



512GW Townhouse, from industrial to residential
New York City, USA

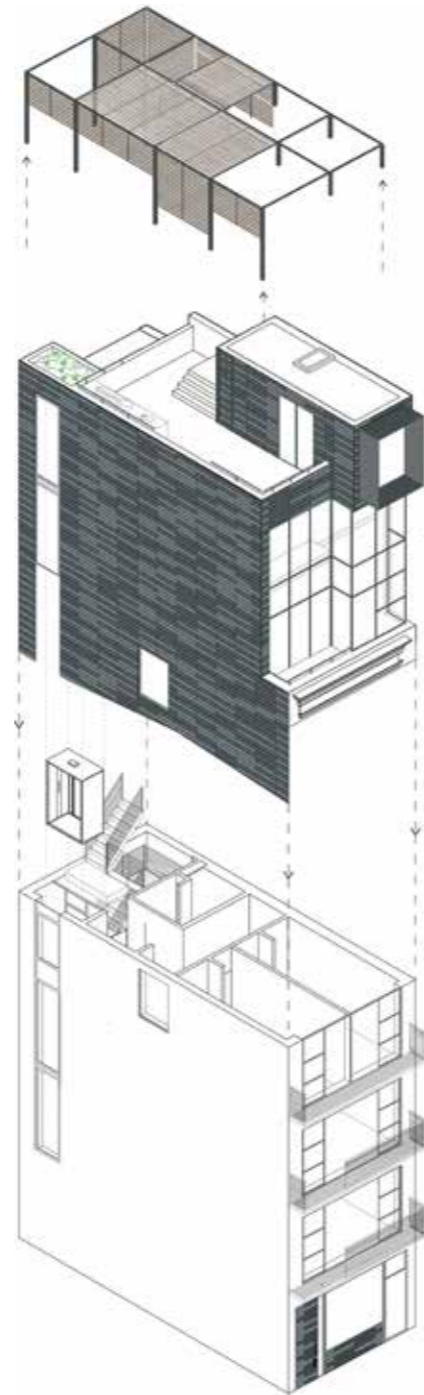
Architecture practice Archi-Tectonics, headed by Winka Dubbeldam, converted a long, narrow industrial structure in SoHo into a spacious, flexible eight-story family home. The adaptive reuse project doubled the space by adding a four-story structure to the original and unifying the two volumes with a 3D envelope called "Climate Skin" – a spacious lattice envelope made of lightweight steel and folding panels clad with high pressure laminate slats. When closed, they appear as one smooth surface, but when opened, they fold out like feathers of a bird's wing. Like an intricate lacework dress, the sheathing changes character and appearance at different times of day and view angles, and serves as both filter and amplifier between the privacy of the house and the public streetscape.

The unique Climate Skin wraps up and over the building, creating several green outdoor spaces at every floor with a living/dining area and culminating in a habitable terrace. Extensive prototyping assisted in optimizing the movement of the trellis panels. The façade can fold and slide open to accommodate the residents' needs, providing privacy or connectivity to the outdoors and allowing them to adjust ventilation, light, shade and temperature – a sustainable solution that makes the building adapt to environmental conditions. In warm weather, the 3D skin reduces interior radiation and lowers the necessity for air-conditioning; in cold weather, it increases interior radiation and reduces the necessity for heating as it lets in the sun's rays.

The project respects the building's history by restoring the existing brick and up-cycling materials. The black steel in the original building is used in the staircase that connects all eight stories of the house, becoming a *fil rouge* for the interior design. The vertical circulation is highlighted by a flood of natural light from the glass roof above. At the top of the stairs there is a cozy meditation spot with a window box penetrating the Climate Skin to provide a view of SoHo. To spatially enhance the building's small floorplates, each floor contains a program connected through double-height voids as seen between the kitchen and dining area as well as between the study and master bedroom. This spatial interlacing provides long views throughout. Double-height windows, a skylight, and a dramatic south-facing continuous window slot bathe the narrow living space with natural light. Together, the fenestrations accentuate the extreme verticality of the space and create a dynamic spatial experience.

Archi-Tectonics' innovative approach to this urban residential project exemplifies a sustainable design solution that not only makes the most of the building's footprint, but provides the inhabitants with elegant living, working and outdoor spaces. The Climate Skin reduces energy costs while creating a ~~by the existing characteristics of the city. There promises to be more similar~~ eco-friendly approaches to urban living ~~where such city densification poses challenges.~~

, in this densified urban environment

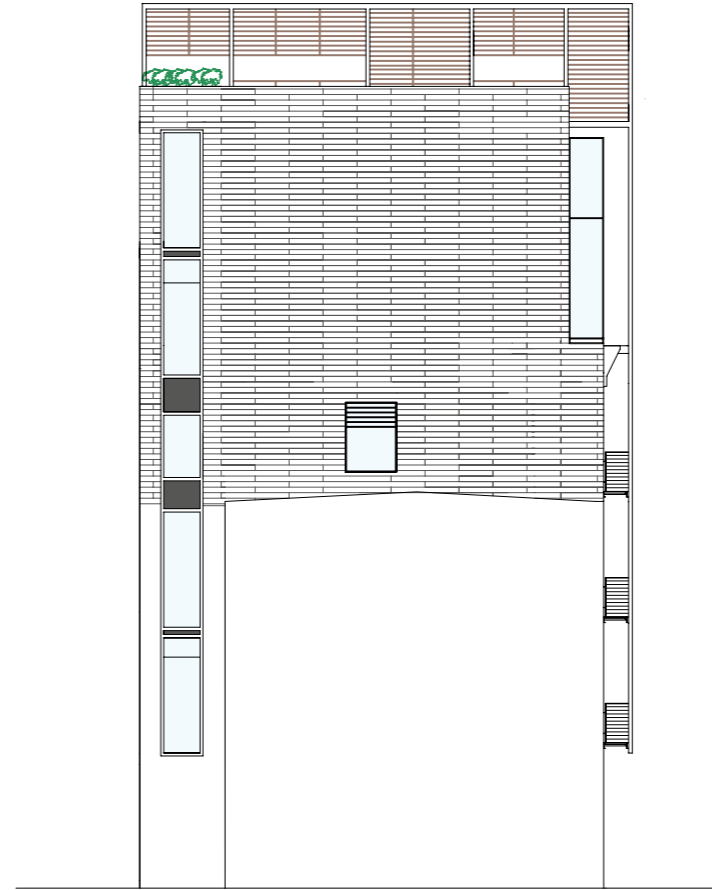


■ Exploded axonometric view showing sun-shading system





■ East elevation - Scale 1:200



■ South elevation - Scale 1:200



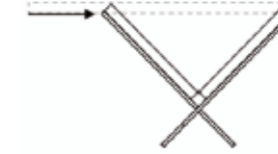
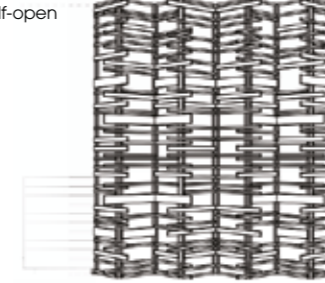


■ Possible configurations of operable trellis

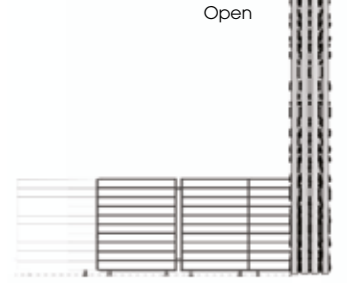
Closed



Half-open



Open



The Climate Skin is a spacious lattice envelope made of lightweight steel and folding panels clad with Trespa® slats. When closed, they appear as one smooth surface, when opened, they fold out like feathers of a birdwing

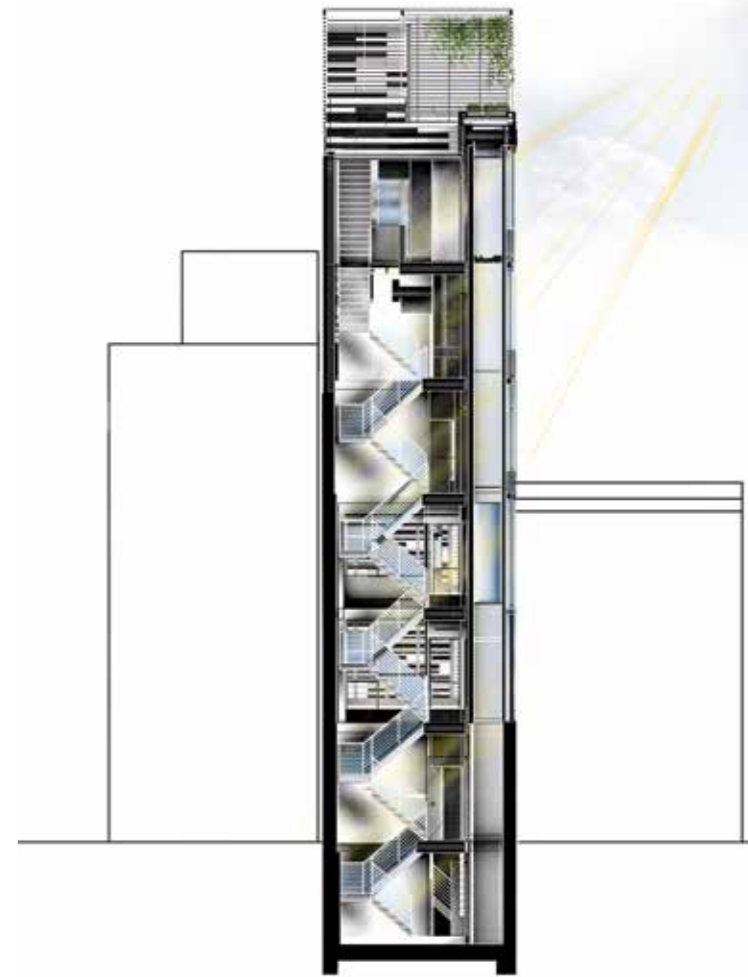




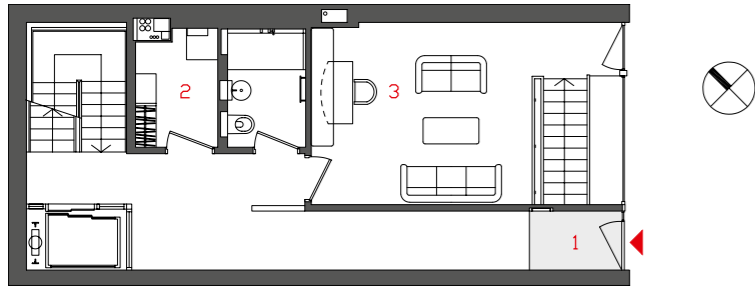
■ Longitudinal section - Scale 1:200



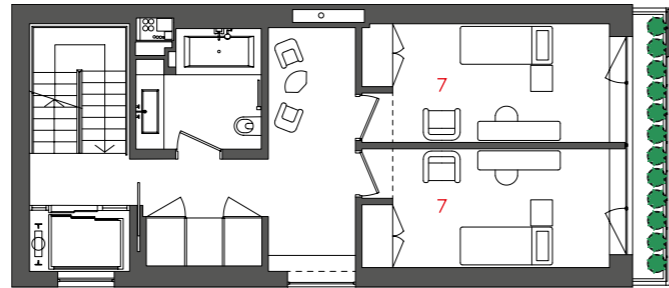
■ Cross section - Scale 1:200



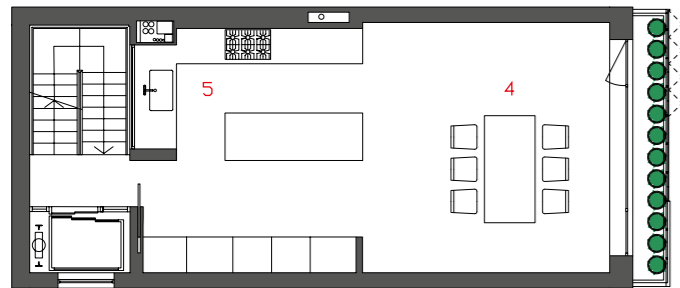
■ Ground floor plan - Scale 1:150



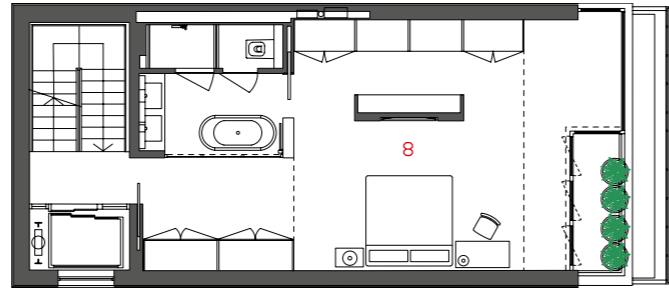
■ Third floor plan - Scale 1:150



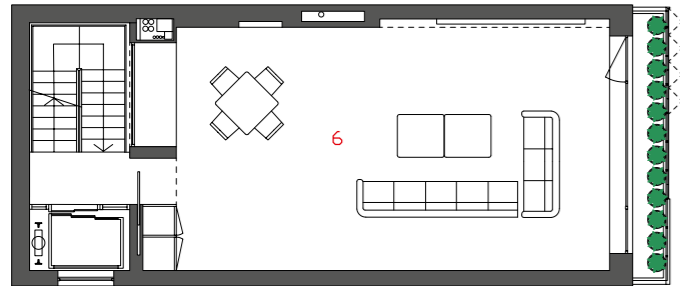
■ First floor plan - Scale 1:150



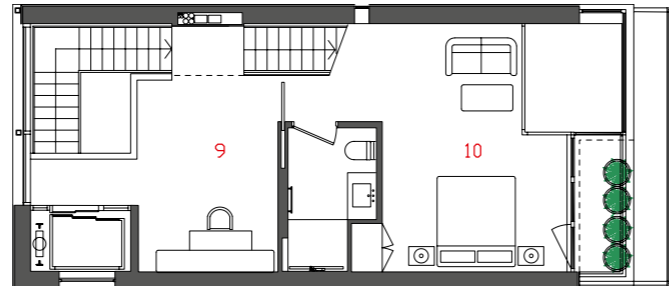
■ Fourth floor plan - Scale 1:150



■ Second floor plan - Scale 1:150



■ Fifth floor plan - Scale 1:150



- 1- Entrance
- 2- Storage/Technical room
- 3- Guest room
- 4- Dining room
- 5- Kitchen
- 6- Living room

- 7- Kids bedroom
- 8- Master bedroom
- 9- Home office
- 10- Guest bedroom





CREDITS

Location: New York City, USA

Completion: 2020

Architect: Archi-Tectonics

Principal in Charge: Winka Dubbeldam

Partner in Charge: Justin Korhammer

Main Contractor: Galcon Construction

Consultants

Structures: WSP Group

Mechanical: 2LS Consulting Engineering

Trellis Slats: Trespa® Miteon®

Lighting Fixtures: Philips

Finishes: Porcelanosa

Photography: Evan Joseph
(pp. 50, 52, 56 above left, 59, 62, 63),

Archi-Tectonics (pp. 53, 61),

Alexander Sipkes (p. 54),

Surface Magazine (pp. 55, 60),

Federica Carlet (p. 56),

courtesy of Archi-Tectonics