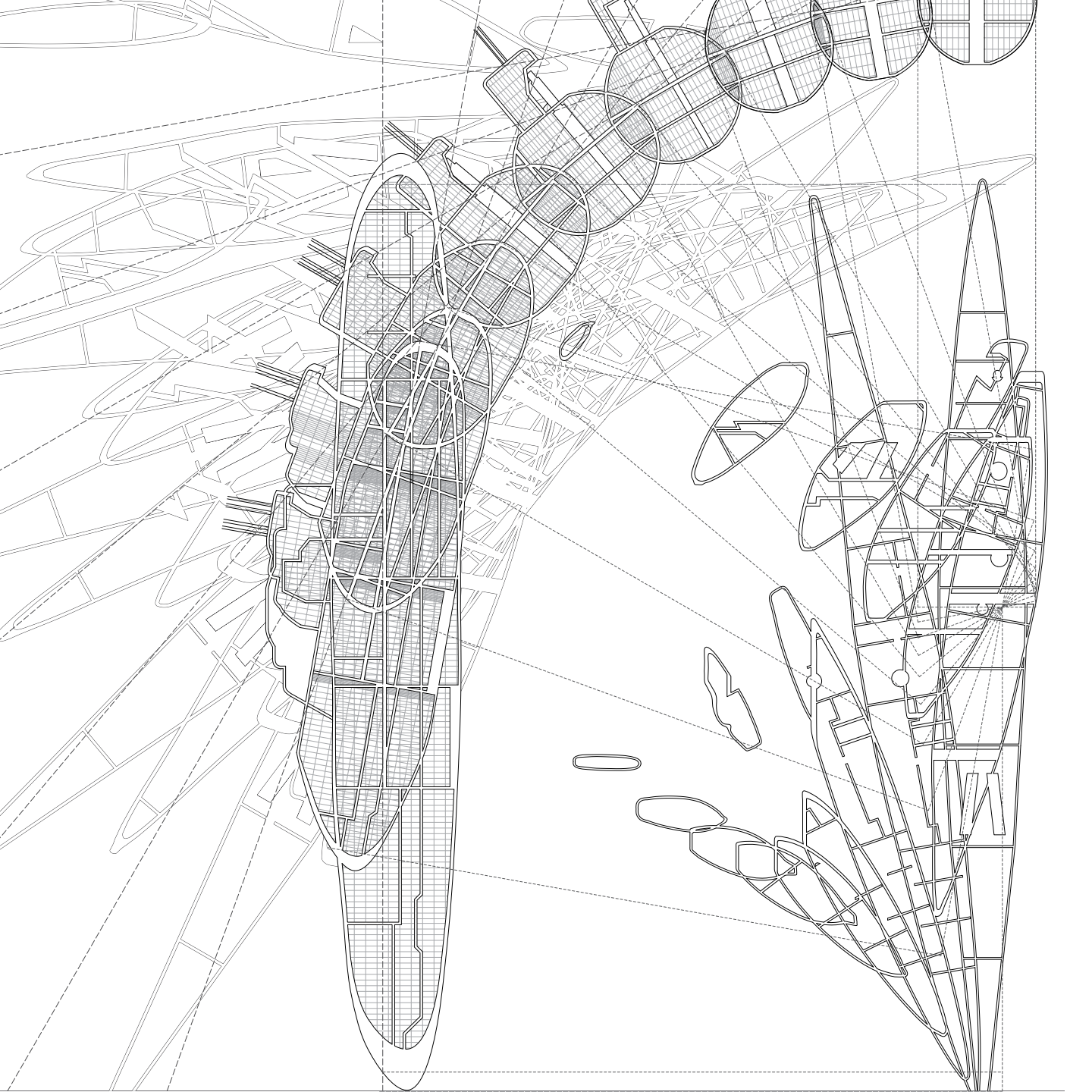
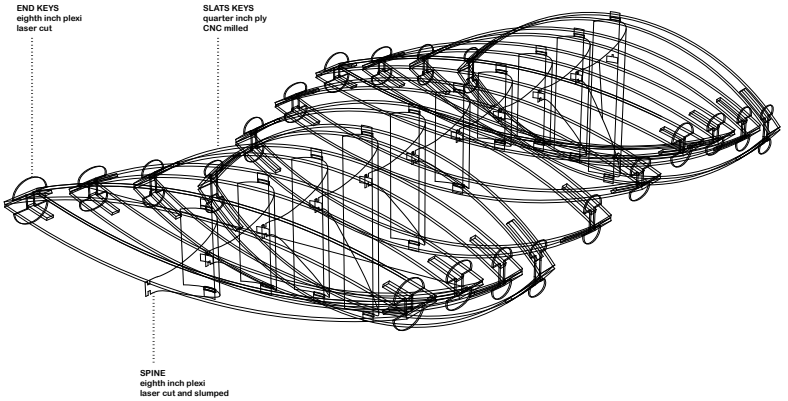
irene e. brisson

contents

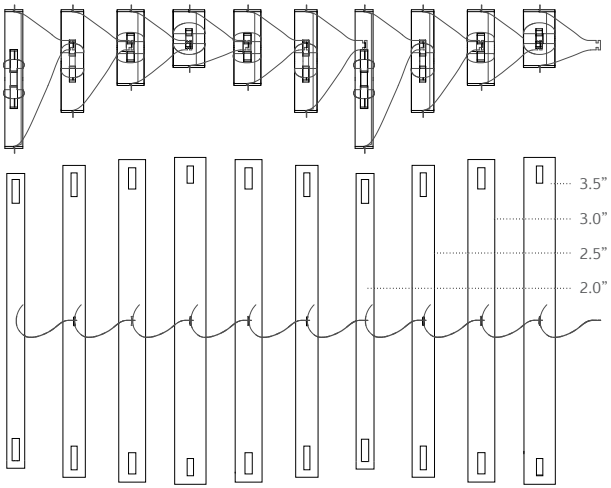




sinusoidal spine structure

design partner: dahlia hamati

The design of an inherently tenuous and unstable system evolved from studies of glueless plexiglass models and the bending limits of birch plywood to identify the limits of friction and tension in a static system. Decreasing widths of plywood strips are used for their greater flexibility to create changing bow heights. The acrylic props notch into each other forming a reflective and distorting spine with a small degree of mobility supporting a chain of undulating ribs.

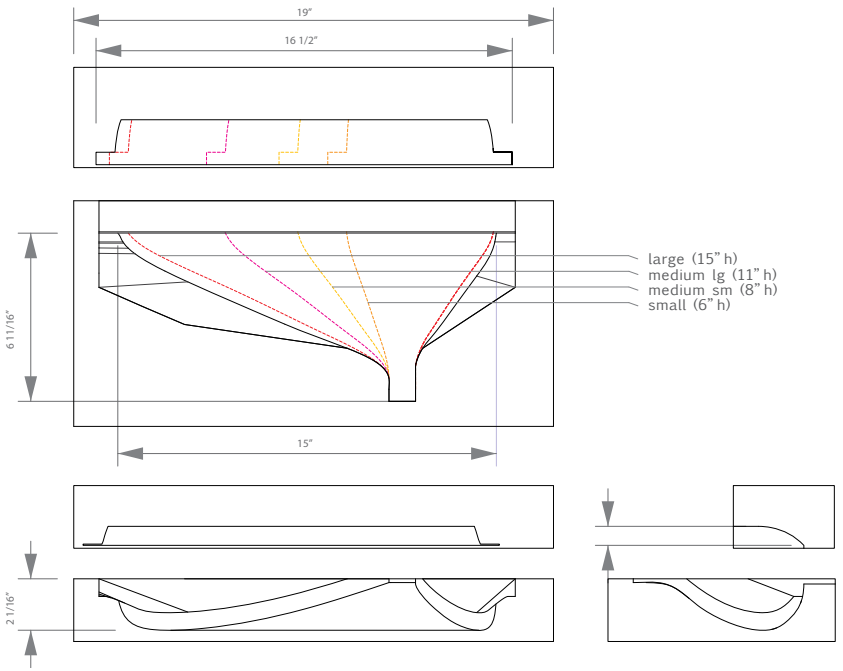


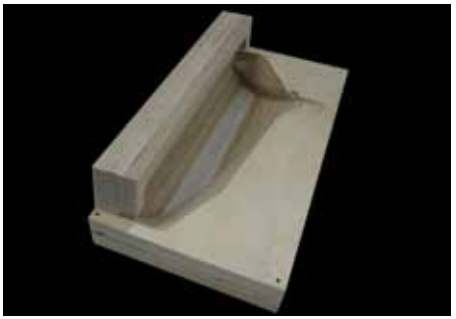
acrylic slump molding

CNC milled 2-part mold
laser cut flat $^{1}/_{8}$” plexiglass

Four shapes of varying lengths were laser cut, then heated in shop oven and pressed into the milled mold. The upper section of the 2-part mold was held in place with clamps to be released after the acrylic cooled and hardened. The curvature of the final shapes provided sufficient stiffness for the plexiglass members to resist the pressure of the wooden slats.

The lower half of all acrylic members are the same shape to create an even bottom surface for the installation and allowing the same mold to be used for all components.



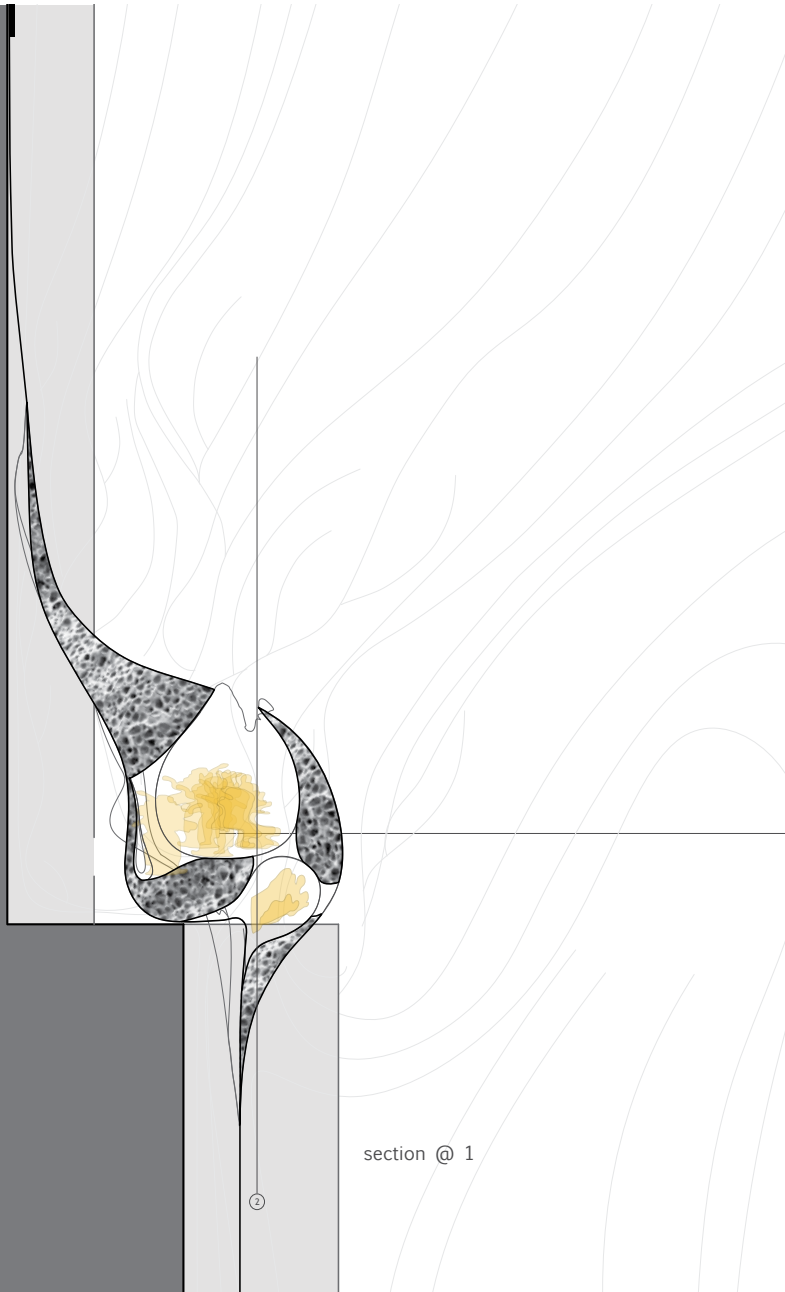


urban wind canyon climate research pod
30 broad st, 26th fl, new york ny

purpose:
due to the complex and dynamic wind patterns in urban canyons there is a lack of functional models for particulate pollution. it has been observed that particle densities vary with height in these situations and continuous monitoring at a series of vertical aligned points would provide a basis for comparison and study.

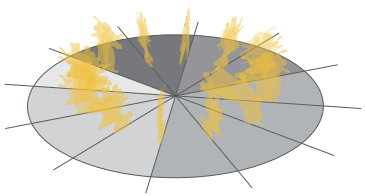
equipment:
primary sensing equipment will be small mass spectrometers mounted every 20 ft. on a cable extending above and below the observation station. on site computers will be run to tabulate the data collected by the spectrometers every 10 minutes as well as provide for the researcher's continuous modeling and simulation investigations. closed circuit television and typical heat and weather sensors will be provided for record keeping of local conditions to validate data.

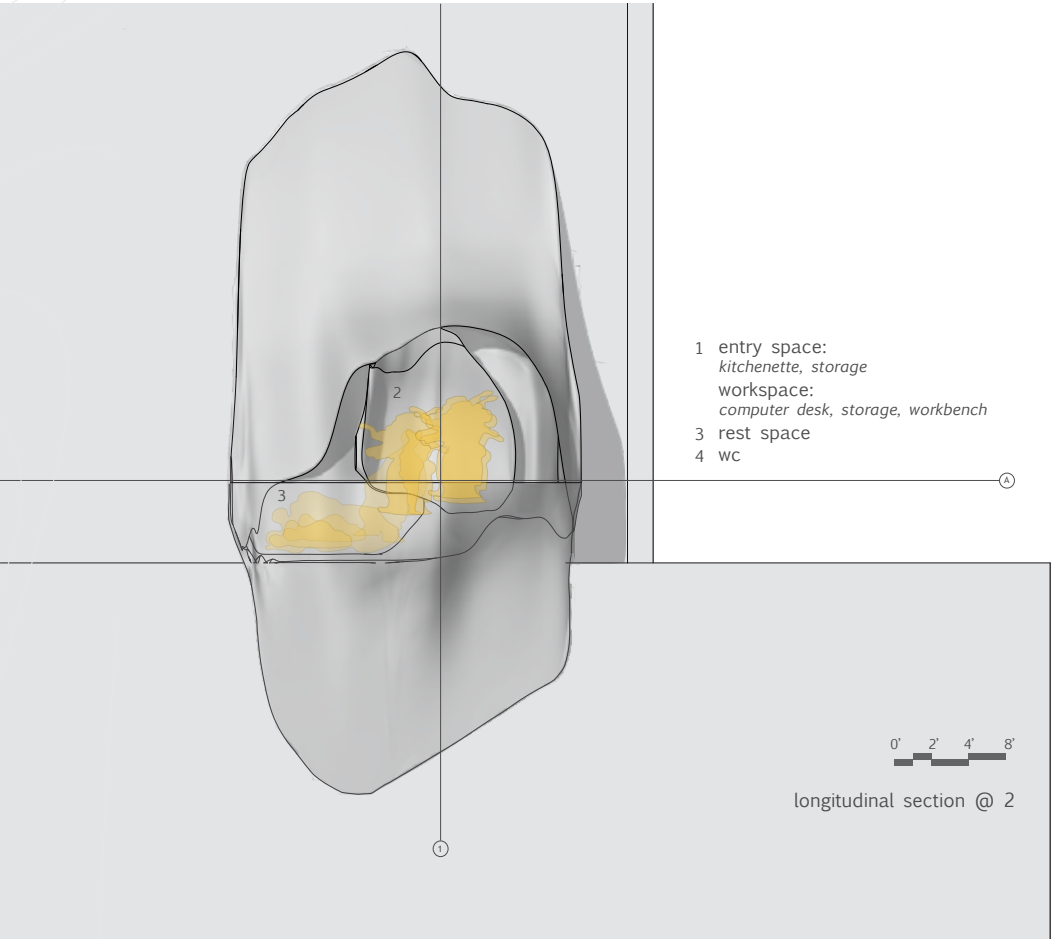
materials:
the observation station will be attached to the existing building via clamp and hook systems at existing window openings. the structure of the station will be ceramic foam components which are very light weight, stiff & have low wind flow resistance. the porous material will allow for the collection of air-borne debris for a qualitative record of pollution on the site.



section @ 1

administration
peer research
data compilation
short-term projects
maintenance





1 entry space:
kitchenette, storage
workspace:
computer desk, storage, workbench
3 rest space
4 wc

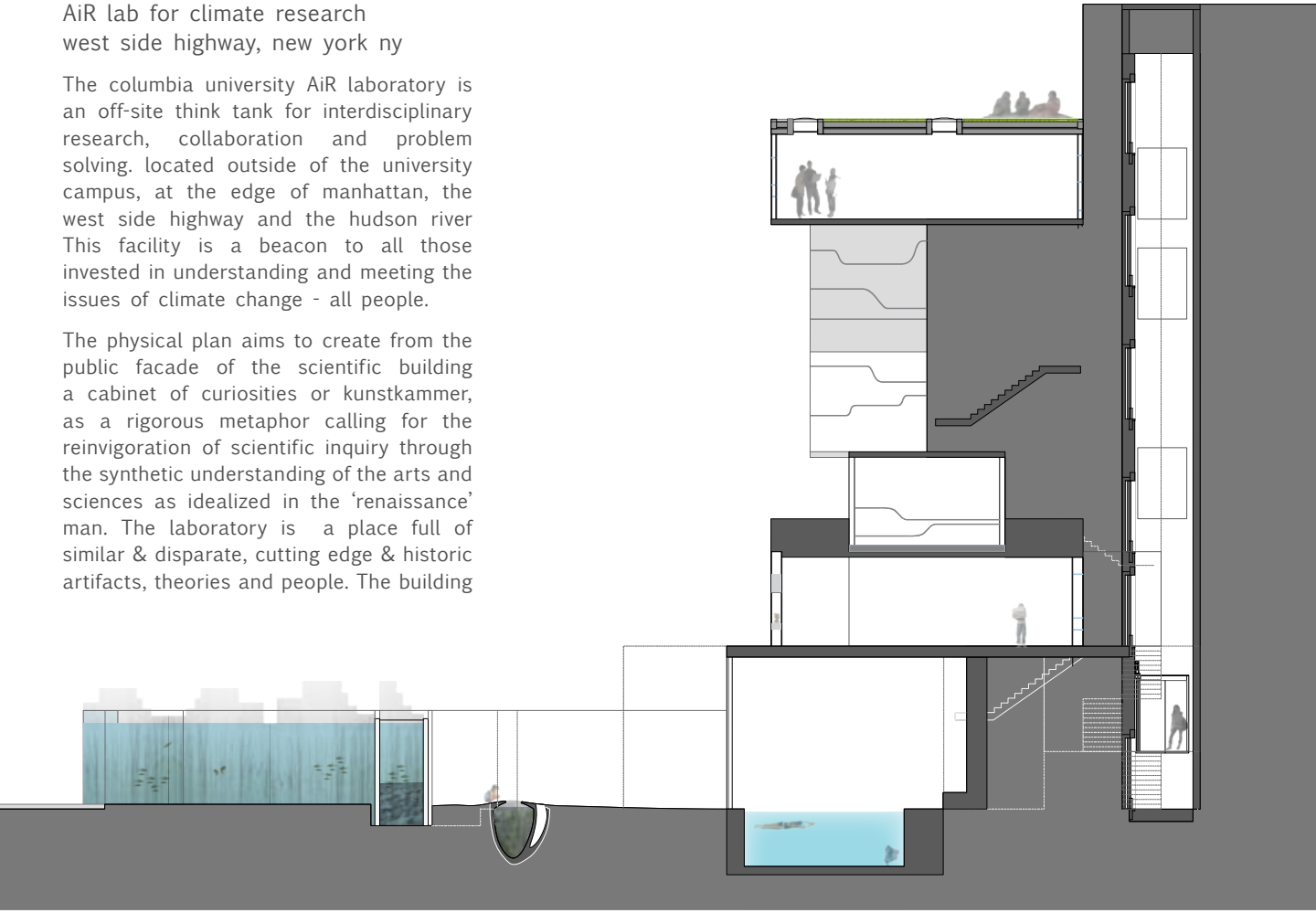
0' 2' 4' 8'

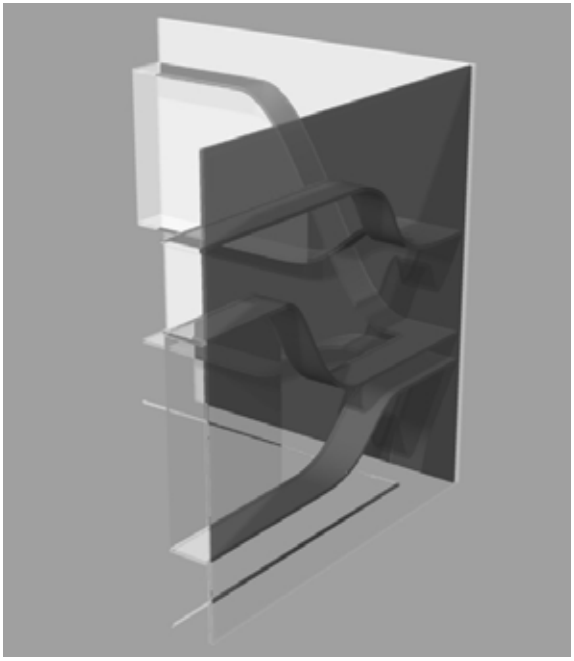
longitudinal section @ 2

AiR lab for climate research
west side highway, new york ny

The columbia university AiR laboratory is an off-site think tank for interdisciplinary research, collaboration and problem solving. located outside of the university campus, at the edge of manhattan, the west side highway and the hudson river This facility is a beacon to all those invested in understanding and meeting the issues of climate change - all people.

The physical plan aims to create from the public facade of the scientific building a cabinet of curiosities or kunstkammer, as a rigorous metaphor calling for the reinvigoration of scientific inquiry through the synthetic understanding of the arts and sciences as idealized in the ‘renaissance’ man. The laboratory is a place full of similar & disparate, cutting edge & historic artifacts, theories and people. The building





provides a matrix to be filled with the accumulated display of these components to remind the resident scientists and visitors of basic, forgotten, assumed and irrelevant knowledge in an aesthetic way. These objects between research fields and products provide cross-links to jump start new and potentially fruitful directions for research and discovery.

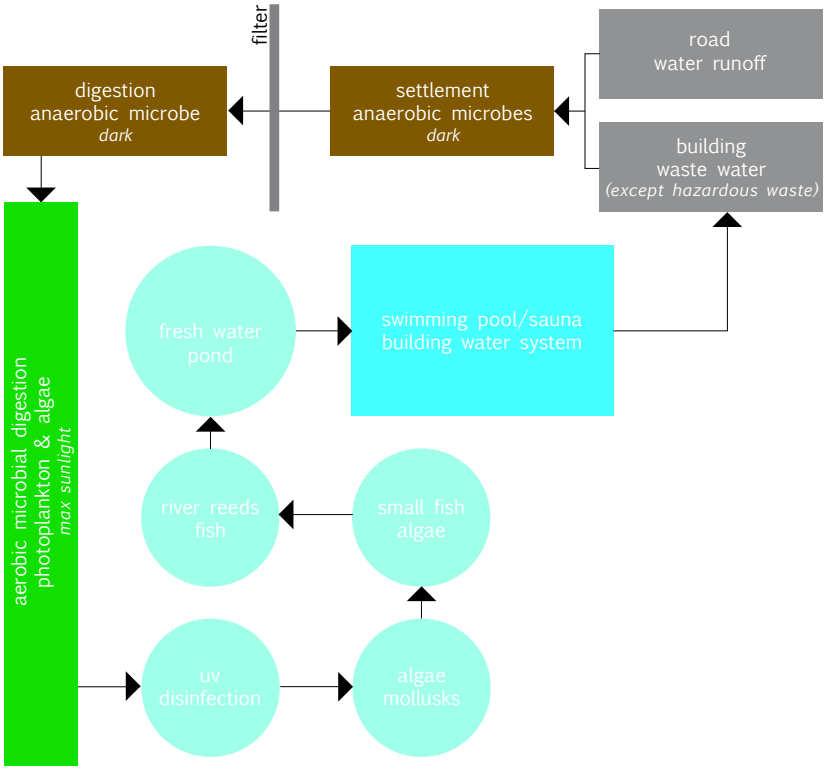
While transparency promises to provoke new links and interactions, it also threatens to isolate and alienate. Sunscreens are mounted in the shelves that undulate through the facade allowing the researchers to selectively screen and reveal themselves as well as construct a history and identity through the accumulation of artifacts and trophies.

the kunstkammer involved bringing together objects from the world of nature, research instruments, and works of art, but not to simply deposit them in a static collection. instead the exhibits were to be actively utilized and the collection linked with laboratories and libraries. horst bredekamp on leibnitz

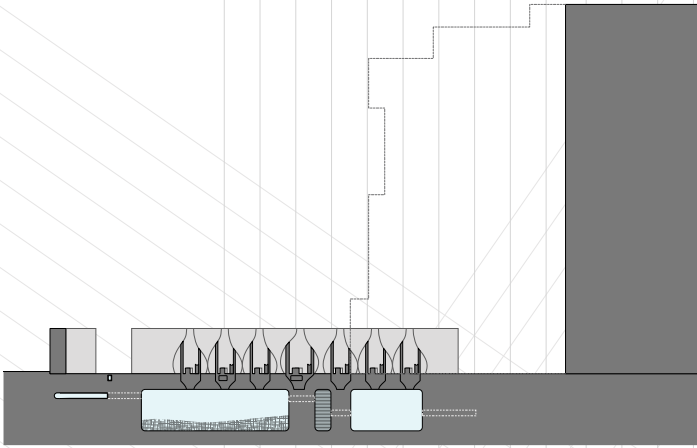



Living Machine Building/Street Ecosystem

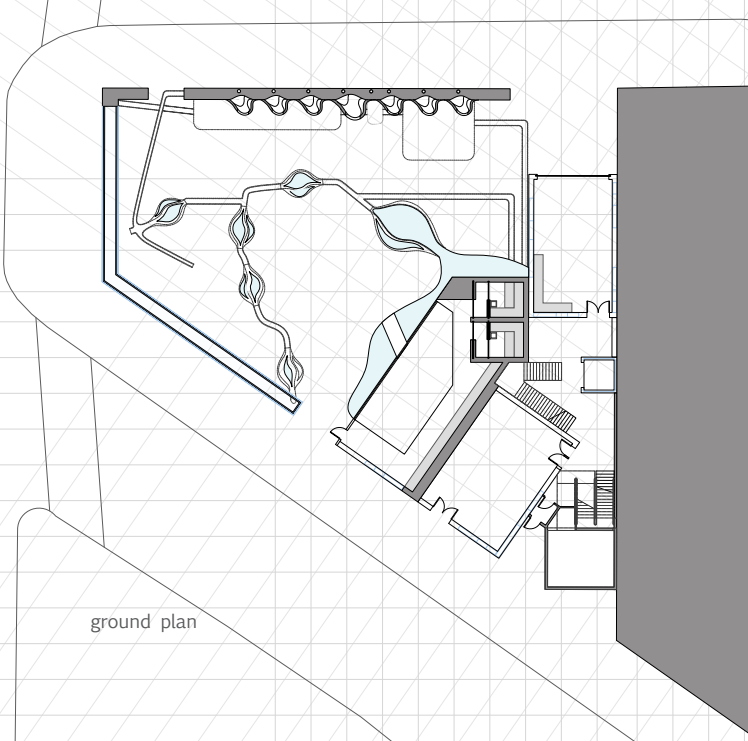
As a laboratory for environmental research, the building and site are themselves research instruments where sustainable water treatment processes can be studied and improved both by experts and by the young future scientists that come to play and learn from this ecosystem. Grey water from road runoff and black water from non-hazardous building systems and public toilets pass through a biological waste treatment system. A series of aerobic and anaerobic settling tanks separate and break down large pollutants. An aquarium where phytoplanktons and algae continue the cleaning process serves as a site wall for the complex, projecting its mission both in and out. Prior to re-entering the building, the water passes through touch pools with increasingly macro-organisms elucidating the cyclical nature of both water and nutrients.



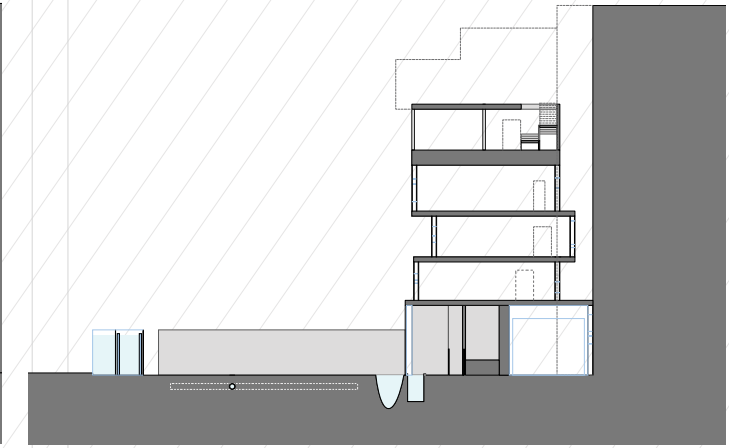

washington st.
a
b
c
west side highway
canal st.



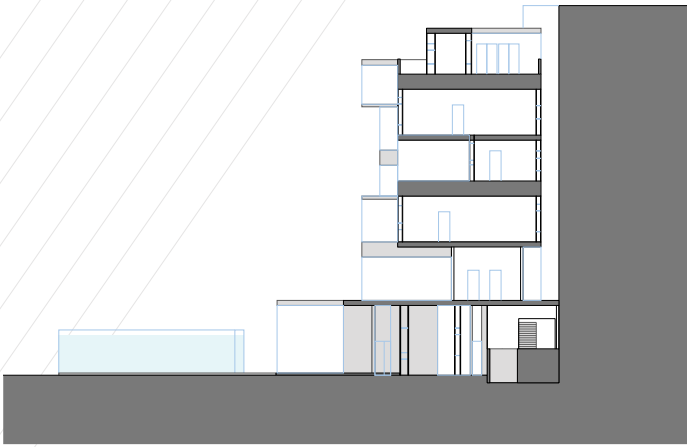
section a



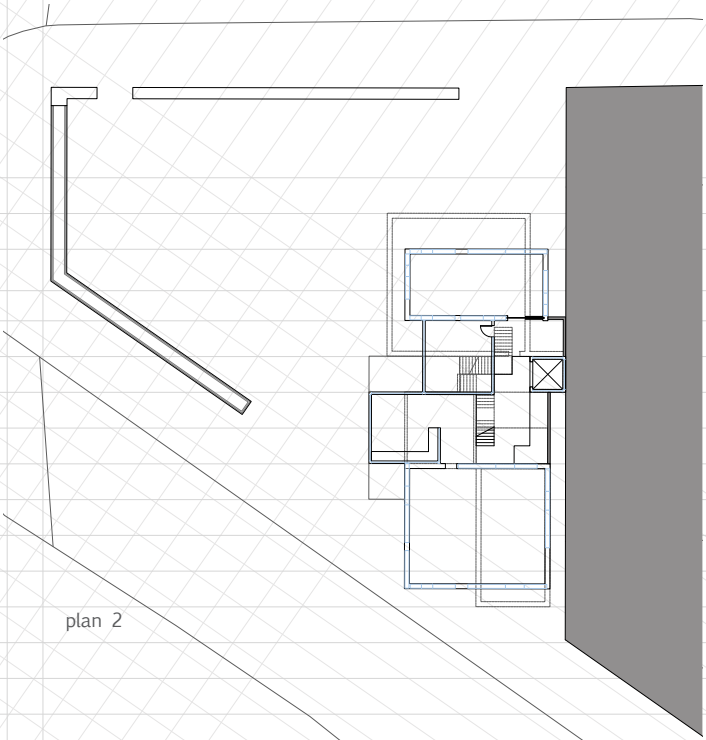
ground plan



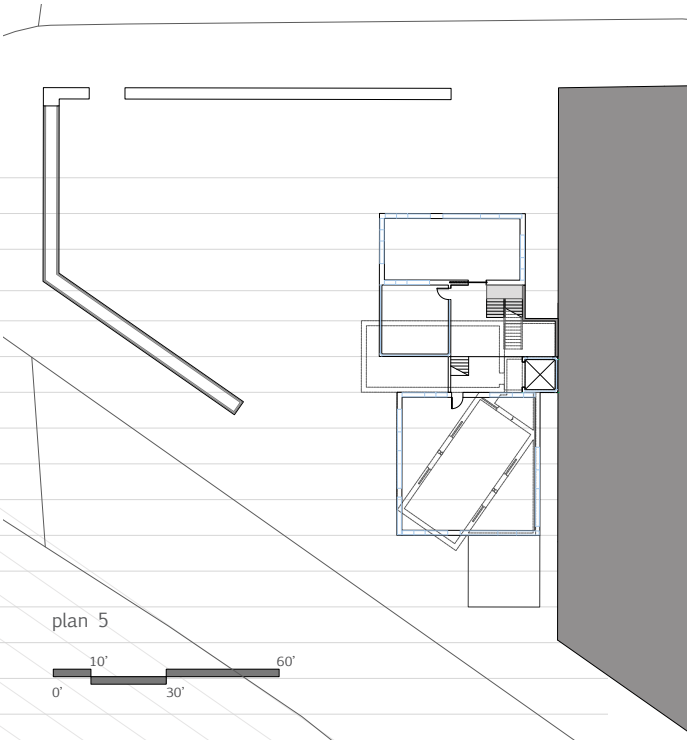
section b



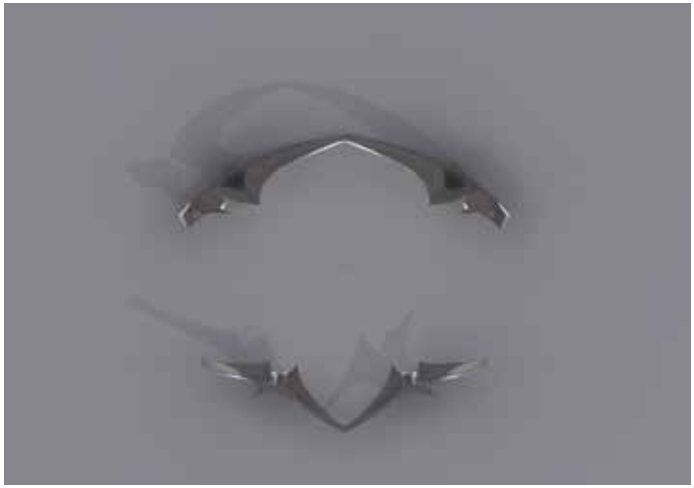
section c



plan 2



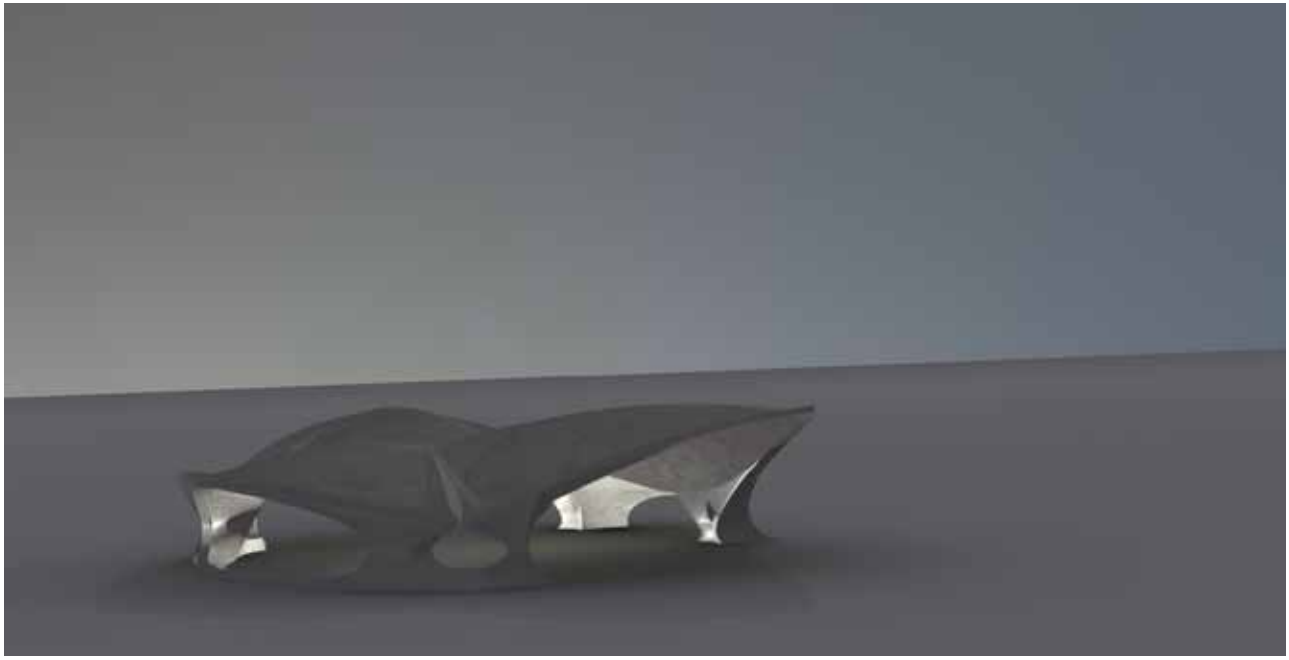
plan 5



TWA flight center *eero saarinen*
digital modeling and animation

The TWA terminal at JFK International Airport (1962) is a masterpiece of the iconic jet age terminals embodying the exhilaration of flight in its fluid, concrete forms. The terminal was ground breaking with closed circuit television, central public address systems, baggage carousels, and electronic schedule boards, yet its cast in place concrete structure made it difficult to modernize and the innovative gate position layouts were out of date by the time the facility opened due to the introduction of jet planes.

Working from published sections and original construction documents a 3d model was created to produce renderings and animation as well as a conceptual physical model. (rhinoceros 3.0, 3Dstudio max, adobe aftereffects)

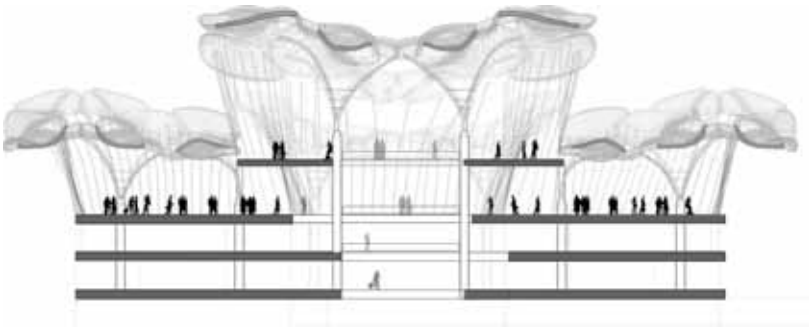


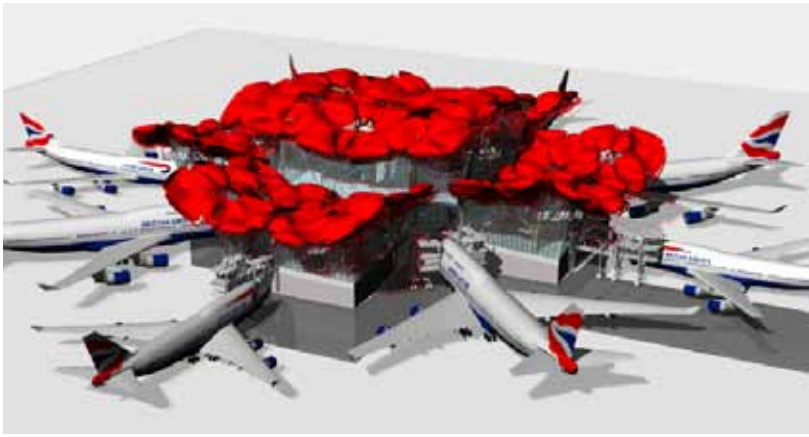
satellite air terminal

design group: aaron davis, aries liang, jay shah

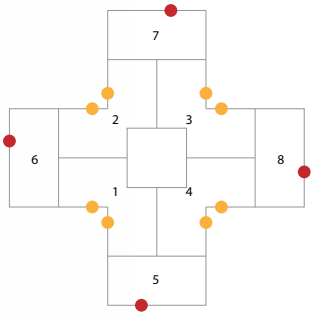
As a group we undertook the design of a satellite terminal to serve a single carrier with 8 gate positions. 4 positions are designed to serve class 1-4 aircraft with the four positions at the inner corners of the cross-shaped planes sized to accommodate class 5-8 aircraft such as the Airbus 380. The terminal is presumed to be attached via an underground people mover to a primary terminal where initial check-in, security and baggage intake would occur.

In an effort to create a light and pleasant atmosphere for the travel a large atrium with staggered floor plate openings will carry daylight down to the ground and basement levels where concessions and passenger entrances will occur, respectively. The double faced curtain wall has a jagged plan increasing its stiffness and is tied back to an outer ring of structural columns. The inner ring of columns around the atrium space carry the upper roof canopy. The large span roof is constructed of light-weight, insulating ETF cushions.

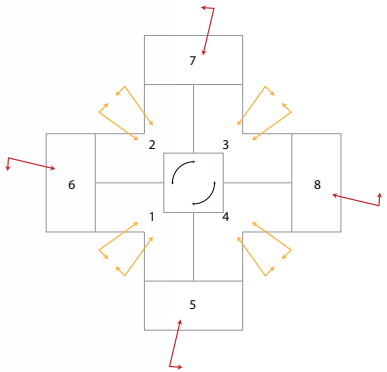




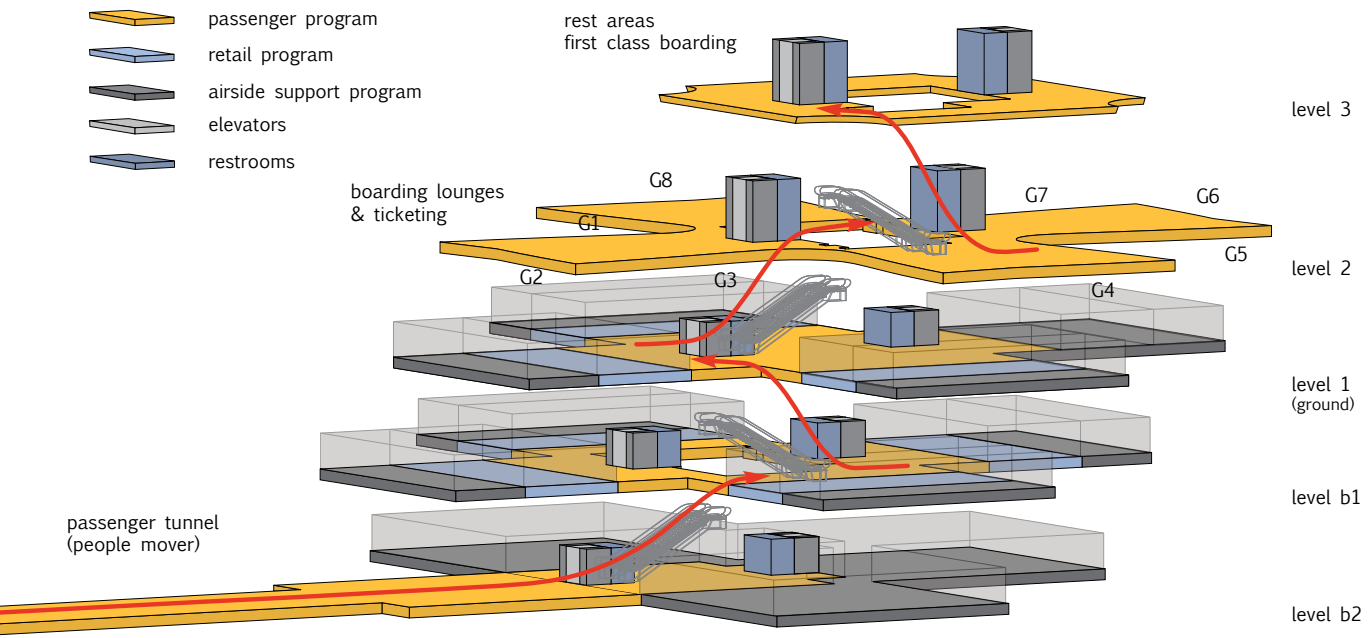
plane positions

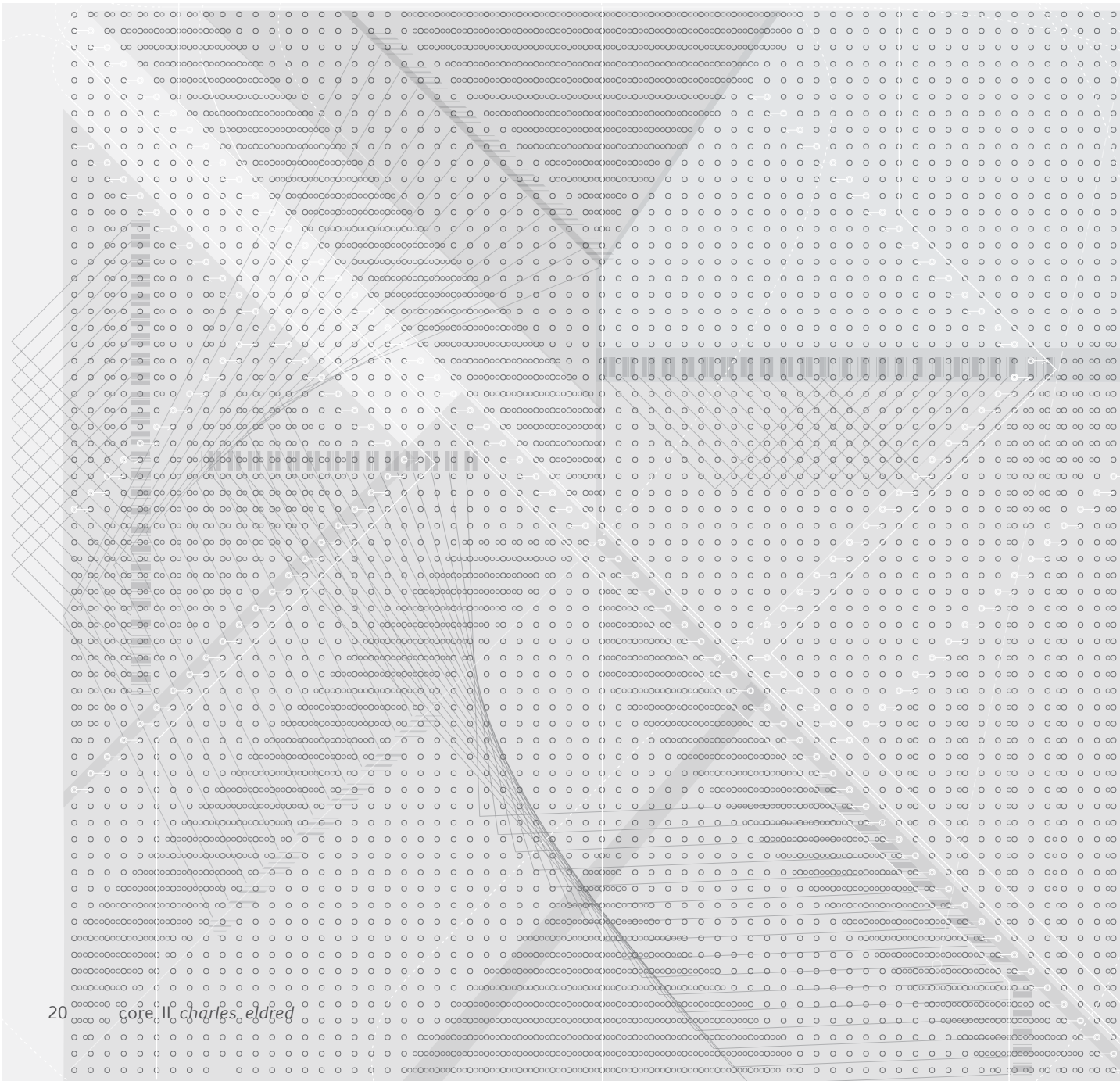


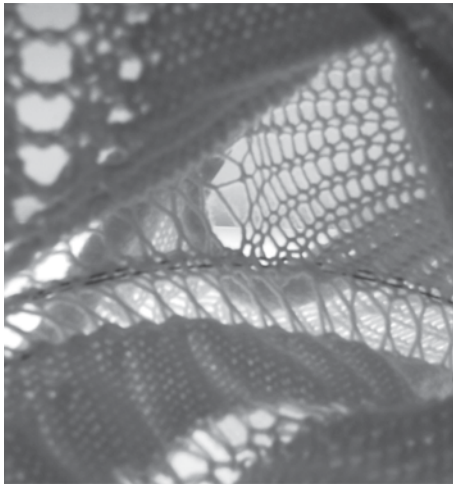
single jetway/check-in station
double jetway/check-in stations

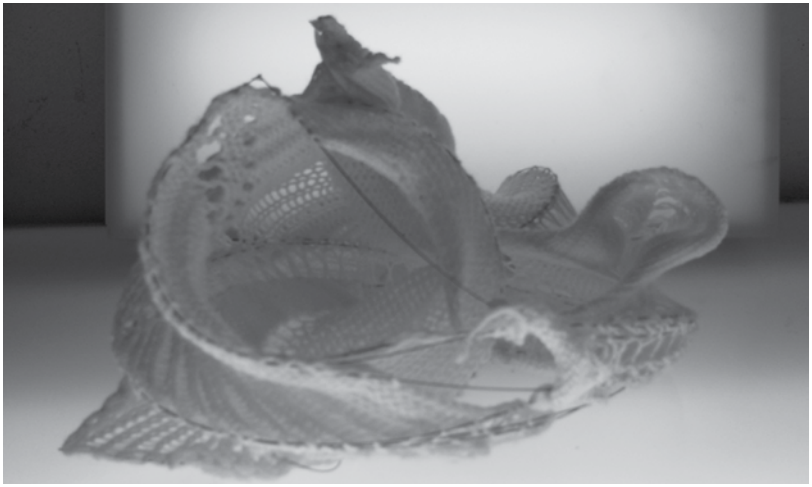


deplaning/boarding diagram





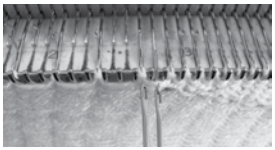


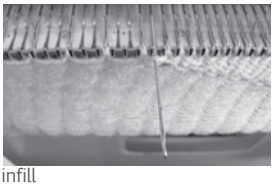


tectonics of the line

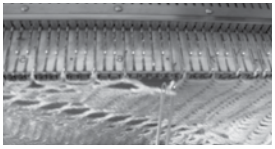
material exploration

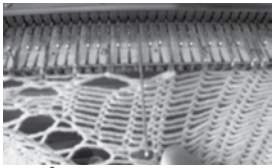
Initial material studies focused on the creation of a tectonic system out of the aggregation of weak elements. Using a knitting machine which consists of a linear bed of needles that each carry a pearl stitch, a map of varying density was knitted resulting in a fabric with differential resistance to stresses and very small, but non-zero compressive strenghths. The insertion of wires into the mostly flat material, followed by strategic knitting over and stitch of the surface created compression hoops along which the fabric could be tensioned to reveal the layered and complex porosities that were planned into the initial map. All changes in stitch density were made with simple increases, decreases and transferred stitches. Areas of high tension contrast with loops of loose material and combine to create complex thresholds and destabilize notions of interior and exterior surface and space.



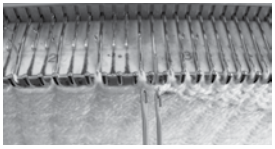


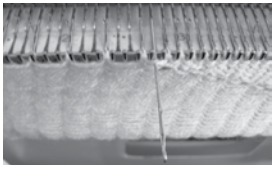
infill



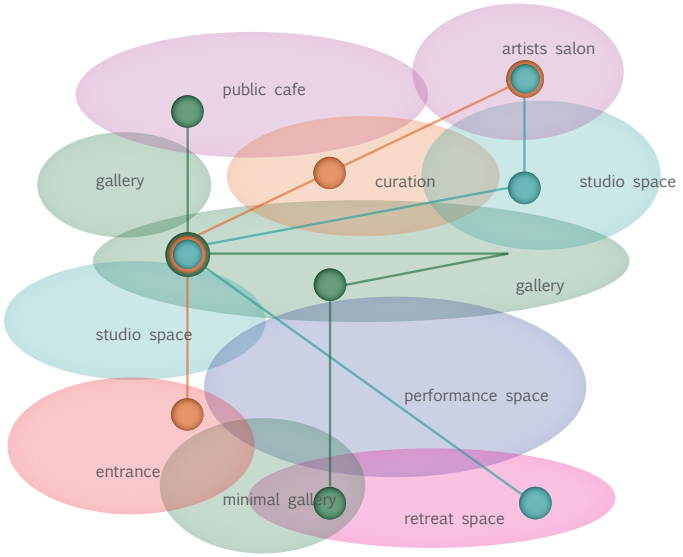


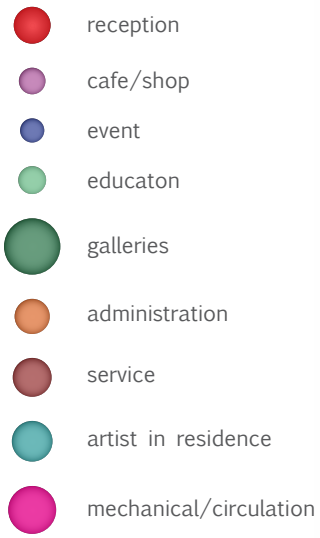
transfer

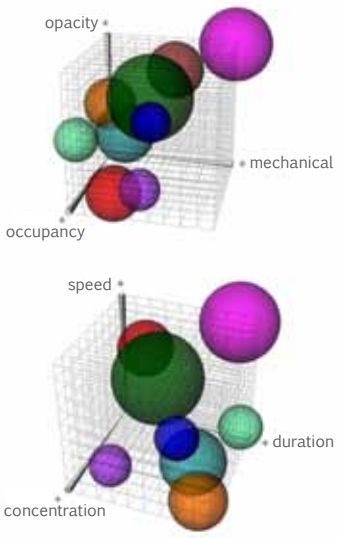




increase





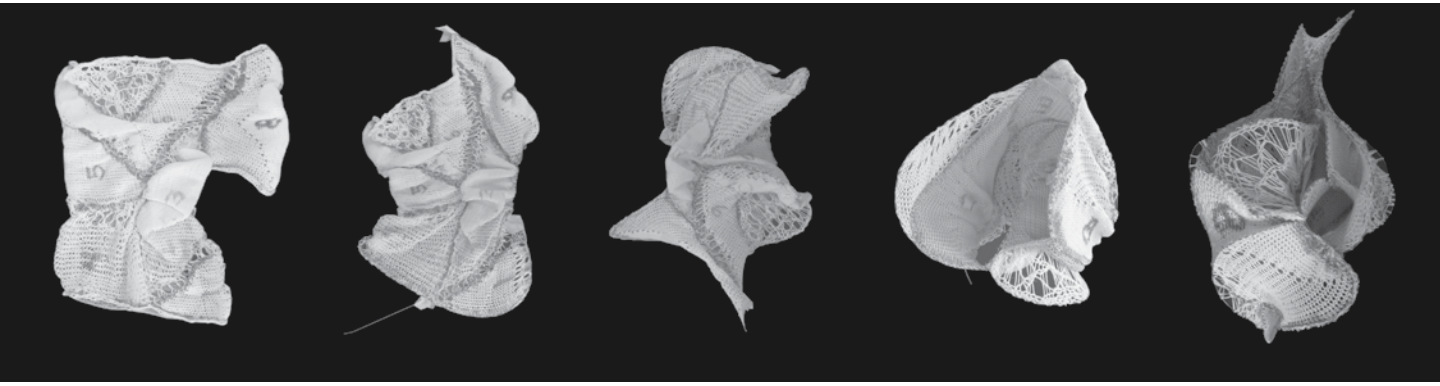


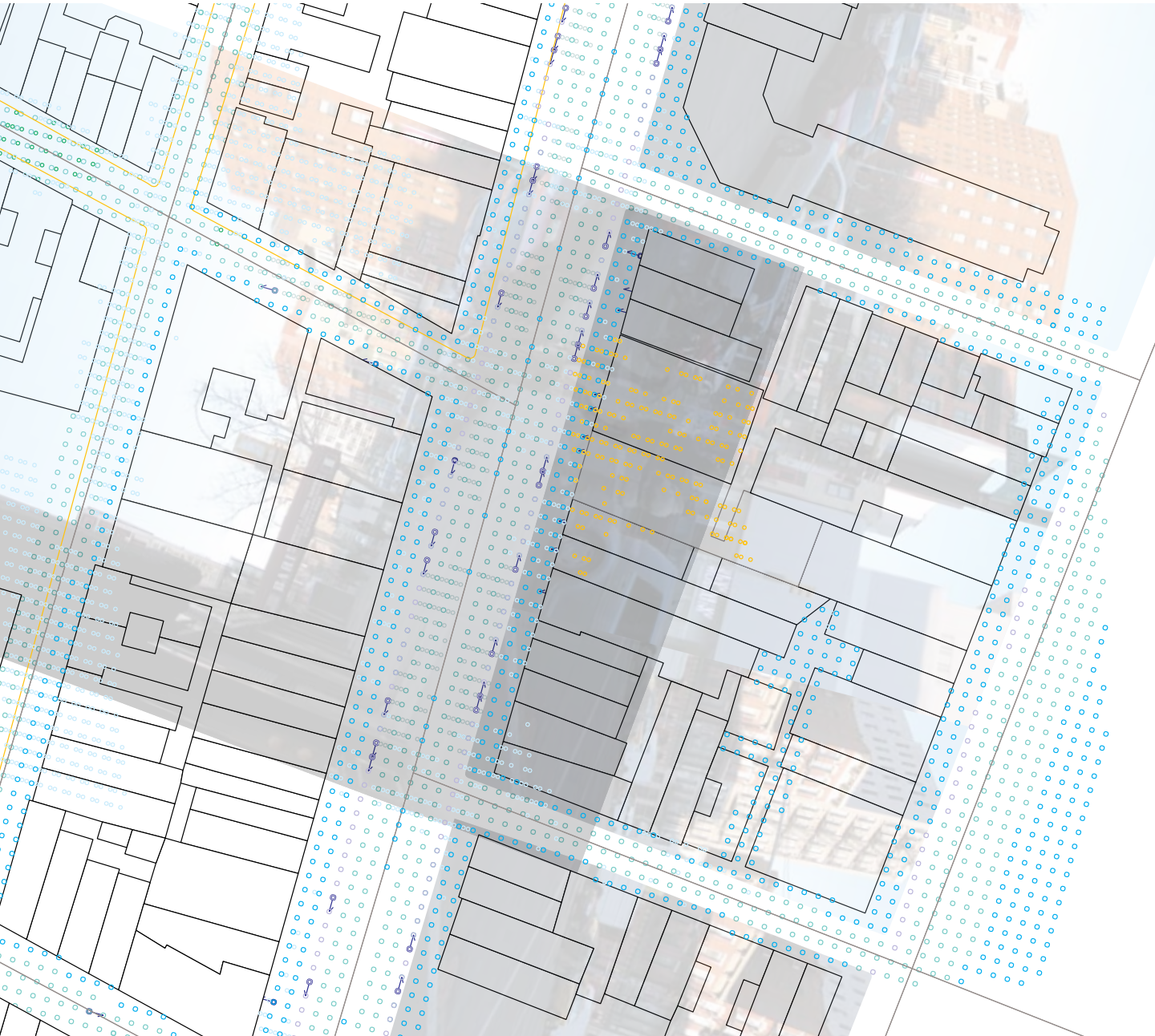
museum of design
bowery, new york, ny

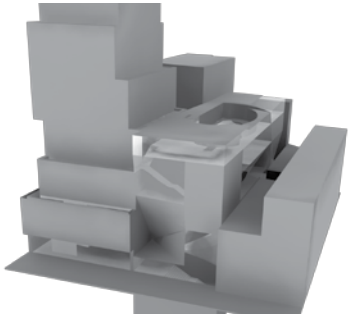
Both city plans and knitted textiles are conceptualized and represented as flat grids despite never being experienced as such. Local and gross deformations of the grid in plan, as well as in the third dimension provide both landscapes with rich spatial instances - experienced in time inconsistencies in density and shape create dynamic spatial narratives. Using knitting techniques to approach the program of the Museum of Delineation allows for the literal use of the line itself, as a programmatic, spatial and tectonic element. Variations in density create shifting levels of visual perception and tensile resistance. Three surfaces serve the artist, curator and visitor independently while converging in unexpected visual and spatial adjacencies and penetrations.

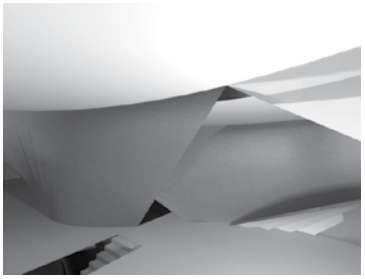
In exploring the program through a flexible and distortable membrane, it appeared that exciting and unplanned adjancies could result from the folding, stitching and tensioning of the flat surface. Rather than one or three linear spatial experiences a multiplicity of non-linear spatial experiences were created.

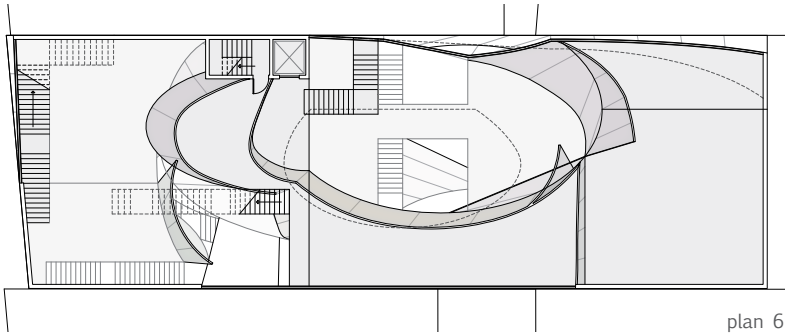

PUBLIC WC
EVENT
EVENT STOR
GALLERY SM SCALE
COAT
ENTRY
RECEPTION
GALLERY DIGITAL
LOBBY
GALLERY LG SCALE
CONSERV WORKRM
STAFF LOCKERS
FREIGHT ELEV
DELIVERY/ LOADING
GAL MGR
WORKSHOP
GALLERY STORAGE
STUDIO
GALLERY
STORAGE
WC
STAFF
CAFE STORAGE
CAFE COUNTER
KITCHEN
KIT STORAGE
CAFE SEATING
MULTIMEDIA GALLERY
DEV/PUBL STAFF
CURATOR OFFICE
CURATORIAL RESEARCH
CURATOR OFFICE
CURATORIAL STAFF
LUNCHRM STAFF
WC
CURATOR OFFICE
CURATOR OFFICE
PUBLICATION LIBRARY
OPEN OFFICE
STORAGE ADMIN
LIBRARY
CLASSROOM
STORAGE CONFERENCE
REGISTRAR
DIR OFFICE
BUSINESS OFFICE
PUBLIC WC
CONFERENCE
STAFF OFFICES
EDUC DIR OFFICE



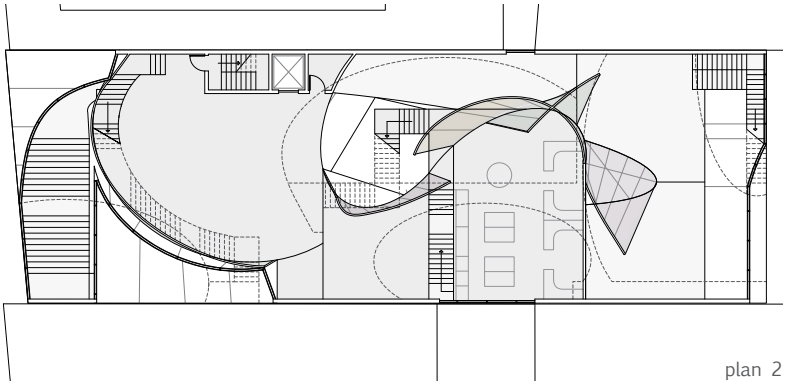




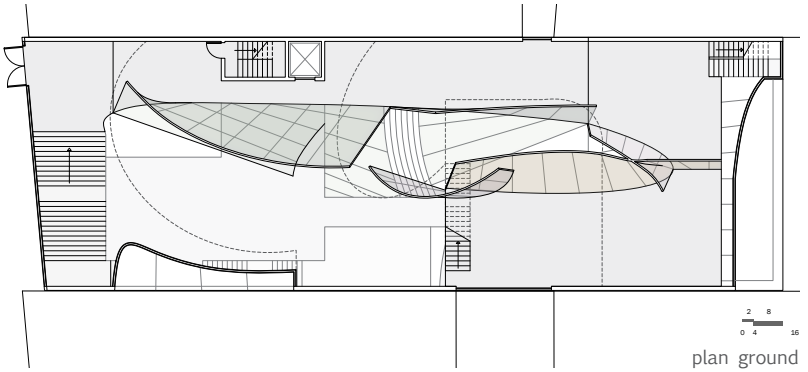




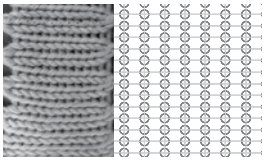
plan 6



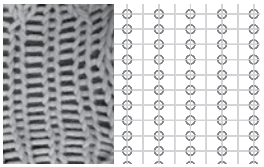
plan 2



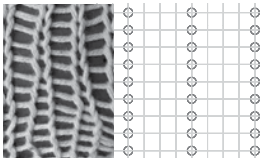
plan ground



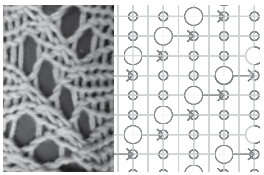
Type A
Floors & stairs, galleries
dense, opaque
All needles knit



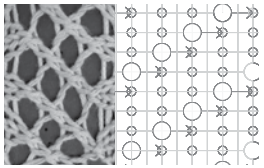
Type B
Galleries & studios
lightly porous, even
Alternating needles knit



Type C
Studios & offices
more porous, even
Every 4th needle knits

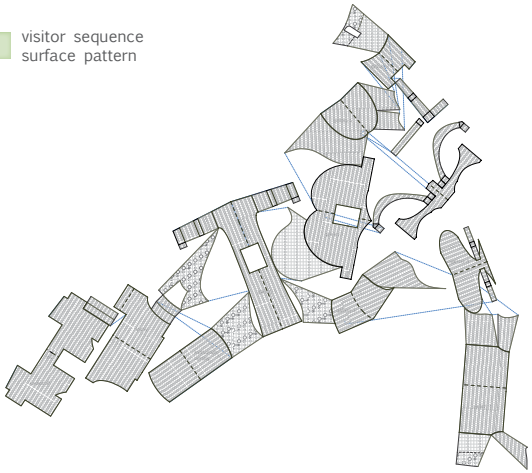


Type D
Studios & offices
porous, large apareratures
Transfer stitch every 3 stitches

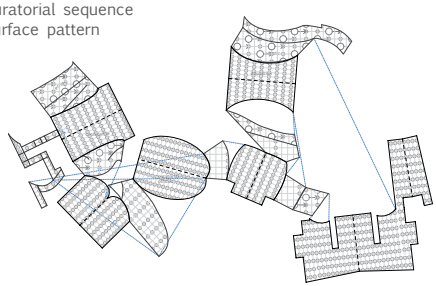


Type E
Open studios & cafe
porous, large apareratures
Transfer stitch every 2 stitches

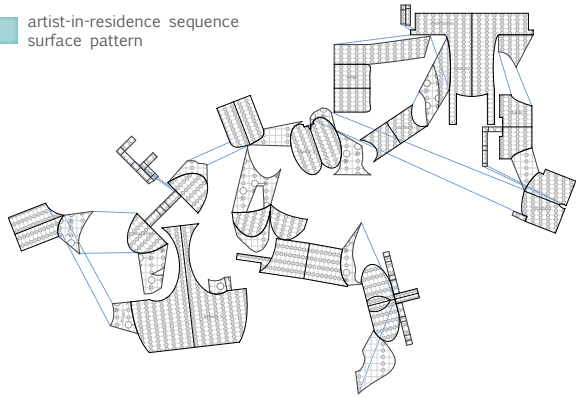
visitor sequence
surface pattern

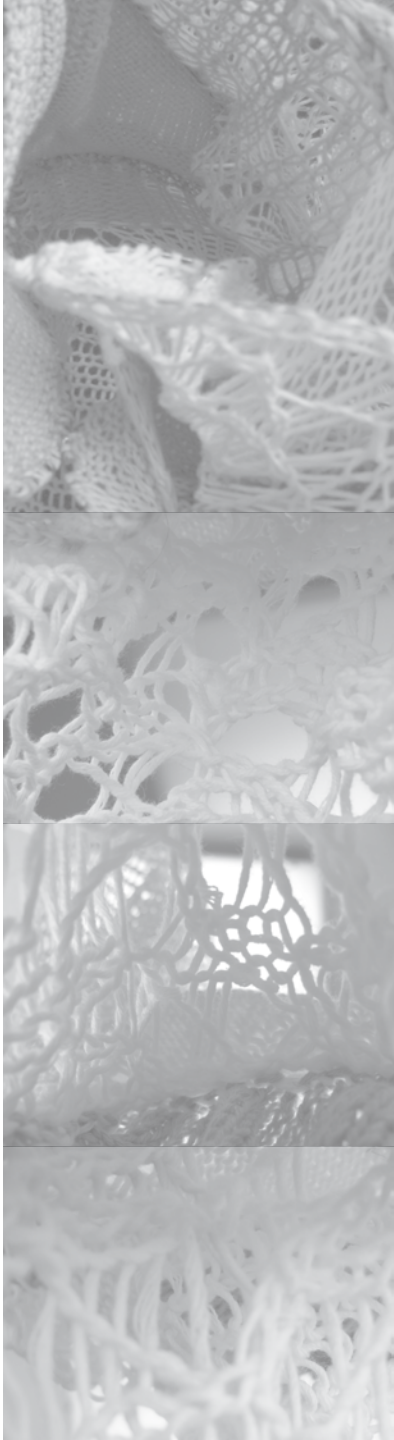


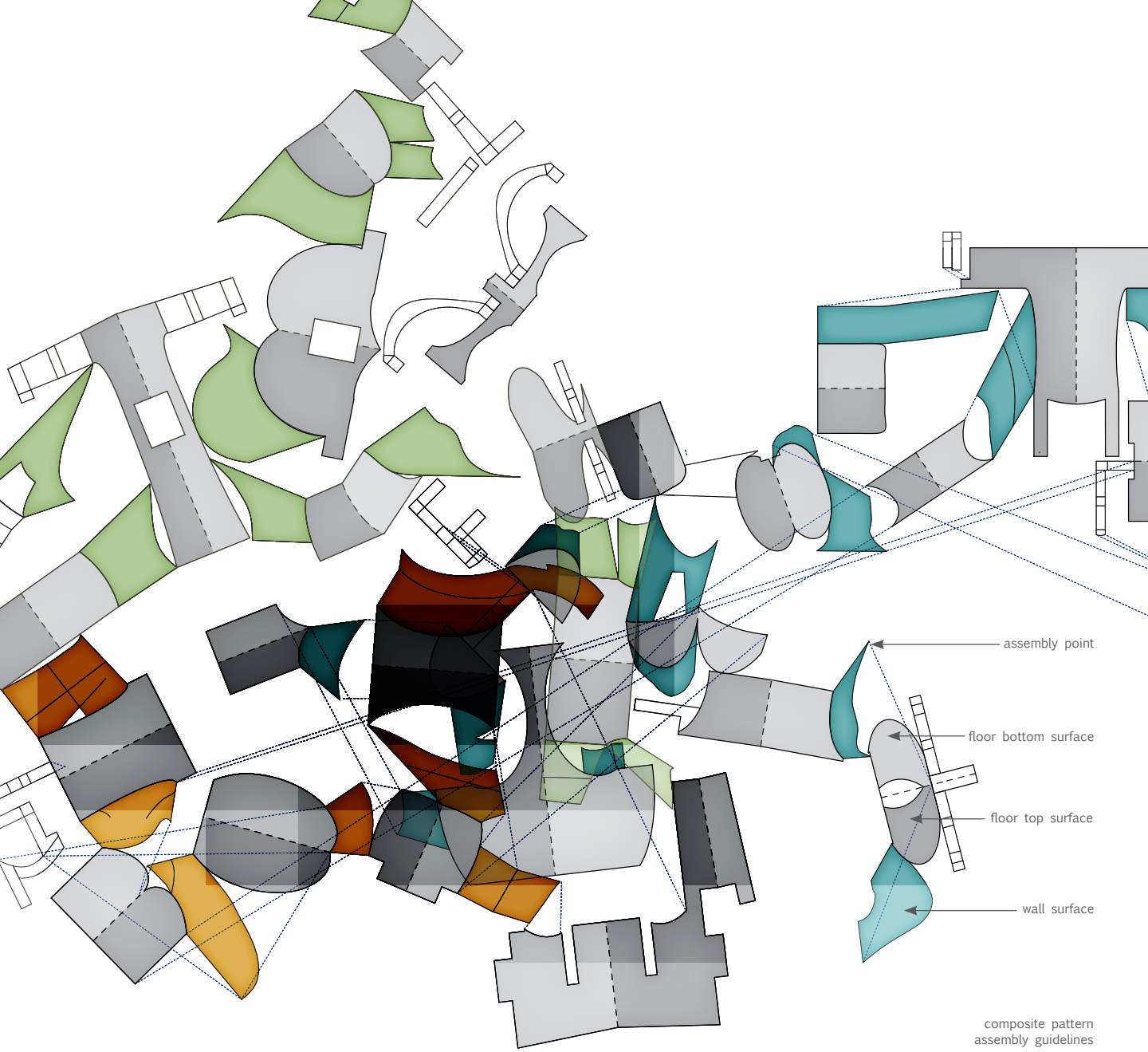
curatorial sequence
surface pattern



artist-in-residence sequence
surface pattern







composite pattern
assembly guidelines

cambridge public library
cambridge, ma

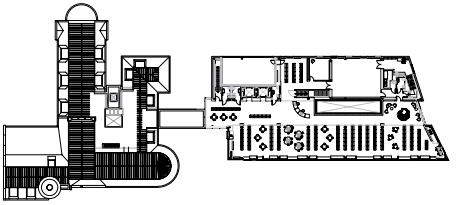
ann beha architects
with william rawn associates

interior designer

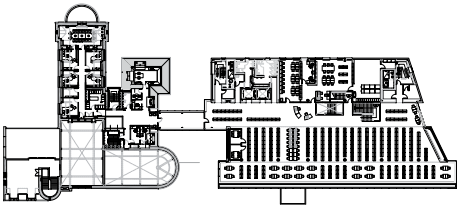
The Cambridge Public Library, designed in 1887 by Van Brunt & Howe in the H.H. Richardson inspired Romanesque style, is listed on the National Register of Historic Places. ABA partnered with William Rawn Associates to complete the renovation, restoration and major expansion of the library. The historic building has been restored and energized and includes a 70,000 sf addition that maximizes views of the historic building while minimizing impact. The entire historic building has been restored and includes the Information Commons in the original delivery room and Young Adults in a reconfigured stack space. Simple, contemporary additions accommodate a conference room in the former entrance porch, and link the old building and the new.

Complementary architectural finishes and consistent furnishings unite the historic building and addition for a cohesive library experience. The powerful historic paint colors are carried into upholstery and finishes in the addition accenting the reading zones in the addition and anchoring them against the red circulation zone.

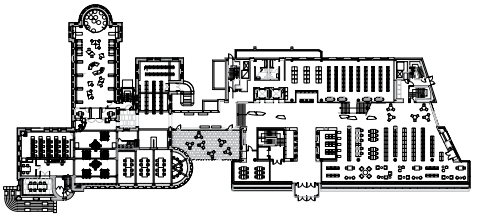

X-104
VESTIBULE
X-103
STACKS
X-S1
STAIR 1
X-106
ATRIUM
X-102
CORRIDOR
X-105 CLOSET
X-S3
X-107
INFORMATION
COMMONS
X-S4
STAIR 4
S3
STAIR 3
E3
ELEVATOR 3
108
ELEVATOR/
STAIR LOBBY



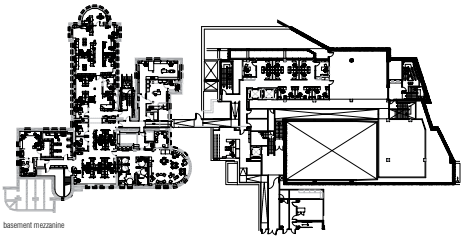
third floor



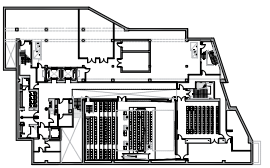
second floor



first floor



basement mezzanine



children's room
cambridge public library

The children's floor in the library addition is a playful zone for imagination and fantasy. Both architectural and interior finishes contribute to the effect of a fanciful forest clearing. The design of this floor was carried out in close collaboration with the children's librarians to address the specific demands of a children's place.

Furnishings are sized appropriately for pre-school, grade school and junior high children with the level of abstraction increasing in the older childrens' areas. A predominantly graphic manipulation of scale and image is balanced with textural experiences of wood finishes, carved pile carpeting and window cushions. The reading nooks established in window boxes pushing through the double skin facade are echoed in the service desk where children can share treasured objects and books - and care for the floors' pet lizard.

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