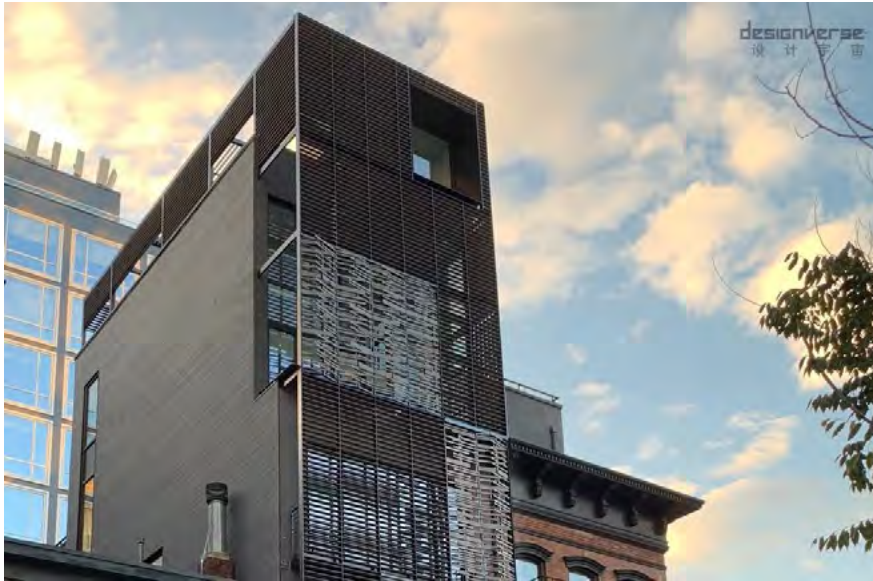




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## 512GW Townhouse | Archi-Tectonics



建筑设计

室内设计

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发布时间: 2021/05/31

### 项目信息

**Architects:** Archi-Tectonics

**Principal in Charge:** Winka Dubbeldam, Assoc. AIA

**Partner in Charge:** Justin Korhammer

**Archi-Tectonics Team:** Hanxing Zu, Sarah Lulan, Filomena Nigro, Avra Tomara, Royd Zhang, Zhe Wen, Kristina Kroell, Elena Sarigelinoglu, Hsiang Wei Chen, Adin Rimland, Boden Davies, Nariman Kiazand, Robin Zhang, Thiebaud Nell

**Main Contractor:** Galcon Construction

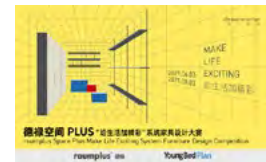
**Consultants Structural Engineers:** WSP GROUP

**Mechanical Engineers:** 2LS Consulting Engineering

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Archi-Tectonics converted a long and narrow industrial structure in SoHo into a spacious and flexible 8-story family home. The size of the space was doubled by adding a 4-story structure to the original townhouse, and by unifying the two volumes with a 3d envelope: the Climate Skin.



Street View ©Evan Joseph



## CLIMATE SKIN

The townhouse is inscribed within the Climate Skin, a spacious lattice envelope made of lightweight steel and folding panels clad with Trespa™ slats. When closed, they appear as one smooth surface, but when opened, they fold out like feathers of a birdwing. Like an intricate lacework dress, the sheathing changes character and appearance at different times of the day and view angles, and serves as both filter and amplifier between the privacy of the house and the public streetscape. The Climate skin does not stop at the facade, it wraps up and over the multi-level roofs, creating a private outdoor 'room' with green roofs and outdoor dining.



Facade from afar with plants ©Archi-Tectonics

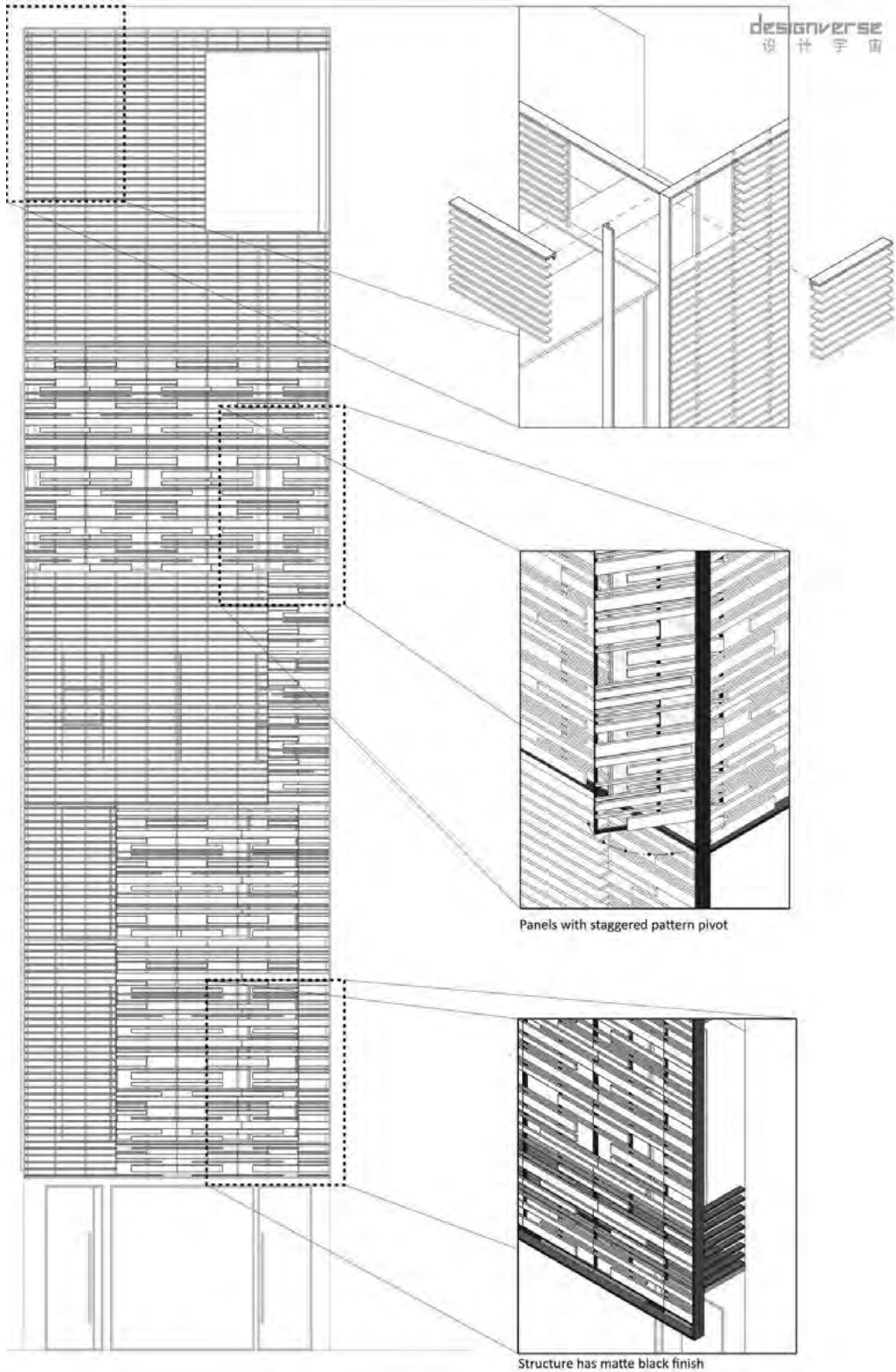


Facade ©Archi-Tectonics



Facade detail ©Archi-Tectonics





Facade Detail ©Archi-Tectonics



Opening Facade ©Surface Magazine

This unique facade also poses interesting solutions for sustainability. By making the Climate Skin operable, residents can adjust ventilation, light, shade, and temperature so that the building naturally adapts to environmental conditions. In warmer months, the Climate Skin reduces interior radiation and lowers the need for air-conditioning. In colder months, opening the Climate Skin increases interior radiation and reduces the need for heating.



Trellis open ©Archi-Tectonics

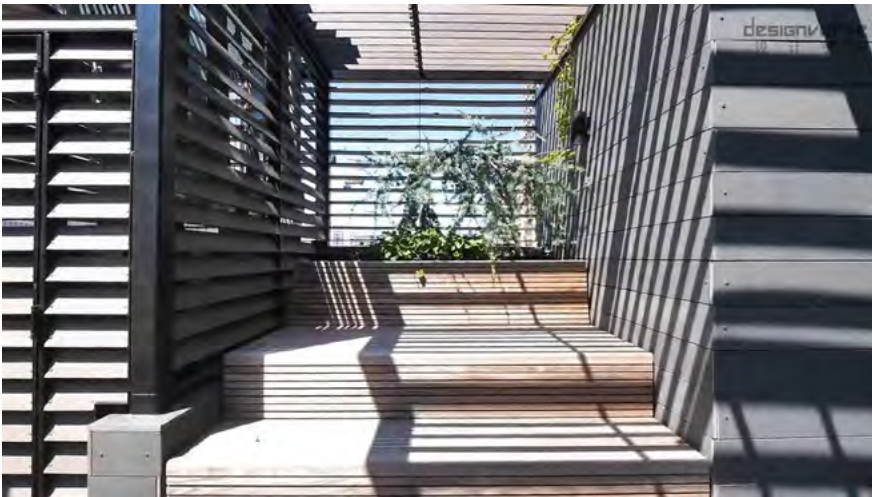


## INTERIORS

Inside, the project pays respect to the building's history by restoring the existing brick and up-cycling materials. The black steel in the original building is used throughout the house, such as in the staircase that runs through all eight stories of the house lit from above by a glass roof. At the top the stairs turn 90 degrees and move up to the bulkhead where we find a perfect meditation spot, with its window box penetrating the Climate Skin, overlooking SoHo.



Terrace entrance ©Evan Joseph



Terrace seating ©Evan Joseph

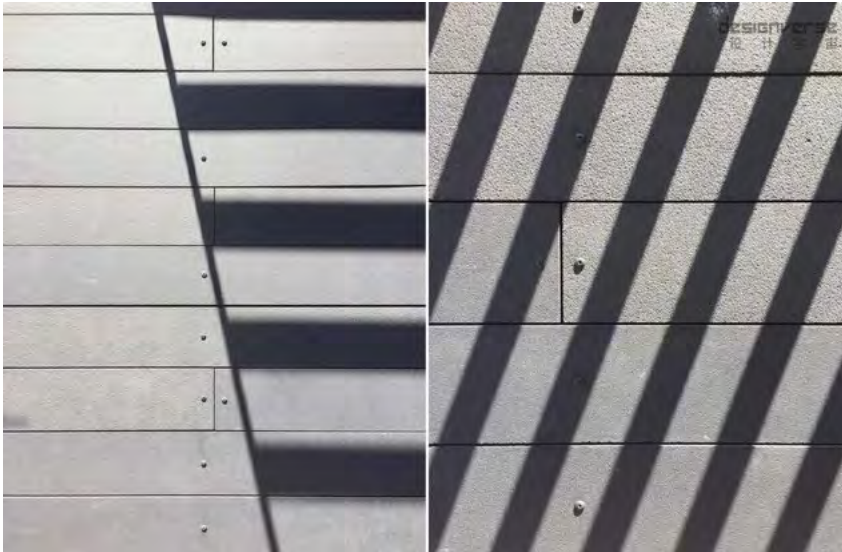


Terrace close-up ©Evan Joseph



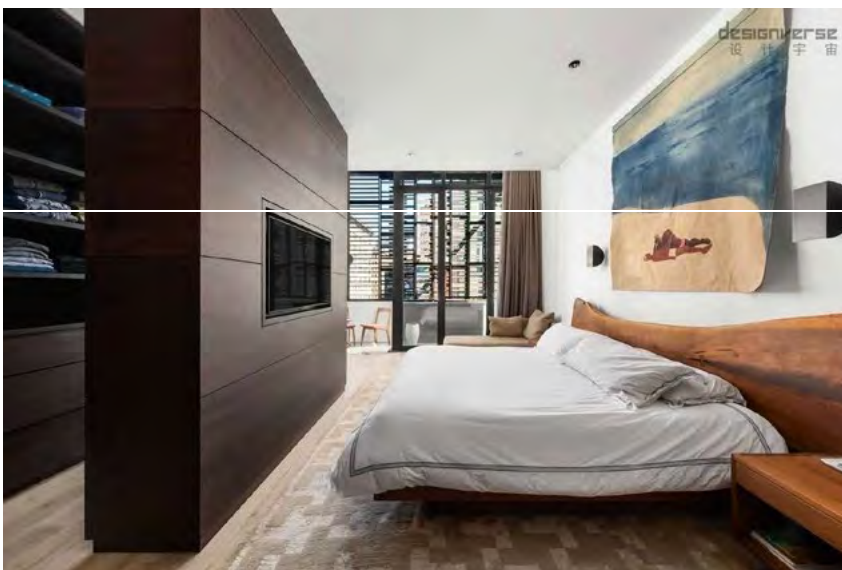


Terrace BBQ ©Evan Joseph



Terrace ©Archi-Tectonics

To enhance the building's small floorplates spatially, each floor contains a program connected through double-height voids, such as between the kitchen and dining area, and between the study and master bedroom. These allow for spatial interlacing and long views throughout.



Bedroom ©Evan Joseph



Kitchen ©Federica Carlet



Kitchen ©Federica Carlet



Kitchen ©Federica Carlet



Double-height windows, a skylight, and a dramatic south-facing continuous window slot bring ample light into what could otherwise be a dark and narrow living space. Altogether, these highlight the sensation of extreme verticality and transform mundane everyday tasks into a dynamic spatial experience.



Living Room ©Federica Carlet



Living Room ©Federica Carlet



Atrium ©Evan Joseph



Study ©Evan Joseph





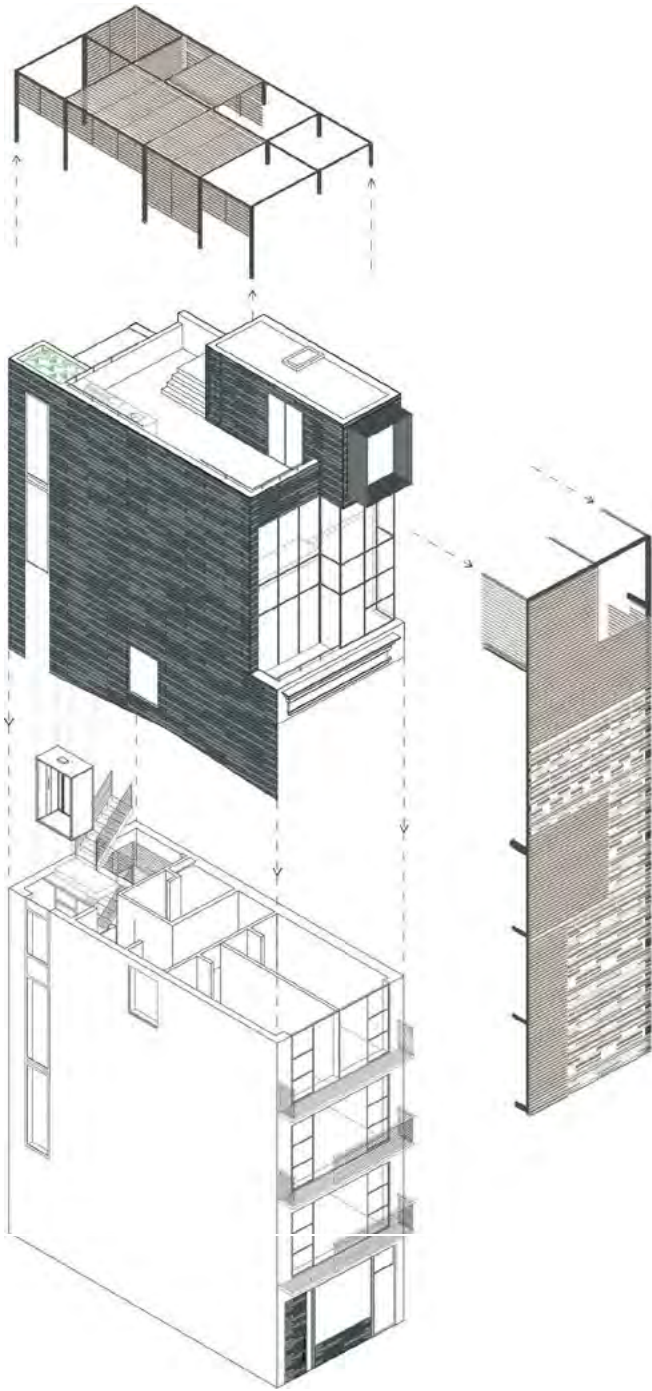
Washroom ©Evan Joseph



Washroom ©Evan Joseph

## IMPACT

This Urban townhouse represents an innovative approach to densification in a city challenged by housing shortages and skyrocketing prices. The conversion not only provides residents with a diversity of elegant living, working spaces and generous outdoor areas, but also respects the existing characteristics of the city and poses a potential future for urban living. The Climate Skin's adaptability to environmental conditions represents a rethinking of the residence's footprint on the environment, and reduces energy costs. It anticipates future, more sustainable design approaches to urban living.



Exploded isometric ©Archi-Tectonics

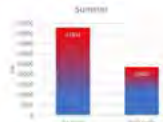




Perspective front ©Archi-Tectonics



**512GW**  
Radiation analysis  
April - September

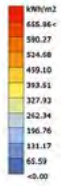


As a result of the operable climate trellis, interior radiation is reduced by 45% in warmer months, significantly lowering the need for airconditioning.



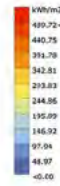
Without trellis

Radiation analysis  
New York, Central Park, 200, 200, New York, USA, 1977  
1 APR 1:00 - 19 SEP 24:00



With trellis

Radiation analysis  
New York, Central Park, 200, 200, New York, USA, 1977  
1 APR 1:00 - 19 SEP 24:00



Radiation overview ©Archi-Tectonics

**512GW**  
Radiation analysis  
October - March

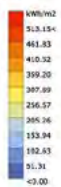


As a result of opening the trellis in colder months, interior radiation is 25% higher compared to having the trellis closed, reducing the need for heating.



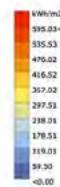
Trellis closed

Radiation analysis  
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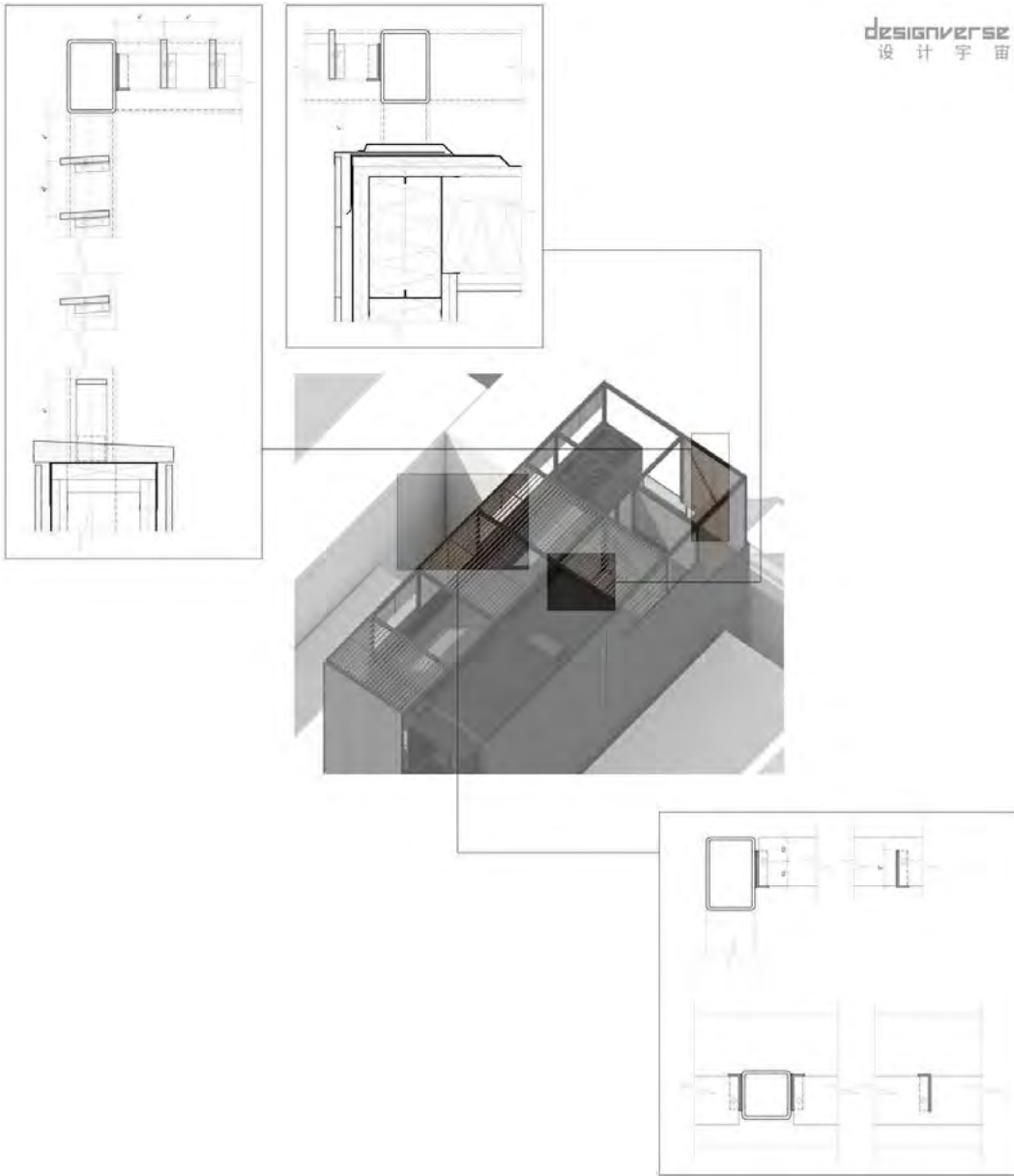
Trellis open

Radiation analysis  
New York, Central Park, 200, 200, New York, USA, 1977  
1 OCT 1:00 - 31 MAR 24:00



Radiation overview ©Archi-Tectonics





Trellis Structure Details ©Archi-Tectonics

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