JOSHUA PARKER

SELECTED WORK

2007 -

JOSHUA PARKER, M. Arch., Syracuse University School of Architecture (SUSOA), B.S. Electrical Engineering, University of Washington (UW), Certification, Institute of Advanced Architecture of Catalonia (IaaC)

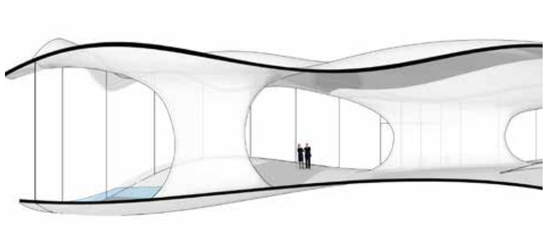
CONTENTS

ZHUHAI PORT PAVILION

Pavilion to Showcase the 5-10 year development plan for the 7 port areas in Zhuhai. The plan of Gaolan Port is at the center of the display with the Wanshan Port being a supplementary. Requirements include dark rooms with circular model spaces 15m and 4.5m in diameter, Large display wall, cinema, lounge and general public space. Design to invoke the ocean and port and Zhuhai's position as a international port.

Project asked for a formal response to "sea and port". Continuous free-form surface provide language and medium to produce spaces evokative of flowing sea water while guiding people through continuous sequences of soft expansions and contractions that serve as exhibition space. the visitor experience is of being underwater. the language and meaning of port is also incorporated to describe moments where the undulating ground plane connects with ceiling to enclose ovular spaces that become oportunities for office space, bathrooms, cinema, etc.

Project Scope: Architectural Design of City planning museum for Zhuhau Port Authority | Collabortors: Ingame Architecture, Yang Zhang (principal in charge) | Role: Consultant for Ingame Architecture, Lead designer | Contribution: Concept/schematic design, computational design, design development



1.

1. diagramatic building section
2. contour in plan, site area is approx. 4,000 square meters.
opposite: Renderings from street and interior view.

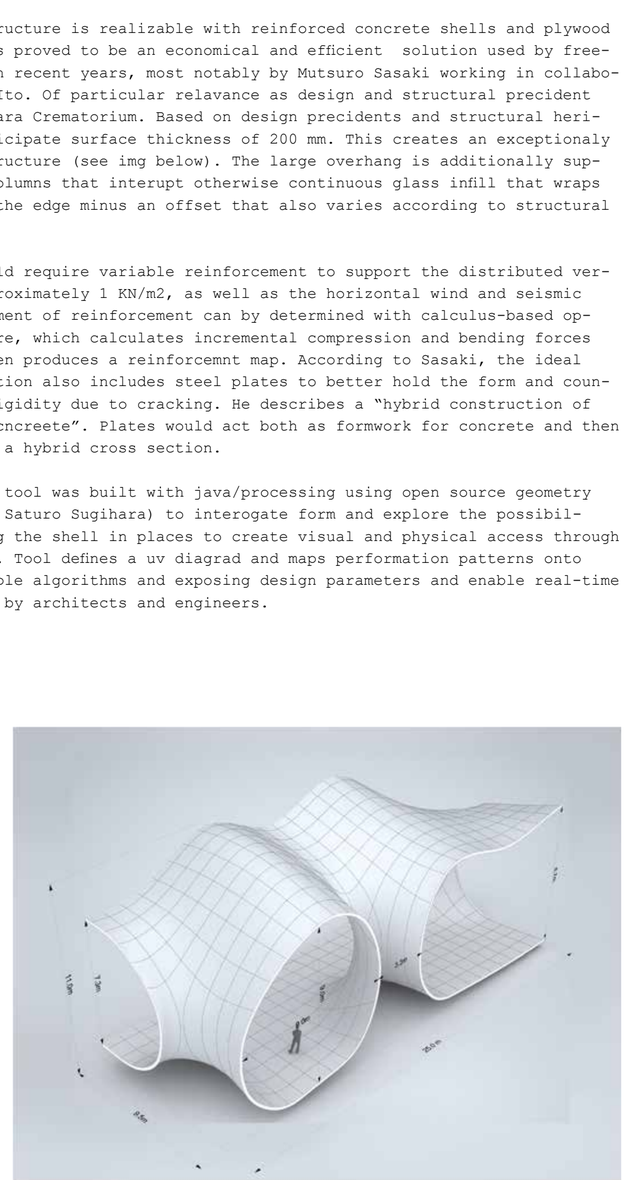
images and text courtesy of Ingame office

Program was divided into two groups. For the most part public activity space, lounge and exhibition occupies the main intersticial space. Remaining program: offices, bathroom, cinema, dark rooms, etc. occupies ovular spaces created by surface deformations. Design was a process of placing circular program in plan, taking the centers, and radius, as location and size of surface ports. A port pulls ground and roof planes together, effectively disturbing the surface as it self adjusts according to structural criteria. The surface, in turn, pulls back stretching and elongating the circles, creating ovular spaces. The cumulative effect of all ports is a heavily undulated surface pair. The frequency and amplitude of irregular waveforms depends on incremental spacing of ports and ground ceiling height.

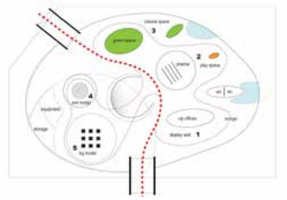
The thin-shell structure is realizable with reinforced concrete shells and plywood formwork. This has proved to be an economical and efficient solution used by free-form structures in recent years, most notably by Mutsuro Sasaki working in collaboration with Toyo Ito. Of particular relavance as design and structural precident was the Kakamigahara Crematorium. Based on design precidents and structural heristics, we can anticipate surface thickness of 200 mm. This creates an exceptionaly thin and light structure (see img below). The large overhang is additionally supported by steel columns that interupt otherwise continuous glass infill that wraps the structure at the edge minus an offset that also varies according to structural requirments.

The structure would require variable reinforcement to support the distributed vertical load of approximately 1 KN/m2, as well as the horizontal wind and seismic loads. The arragement of reinforcement can by determined with calculus-based optimization software, which calculates incremental compression and bending forces along surface, then produces a reinforcemnt map. According to Sasaki, the ideal construction solution also includes steel plates to better hold the form and counter the loss of rigidity due to cracking. He describes a “hybrid construction of steel plates and cncreete”. Plates would act both as formwork for concrete and then fixed in place for a hybrid cross section.

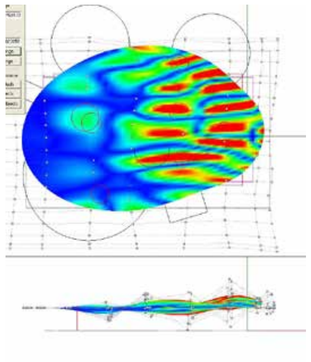
A custom paneling tool was built with java/processing using open source geometry library (igeo, by Saturo Sugihara) to interogate form and explore the possibility of perforating the shell in places to create visual and physical access through vertical surfaces. Tool defines a uv diagrad and maps performation patterns onto surface using simple algorithms and exposing design parameters and enable real-time collaborative use by architects and engineers.

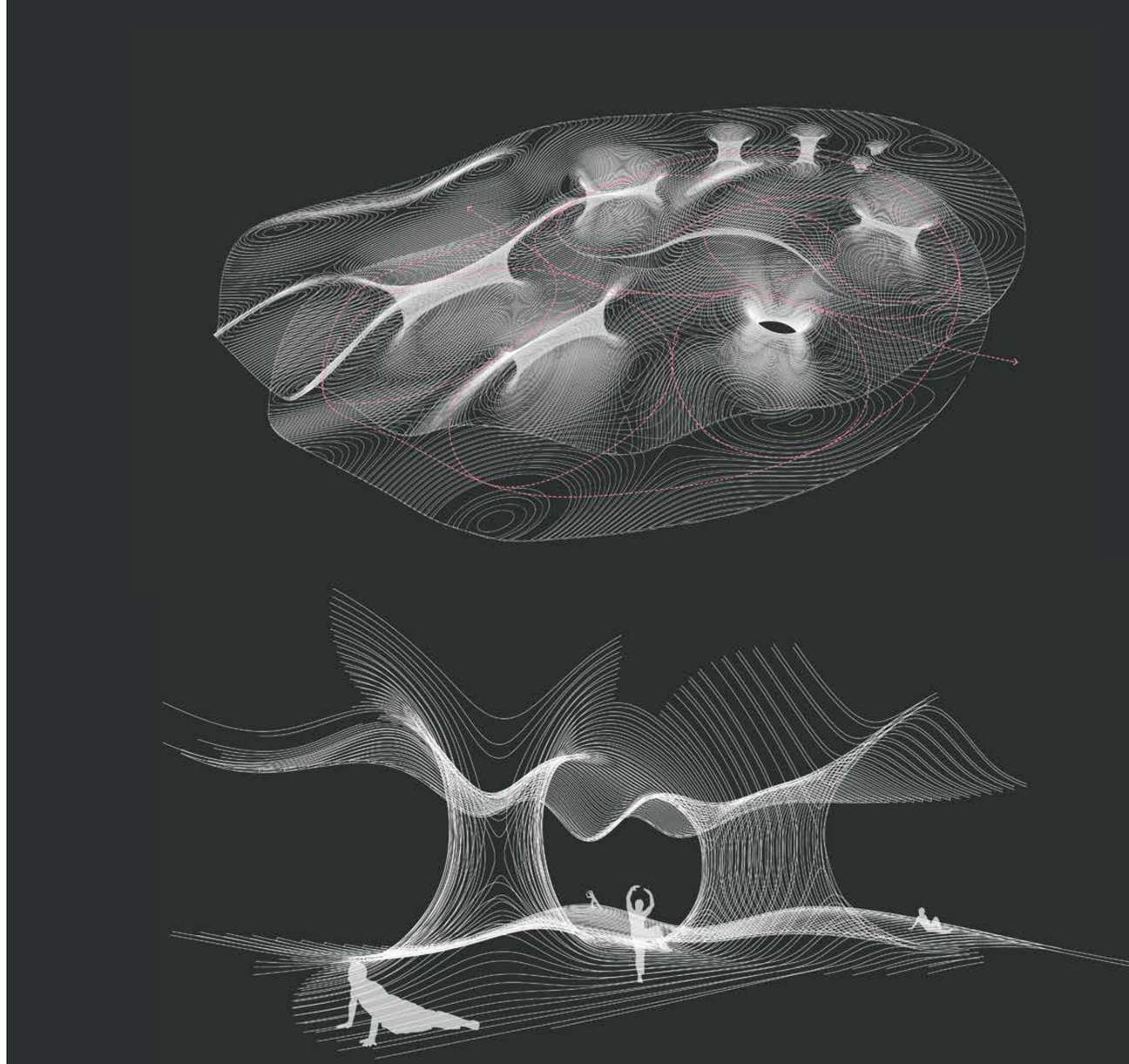


Below: floor plan contours, and programatic relation to primary circulation paths.



Left: Sectioned axon showing scale and formwork.
Below: Curvature analysis, blue indicating areas of minimal curvature, and red, areas of maximum.





Top: Contours and interior circulation.

Below: lateral contours express form and indicate possible structural approach.

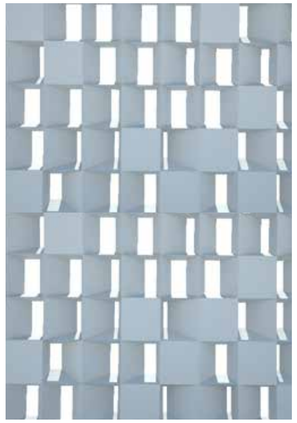
UPLIFT AIRSHIP HANGER

Layers of earth are thrust upward by the geological process of uplift exposing a spatial pocket in the earth for airship operations while generating unexpected oportunities for secondary function as form becomes manifest as a “natural” landform that seemlessly integrates with site both visually and systemically as a member of a self-sustaining networked ecology of tree-covered mountains and landscapes.

Prefabricated concrete frame and panel system realizes an innovative and fully integrated structural skin that carries vertical loads of structure, roof instalations and ceiling crane while oposing lateral forces with highly optimized shape that minimizes material while expressing the combined effi ciency of structure, economy and form.

Flexible and highly effi cient structural framework minimizes maintenance and construction costs while permitting a highly differentiated and modular system of cuts and openings that modulate natural light, facilitate ventilation and rain water management, as well as generate suffi cient energy to realize a zero mainanence green roof and fully integrated building system that produces all of the energy it consumes.

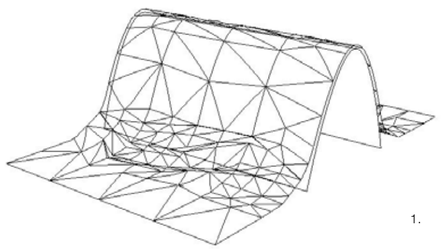
Project Scope: Design Competition, Airship Hanger, Anhui, China | Collabortors: OPEN Architecture, Chinese Academy of Building Research (CABR), LI HU (principal in charge) | Role: Consultant for OPEN, Lead designer | Contribution: Concept/schematic design, form-finding, computational design



1. uplift formation concept
opposite: arial view of landform

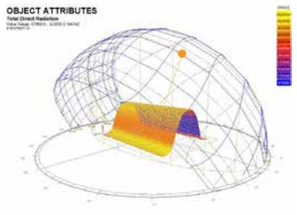
2-3. possible lighting variation acheived with integrated paneling system.

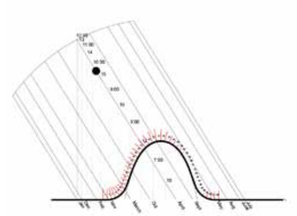
text and images courtesy of OPEN Architecture
more at http://openarch.com/task/1454



1.

above: site photos of tree covered landscape





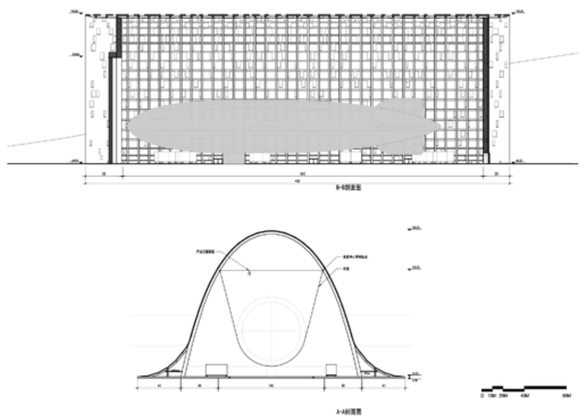
Above: seasonal solar exposure of build skin.

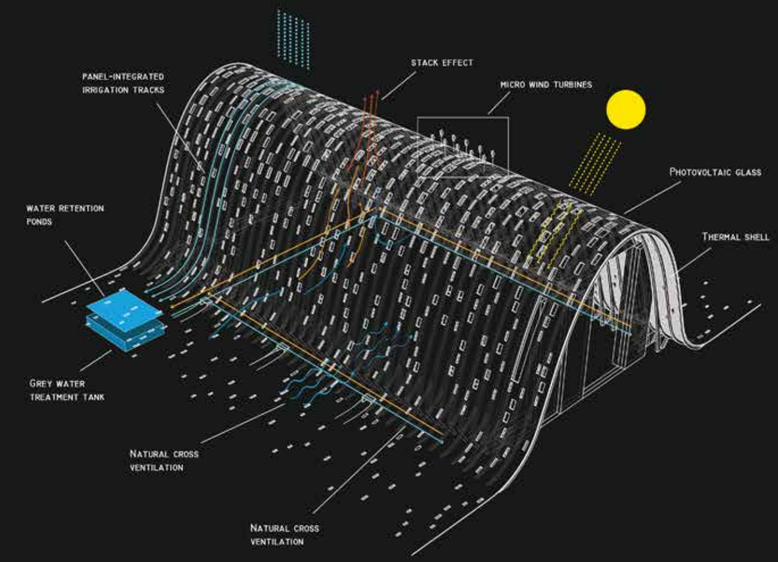
Primary structure consists of 64 concrete ribs that are arrayed along the length, and which follows catenary curve. This hightly efficient form allowed us to minimize material and cost, while supporting an exceptionally thin and light-weight skin. It was important that the skin be expressed as lifting up and not visually oppress the space below so this apparent lightness was critically important architectural criteria met with structural intellegence.

Lateral support beams run the length of the structure, stabalize it against lateral forces and establish gridded framework for prefabriacted panels and integrated energy systems. Framework and panel system comprise the structural skin, which follows catenary form of load-bearing ribs and peals away at base to express itself as a continuation of the ground plan, ie. layer of earth lifted up from it. This separation of skin from primary structure also creates an interstitial space that runs the lenth of the hanger to be occupied by offices, storage and secondary program.

Structure at ends also frame the hanger doors, consisting of four segments, which run along tracks, supported by truss at the top and in ground at the bottom. As doors open they penatrate the skin, where ommissions of laterial supports in the framework can be seen. This did not compromise structure as framework was sufficiently redundant to allow for the ommission of beams in places where door penetrates skin.

Right: Sections. Primary structure can be seen to follow a catenary form. Skin can be seen to separate at base creating interstitial spaces.

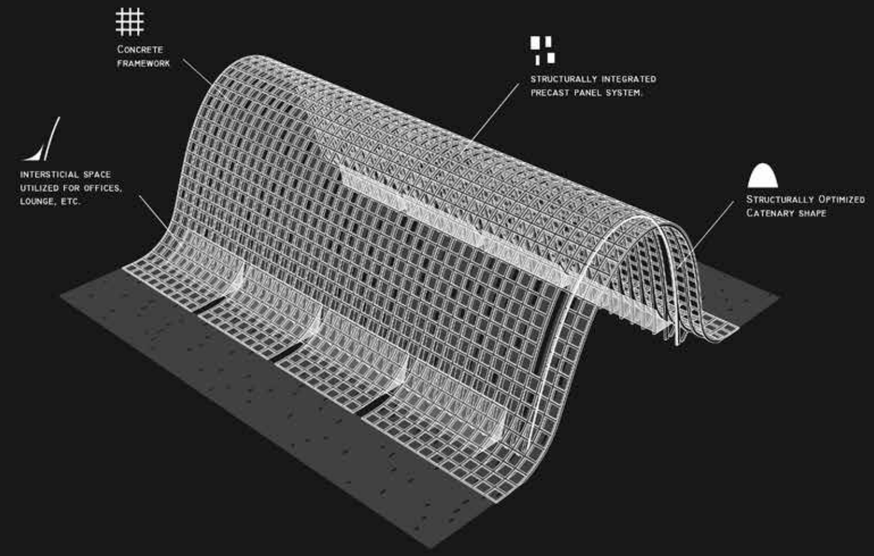




INTEGRATED STRUCTURE /
PERFORMATIVE SKIN

pasive energy systems

modular system of cuts and openings that modulate natural light, facilitate ventilation and rain water management, as well as generate suffi cient energy to realize a zero mainanence green roof



structural framework

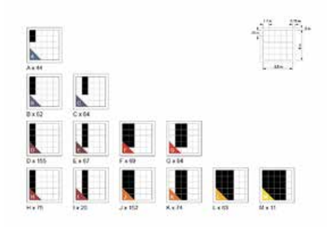
minimizes costs while permitting a highly differentiated and modular system of cuts and openings.

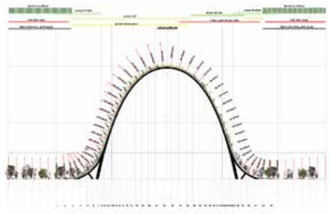
Using solar analysis software we determined the annual direct and indirect exposure of each panel. This data informed the arrangment of solar collection, diffuse light control and green roof programing. Modulation of light was acheived with 13 discrete panels types, which permit direct and diffuse light to penetrate skin. Penetration pattern responds most directly to solar profile and grade, and is then adjusted to satisfy programatic mapping of recreational trails, activity patches, and maintenance tracks.

Indigenous trees and ground cover are specified for landscape at the base and provide shading for trail network that extends outward and up the structure from the base, connecting greenroof ecology and public park services with surrounding forest and hills. Trees extend partway up structure, and ground covers the entire surface. Top soil and grass is supported by ecoweb mesh installed on top of structural skin.

Interior lighting requirements are met during day with system of cuts and opening in the skin. This also produces a controlled and highly dramatic lighting effect that registers time of day and quality of natural light. During night artificial lights produce a light pattern on the exterior skin.

Custom software tool was developed to search design space specified by parameters describing the panelized system of cuts and opening to meet lighting requitements and expore lighting effects in real-time. Alternate system of apperatures, shown above, produce slight more dynamic expression of light control that better registered the relationship between skin and environment, however effect came at a cost: added conmplexity to the prefabriced paneling system.

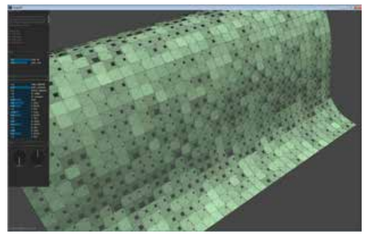




Above: Modules and encoding sceme based on solar exposure and program mappings.

1. Bottom Left: screenshot of custom paneling tool generates perforation pattern based on solar data, as well as light and program constraints.

2. Bottom Right: images of landform model

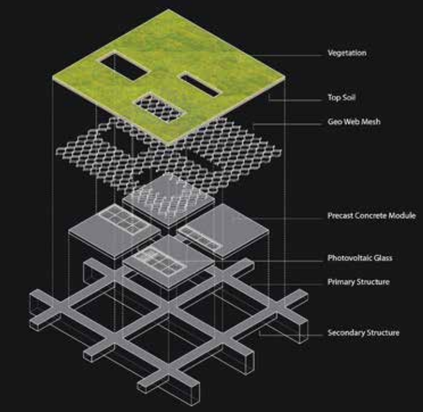


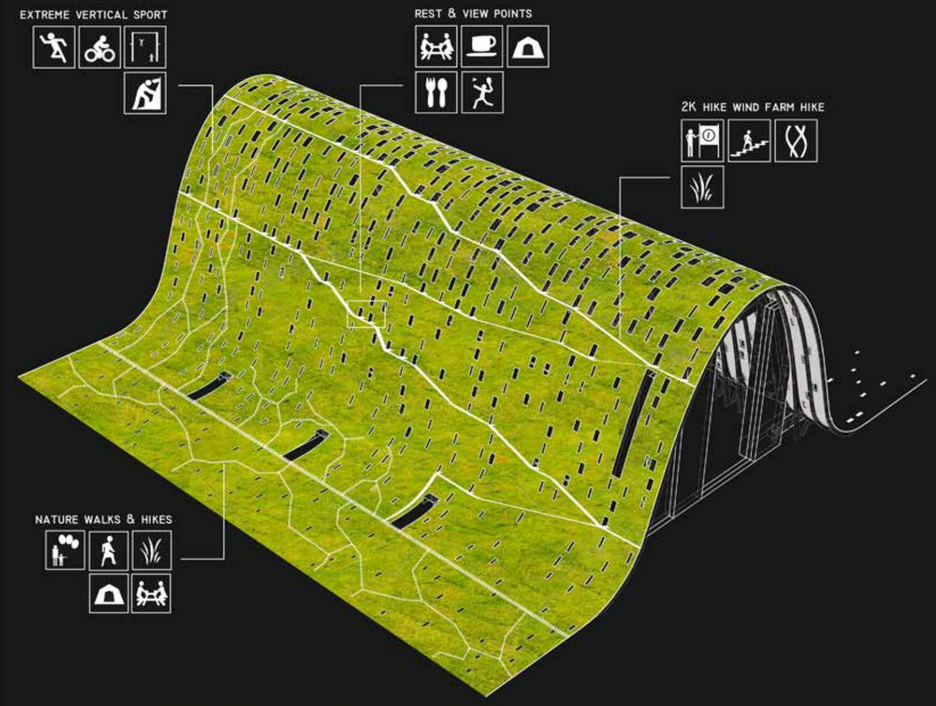
1.

2.

SELF-SUFFICIENCY, PROGRAMMED GREEN ROOF

left: diagramatic detail of integrated construction layers. prefabricated panels with pre-installed solar glass fit onto frame. eco-web mesh is installed ontop of frame/panel system. hardware not shown.





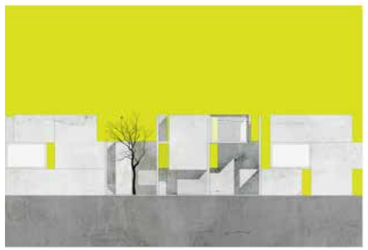
above: programatic diagram of greenroof. program is mapped on to surface according to grade, plantings, and sun exposure.

PROTOCELL

Research project initiated by OPEN Architecture proposal for Netdragon commune At the virgin beach front area where Min River meets the Pacific Ocean, and adjacent to Fuzhou Changle Airport, Netdragon Websoft Company's new headquarters building is currently under construction, embedded in it, the grand visions for the future of the company. Nearly 700 employees and their families will move from the center of Fuzhou city to this new campus. A 50,000m² land which used to be an eel farm will become their new living quarters. This is a very interesting and young community of people. Their work is to create wonderful virtual worlds that entertain millions of people. In real life and on this land of their new dreams, they need a unique living area and a brand new collective life style.

The Netdragon Village project is an architectural experiment investigating how to restructure relationships between people and nature, and also relationships amongst people themselves. The project seeks to create a ecological habitat for the future at a comparatively low cost.

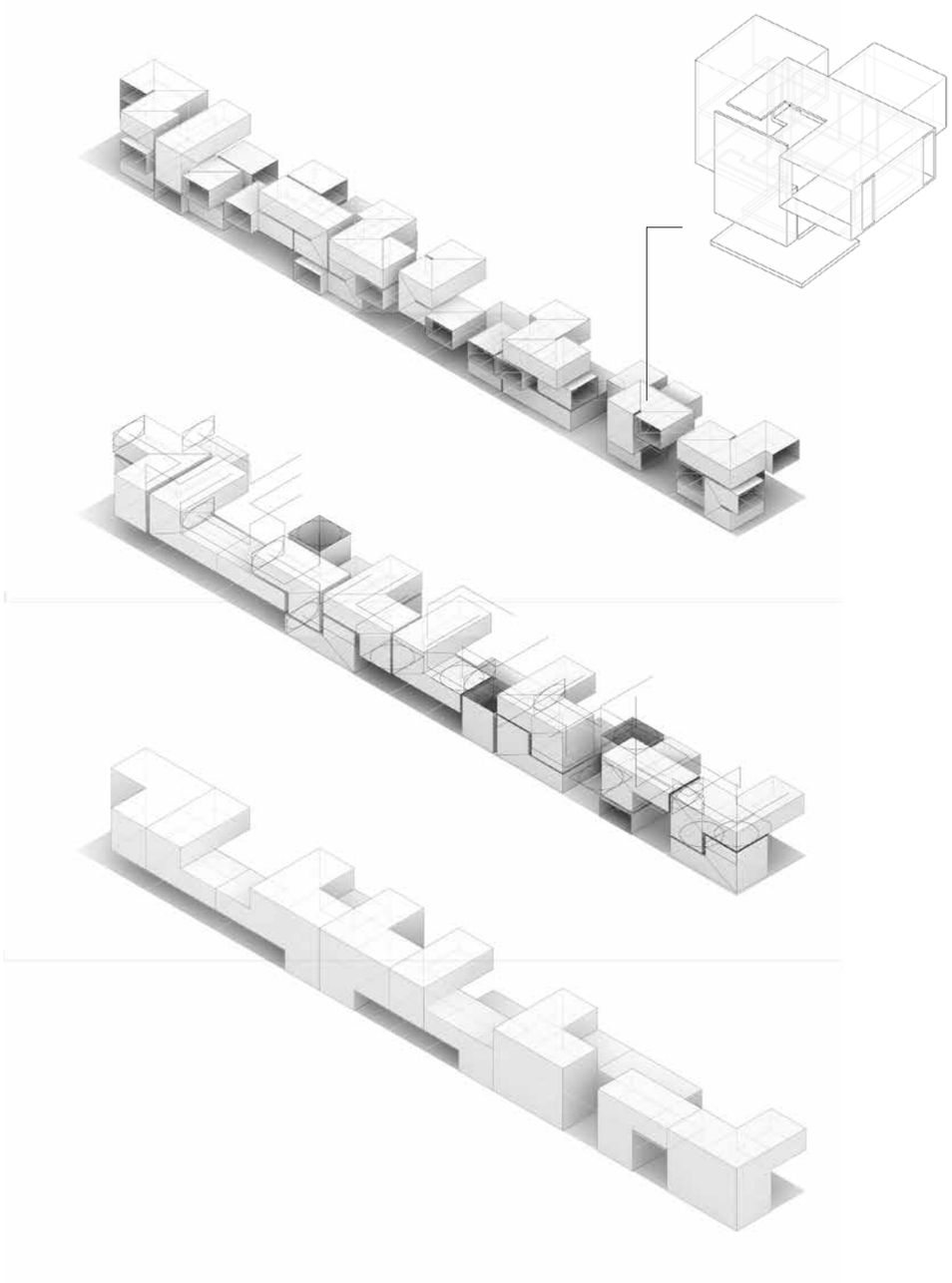
Scope: Metadesign, collective housing system | Collabortors: OPEN Architecture, Li Hu | Role: Lead designer, researcher



1. self-organized arrangement of approximately 100 four-cell housring units.

1.

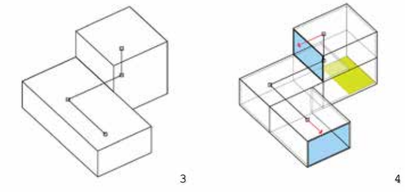
x100 habitat



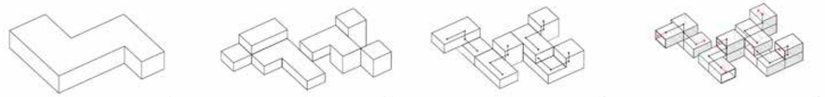
above: exploded axon of x1 unit
opposite: floorplans, grnd, 2, 3

The algorithm, initially implemented in rhinoscript, can be divided into three isolated stages. The first distributes cellular mass according a CA logic and optimizer that adjusts massing for circulation paths and other encoded constraints like site, topographic features, etc. The first stage requires as input an initial massing condition as cellular automata procedes as incremental refinement.[1] First stage is also responsible for constructing a cell network, ie. each cell maintains state and keeps track of neighbooring cells. This network is passed to stage two along with further building constraints like program, floorspace allocation, etc. The second stage subdivides single-cell mass into multi-cell clusters or linked cell chains. This is accompolished by establishing an initial condition of randomly placed conditional units and defining a fitness function that evaluates the placement and situation of the unit and simply discards losers and ignores winners. This is a weak genetic optimization algorithm that is more brute force than anything else, but it does find solutions in reasonable amount of time. The final stage embeds building intellegence into cell clusters, places utility core, and adapts unit to basic building constrains... All stages are intended to be a guided meta-design processes, in which designers participate in real time by making subjective decisions and feeding them back into the system.

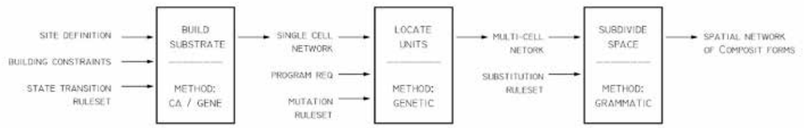
1. boundary condition
2. massing after 1st pass
3. cellular chains form
4. cells self adapt to local context to improve access and views.
5-7. schematic diagram and psuedo-code
7. resultant housing unit



3 4



1 2 3 4



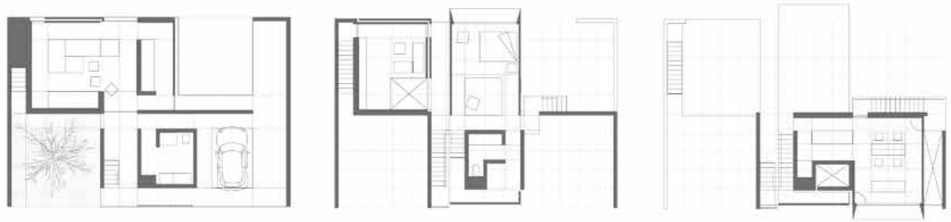
5 6 7

```
//input
site boundary
module size
far
porosity
avg height

ruleset obj

//calc 2nd order params
site area from bounds
floor area as site_area*far
mods as flr_area/mod_size
seeds as mods/porosity
levels as avg height
spl as seeds/levels
cvg as spl*mod_size/site_area

//build
create 2d pt grid
create cells from pts
assign random type

link cells to neighbors
define neighborhoods

//refine
```

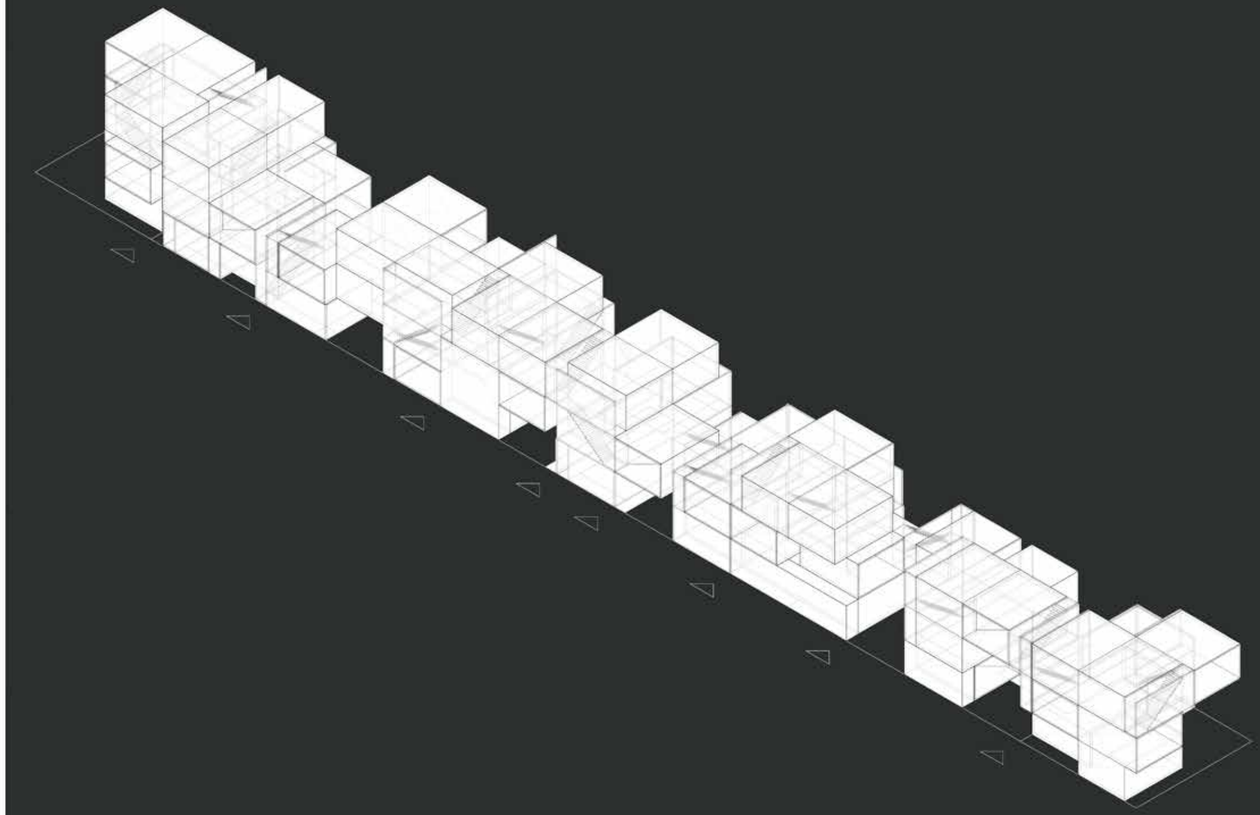
```
//input
array of linked cells
num of 6-cell units
num of 12-cell units
max height

ruleset obj

//solve
find candidate snake
Apply ruleset
(necessary conditions)
repeat until all found

//optimize
pick snake at random
calculate fitness
apply ruleset
repeat

//output
for each ordered cell set
connect pts with polyline
sweep polyline
```

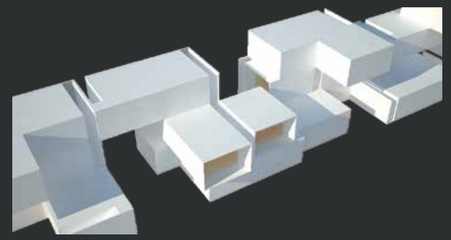
```
//input
array of spines

ruleset obj

for each snake:
apply ruleset
```

x1 house



rightt: x10 housing block with x1 unit indicated with white box.





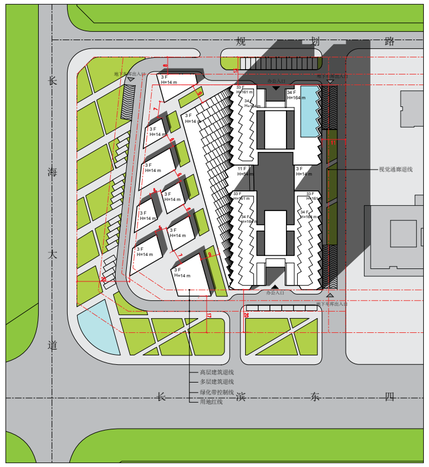
Above: wireframe of 10-unit case study after placeement of circulation, program and utility cores. Units at this point are clustered and structural walls are placed provisionally around prefab modules.

Opposite: x1, Single-family unit case study suggests possible organizational logic to be encoded in shape grammer: composit cellular forms wrapped by structural wall minimizing structural redundancies of prefabrication, programatic adjacencies, central utility core, externalized circulation follows structural walls and arranged to separate public and private routes.

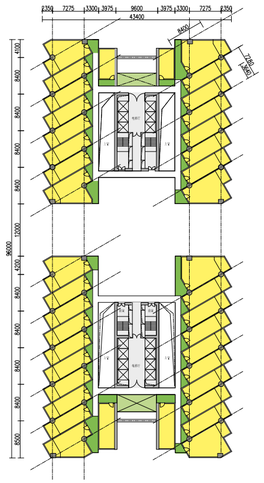
HAIKOU WEST COAST COMMERCE

Proposal for high-rise tower in haikou to be used for home and small office loft spaces. Building form was largely informed by local environmental and urban situation, passive heating cooling strategies effective in subtropic climate, prevailing wind direction, and shifting view condition. Dividing the tower in to two vertical slabs separated by large open-air gap created opportunity for open-air corridors and vertical air shaft for heat disipation and cross ventilation. It also provided starting point for responsive building form, that could be structurally solved with traditional column/slab system by treating tower as two roughly square towers. Pulling base outward, we create a terracing condition and large interior atriiums space. View & light analysis revealed a condition where in optimal unit orientation shifted from southwest at the base to north-west above 100m where views of the sea became accessible. Accordingly, units below 100 orient to the south-west, and those above orient to the northwest. Facade expresses this shift, by gradually rotating toward the northern sea.

Project Scope: Design Concept for soho tower, Haikou, China | Collabortors: LDI and Structure Concultant Role: Senior Designer | Contribution: Concept/schematic design, form-finding, computational design



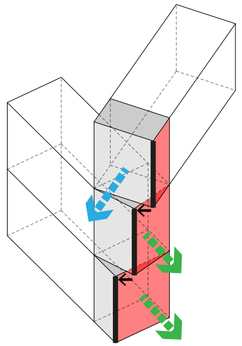
1.



2.

above: bird's eye rendering
1. site plan
2. floorplan

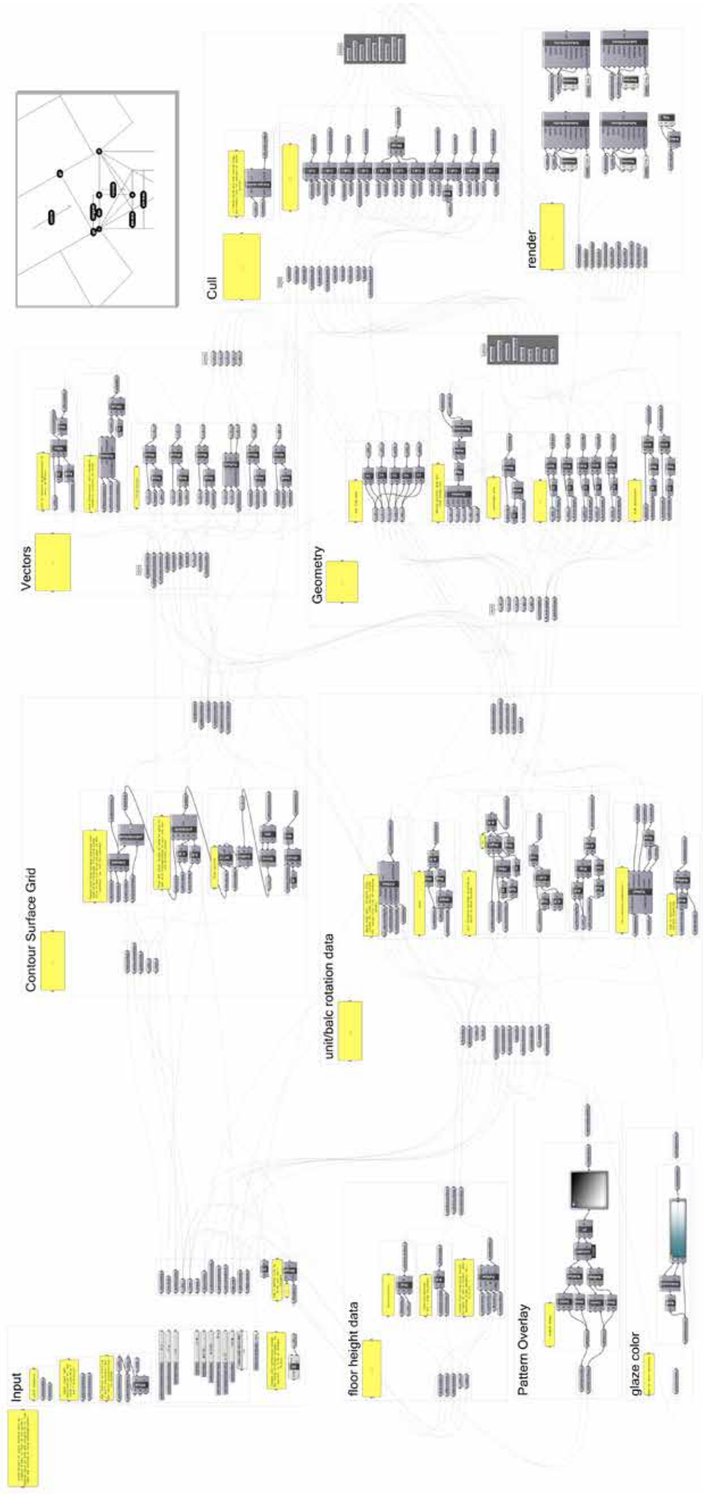
text and images courtesy of Aedas
more at http://www.aedas.com/en/architecture

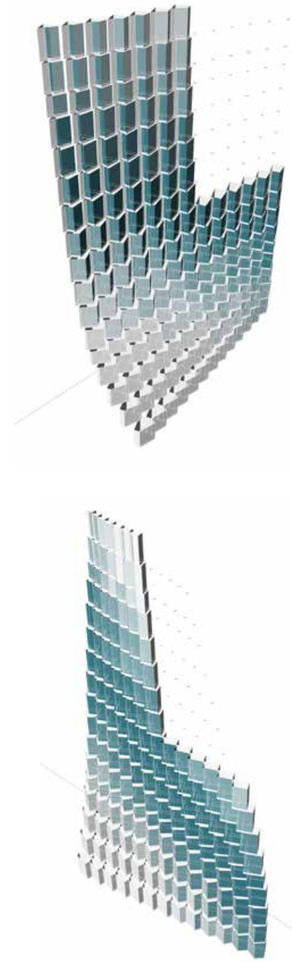


Raised canopy extends the length of the street creating partial weather protection, and an interactive surface for led display, further activating retail street and creating a dramatic lighting effect that speaks to high-tech orientation of software park. Louvers with integrated PVC panels ares are installed on roof to collect solar energy and mitigates electrical load of towers. Application of high performance solar shading devices on outer facade glazing provide layer of solar protection, while redirecting diffuse light into building reducing reliance on electric lighting.

above: facade incrementally shifts in response to unit orientation.
below: rendered views

text and images courtesy of Aedas
more at http://www.aedas.com/en/architecture



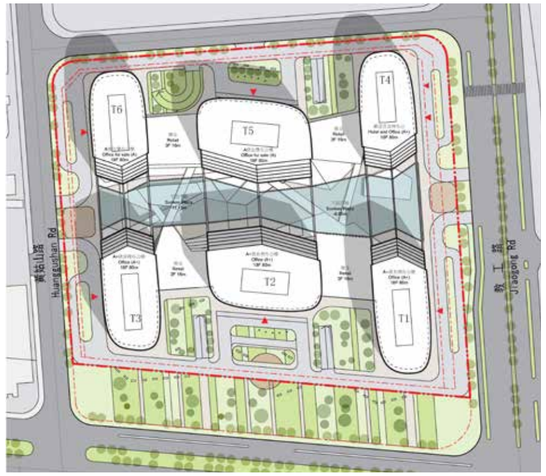


above: test model screenshots
left: grasshopper definition

HANGZHOU SOYEA SOFTWARE PARK

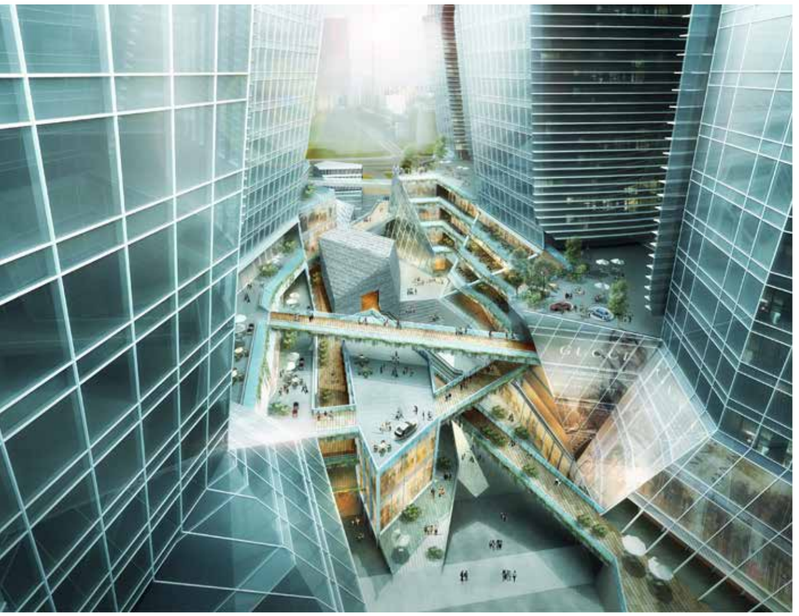
Mixed use software park to include space for office, hotel, and outdoor retail park in Hangzhou. By connecting key public entry points on the east and west of the site, we create a large retail street cuts throught the length of the site. This responds to existing traffic flows and activates new ones creating an internal negative space for commercial and leasure activities. By pusing tower volume back in three places we create hexagonal negative space that enclosed the internal street, while also creating opportunities for terracing on the top of the tower and retail levels. By pulling tower volume forward we then create hexagonal negative space in plan the creates a dynamic internal space that opens into plazas and closes into sculptural streets. this also opens up street plazas to increased levels of natural light.
By pusing ground plane down with exposed valuable retail fronts on basement levels to internal street, while strengthening the negative space defined and creating highly dynamic 3-dimenstion experience for shopping moving along the street. Finally, Retail levels are terraced creating rich and playful sculptural spaces with covered and open-air green break-out spaces for public seating that overlook internal street and establish dramatic bridging opportunities that facilitate closed retail loops on all retail levels. Offices and hotel are also terraced on upper floor levels creating balconies for internal sky gardens that are stepped back to recieve natural light.

Project Scope: Mixed-use software park, Hangzhou, China | Role: Senior Architectural Designer, Team leader | Contribution: Concept Design



above: bird's eye rendering
opposite: site plan

text and images courtesy of Aedas
more at http://www.aedas.com/en/architecture



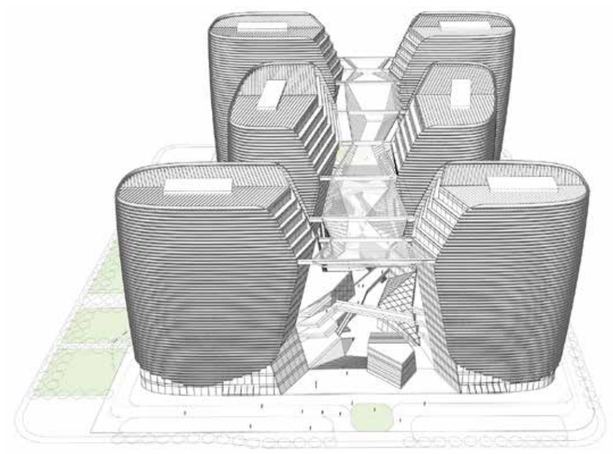
left: retail street
opposite: formation diagram series

text and images courtesy of Aedas
more at http://www.aedas.com/en/architecture

above: concept reference images
opposite: view from across street

text and images courtesy of Aedas
more at http://www.aedas.com/en/architecture

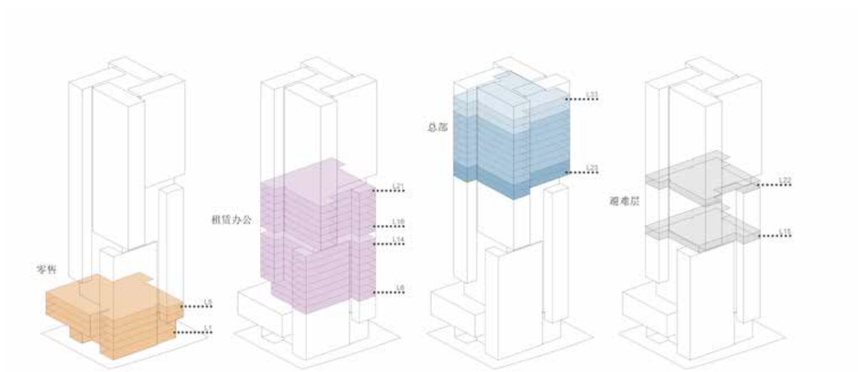
Louvers with integrated PVC panels ares are installed on roof to collect solar energy and mitigates electrical load of towers. Application of high performance solar shading devices on outer facade glazing provide layer of solar protection, while redirecting diffuse light into building reducing reliance on electric lighting. Raised canopy extends the length of the street creating partial weather protection, and an interactive surface for led display, further activating retail street and creating a dramatic lighting effect that speaks to high-tech orientation of

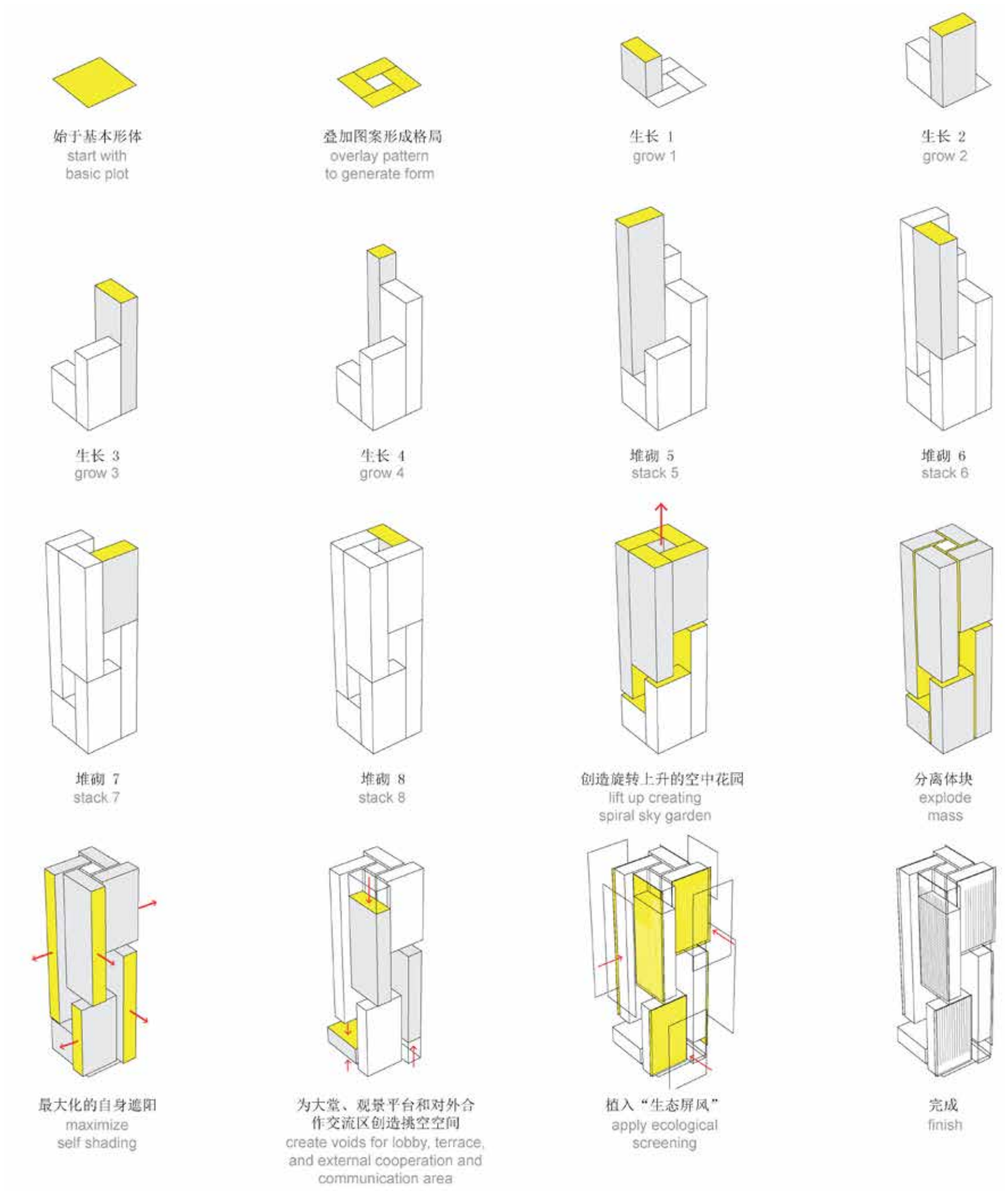


CHINA INVESTMENT SECURITIES PLAZA

At once a symbol of traditional chinese values and simple depiction of rotational movement, the fan-shaped pattern created by rotating a slender 3-to-1 rectatangle around a point becomes a powerful generator of dynamic form, a rich cultural symbol, as well as modern icon that provides the tower with a singular identity looking both forward to a sustainble future of perpetual change, and backwards to traditional chinese values of balance and harmony. This high-rise urban project aspires for quality and sustainability at every stage of the building life cycle in order to reduce the environmental impact of the building by optimising the efficient use of energy, water, and other resources. Developing the building vertically will create the great chance to give precious free public space back to the city. A green park with trees, fountains and shading canopies will provide tourists with fresh and natural areas to relax and get some rest from the summer heat. A continuous spiral series of sky gardens wrap the bulding mass. These open-air gardens are controlled micro-climates with trees and other plantings to provide natural shading and fresh air.

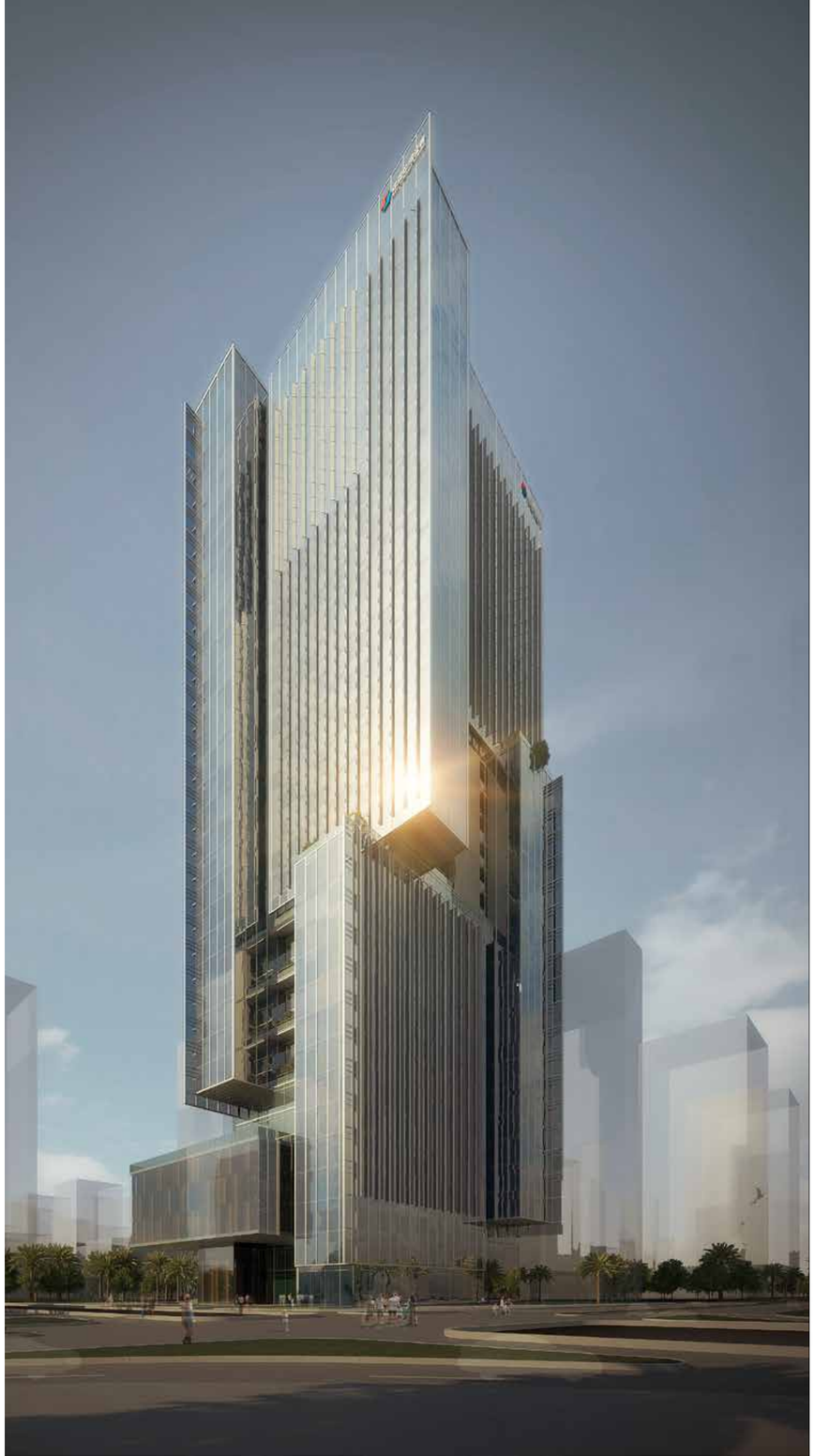
Project Scope: Design Competition, Mixed-use High-rise Office Tower, Shenzhen, China | Role: Senior Designer, Aedas | Contribution: Concept/schematic design

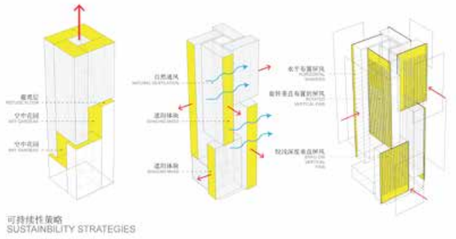


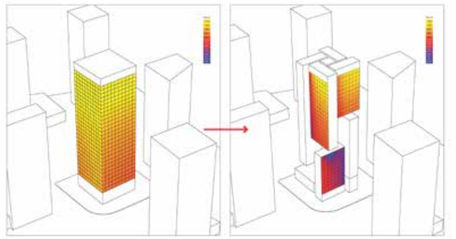


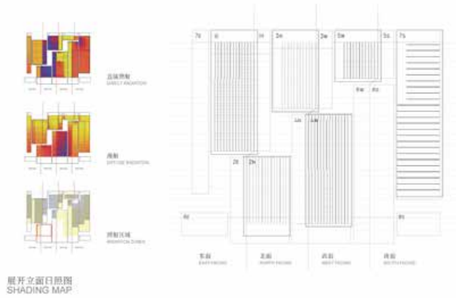
right: rendered street view
opposite: sustainability features

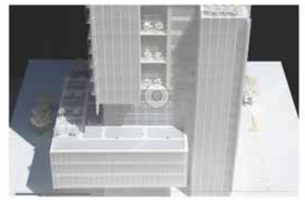
text and images courtesy of OPEN Architecture
more at http://openarch.com/task/1862

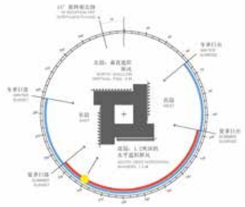


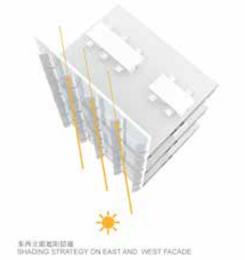


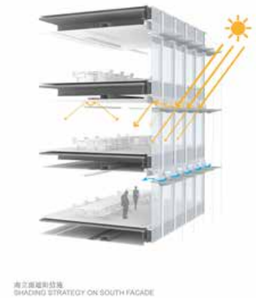

通过将建筑最初体块和我们高效能体块进行能量测试，得出热辐射对比情况。在建筑主要立面上，盘旋布置的“自身遮阳”机制体块明显降低了热辐射，同时也为建筑提供了自然通风，不仅提高了建筑的舒适度，且减少了建筑对空调系统的依赖。

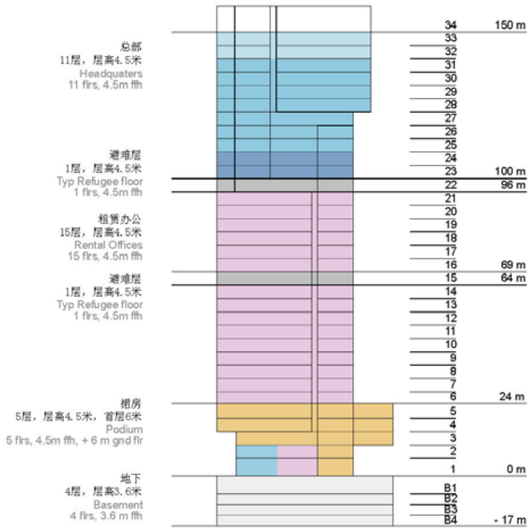












spread: functional floorplan permutations

text and images courtesy of Aedas
more at http://www.aedas.com/en/architecture

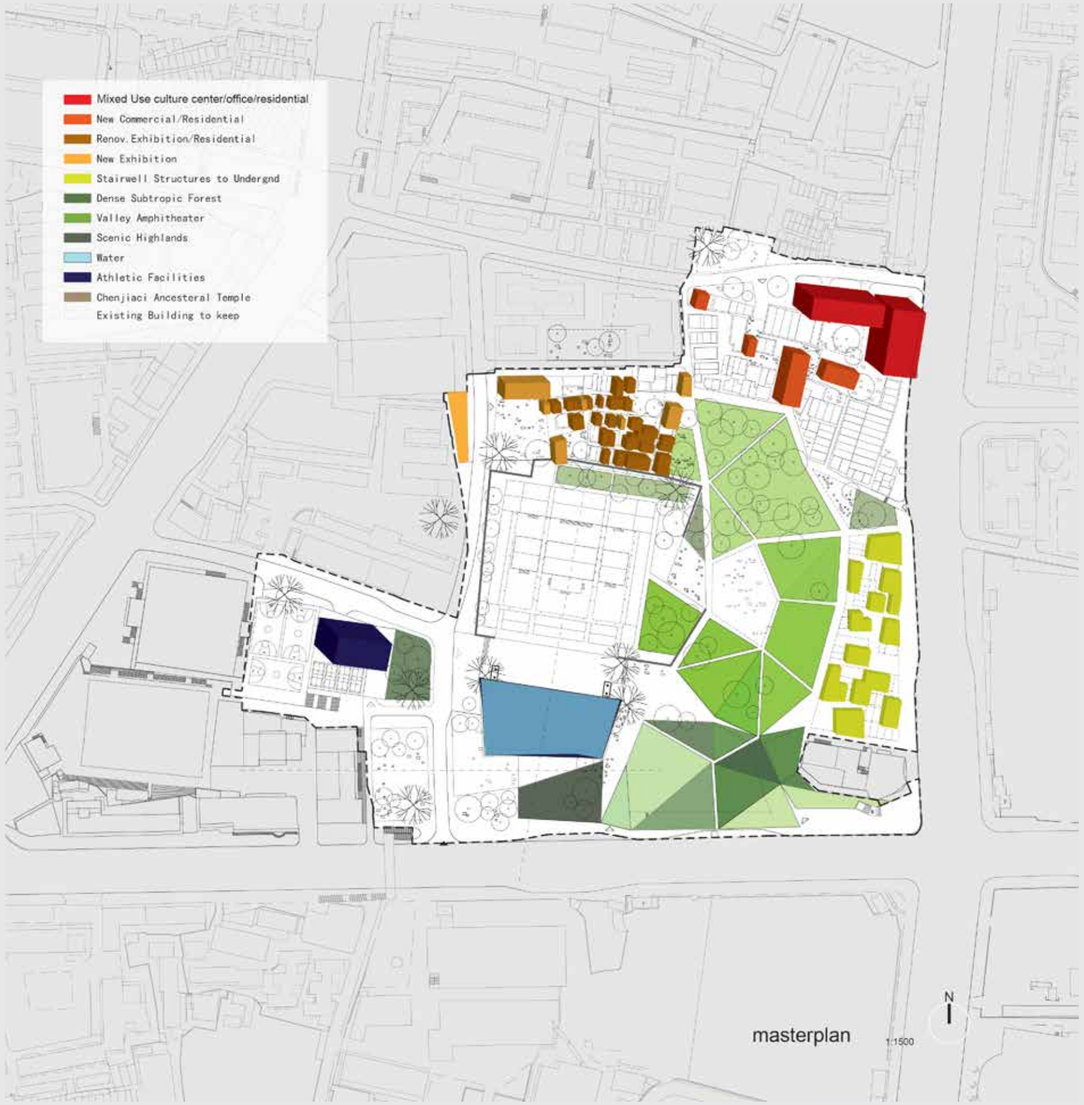
CHENJIACI CULTURAL VILLAGE AND PARK REDEVELOPMENT

The cultural square of Chan's Ancestral Temple (CAT) is intended to be a multi-programmed tourist site that is rich both in historical architecture and civic culture. Our design proposes to divide the land around the CAT, the core of the region, into five spaces with different programs: history space, exposition space, culture space, sports space and civic activities space. Through rebuilding, revitalizing and transforming the five spaces, we aim at creating a new spatial organization that consists of one core, one museum, one stripe, one street and multiple points, restoring the historical features of the CAT to the largest extent and revitalizing this area through tourist and commercial propositions. [text by node]

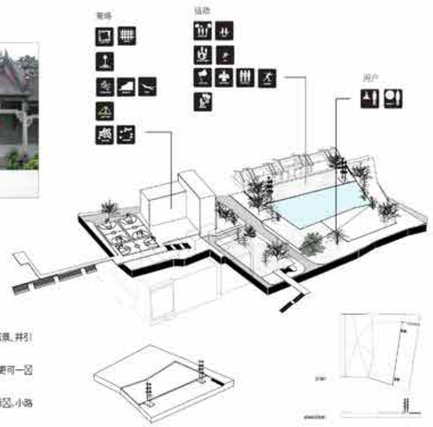
Scope: Redevelopment of Cultural park & Square of Chan's Ancestral Temple, Guangzhou, China | Collabortors: Node Architecture and Urbanism, Doreen Liu (principal in charge), Jiebin, Huang, Shaoli Lin | Contribution: Concept/schematic design, masterplan for landscape/park nodes | Role: consulting architect for Node Architecture and Urbanism, in charge of landscape nodes

top: diagram of park zones
right: views from park
opposite: masterplan

images courtesy of NODE Architecture & Urbanism



no.1



高地

升起的石[illegible]地[illegible]下形成了以[illegible]家间[illegible]的框景，并引[illegible]途人入内。

在地[illegible]上游人可以享受着[illegible]无阻的景色，更可一[illegible]略[illegible]家间的滋味。

在[illegible]的地方，游人可放[illegible]事，打羽毛球等活[illegible]，小路引[illegible]着人[illegible]到[illegible]野餐和休息的理想地点。

no.2

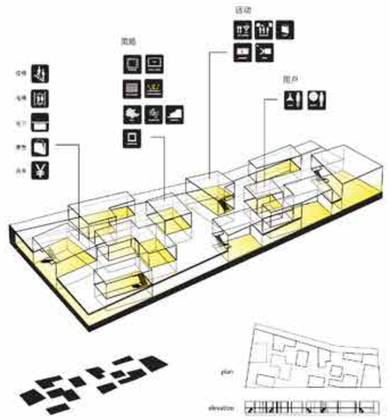
高地

升起的石[illegible]地[illegible]下形成了以[illegible]家间[illegible]的框景，并引[illegible]途人入内。

在地[illegible]上游人可以享受着[illegible]无阻的景色，更可一[illegible]略[illegible]家间的滋味。

在[illegible]的地方，游人可放[illegible]事，打羽毛球等活[illegible]，小路引[illegible]着人[illegible]到[illegible]野餐和休息的理想地点。

no.4



广场

通透的结构穿过地块形成地面与地下的连接。

晚上，地底下的照明使这结构变成一个景观丰的发光体。在日间自然光投进毫时的地下购物中心，在街道上结构营造途人的视线，都起途人的好奇心。

树化屋顶把结构融入景观中，历史的痕迹使这些结构与临近的文化区内的建筑物形成关系。

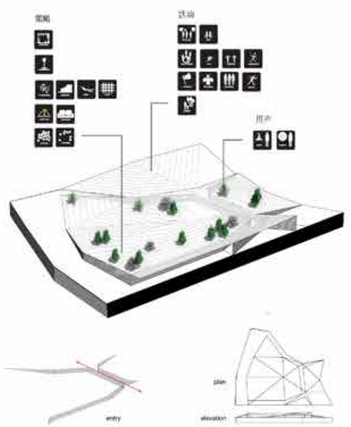
no.5

现有森林

树林提供最佳的遮阴处。

这里是游人员聚集、交际、运动和下棋的好地方。

弯曲的小路穿过从林形成自然步行径并穿插于各个休闲空间中

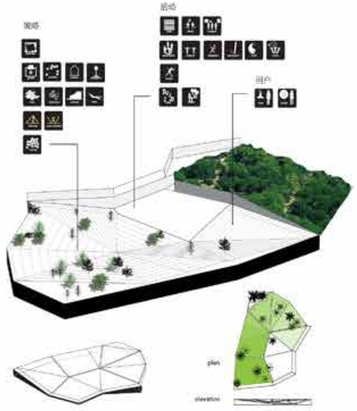


no.3

自然剧场

被地自然景观形成了一个以陈家祠为中心的大型广场，广场可以举办大型活动，集体运动和游戏，是一个理想的社交场所。

陈家祠被看成一个美丽的背景衬托着这个社交场地，围墙借用园林中的框景手法，不光可让祠外行人窥视陈家祠的，也可让祠中游人观看广场的情景

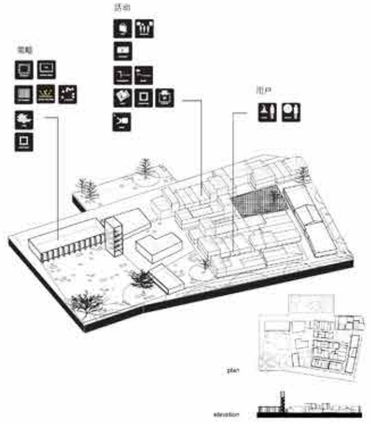


no.6

自然剧场

被地自然景观形成了一个以陈家祠为中心的大型广场，广场可以举办大型活动，集体运动和游戏，是一个理想的社交场所。

陈家祠被看成一个美丽的背景衬托着这个社交场地，围墙借用园林中的框景手法，不光可让祠外行人窥视陈家祠的，也可让祠中游人观看广场的情景



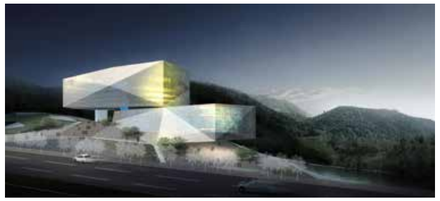
Catalog of space and activity. Each zone is given a thematic designation and program and activities are mapped onto it.

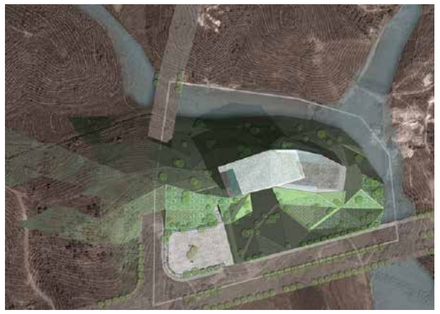
GUANGXI MUSEUM OF FINE ARTS

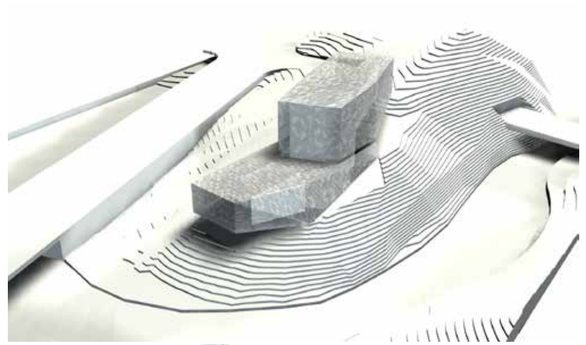
36,000 m2 museum of cultural art comprising 18,000 m2 of Exhibition Space and just under 3000 m2 of interior public space. Remaining area split between public facilties, office space and storage. 35% of total volume was buring and 65% above ground. The Museum is designed to integrate with the terrain, i.e. to embed part of the museum functions into the mountain, then follow the moutain slope to organize the circulation from the waterfront to the mountain top, thus create the impressive cantilevered building feature and form the corresponding axis at the head of the “dragon vein”.

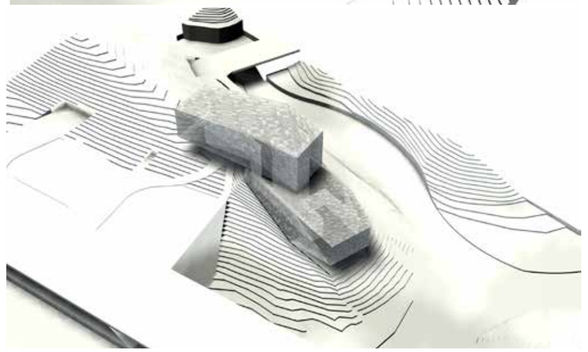
I participated in development of concept, schematic design and initial massing, In charge of design and development of building Envelope and landscape as single continous triangulated skin. Perforation pattern derived from traditional rug patterns and constructed with 2.5 x 4m perforated aluminum panels. Quilted effect from triangulation also recalls traditional rug pattern. pattern tiles are approx. 8x8m and consist of 8 perforated aluminum panels, 2 of which are unique. 3 unique pattern tiles of varying transparencies then yield a total of 6 unique aluminum panels.

Project Scope: Design / Analysis of Building envelope | Collabortors: NODE Architecture and Urbanism | Roles: Design Consultant for NODE | Contributions: Concept/schematic design, massing, incharge of landscape and envelop design



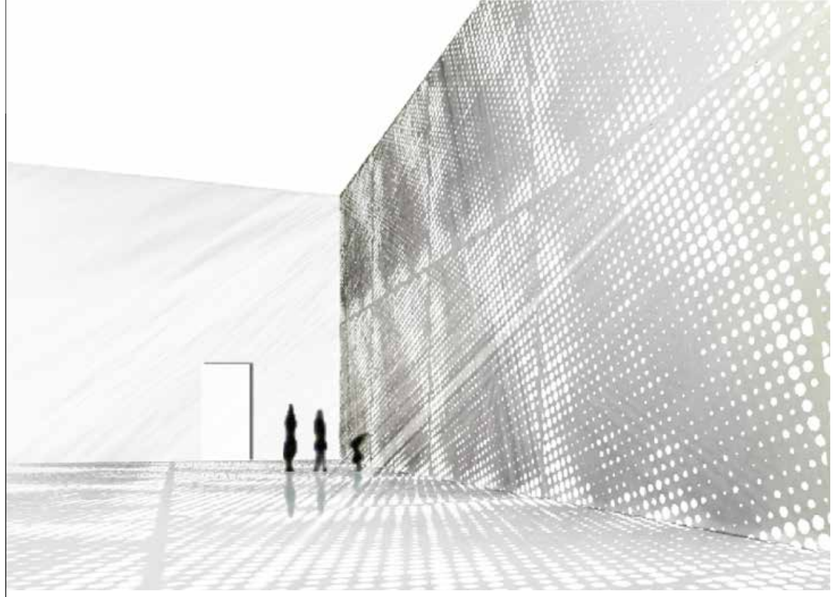


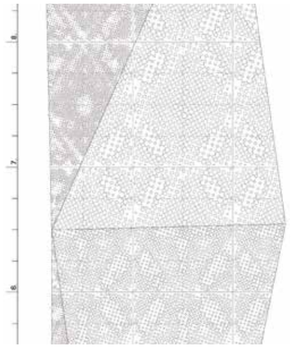


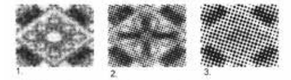


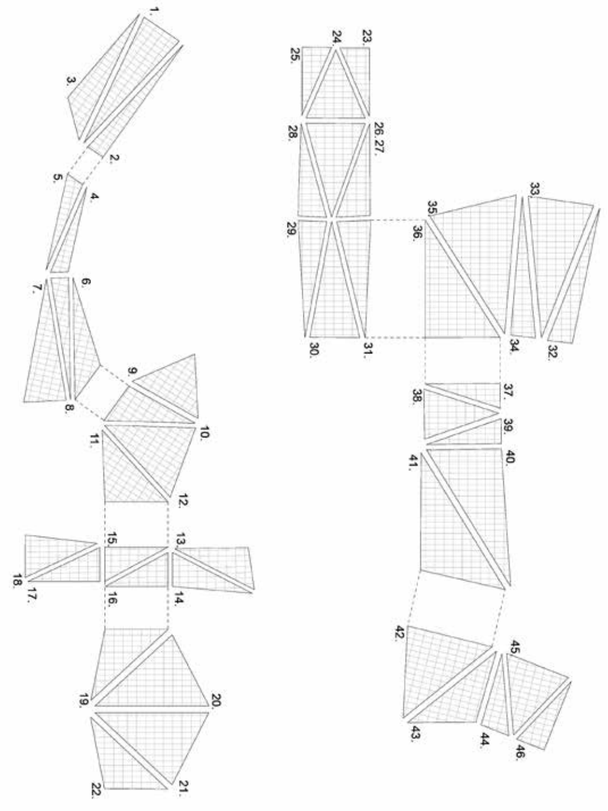
right: bird’s eye views of massing and skin
opposite: skin unfold with panel and pattern mappings.

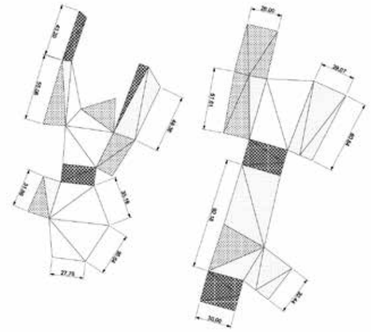
images courtesy of NODE Architecture & Urbanism

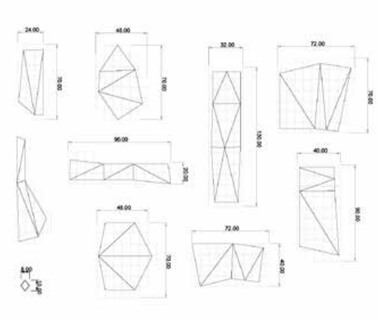










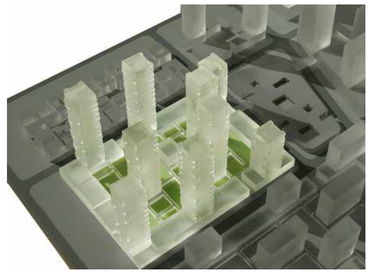


SAMPLING: JAZZ TOWERS, BAOTOU

Jazz Towers is one of the many urban typologies within the BTCBD City of Plazas. The project responds to issues of gated development by placing a horizontal commercial perimeter block to surround the ten vertical residential towers, which allows both protection and accessibility. An open plaza harnessed by the horizontal band and on the roof of ground floor parking structure is inserted in the center. It provides public space for the residents on a higher ‘ground’, as well as linking to the social network of open spaces of the master plan.

The towers, measured 18m x 18m with central cores, are proposed with open plan for flexible unit layouts. The corners of the towers cantilever out 1.5m to provide each space with its own unique perspective increasing connection from the interior space to the city. Inspired by the spontaneous yet systematic structure of Jazz music, the cantilever view-boxes are composed on the elevations of the towers through parametric calculation of Jazz musical sound wave. The musical rhythmic façade allows spacio-temporal movement by placing strategic architectonic elements in space to influence human moving and visual patterns. When one meandering around the “Towers of Interlocking Views”, it evokes a sequence of harmonic spaces as well as the dynamic and free energy of urban life.

Scope: residential towers | Collabortors: OPEN Archtiecture, LI HU (Principal in charge) | Role: Consultant for OPEN | Contribution: Custom design tool



1. building elevations
2. architectural model

text and images courtesy of OPEN Architecture
more at http://openarch.com/task/1456

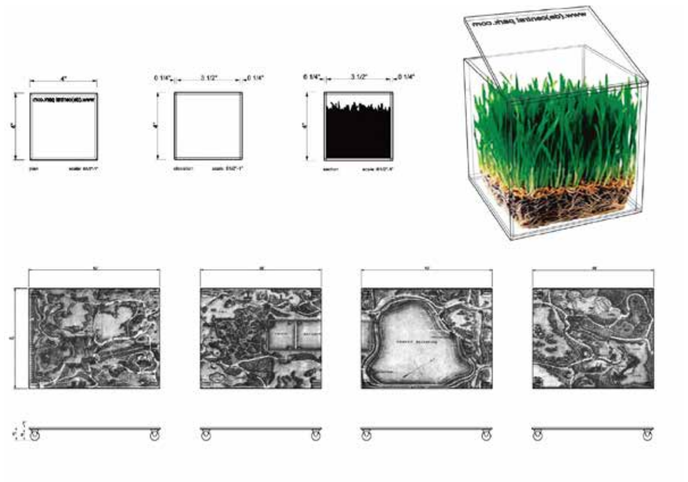
DECENTRAL PARK

15,000 Boxes, 4”x4”x4”, will be located on four dollies placed parallel to the Lubin House facade. Central Park dirt excavated during The Gates installation, will be placed in each box - a piece of the park. To be taken by any passerby, The Boxes will be dispersed throughout the region, collected or discarded. The non-biodegradable material will be cycled into daily life constantly relocating (de)central park.

The 7,500 Boxes and four dollies will remain outside Lubin House until they are removed by residents, visitors, police, vandals, vagrants, or employees. www.decentralpark.com (launched 01.01.05, address in each box), will interactively facilitate the tracking of each box.

TRACKING & MAPPING: Each box is labeled with a unique alphanumeric identifier and website address: www.decentralpark.com. This identifier along with anonymous address is submitted on the website, and entered into a database with a timestamp. A given box is reentered any number of times as it is given away, forgotten, found again, and passed along deliberately and incidentally. Each time it is resubmitted with another address and unique timestamp, a fixed point in time and space is defined. The collection of all geospatial points for a given box characterizes its discrete path. All paths define the dispersion pattern of the boxes and decentralization of the park.

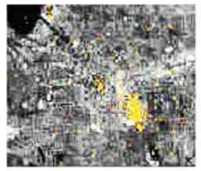
Scope: Architectural Design Competition, facade installation | Collabortors: Wilson day, Sai Sinbondit, Theodore Brown | Role: Member of design team | Contribution: Concept, Interaction design,



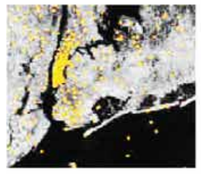
right: diagram of box and dollies
opposite: dispersion senarios

text by Theodore Brown

02 . 12 . 05

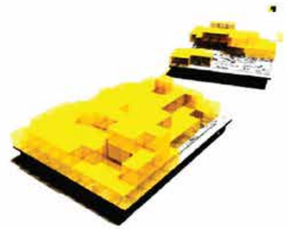


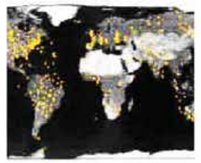
02 . 14 . 05



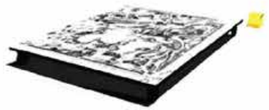
02 . 18 . 05

02 . 26 . 05





01 . 20 . 11



BEING THERE

“Sensors of all kinds are now becoming tiny, inexpensive, and network-enabled, and they are increasingly being integrated into very large-scale sensing systems”2 and mobilized by robotic devices. The Miami police currently uses small flying drones manufactured by Honeywell as “an extra set of eyes”3 And the US Army in a 41 million deal with BAE, a British Defense Company, is currently developing robobugs, an army of miniature robots modeled after spiders, dragonflies, and other insects to “provide enhanced awareness for soldiers, by extending their eyes and ears.”4

As wireless bandwidth increases, and embedded and mobilized sensing systems become available to the consumer, William Mitchell warns of a schizophrenic mode of existence akin to being at the “focal point of a global personal panopticon.”5 where we are surveying and being surveyed at all times. The same way telephones “stretch our speech production and reception system around the globe and multiplies its points of presence,”6 remote sensing extends, augments, and proliferates our remaining four senses.

How will this mobilization of the senses effect the way people are social and the way society inhabits space? And of interest is how will public space as a physical construct of architecture and urbanism participate in this new form of engagement? The digital revolution of the late 20th century and early 21st century has already transformed social engagement. “People no longer expect social and communal exchanges in the urban and public space... People may physically be in these public spaces but they remain isolated.”7 Even in populated public space the mobile phone is the dominate form of communication. Real social engagement is now electronically mediated and remote, taking place in the office or on the bus with a mobile device. This erosion of the physicality of social structures has led some to claim that public space as a physical construct no longer exists. At the very least we can must concede that public space and community are no longer localized and strictly physical. This has affected a dematerialization of self, but also represents a potential for liberated forms of interaction. “Dematerialization delivers us from servitude to places and things – and, it undermines the regime of physicality.”8

Robotic extension of self within this 21st century context begs important questions: what is the relationship between the real, virtual and remote? Does the mobilization of the senses effect a virtual extension of self into the physical world? That is, if the ubiquity of wireless communication represents a dematerialization of the physical self then does the mobilization of remote sensing systems constitute a virtual re-materialization, and does it represent a further detachment or re-engagement with the physical environment? Furthermore, how does it affect the nature of “being there” as a perceiving subject, and how should phenomenal space adapt to a fragmentation and proliferation of the senses?

2. William J. Mitchell, The Cyborg Self and the Networked City, (MIT Press: Cambridge Massachusettes 2003) 30

3. Juan Villalba, Miami police department spokesman

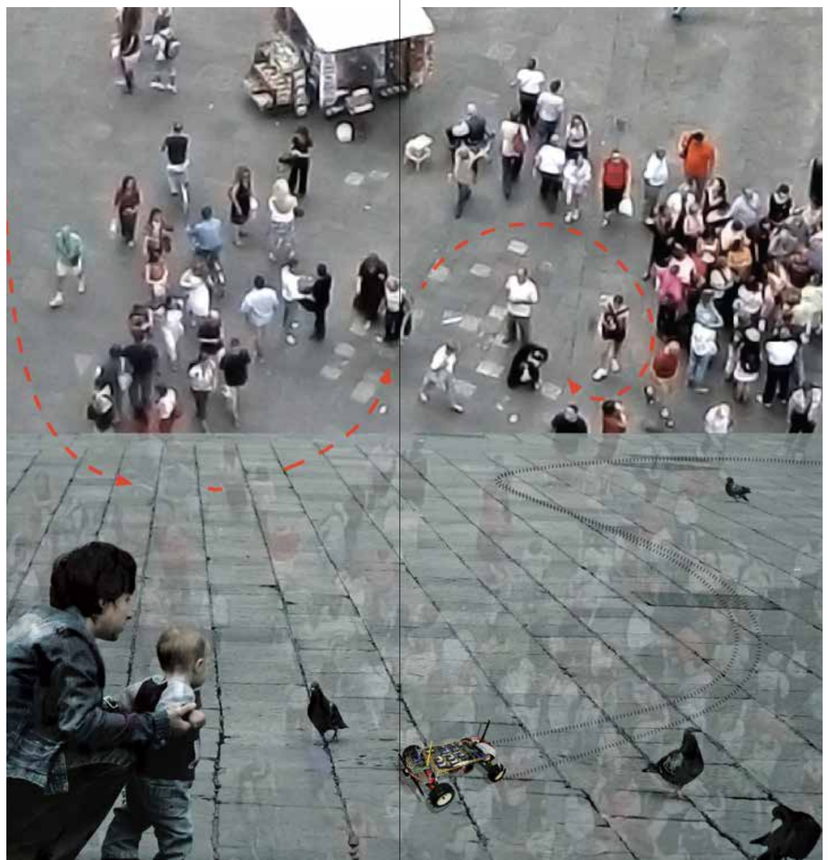
4. Steve Scalera, program manager in an interview with British Daily News

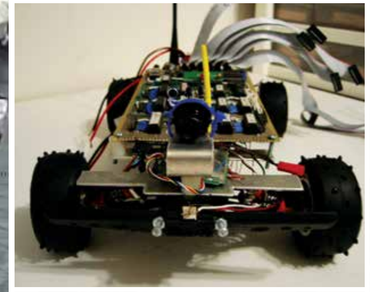
5. Mitchell, x

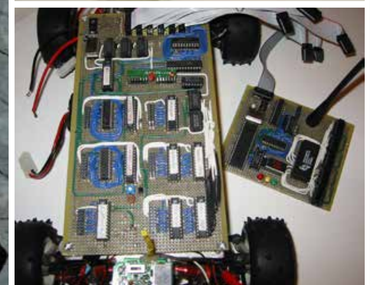
6. ibid., x

7. Noriyuki Tajima, “Tokyo Catalyst: Shifting Situations of Urban Space,” Perspecta 38: Architecture After All (2006): 84.

8. Mitchell, 84

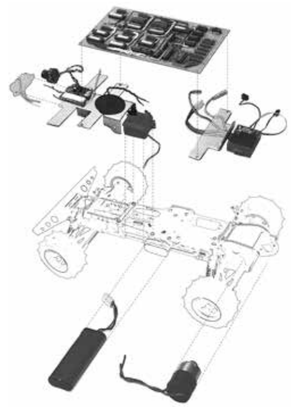




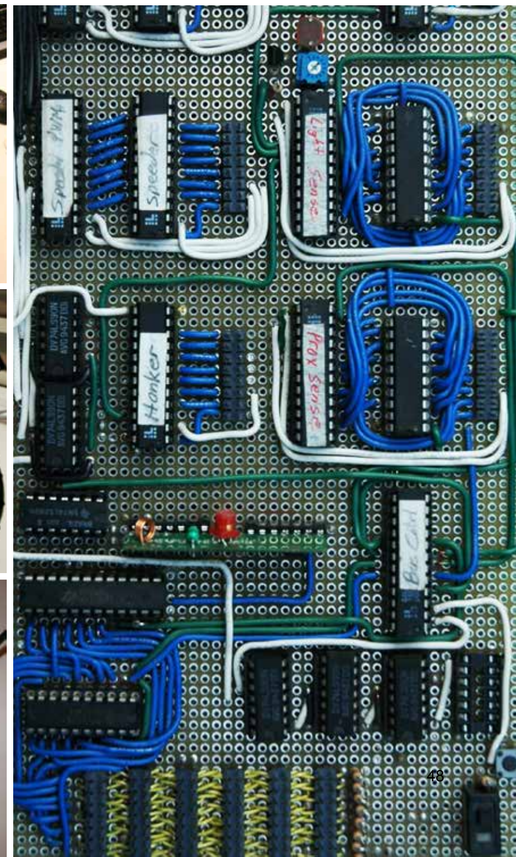


These are some of the themes and questions provoked by this research project. A semi-autonomous Terrestrial Rover is unleashed on the city equipped with four senses and cable of wandering, executing routes, and remote control while avoiding collisions with a proximity sensor and collision avoidance intelligence. It moves through the city scape largely unseen interacting with the physical environment and relaying real-time video from 3.2 inches off the ground.

Scope: Design and fabrication of protoype car | Collabortors: Kevin larsson, Matt Zobe, James K. Peckol | Contribution: design, Hardware programming/testing



1. control peripherals
2. front view of car
3. onboard and control board
4. main circuit board



SYRACUSE: RECOVERING THE HIGHTWAY

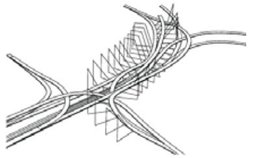
Architecture is conventionally employed to design the places where infrastructure is not or to create the illusion the infrastructure is not where it is. In Landscapes of Infrastructure, Elizabeth Mossop calls for a reexamination of infrastructural space, and a recognition of its role as a part of the inhabited city:

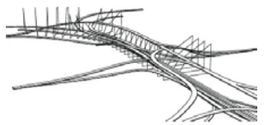
all types of space are valuable, not just the privileged spaces of more traditional parks and squares, and they must therefore be inhabitable in a meaningful way. This requires the rethinking of the mono-functional realm of infrastructure and its rescue from the limbo of urban devastation...1

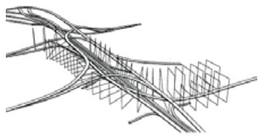
The history of Syracuse is the history of traffic infrastructure. Syracuse grew from a small settlement to a boom town as a transportation hub on the Erie Canal, then to an industrial city as a major crossroads on the railway network which replaced and expanded the canal network.2 Today, Syracuse is located at the intersection of Interstates 90 and 81, roads spanning the width and breadth of the US.3 While traffic infrastructure has consistently served Syracuse's public and private interests, the urban role infrastructure has played in the city has steadily degraded. The canal was celebrated, the highway is disregarded. The canal served a unifying function, as a symbol of prosperity and focal point of public activity and private venture. It attracted development, generated new urban forms and sponsored new forms of urbanism. The highway is a physical and psychological barrier severing connections, detracting development and transforming post-industrial Syracuse into an archipelago, characterized by the islands of downtown Syracuse and Syracuse University.

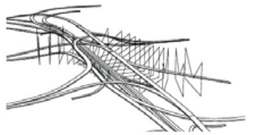
The Erie Canal Short Block typology was both an opportunistic response to a unique set of conditions created by the Erie Canal, as well as a meditative agent moderating the devise effects of a physical barrier. Highway 81 is currently responsible for an analogous division of the city, however, the relationship of the highway to the city and the manifestations of the division constitute a very different set of conditions. This project attempts to locate a typological system analogous to the Short Blocks in its ability to occupy an niche condition and restore a lost dialogue between two halves of a divided city.

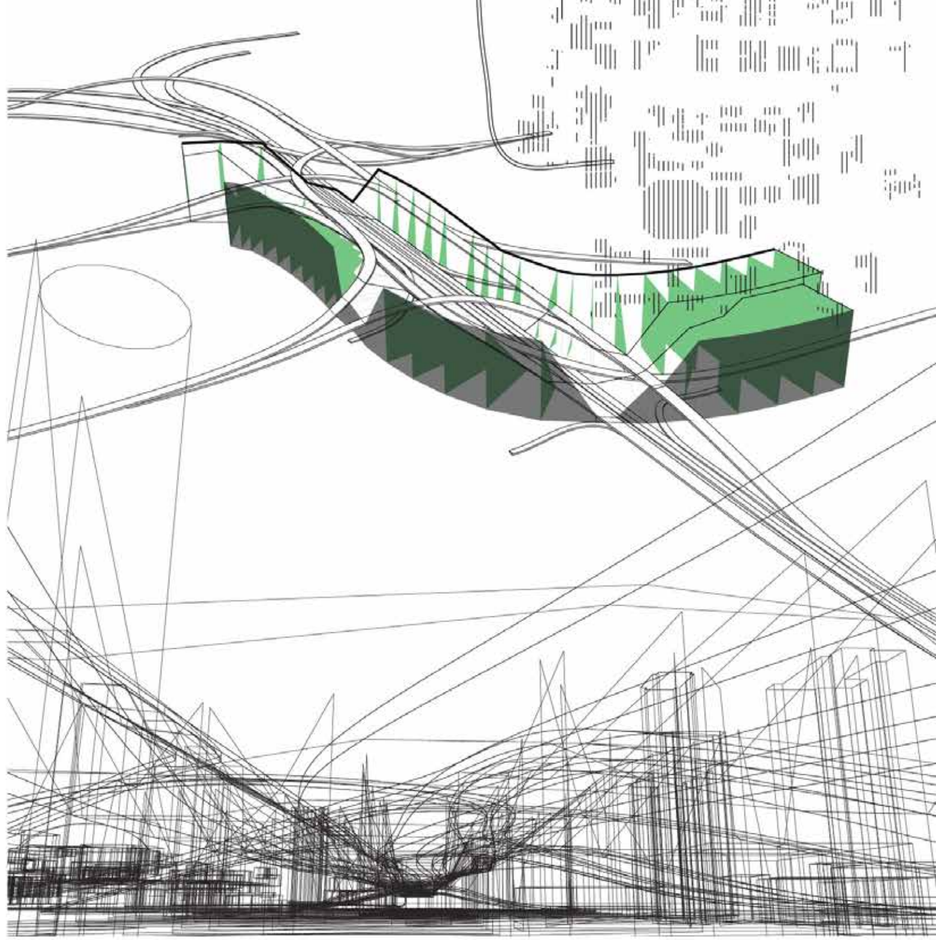
Scope: Architectural Design, Zoning strategy | Collabortors: Ivan Rupnick, Terrance Goode (Academic advisors) | Contribution: Project conception, design, text

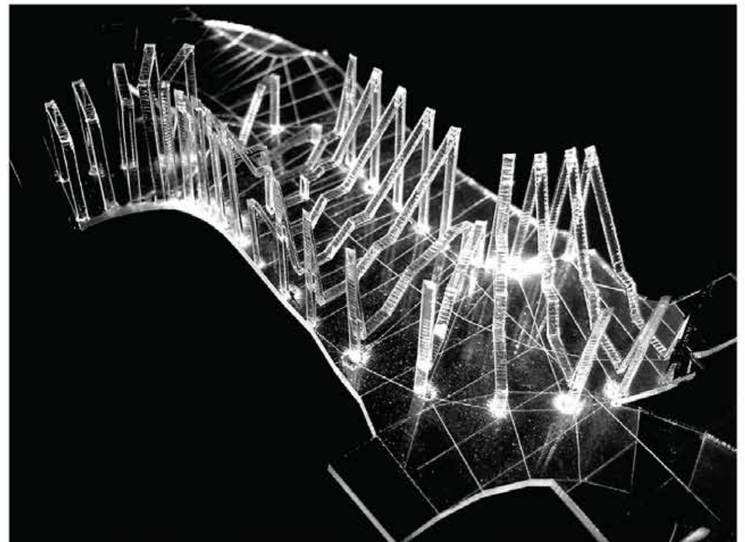


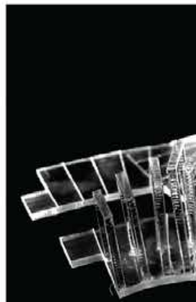












Formally, compared to the canal and railroad, the highway condition is scaled in plan, and multiplied in section. This scaled 3-dimensionality, unique to the highway explodes the potential paths of movement through and occupation of the “barrier condition” the highway represents. An extra sectional dimension means we are not restricted to a traffic light intersection diagram that describes canal and railroad porosity: pedestrians wait their turn and cross at 90 degrees. And as architects, we find that spatial opportunity always accompanies scalar shifts. The highway is no exception. Furthermore, the spatial potential on the interior of the highway footprint, suggests an inversion of the Shortblock typological orientation with the public facade facing outward and private access on the canal-facing side. Rather, the highway block faces inward toward an interior highway urbanism. Lastly, 19th century industrial development was inside out, with the canal at the center, and relatively unconstrained externally, hence [industrial] explosion and boom [town] serve as indexical descriptions of the development. That is the canal preceded the city. The post-industrial condition is dramatically different. The city is preexisting and urban sites are heavily constrained externally. This is true of the void condition the highway fosters, as well as of connective projects in general that are fundamentally mediative and necessarily derivative:

In architecture, the ‘between’ centers its interest on what mediates – the architecture of relation and tangency. It is the urbanism of open systems, architecture without limits, without clauses, open to phenomenology of landscapes… It is the ideal response for a project contaminated by the environment around it. It originates there, where (or starting from) the conditions are not precise, but ambiguous, confessed, misapplied, hybrid, uncertain. A project that originates in this grade of confusion, for example that of our peripheries, tries to tinge itself or imbibe this or that; it tries – this ‘in between” project – to attract everything towards itself that it can use to make its own space.4

This project took, as an initial condition, typical Syracuse Zoning envelopes, distributed them along Existing and Proposed paths of reconnection in unused usable space and systematically adapted them to the constraints imposed by the highway, the city, and our urban agenda. The incremental transformation evolved into an urban & zoning plan that fills the highway void with usable, commercially viable envelopes, and transforms the highway void into an urbanism that celebrates the highway’s legacy as an infrastructural agent of urban development by embracing its aspects: movement and sound.5 Furthermore, it attracts pedestrian activity and economic development by taking advantage of its position between two urban centers and potential as an urban armature linking them together. It reconnects the two halves of the city with something that originates from, and is contaminated by, both of them, but is explicitly neither. Unlike the downtown, and university districts it mediates, this is an urbanism of intimate spaces, shaded by the highway, and filled with the white noise of traffic. Buildings press in creating alleyways, and expand out creating open spaces, while always responding to and encouraging automotive and pedestrian traffic patterns that flow unimpeded through and around each other, contributing to this phenomenal space of movement and ephemeral activity. As Elizabeth Mossop points out:

The significance of the automobile must be dealt with rather that ignored in a nostalgic yen for a pre-car urbanism or blindly embraced for its romantic associations. It is time to engage with these landscapes that have been so poorly served by design.6

1. Elizabeth Mossop, “Landscapes of Infrastructure,” in The Landscape Urbanism Reader, ed. Charles Waldheim, 163-177. (New York: Princeton Architectural Press, 2006), 171

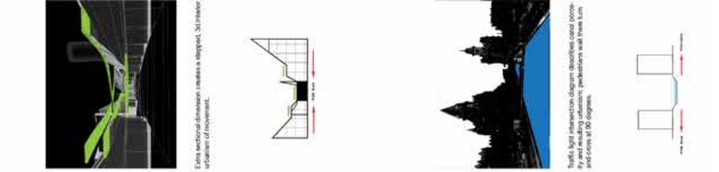
2. The Erie Canal was the first major transportation route between the Atlantic ocean and the interior of the United States. The Canal was a prime factor in the rise of New York City as the major port of the U.S., and resulted in the explosion of small canal settlements into large transportation hubs and later industrial cities.

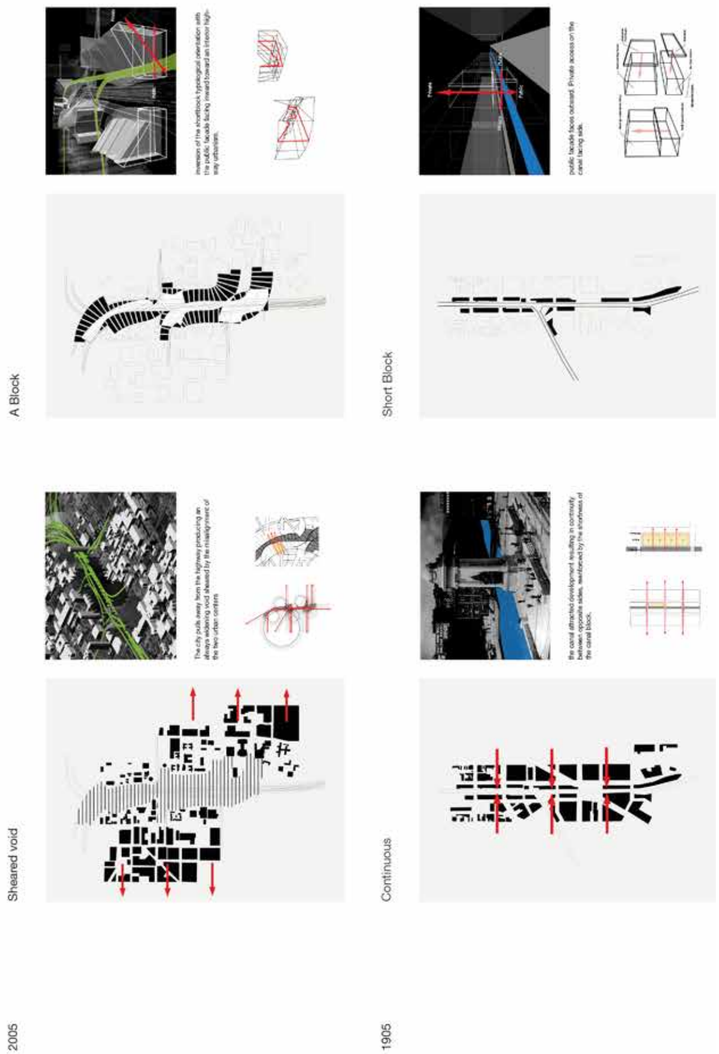
3. nterstate 81 runs north-south through Syracuse, and forms a physical and psychological barrier between downtown and University Hill, an issue both Syracuse University and local politicians are trying to address. Interstate 90 runs east-west, connecting Seattle to Boston.

4. Manuel Gausa et al., “in-between,” the metapolis dictionary of advanced architecture (Barcelona: Actar 2003) 334

5. To be explicit, these are zoning envelopes, constrained both geometrically, and typologically.

6. Elizabeth Mossop, “Landscapes of Infrastructure,” in The Landscape Urbanism Reader, ed. Charles Waldheim, 163-177. (New York: Princeton Architectural Press, 2006), 173

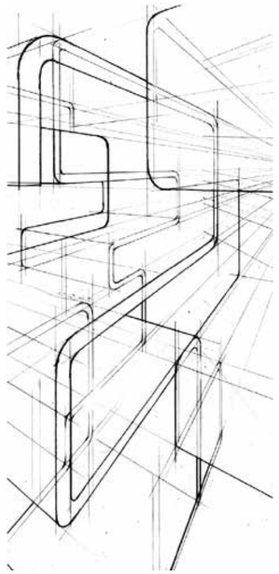




INFESTED PUBLIC INTEREST

As Western cities become increasingly private, architecture must reconsider its role in the public sphere. Increasingly architecture is employed as an instrument for maximizing investor profit, while public agendas get pushed aside. Wolf Prix argues that architects can resist this debasing trend by exploiting the transistor-like capacity of architecture: “The model of the building as object is replaced by the idea of an urban transistor - an architecture that is capable of amplifying the urban spaces adjoining it through its own transistor-like spatial organization.” [5]

Our proposal for an art museum and artist studio, endorses this model of an informal public agenda, and attempts to serve it through the manipulation of the building envelope as the boundary between public and private spheres. Specifically, it exploits the unique capacity of the wrapping surface to intermesh, simultaneously separating and unifying—delineating program while challenging boundaries—carving out public space and infesting private space with a public agenda. Infestation also became an operative word for describing the fragmented extension of the surface out of the building into the city as a framework for unanticipated forms of appropriation, while ostensibly extending the museum’s scope of influence as brand and promotional banner for current and upcoming exhibitions.

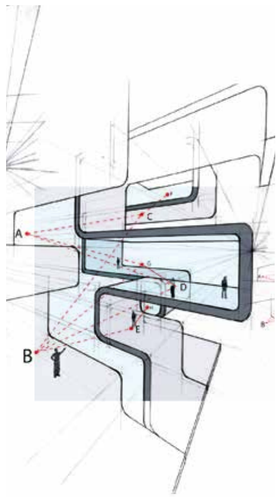


Scope: Architectural Design, Museum and design studio | Collabortors: Kristiana Leniart, Tyler Hinkley, Ted Brown (advisor) | Contribution: Concept/schematic design, text, design of wrapping surfaces

“Philadelphia is a city of old industrial plants, old row houses, and old communities still organized around traditional ethnic and racial lines, and still excluded, in part, from the benefitsof globalized economic structures; and from a declining industrial job base in an era of de-industrialization and privatization.”1

Philadelphia’s shift to post-industry has increased rather than decreased divisions among classes, races, and neighborhoods in both the city and suburbs. This divisiveness is not because the region is more heterogeneous than in the past. As Carolyn Adam points out: “Philadelphia was never united by a single political and civic agenda; it was always composed of separate communities (city of neighborhoods).”2 However, in the past there was a network of localized linkages created by an industrial economy that served to hold the region together. "The vast web of economic interconnections between firms and sections of the city helped to establish social and political cohesion in a diverse citizenry.”3 The Global city does not serve that same unifying function because the industries it supports and jobs it generates substitute global linkages for what were previously local linkages. This condition is exacerbated by increasingly privatized development patterns that disconnects many of the city’s neighborhoods from the “structures of opportunity.”4

Aerial images, with their ability to reduce cities to patterns, conceal the socioeconomic reality of the contemporary landscape. “Aerial images lay everything bare, and yet by their reduction of things to a marvellous pattern they smooth out the complexity and contradiction of being in a body.” [6] A satellite image of Philadelphia does not



1. Carolyn Adams, et all, Philadelphia: Neighborhoods, Division, and Conflict in a Postindustrial City (Philadelphia: Temple University Press 1991), 26

2. Carolyn Adams, et all, Philadelphia:

register the discontinuity that post-industry suffers from. Rather, it suggests a continuous matrix of localized difference. The city, as seen through this conceptual framework, can be understood as a globally connected and locally unified aggregate of intensities. This project appropriates this benign representation and employs it as a productive medium of local connection, capable of manifesting spatial relationships and cultivating localized linkages, by carving out public space and infesting private space with a public agenda, as well as provoking speculation by reformulating the post-industrial city as a globally connected and locally unified, however spatially fragmented, networked distribution of episodic engagements—between agents of public and private interest.

When the surface appears in the city, it takes the form of installation, structure, infrastructure, pattern, form, sponsored, and unsponsored. It cultivates public engagement by serving as a banner and framework for organized public exhibition as well as unanticipated forms of expression and appropriation. The continuous surfaces that extend into the museum, fragment and disjoint as they extend out from the museum and into the city effectively extending the museum's scope of influence on, and by, the public city, replacing the model of privatized art consumption with mutual dialogue and public expression.

Within the museum, it exploits the unique capacity of the wrapping surface to intermesh, simultaneously separating and unifying—delineating program while challenging boundaries.[7] This capacity is further enabled by the asynchronous relationship between the three surfaces. This generates strong relationships by overlapping wrapped spaces, effectively shifting private spaces outward and penetrating public spaces inward, creating moments of physical overlap, and visual connection, blurring or intermeshing the distinction between public and private. This is particularly meaningful in the context of the museum, in which people are forced to interact in a non-physical voyeuristic manner, offering the voyeur privileged views, and framing museum goers as both subjects and objects.

Neighborhoods, Division, and Conflict in a Postindustrial City (Philadelphia: Temple University Press 1991), 26

3. Ibid.

4. Ibid, 27.

5. Wolf Prix, "b5 2 c6: Public Space," in The State of Architecture at the Beginning of the 21st Century, 18-19 (New York: The Monacelli Press, 2003) 18

6. Richard Weller, "An Art of Instrumentality: Thinking Through Landscape Urbanism," in The Landscape Urbanism Reader, ed. Charles Waldheim, 69-85. (New York: Princeton Architectural Press, 2006), 75

7. See Dillar & Scofidio's Eyebeam, New York; OMA's Kunsthal, Rotterdam.

Left: Black and White Populations per census block—comparative barchart. Racial segregation is most pronounced in housing. Data from Pennsylvania GIS Clearinghouse Plots of black residents and white residents. Each dot represents 1 person. Data from Pennsilvania GIS Clearinghouse.

Right: Concept