connected near their tops by one- and two-story bridges. Rather than serve merely as a circulation element, this so-called “sky loop” provides programmed space for art galleries, shops, cafés, and even a fitness club with a swimming pool. (People began moving into the complex in early 2009, but the developer has yet to find an operator for the bridge spaces. In the meantime, the company has held events, parties, and exhibitions in them.) More shopping and dining areas occupy a loop at the base of the towers, while a preschool and a kindergarten nestle in grass-covered structures tucked along the perimeter of the site. With roughly 650 apartments, the project “has enough density to keep both loops active.”
1. Steel bridges connect the eight concrete-frame residential towers.
2. A green roof open to the public tops the multiplex cinema.
3. A grass-covered pavilion on the perimeter of the complex houses a preschool and kindergarten.
4. Located in a former industrial area, the project overlooks new housing developments in some directions and construction sites in the others.
1. Some of the bridges slope to connect towers at different floors.

2. A swimming pool occupies one of the connecting structures.

3. The sky loop offers great views of the complex.

4. Steps on some bridges can be used for social gatherings.

says Holl, refuting any notion that Linked Hybrid might repeat the errors of Minneapolis’s skybridge system, which strangled street life. “We created a porous place that invites people inside,” explains the architect. “This project offers a new urban model for Beijing,” states Li Hu.

When Modern Green first approached Holl in 2003, it asked simply for a residential complex. But the architect pushed the client to develop a mixed-use program, including a multiplex cinema and a hotel to draw outsiders to the project. Six years later, Modern Green has built almost all of these elements, including a cylindrical hotel and an angular multiplex—both rising from a large reflecting pool at the heart of the complex. The hotel, though, has yet to open, and at least part of it may be used as service apartments.

The project’s location just outside Beijing’s Second Ring Road (the city now has six) and within a 15-minute walk of a subway station makes it a convenient place to live. In the 1950s and ’60s, Mao Zedong developed this area for industrial uses, so Modern Green didn’t have to knock down any houses to clear the site, only a factory. “I wouldn’t work on a project that requires people to be relocated,” states Holl.

Collaborating with structural engineers at Guy Nordenson and Associates and the China Academy of Building Research, Holl’s team designed the eight towers with concrete exoskeletons that eliminate columns inside apartments. As a result, the buildings’ envelopes are the structure—a scheme that the designers expressed in diagonal lines that chart the seismic forces on the facades. Concrete floor slabs are equipped with radiant heating and cooling. The project’s iconic steel-and-glass bridges, which range in length from 53 to 197 feet, were assembled on the ground, then hoisted into place. Roller mounts with huge ball bearings connect the bridges to the towers, allowing the bridges to move independently during earthquakes. The most difficult parts of the project to build, says Holl, were the 33-foot-long, multi-story steel cantilevers at the top of five of the towers. (See technology story on page 138.)

As he has done on other projects, such as Simmons Hall at MIT [Record, May 2003, page 204], Holl introduced color on window sills. For Linked Hybrid, he applied saturated hues to powder-coated aluminum panels on the header and two jambs of each window. Holl
1. The multiplex cinema is one of the amenities that help draw people from outside the complex.

2. Most apartments occupy a quarter of a tower floor, so they enjoy views in two directions and cross ventilation.

3. Double doors allow residents to open one room onto another and adjust the layouts in their apartments. The units range from one to three bedrooms and from 800 to 1,600 square feet.

OPPOSITE: Landscaping, ground-level shops and the cinema all help activate the central plaza. Holl used colors taken from Buddhist temples on window soffits.

Says he took the colors from polychromatic Buddhist temples, then used the I-Ching to determine the pattern.

Sustainable strategies drove much of the design, starting with the 655 geothermal wells dug 330 feet deep, which provide 5,600 kwh per year of energy in the summer and 3,700 kwh per year in winter, enough to handle most of the complex's heating and cooling needs. A backup system kicks in when more energy is needed. Plumbing recycles gray water to irrigate planted areas, while the central reflecting pool doubles as a retention pond. With water becoming an increasingly precious commodity in Beijing, Linked Hybrid's goal of reducing potable-water use by 41 percent represents an important example for other developments to follow.

Four apartments occupy each floor, so each unit sits in its own quadrant and enjoys views in two directions. Typical units range in size from 800 to 1,600 square feet and from one to three bedrooms. Double doors that can open one room onto another allow residents to use the apartments in a variety of ways, including as offices, and the absence of interior columns enables many different layouts. Operable windows on two facades encourage cross ventilation, but the buildings also provide mechanical ventilation and radiant cooling.

Holl sees Linked Hybrid as a “city within a city” and says it represents “a value change” in the design of tall buildings. “It’s not about being tall,” he states. “It’s about being sustainable and making connections to the urban context.” There’s a danger, though, that the developer may fence off the property and provide only gated access to residents. And if the hotel remains empty and the programmable spaces on the bridges aren’t leased, then the project may never reach its full potential as a model for more vibrant residential development. Building such an ambitious complex stands as a remarkable accomplishment—one that would be unlikely in today’s United States. Now the managers of Linked Hybrid need to show they can fill it with the kinds of activity that will make it truly come alive.

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**PROJECT:** Linked Hybrid, Beijing

**ARCHITECTS:**
Steven Holl Architects – Steven Holl, FAIA, Li Hu, design architects; Hideki Hirahara, project architect

**ASSOCIATE ARCHITECT:**
Beijing Capital Engineering Architecture Design Co. (BCEAD)

**ENGINEERS:** Guy Nordenson and China Academy of Building Research

**GENERAL CONTRACTOR:** Beijing Construction Engineering Group

**SOURCES**
- **ALUMINUM CURTAIN WALL:** Xi Fei
- **GLAZING:** Saint-Gobain
- **EXTERIOR LIGHTS:** iGuzzini
- **SWIMMING POOL:** Astral Pool