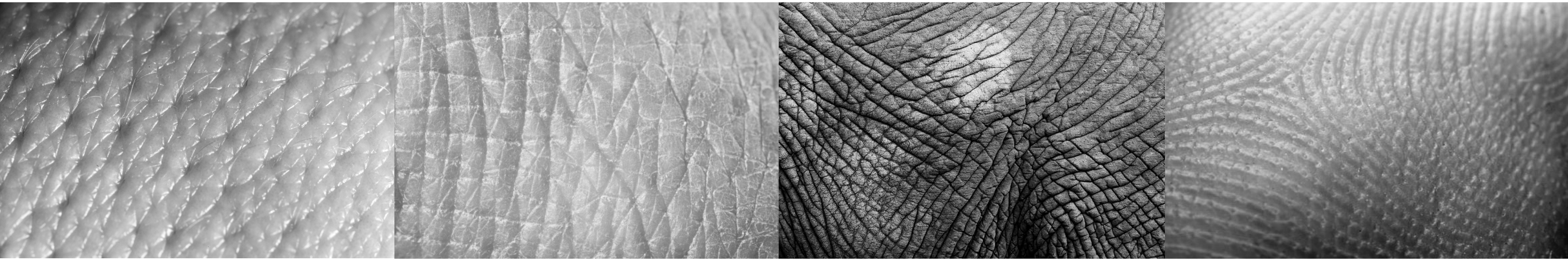
12-2014

Architecture Connects

Ryan DeSilva



ARCHITECTURE CONNECTS

ryan douglas desilva

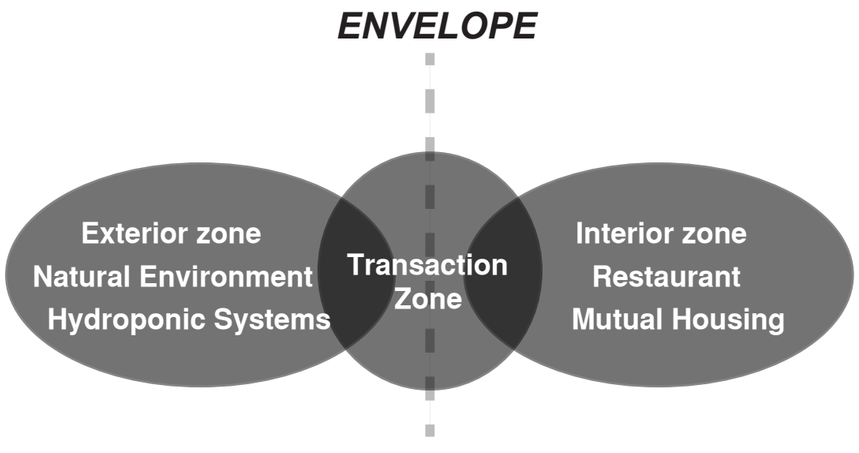
MY CLAIM

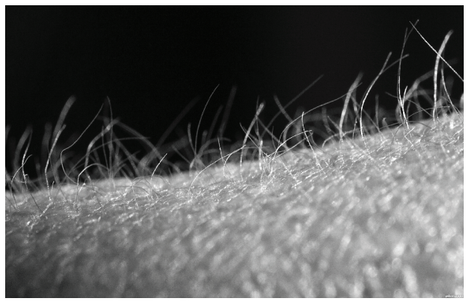
The envelope is the transaction zone between the ideal climate and the natural climate. The envelope has an important use as a driver for adaptive building use.

[*MY CONTENTION*]

- The Envelope acts as the facilitator of Community Engagement. (Housing)

- The Envelope acts a driver for Economic Performance and Stability. (Restaurant)





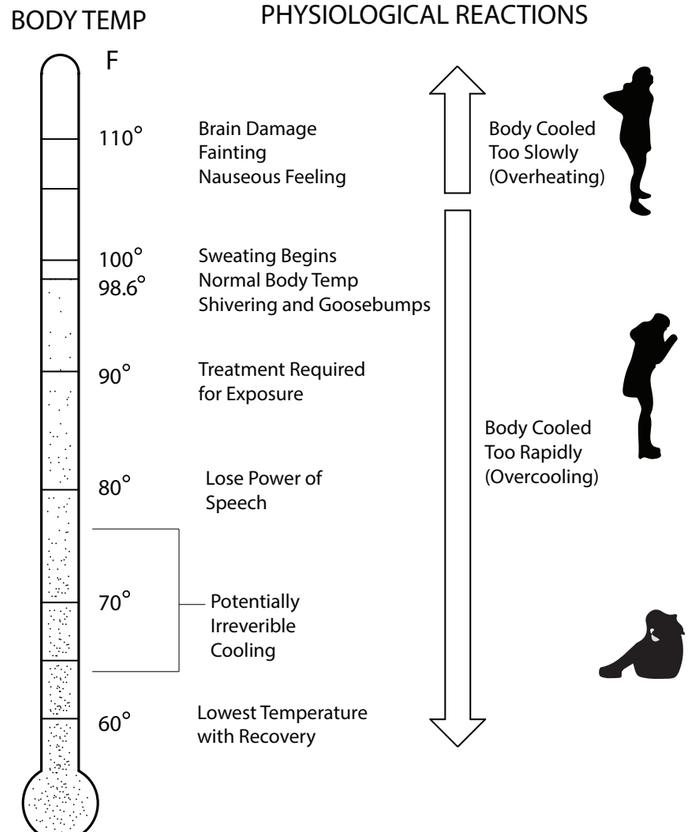
Source: Building Envelopes, An Integrated Approach lovell, Jenny 2010 p. 9-53

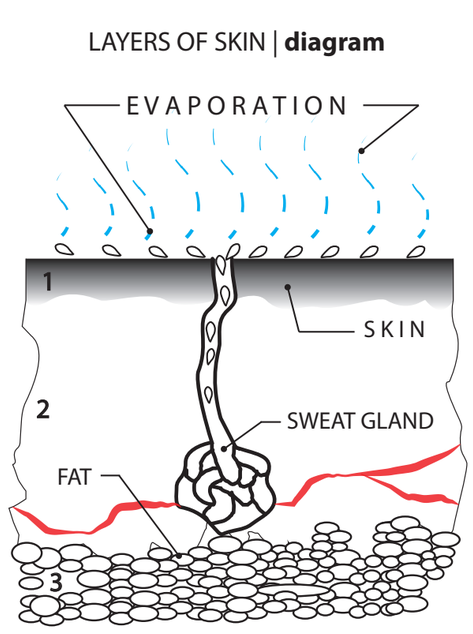
SKIN | the human envelope

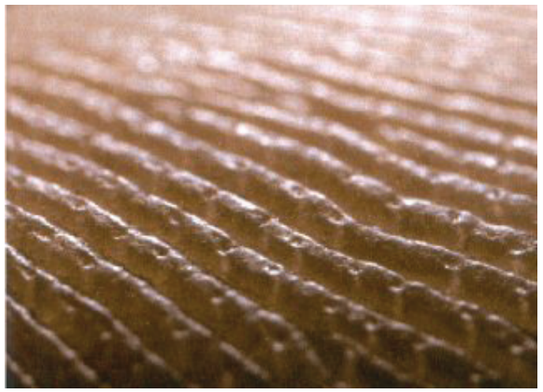
The human body's largest organ is the skin. Skin protects body tissues against injuries and helps regulate body temperature by making the pores larger or smaller. The nerves in skin receive the stimuli that are then interpreted by the brain as touch, heat, and cold. Skin is composed of three layers: epidermis, dermis, and subcutaneous fatty tissue.

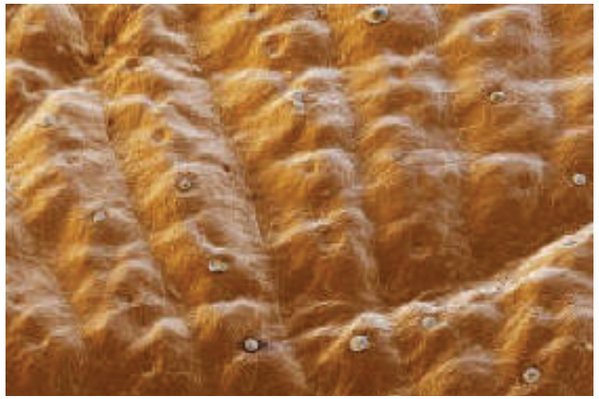
The typical body has between 20 ft2 to 25 ft2 of surface area which serves as a radiator for releasing heat via radiation to lower the body temperature or as an absorber to take in radiant energy to raise the body temperature.

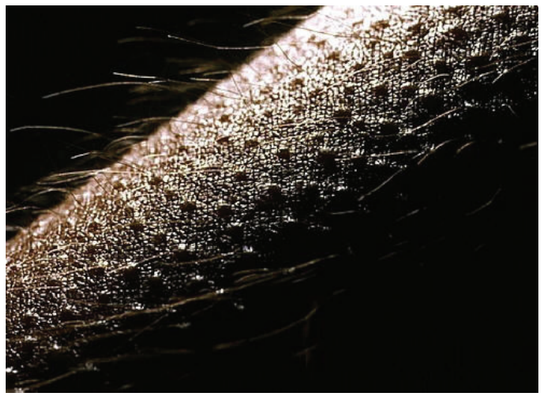
"Skin is the principal organ for dissipating heat: the human body dissipates approximately 85% of its heat loss through the skin under normal environmental conditions (Zhang 2003)." Holopainen, R., A human thermal model for improved thermal comfort, Doctor of Science in Technology Thesis, Aalto University, VTT, December 2012









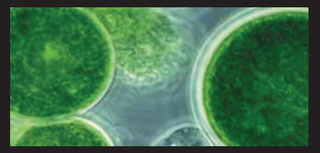


precedent study | THE ORGANISM

Marcos Cruz : "Architecture is starting to absorb and generate and host nature in its skin. The Conclusion rather than biomimicry or Bionic thinkinking is the joint venture of both. I think there is a synthetic approach, a sy,biotic Approach. Biomimicry is the imitation of the models, systems and elements of nature for the purpose of solving complex human problems. Architects always have the difficulties of scales.

"How I defign FLESH" - marcos cruz
Human Flesh- The Body
Aestetic Flesh- Disgusting Flesh
Architectural Flesh- Inhabitable Interfaces
Digital Flesh- The Sacred and the Sublime
Neo-Biological Flesh- Synthetic Neoplasms

Source: nextnature.com
Source: Marcos Cruz: Biomimicry



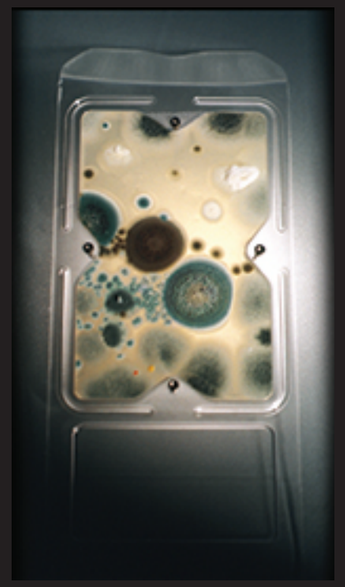
MOSS TABLE: "When the moss photosynthesize, they release nutritious fats, carbs and proteins into their roots to feed colonies of helpful, symbiotic bacteria. In the process of breaking down these compoundsm of bacteria release electrons. Created by Alex Driver, Carlos Peralta, Paola Bombelli, this prototype Moss table produces enough energy to power a small lamp. "

ALGAE LAMP: "The idea was inspired by a scientific breakthrough by scientists from yansei and Stanford University that allows a small electrical current to be draw3n from algae during photosynthesis. Placing the lamp outside in the daylight, the algae use sunlight to synthesize foods from CO2 and water. The energy produced is stored in a battery to be called upon at night"

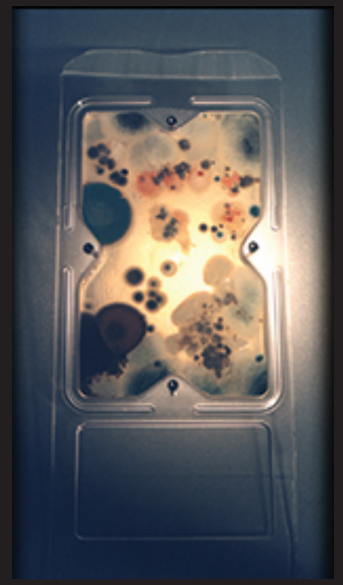
BIQ House: With 200m² of integrated photo-bioreactors, this innovative passive-energy house generates microalgae biomass and heat as renewable energy resources.

Steve Pike, Contaminant, 2003

Interaction Vessels are controlled environments in which different micro- organisms were introduced and manipulated. By the application of facilitators and inhibitors bispoke devices affording some influence over the microbial growth, the outcome could be partially designed with other parameters established by the self determination of the colonies themselves. For containment, Steve Pike designed and crafted a structure of Monitor Cells and Monitor Vessels that set out to apprehend and develop locally present microbes. Providing to be a significant investigation into the monitoring capability and responsiveness of the structure, the Installation also exemplified an emergent, morphological aesthetic.

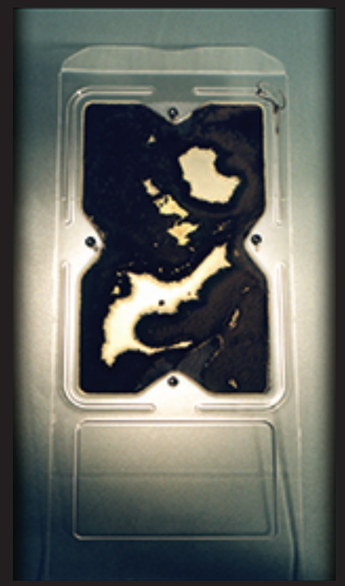


DWELLING



GROCERY STORE

WORK SITE



FLOWER SHOP

BAKERY

AIRPORT

PRECEDENTS

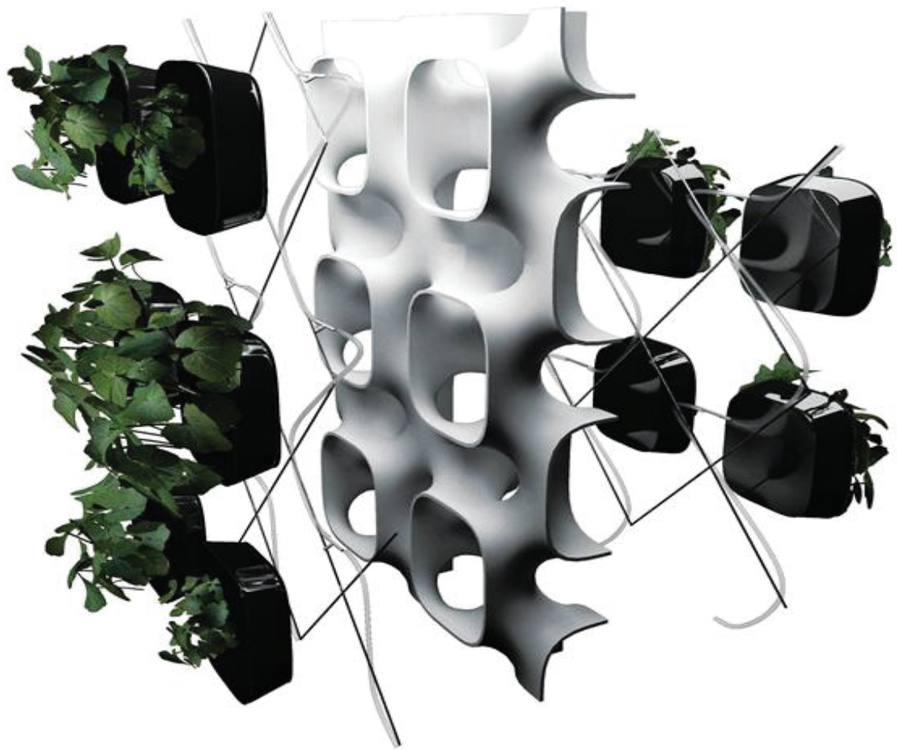
CASE + SOM | living green wall

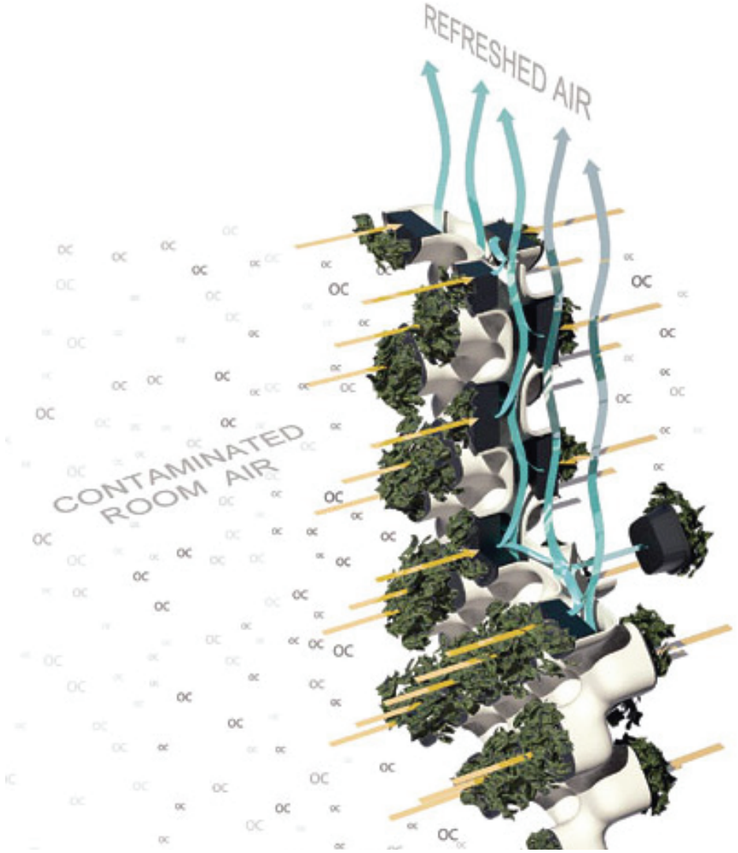
The modular wall system provides habitat for multiple types of plants including English Ivy, Boston Ferns and Dieffenbachia, which are all fed water and nutrients through a hydroponic system.CASE and SOM's AMPS Living Green Wall Promises to reduce Air Pollution and Energy Costs Active Modular Phytoremediation System.
(AMPS) The biologically active surface can absorb 200 times the pollutants through the roots or leaves of the plants, thus dramatically improving the systems capacity.
The system can provide 60% of the fresh air required.Typically that air would need to be sourced from the outdoors, and would then need to be heated or cooled at a high energy penalty before being circulated. Thus the reduction in the amount of incoming air required provides a large cost savings.

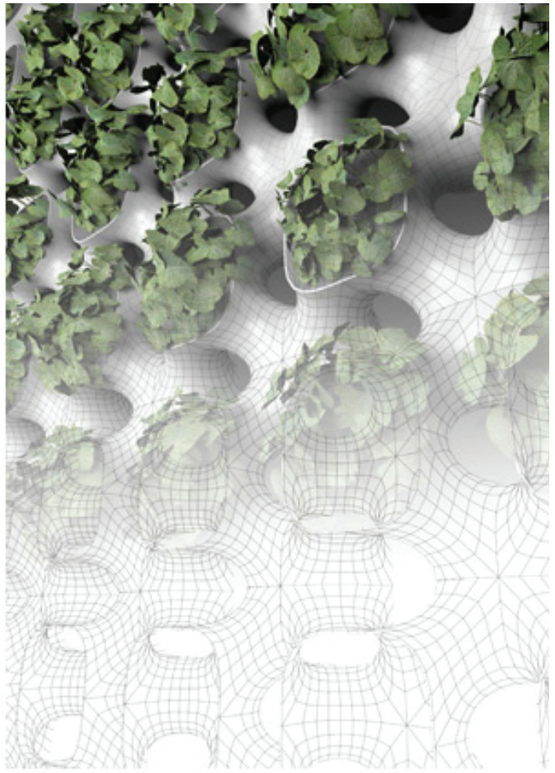
Air moves through a perforated air intake duct—a series of mini-jets are being developed to encourage airflow—and directly over the root system. This allows the rhizomes on the roots to essentially digest airborne toxins—VOCs, particulate matter, and other biological and chemical pollutants.

TECHNIQUE: Active Phytoremediation

SOURCE: http://www.architectmagazine.com/green-technology/green-wall-systems-active-phytoremediation-wall-system.aspx

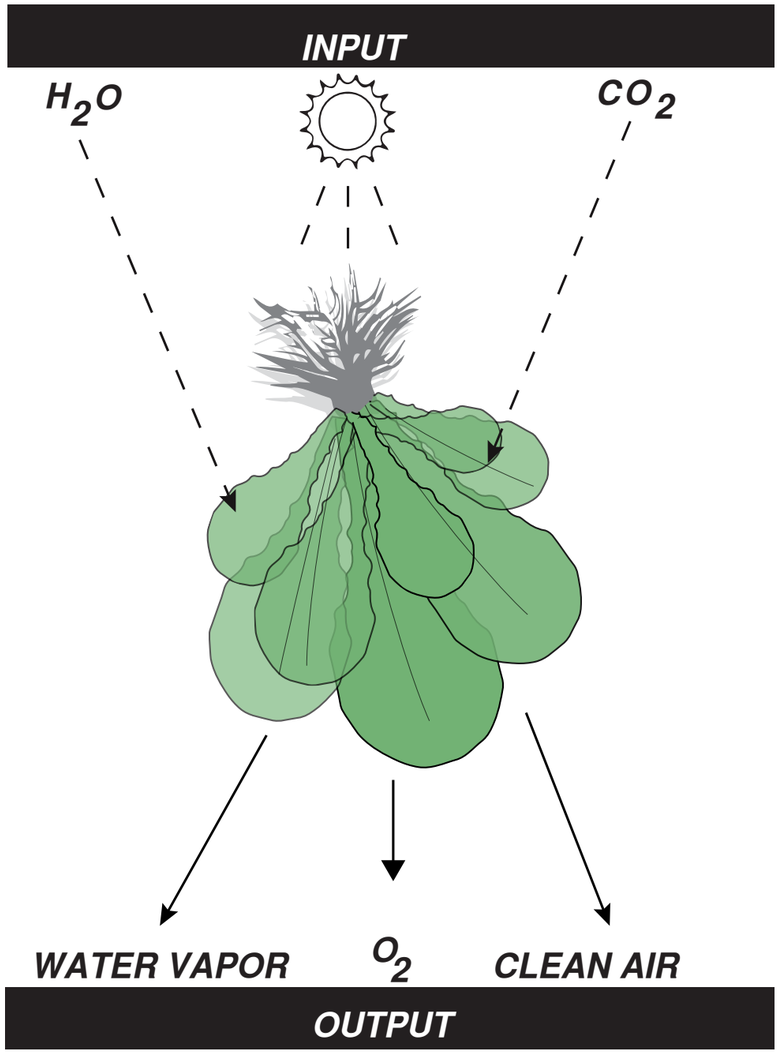


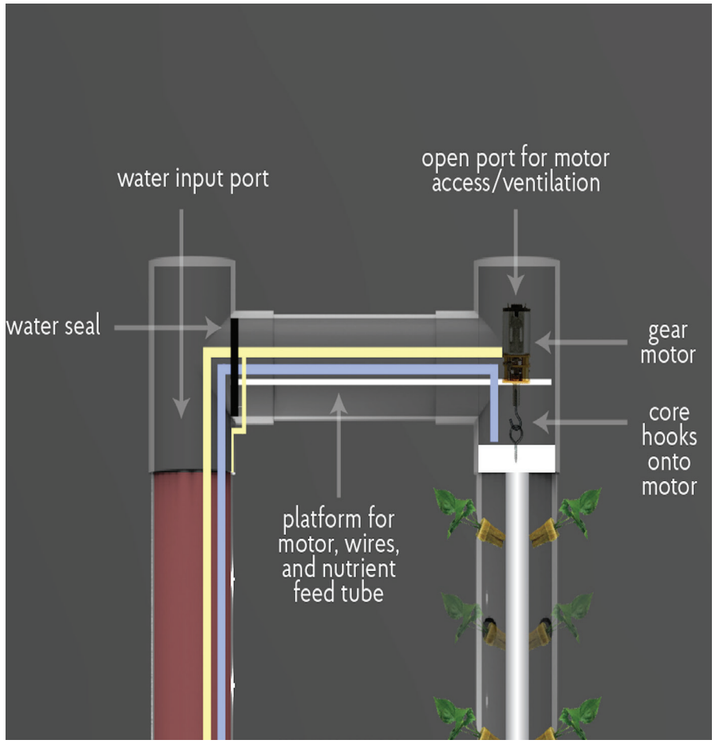


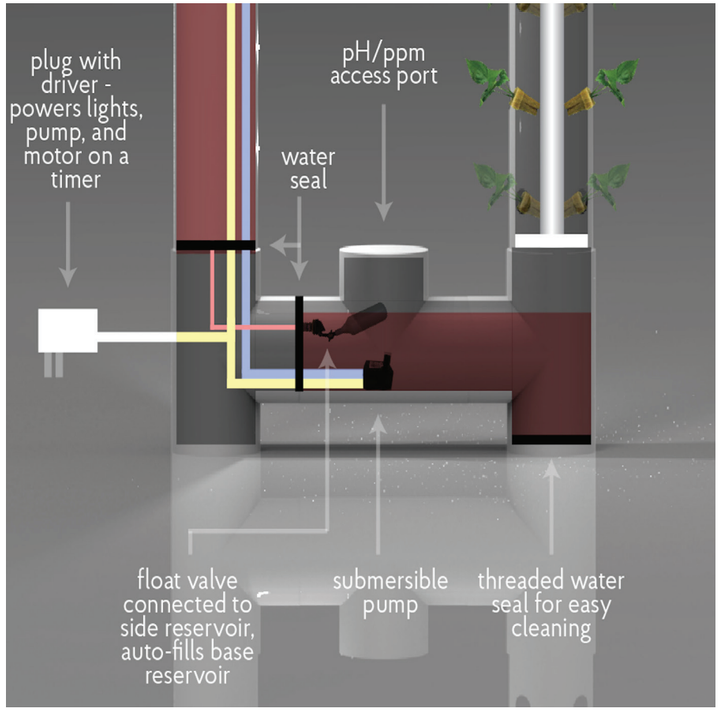


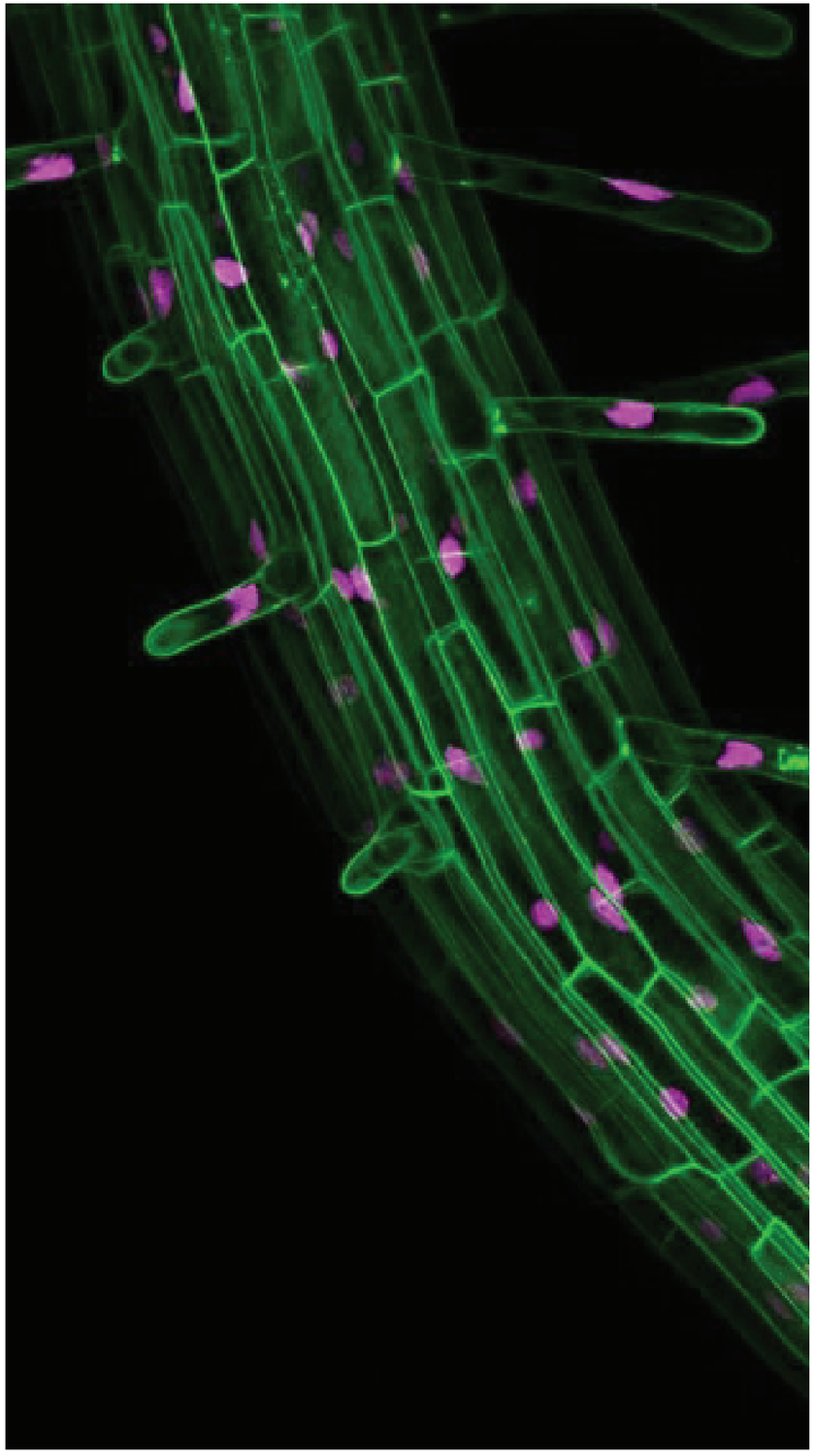
O R A N I S M | efficiency

Organic process of growth (Photosynthesis) allows for individual cells of a plant to grow. As the cells multiply and grow they begin to fan out, optimizing the maximum suface area needed for growth. The organism takes in C02 and through photosynthesis gives off O2 wich Humans need.
(17 mols of sunlight required over a 24 hour period)
(Phytoremediation) is a process by which the plants root structure is exposed, cleaning the air which passed through it . This technique cleans the air 200-300%.









site annalysis | BRIDGEPORT, CT

BRIDGEPORT | *1935 Factories + industry*

1- General Electric
2- Remington Arms
3- Singer Sewing Machine
4- Bridgeport Brass
5- Warner Corset
6- Bryant Electric
7- Bullard Machine

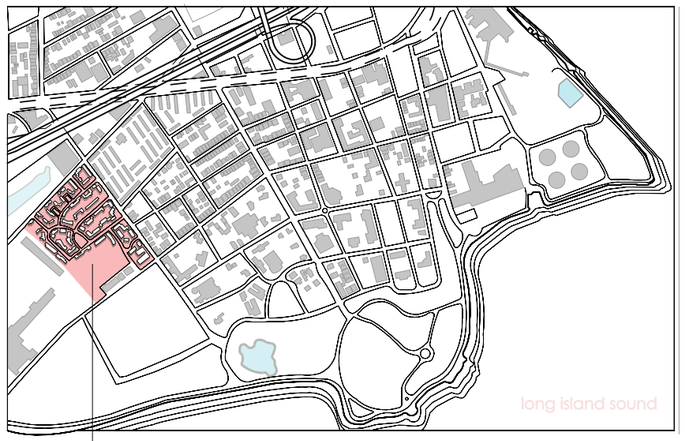
WARNER CORSET FACTORY
production line, Bridgeport CT

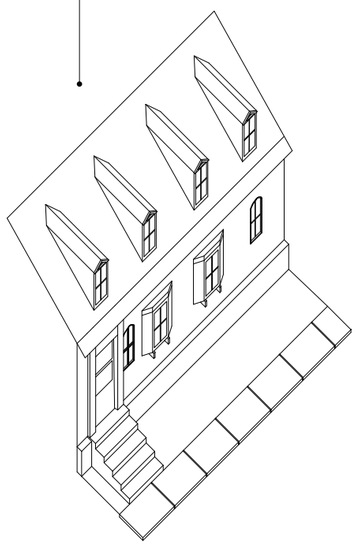
Brothers Dr. Lucien and Ira De Ver Warner became concerned with the use of the modern corset in women's fashion. In turn, hey designed and proposed a more comfortable alternative design. The traditional corset design was tight, uncomfortable and made of steel and fabric which would break womens ribs. After desinging the first flexible corset out of string and layerd fabric together, the new design caught the attention of women and designers worldwide. The Warner brothers moved their expanding company to Bridgeport Connecticut in 1876 and became "part of the nation's most productive centers of industry." Over one thousand employees craftet 6,000 corsets on a daily basis, quickly becoming the largest and most popular corset manufacturer in America. The Warners employees consisted of large numbers of immigrant women (2200) and were provided housing in newly developed housing projects west of the factory building. The company provided the immigrant women workers meals, library and classes taught by organizations such as the YWCA (Young Womans Christian Association) The company strived to fight the modern connotation of factory labor issues and bad working conditions.

By 1913 sales reahed $7 million and profits averaged $700,000 annually.

Sources: Bridgeport's Socialist New Ideal 1915-36, Cecelia Bucki 2001
Image of America, Bridgeport At Work, Mary K. Witkowski, 2002
Bridgeport Library, Warner Brothers and their Amazing Corsets

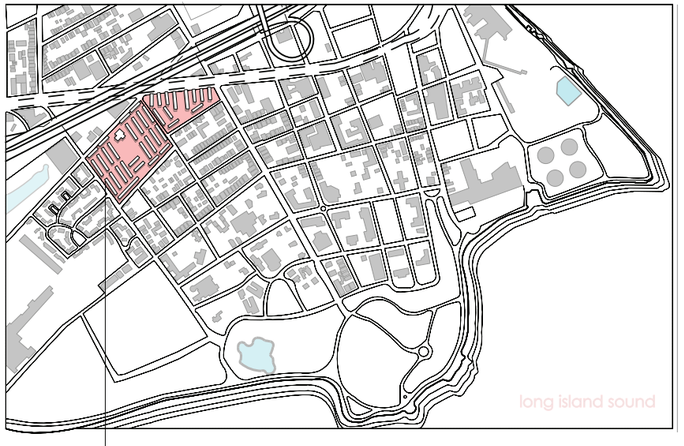
SEASIDE VILLAGE HOMES
Year Built: 1918
Style : Residential Apt Housing

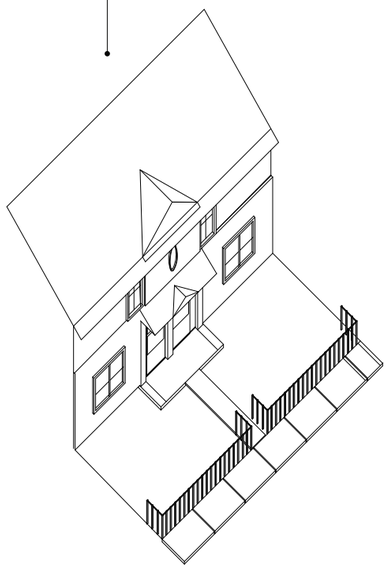




The Seaside village homes built in 1918 offer a colonial facade with a raised entry to evoke a sense of priminade entering a living space. The front yard is divided by the sidewalks and there are no other formal means on division of lots. Trees have been planted in between housing apartments to dileniate a break in unit. Shurbs are planted at the concrete foundation reveal line. Consistent dormers and bump out bay windows are also deployed on the facade as formal gestures.

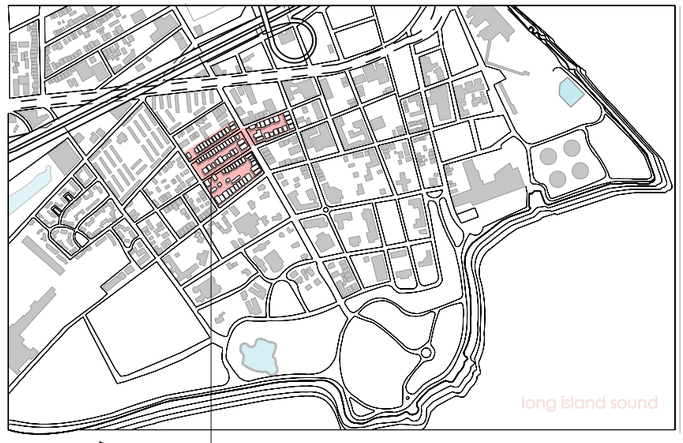
HOUSING AUTHORITY CITY OF BPT
Year Built: 1950
Style : Residential Apt Housing

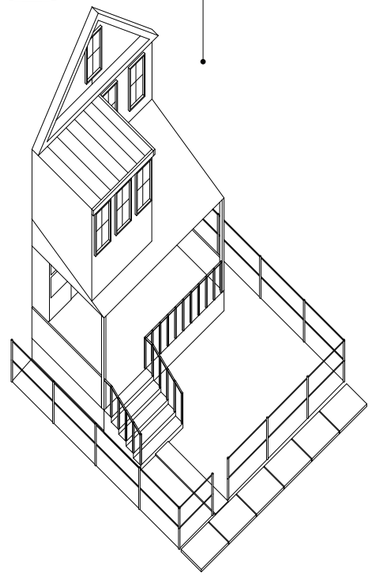




The housing authorite's residential housing project was built in 1950. The facade is clad in brick face with a gable roof above the entry way. Foliage such as trees are planted in between tennants lawn space to dilineate lots. A small metal knee fence is implemented, demarkating the square footage for the front yard Each tennant's front yard space is approximately 20ft x 10ft (200sqft.) The public sidewalk runs parallel with the housing unit. there is no raised entry but a covered portico.

ATLANTIC STREET HOUSING UNIT
Land Use: Three Family Housing Unit
Year Built : 1910



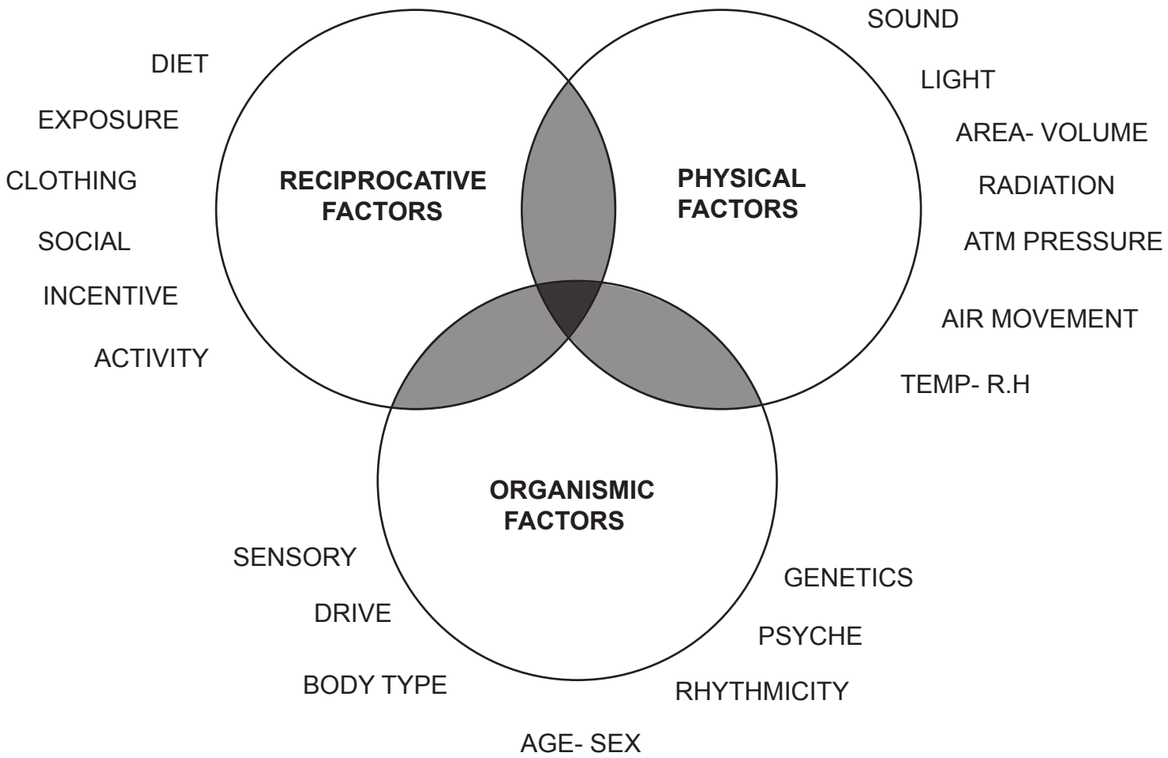


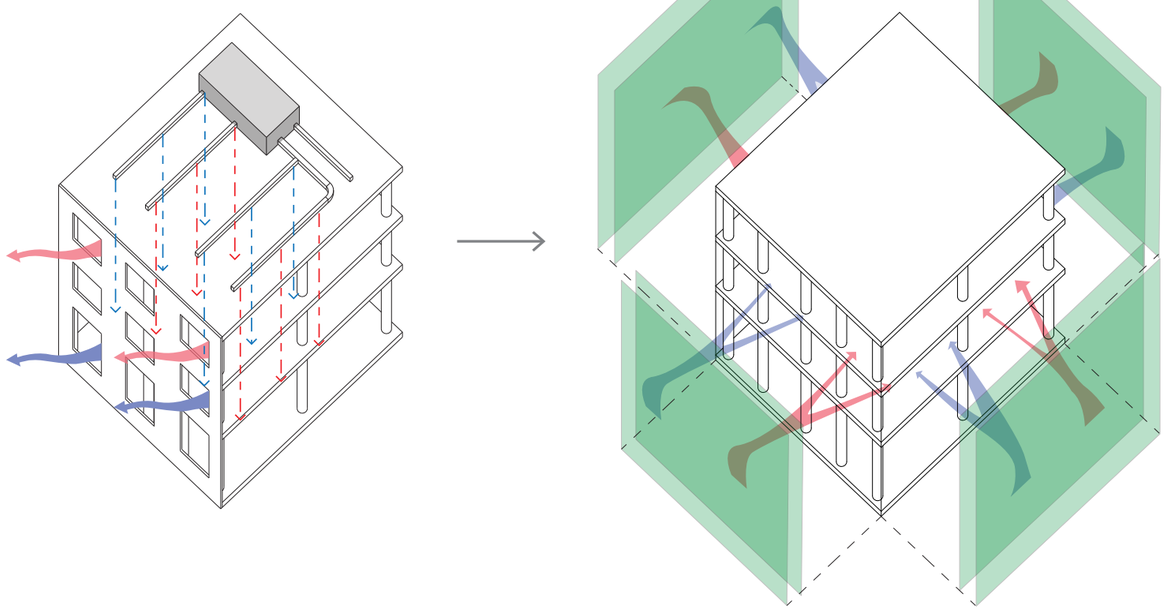
The Atlantic street housing units were built in 1910. They are an all wood construction clad in wood shingles. The front portch is covered by a second story overhang. This acts as a raised social space overlooking the street and the front lawn. The property has a clear demarcation of property lines with use of metal chain link fence. The sidewalk runs parallel to each abutting property. Eac Unit houses 3 families depending on size. The property line can be demarcated by use of fences or shrubbery or ornamental pieces.

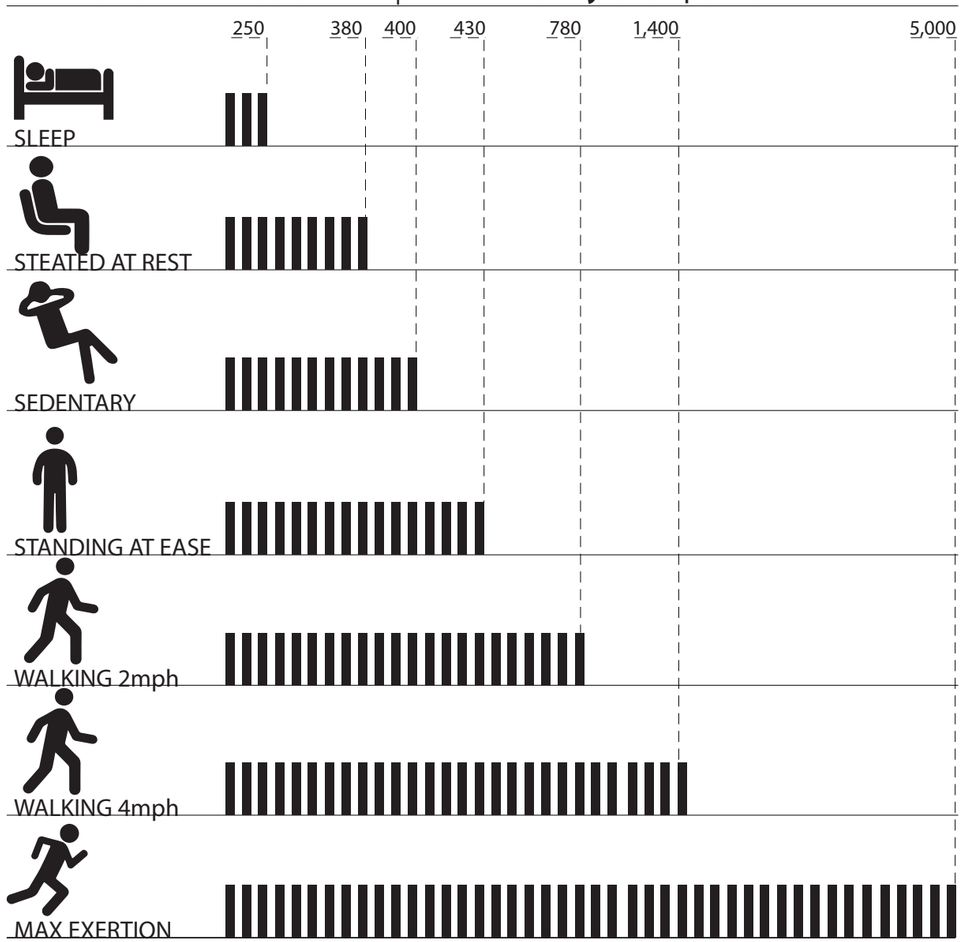

long island sound

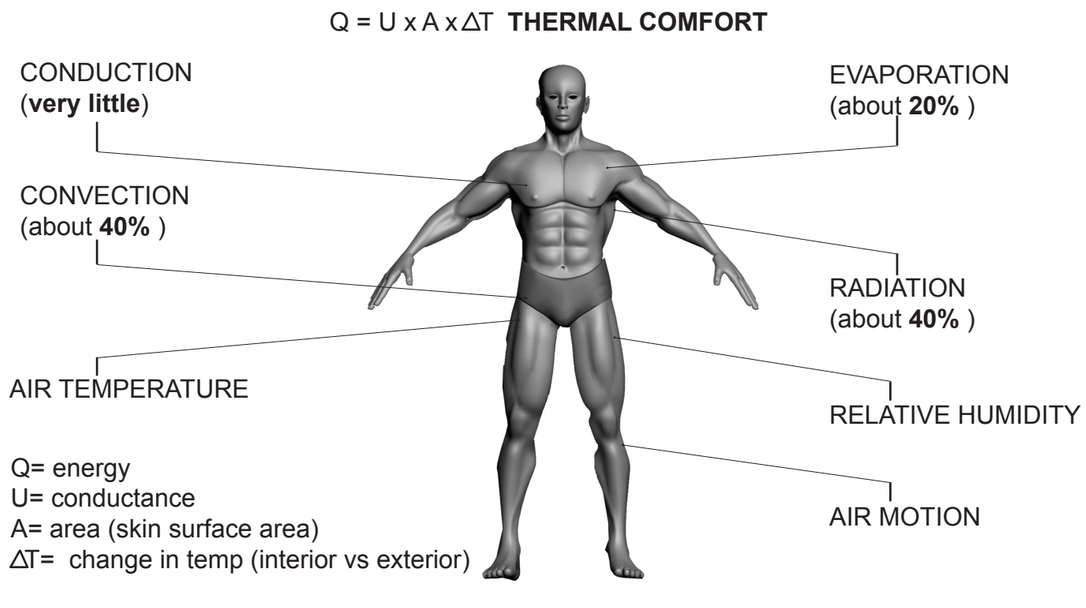

long island sound

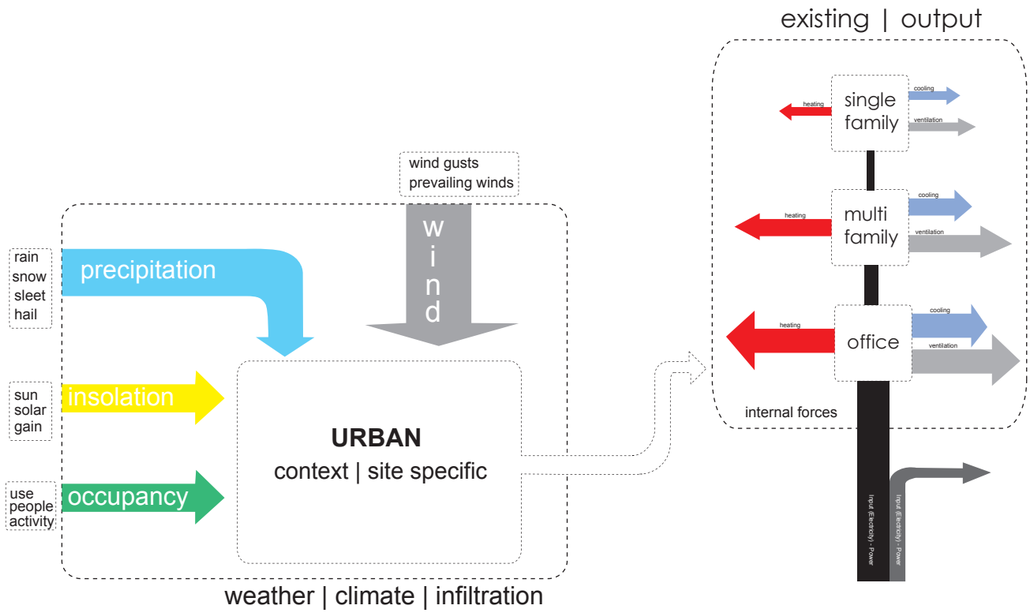
P E R F O R M A N C E | human scale

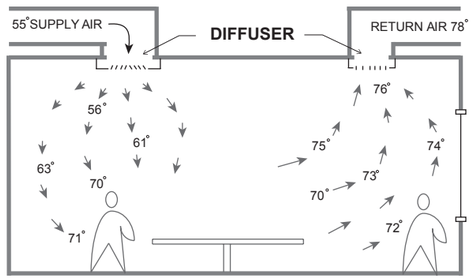




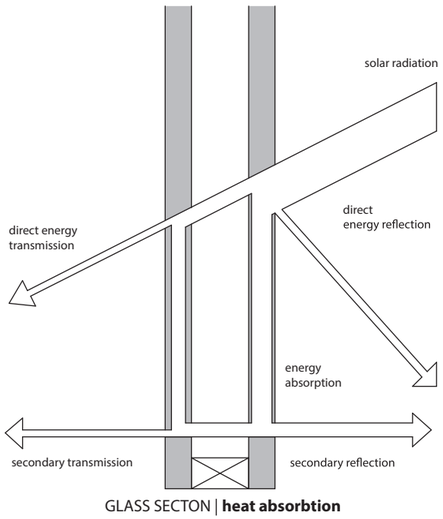






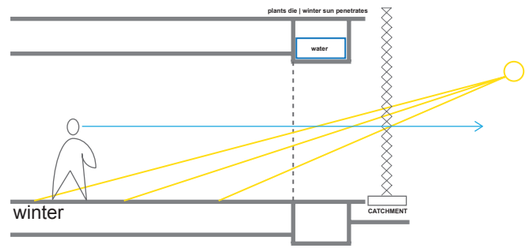


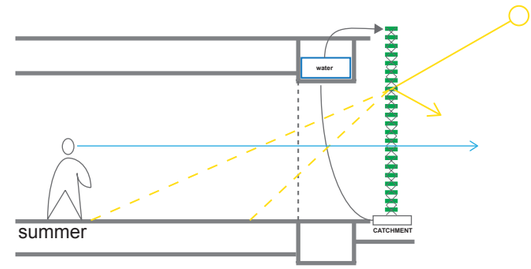
AIR DIFFUSION + MIXING PATTERN | TYPICAL ROOM - COOLING

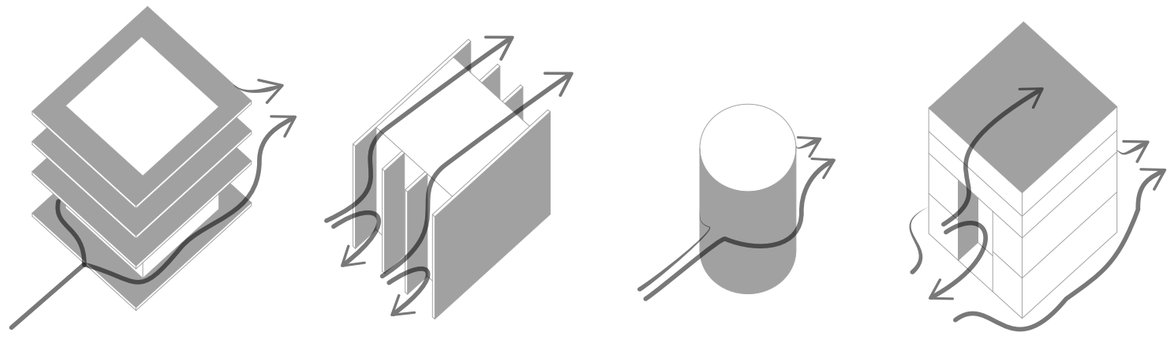


GLASS SECTON | **heat absorbtion**

PHYSICAL DECISIONS IN ENVELOPE SYSTEM DESIGN
Exterior Wall/Roof/Floor Exterior Surface, Material Properties
Composite Materials, Thickness Interior Surface
Form: Planar, Curved **Slope, Orientation** **Module, Size, Shape** Connection of Envelope Components
Windows/ Openings **Material Properties** **Size, Shape, Spacing** Orientation Control Systems, Sunshading Control Systems, Heat Loss Control Systems, Security/ Privacy Frame Connections, Plan/Sec/Elev. Access, Visual and Physical Expansion Potentia, Horiz & Vert Change Potential, Horiz & Vert Change Potential for Access & Image Color, Texture, Ornament



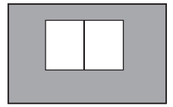
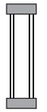
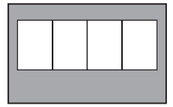
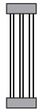
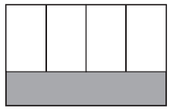
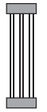
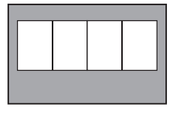
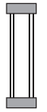
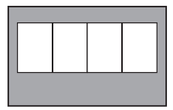
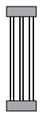
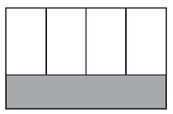
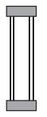
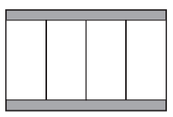
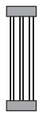
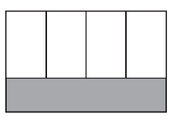
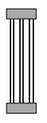




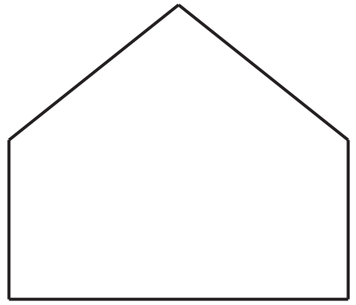
PERFORMANCES PRIORITIES | BUILDING TYPES						
	spatial	acoustic	thermal	air quality	visual	integrity
SMALL OFFICE	✔		✔			
LARGE OFFICE	✔	✔	✔	✔	✔	
MULTI FAMILY	✔	✔				✔
SINGLE FAMILY	✔		✔			✔
STORES					✔	
SHOPPING CENTERS	✔		✔	✔	✔	
HOTEL /MOTEL	✔	✔	✔			✔
ELEMENTARY SCHOOLS	✔	✔	✔	✔	✔	✔
SECONDARY SCHOOLS	✔	✔	✔	✔	✔	✔
WAREHOUSES						
ASSEMBLY		✔		✔	✔	
CLINICS	✔			✔	✔	
NURSING HOMES	✔		✔	✔	✔	✔
HOSPITALS	✔		✔	✔	✔	✔

THE BUILDING SYSTEMS INTEGRATION HANDBOOK, RICHARD D, RUSH

OPTIMIZATION BUILDING TYPES

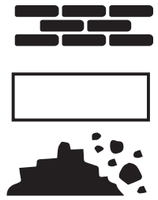
BUILDING T Y P E		WINDOW AREA		GLAZING TYPE	SECTION	INSULATION THICKNESS
low- energy housing		<30%		2 pane insulating glazing		15-25 cm
low- energy housing		>30%		3 pane insulating glazing		15-25 cm
passive house		>50%		3 pane insulating glazing		25-35 cm
office building		<50%		2 pane insulating glazing		>15 cm
office building		<50%		3 pane insulating glazing		>15 cm
office building high internal loads		<70%		2 pane insulating glazing		>10 cm
office building high internal loads		>70%		3 pane insulating glazing		>10 cm
office building thermoactive ceiling		<70%		3 pane insulating glazing		>15 cm

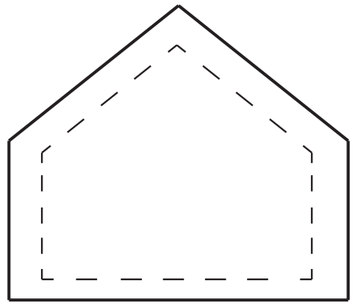
TAXONOMY | residential construction



- solid masonry walls
  (bare or painted / rendered)
  (unceilinged roof)
- solid ground floor
  (bare earth)

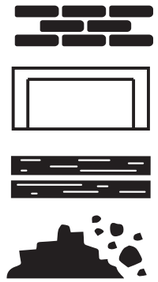
PERIOD: pre | post 1600's

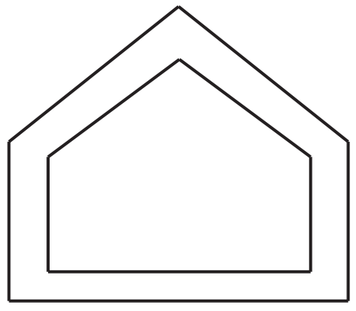




- solid masonry walls
  (inner linings to walls and ceilings)
- solid ground floor
  (timber boarded finnish)
  (battens or joists on/near bare earth)

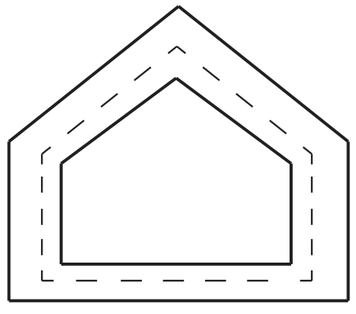
PERIOD: mid 1700's





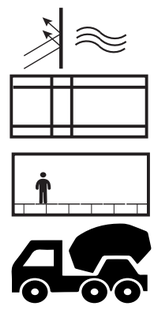
- cavity masonry walls uninsulated
  (inner linings to walls and ceilings)
- uninsulated ground floor
  (stone slabs | concrete boarded finish)
  (suspended timber floor)

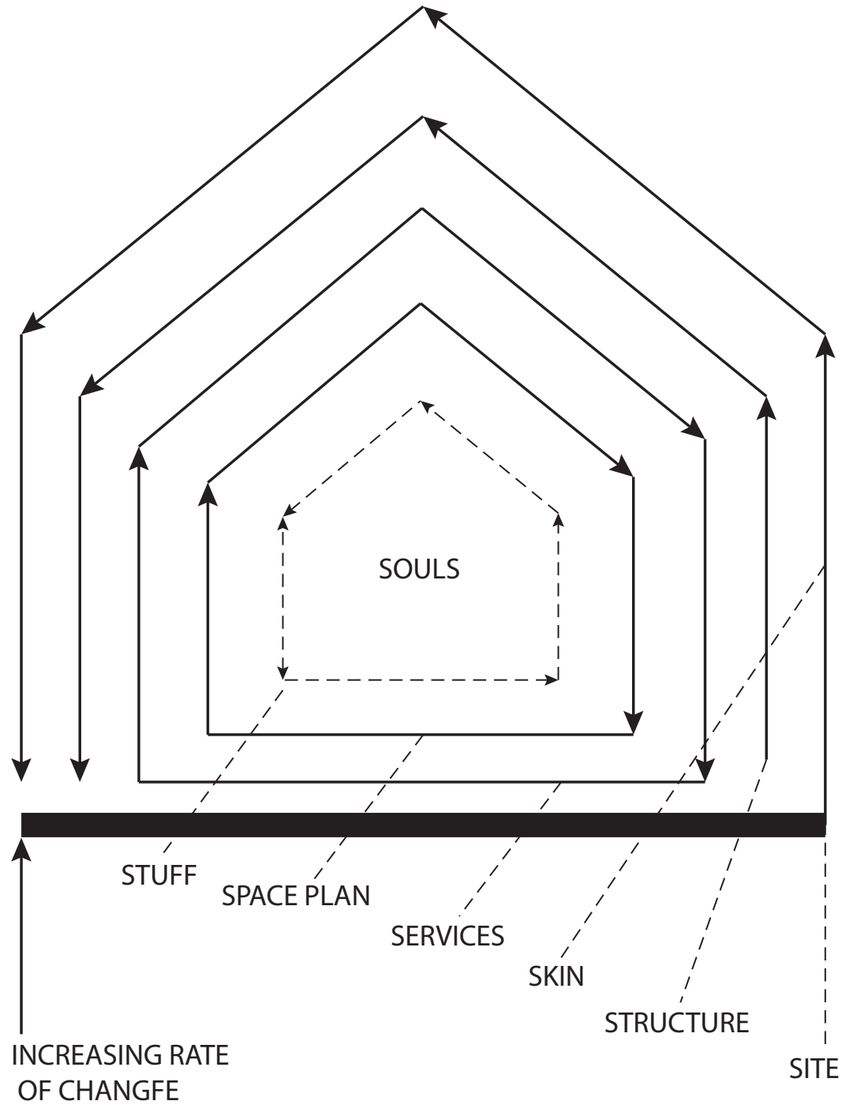
PERIOD: from mid 1800's



- insulated cavity| framed | panel walls
- internal lining to walls and ceilings
- insulated solid or suspended timber precast concrete floors
- raised floor systems

PERIOD: from 1950-1999





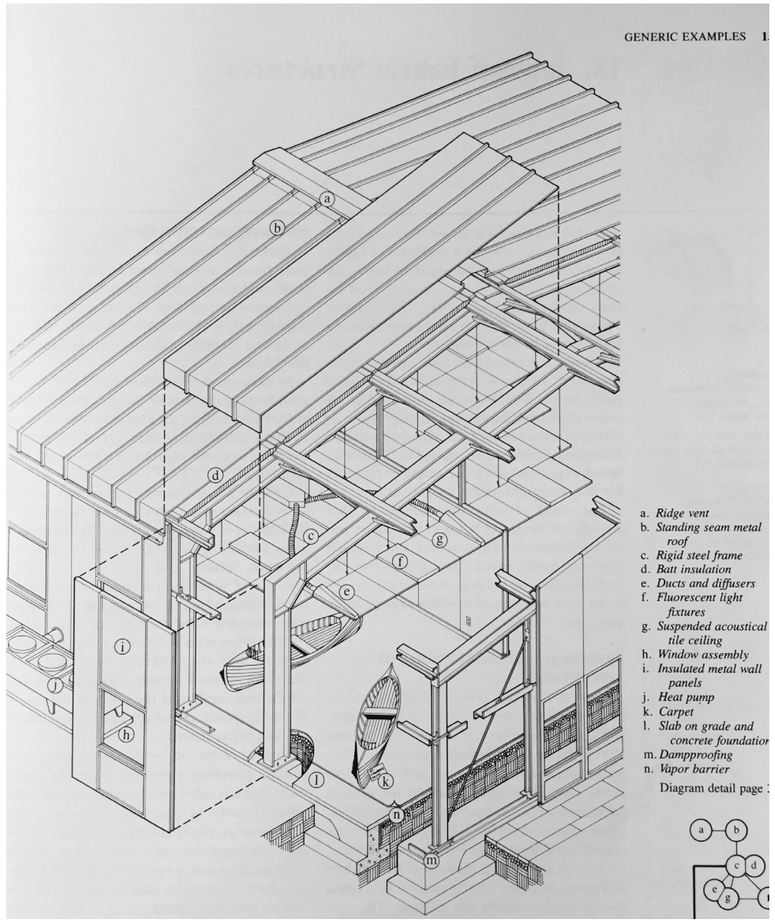
Shearing layers	Description	Typical Lifespan/ activity
Site	Location + Context	Permanent
Structure	Bones	30-300 years
Skin | Envelope	Envelope	20 + years
Services	Lifeblood	7-30 years
Space Plan	Interior Layout	3 years years
Stuff	Furniture + Equipment	Under 3 years
Souls	People	Daily

LAYERS OF CHANGE | Temporality

EXISTING BUILDING TYPES

BRIDGEPORT, CONNECTICUT

Metal Building Systems

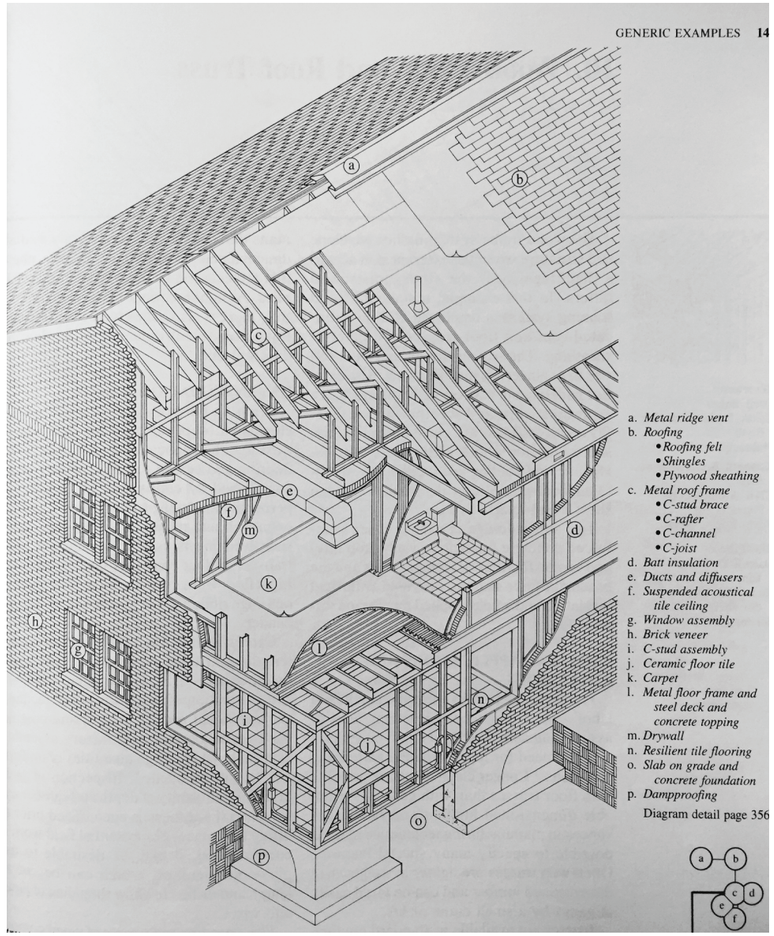


The Building Systems Integration Handbook, Rush, Richard AIA 1986 p. 413-427

Description:
Pre-engineered metal building integrates ligheight structural and envelope components at the connected level, but the result is a structure and envelope that combine to produce a common structural effect. Each component adds strength and regidity of the overall form.

Key integration issues:
-Building corners and edges are particularly subject to wind induced uplifting.
-Sheet metal and steel structural memebers carry little to no insulative properties, attention to proper thermal barriers must be taken into account.
- Metal building systems are very lightweight .

Lightweight Steel Frame + Brick Vineer

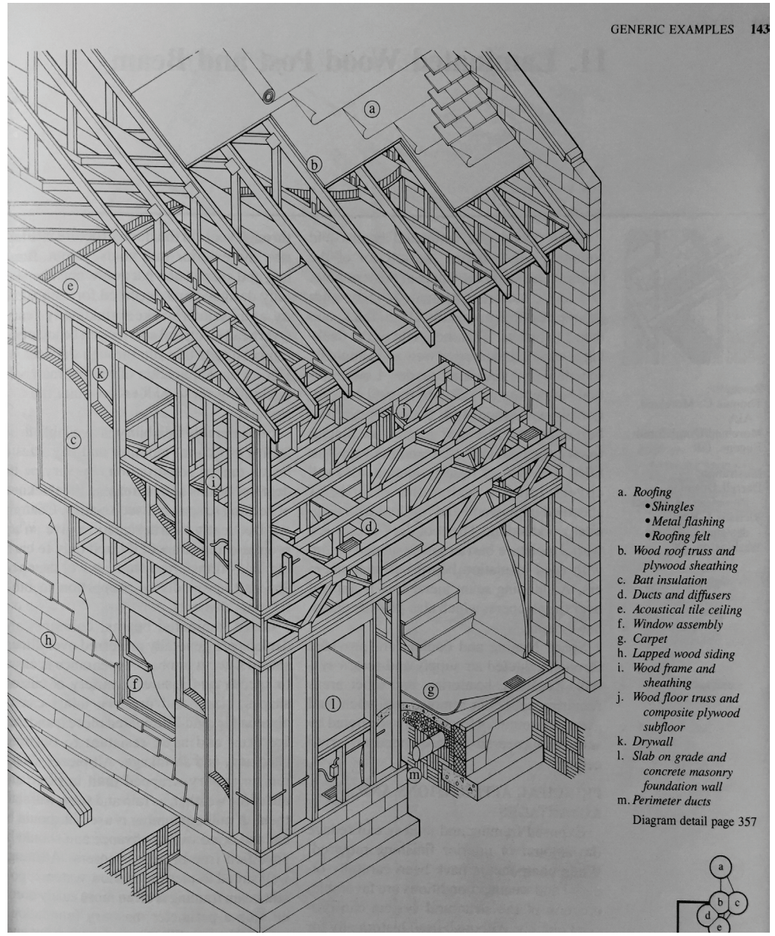


The Building Systems Integration Handbook, Rush, Richard AIA 1986 p. 413-427

Description:
Structural, interior and envelope systems are connected in lightweight steel frame construction, while the mechanical systems are meshed within the structural walls, floor and roof. Connections between the brick and the cold-rolled steel structural frame are minimal, to permit nearly independent movement of the two systems.

Key integration issues:
-Anchoring the veneer to the steel frame should permit free and independent movement of the two materials.
-The brick veneer is self supporting and serves almost excusively as envelope.
- Sheathing both side of the frame provides some lateral stability as the free standing brick facade cannot brace the structural laterally.

Wood Floor +Roof Truss

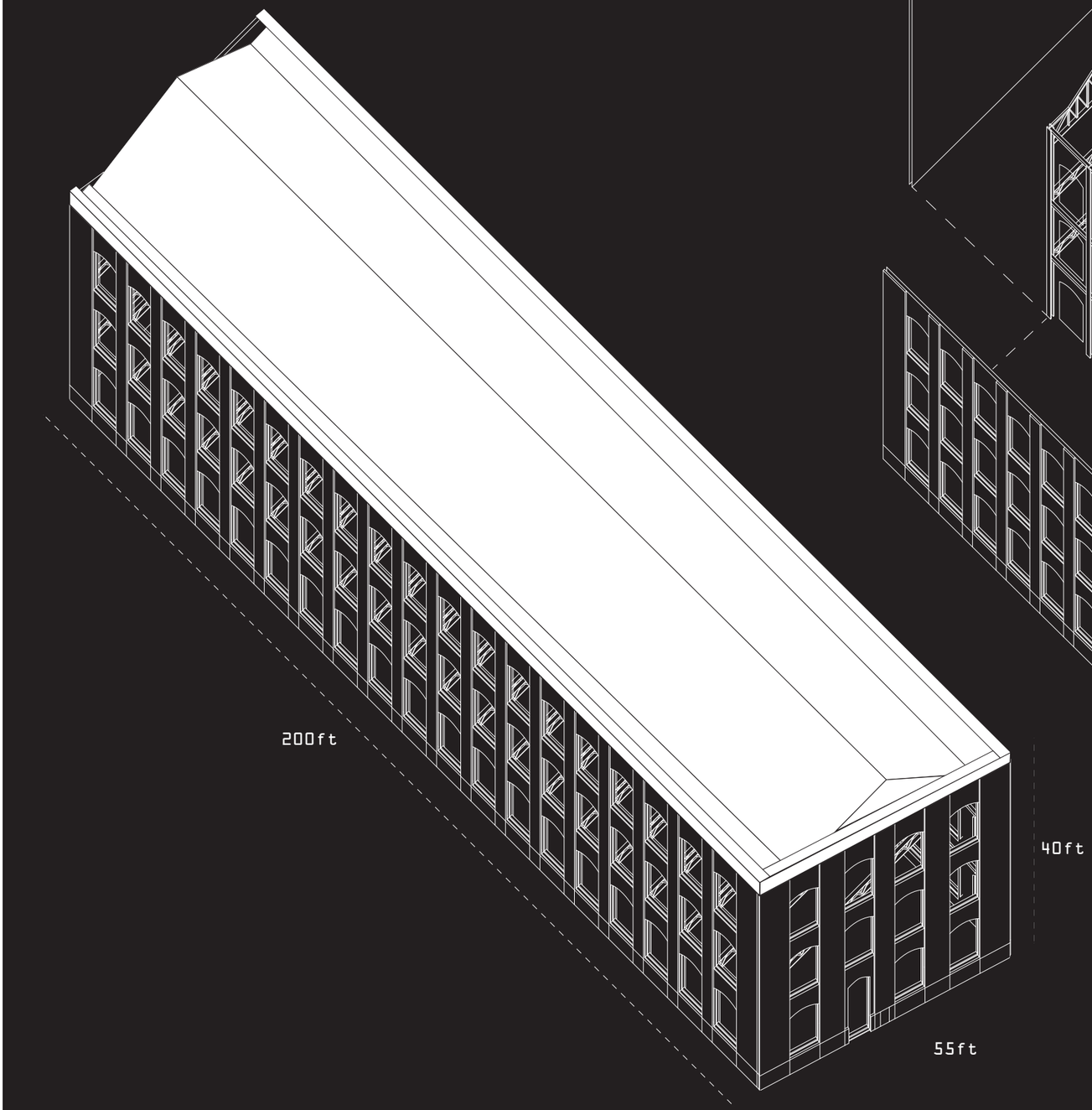


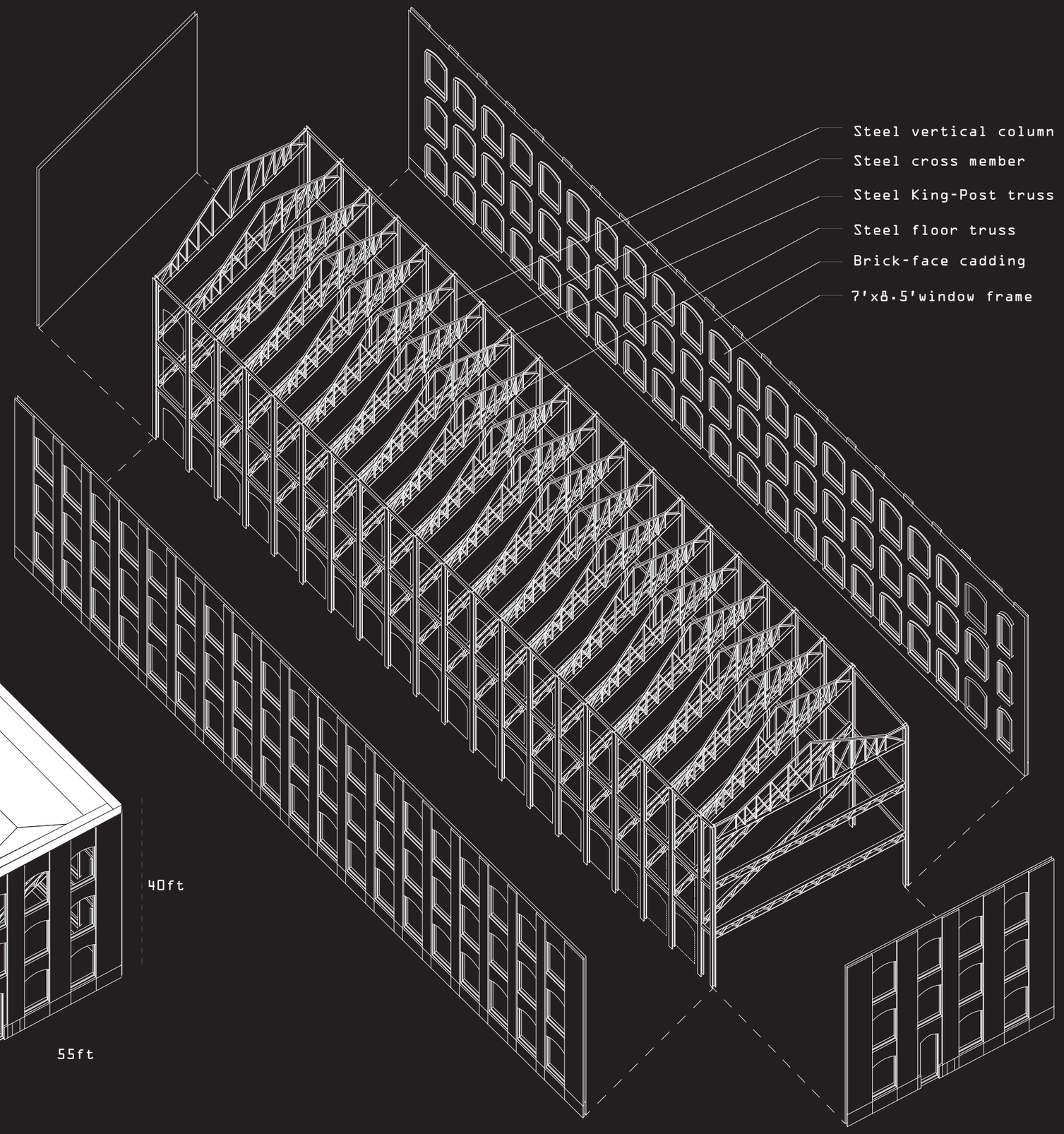
The Building Systems Integration Handbook, Rush, Richard AIA 1986 p. 413-427

Description:
Open-Web wood truss and stud frame construction produces natural voids within the sructure for placement of mechanical systems. The basement slab unifies structural, envelope, and interior systems. Open webb wood truses permit framing, leaving grearer flexibility in the location of interior partition walls that need not be load bearing. The plywood veneer exterior siding unifies the structural system with th thermal envelope because the sheets act as both a structural sheathing for thr woof frame and as an integral element of the envelope.
Key integration issues:
-Wood can and will erode faster than metal. Wood construction is also subject to easy structural failure under fire conditions.
-Inspection of truss units for uniformity of depth and camber and for general tightness is encouraged prior to lifting into place.

BUILDING ANALYSIS

Type: Warehouse
Built: 1910
33,000 sq FT





SITE | climate data

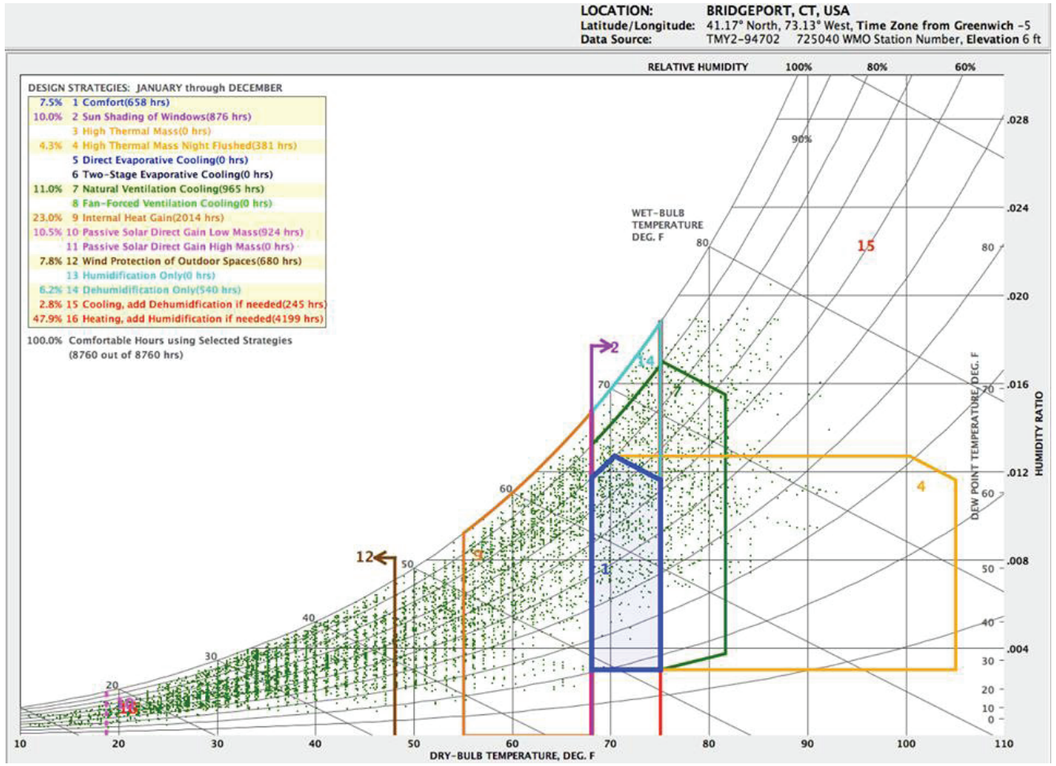
Bridgeport, Connecticut **DATA**

LARGEST DESIGN STRATEGIES : 42.0% = Heating and Humidification (4199 hours)
23.0% = Internal Heat Gain (2014 hour)
11.0% = Natural Ventilation Cooling (956 hours)
10.5% = Passive Solar Direct Gain Low Mass (924 hours)
10.0% = Sun Shading of Windows (867 hours)

Temperature Range Data: Average High = June (84.2 Degrees F) (Design High= 92F)
Average Low = Febuary (25.3 Degrees F) (Design Low= 3.5F)

Bridgeport lies within the transition zone between a humid subtropical and a humid continental. Th e coastal location of Bridgeport on Long Island Sound result in Bridgeport being several degrees cooler in summer and milder with less snowfall in winter than locations further away from the coast. Bridgeport is a relatively sunny climate, averaging more than 2400 hours of sunshine annually. In summer, hot and often sultry tropical weather conditions can be typical, with high temperatures in the 80s and occasionally in the 90s F. Brief, but intense late day thunderstorms are common in the hottest months. Fall and spring months are cool to warm with high temperatures from 50 to 70 F. The winter months have daily high temperatures in the upper 30s F and overnight lows in the mid 20s F. Winters in Bridgeport are modest, with a mix of rain and snow, though in some years Bridgeport can receive heavy snow.

SOURCE Climate Consultant



WEATHER DATA SUMMARY

LOCATION: BRIDGEPORT, CT, USA
Latitude/Longitude: 41.17° North, 73.13° West, Time Zone from Greenwich -5
Data Source: TMY2-94702 725040 WMO Station Number, Elevation 6 ft

MONTHLY MEANS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Global Horiz Radiation (Avg Hourly)	63	83	94	115	121	124	123	119	105	90	63	55	Btu/sq.ft
Direct Normal Radiation (Avg Hourly)	95	100	91	96	97	85	90	92	91	103	81	85	Btu/sq.ft
Diffuse Radiation (Avg Hourly)	29	39	44	54	53	62	58	57	51	40	32	26	Btu/sq.ft
Global Horiz Radiation (Max Hourly)	159	206	249	299	302	304	300	286	252	230	163	136	Btu/sq.ft
Direct Normal Radiation (Max Hourly)	284	295	295	295	289	264	277	262	280	282	273	278	Btu/sq.ft
Diffuse Radiation (Max Hourly)	76	123	124	134	146	167	151	141	124	105	84	72	Btu/sq.ft
Global Horiz Radiation (Avg Daily Total)	594	859	1116	1526	1738	1858	1810	1624	1302	983	614	505	Btu/sq.ft
Direct Normal Radiation (Avg Daily Total)	895	1032	1077	1272	1389	1271	1321	1254	1131	1117	788	772	Btu/sq.ft
Diffuse Radiation (Avg Daily Total)	275	408	530	716	774	932	859	783	627	439	315	243	Btu/sq.ft
Global Horiz Illumination (Avg Hourly)	1995	2626	3016	3698	3902	4046	4029	3884	3402	2879	1993	1738	footcandles
Direct Normal Illumination (Avg Hourly)	2500	2709	2551	2738	2756	2351	2489	2515	2525	2802	2128	2187	footcandles
Dry Bulb Temperature (Avg Monthly)	30	29	37	46	58	67	73	73	66	56	45	33	degrees F
Dew Point Temperature (Avg Monthly)	19	21	26	31	46	56	64	62	54	45	35	23	degrees F
Relative Humidity (Avg Monthly)	63	72	68	59	68	69	74	70	68	66	69	69	percent
Wind Direction (Monthly Mode)	300	330	340	310	240	230	220	240	290	280	340	290	degrees
Wind Speed (Avg Monthly)	14	13	11	13	10	10	10	9	12	11	13	13	mph
Ground Temperature (Avg Monthly of 3 Depths)	45	39	36	36	42	49	56	62	65	64	60	53	degrees F

TEMPERATURE RANGE
California Energy Code

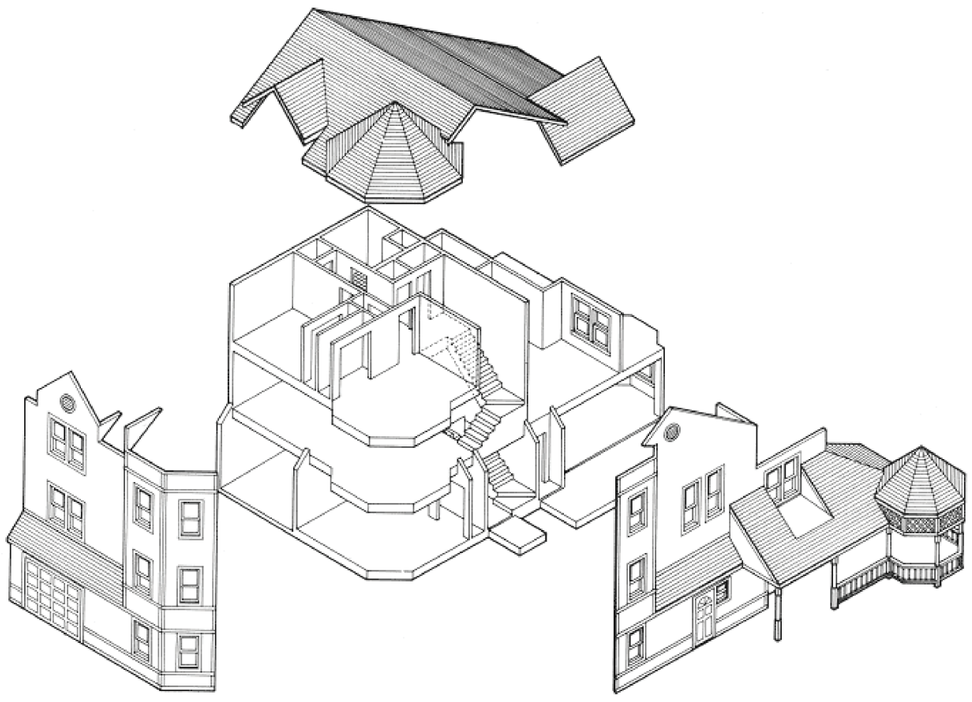
LOCATION: BRIDGEPORT, CT, USA
Latitude/Longitude: 41.17° North, 73.13° West, Time Zone from Greenwich -5
Data Source: TMY2-94702 725040 WMO Station Number, Elevation 6 ft

building program | ***Bridgeport, CT***

MUTUAL HOUSING ASSOCIATION
parkside gables, Stamford ct

Located in Stamford Connecticut, it was the first mutual housing community to be built in Connecticut. More than 75% of the Parkside families purchased their first homes.
Resident participation: 20 hours a week are required. Tasks include: participation on the community housing board, organizing events, cleaning common areas, property cleaning, lawn and building cleaning.

"I recently drove by Parkside Gables and became nostalgic, I was amazed at how orderly, clean and well maintained the community is 20 years later, a cleaner testament to the residents who take pride in their homes and treat it like a homeowner. - Jeffery Rutishauer
Mutual Housing caused a change in our entire neighborhood and gave our community new stability. New buisnesses and other non-profit organizations moved in and the lifestyle for the people in our community improved fast. And it was all because Mutual Housing broke the barrier and saw the potential of the space and the people. - Debbie Joyner (First resident of Parkside Gables)



Housing and Connecticuts Economy

*people are struggling to **buy a home***

Median Value of a home	Monthly mortgage payment	Estimated % of CT households unable to afford a house
$157,000	$1,265	60%

*people are struggling to **buy an apartment***

Average rent	Annual income needed	Estimated % of CT renters who cannot afford rent
$815	$32,600	42%

FOR EVERY $10 MILLION INVESTED IN CONNECTICUTS HOUSING INDUSTRY, THE STATE'S ECONOMY WILL BENEFIT FROM

Connecticut	New jobs created	New wages created
Initial impact	190	$6,058,150
Leveraged impact	1,711	$54,523,350
Total impact	1,901	$60,581,500

source: home sweet home: Why America needs a National Trust Fund, Center for community change. 2001

MOLECULAR GASTRONOMY
moto restaurant, Chicago IL

Moto is a Molecular Gastronomy restaurant in the Fulton River District of Chicago. “The restaurant is known for making high tech dishes witch incorporate elements such as carbonated fruit, edible paper, lasers and liquid nitrogen for freezing food.” The restuarant features a 15 course meal which are downsized into bite-size portions. Forbes magazine put Moto at #44 on its list of “100 best US restaurants” making it a top restaurant attraction in the country. Mr. Cantu (Moto’s chef) wants to use technology to change the way people perceive (and eat) food, and he uses Moto as his laboratory. "Gastronomy has to catch up to the evolution in technology," he said. "And we're helping that process happen."

Moto grows all of their produce in house using vertical hydroponic techniques as well as composting which they call “micro greens” The current scheme utilizes a NFT (Nutrient Float Trofts) system with LED string lighting to minimize wattage consumption.
Mr. Cantu argues “In the future, you will be able to go to a website, a contractor will come out.. and build a symilar system in your home, which will save you a substantial amount of money by eliminating packaging, processing, refridgeration and food miles”

Molecular Gastronomy describes the scientific exploration of food and the cooking process. “For us, it’s a way to create forward-thinking food that can either make the world a better place, or make food much more fun to enjoy,” - Homaro Cantu

Sources: *Bernstein, David (02-03-2005), "When the Sous-Chef Is an Inkjet", The New York Times*

OFFICE FARM, OTEMACHI HQ
Pasona O2, Tokyo Japan

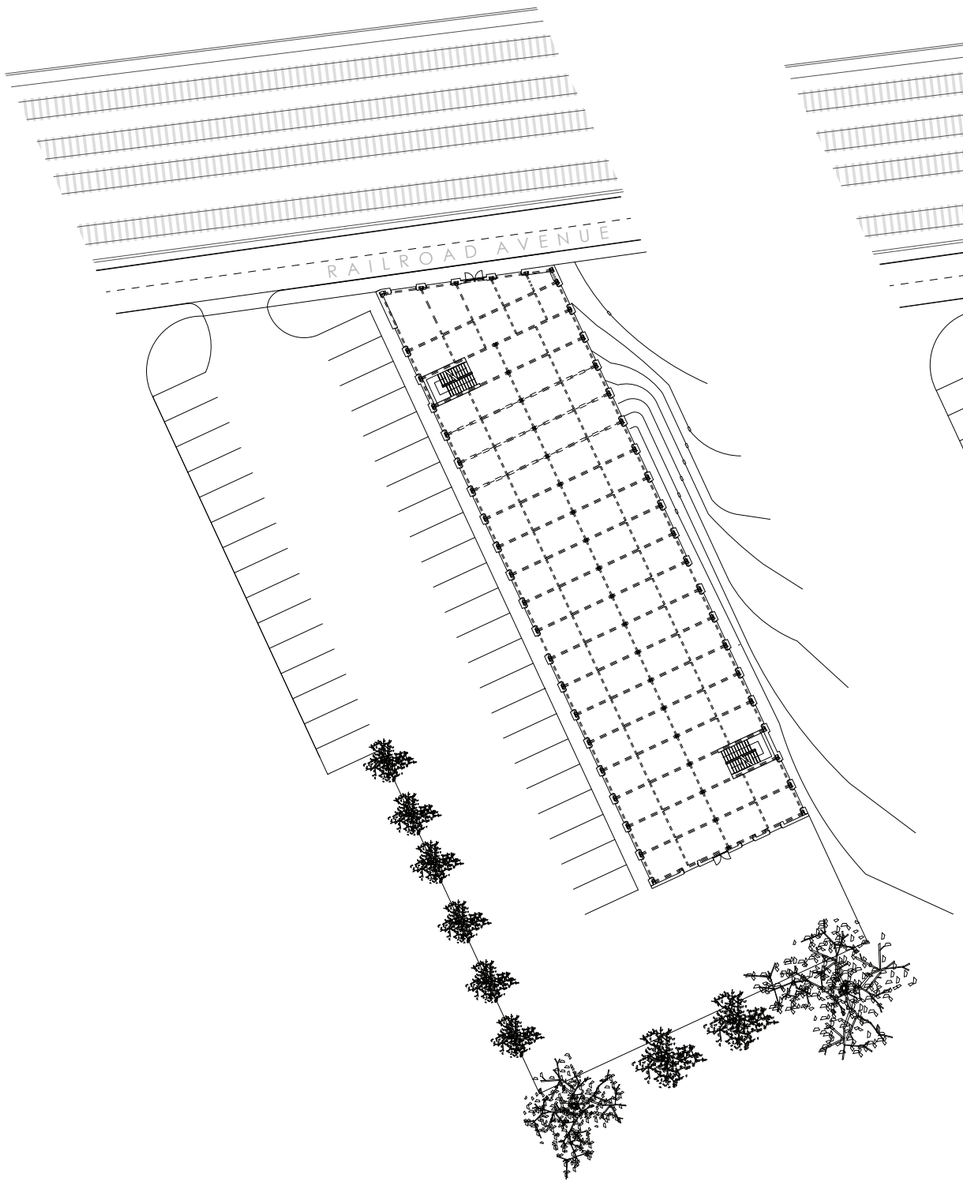
Pasona O2 Tokyo is a 10,000 sq ft space of underground farmland located in Otemachi Headquarters building. It showcases city farming initiative.

-The company took over a 50-year-old structure and renovated it into the urban farm and eco office. Pasona elected to dedicate considerable space inside the building to hydroponic and soil-based farming, which is interspersed throughout the entire building

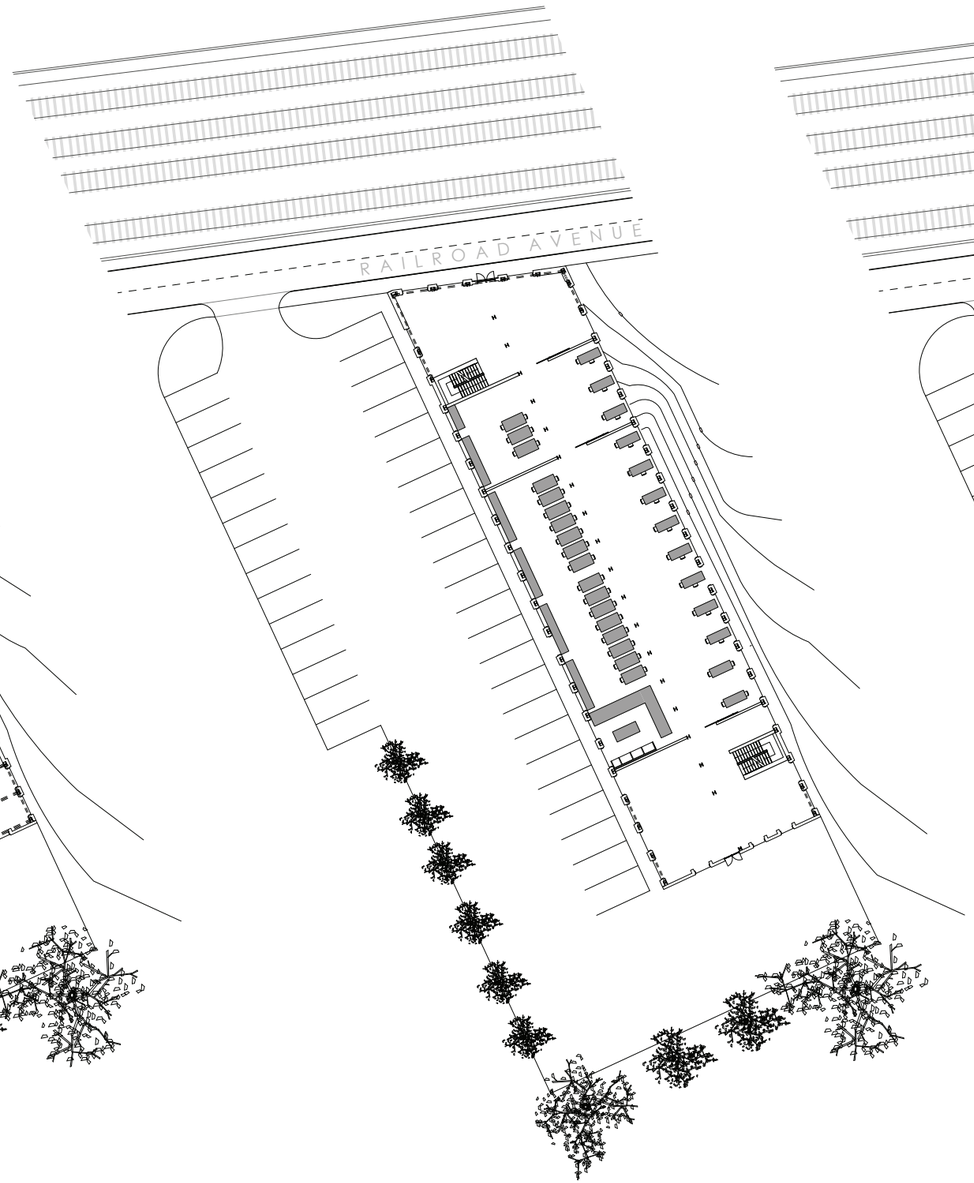
-There are a total of 100 different types of produce grown throughout the 10,000 sq ft office environment.

-Through their urban farm and headquarters, the recruitment company is also supporting the education of Japan's next generation of farmers who work in internships to learn about food production.
“The green space comprises 43,000 square feet with 200 species, including fruits, vegetables, and rice. (Seriously, the main lobby has a rice paddy—and a broccoli field!) "It is the largest and most direct farm-to-table of its kind ever realized inside an office building in Japan," -Kono Designs

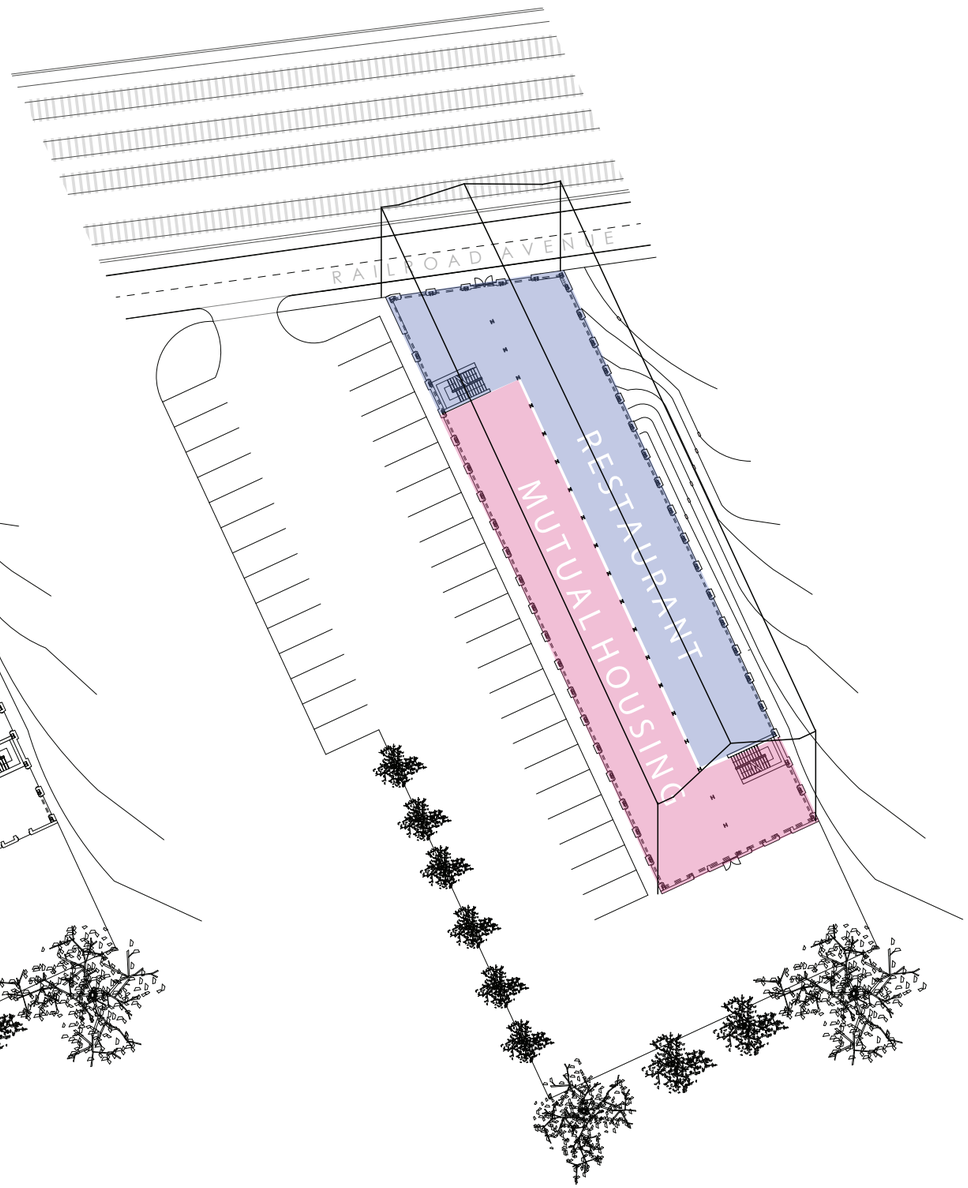
Source: architizer.com | Pasona O2



STRUCTURE



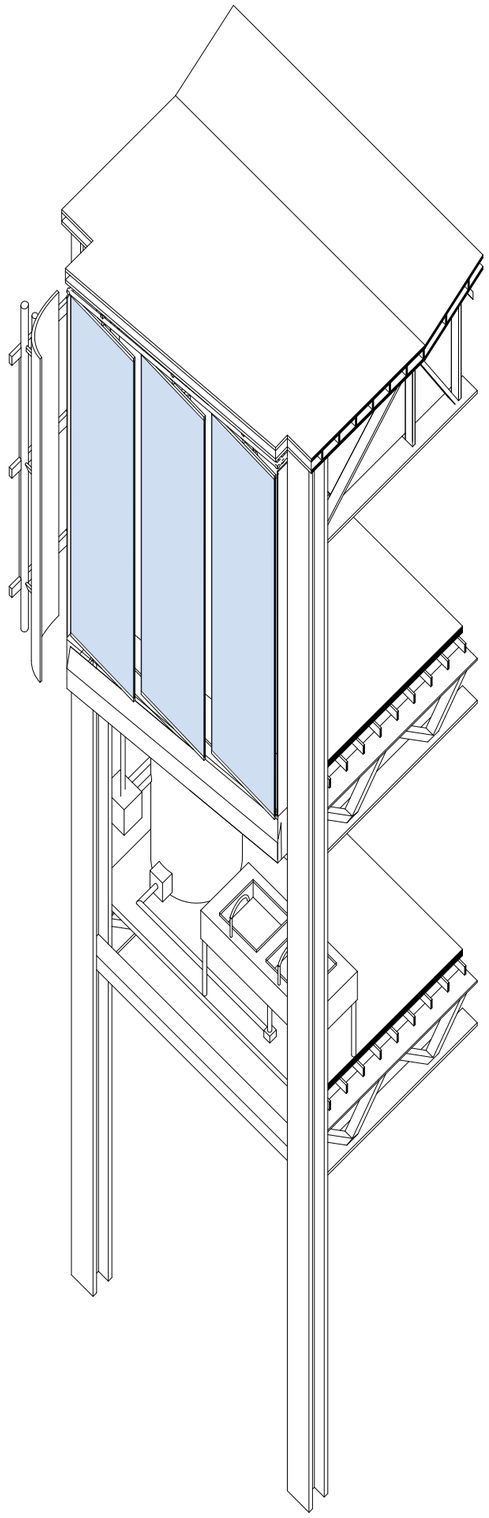
PRIOR USAGE



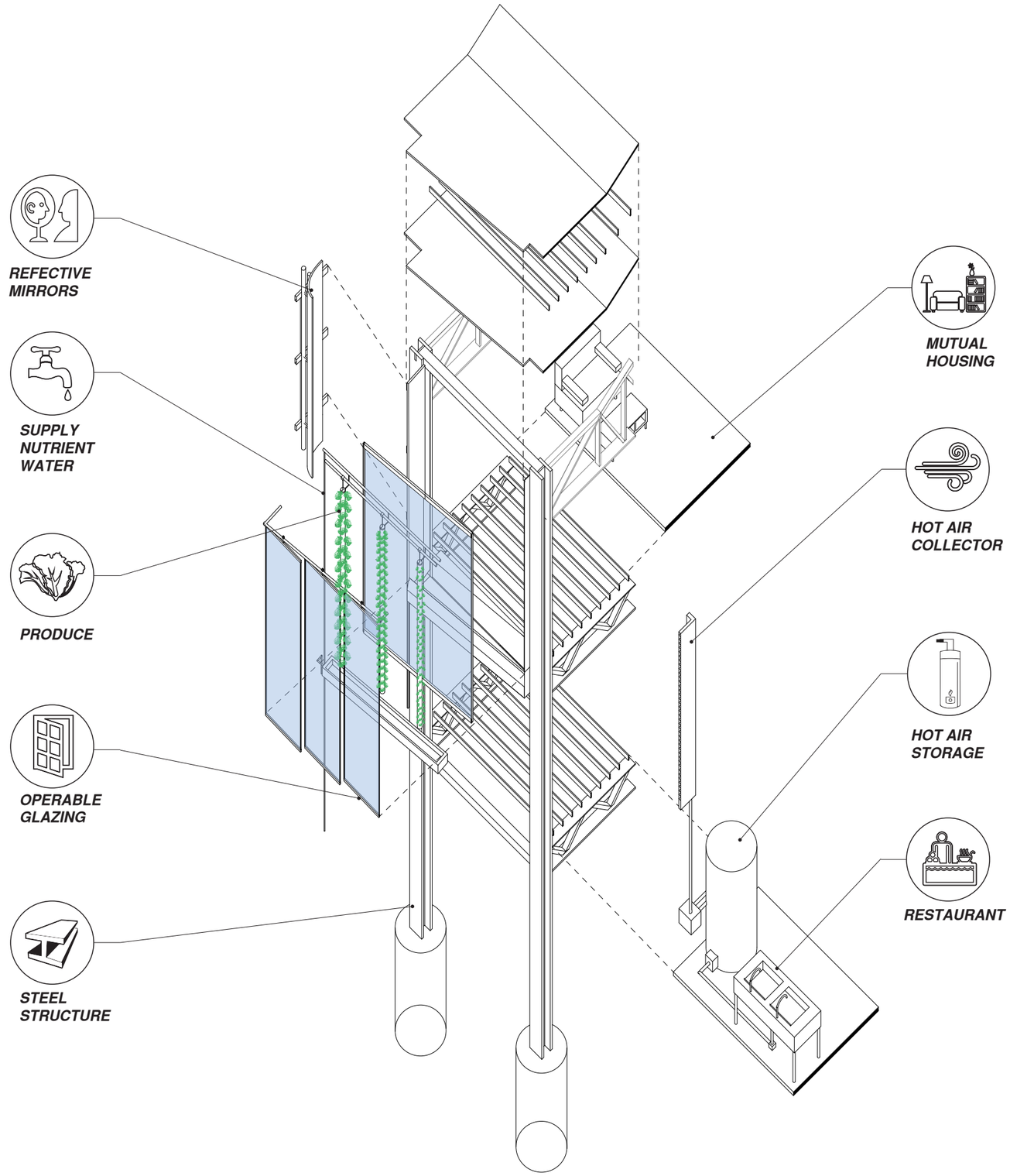
PROGRAM

N

scale: 1″ = 50′



SOUTH Facing | solar collection



SOUTH Facing | exploded

SITE

BRIDGEPORT, CT

- ***industrial district***
- ***proximity to transporation***
- ***rail | highway | boat | airport***

SKIN

- ***Multi Layered Building Envelope***
- ***Passive + Active energy strategies***
- ***Facilitator | growing produce***

MY PROJECT

HOUSING

- ***Mutual Housing Format***
- ***Subsidized Housing***
- ***Tennant Work***

The Envelope acts as the facilitator of Community Engagement. (Housing)

RESTAURANT

- ***Molecular Gastronomy | food***
- ***Place of Destination***
- ***Economic stimulant***

The Envelope acts a driver for Economic Performance and Stability. (Restaurant)