

Harmony A-new: alternative high school design

New learning environment for the 21 century

problem statement

Can architecture cultivate the wellness of students in the public education system?

The Claim

A healthy level of wellness for students can be cultivated through bottom-up design in teaching curriculum, learning environment and architecture.

Typology

alternative high school

A school for students that are not up to par with their counterparts in the mainstream public school system.

Why design an
alternative high
school?



We are no longer in the industrial revolution, yet our public school system is still modeled in its image.



The initial role of these class rooms was to prepare students to enter the economy of the Industrial revolution. Auditory learning was rewarded and standardization was ideal.

The layout of these spaces were designed in such a way that the teacher commanded attention and students were forced to partake in education rather than learning.

“The purpose of education is not to service society, it is to create a society.” Thomas Jefferson.



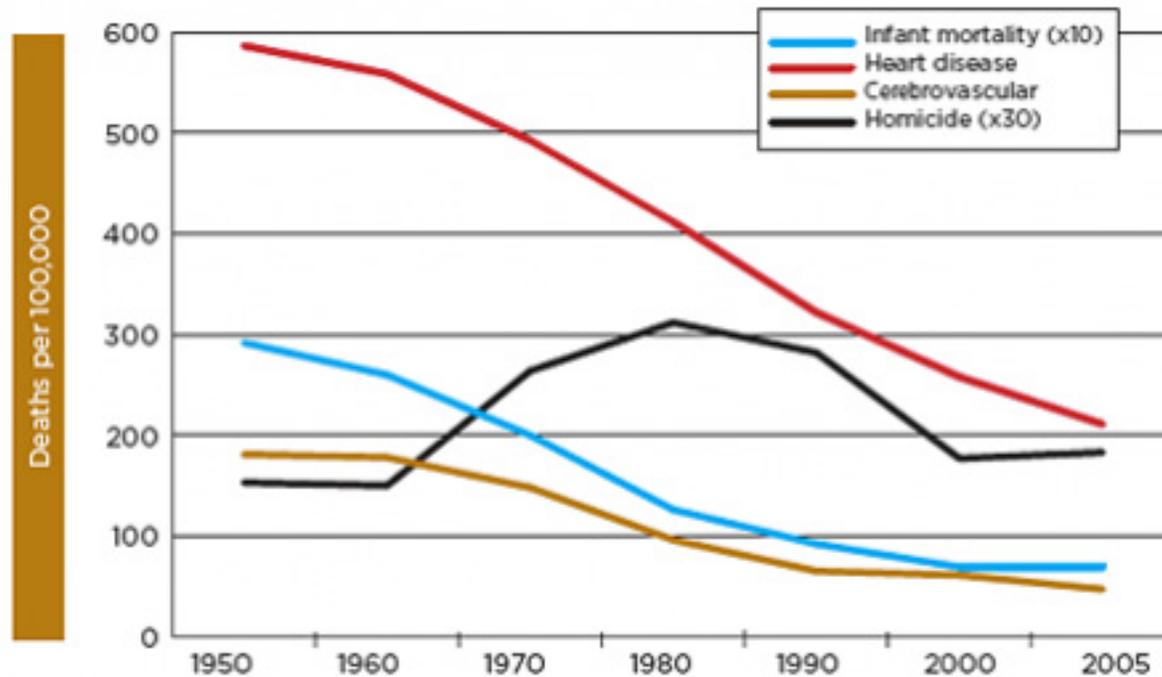
These kind of lecture spaces, are best suited for auditory learning, but what about the other learning styles?



How can we test if these schools still function for learning?



A total of 510 people were murdered in Chicago during 2008. Eighty percent of these victims were killed by gunfire. Nearly half were between the ages of 10 and 25



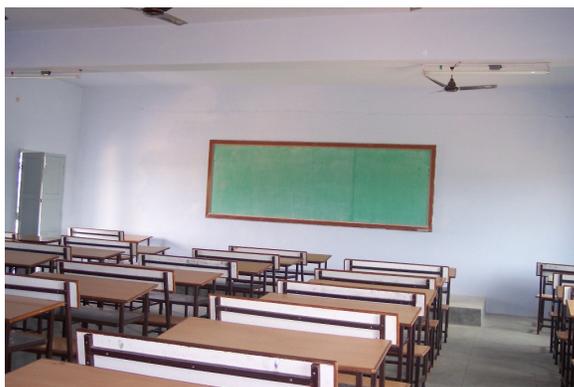
So what is level of wellness of the students from these school?

How can architecture improve the level of wellness for these types of youth?

Educational Reform
V.S
Learning Revolution

“Death to education... the
dawn of learning.”

These spaces are only designed for one kind of learning and one kind of teaching style.





hallways use an immense amount energy to function but they are only used for a few minutes through out the day.

Static rooms= bulky structure





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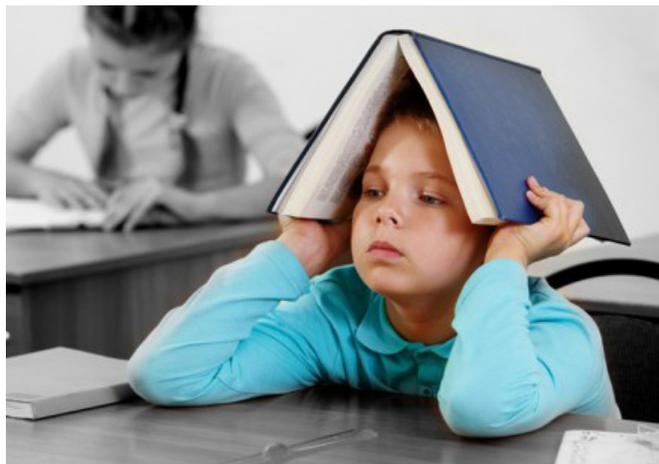


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Class rooms are only deigned for one kind of learning and one kind of teaching style.

So what should a
school of the 21st
century look like?



Class rooms will be replaced with learning studios. Here students will learn with bottom-up personalized curriculum designed to stimulate the mind, body and soul.



Class rooms will no longer be need because teacher will no longer be a “sage on the stage” but rather a “guide on the side.”

Advancements in software will allow teachers to closely monitor the learning curve of each individual student, thus bridging the gap between learning and information.

The only problem is that school must be willing to make drastic changes in their teaching methods.

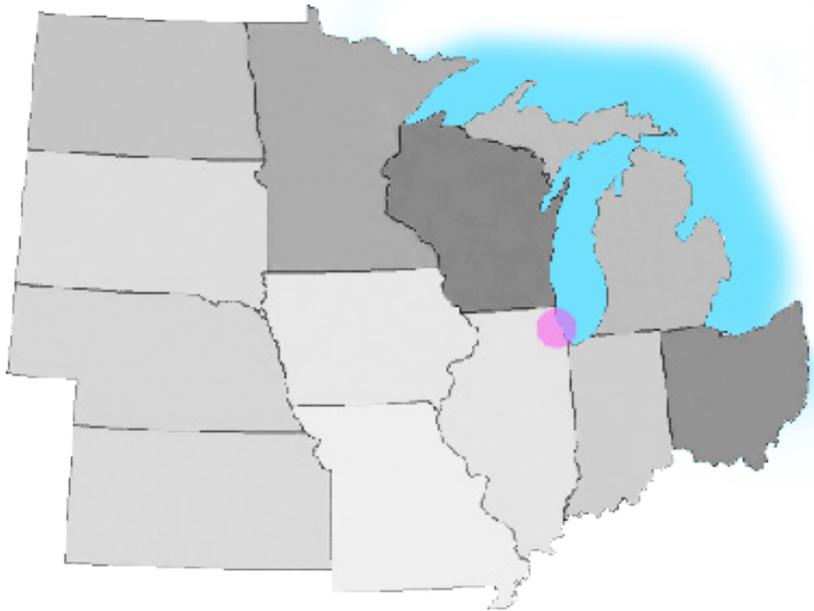
“The U.S Department of Comers ranked 55 industry sectors by their level of IT intensiveness. Education was ranked #55. The lowest. Below coal mining.”



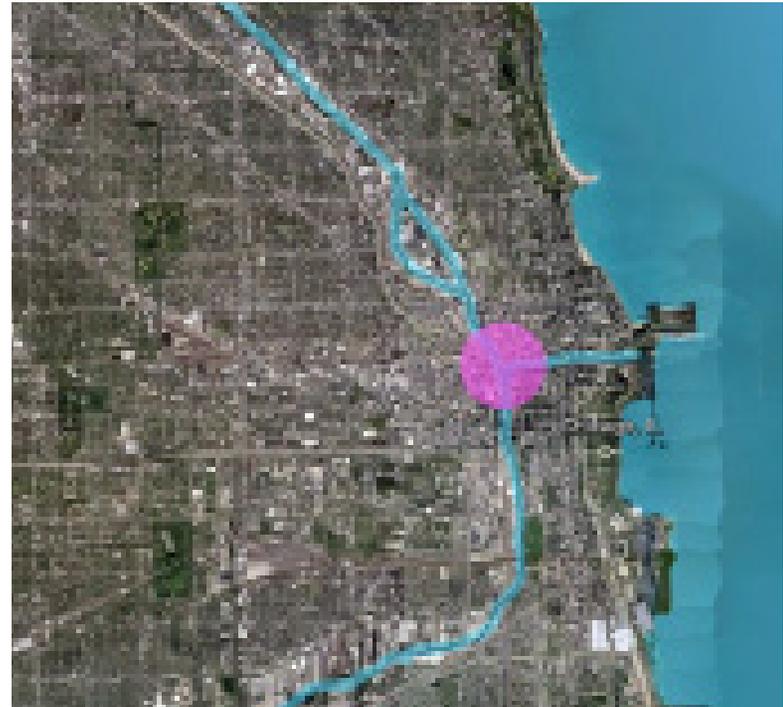
Project based learning

site information

1.Region: Midwest USA



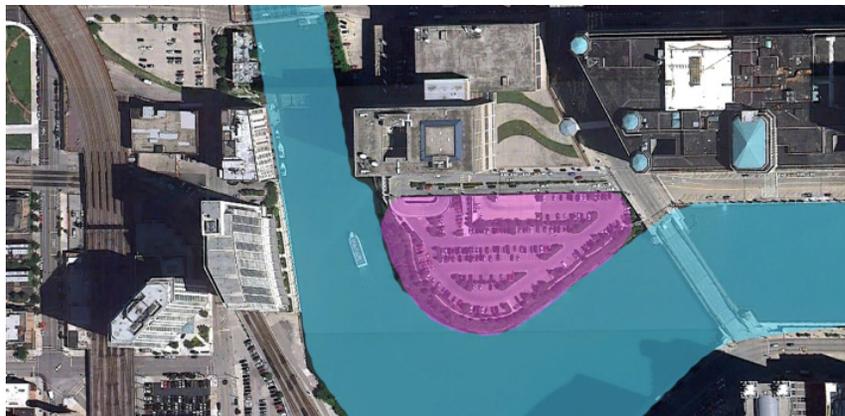
2.City: Chicago, IL



3.Site:
350 West Mart Center Dr.
Chicago, IL 60654

This particular site is ideal because of its location which is in the heart of downtown Chicago. It is surrounded by a busy downtown district and by a scenic river. This site is unique from other downtown sites, in that it is sounded by both the urban city and nature.

The site's proximity to the many amenities that downtown has to offer is ideal in order to reincorporating the students back into the mainstream school system. The site is within a 10 minute walking distance from Grand Central Station, and a 5 minute walking distance to several bus stops. The site has several access points for the public bus system. The site is also free from surrounding tall built structures to the south that could reduce its solar access.

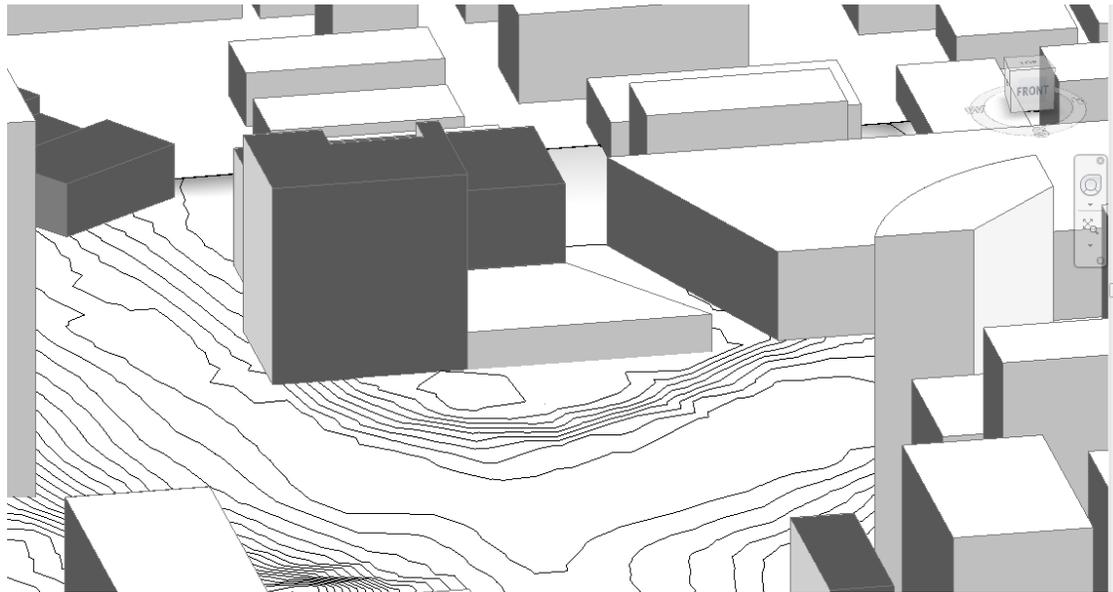
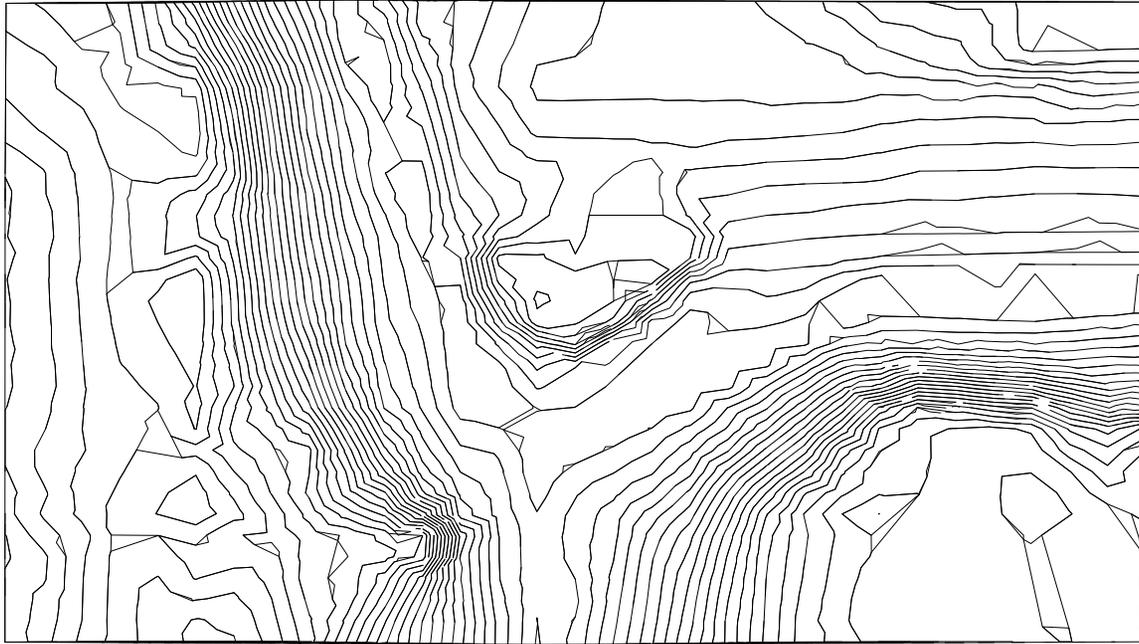


Midterm

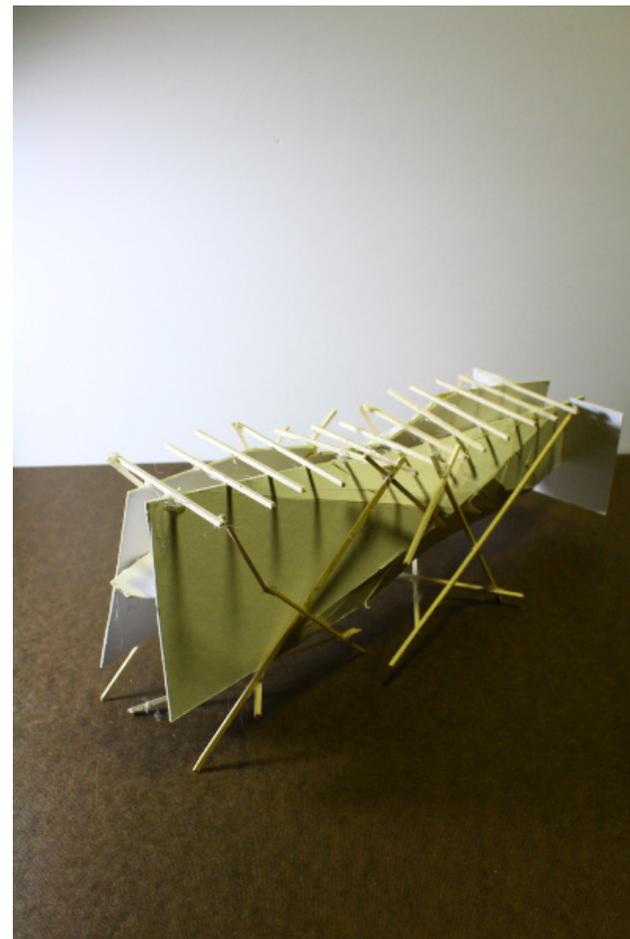
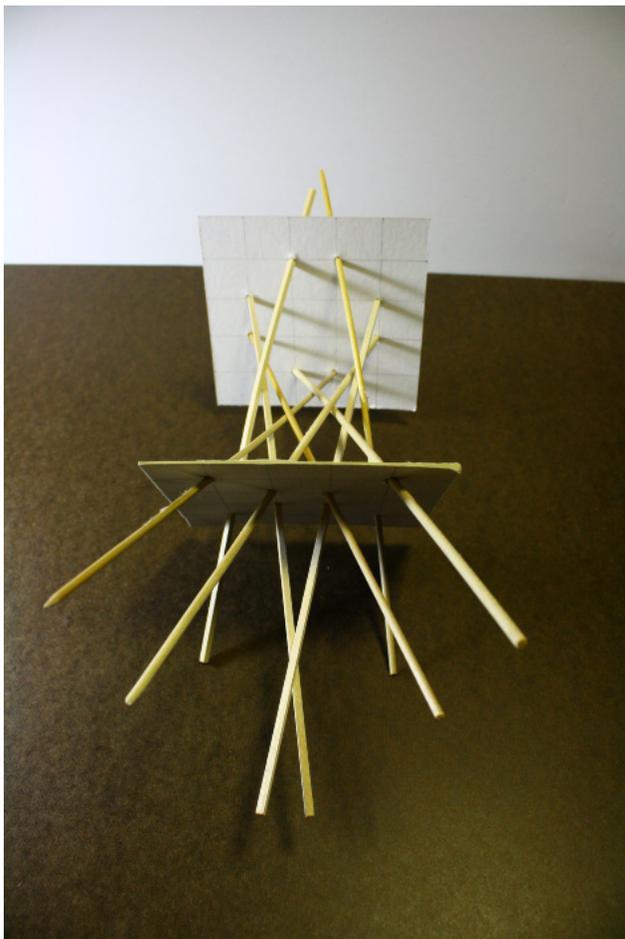


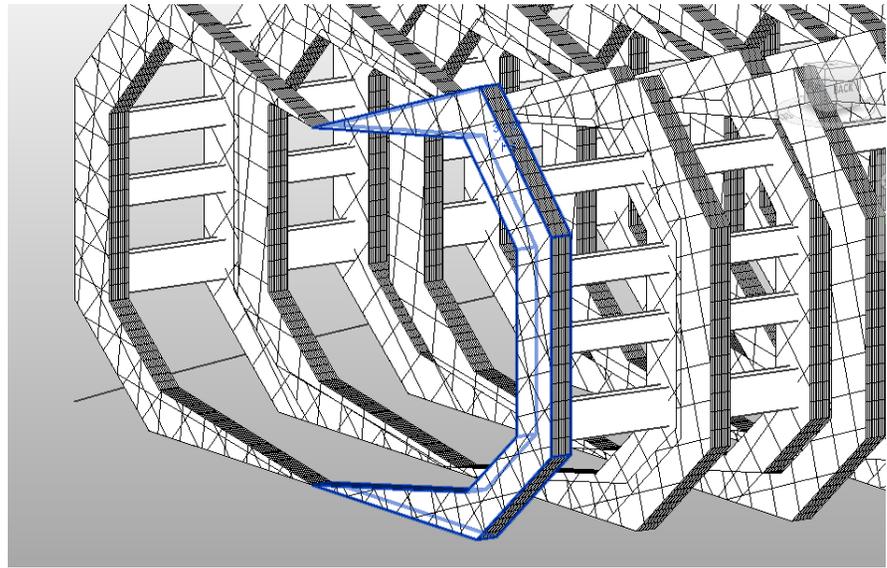
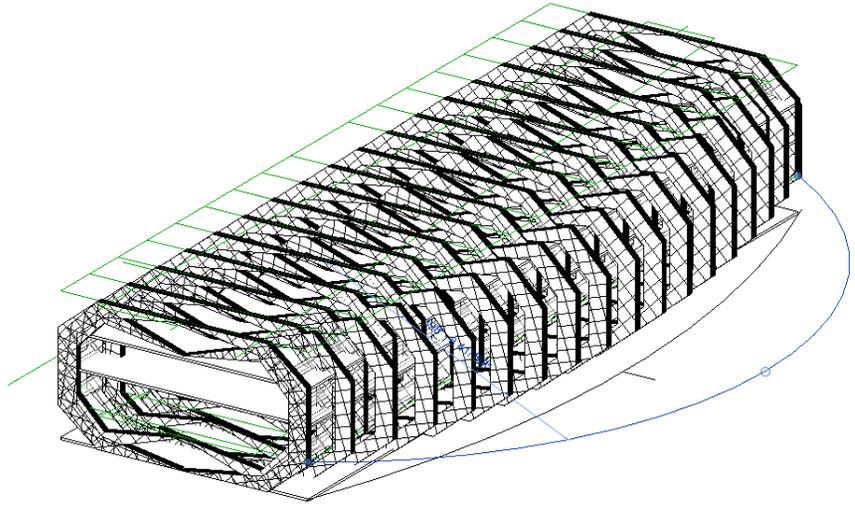


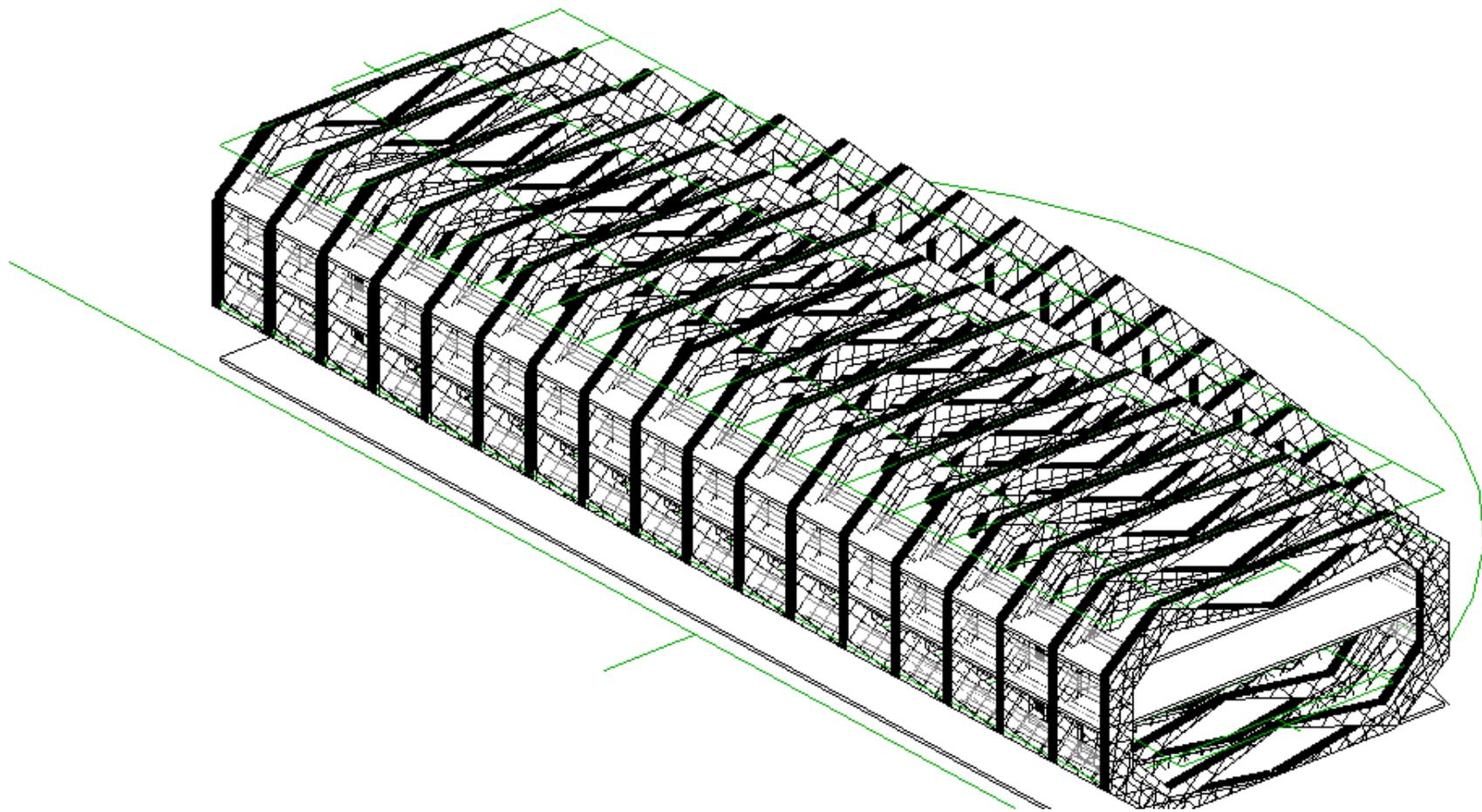
Topography

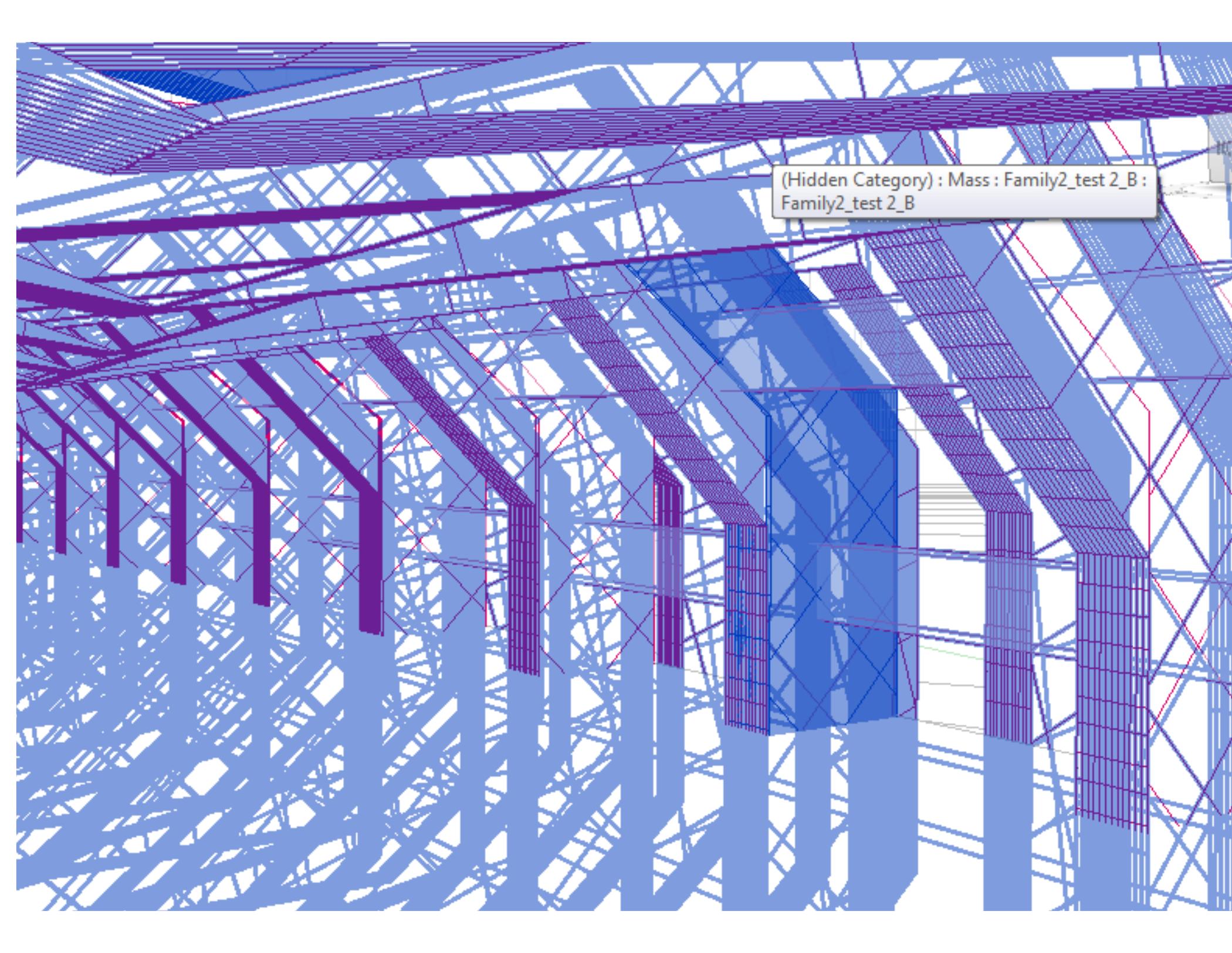


Process

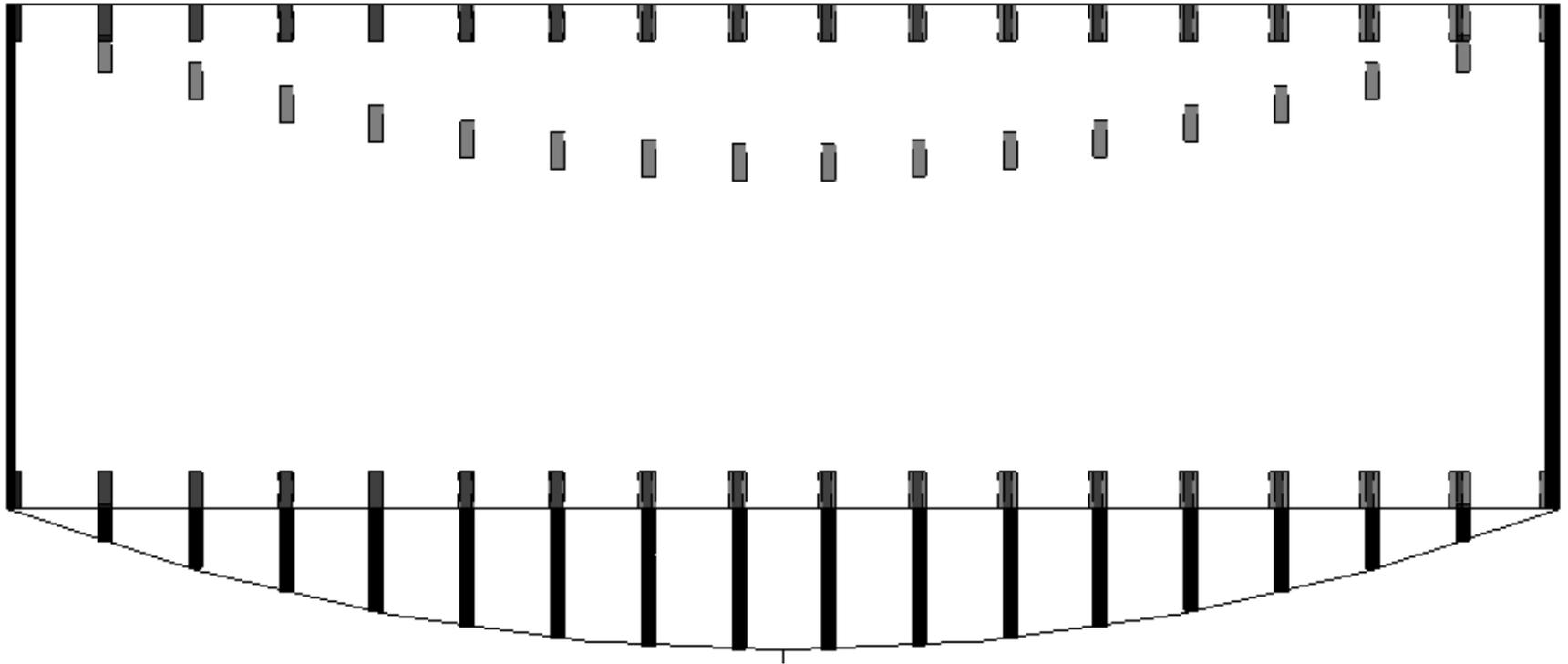


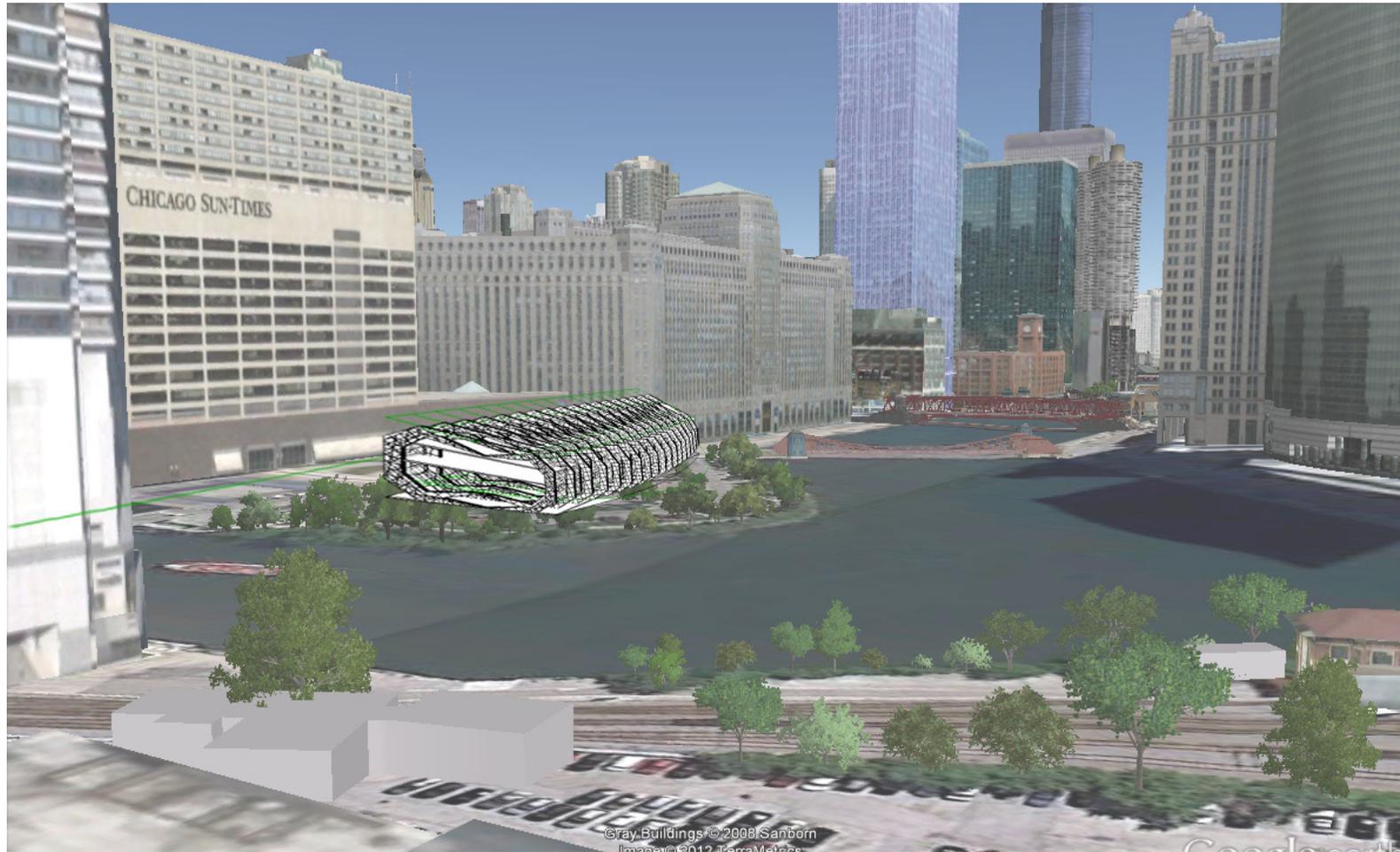






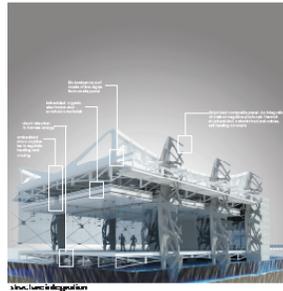
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Family2_test 2_B





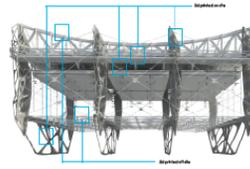
This new alternative high school is designed in such a way that those students whom would normally fail in the conventional system, can succeed in a system that is simultaneously aware of their strong points and negative behavioural tendencies. An example of this would be large amount of flexible open spaces (easily observed and regulated by administration) where students can learn useful trades. The hope is that once they have completed their training, they will be able to find a steady source of income. This will directly reduce the tendencies to rely on illegal forms of obtaining money to provide for themselves and their families which in turn also improves the overall quality of an urban city.

final design



structure integration

Harmony A-new alternative high-school



principle structure

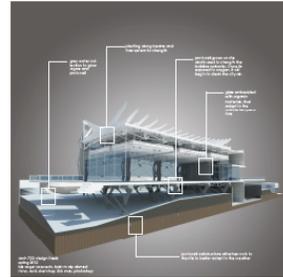
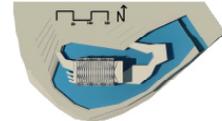
Problem statement
How can architecture promote living in harmony with our natural environment, in order to ensure a healthy level of overall wellness for the occupant?

We are currently living in the technology era
and the current public school systems in the United States is still outdated after the industrial revolution. The old model of public education has long past its era. We need to embrace new technologies to enhance the potential of the future generation.

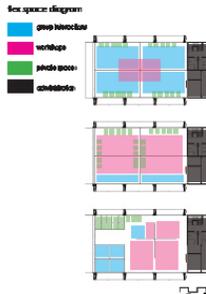
The plan of action for the new alternative high school will focus on a "learning revolution" as opposed to education reform. Unlike in many ways is our attempt to fix a broken system with the same methods that landed it. With the help of new technologies and software, teachers are able to become a "guide on the side" instead of a "langer on the stage". The method of teaching is more meant to our natural way of learning. Humans are engrained to learn by more than just auditory learning.

We are no longer in the industrial revolution
yet the practice of making buildings still follow the Victorian method of structure, and the industrial revolution's thirst for mass production. At last, building technologies of today, can only be carbon neutral. Architecture must look towards being carbon negative, in order to ensure the wellness the occupants.

Program
The proposed structure will house an alternative high school in the heart of downtown Chicago. The spaces in the new building will be more dynamic and dynamic, as the space adapts to the user instead of the user adapting to the space. The structure will be able to house learning curriculum focuses heavily on project based learning, in turn the projects are completed throughout the community, to keep with the "city beautiful" movement.



cross section



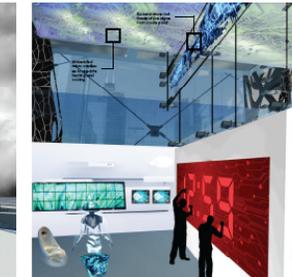
floor space diagram



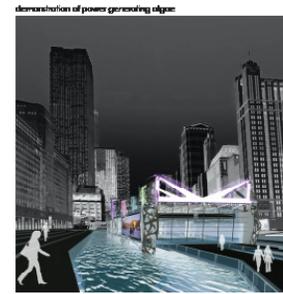
student entrance



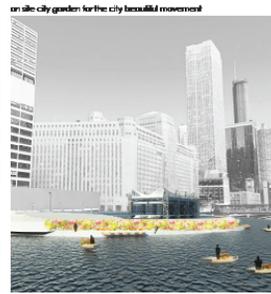
public entrance



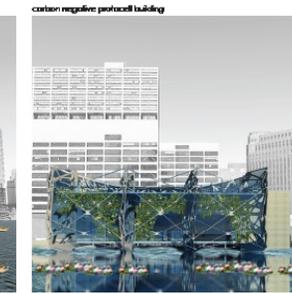
flexible learning studio



demonstration of power generating edge

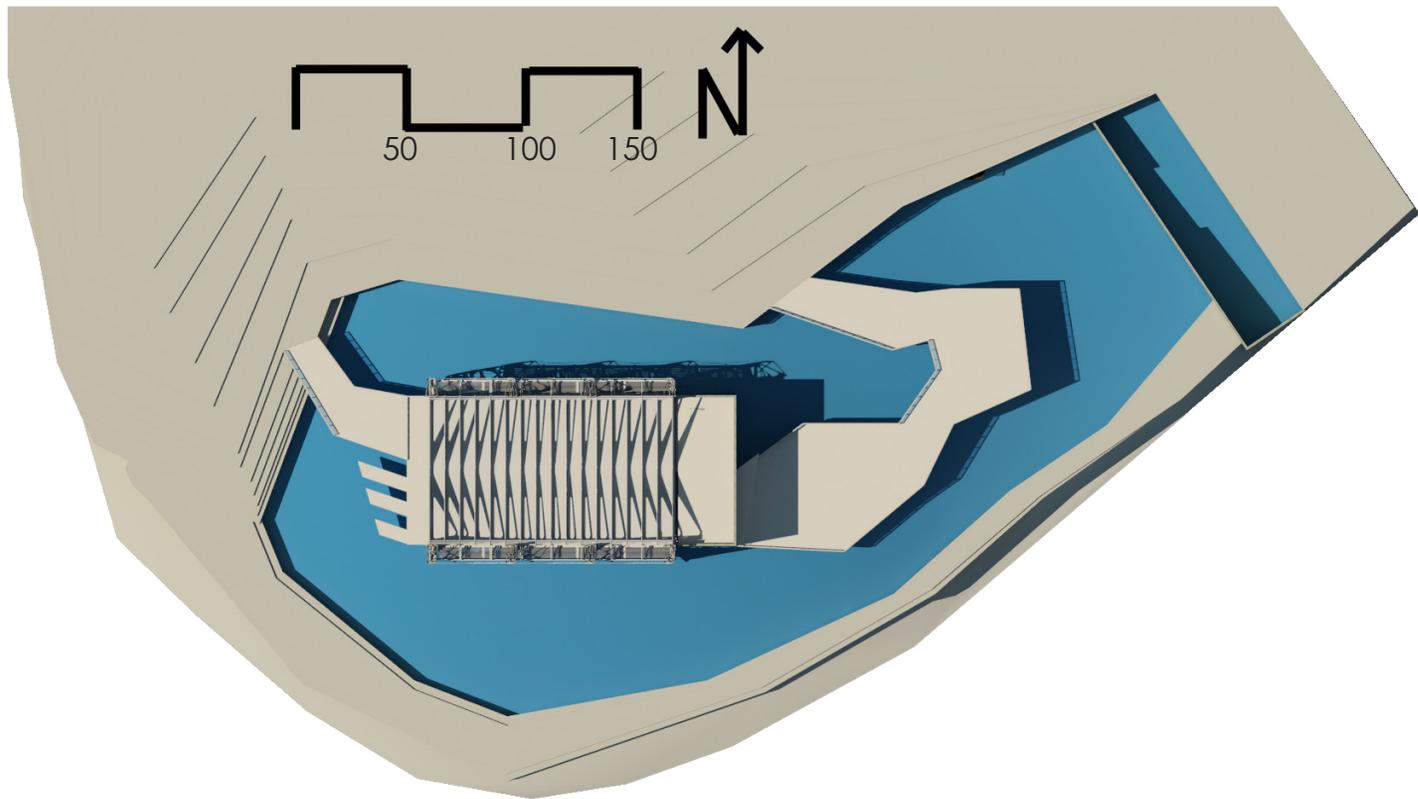


on-site city garden for the city beautiful movement



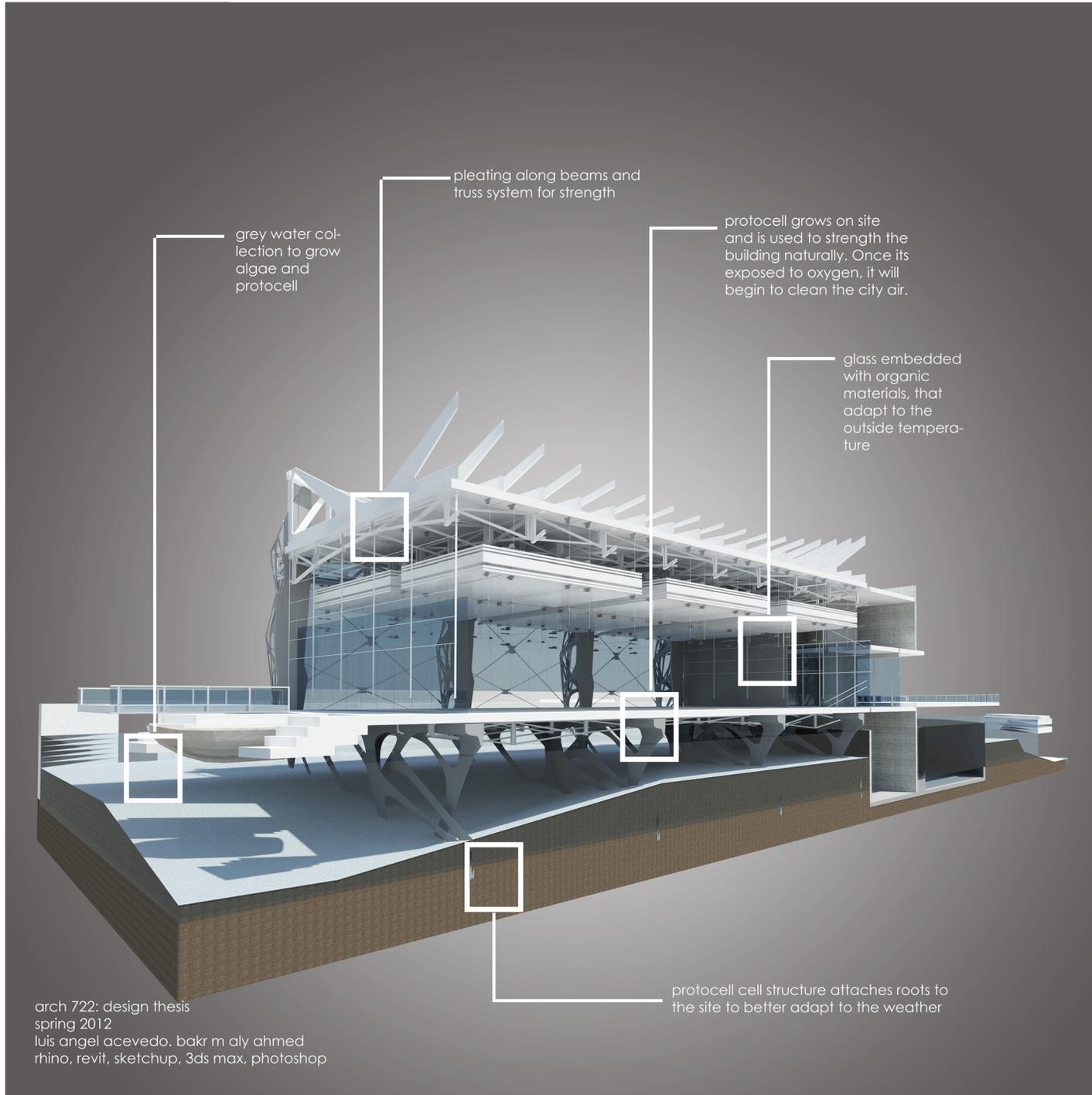
carbon negative protocol building

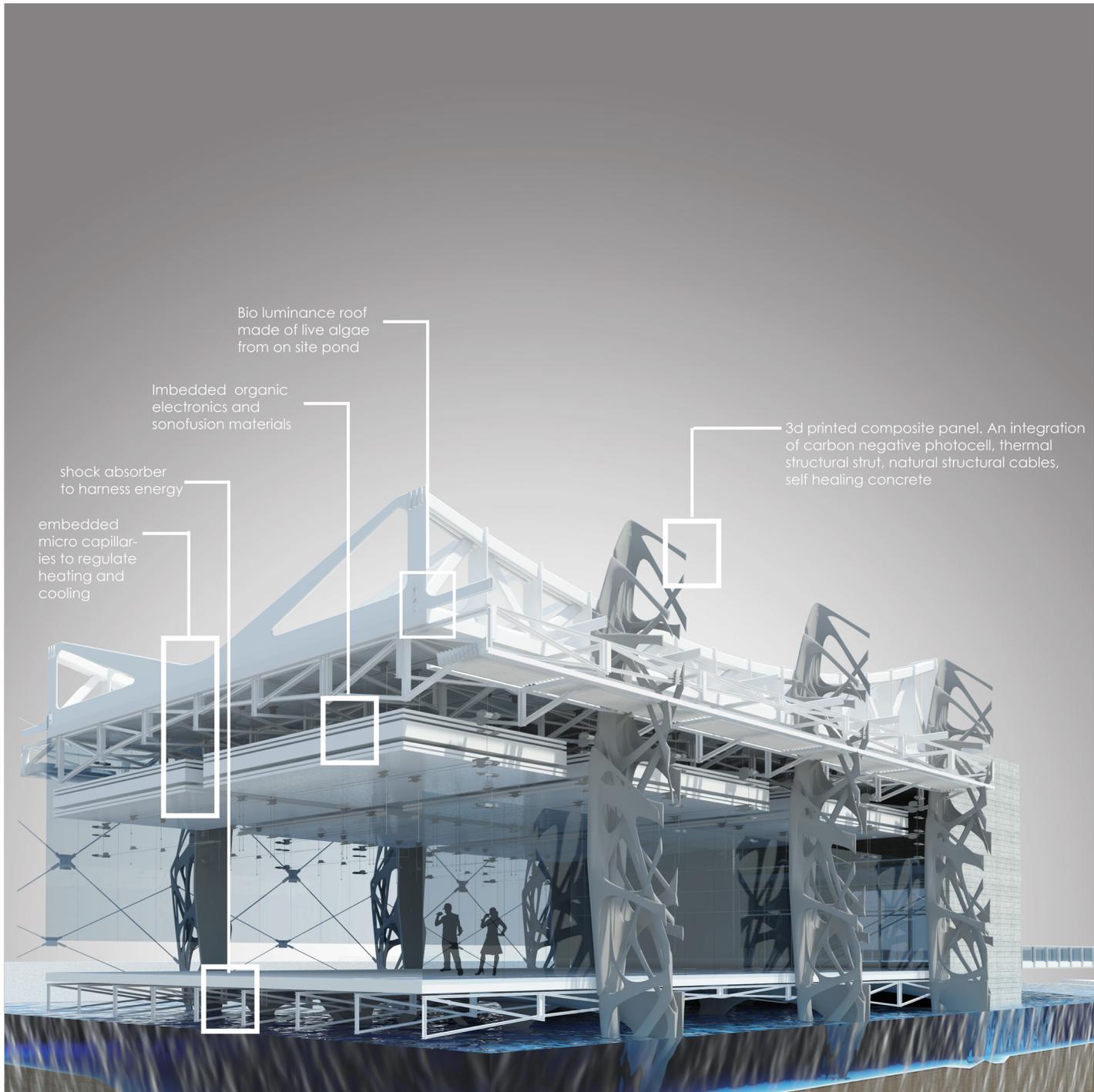




Animation

cross section





Bio luminance roof
made of live algae
from on site pond

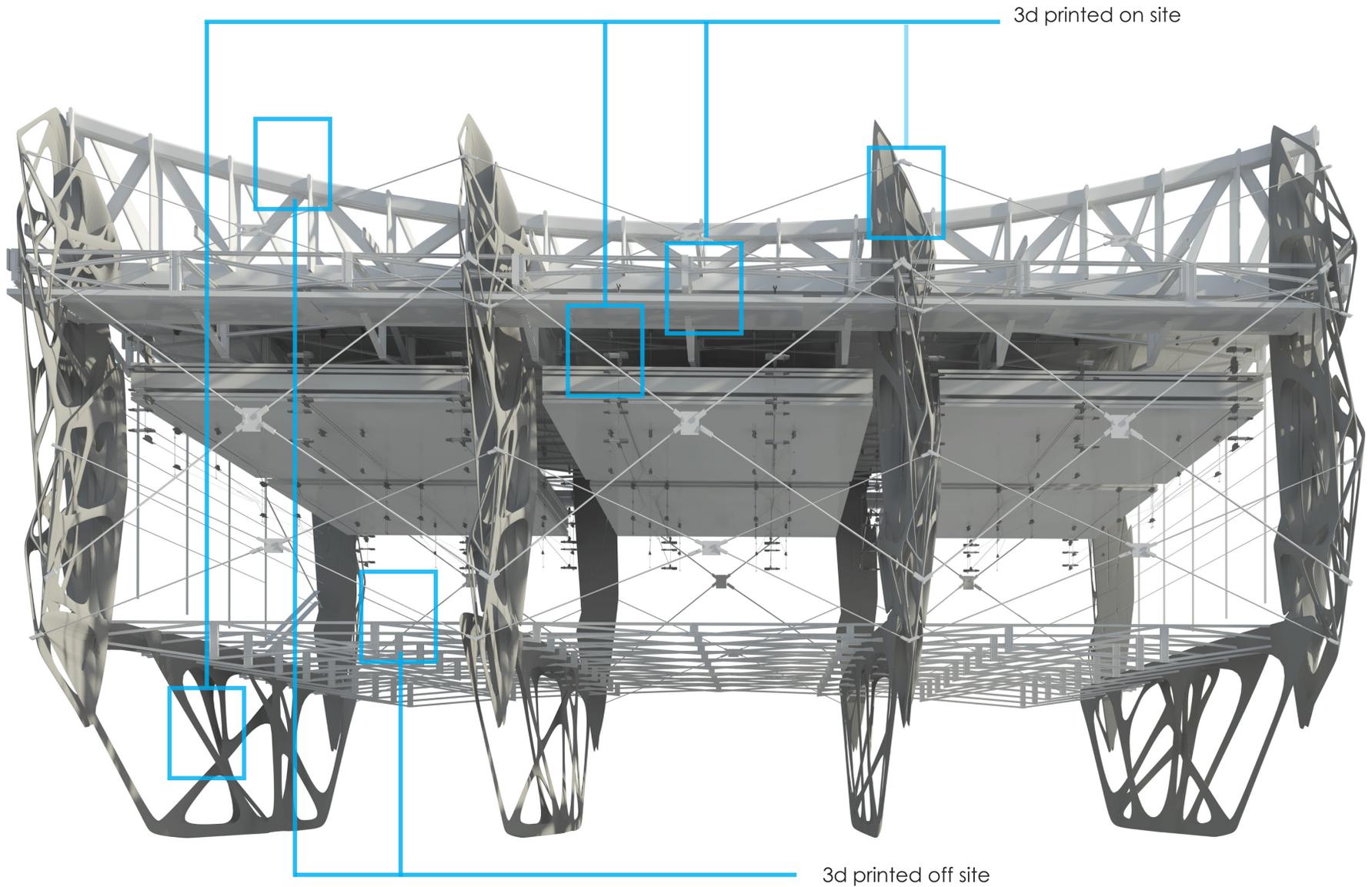
Imbedded organic
electronics and
sonofusion materials

shock absorber
to harness energy

embedded
micro capillar-
ies to regulate
heating and
cooling

3d printed composite panel. An integration
of carbon negative photocell, thermal
structural strut, natural structural cables,
self healing concrete

structure integration

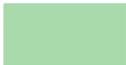


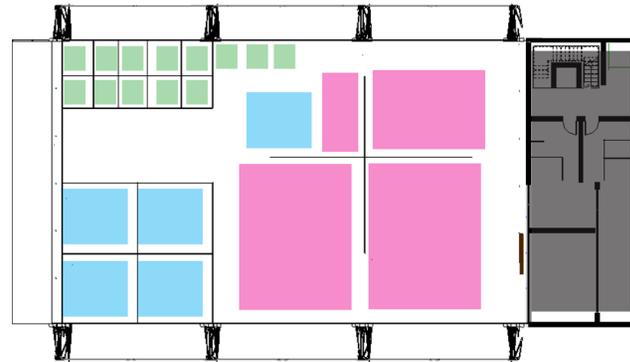
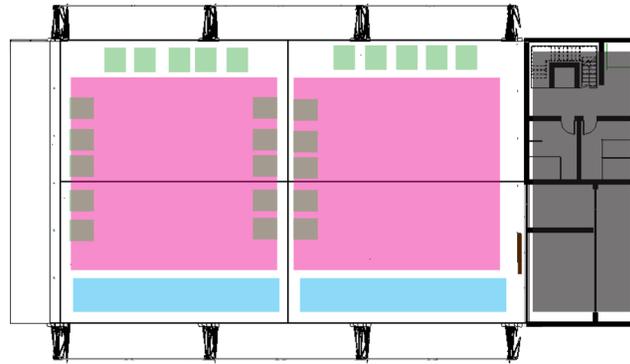
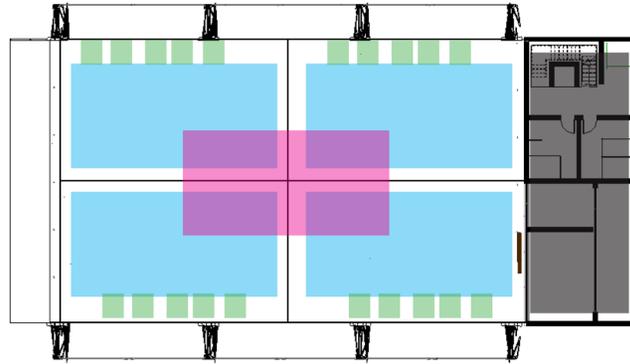
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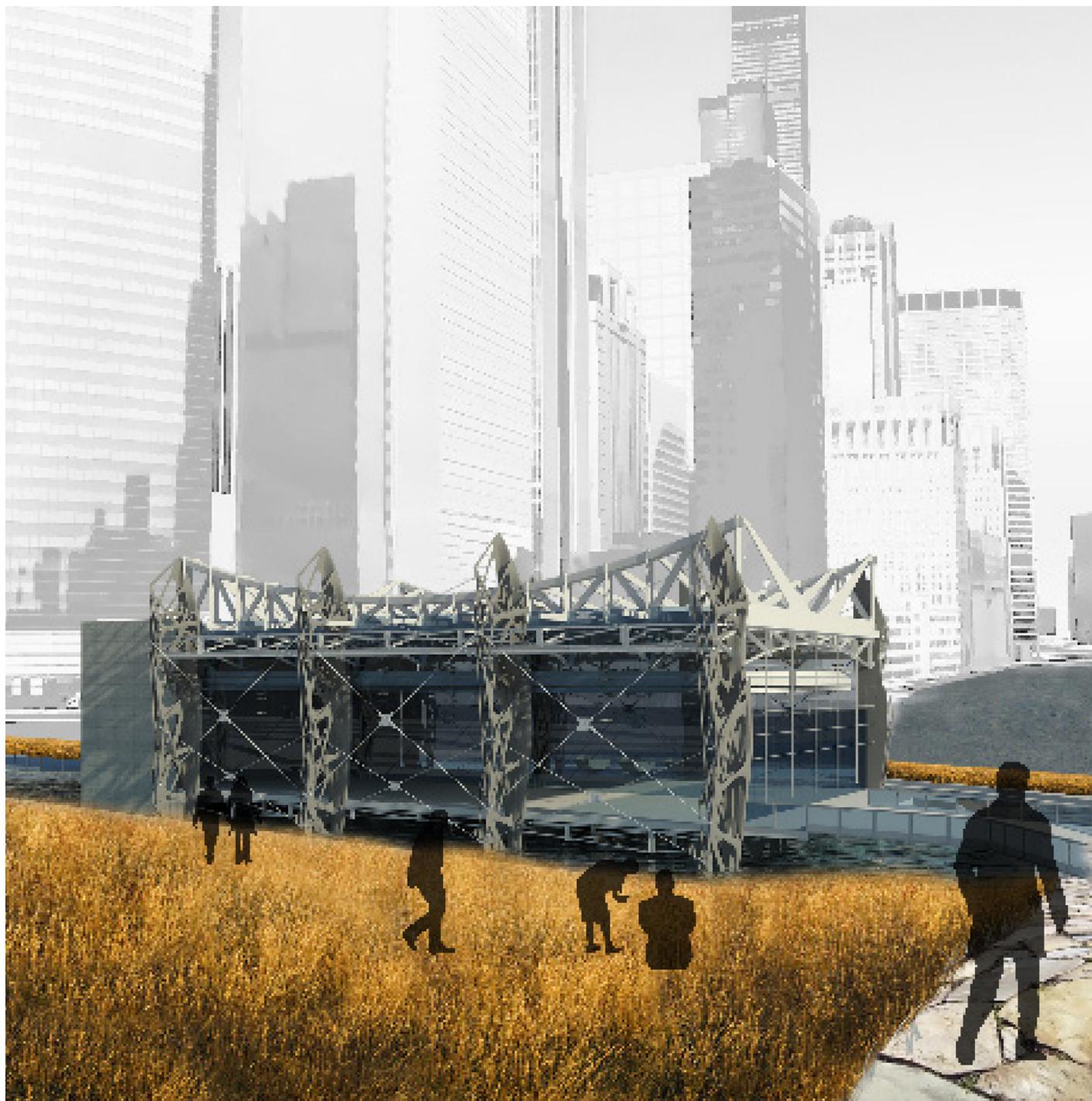
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principle structure

flex space diagram

-  group interactions
-  workshops
-  private spaces
-  administration

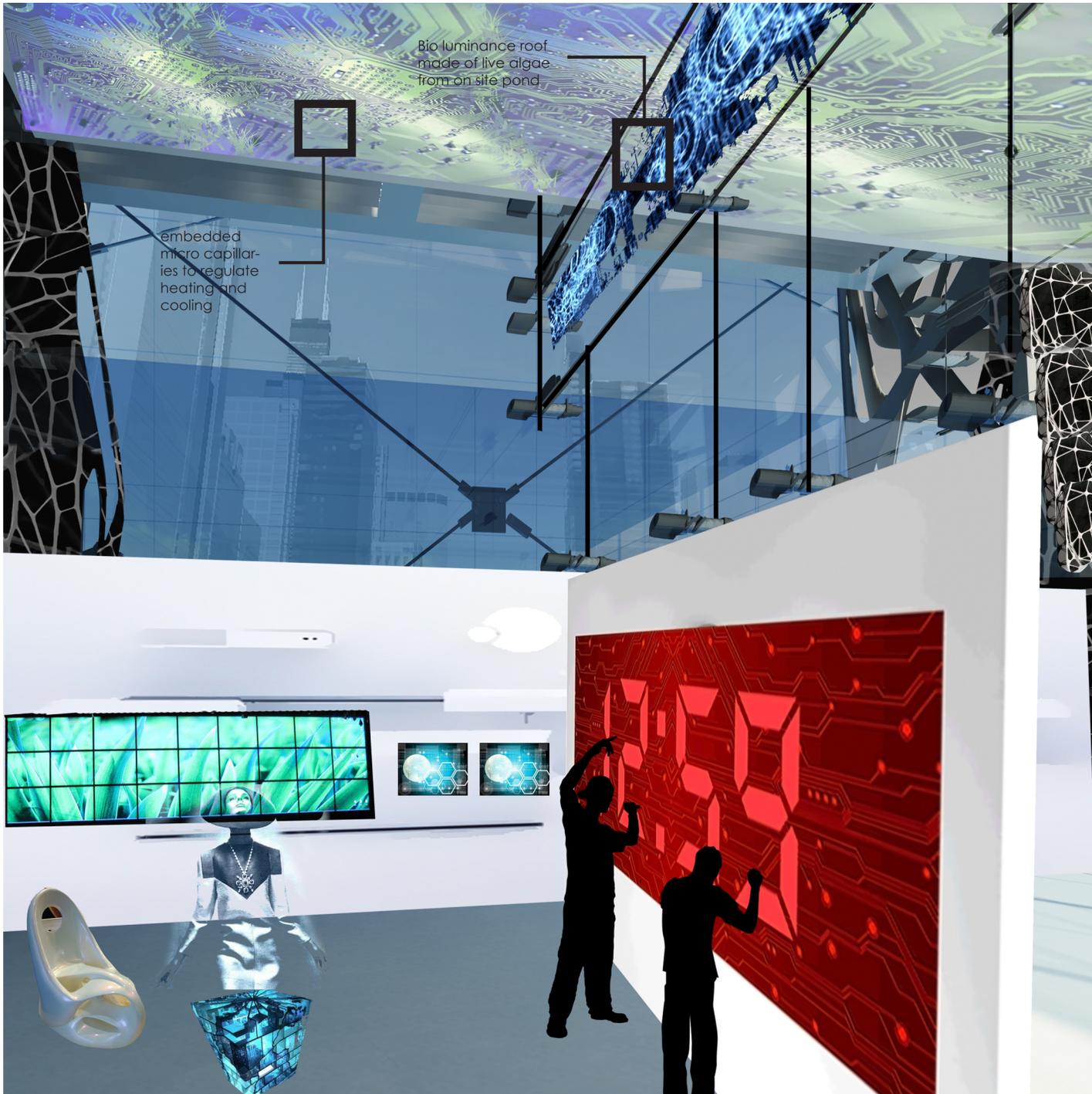




student entrance



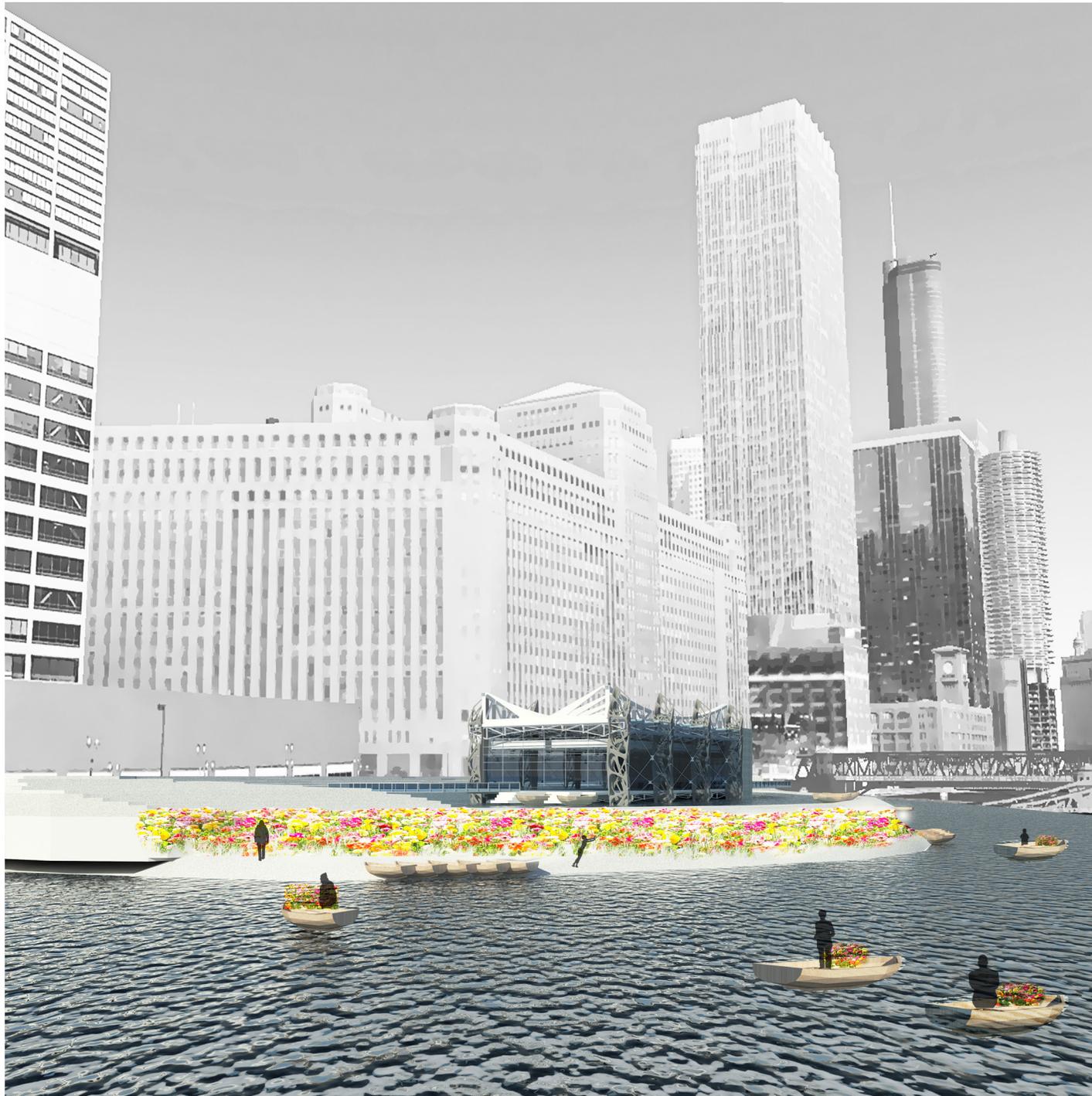
public entrance



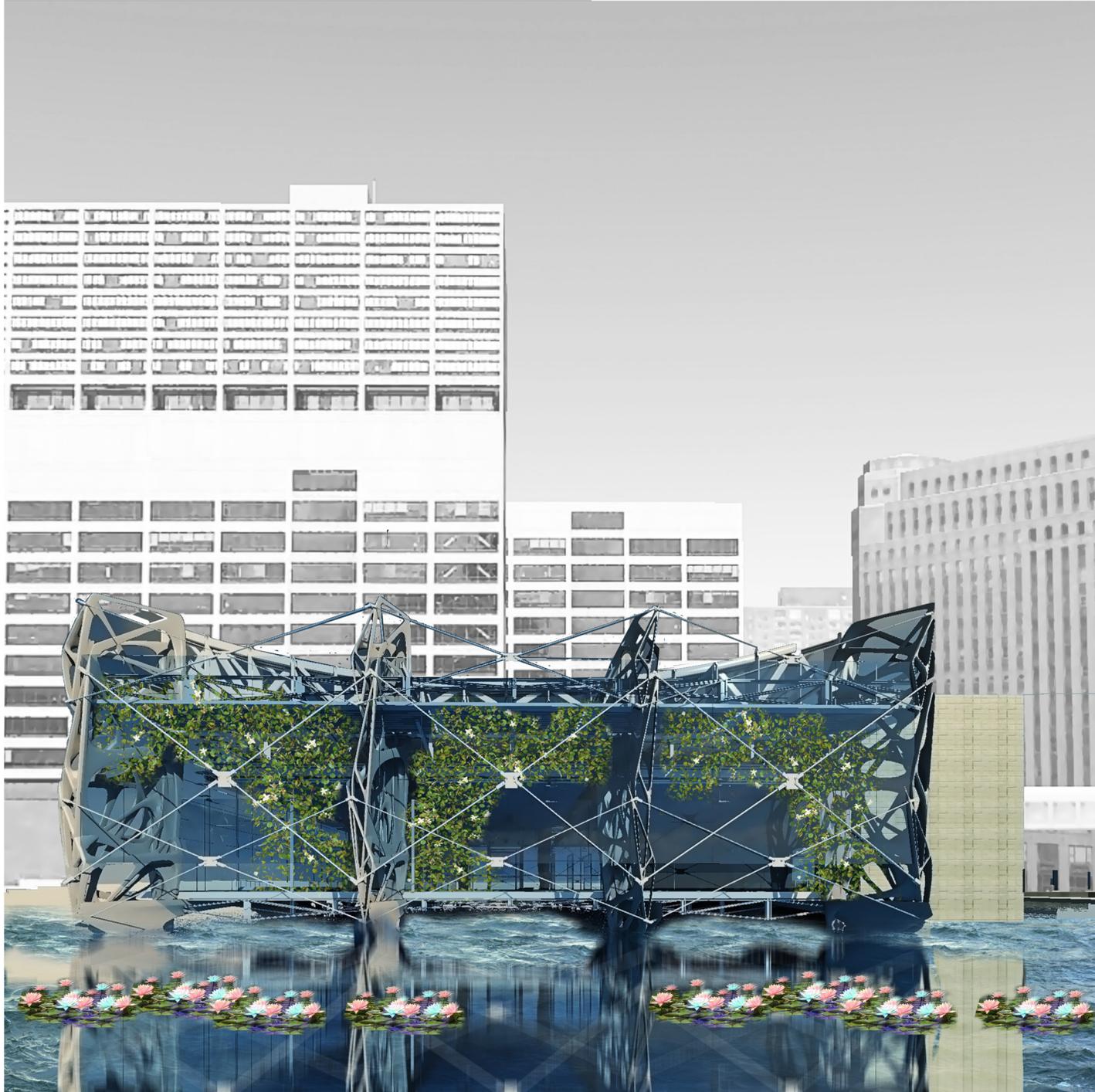
demonstration of power generating algae

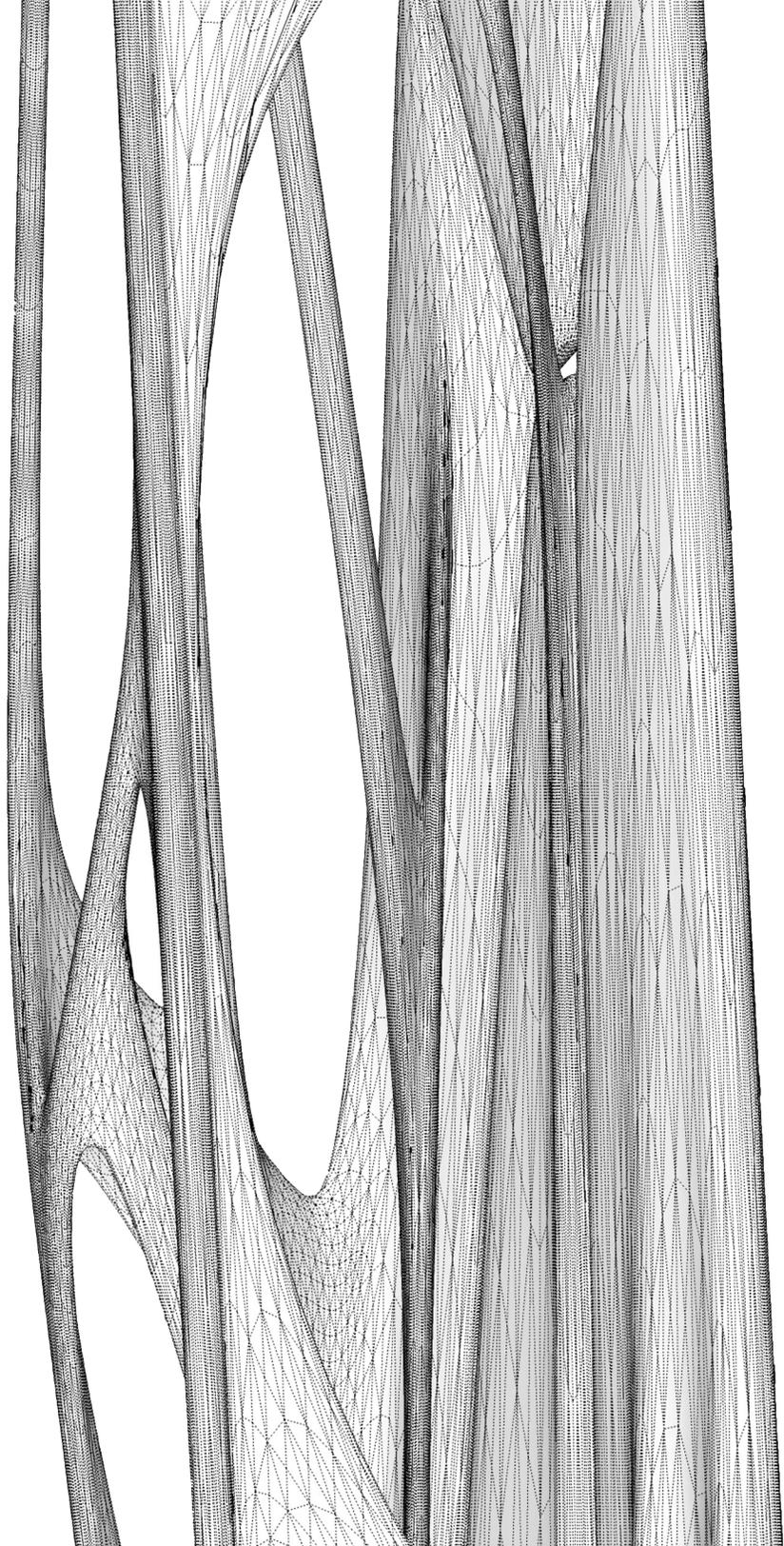


on site city garden for the city beautiful movement

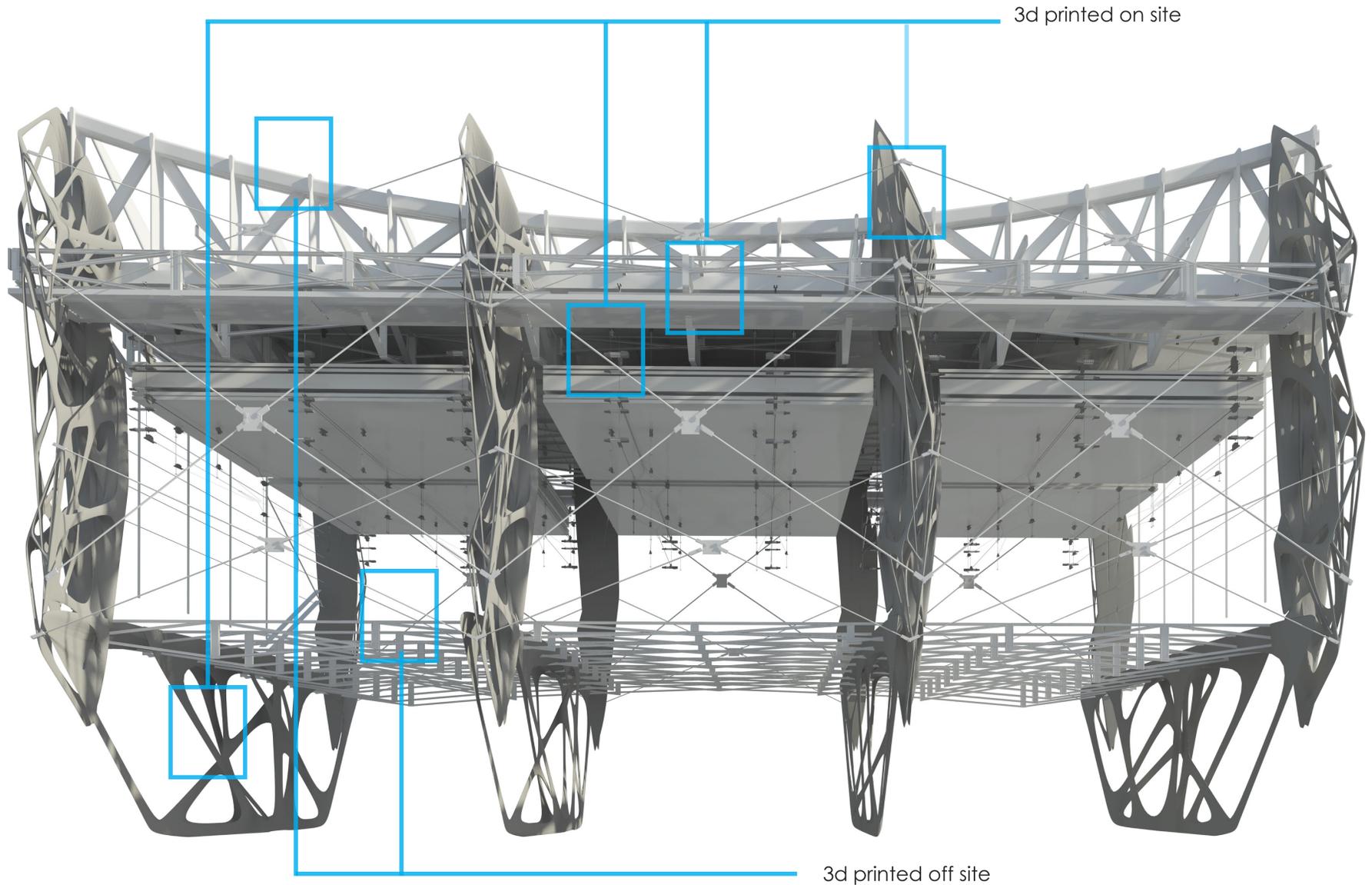


carbon negative protocell building









3d printed on site

3d printed off site

principle structure

