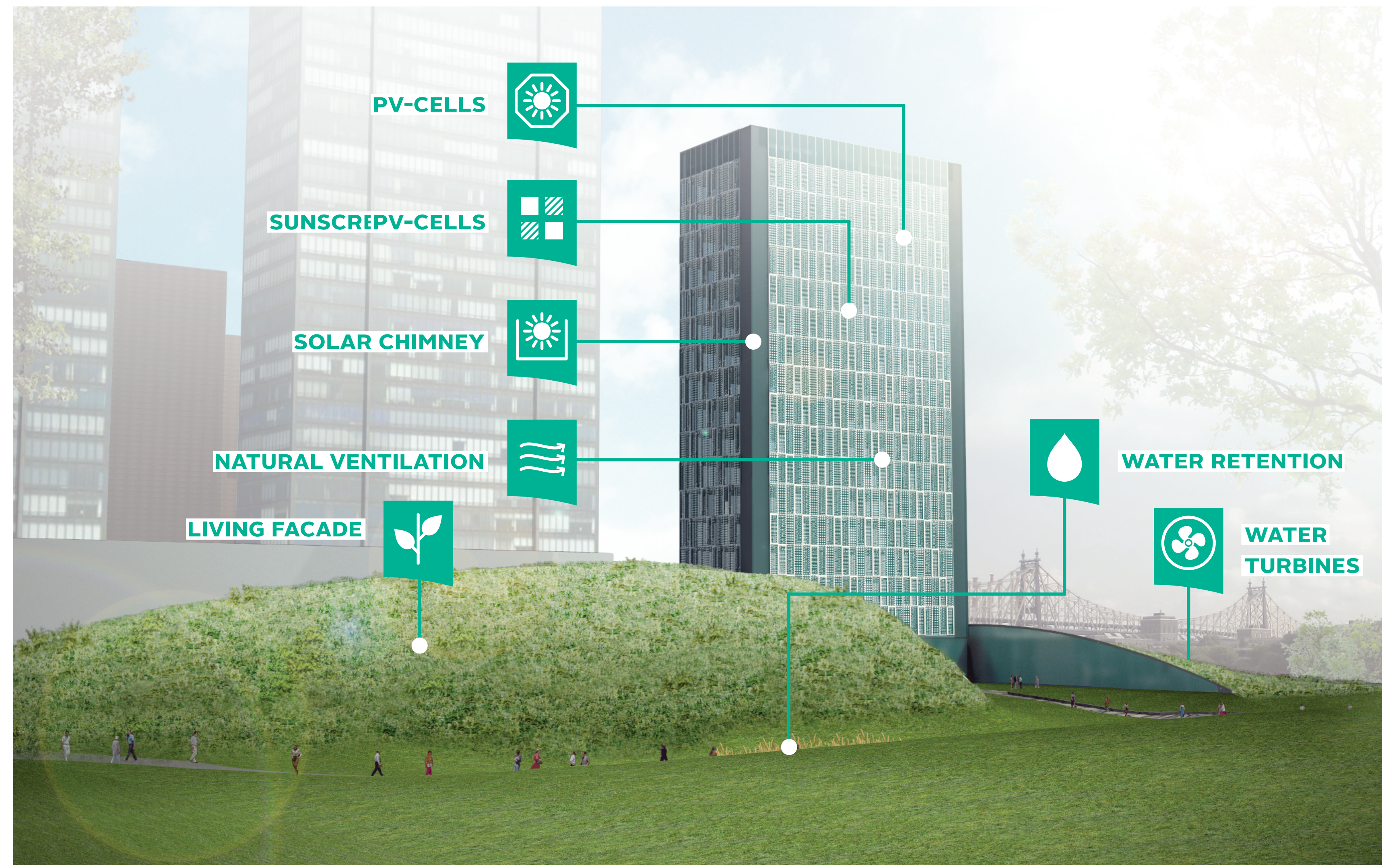
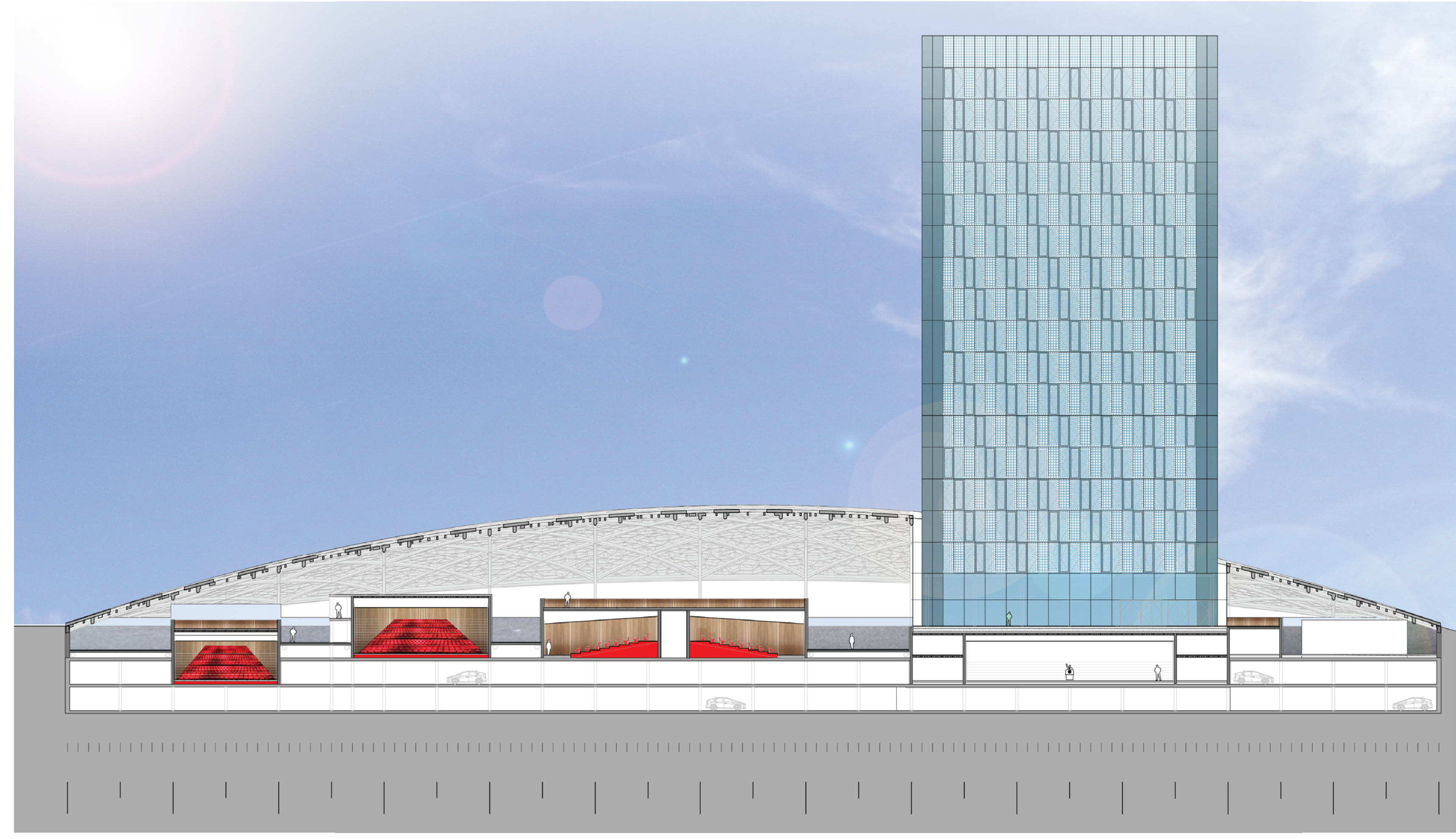


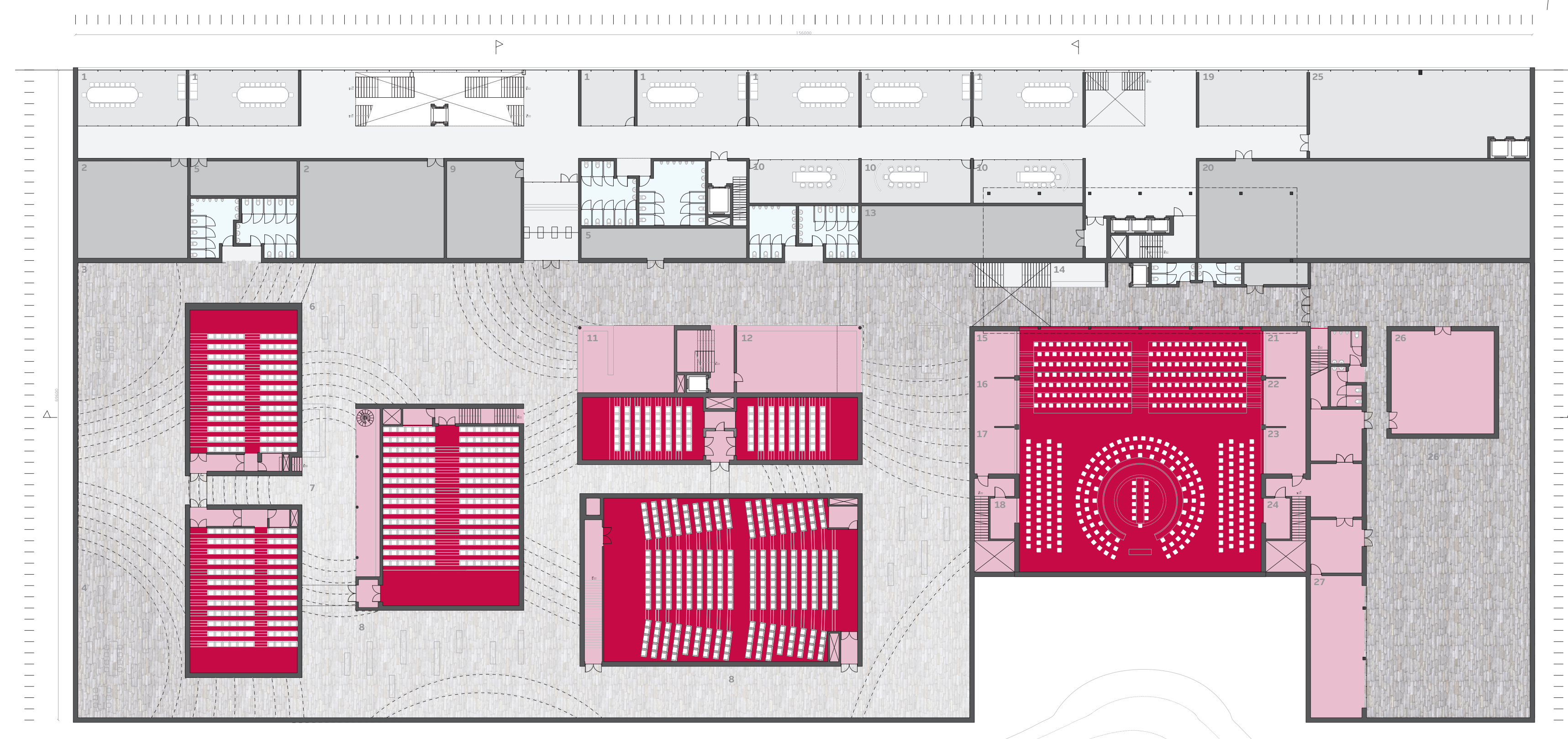
Impression and sustainable features



Section



Public floor



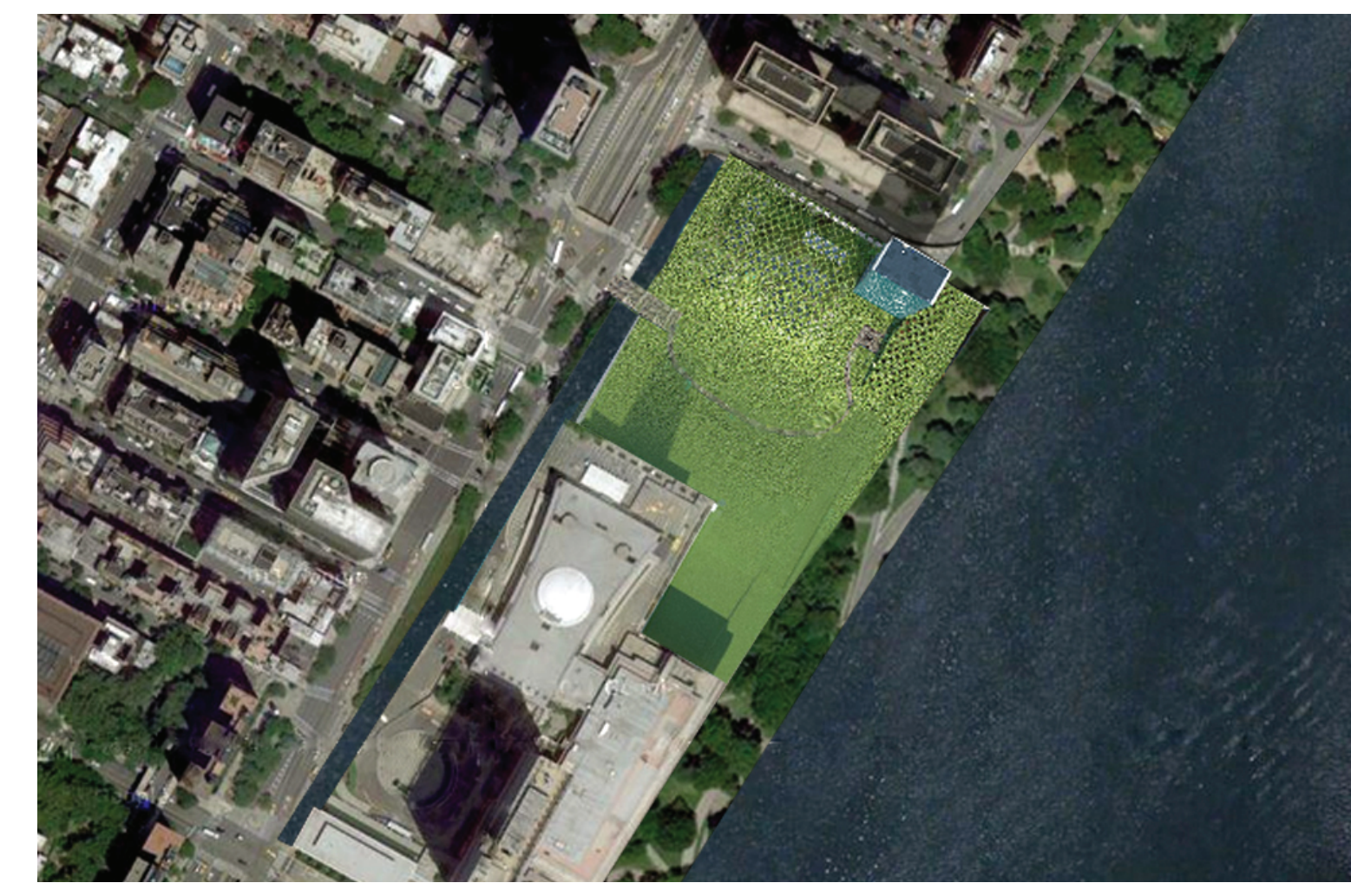
- 1. MEETING
- 2. FM
- 3. JOURNALISM
- 4. MULTIMEDIA
- 5. PRESS
- 6. PRODUCT SPACE
- 7. AUDIUM
- 8. EXPOSITION
- 9. CLEANING
- 10. VISIT
- 11. SHOP
- 12. WARDROBE
- 13. ICT
- 14. COFFEE
- 15. ARABIC
- 16. CHINESE
- 17. UNIFORM
- 18. VISUALS
- 19. FM OFFICE
- 20. ARCHIVE
- 21. PRESS
- 22. RUSSIAN
- 23. SPANISH
- 24. SOUND
- 25. EXPOSITION
- 26. PRESS
- 27. SOUND & TRANSLATION

Impressions of public space

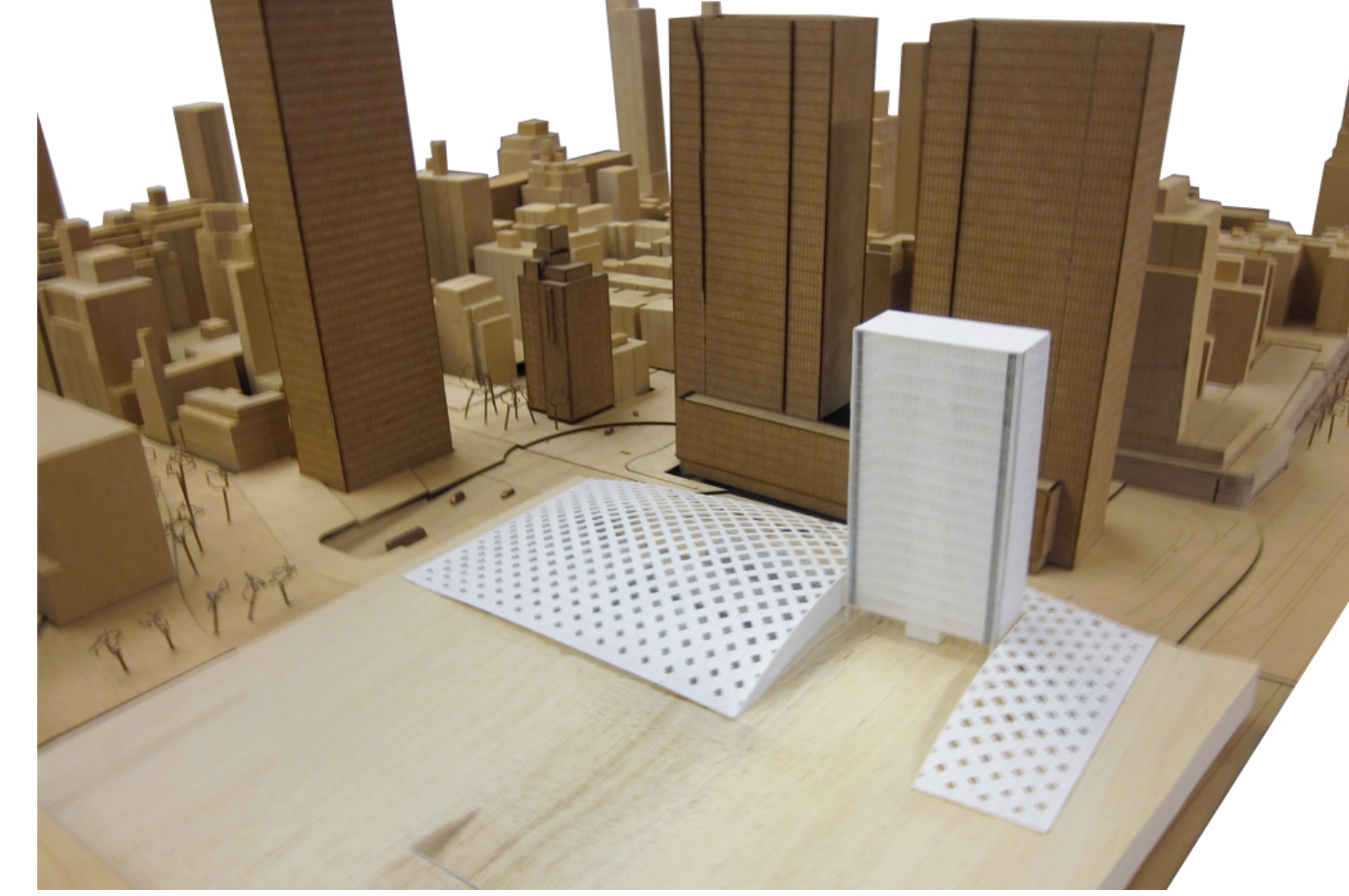


Roel Rutgers // Msc Architecture + Msc Building Technology // SADD studio // Februari 3rd 2012

Building on the location



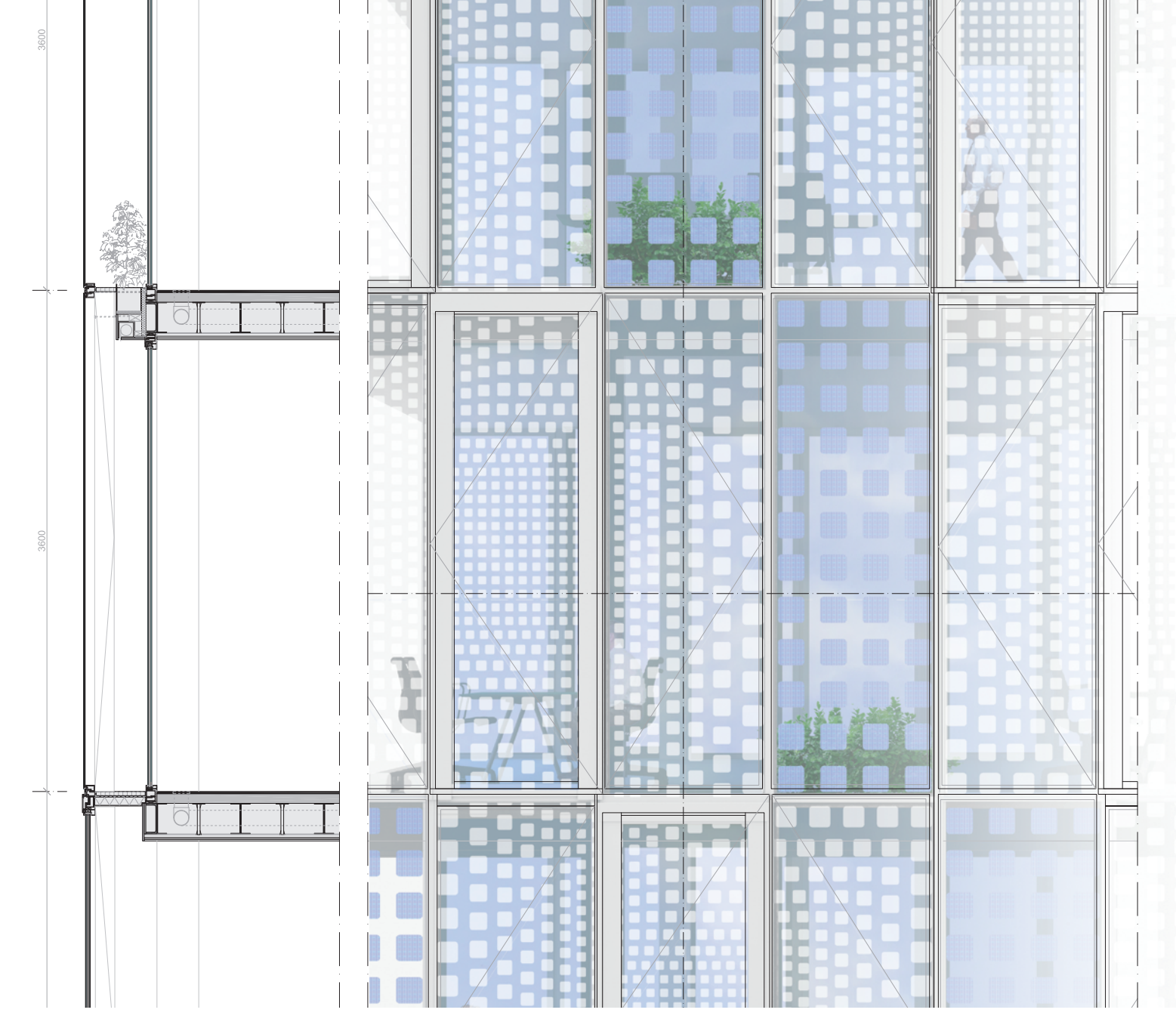
Building on the location (model)



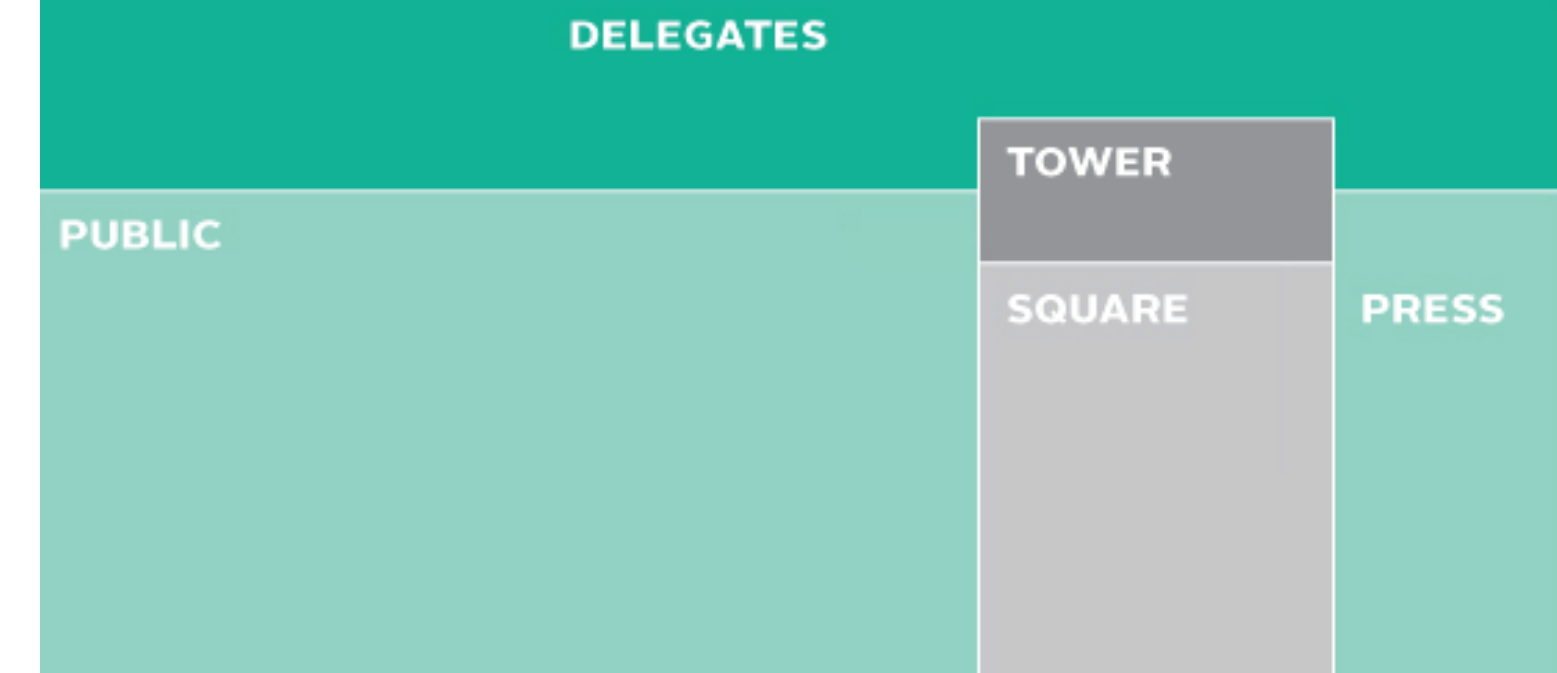
Division of program in horizontal (informal) and vertical (formal) shape



Facade of the office tower



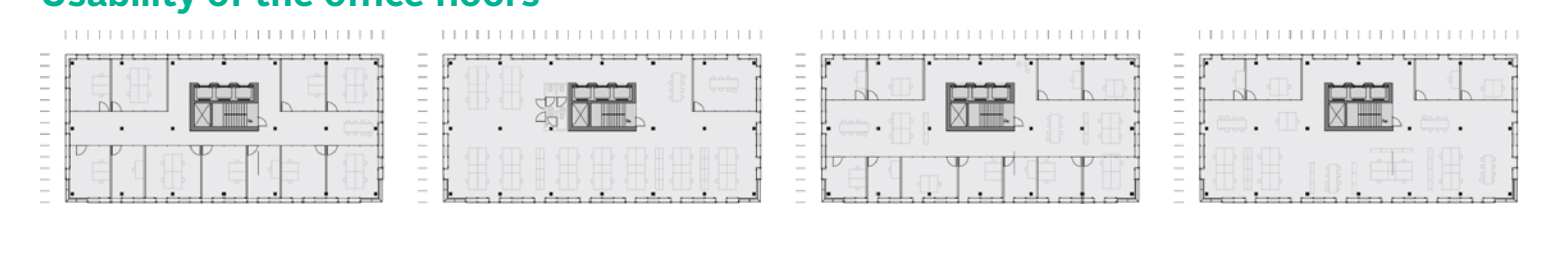
Division of the building for different user groups



Different user groups



Usability of the office floors



The goal of the project is to create a design for a recognizable sustainable icon that finishes the UN international territories on the North side, which makes use of its environment to sustain itself in terms of water, power and temperature regulation and which complements the green space of the existing park. The design should also accomplish a balanced architectural configuration on the plot with the existing UNHQ and resolve the security problems as well as deal with the different flows of people that use the building. The project's difficulty lies both in resolving the site's architectural configuration and in creating a sustainable icon.

The UN site is a piece of land with the status 'international territory', which faces many problems concerning safety and control of the location. The UN Headquarters with its strong geometry and monumental status, designed by a team of 13 international renowned architects, also forms a challenge to add (up) to.

Next to these problems of handling the site and the relation to UNHQ, the question 'how the building should represent its function' is an important issue in the project, or, in other words, 'what a sustainable icon should look like'.

In the design the biggest problem of UNHQ, the presence of FDR-drive, is managed by relocating this highway in a four-lane double level tunnel in East River, with a public park on top. In this way, the waterline recreational zone of Manhattan can be completed. The international territories are transformed into a podium again, as it was meant in the original design. UNEC is located on the north side, which was also originally intended as a space for an extension. In this way the plot gets a clear border on the North side. The ground near the General Assembly is lowered to create an entrance under the podium of the Assembly. By this mean, the security checkpoint in the temporary security tents on the podium can be moved to the basement of the Assembly.

The program of the UNEC building demands a large amount of offices and a lot of meeting, gathering and exposition functions. These office functions ideally need a space with a maximum depth of 14 to 15 meters between the facades to create an efficient surface in terms of daylight and floor layout. The other functions could also fit in this dimension, but ideally need to be interconnected on the horizontal plane to create an informal landscape that could be discovered by visitors. Thus, the building is split up into the office functions, which should be fitted in a volume with a maximum depth of 15m, and the other functions, oriented in a horizontal configuration. This division somewhat resembles the configuration of UNHQ that consist of an office slab and a configuration of volumes on ground level that houses library, exposition and gathering functions.

To maintain the park that is present on the plot, the north side is lifted and space for the horizontal functions of UNEC is created underneath. This space is shaped like a dome in order to deal with heat flows and ventilation of the space in a more natural way. Hot, used air streams up and accumulates in the top of the dome, while new fresh air is inserted on ground level. From the outside, the lifting of the landscape testifies to the fact that the most important functions of the building are located under the landscape. Also, the hill creates a green wall on the north side of the international territories and thereby provides a more intense experience of the amount of vegetation on the site, which improves psychological aspects for visitors. The dome has windows for daylight and heat retention. These windows are larger on the north side and in the more horizontal parts, where the plants can shade the glass.

The offices are shaped into a tower with an interior depth of 14.5 meters. This tower uses a minimum amount of surface in the park by its configuration in 35 stories. It is inserted in an incision in the hill and an entrance area is created in front of it, which equals the function of the podium to the assembly of UNHQ. With its clear building volume, the office tower signals the presence of UNEC and especially its entrance. The amount of glass in the tower is maximized for view and light. It is acclimatized by a second skin facade with openings on the in and outside. In winter, this facade can be fully closed to create a temperature buffer; in summer the outside can be opened 50% to cool the cavity. In spring and autumn, the offices can be opened to the cavity as well as directly to the outdoor environment (25%). The floors inside are adjusted to fit every type of office space with their depth of 14.7m. The corners of the tower have solar chimneys implemented to ventilate the dome.

With the spatial configuration of the combination of a hill and a glass tower, the UNEC building is an example of the broadness of the term 'sustainable building'. Building under the landscape is one of the oldest ways to create naturally insulated and acclimatized buildings and therefore represents the old modus of building sustainably by using nature. The office tower represents the modern way of sustainable building by implementing high tech solutions.

The materials of the building are all assembled dry for the purpose of recyclability. The construction of the parking garage is made of prefabricated concrete. The dome and tower are constructed from steel. The tower is made with lightweight combined steel-concrete floors that create space for ducts and pipes above the ceiling. The interior landscape under the dome is made with Manhattan Schist from the subway excavations. The volumes that pierce through them are clad with translucent opaque glass panels. The auditoriums inside these volumes are clad with bamboo slats.

In front of the building, on the lowest part of the site, rainwater is harvested into an underground cleansing facility. Heat and cold are stored in a PCM-plant underneath the office tower. In winter, ventilation air is heated here, in summer it is cooled. The plant also provides warm water for the floor heating in the offices and cool water for the cooling ceilings. Energy is created from tidal turbines on the wall of the highway tunnel and from PV-cells on the office tower.

Construction

