

The Greenwich High Parks

International Isover Contest | Project brief
Nara Telles & Erick Fernández



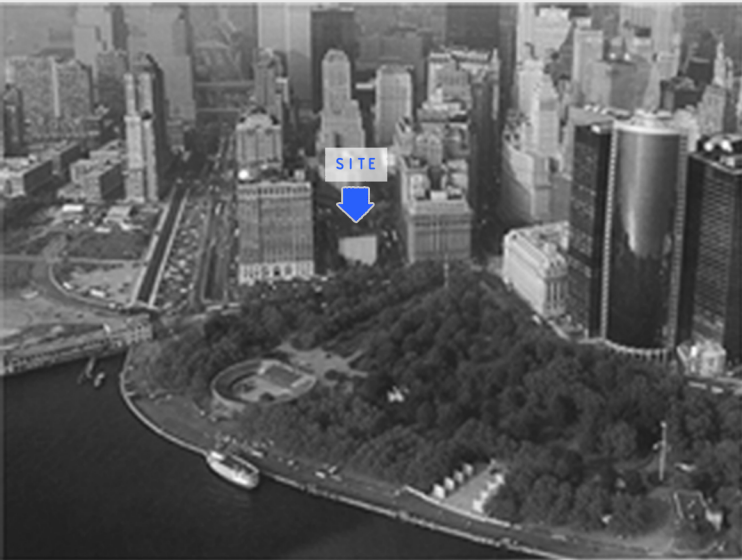
International Isover Contest | The Greenwich High Parks

Project Brief | Introduction



The location has three major points South Greenwich:

- World Trade Center Memorial
- Battery Park - considered the second largest urban park in new york
- Booklin Battery Tunnel - connect Greenwich South to Brooklin

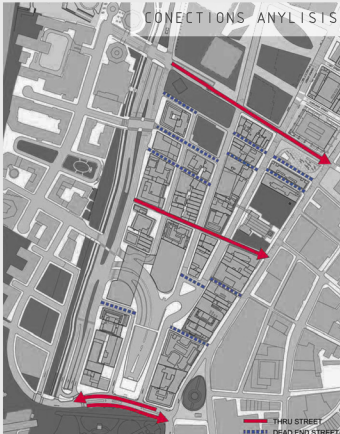
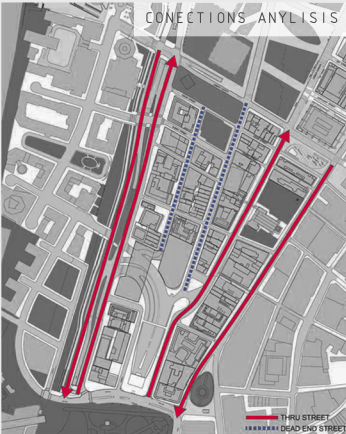


Greenwich South has 16 hectares of the southern tip of Manhattan and is limited by the West Side Highway, Battery Park, Broadway and Liberty Street, the World Trade Center memorial. Although these limits of urban infrastructure in many ways isolated from the rest Greenwich South of the city, in recent years has greatly increased the number of residents and tourists who live and stay in South Greenwich. At the same time, the demand of new Class-A commercial spaces has made considerable investment in Greenwich South a potential site for expansion. Often overlooked, Greenwich South is about to be the centerpiece of a new neighborhood to live-work-play.

The urban and architectural trends, demand places that are sustainable and in turn have an inclusive communication with the city and public space. Therefore, our main concept in our design process was founded on public and private space in a single proposal. We seek to optimize the thermal comfort of the basement through the extraction of the air generated by the movement of the metro on the underground galleries.

The program, therefore, also consider mixed uses to enhance the urban condition of Greenwich South, including the arts, culture, leisure and recreation.

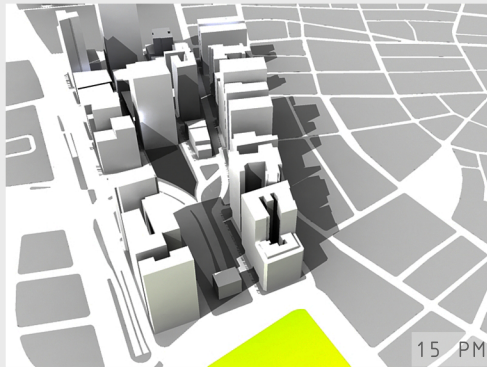
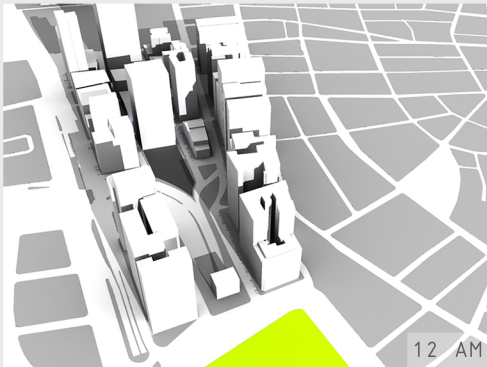
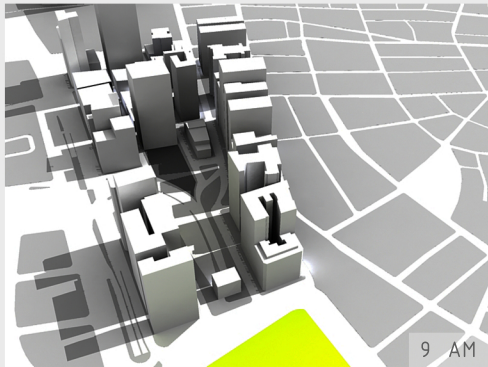
The building design was the result of many studies of this new vision of Greenwich South.



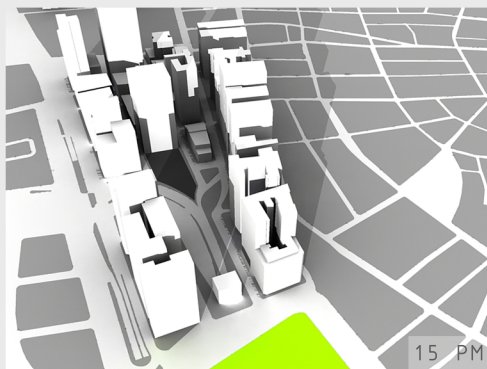
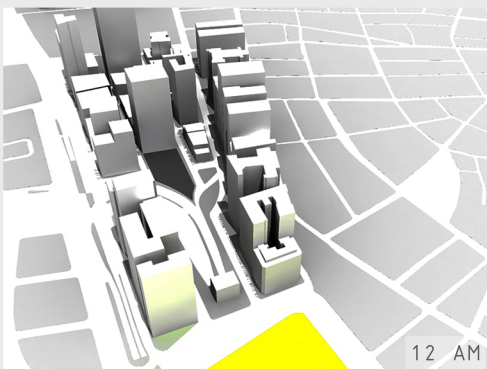
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Project Brief | Analysis

Summer | 06-22

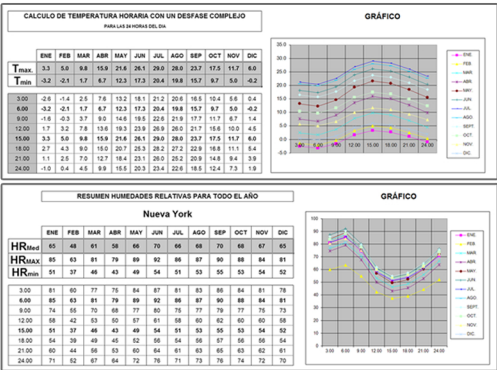


Winter | 12-22



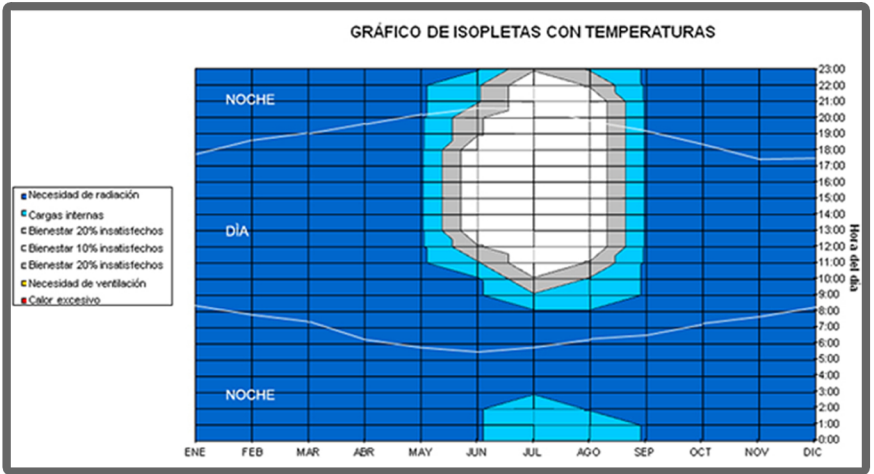
Site analysis which determines the basic concept of design: The site is bipolar, has favorable conditions in terms of solar orientation and sunlight in the upper part, but the base is just the opposite due to the projection of the shadows of the buildings around, both winter and summer.

Adapted Comfort Climograph



isopleths

	month	dawn	nightfall	month	dawn	nightfall
january		8:15	17:55	july	5:40	20:25
february		7:50	18:30	august	6:10	19:50
march		7:10	19:00	september	6:35	19:05
april		6:15	19:35	october	7:10	18:10
may		5:40	20:05	november	7:45	17:35
june		5:25	20:30	december	8:15	17:30



After analyzing climate of New York City (located 40 ° north latitude), we conclude that the formal aspects of building design should seek to obtain greater efficiency in the summer shadowing in order to avoid energy costs such as air conditioners, mechanical fans, etc. And develop a airtight building, ensuring cool in summer and a comfortable heat in winter.

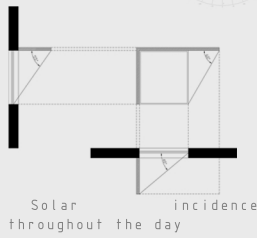
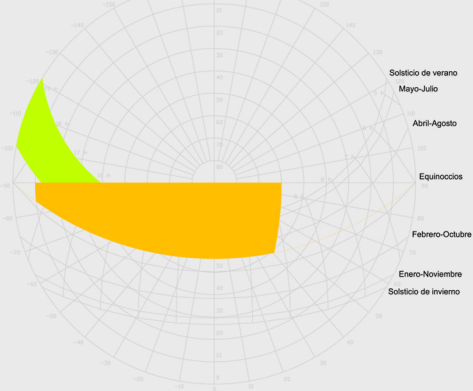
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Project Brief | Analysis

Facade studies

South facade

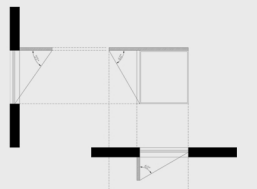
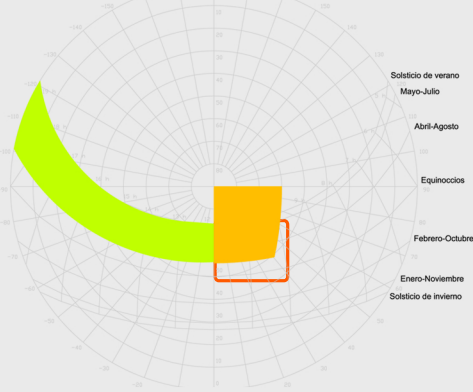
Latitud 40°N



Project | Election of this facade for the residential tower, for a more controlled comfort and better solar incidence. It was thought of a mechanical facade where the blades change direction as winter or summer

East facade

Latitud 40°N

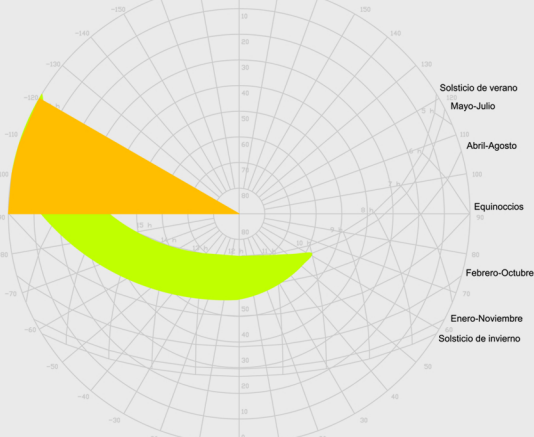


The solar incidence are at mornings.

Project | Election of this facade for the hotel tower, because the activities in this use are made regularly in the morning and night, favorable for such orientation.

North facade

Latitud 40°N



There is a lot of light, but a bit little solar incidence.

Project | Election of the Office tower, so there is plenty of light throughout the day, without bothering

West facade

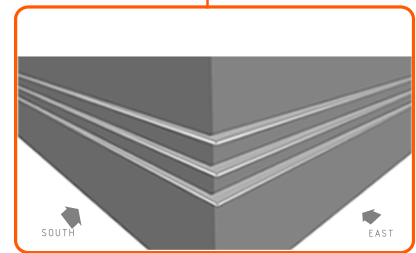
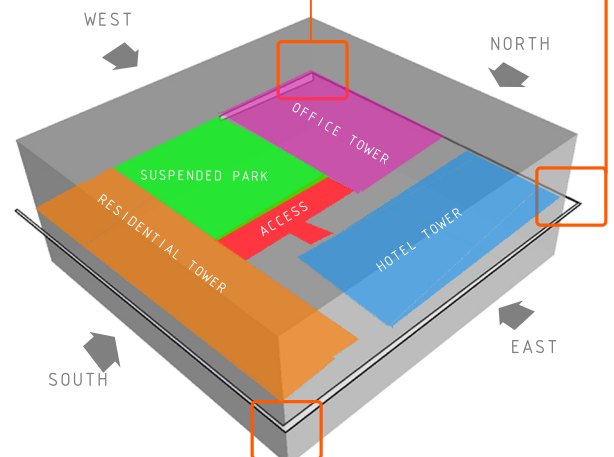
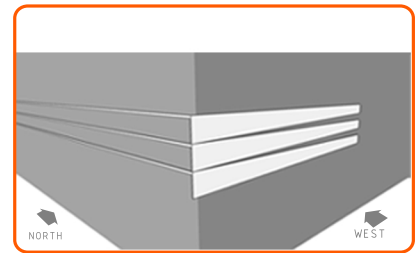
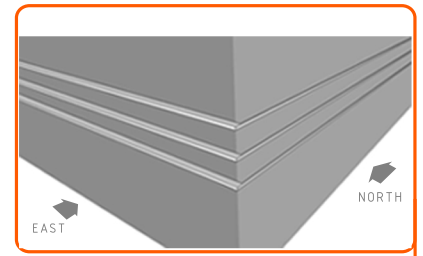
Latitud 40°N



There is a lot of bother solar incidence. Window will be avoided.

Project | Use of this facade for the creation of a suspended parks throughout the tower.

Louvres Study



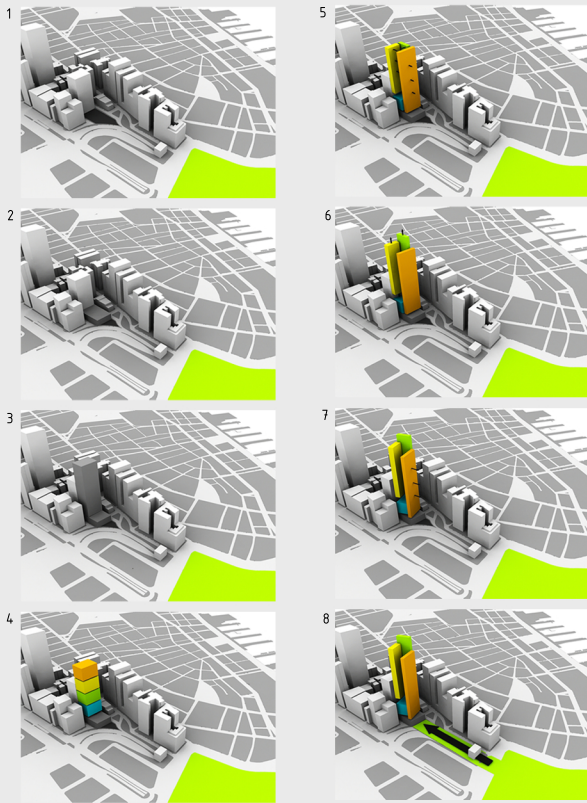
Drawing upon studies of stereographic letter, we develop the blades of the building.

Each facade has its particularity, and the contour of the blade changes depending on its facade.

The west facade, we opted not window, our proposal is design a suspended park, just with a bland to protect the office tower wall.

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Project Brief | Project process



The proposed base that includes public activities of the program was made in 5 levels, incorporating the fifth level in a public space, open to the outdoors.

The Tower was the result of previous analysis. Due to the different features presented in the base and in the tower, we decided to break it up, as a strategy for the project. So, we also fragment the use of the tower within a single structure, leaving the center, courtyards whose function is solved as a public space of coexistence and as a strategy to avoid the orientation to the west. These courtyards, due to its use and as a climate comfort support for the building, is responsible for the giving project name.

For better thermal utilization, we rotate so that different uses could obtain their most favorable orientation. The design of the base is a result of this operation, because it follows the shape and orientation of the tower in its growth.

The last intervention was the creation of the public space that connects and introduce the Battery park in the project, it is the result of existing connections in South Greenwich.

Connection diagrams and development of the base



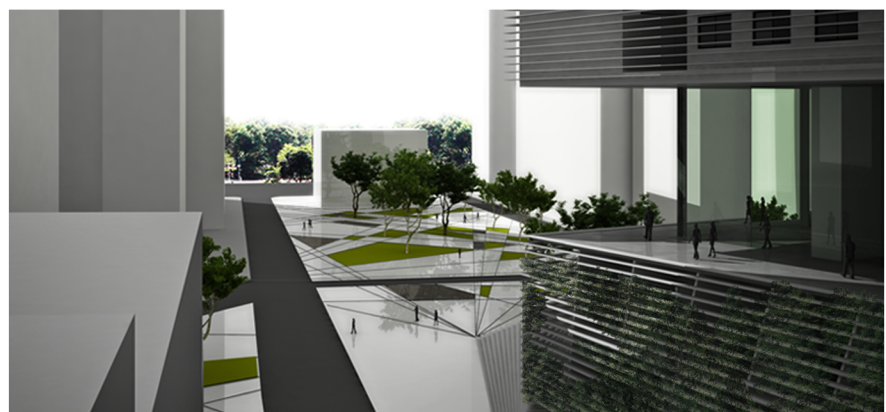
The process of urban scale design stems from the idea of creating and enhancing the dialogue between the buildings, massive transit network and the urbanization of Greenwich South.

The base is divided into 4 areas in which one side are the lobbies, theater and the entrance to the subway and on the other side is the access to the tower and part of the mall.

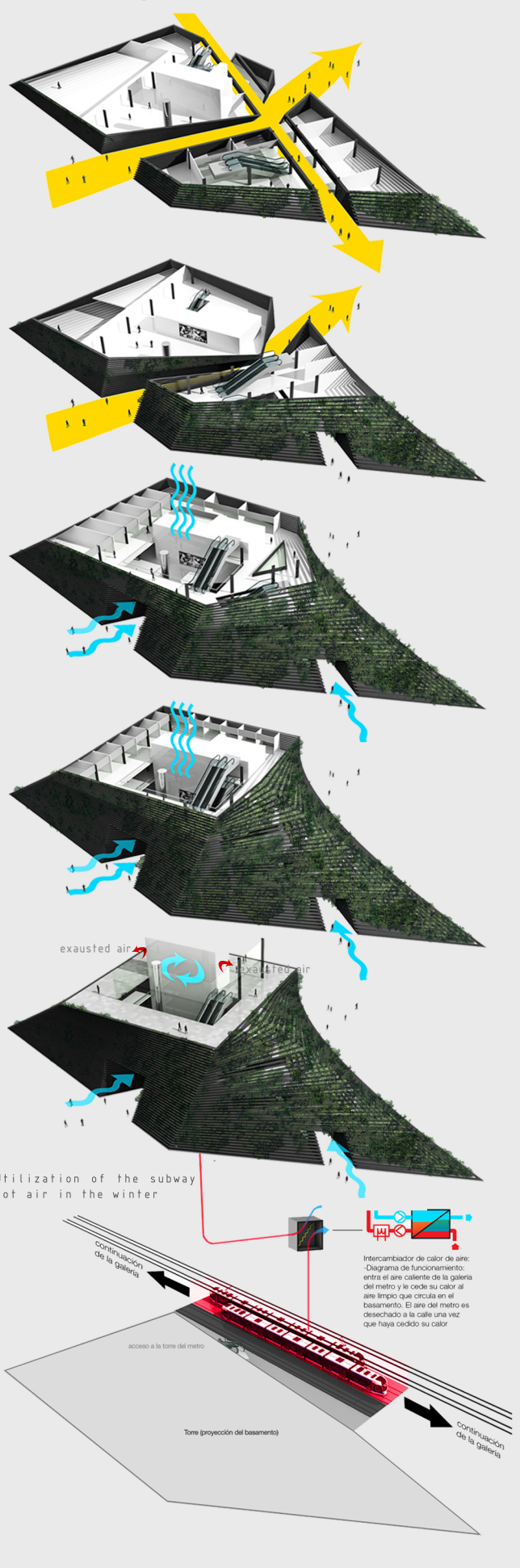
The subway entrance is located inside the tower over the pedestrian crossing corridors.

On the other hand, rehabilitates Greenwich South as an artery of Manhattan that crosses almost completely. It also opens connections to more efficient traffic flows, both in Morris Street and Washington Street

In general the design, arrangement of green areas and the lighting and ventilating at Battery Tunnel ramp are generated through the connections of the vertices of the buildings around, this operation was proposed to increase our intention to generate a dialogue which ensures identity and presence in Greenwich South.

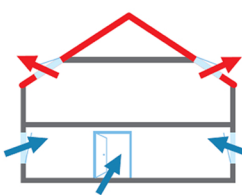


Connection diagrams and air circulation at the base

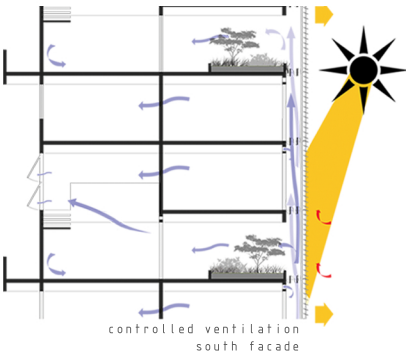


Airtightness building

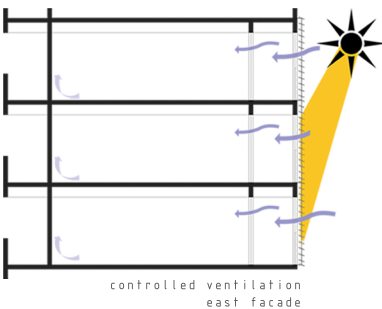
For an optimal thermal comfort, the building has a controlled ventilation, allowing a fresh air inlet and outlet of exhaust air from the base to the office towers, residential towers and tower hotels



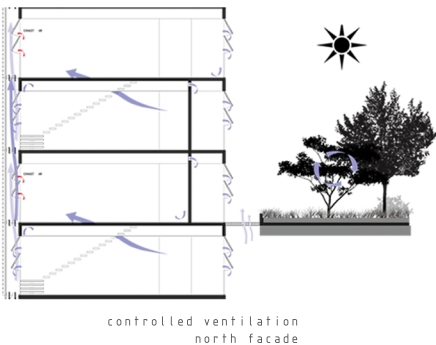
VERANO



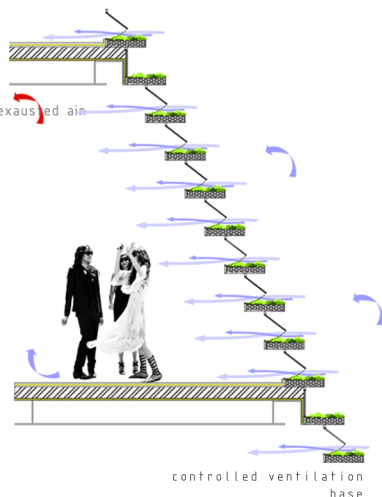
controlled ventilation south facade



controlled ventilation east facade

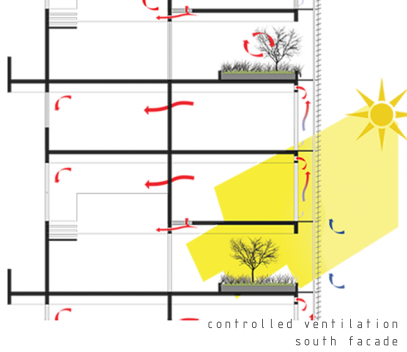


controlled ventilation north facade

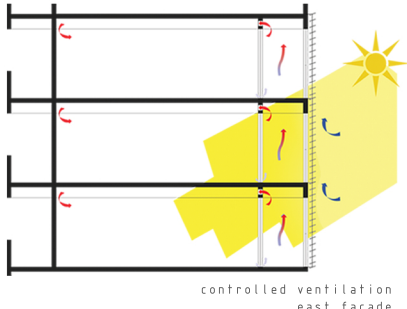


controlled ventilation base

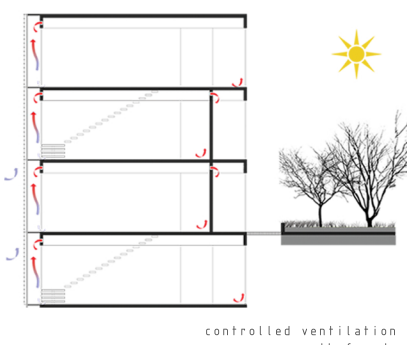
INVIERNO



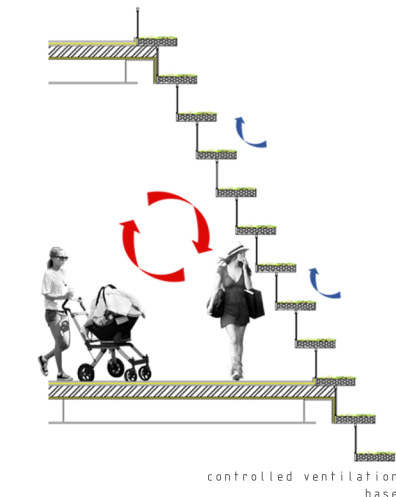
controlled ventilation south facade



controlled ventilation east facade



controlled ventilation north facade



controlled ventilation base

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Project Brief | Isover Materials

Isover Products

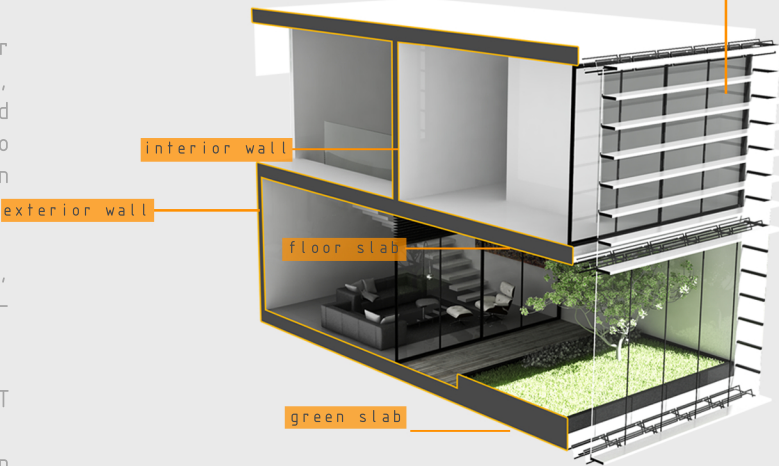
Since New York is a city with more months with low temperatures and high humidity (from 41% -87%), it is necessary to provide anti mold materials.

It was elected the use of the Vario Vapor Barrier material throughout the building, giving it airtightness. So, hot air is retained within the building and keep out cold air. Also prevents mold growth and possible condensation water inside the enclosure.

Even the weather is warm or cold, dry or wet, the system intelligently adapts to weather conditions should prevail.

The internal and external walls have ECOVENT material, which, being mineral wool, is non-combustible, ensuring excellent performance in fire.

Window:
double-glazed low emissivity, insulated frame.



Section of a module housing

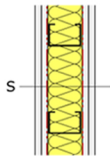
Detalles:

INTERIOR WALL

Composition:

- 12.5mm Laminated gypsum board
- 12.5mm Laminated gypsum board
- 02.0mm Vario vapor barrier
- 40.0mm ISOVER ECOVENT (Mineral wool)
- 02.0mm Vario vapor barrier
- 12.5mm Laminated gypsum board
- 12.5mm Laminated gypsum board

U-value= 0,57 W/m²K
R_a≥45dB

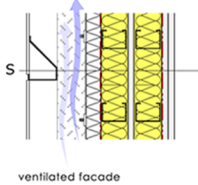


EXTERIOR WALL

Composition:

- 05.0mm Gray Stone Facade Cladding
- 125mm Ventilation Gap with Steel Supports
- ISOVER RKL-31 FACADE board
- 02.0mm Vario vapor barrier
- ISOVER ECOVENT (Mineral wool)
- 12.5mm Laminated gypsum board
- 50.0mm ISOVER ECOVENT (Mineral wool)
- 02.0mm Vario vapor barrier
- 12.5mm Laminated gypsum board
- 12.5mm Laminated gypsum board

U-value= 0,26 W/m²K
R_w≥60dB

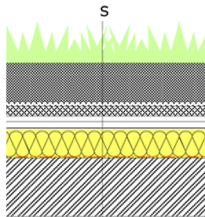


GREEN SLAB

Composition:

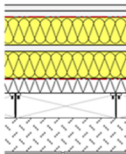
- 100mm Vegetation
- 12.0mm Substrate for the plants
- 25.0mm Subsoil filtration layer
- 12.0mm Waterproof PVC layer
- 12.0mm Compression layer
- 70.0mm Extruded polystyrene
- 02.0mm Vario vapor barrier
- 150mm Concrete Slab
- 12.5mm Gypsum board

U-value= 0,33 W/m²K
R_w≥52dB



MATERIAL LAYER	Density ρ (kg/m³)	Conductivity λ (W/m²K)	Thickness e (m)	Resistance (m²K/W)
Resistance surface				0,130
Laminated Gypsum Board	800	0,250	0,012	0,048
Laminated Gypsum Board	800	0,250	0,012	0,048
ISOVER ECOVENT		0,038	0,050	1,316
Laminated Gypsum Board	800	0,250	0,012	0,048
Laminated Gypsum Board	800	0,250	0,012	0,048
Resistance surface				0,130
TOTAL RESISTANCE (R _{total})				1,768
TRANSMITTANCE U _{int} (W/m²K)				0,57

MATERIAL LAYER	Density ρ (kg/m³)	Conductivity λ (W/m²K)	Thickness e (m)	Resistance (m²K/W)
Resistance surface				0,130
ISOVER RKL-31		0,031	0,030	0,968
ISOVER ECOVENT		0,038	0,050	1,316
Laminated Gypsum Board	800	0,250	0,012	0,048
ISOVER ECOVENT		0,038	0,050	1,316
Laminated Gypsum Board	800	0,250	0,012	0,048
Laminated Gypsum Board	800	0,250	0,012	0,048
Resistance surface				0,040
TOTAL RESISTANCE (R _{total})				3,913
TRANSMITTANCE U _{ext} (W/m²K)				0,26



MATERIAL LAYER	Density ρ (kg/m³)	Conductivity λ (W/m²K)	Thickness e (m)	Resistance (m²K/W)
Resistance surface				0,040
Conventional garden slab	250			0,130
Waterproof PVC layer		0,17	0,012	0,071
Extruded Polystyrene		0,029	0,070	2,414
Concrete Slab	2000			0,180
Gypsum Board	800	0,250	0,012	0,048
Resistance surface				0,170
TOTAL RESISTANCE (R _{total})				3,042
TRANSMITTANCE U _{int} (W/m²K)				0,33

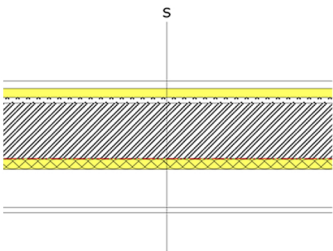
FLOOR SLAB

Composition:

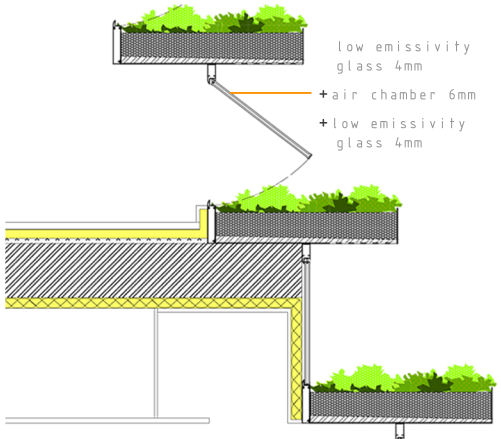
- 20.0mm Wood Floor
- 25.0mm ISOVER ARENA PF (Rock wool)
- 15.0mm Leveling Base
- 150mm Concrete Slab
- 02.0mm Vario vapor barrier
- 25.0mm ISOVER Rigid fiberglass
- 12.5mm Gypsum board

U-value= 0,48 W/m²K
R_w≥62dB

MATERIAL LAYER	Density ρ (kg/m³)	Conductivity λ (W/m²K)	Thickness e (m)	Resistance (m²K/W)
Resistance surface				0,100
Wood Floor	250	0,11	0,02	0,182
ISOVER ARENA PF		0,032	0,025	0,781
Concrete Slab	2000			0,180
ISOVER rigid fiberglass		0,036	0,025	0,694
Gypsum Board	800	0,250	0,012	0,048
Resistance surface				0,100
TOTAL RESISTANCE (R _{total})				2,086
TRANSMITTANCE U _{int} (W/m²K)				0,48



tower floor slab



base floor slab