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untestedcity.com

# SELECTED WORKS | architecture, urbanism

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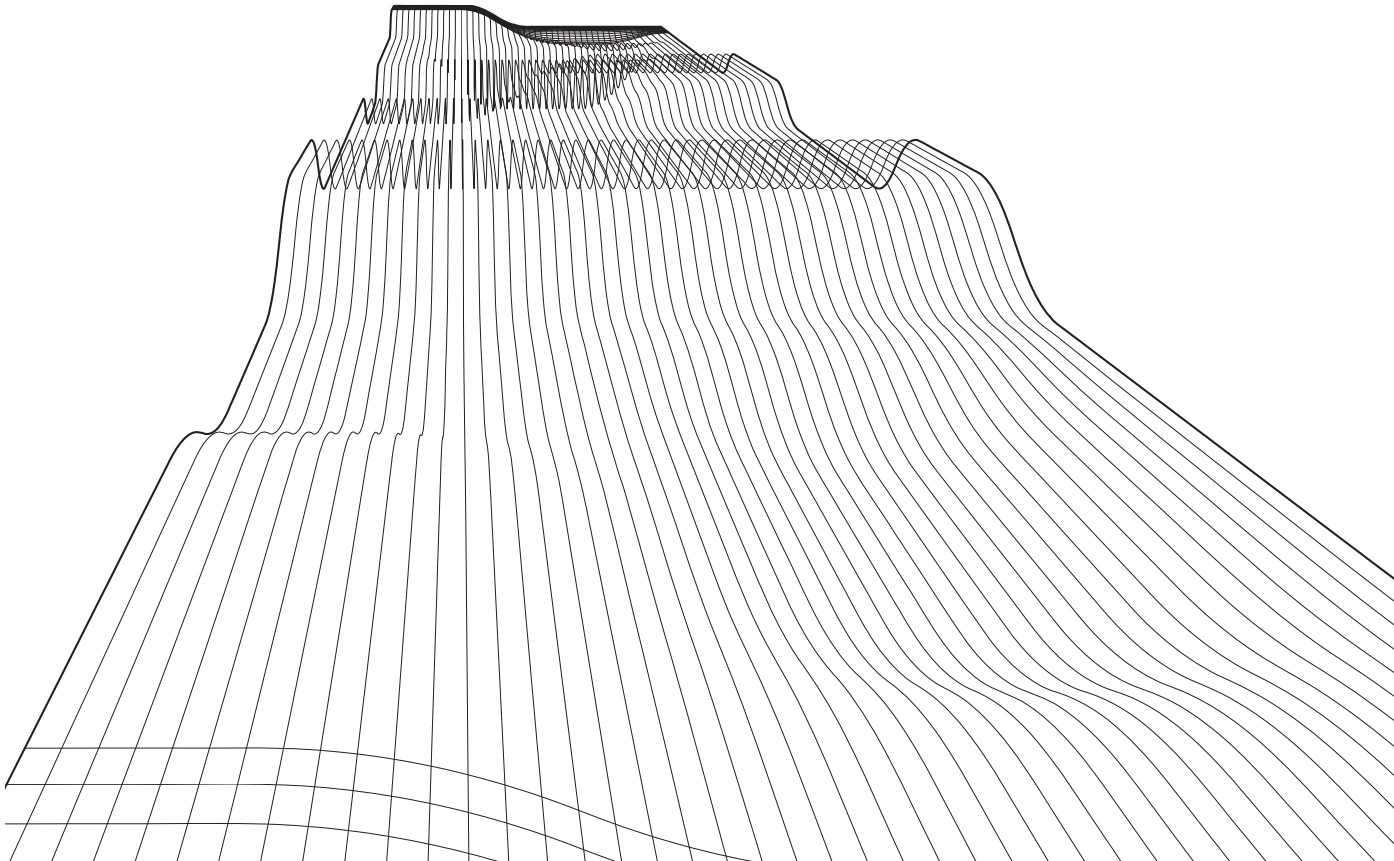
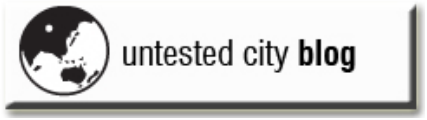






UNTESTEDCITY.COM

THE UNTESTED CITY BLOG is an interactive public forum for the exchange of ideas and information over the course of a 12-month journey (and subsequent research) through the world s newest cities and public realms. While much of this site is dedicated to travelogues, fieldwork, and analysis, ultimately the research hinges on contacts and networks of communication.

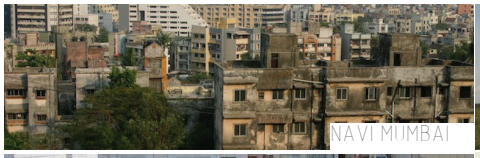
UNTESTED CITY refers to the untapped potential of unprecedented rates and scales of development occurring in many parts of the world and to design s responsibility to act, re-invent, experiment, and respond. For designers, it is an opportunity to test new ideas in order to re-think the way we are building cities and to address the overlooked consequences of the past. Design must take on a whole systems thinking a landscape urbanism meets high-density metropolis approach. Design is a process of integration at great scope. It must be multi-disciplinary and collaborative if it is to be sustainable. It is the opportunity to invent new modes of inhabiting the city at new adjacencies, scales, and flexibilities. The future of our cities will be determined by anti plans and zones of opportunity. Only when cities are examined from the roof-top down, can they built from the bottom up. Our built environments are in need of an overhaul and architecture is the tangible and social interface for urban reconciliation.

A building is not a building.

## 6 NEW CITY CASE STUDIES


DUBAI


ALMERE

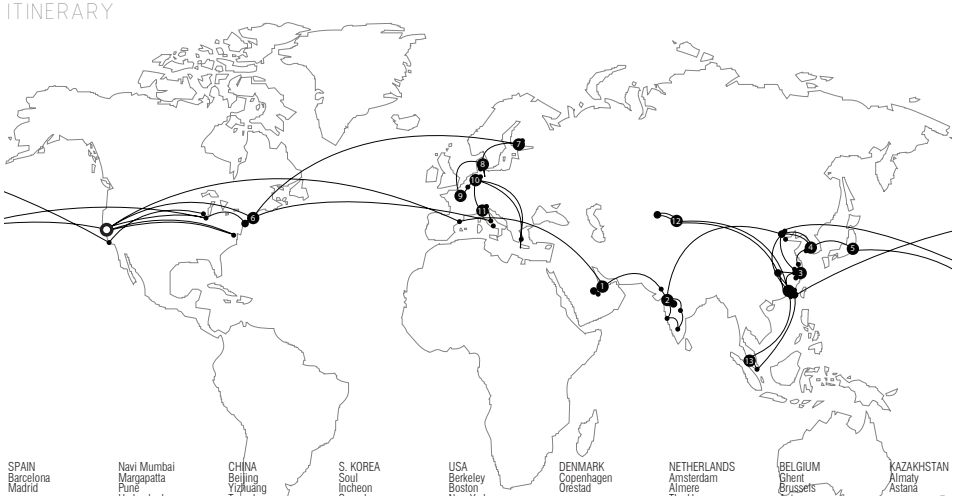

NAVI MUMBAI


ØRESTAD


SHENZHEN


ASTANA

## ITINERARY



SPAIN
Barcelona
Madrid

UAE
Dubai
Abu Dhabi
Masdar
INDIA
Ahmedabad
Ghandinagar
Mumbai

Navi Mumbai
Margapatta
Pune
Hyderabad
HiTex City
Bangaloré
UCB City
Electronic City
Goa

CHINA
Beijing
Yizhuang
Tongzhou
Shenzhen
Hong Kong
Sha Tin
Shanghai
Songjian
Thames Town
Guangzhou

S. KOREA
Soul
Incheon
Songdo

JAPAN
Tokyo
Tokyo Bay
Naoshima

USA
Berkeley
Boston
New York
Madison
Chicago
Los Angeles

FINLAND
Helsinki
Viikki
Arabiata

DENMARK
Copenhagen
Orestad

FRANCE
Paris
Cergy Pontouis
Lille

NETHERLANDS
Amsterdam
Almere
The Hague
Delft
Rotterdam
Utrecht
Leidsche_Rijn

GREECE
Athens

BELGIUM
Ghent
Brussels
Antwerp

ITALY
Milan
Verona
Venice
Palmanova
Rome
Naples

KAZAKHSTAN
Almaty
Astana

MALAYSIA
Kual Lumpur
Putra Jaya
Cyber Jaya

## EXHIBITION




## METHODOLOGY

Why are new cities being built?

How is public space being designed, built and used in these new cities?

Which examples should be implemented?
Which should be abandoned?

The research led to a sort of **construction tourism** around the world to answer these main questions. The hypothesis centered around the belief that I would discover many dysfunctional examples and neglected planning opportunities for public space, but that a closer examination might reveal a new species of surrogate public space, one that serves traditional urban needs in unprecedented form.

| *Sprouting Cities* | *Tabula Rasa Cities* |
|---|---|
| Dubai | Songdo |
| Shenzhen | Almere |
| Astana | Orestad |
| | Astana |

The research focused on two distinct **patterns of development**: *Sprouting Cities* and *Tabula Rasa Cities*. Sprouting City suggests the complete transformation, or re-branding, of an existing city through a surge in construction and upgrading. Tabula Rasa City refers to the development of entirely new, planned cities on previously undeveloped, or nearly undeveloped, land.

**Time-lapse photography** at significant public spaces in new cities became a dominant form of time-based documentation. My role was active participant and observer on site.

**Drive-by shooting** (rapid photography) was a way to capture tours through cities and the speed and movement of the immediate mode of travel.

*user interface*
*pedestrian*
*multiple publics*
*safety*
*self-sufficiency*
*connected*
*eco agenda*
*active / responsive*

New cities unprecedented in rate and scale warranted a critical examination of established urban **Performance dimensions**. This list represents a re-thinking of criteria across cultural boundaries. The performance of public space served as a barometer, or indicator species, for the success, or health of new cities.

## untested city

Today, entire new cities are designed and built virtually overnight. China alone plans to build 400 new cities within 30 years. Fueled by economic growth and urban migration, these 'instant cities' have become vast fields of urban experimentation, the impetus behind unprecedented scales and rates of architectural development and public infrastructure. However, the imperative for haste in construction preempts serious reflection on the quantity of outcome. The realities of these untested environments impact personal space and public life in the city, and the effects are best revealed, although notably overlooked, in the performance of public space.

As the gauge of urban success and failure, public space warrants specific evaluation. In this historically unique context, it requires an objective assessment based on the rethinking of established criteria. This boom in city building is happening as a series of massive but scattered experiments. I propose to kickstart the feedback loop to influence the design of future cities with an examination of public spaces in significant new developments around the world.

This Branner Traveling Fellowship proposes the cross-comparison of new cities through the lens of public space. I seek to understand how public landscapes have been influenced by existing conditions, how they are affected by the pace of development, and how they begin to shape the fabric of the emerging city. I intend to study the disparate pieces that form a system within the city and how the performance and co-existence of these zones could inform future implementations that are both responsive and multi-scalar.

MEDLIN
SOWERS
MASTRANGELO

WED
2.10.2010
7 PM
WURSTER HALL ROOM 112
3 LECTURES
FROM THE 2009
JOHN K. BRANNER TRAVELING
FELLOWSHIP IN ARCHITECTURE

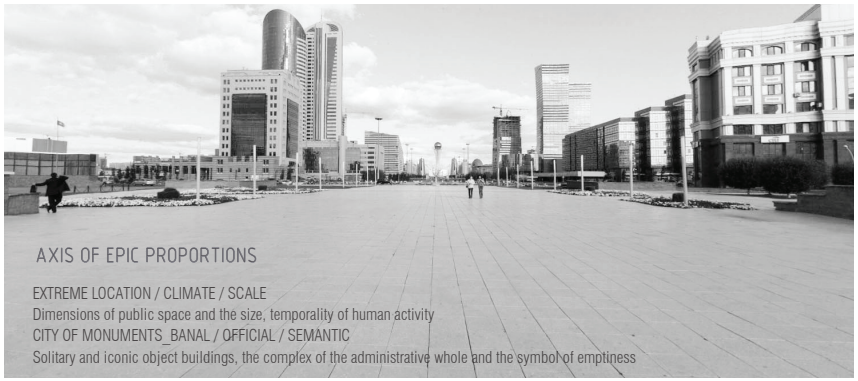
reception /exhibit opening to follow
2.10.2010 - 3.10.2010
Wurster Hall, gallery 108

### the untested city
Unprecedented urbanism and the performance of new public space

John K. Branner Fellowship, 2009
12 months of international travel and research, lecture and exhibition

2.10.10 - 3.10.10 spring 2010







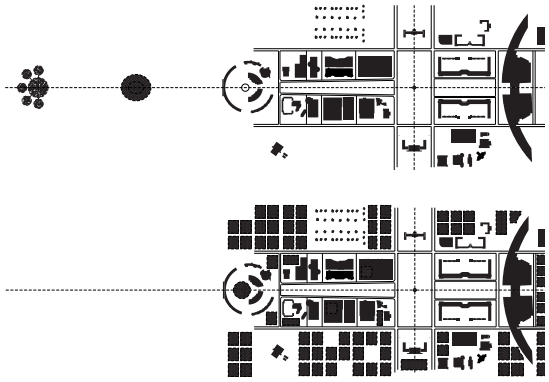
**Астана**
Akmola, Kazakhstan
51°10' N 71°26'E

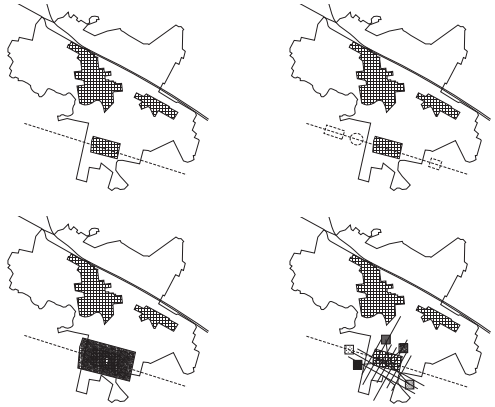
founded: 1994
population: 802,980
area: 258 km² /100 sq. mi

distance to Almaty:
966 km/600 mi

Master Planner:
Kisho Kurokawa

GROWTH SCENARIOS





# instant city / mega project

New Cities are erected at speeds that far exceed initial demand or need for public space. The result? Public space is either non-existent or overwhelming until density reaches a critical mass. This thesis proposes an infrastructural intervention for the interim - a catalyst for city life through a re-design of the public realm, a barometer of health for the city.

New capital city and former soviet republic Astana, Kazakhstan, was realized in just under a decade. Its remote location and extreme climate in combination with a transitory, uprooted population, and lack of adequate public infrastructure has resulted in a vast, empty core at the heart of the city.

Monolithic and disconnected buildings support the notion that the needs of the people (perceived as a passive mass) are secondary to prominent individuals and political figures. Prioritizing image over spatial relationships has produced a series of follies rather than functional buildings and public space.

This thesis proposes challenging the axiality of the site and diffusing the formal power of the state in the built environment. It is a re-configuration of the public realm through new layers of density -by carving through the open space and re-inventing the monumental core.

The thesis challenges the role of the planner, architect and urban designer, in the ongoing global economic crises. Ultimately, this is not only an idea for public space issues in Kazakhstan, but a template for resolving the compromised public realm of new cities world wide.

[INSTANT/MEGA CITY/PROJECT]

instant city / mega project [masters thesis]

The execution of monumental vision and the production of public space
a re-configuration, re-invention of Astana, Kazakhstan's administrative core

Committee in Charge:
Profs. Nezar AlSayyad (Chair), Renee Y. Chow,
Rene Davids, Michael Southworth

spring 2010

## FIVE POINTS OF DESIGN

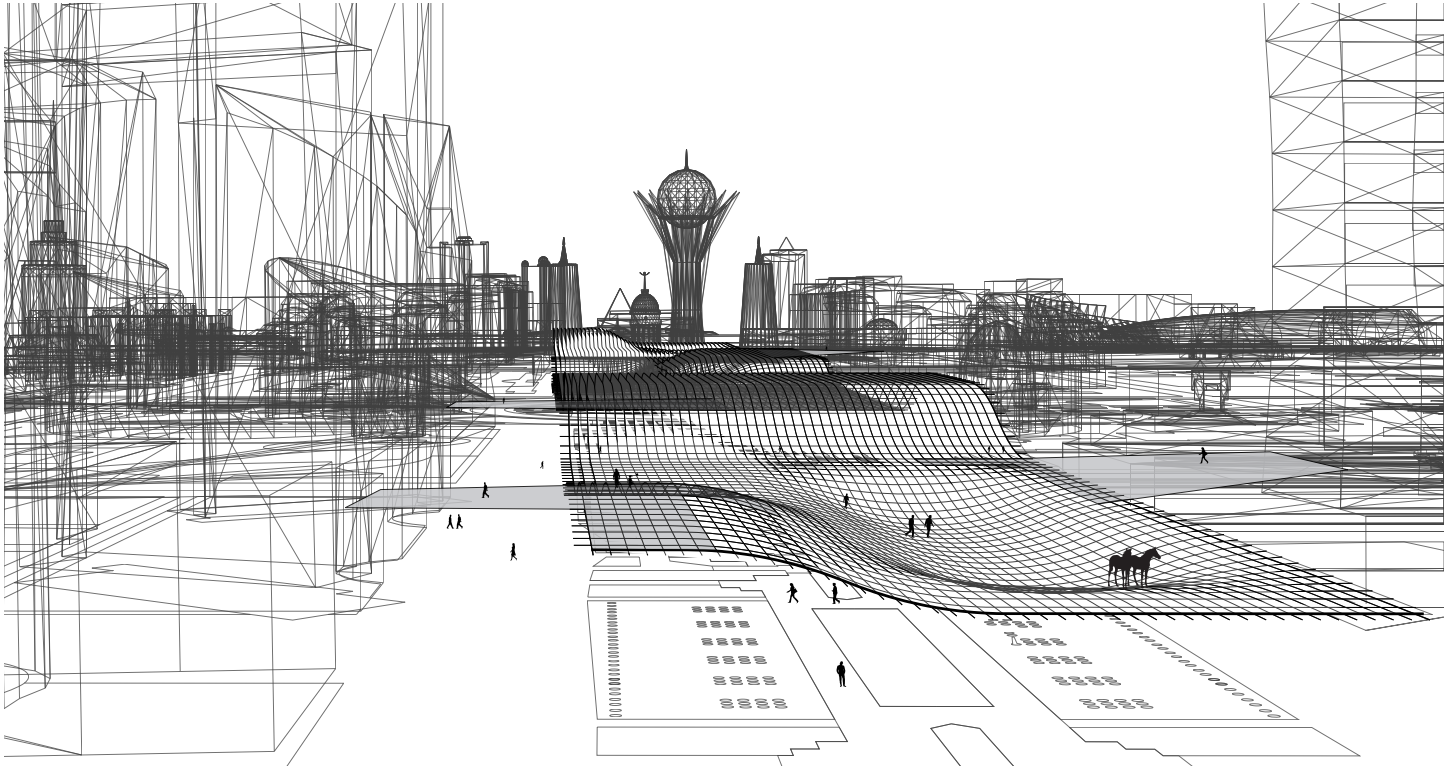
1. Transform the axis from predominantly mono-functional to multi-functional use with the creation of permanent and transitional program.

2. Carve out, or sever, the uninterrupted horizontality of the site to create spaces scaled for a variety of human activities, individual and collective.

3. Link isolated, object buildings and monuments with a protected, pedestrian-oriented public infrastructure.

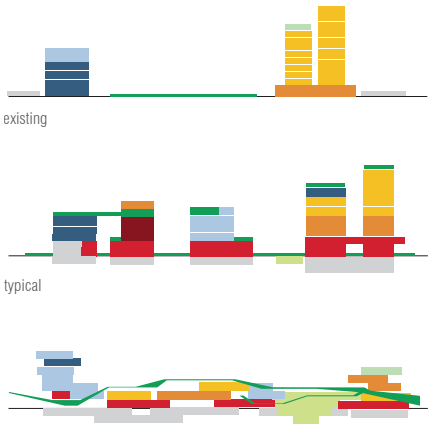
4. Create vistas within vistas to shift focus from the state to the people who comprise it and define its values - highlighting the multiple publics of Astana and encouraging a citywide coexistence.

5. Accommodate flexibility over time, including the need to support daily practices, periodic routines and episodic citywide events.

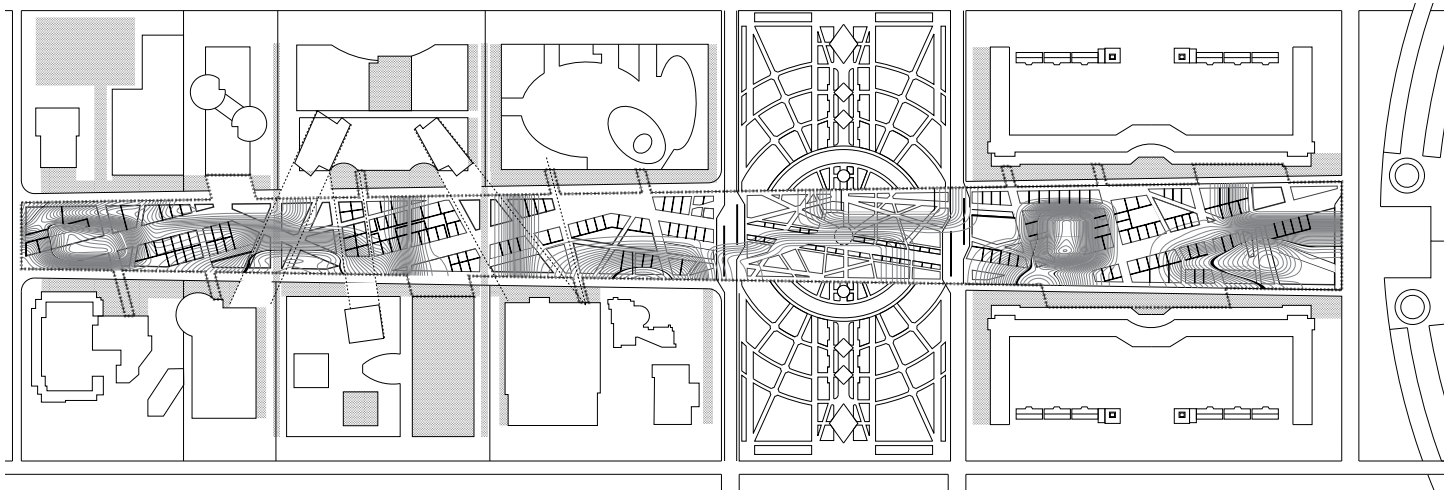


conceptual parti: layered public space, links to existing fabric, and monumental preservation

## PROGRAM RE-SHUFFLE

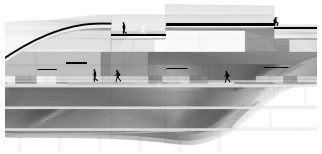



The Networked Whole
The overlap, or slipping of program generates a more infrastructural approach to development.




mile-long intervention at (public) grade:
suggestions for inhabitation and scale, plan for access and circulation

MOMENT OF REFLECTION_LVLS OF COMMERCE



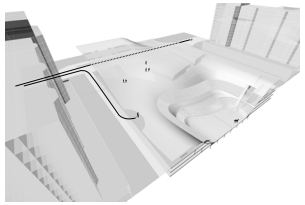
BAYTEREK / "CHUPA CHUP"

The centrally located observation tower/ monument references a Kazakh myth about a magic bird that lays a golden egg in the branches of a tree of life. "Bayterek" literally means "tall poplar tree" yet residents colloquially refer to it as central Asia's popular brand of lollipop, the "Chupa Chup."

STADIUM / CIRCUS / AMP IT HEAT RE

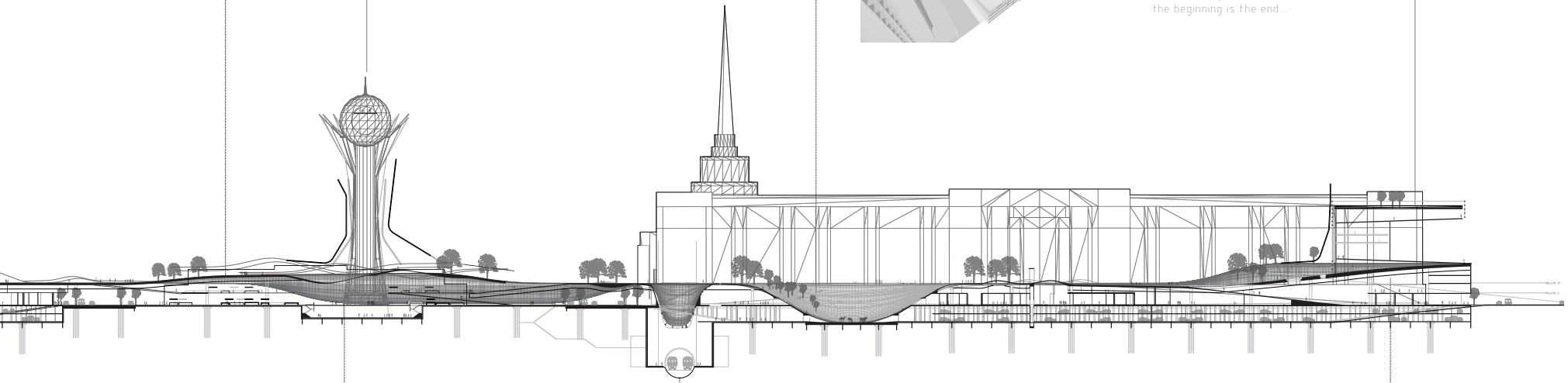
The circus is an amenity in all large Kazakh cities. This multi-functional arena might also host sporting events or live concerts.

MOMENT OF REFLECTION _
ACCESS UNDER/THROUGH/AROUND/OVER



MUSEUM OF NATURAL HISTORY /
ANIMAL SCIENCE CENTER /
GALLERY OF FELTMAKING AND
TRADITIONAL TURKIC HANDICRAFTS

THE PUBLIC SECTION terminates in the East with a 'seed' of development - The Museum. The form of the building allows for a literal and metaphorical re-framing of Astana's history. A sequence of vistas are reconstituted and movement is choreographed to allow for unexpected shifts and glimpses of the Presidential Palace and Khan Shatyr. In this sense, this plug-in city extends to its immediate and 'as far as the eye can see' environs. The end is the beginning is the end...

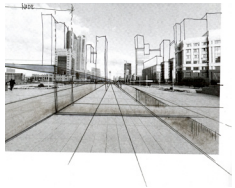


THE BAZAAR / CENTER MARKET

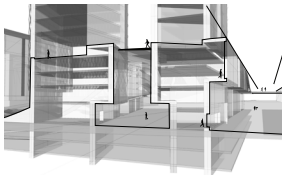
The bazaar is the center of Kazakh life and business. The Millennium Axe wouldn't be complete without this magnetic attraction of public life.

METRO STOP EAST / STADIUM STATION

Naturally lit and passively conditioned, this subterranean transit hub connects directly to the stadium, bazaar, and 'Chupa Chup'.



MOMENT OF REFLECTION _
LIVING AT THE EDGE



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spring 2010

NATIONAL LIBRARY / THRESHOLD TO ICE PARK

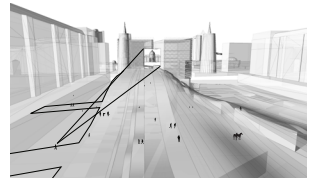
As the original 'seed' of THE PUBLIC SECTION, the National Library is the jewel box of the western quarter. Its faceted, concave, and reflective facade visually fractures, inverts, and reduces the surrounding landscape / monuments. It juxtaposes moments, activities, and scales of ongoing public life nearby, placing the focus of the city's future where it ought to belong - with the Astanites who comprise it.

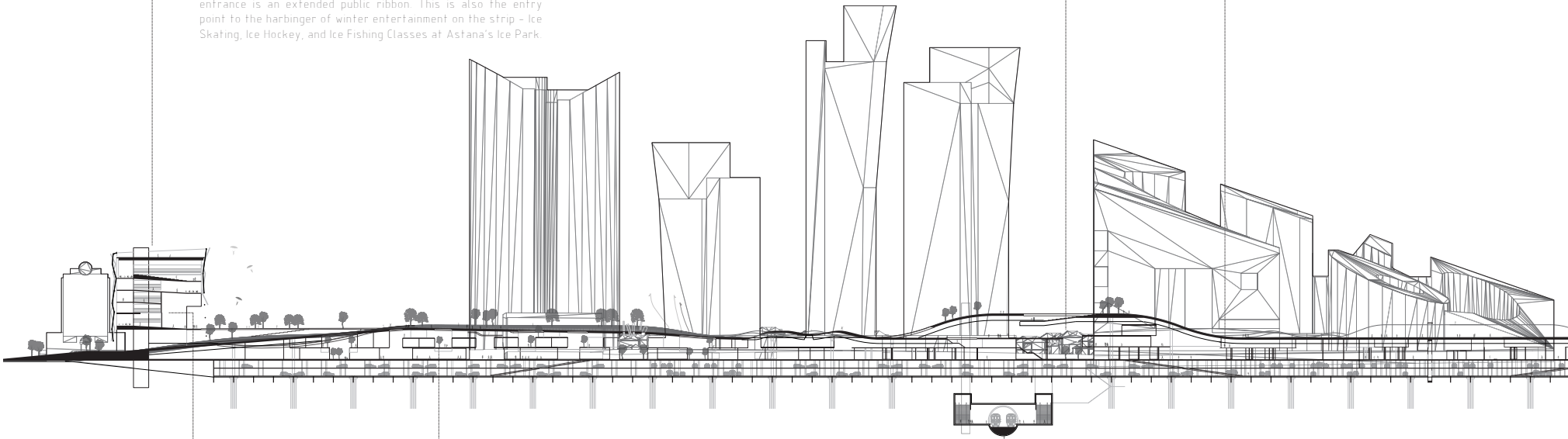
Notice that this is a particular moment where the public surface directly engages the architecture; the path to the library's main entrance is an extended public ribbon. This is also the entry point to the harbinger of winter entertainment on the strip - Ice Skating, Ice Hockey, and Ice Fishing Classes at Astana's Ice Park.

CITY COLLEGE / ARTS DISTRICT

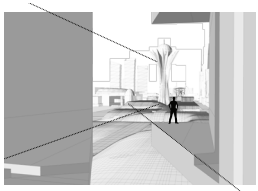
This is the future location of a major hub of public activity of multiple scales - from the warehouse to the kiosk.

MOMENT OF REFLECTION_
BRIDGING TO EXISTING FABRIC





MOMENT OF REFLECTION_
STANDING IN VISTAS WITHIN VISTAS

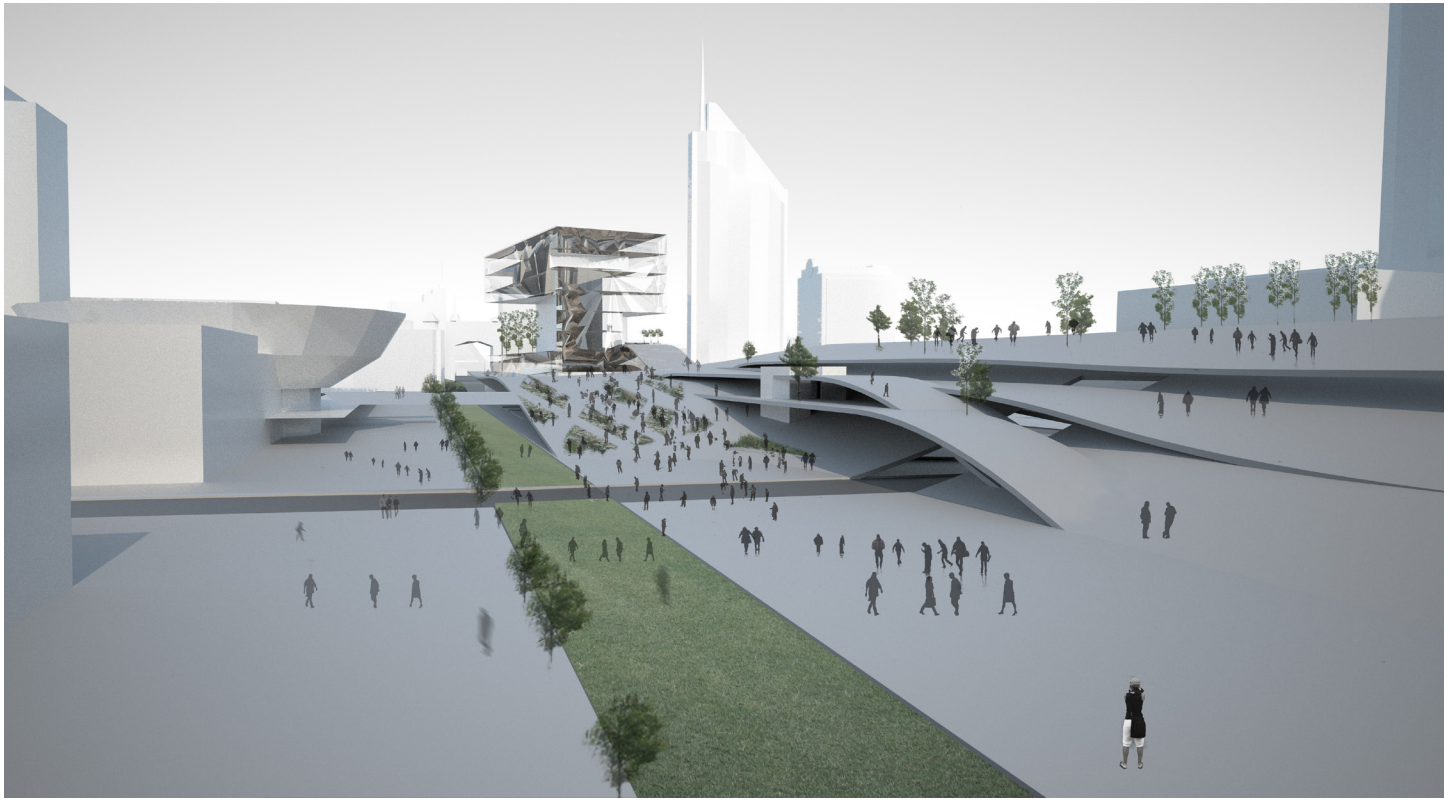


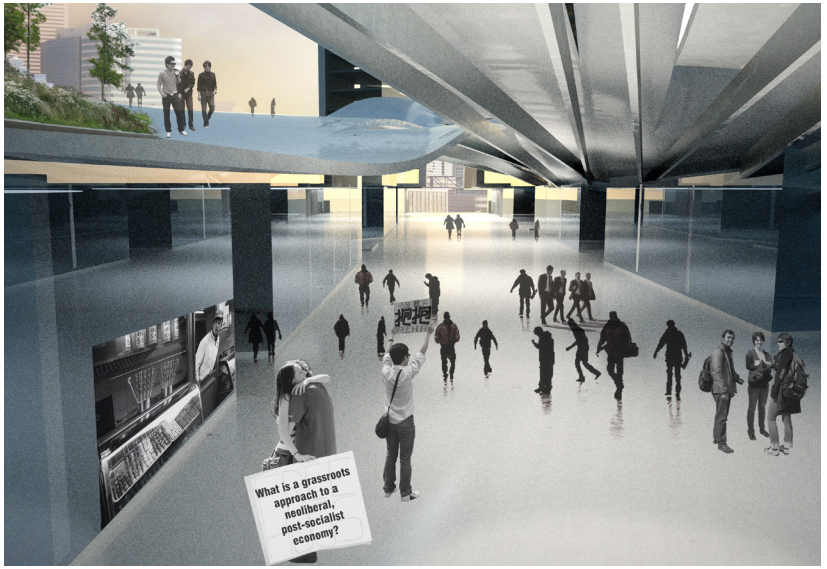
THE ANTI-ENCLAVE / RESIDENTIAL DISTRICT

It is anti-enclave because it is a mixed-use residential district. This is dense urban living at the public ground, connected and adjacent to a variety of city amenities. The courtyards function as semi-private collective space. The PUBLIC GROUND is within gazing distance.

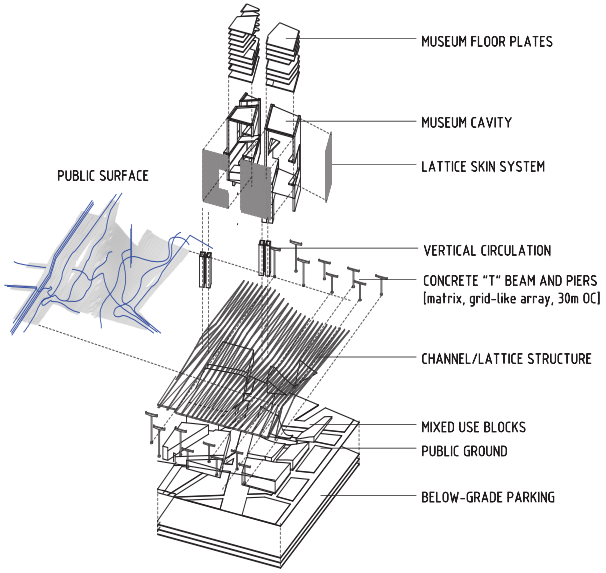
METRO STOP WEST

Embark here for the National Library, Residential District, and City College.



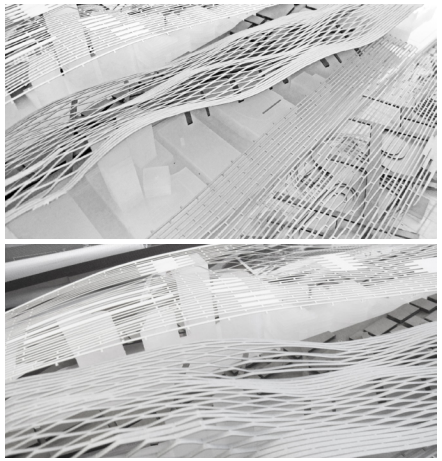



View from Market Street

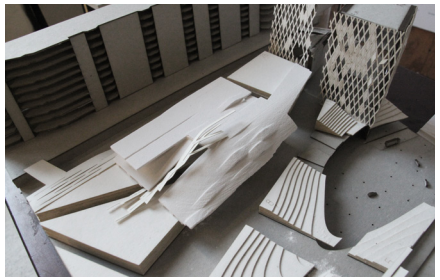



STRUCTURE: bridge construction and overpass technology
MATERIALS: concrete, steel, glass, landscape

SURFACE ANALOGS:
STUDIES IN STRUCTURAL SKINS



Inspired by lamella domes and funicular bridge design, these paper analog models attempt to illustrate the types of long spans and adjacent geometries generated by the reshuffling of program on the site. Experimentation included laser cutting slits in material at varying widths and lengths. This produced a corresponding change in curvature and size of aperture which, in turn, affected the opacity and transparency along the length of the site. Further studies would explore structural thickness and would optimize depth-to-span ratios. This type of form and structural generation has substantial potential at the scale of the building and the scale of the mega project.



The structure was more of a diagram about how light and air could penetrate a series of parallel, undulating public ribbons, at a gradient of scales. (Thickness of the lattice was 3D printed in the starch 1:500 model.)

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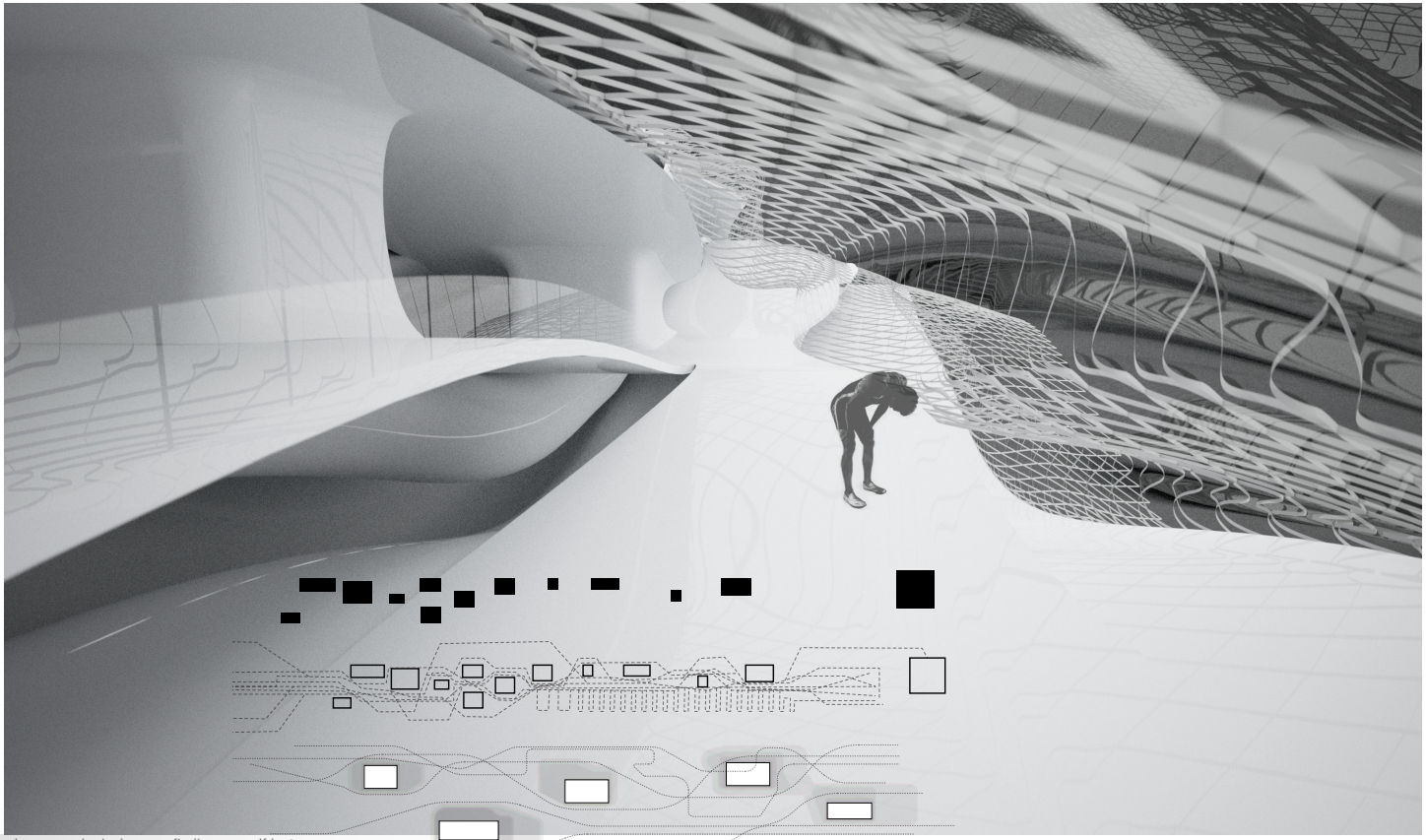
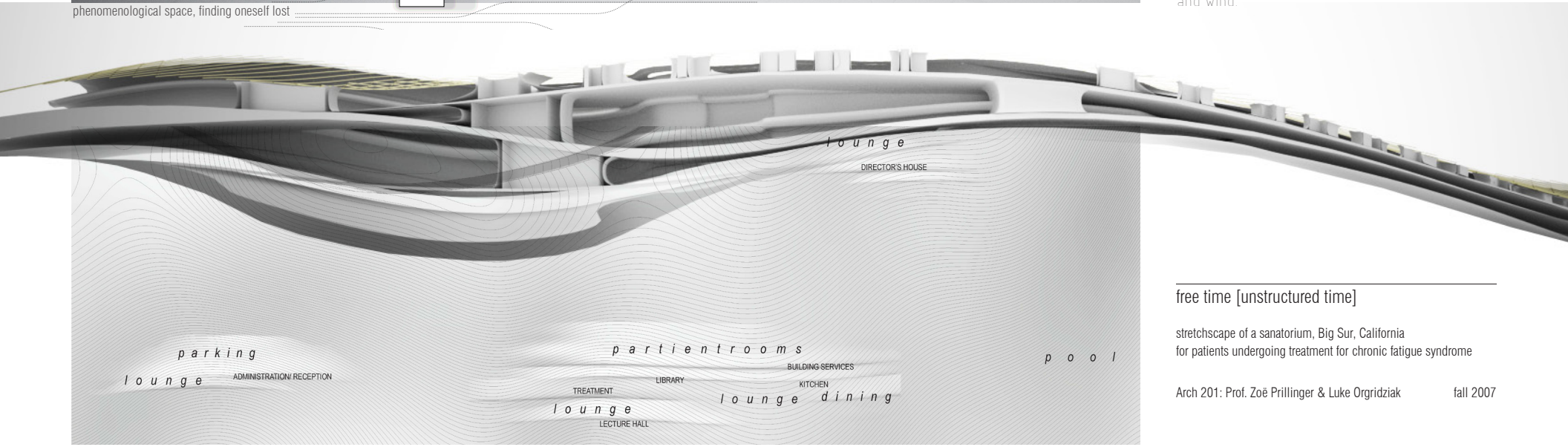


phenomenological space, finding oneself lost




# free time

[UNSTRUCTURED TIME]
Stretchscape of a Sanatorium

The Sanitorium amplifies existing conditions and forces by weaving new scales of activity into the landscape.

It exploits the notion of stretchscape, an ensemble of spaces described as fluid, infinite, unstable, and ambiguous. Nodes of stability anchor the turbulent stretchscape. This duality represents the sanatorium patients' daily routine of free time, or unstructured time, and structured time.

In general, program is stretched, the building spread out on the site not only to capture the vastness of the site, but to become a sort of 'endless walk' for the occupants, to create the state of, or feeling of being free, relaxed, lost - dedicated to a physical act of self reflection.

Program within the stretchscape is overlapping, flexible, and multi-directional, ultimately indecipherable from circulation space. It includes indoor/outdoor lounge space, dining areas, pool and recreational areas, and patient rooms. These spaces highlight the sublimity and temporal aspects of the landscape. They are marked by panoramic views, ambiguous heights, and natural light. They harvest light, water, and wind.

## free time [unstructured time]

stretchscape of a sanatorium, Big Sur, California
for patients undergoing treatment for chronic fatigue syndrome

Arch 201: Prof. Zoë Prillinger & Luke Orgridziak fall 2007

Within the structured nodes, program is prescriptive, efficient, and standardized. This is the administration, treatment facilities, and building services. These spaces are rigid, compact, compartmentalized, have restricted views, and controlled lighting. In the stretch scape their presence is blurred. It is not until complete immersion that one gains an awareness of a change in orientation, physically and mentally.

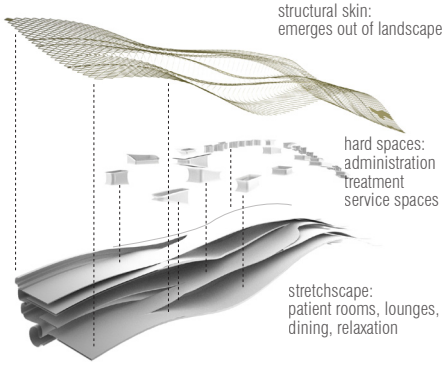
Extreme topography of the site (seen as the ultimate stretch scape) and anticipated views stretch the program in a terraced field condition along the terrain.

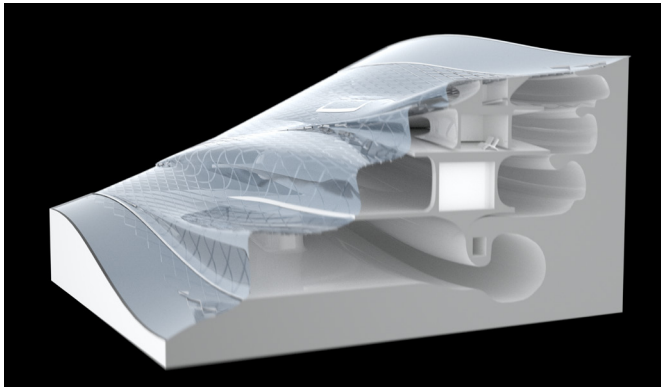
The sanatorium is a critique on the daily routine of the CFS patient, continuously oscillating between structured and unstructured time and space.

Stretchscape exploits free space and free time, emulating a continuous and fluid surface and lengthening served spaces to create essentially an endless walk, a physical relaxation and meditation technique for occupants.

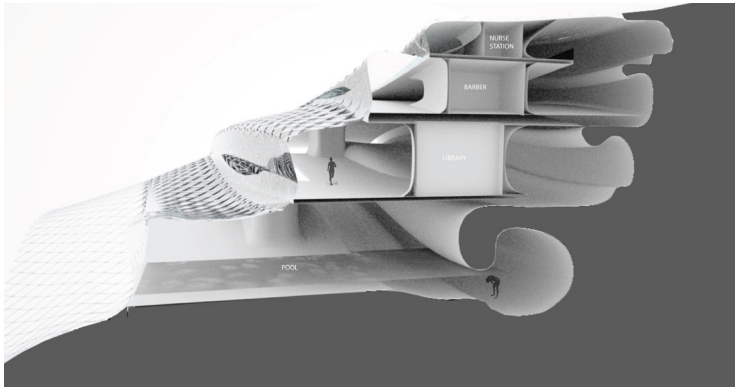
Hard spaces, or Nodes of Stability, function as structured spaces. They are the administration, treatment rooms, and service spaces.

Upon entering the Sanatorium, one is immediately in an open, undulating but placid environment. Further investigation into the stretched field condition reveals the emergence of turbulence. The once smooth surface becomes caught up in its own rippled, and creased geometry. Patients eventually find themselves lost in space.



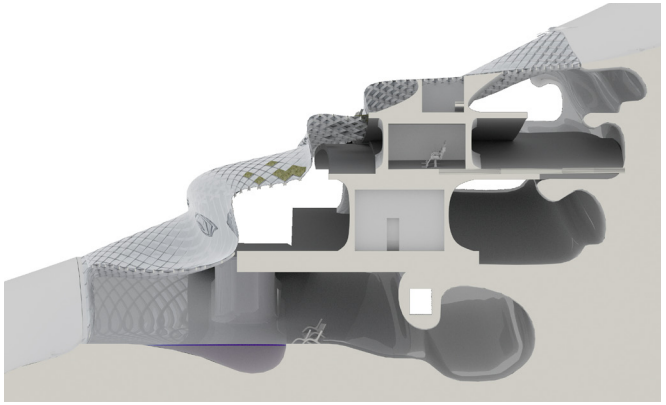



building as continuum: from soft undulation to ripple, folding condition

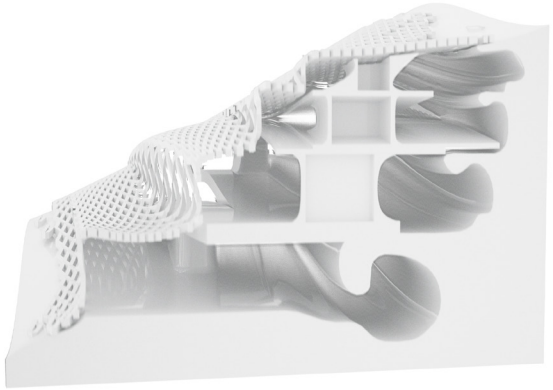



building and syndrome: cronic fatigue affects perception and orientation

PROCESS

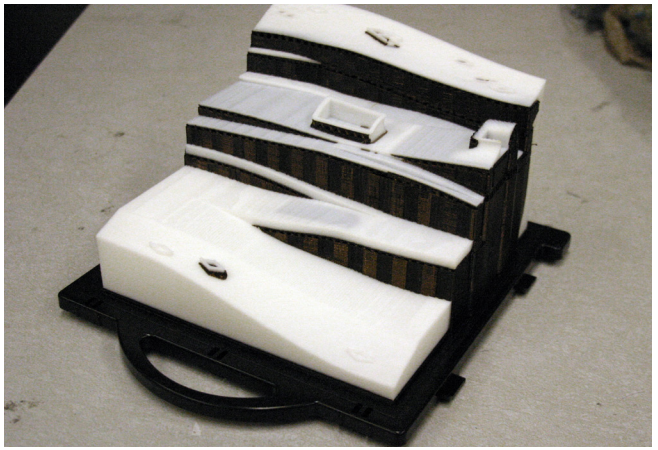


section rendering, material development

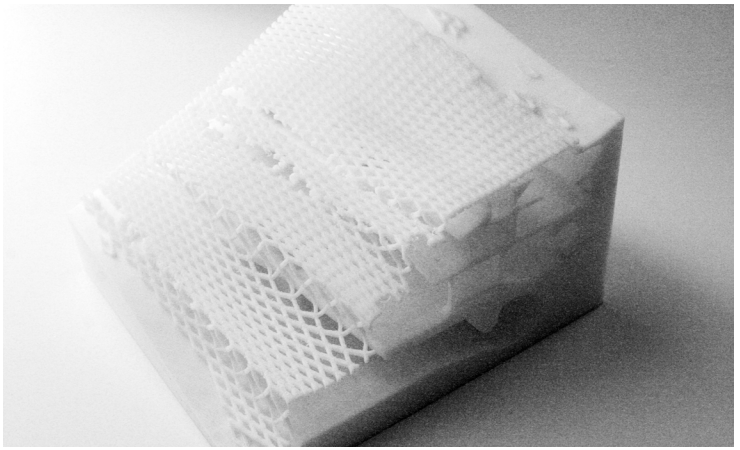


digital rendering of proposed sectional model

REPRESENTATION

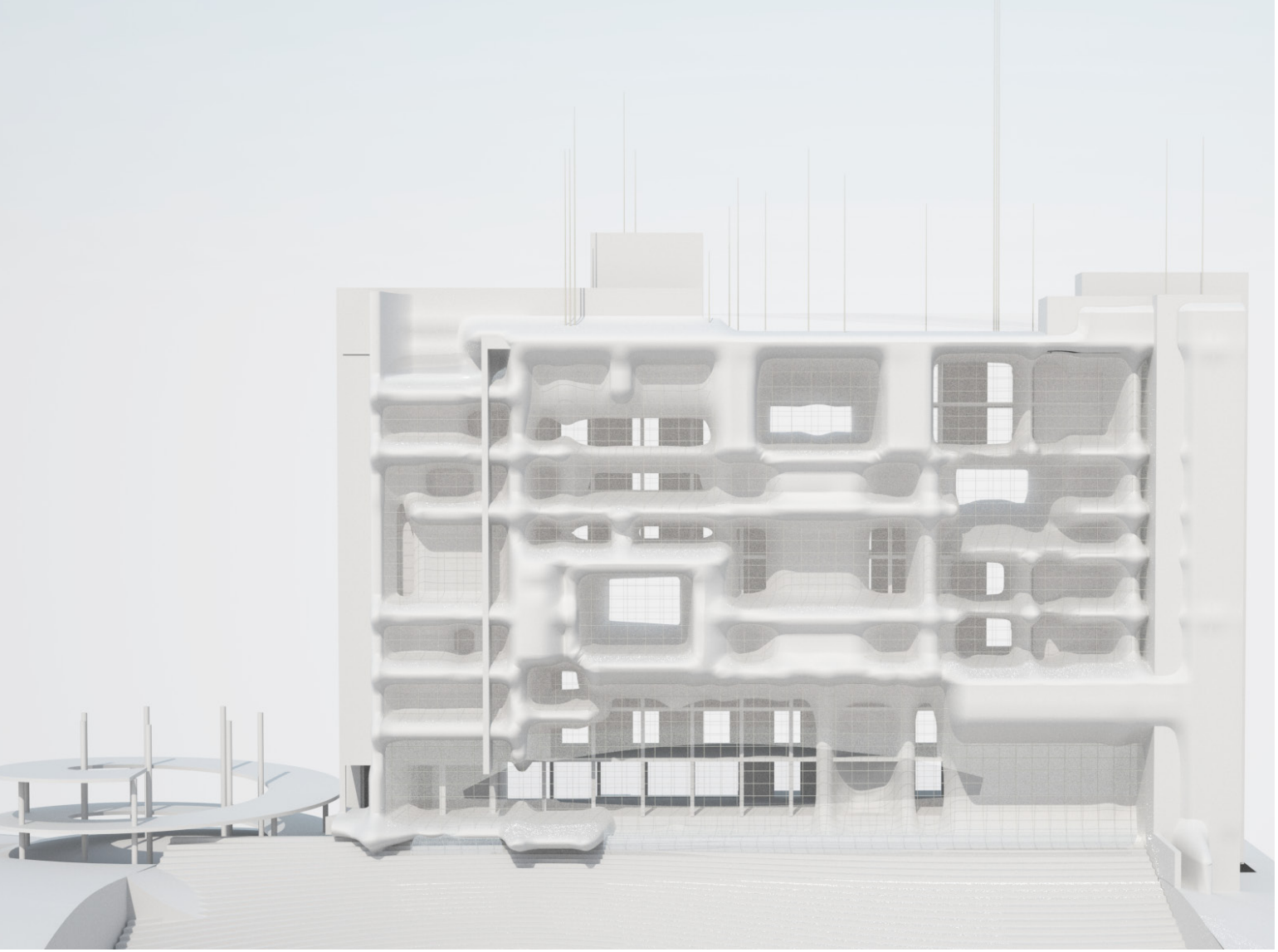


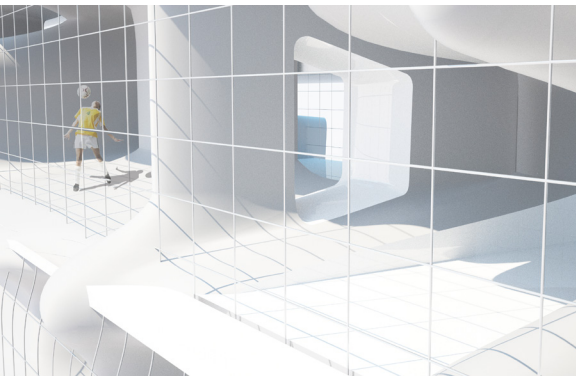
printed architecture: +40 hrs
College of Engineering: plastic print, soluble build



testing the limits of 3D printing: assembled physical model
skin = +42 hrs
sectional base = +40 hours
total print time = +82 hours

FABRICATION





## adaptive chirality

The call for a boarding school and soccer academy bears the baggage of Monrovia's war-torn past and its current dilapidated, bombed-out, built condition. Monrovia is a squatter city, void of large-scale infrastructure, separated by sporadic enclaves of wealthy politicians.

The site is the ten-story, Ducor Hotel, formerly a resort destination and Intercontinental Hotel located at the city's highest elevation. Once a gleaming prototype of the International Style, the Ducor now crumbles in disrepair and is home to hundreds of displaced residents.

The site, the building orientation, the double-loaded building armature, the city, the political context, the climate, the new soccer agenda all tell a story about sides. This sidedness, or pronounced chirality, become the generator of a new architecture and a new strategy for change. Using the building armature as framework, new program emerges through the hypermodification of the existing structure.

The proposal aims to amplify the sidedness of the building with the addition of new program and functions.

A SIDE FOR LIVING

The west side of the building is subject to the most heat gain, therefore, it is the more closed, protected side of the building. It preserves the existing structure and interior spaces. The new boarding school dormitories replace the standard hotel rooms.

A SIDE FOR LEARNING

The east side of the building faces the city. It reveals the new school and soccer facilities to the city they will serve. This side of the building deviates from the existing structure, eliminates large portions of the existing building and replaces and reinforces the structure.

adaptive chirality

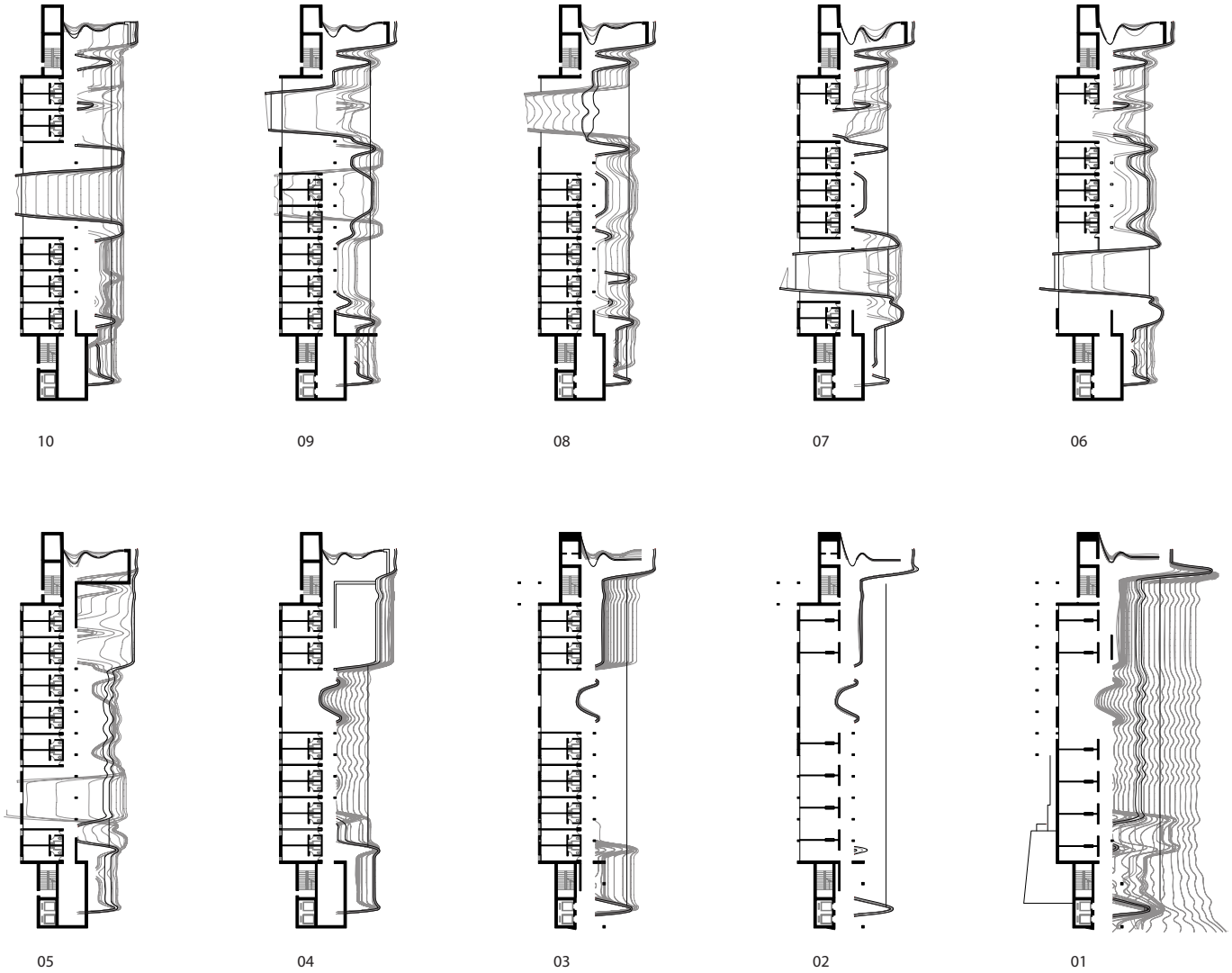
strategy for change through the hypermodification of existing structures
proposal for a soccer academy and boarding school in Monrovia, Liberia

Arch 201: Prof. Kevin Daly spring 2008

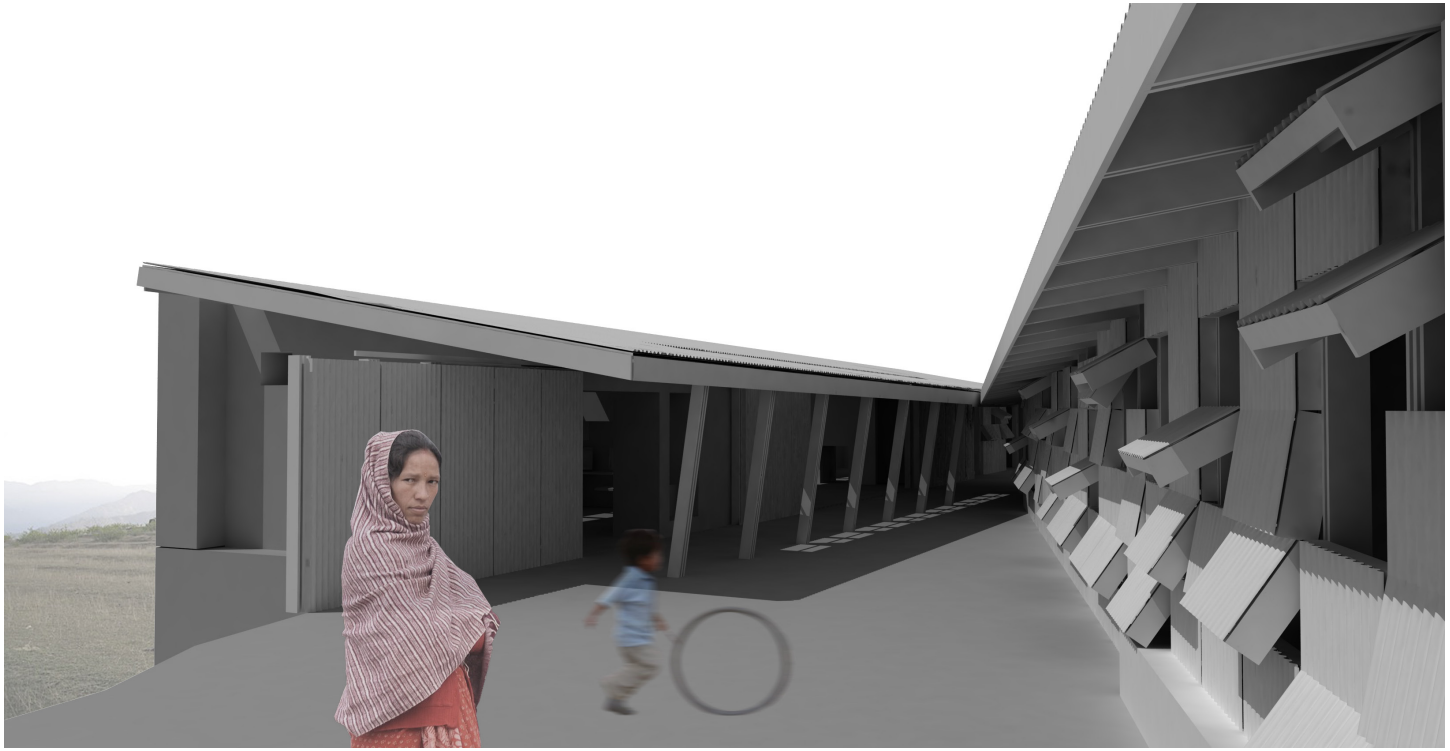
Construction methods: New spaces are defined and reinforced by shotcrete construction. Shotcrete can be mixed on site using local materials and labor, has high strength, durability, low permeability, excellent bond, and intrinsically takes on complex geometries and curves.

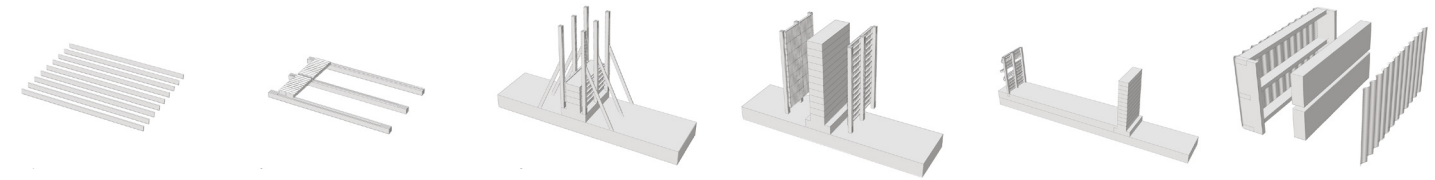
Skin: Mosquito netting wraps the building, hung from a pre-stessed cable net wall system. Netting becomes the shading, protection, and blurs the boundaries of indoor and outdoor.

Urban strategy: The proposal seeks to be a strategy for the revitalization of the city. Construction methods at the Ducor become city models while the strategic planning of a system of soccer fields throughout the city aims to act as a catalyst for change and an incubator for urban infrastructure.




variations in shotcrete re-construction





Incremental modular assembly, materials: wood, earth, corrugated metal

## incremental shift

is a proposal for a new tele-medical center in Sanfe Bagar, Nepal that addresses the present and future state of the digital divide by presenting a framework for gradual change.

As digital technology is introduced to Nepal, improved access to health care through internet technologies has the potential to transform the lives of many people in the rural community. The proposal recognizes that this revolution will not happen overnight; the advance of technologies will build on and enhance the knowledge of local people, facilitating a change that will happen slowly and lightly. It encourages equity through a flexible, growth-oriented, local network of Wi-Fi access and int'l medical knowledge exchange.

This 'building as infrastructure' approach suggests new datums of thought, methods of construction, and use of materials to negotiate between the known (existing Nepali traditions and customs) and the unknown (new digital technologies and educational opportunities). Incremental Shift is the first physical phase of the tele-medical center, acknowledging the future by planning for its role as facilitator and hub of digital technologies in NW Nepal.

Incremental Shift is a converging, double-bar scheme alluding to the biased duality of the digital divide. The north-facing public 'high-tech' bar contains the computer facilities, learning labs, and meeting rooms - spaces for long-distance and local knowledge exchange. The south-facing private 'low-tech' bar consists of staff quarters and living spaces - to house staff who maintain, operate and facilitate the center. The public and private bars converge at the community multi-functioning meeting space and common courtyard. Here the division of the bars is dissolved. Interaction between bars is inevitable and encouraged, as is the interaction between rural Nepal and an equitable global digital network.

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### incremental shift

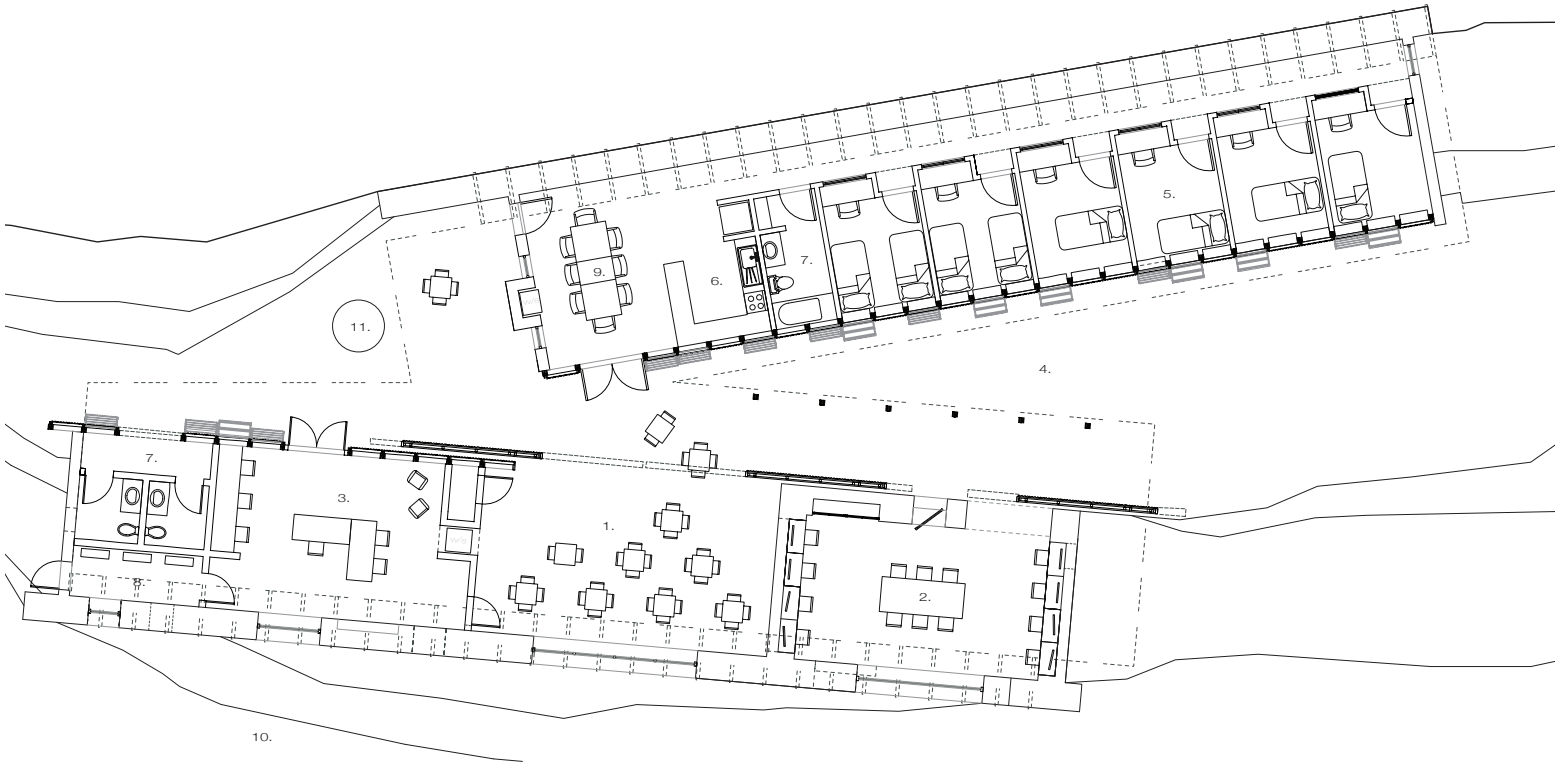
tele-medical center and internet hub in rural Nepal

Raymond L. Watson community design — award winner
Architecture for Humanity Competition — honorable mention
[competition entry w/ Luke Perry and Matt Bitterman] summer 2008

Programmatically, the center anticipates growth over time and future needs of the digital communication age through the incorporation of flexible spaces. In the private bar, staff quarters include 6 individual sleeping rooms, and up to 12 sleeping spaces allowing a flux in the number of workers employed. The staff kitchen and living area becomes communal by operable partitions. In the public bar, the largest space - a meeting room that accommodates up to 100 people - spills out onto the main courtyard space via sliding partitions. The space can be closed for digital projections and opened for larger social events. The main computer lab includes interchangeable nooks for computers and books, accommodating a small library. This learning lab facilitates supervised instruction (computers around the perimeter of the room) as well as a central collaborative workspace. A separate administration space doubles as an auxiliary computer lab.

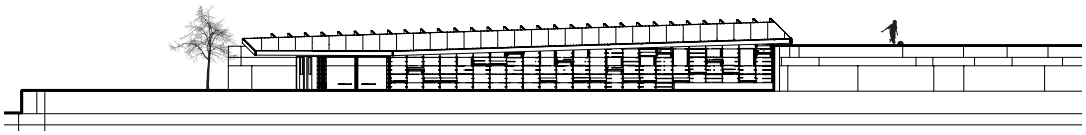
Integrating site-responsive, passive heating and cooling strategies, the two bars open to the courtyard in warm weather to exhaust and cross-ventilate the spaces. They close in colder climate to take advantage of the insulating value of the corrugated partitions, thermal mass of the earth walls, and additional internal heat gains.

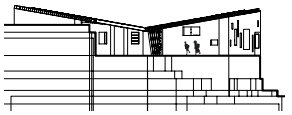
The tele-medical center exists as an extension of the Nepali landscape. The wedge scheme follows the geometry of the terraced site and integrates local, commonly used materials in innovative ways. Building materials include site-based earthen walls, mud-brick interior partitions, local recycled timber framing, and corrugated metal. The formwork used to construct the primary earthen walls becomes a panelized and operable secondary building enclosure system, regulating light, view, and ventilation. This incremental shift in building, technology, and ultimately life, will allow the introduction of the new digital age to proceed in a respectful, but necessary manner.

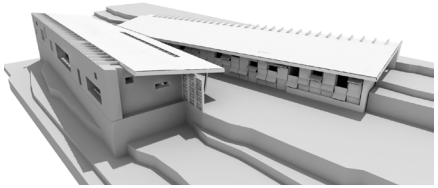


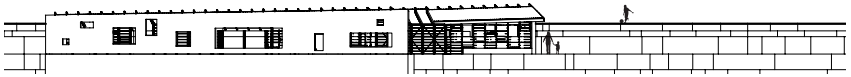

North

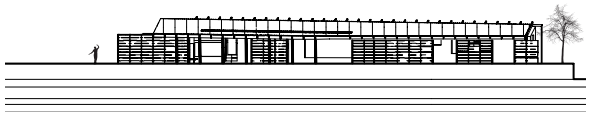
1. Community Meeting Space / Dining Hall
2. Computer Lab / Library
3. Administration / Auxiliary Lab
4. Arrival Courtyard
5. Staff Quarters
6. Kitchen
7. w/c
8. Power Storage / Recycling
9. Dining / Living
10. Septic Field
11. Cistern

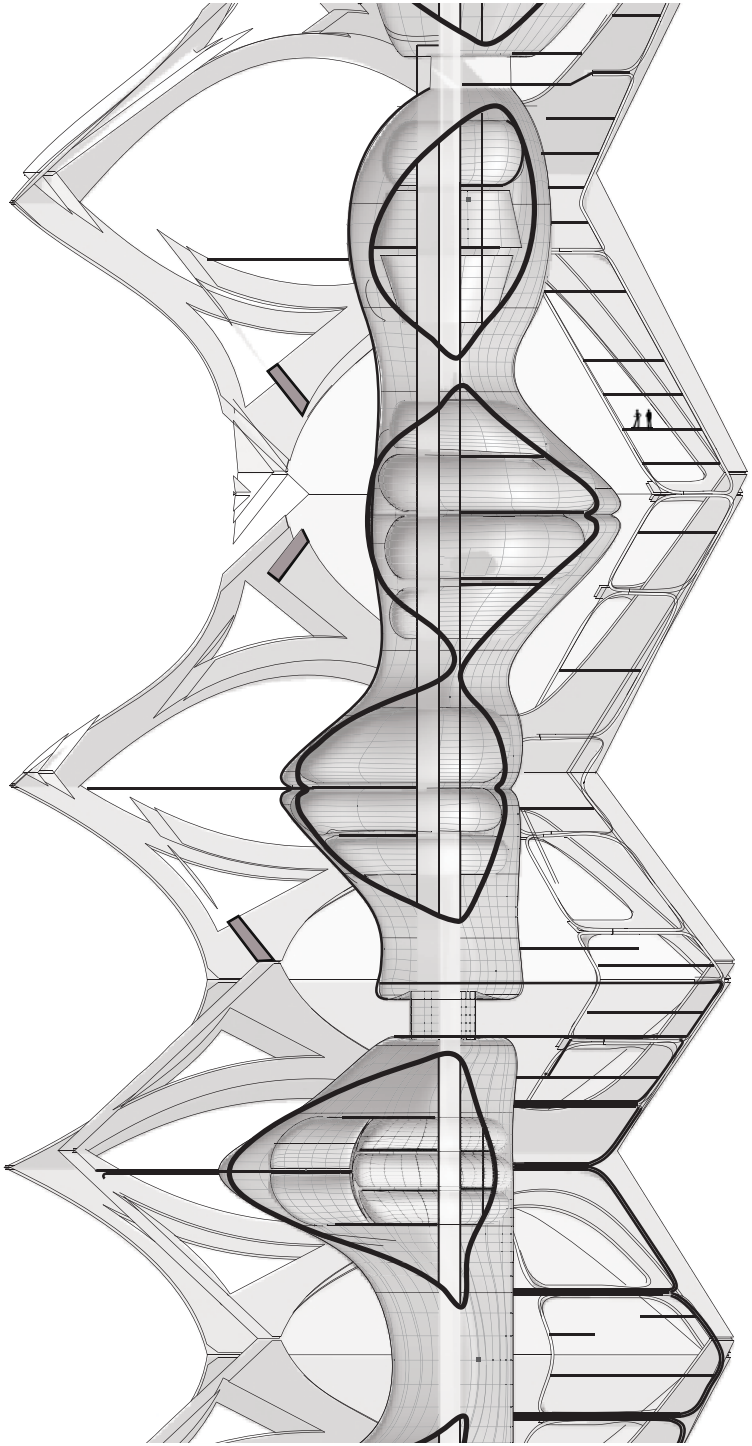












## multithreading

Supernatural supersurface: minimizing footprint and maximizing volumetric difference

The proposal for a state-run redevelopment project, a high rise tower in Hong Kong Harbor, seeks to minimize its footprint and maximize its internal volume through the use of minimal surface logistics.
The spaces of the tower are engaged at the moment that the minimal surface geometries are contaminated, resisted, and customized to deal with complex connections and formations.

The proposal questions the typical tower model of repetitive stacked floor plates by seeking new methods of program and volumetric aggregation. Hotel, art center, reception, and boutique residences intertwine to take advantage of public/private conditions, vistas, and outdoor garden spaces.

Multithreading, a term borrowed from computer science, refers to increasing the efficiency of separate systems via parallel execution. In the case of the tower, this represents the inhabitable spaces of the hotel expanding and compressing, intertwining, and influencing the adjacent art gallery spaces.

Minimal surfaces: the minimum amount of surface that spans between a 'closed' set of edge curves.

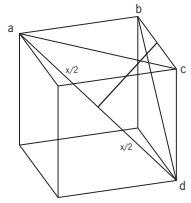
Case studies included the topologocal surfaces of Frei Otto, the architectural squinch and pendentive, and biological cell structures.

# multithreading

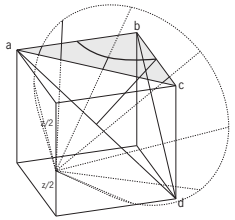
multithreading

hotel tower and event space in Hong Kong Harbor
a formal study of minimal surface logic and transformation

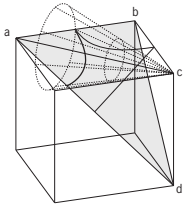
Arch 201: Prof. David Erdman fall 2006



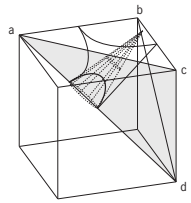

The batwing fundamental region is derived from a quadrirectangular tetrahedron. By definition, this tetrahedron is 1/48 of a cube and has one C2 axis. The C2 axis is the shortest distance between the midpoint of line ad and the midpoint of line bc. The C2 axis is the first edge curve of the batwing fundamental region.



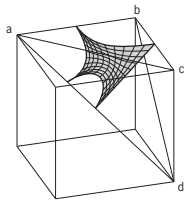

The second edge of the batwing fundamental region is formed by the intersection of plane abc and a cone which has an axis parallel, yet offset, from plane abc and shares the intersection between this plane and the C2 axis. The length of the cone is equal to edge ab/2 and its diameter is equal to the length of edge ad.



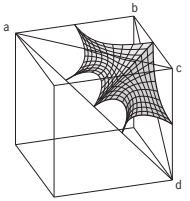

The third edge of the batwing fundamental region is created by the intersection of plane abd and a cone which has an axis at edge ac and intersects the midpoint of tetrahedron edge ab. The diameter of the cone is equal to the length of edge ab.




The final and fourth edge that completes the batwing fundamental region is formed by the intersection of plane acd and a cone which has an axis parallel to the C2 axis and shares intersections with both the C2 axis and edge curve 3.

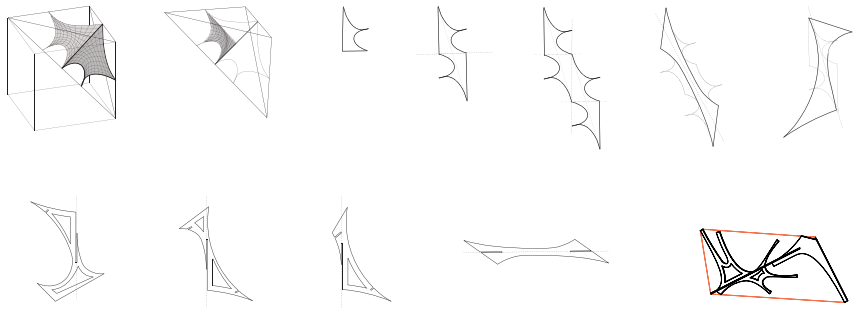



The batwing fundamental region is a simple surface which is bound by three edge curves and the C2 axis of its quadrirectangular tetrahedron.

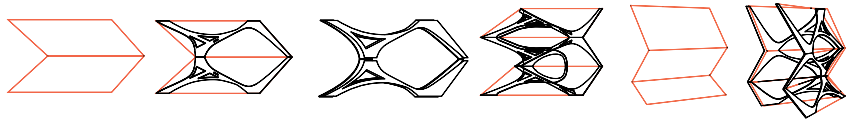



This fundamental region can be duplicated, mirrored and rotated about the C2 axis to fill the void in the tetrahedron.

batwing: parametric analysis

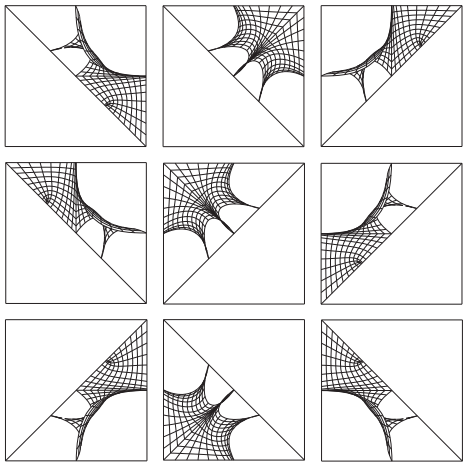


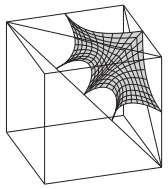
radiology studies

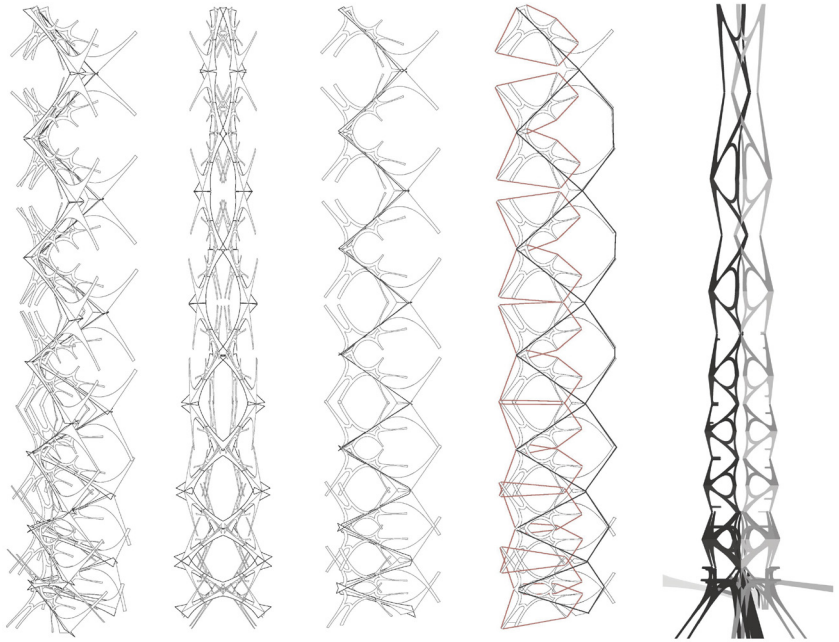


structural assemblies

radiology studies: from minimal surface to structural assembly







assemblies: transformations

Minimal surfaces: the minimum amount of surface that spans between a 'closed' set of edge curves.

Case studies included the topologocal surfaces of Frei Otto, the architectural squinch and pendentive, and biological cell structures.

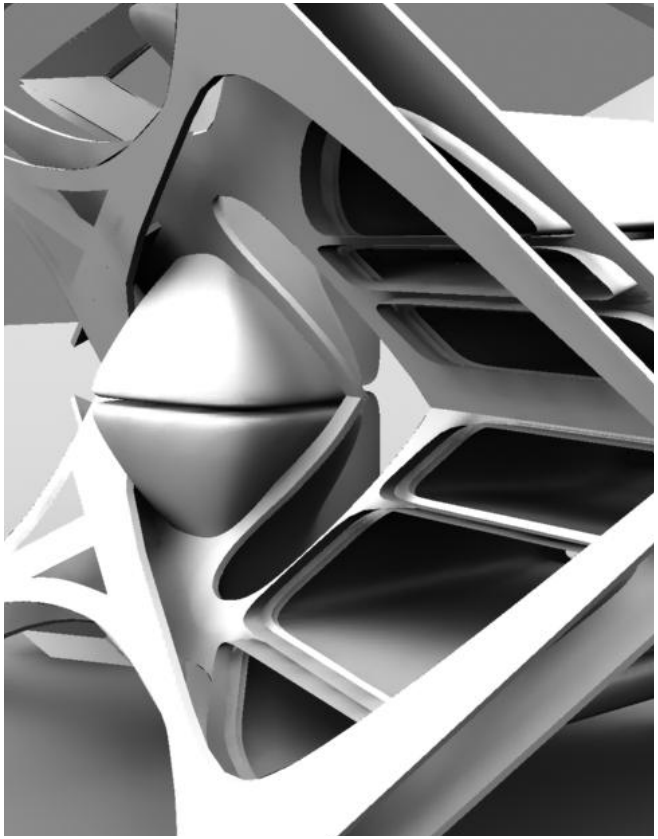
After mimicking the modeling techniques for the creation of Schwartz Minimal Surfaces and a Triply periodic surface, a new surface was created. This was the first component of a structural system that was then free to transform via a host of operational techniques - scaling, rotating, mirroring, skewing.

Micro and macro scale studies generated the form of the tower. The occupiable elevator core, stair circulation, and floor plates were explored individually and then combined for accumulation.

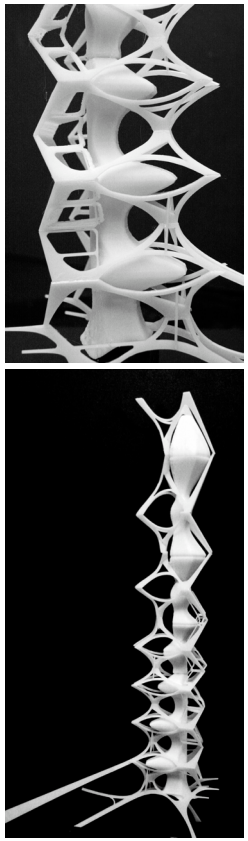
The structure: compression and dilation accommodates absorption and through-flowing space.

The program: Hotel and gallery weave through out, main gallery space emerges at the top of the tower.

The site: The tower plugs in to the network of roadways, transit lines, and elevated walkways of Hong Kong. The bay side accommodates public waterfront access and yacht docking.



Threading detail: elevator core bulb protruding through tower structure



3D fabrication: plastic, adhesive

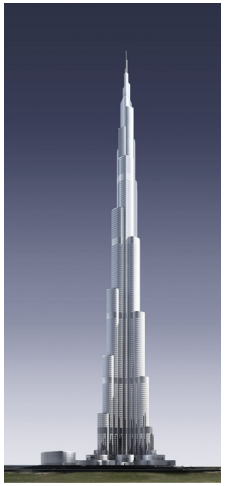
Hong Kong Harbor at dusk

# multithreading

multithreading

hotel tower and event space in Hong Kong Harbor
a formal study of minimal surface logic and transformation

Arch 201: Prof. David Erdman fall 2006



Burj Khalifa: 828 m (2,717 ft)

Site visit in 02/2009 on the Branner Traveling Fellowship, photo by Nicolette Mastrangelo

**Skidmore, Owings, & Merrill LLP**; Chicago
Architectural Assistant

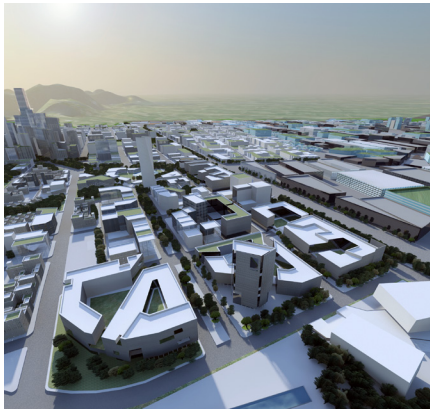
**<Burj Khalifa**; Dubai, UAE
SD through CD on world's tallest building
office annex atrium, residential hotel interiors, MEP coordination

Significant projects:

**Int'l Exhibition Center:** Zhongshan, China
Wind turbine/trellis studies, parking / loading dock, passive earth cooling

**King Abdullah Economic City**; Saudi Arabia
Financial Island master plan
City Center urban design

Rendering and animation still produced in 07/2007



The First 300 Acres: IT Mixed-Use District of Nanotechnology

**Berkeley Group for Arch. and Planning;** Berkeley
Design Tasks Manager

**<Nanocity**; Haryana, India
urban design
architecture
animation production work
publication
physical model
exhibition

The Summerhill Residence includes main living quarters, a guest house and detached garage

Photographs courtesy of Edmonds + Lee Architects

**Edmonds+Lee Architects**; San Francisco
Designer

**<Summerhill Residence**; Sonoma, CA
construction administration
landscape design

## professional practice

| | | |
|---|---|---|
| Skidmore, Owings and Merrill, LLP | Chicago | 04-06 |
| Berkeley Group for Architecture and Planning | Berkeley | 07 |
| Edmonds + Lee Architects | San Francisco | 08 |

See resume for a comprehensive list of professional experience.