A N A S Y L U M

design specificity for the spectrum of cognitive conditions

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by
Justin Gallagher

Submitted to the Department of Architecture
in partial fulfillment of the requirements for the degree of:

Bachelor of Science in Architecture
at the
Massachusetts Institute of Technology

June 2013

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Abstract

This thesis seeks to re-engage the intimate connection between architecture and the minds of its inhabitants through design that addresses specific cognitive needs.

Architecture fundamentally shares a connection with the mind. Through its inhabitants' subjective experience, architecture necessarily interfaces with their cognitive conditions, but to varying extents. This connection was demonstrated most intimately in the architecture and history of the asylum. It was then, when perception was conceived as universal conditions that the built environment participated in the cure of the insane. The result of this attitude was colossal, centralized institutions where those considered insane would be treated. The architectural response to the patients reflected the generalized understanding of the mind at the time--homogenous.

Today, the role of architecture has been marginalized as the conception of the mind is strictly chemical and neither environmental nor spatial. As a result, these once colossal institutions are now extinct.

Treatment of mental illness is now primarily behavioral therapy and psychoactive drugs, which grow more and more pervasive. Currently, 1 in 4 people have a diagnosable illness. This figure has been used to support the claim for a Mental Illness Crisis in America. And while there maybe be an increase in mental instability, the statistic is more likely a consequence of a new, developing understanding of the mind. That is, through this pursuit to decode our very being into chemical formulas, modern science has revealed a diverse spectrum of cognitive or experiential conditions. The new normal is: there is no normal.

The urban condition has already begun to respond to this with the growing network of hospitals, pharmacies, and therapists attending to the mentally ill. However, this thesis projects that soon the mind will be so demystified, that all people will register on a spectrum of cognitive conditions. As a result, architecture will need to respond to not only specific physical requirements such as environment, human body, site, program etc. but to the specific cognitive or experiential needs of the inhabitants. These needs will not longer be recognized as illnesses, but rather as "mindstyles" of the individual.

Through the design of three domestic spaces for specific mindstyles--SAD, OCD, and APD--this thesis posits the ability for architecture to behave with the localization and specialization of a pill.

Thesis Supervisor **Brandon Clifford**
Title **Lecturer in Architecture**

after asylum

A N A S Y L U M

design specificity for the spectrum of cognitive conditions

ACKNOWLEDGEMENTS

My sincerest thanks to

Brandon for challenging me and for your inspiring enthusiasm and insights

Michael Kubo, Joel Lamere, and Mark Jarzombek for your constructive critiques

Meejin for your encouragement and challenges that shaped my education and love of architecture

all of my friends that made the past four years in studio among the best years of my short life (especially Eric and Nadia for also offering your time to help me when I was desperate).

and my family, especially my parents, for everything; I love you.

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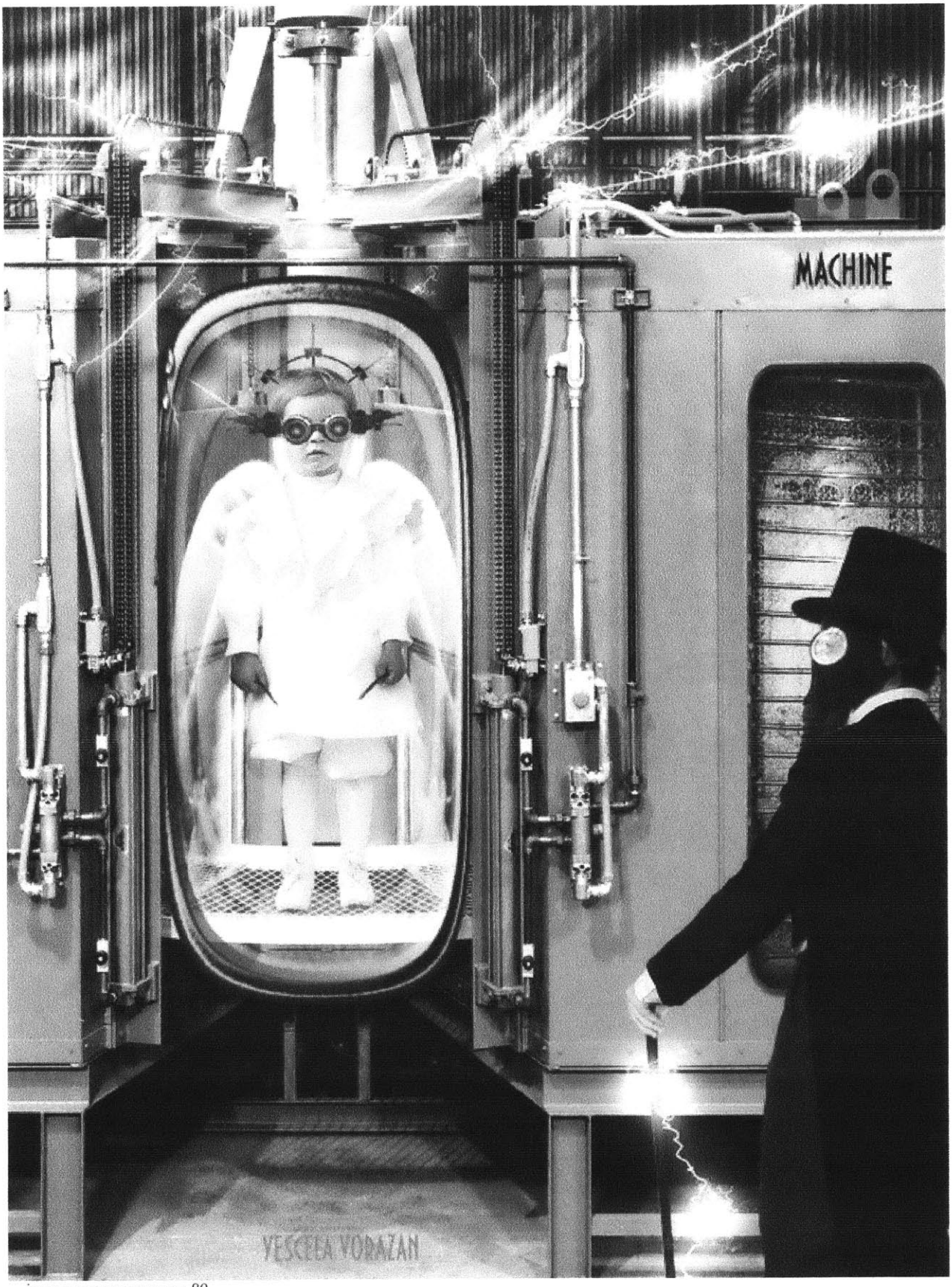

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one

Introduction

"Architecture will be brought to its fullest realization only when the deepest knowledge of human life as a total phenomenon in the biological whole is available."

Anthony Vidler

Through its many kinds of physical manifestations, architecture interfaces with the mind by shaping experiences of the agent. Conversely, cognitive conditions themselves shape the agent's perception of architecture and the external world as a whole. Most architecture considers the former premise, but operates with ignorance to the latter assertion.

The institution of the asylum, however, demonstrated this two-way connection between architecture and the mind most intimately. These architectures were required to respond to the mental states of its inhabitants as they were part of a "cure." Nevertheless, the asylum is now extinct and treatment of mental conditions is now primarily chemical.

This thesis investigates the asylum and its progression in order to learn why it failed and what was successful about it. With these investigations, projections for the agency of architecture in the age of the pill are made.

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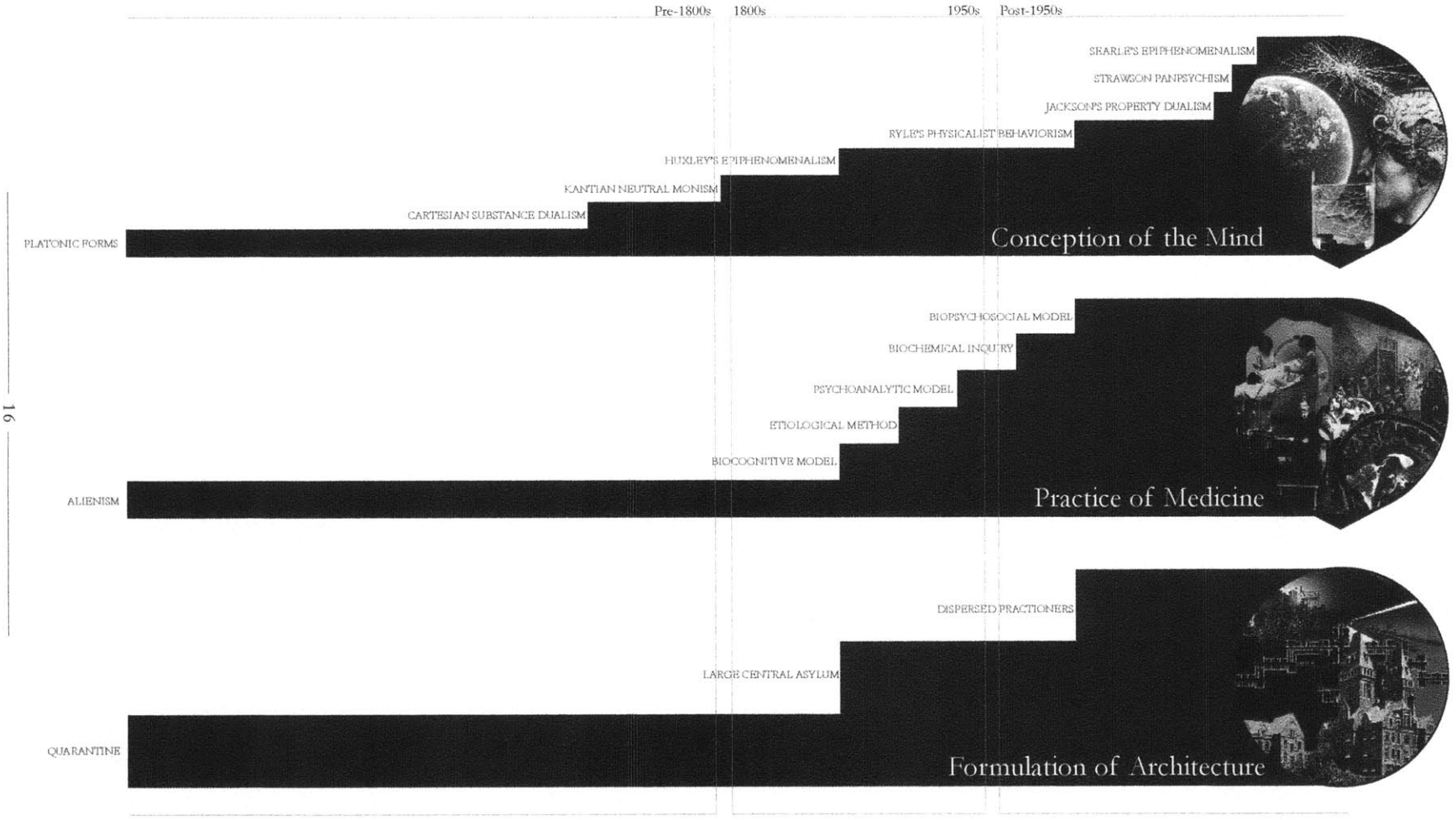
two

The Asylum

The architecture of the asylum went through several changes since its inception. The following pages are investigations of those changes. Moreover, particular interest was taken in the reflection of the conception of the mind in the asylum architecture of the time.


Pre-1800s
1800s
1950s
Post-1950s
SEARLE'S EPIPHENOMENALISM
STRAWSON PANPSYCHISM
JACKSON'S PROPERTY DUALISM
RYLE'S PHYSICALIST BEHAVIORISM
HUXLEY'S EPIPHENOMENALISM
KANTIAN NEUTRAL MONISM
CARTESIAN SUBSTANCE DUALISM
PLATONIC FORMS
Conception of the Mind
BIOPSYCHOSOCIAL MODEL
BIOCHEMICAL INQUIRY
PSYCHOANALYTIC MODEL
ETIOLOGICAL METHOD
BIOCOGNITIVE MODEL
ALIENISM
Practice of Medicine
DISPERSED PRACTIONERS
LARGE CENTRAL ASYLUM
QUARANTINE
Formulation of Architecture

ARCHITECTURE AND THE MIND
TIMELINE

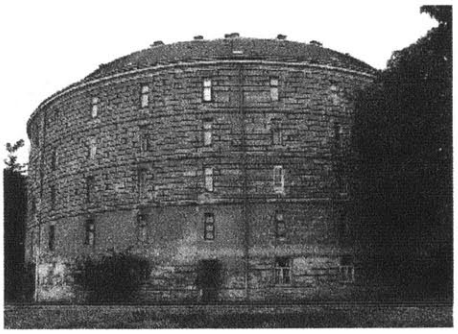
two
The Asylum

The timeline on the opposite page maps in parallel the progression of the prevailing or trending ideas through time for three different categories--the formulation of architecture, practice of medicine, and the conception of the mind. Each has influence over the other and as a result, when changes observed in one stream often correlate with those of another.

To start, prior to the rise of psychiatry, the mind was conceived of as a transcendent entity, the workings of which were mysterious. So, the architecture at that time functioned as a quarantine of the criminally insane and nothing more. The Narrenturm, built in 17th Century Vienna, is an example of this attitude in its prison-like (almost panopticon) design.

During the 19th Century, modern psychiatry emerged as the ideas from the Enlightenment trickled down into the practice of medicine. The environment's ability to augment mental states was recognized and utilized in the treatment of mental illness in colossal institutions. Bedlam Hospital in England is one of the oldest examples of the asylum as an institution engaging in the cognitive needs of its patients. However, the Kirkbride Plan was the consummation of this era because of its rigorously developed specifications for how architecture ought to participate in the cure of insanity.

The third clearly defined period corresponds to the growing concensus in the philsophical and scientific communities that the mind is merely chemical reactions. With this conception, architecture and the external world in general was less important to the treatment of mental illness. Instead, psychoactive drugs took over and architecture was dispersed and mitigated to small practicioners and distributers.



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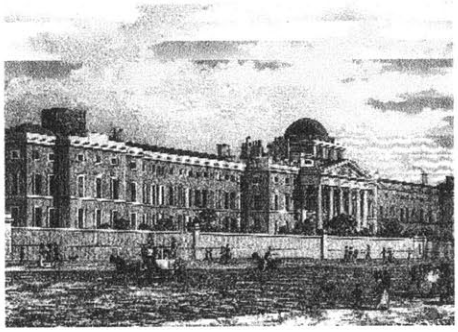

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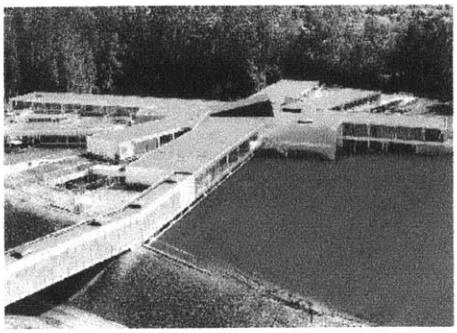

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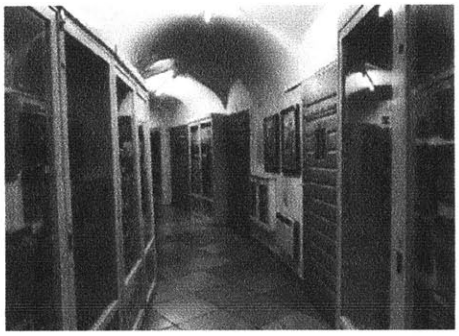
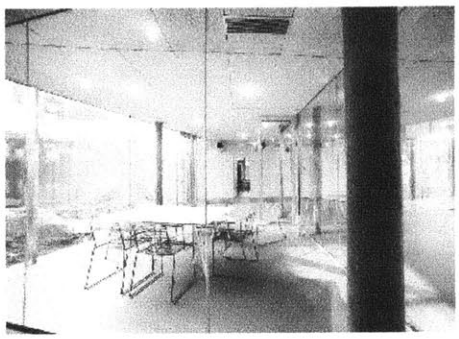




PRECEDENT STUDIES

two

The Asylum

Investigations were carried out into specific precedents of asylums over time. Each one reflects different architectural conditions. Together the precedents reveal the progression suggested by the timeline study.

The following are the selected asylums, their locations and approximate date of creation:

1 Narrenturm
Vienna, 1780

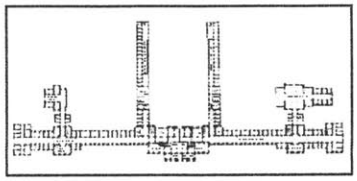
2 Bedlam
London, 1815

3 Richardson Complex
Buffalo, NY, 1870

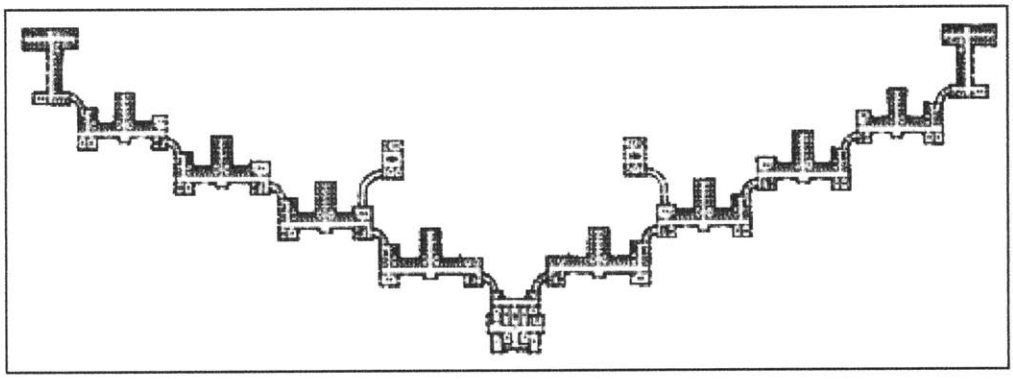
4 McLean
Belmont, MA, 1900

5 BIG Psychiatric Hospital
Helsingor, 2009

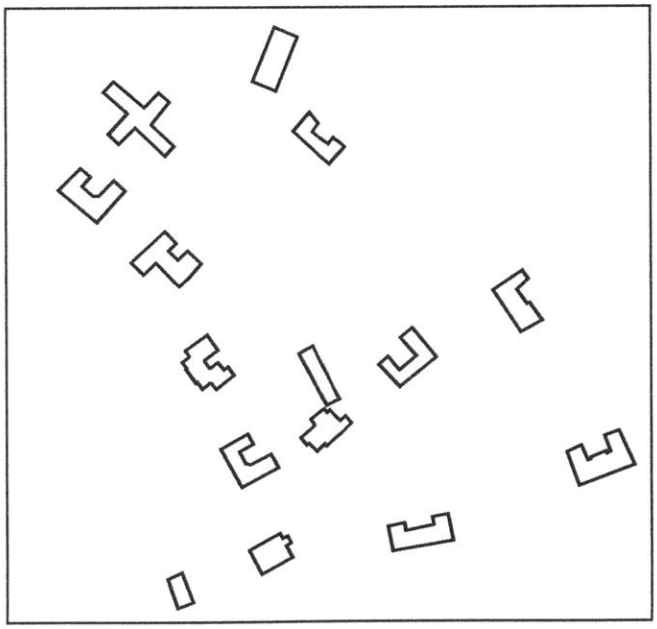
1 Narrenturm



2 Bedlam

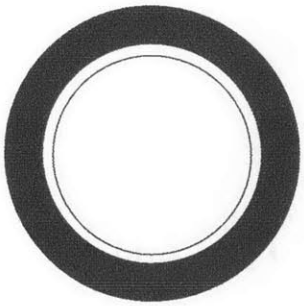


3 Buffalo

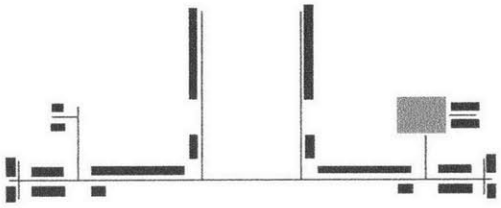


4 Mclean

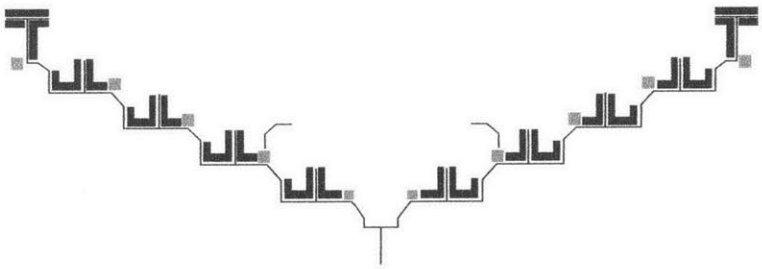
5 Helsingor



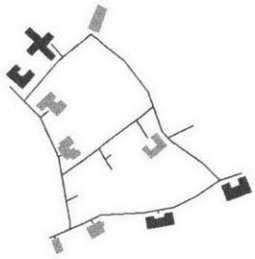
1 Narrenturm



2 Bedlam



3 Buffalo



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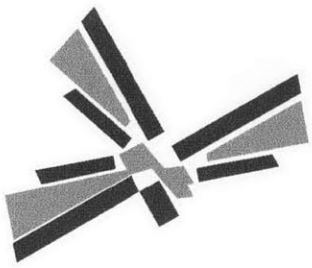
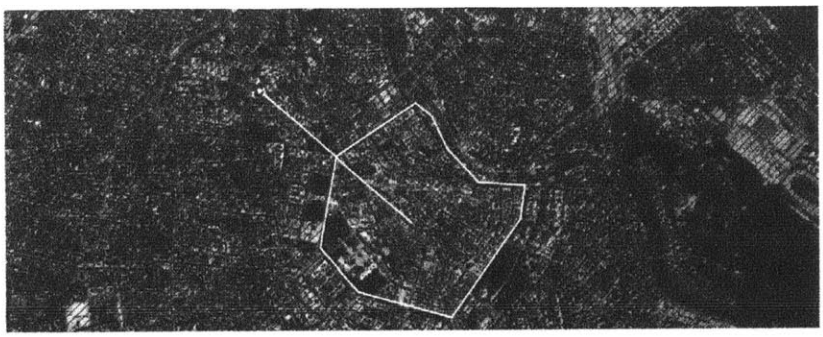
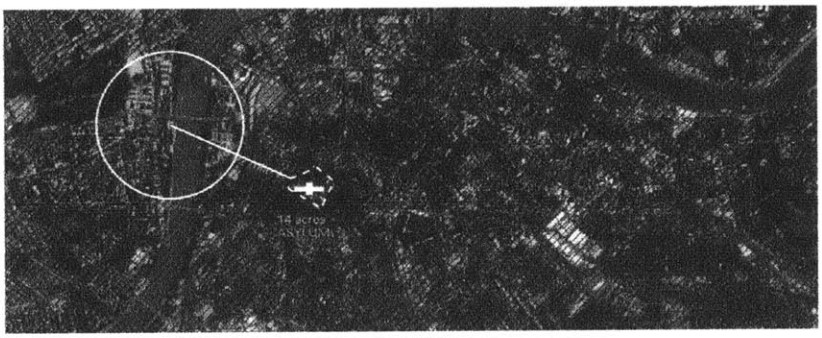


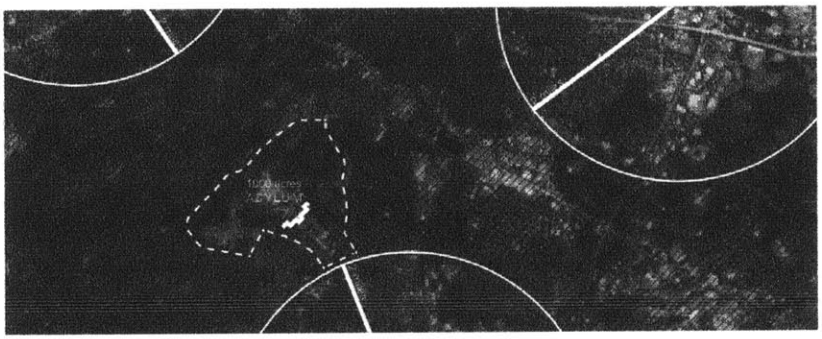
5 Helsingor



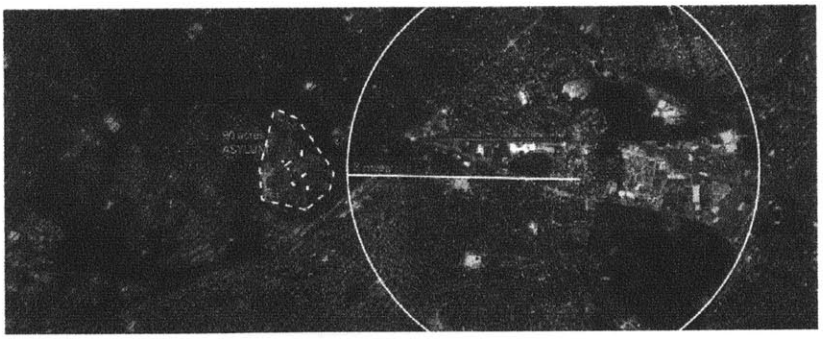
1 Narrenturm



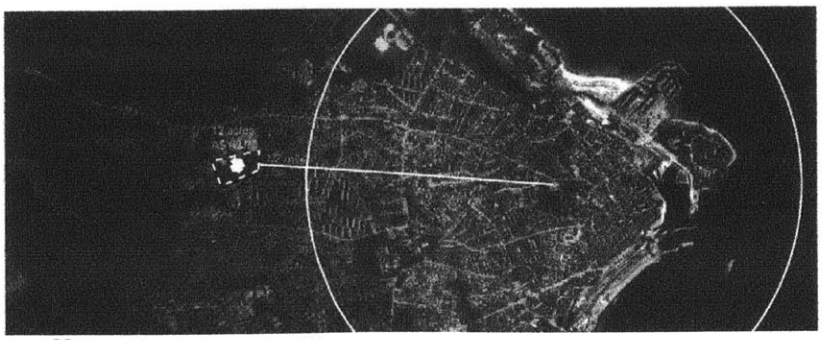
2 Bedlam



3 Buffalo



4 Mclean



5 Helsingor

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Experience

Lighting and materials are treated differently in each asylum type here. The Narrenturm, as a quarantine, had thin halls and little light. Little consideration for the experience can be seen in this prison like precedent. The Kirkbride asylums were grand and well-lit. They were monuments to the practice of psychiatry, which was intentional for the purpose of expressing strength and solidarity to the patients. At Helsingor, light wells puncture throughout the building to bring light in. This modern, albeit rare approach, reflects the appreciatation for the built environment's ability to affect mental states of inhabitants.

Scaling

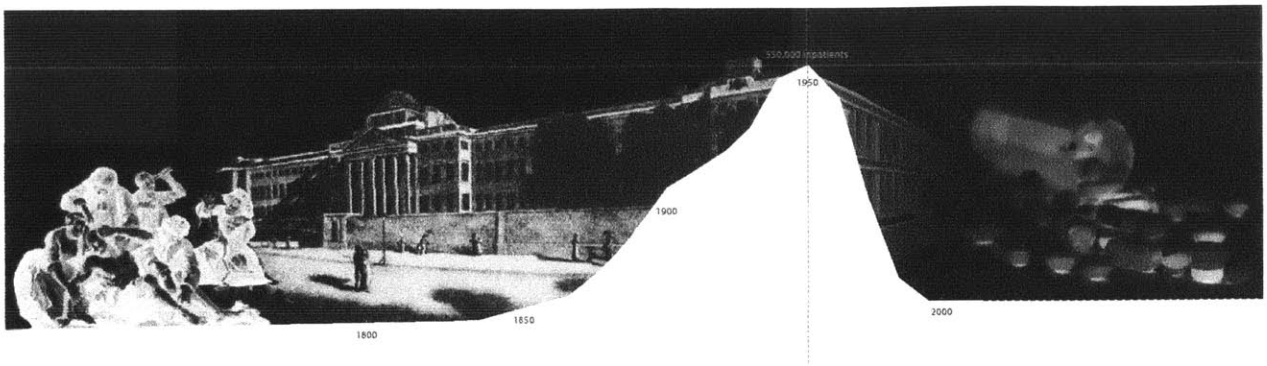
The Narrenturm can be seen as a small and dense condition. Space was not necessary to simply hold people and diagnosis was a lot less common as well. Bedlam grew in size as the practice of psychiatry emerged. The pinnacle of the practice of pschiatry can be seen in the massive subdivided, Kirkbride Plans. Soon after that period, the asylum began to break apart into a community condition--still large but dispersed slightly. Today, the few psychiatry centers are small once again as asylums are typically not a part of treatment as they once were.

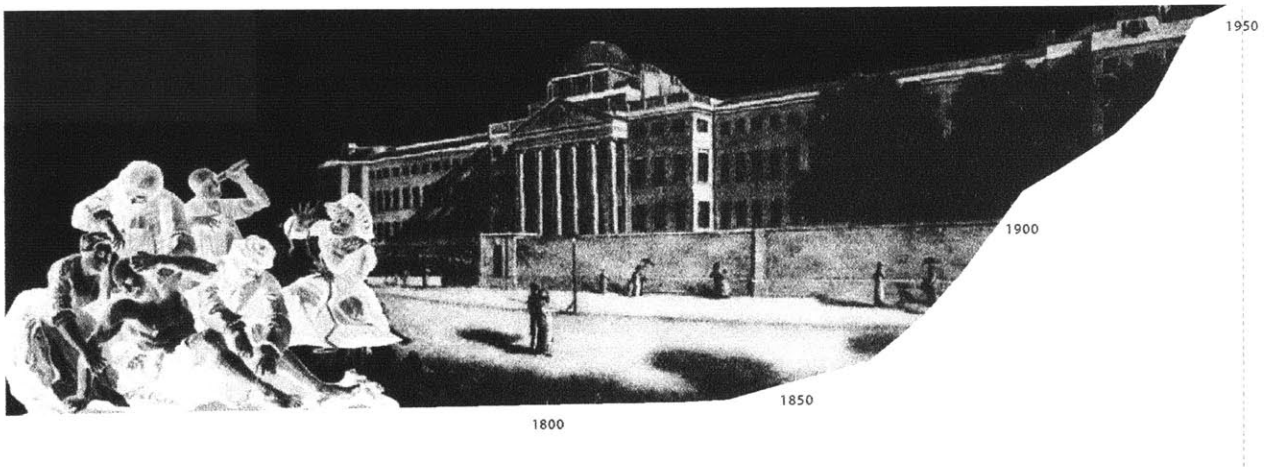
Organization

1/ Narrenturm - no communal spaces, circular circulation, periphery quarters
2/ Bedlam - few communal spaces, quarters along the long straight corridors
3/ Buffalo - staggered circulation, quarters long the circulation route, communal spaces within each ward
4/ McLean - campus-like circulation (roads, footpaths), some buildings communal, others are quarters
5/ Helsingor - circulation and communal spaces joined

Siting

The earlier asylums such as the Narrenturm and Bedlam appeared inside the city limits. They were not central as they contained "undesirables" but they were not far either. A major shift to a rural setting occurred in the Kirkbride designs which called for huge plots of land and a far distance from any city center. As time went on and social integration was encouraged, the asylum moved back towards the city. However, as it was originally, the asylum was never central.


550,000 inpatients
1950
1900
1800
1850
2000


1950
1900
1850
1800

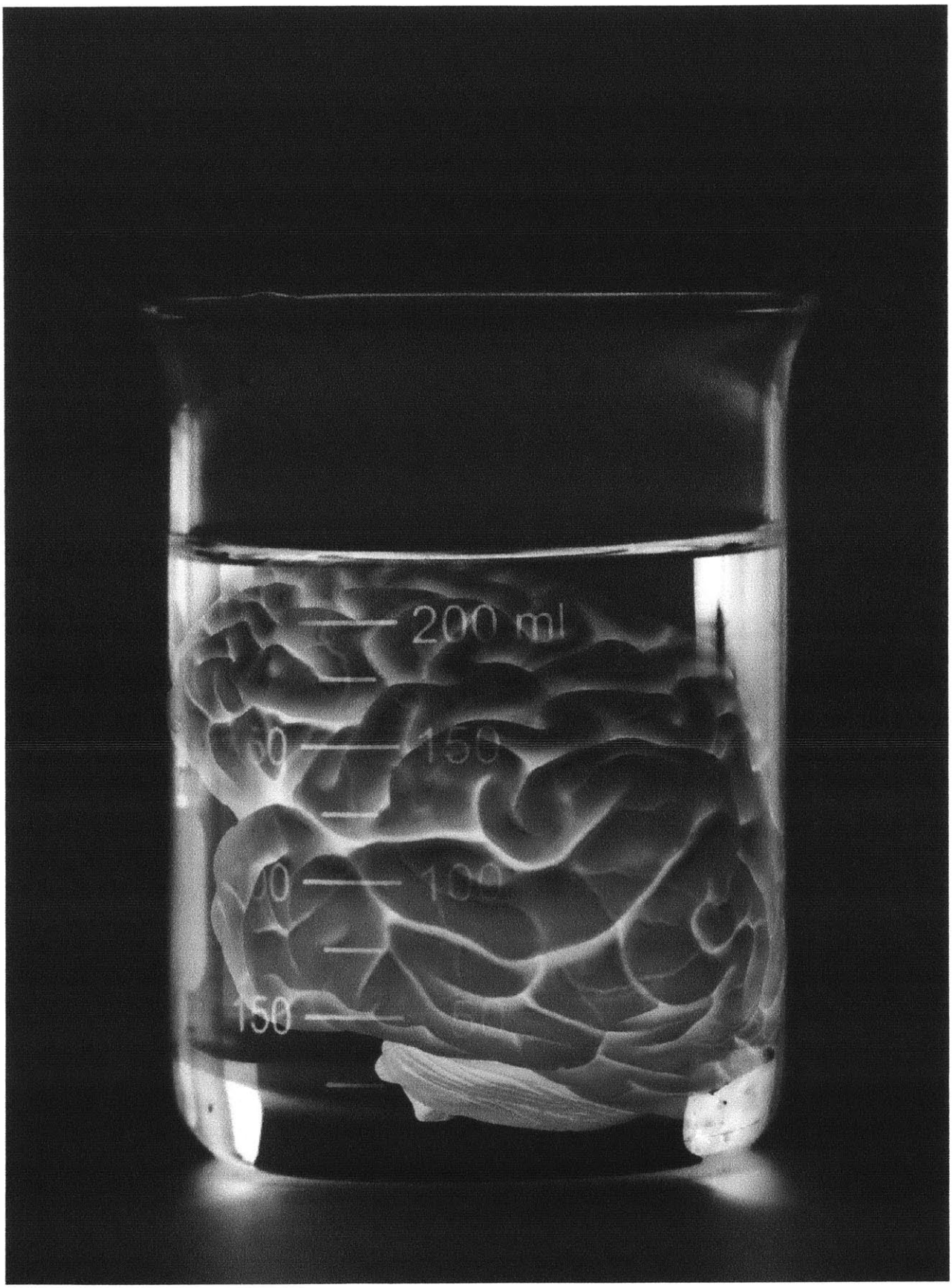
1950
2000

DEATH OF
THE ASYLUM

two
The Asylum

In 1952, the first psychoactive drug, Thorazine, was approved for mass consumption and marketed as a treatment for a wide variety of ailments. This breakthrough reinforced the trend in philosophy to identify brain processes as subjective experiences--objectifying subjectivity. It also bolstered the already growing support for deinstitutionalization from both scientific and public policy communities. As a result, after steady increase for more than a century, there was a dramatic drop in asylum inpatients in the second half of the 1900s.

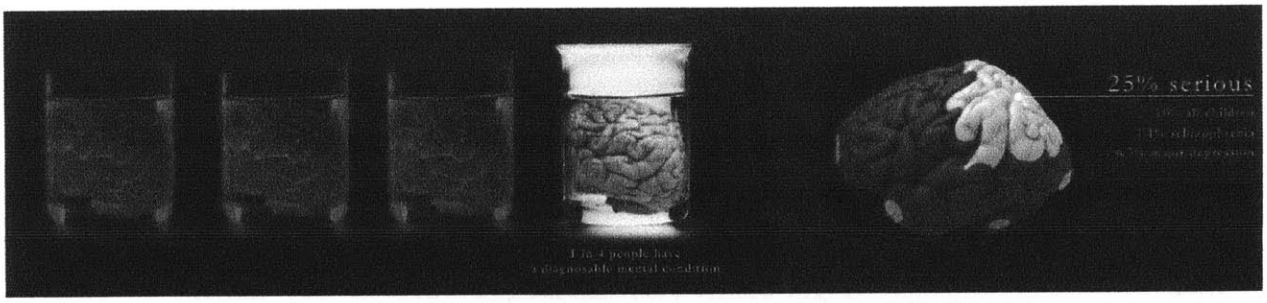
During this period of decline for the asylum, new mental illness treatment facilities were being conceived of as communities and progressively more integrated with society. The McLean Hospital is an early example of the community mental health movement--disparate buildings in a rural setting. However, the practice of psychiatry became progressively more socially assimilated and exclusively chemical, which marked the near total elimination of architecture in mental health treatment.

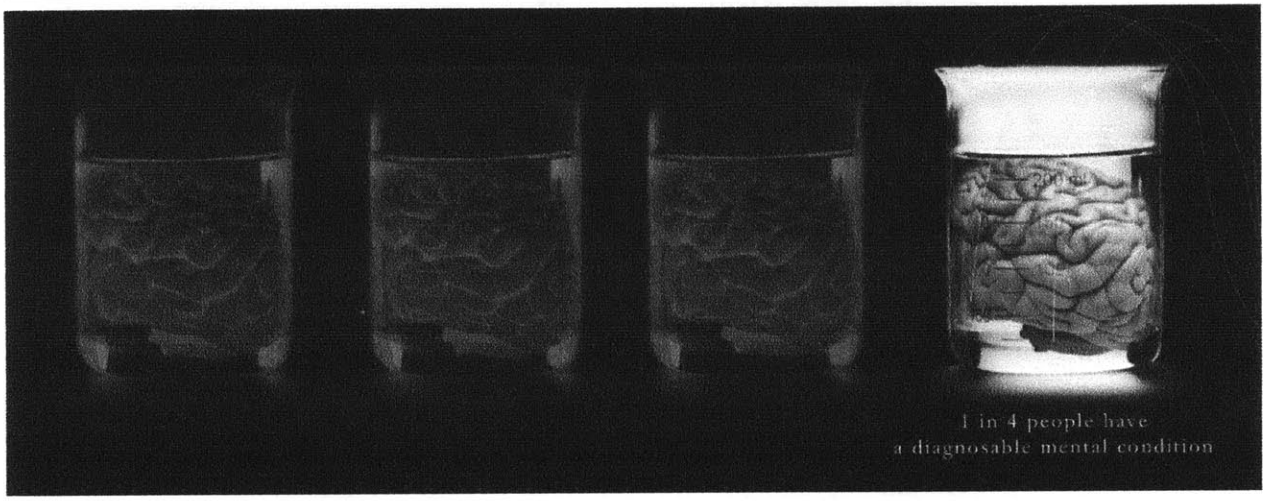

200 ml
150
150

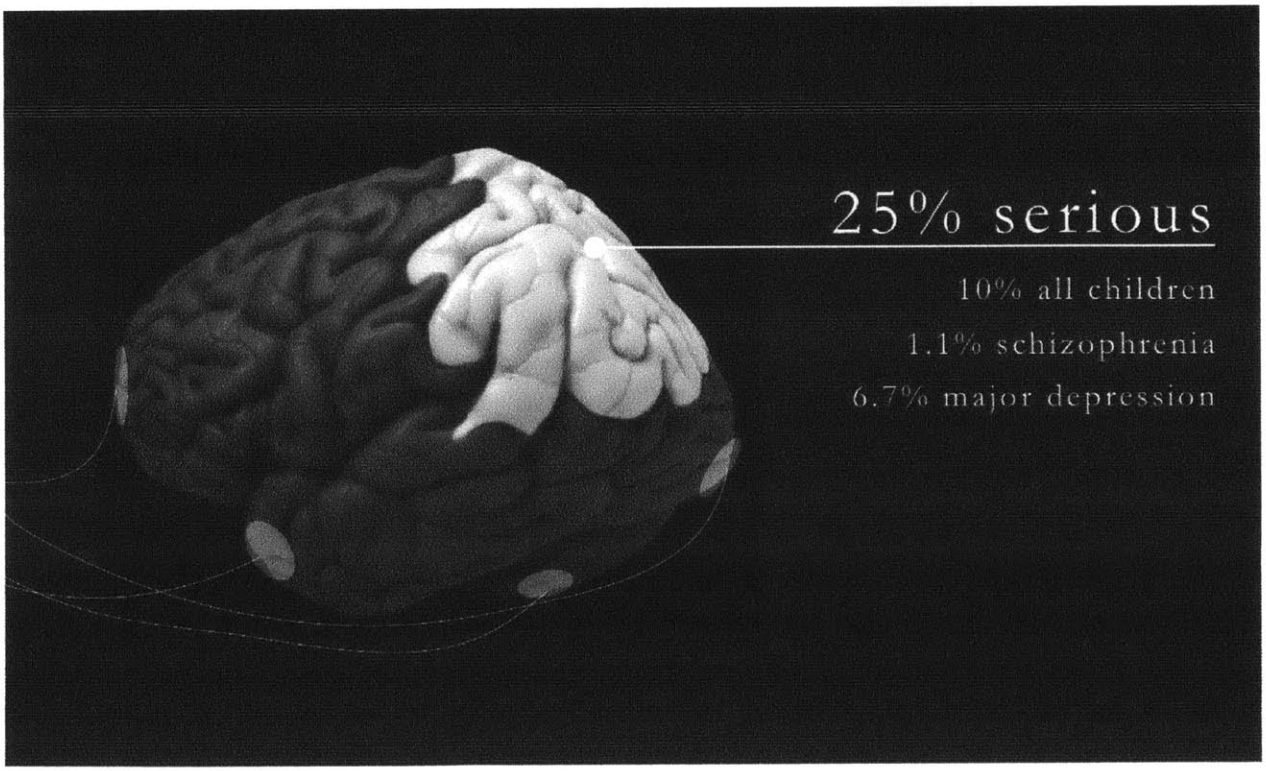
three

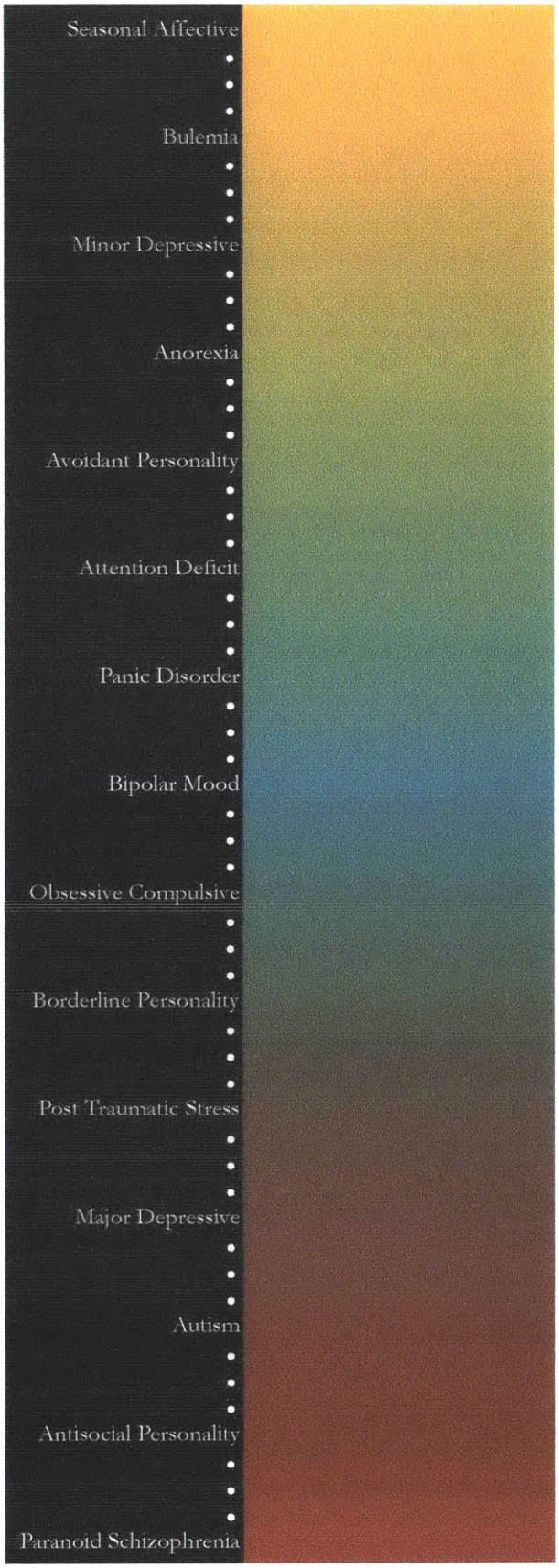
Spectrum and Projection

Architecture has historically shared an intimate connection with the mind. When perception was conceived as universal conditions, architecture was able to this one-to-one connection to it as demonstrated by the asylum. In these now extinct institutions, the built environment participated in the cure of the insane. Today, the role of architecture has been marginalized as the conception of the mind is strictly chemical and neither environmental nor spatial. Since chemicals are specialized and nonlocalized, universal architectural solutions are not capable of effectively responding to the (now understood) varied nature of cognition. The following section is projections for the potential reengagement of architecture and the function of the asylum--responding to cognitive conditions.


25% serious
1 in 4 people have
a diagnosable mental condition


1 in 4 people have
a diagnosable mental condition

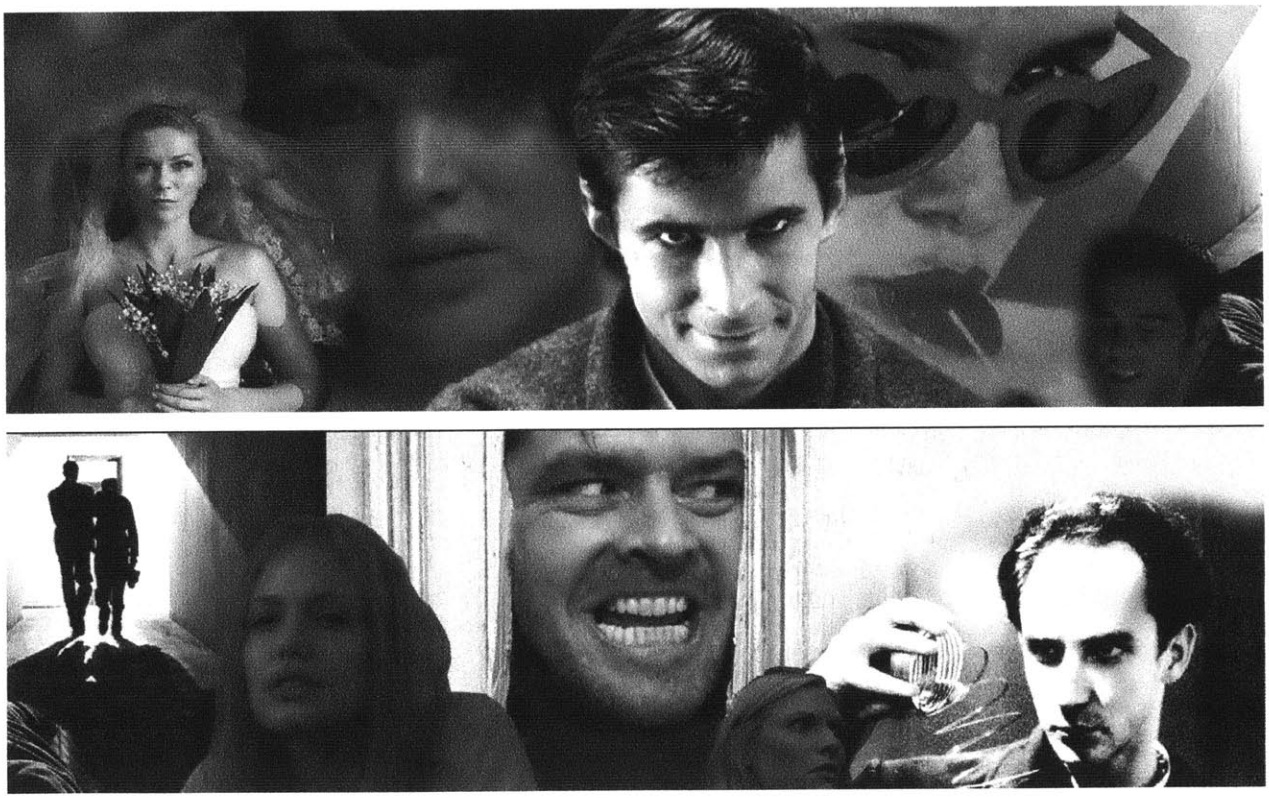

25% serious
10% all children
1.1% schizophrenia
6.7% major depression



CRISIS *three*

Spectrum and Projection

Treatment of mental illness is now primarily behavioral therapy and psychoactive drugs, which grow more and more pervasive. Currently, 1 in 4 people have a diagnosable illness. This figure has been used to support the claim for a Mental Illness Crisis in America. And while there maybe be an increase in mental instability, the statistic is more likely a consequence of a new, developing understanding of the mind. That is, through this pursuit to decode our very being into chemical formulas, modern science has revealed a diverse spectrum of cognitive or experiential conditions. The new normal is: there is no normal.



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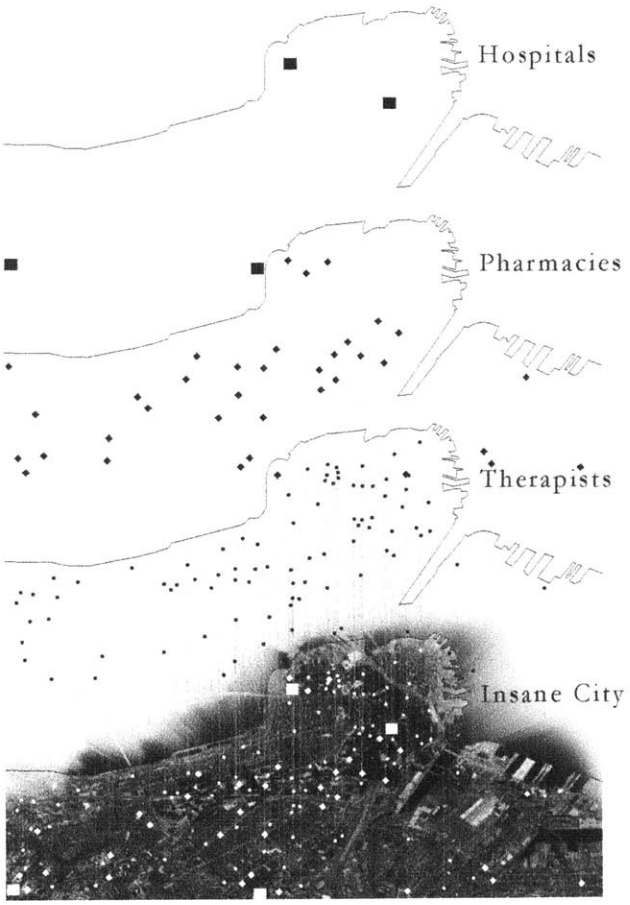
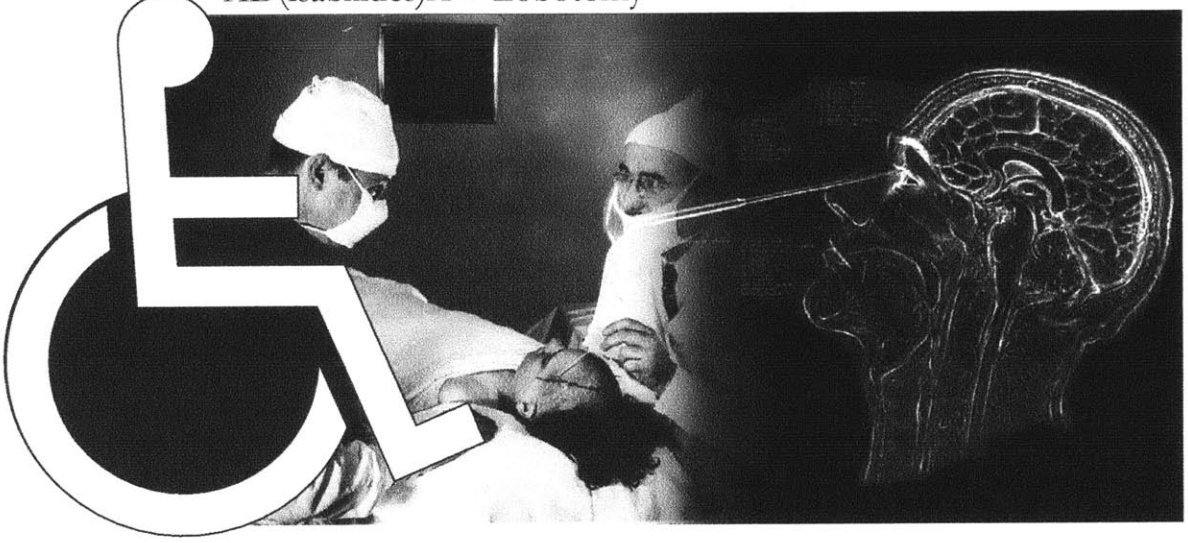


The urban condition has already begun to respond to this with the growing network of hospitals, pharmacies, and therapists attending to the mentally ill. However, this thesis projects that soon the mind will be so demystified, that all people will register on a spectrum of cognitive conditions. As a result, architecture will need to respond to not only specific physical requirements such as environment, human body, site, program etc. but to the specific cognitive or experiential needs of the inhabitants. These needs will no longer be recognized as illnesses, but rather as "mindstyles" of the individual.

AD(isabilities)A > Lobotomy



AM(indstyles)A > Specific Response

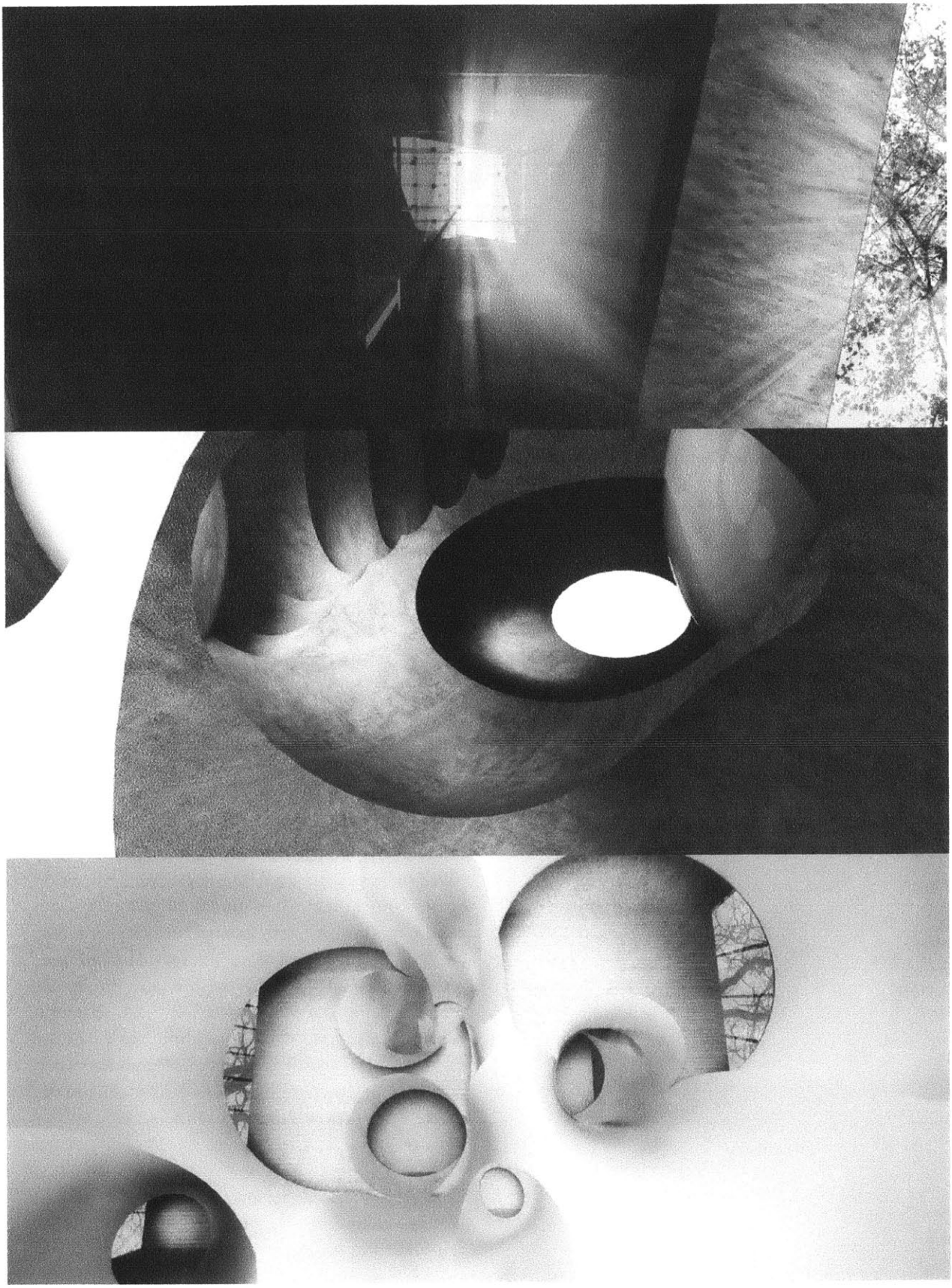
ANTI-ADA RESPONSE

three

Spectrum and Projection

One method of response to cognitive needs would be like that of the ADA, which was designed to respond to physical needs. However, this method is based on generalizations for a wide range of conditions. To treat mindstyles based on generalizations would not only be overly restrictive, but also totally ineffective. As discussed earlier, mental conditions require specific responses--there is no bottom line set of specifications that would appease all methods of perception. In this way, the ADA method of response is like that of a lobotomy--an overly invasive, destructive, and ineffective treatment. There is no capacity to address the specific in this scenario.

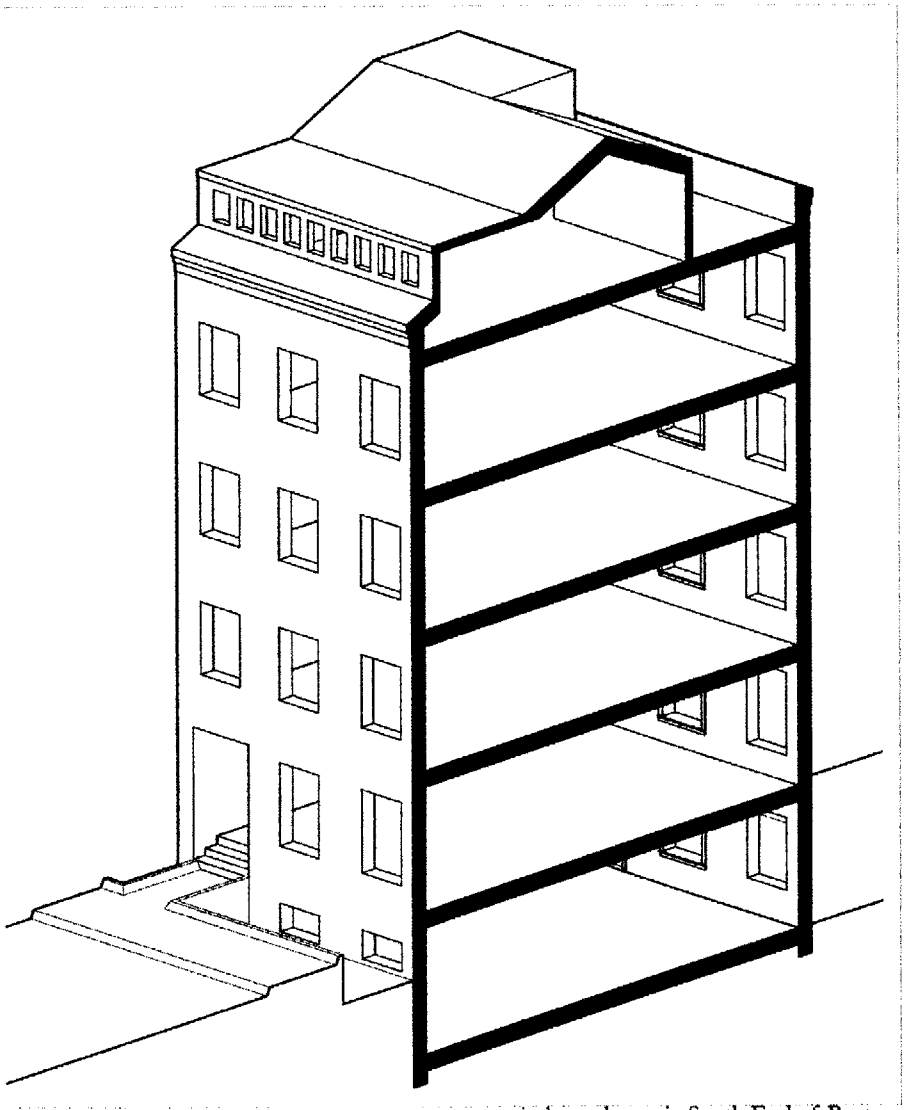
Thus, this thesis is against universal accessibility. Instead, architecture ought to behave with the localization and specialization of a pill.



four

Design Proposals

I am proposing domestic architectures that are designed and formalized as direct responses to specific mindstyles. Mindstyles, as I am calling them, are the varied qualitative states individuals experience and thereby must live in accordance with. By responding to these specific mindstyles, the architecture can maximize individual inhabitants' happiness as well as be integrated effectively into the larger society. In turn, I designed three residences for the typical rowhouse condition of the South End of Boston that couple the requirements for domestic living and the following mindstyles:



typical townhouse in South End of Boston

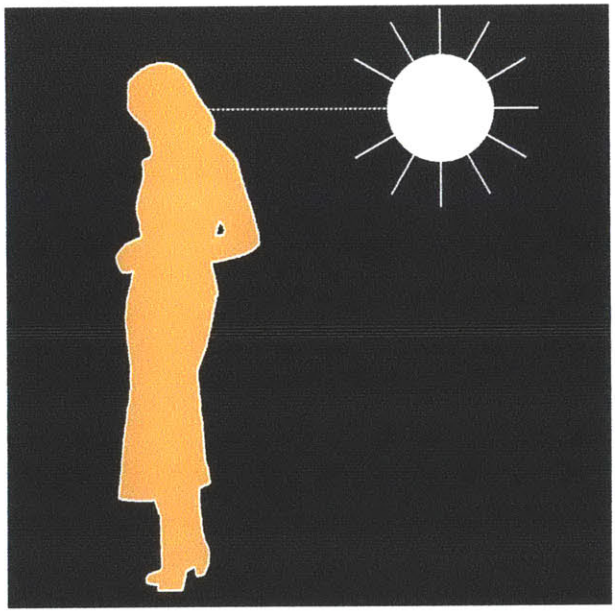
Design Proposals

image source: see page 80

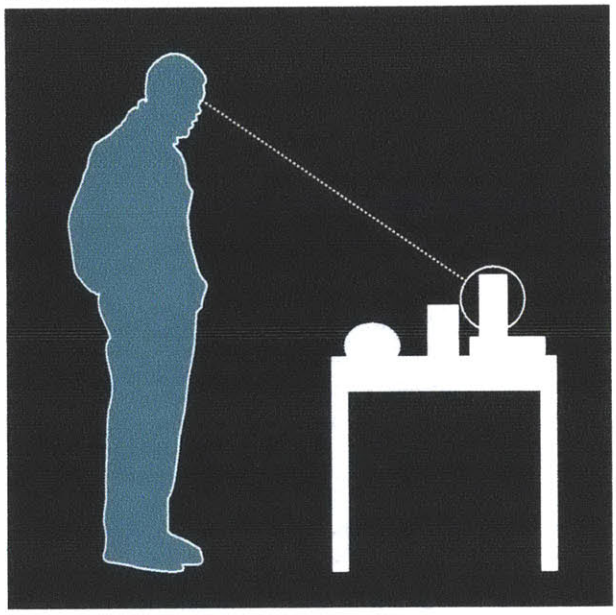
The studies of the asylum revealed the necessity for comunity integration in mental condition treatment. As a result, I selected an archetypal townhouse that would fit into the standard neighborhood condition of Boston, specifically the South End.

The designs must accommdate two families that live in the single building. Most importantly, however, it must couple the typical domestic activities (sleeping, recreation, eating, bathing, etc.) with the needs of various mindstyles--both those identified as "on the spectrum" and those considered "normal."

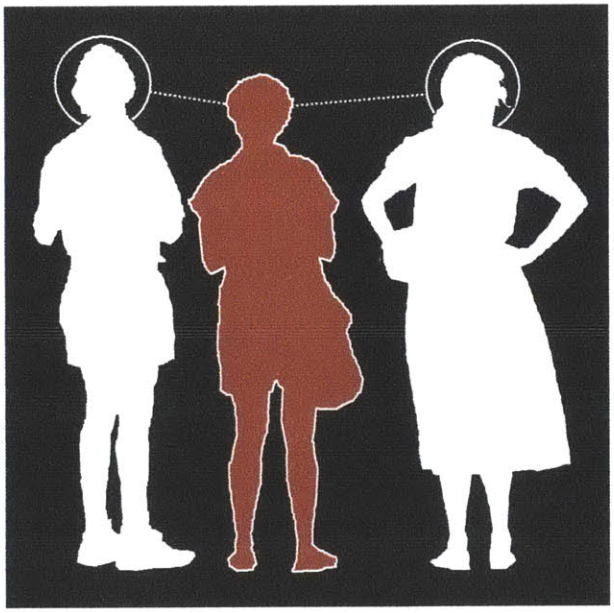
Seasonal
Affective
Disorder



Obsessive
Compulsive
Disorder



Antisocial
Personality
Disorder



SELECTED MINDSTYLES

four
Design Proposals

In order to test the thesis put forth in the previous sections, I selected three mindstyles from different points on the spectrum. Each is characteristically unique and would require very different architectural responses as a result.

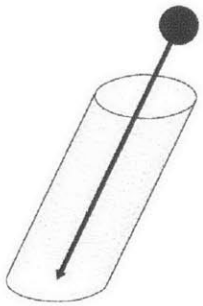
Seasonal Affective Disorder
- normal health throughout year, except one particular season (usually winter)
- experience depressive symptoms in winter or summer
- heightened anxiety, sleep too much, little energy

Obsessive Compulsive Disorder

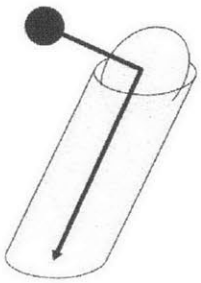
- uncontrollable, intruding, recurring thoughts
- causes fear, uneasiness, apprehension
- results in repetitive behaviors aimed at reducing those anxieties
- recognize their actions are irrational but can't stop

Antisocial Personality Disorder

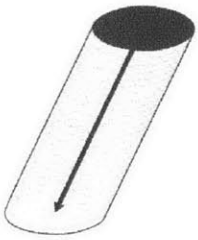
- pervasive pattern of social inhibition or antagonism
- feelings of inadequacy, avoid social interation
- consider themselves socially inept and unappealing, fear ridicule



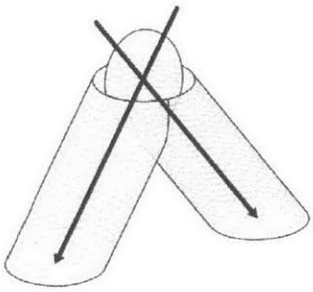
typical light shaft



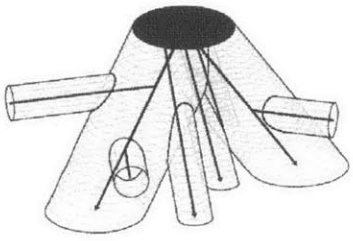
reflector



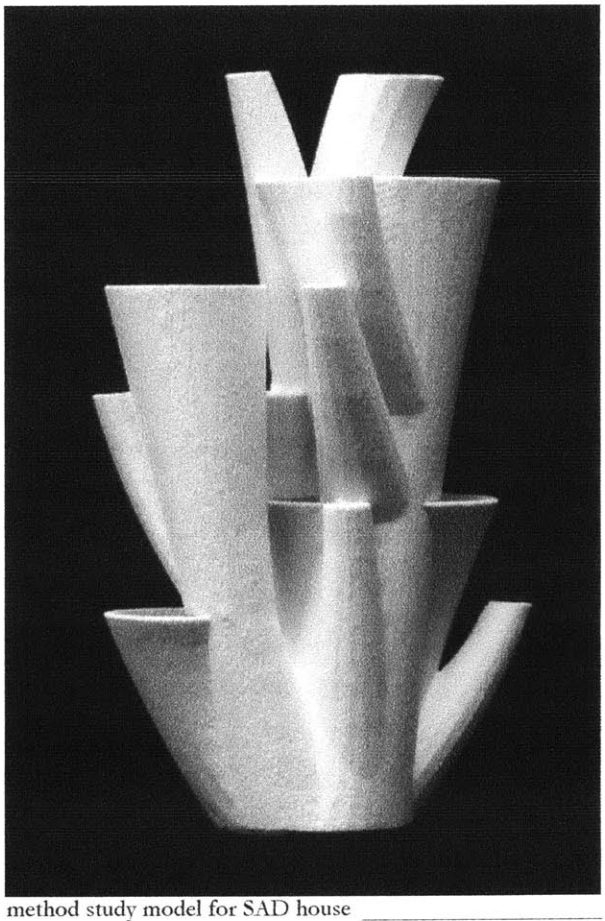
artificial light



dual primary shafts



many secondary shafts

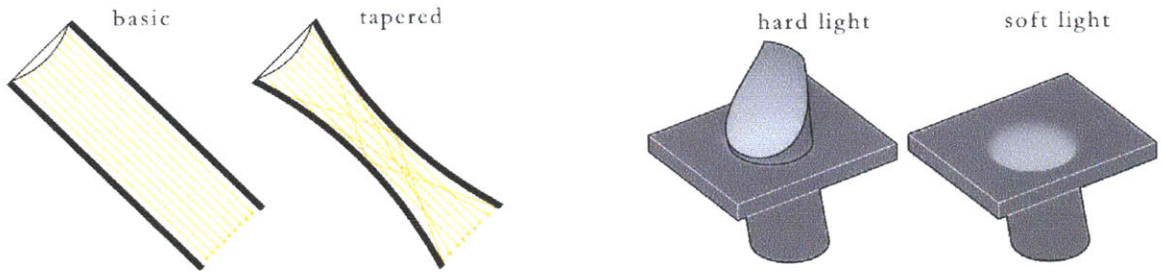


method study model for SAD house

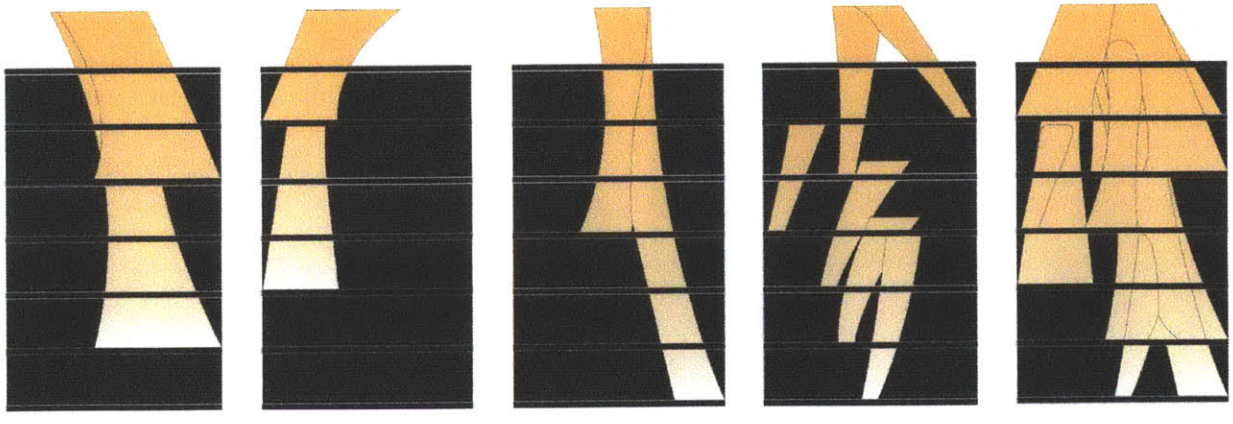
Condition Category: environmental
Response Attitude: appeasement treatment
Architectural Device: light

The clients in this scenario are two families each with one adult member that has Seasonal Affective Disorder. The design follows a typical row house condition with layered floors and compact circulation, but is penetrated by light shafts. The light shafts all intersect and converge onto a single space allowing light to be both directed into all rooms. The light from the shafts may be either reflected natural or artificial from a mechanism at the top of the house. The sizes of the shafts in each room reflects the programmatic need for "treatment" within those spaces, as this design seeks to appease the mindstyle that craves light. Furthermore, the divisions generated by the protruding light shafts are used as the base for the dividing of programmatic spaces (for example, kitchen and guest bedroom).

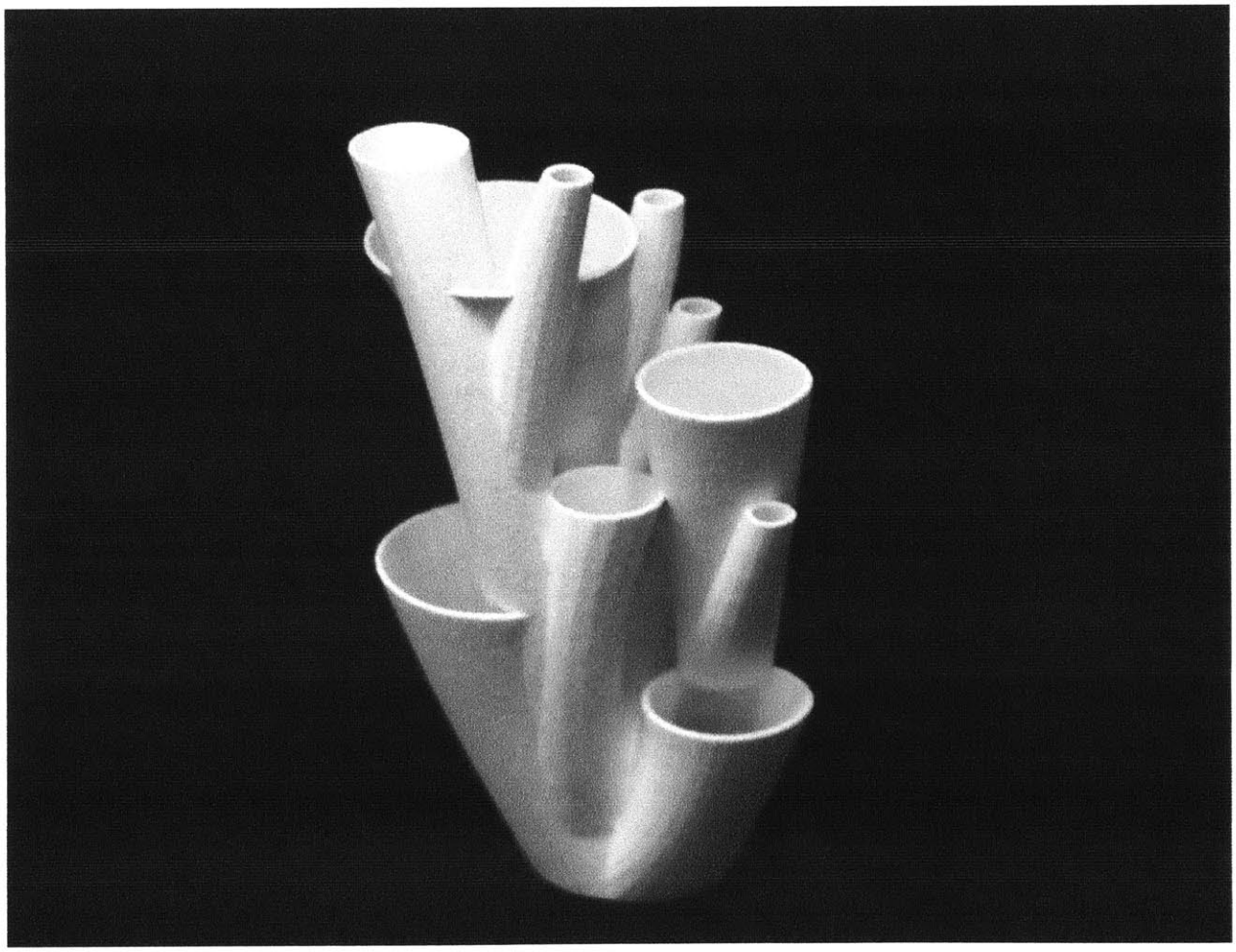
Light Quality Control

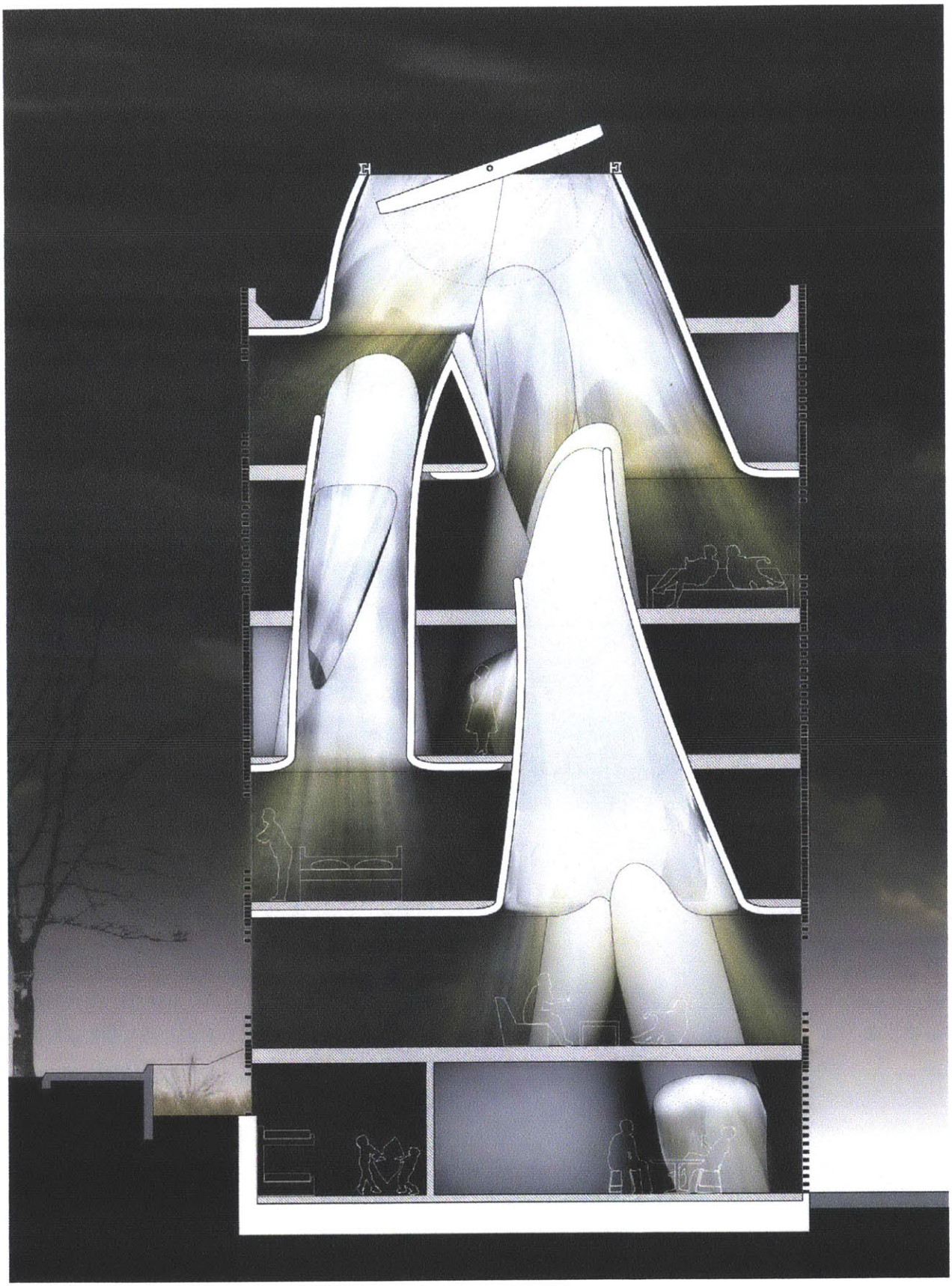


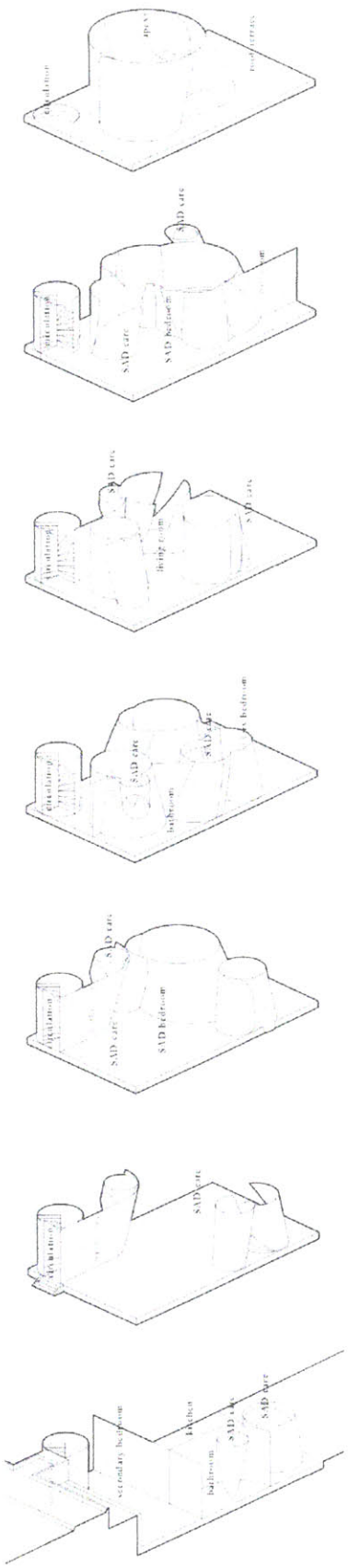
Light to Program

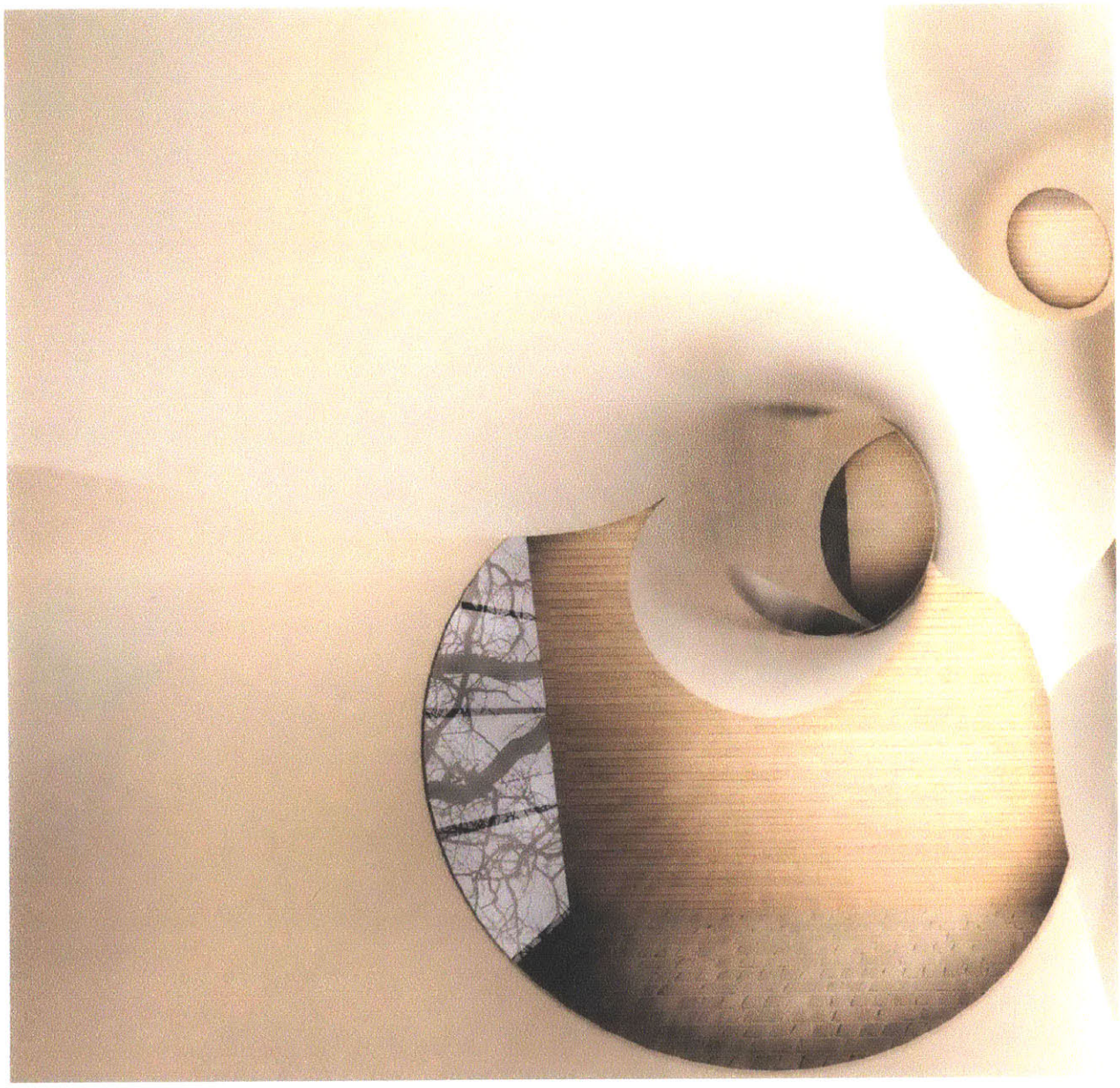


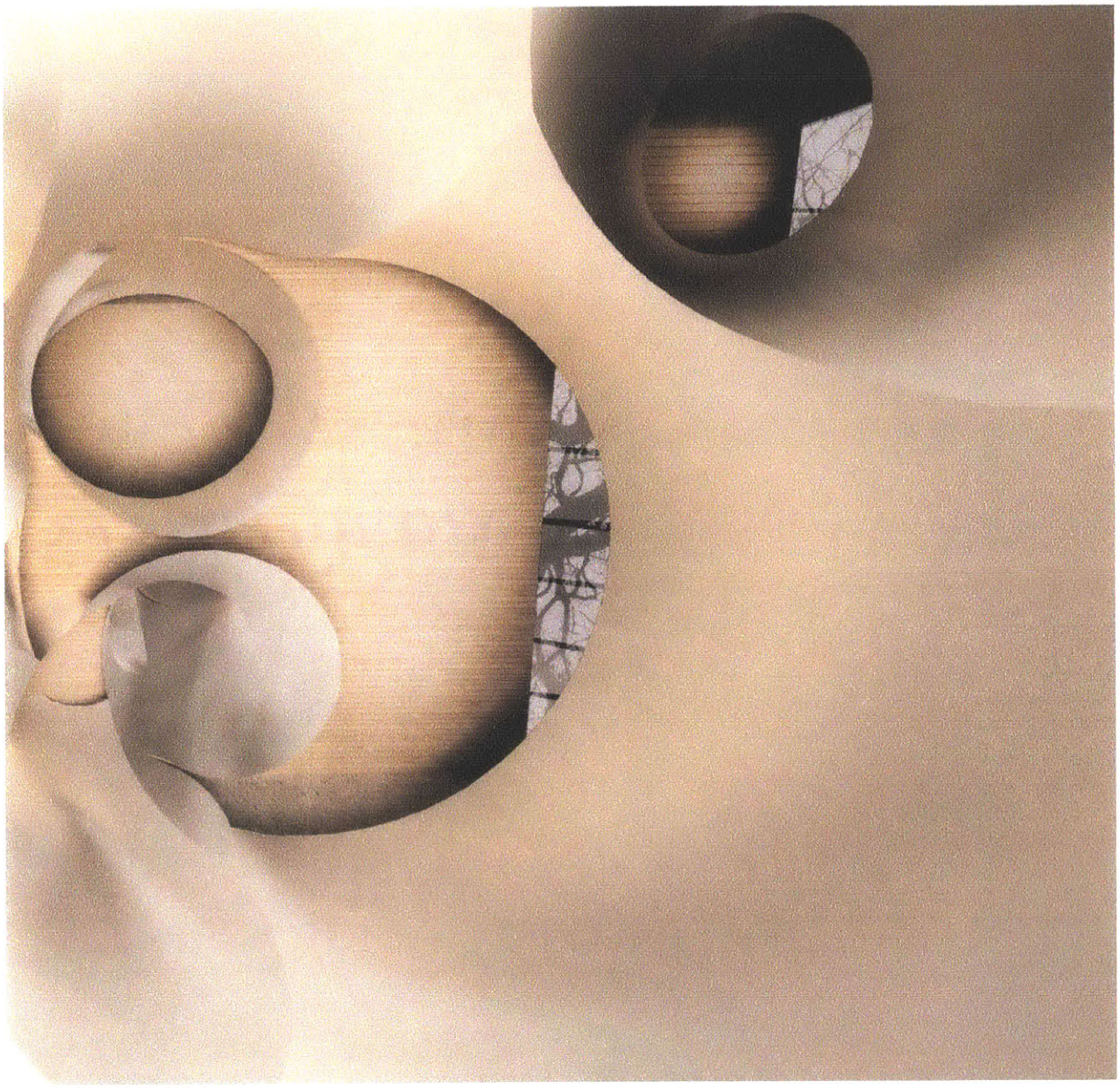
program organization diagrams for SAD house

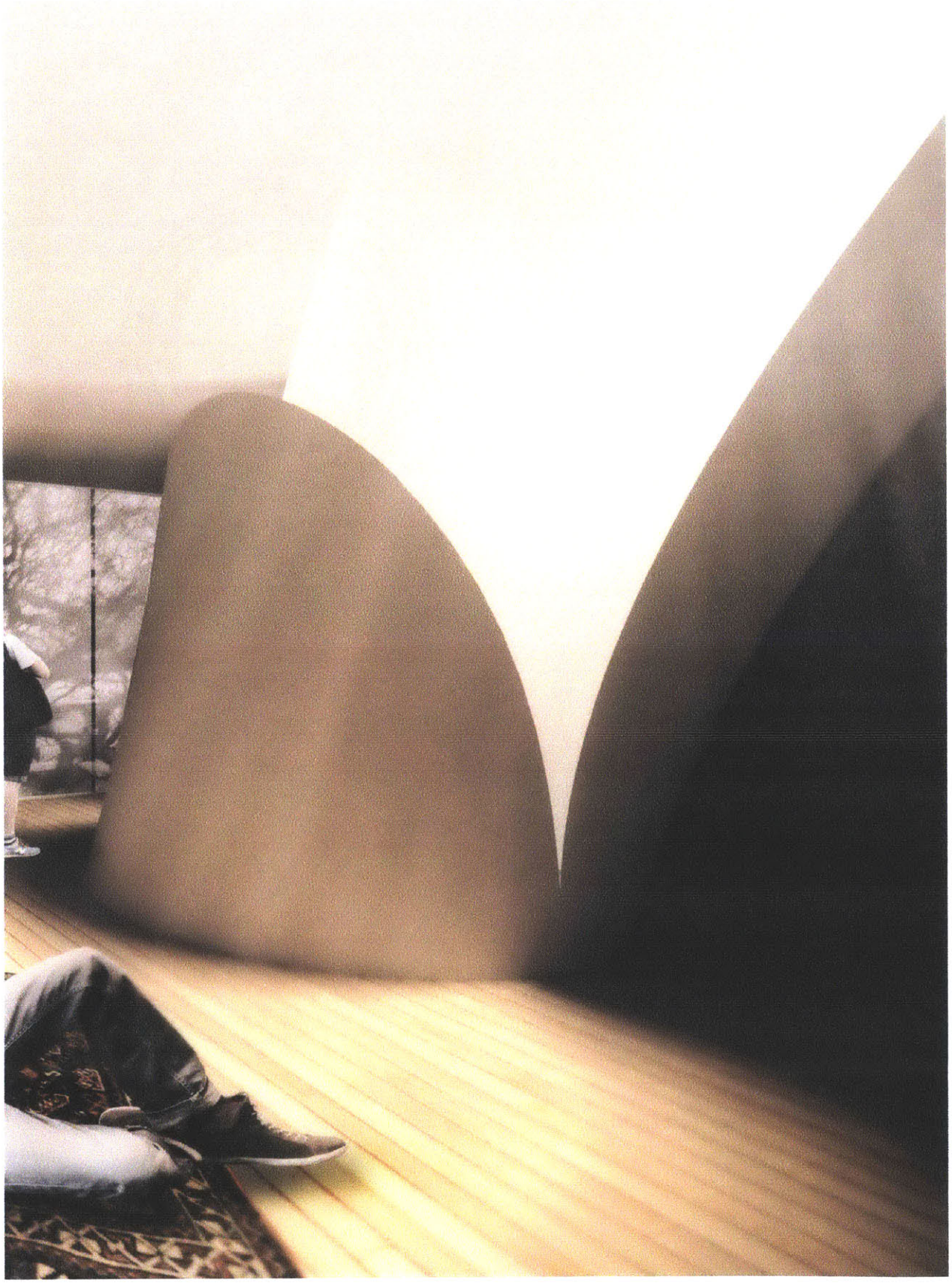


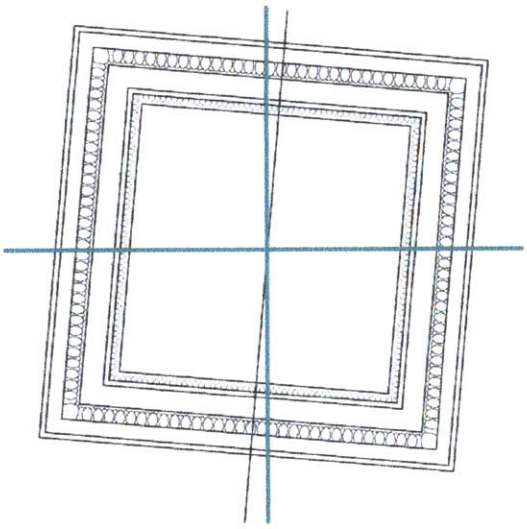




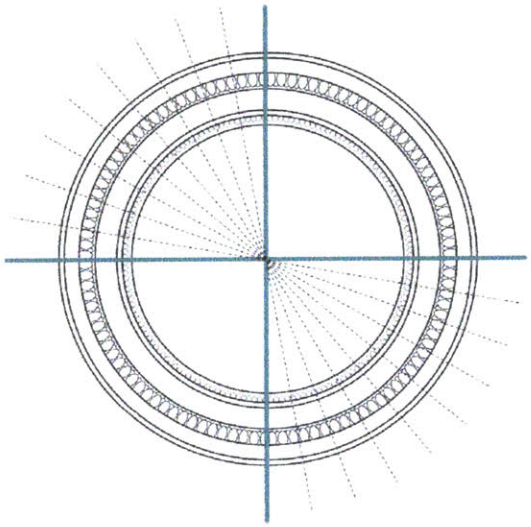




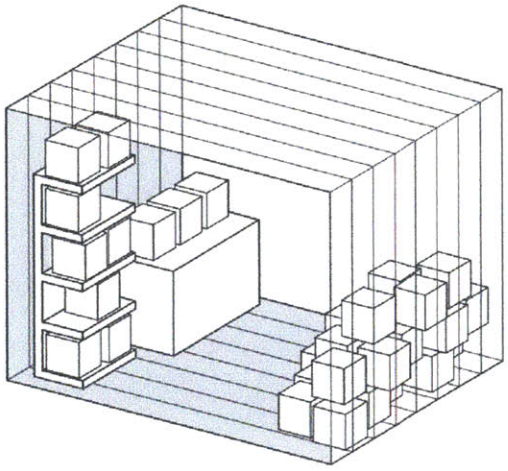




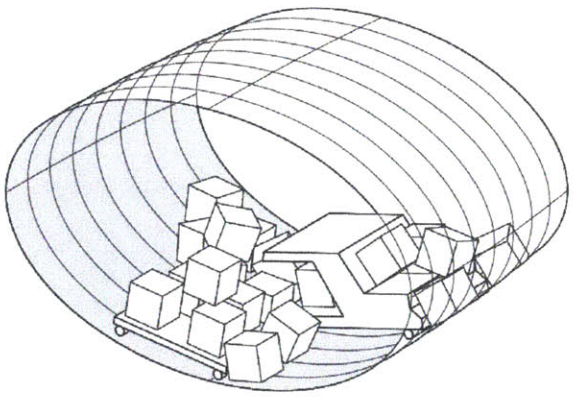
rectangles prescribe orientation



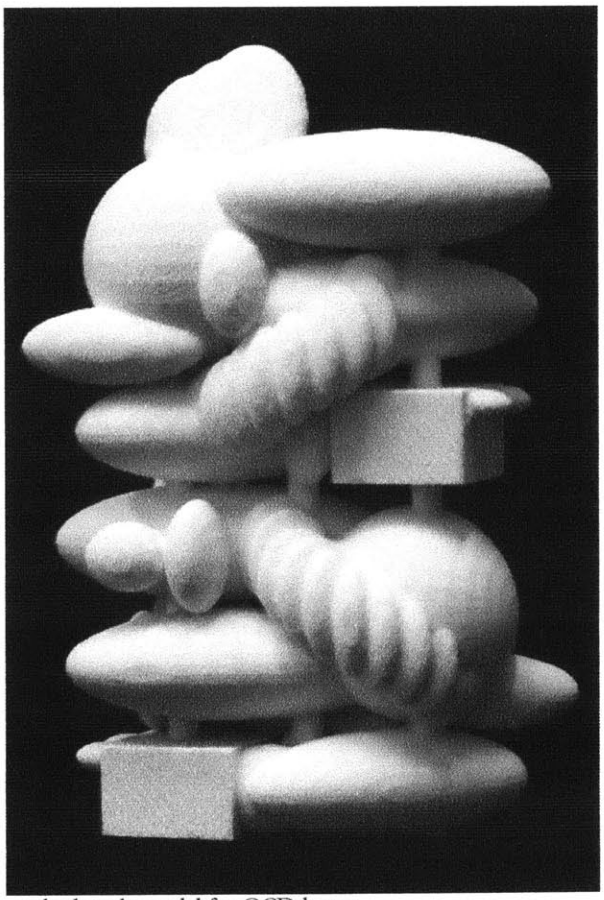
circle have no orientation



flat surfaces allow organization



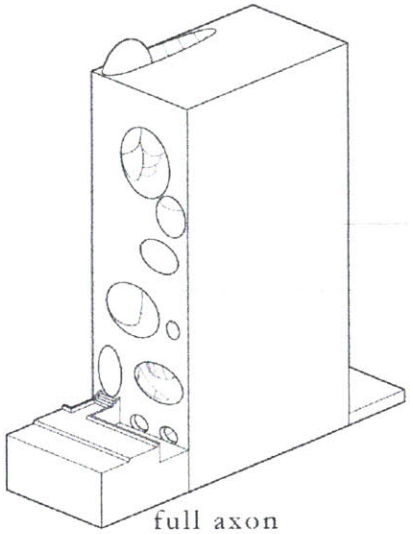
curved surfaces deny organization



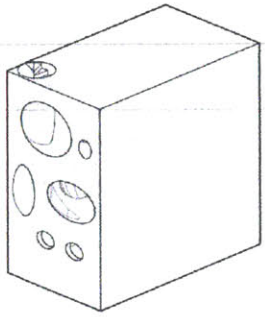
method study model for OCD house

Condition Category: organizational
Response Attitude: non-appeasement treatment
Architectural Device: entropy

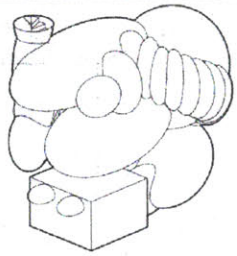
The clients in this scenario are two couples both suffering from Obsessive Compulsive Disorder with a tendency to hoard and organize. The design is intended to antagonize the condition and treat it by disallowing them to engage in behaviors that satisfy their condition--similar to aversion therapy. Thus, the design uses continuously curved volumes--ellipsoids to carve the space in which ordering objects becomes nearly impossible. In the case of hoarding, all of the objects would pile up at the center of the space rendering the architecture uninhabitable. Morever, furniture would all be designed with wheels, making the space be a constant state of entropy.



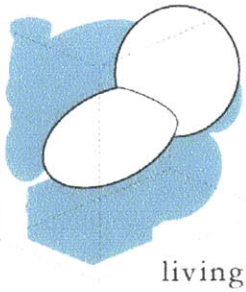
full axon



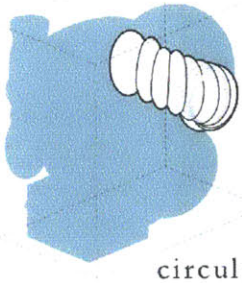
family module



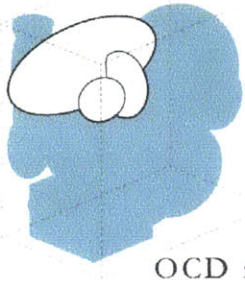
program modules



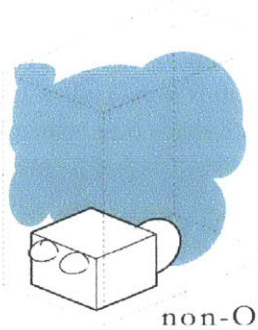
living room



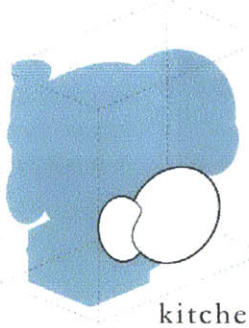
circulation



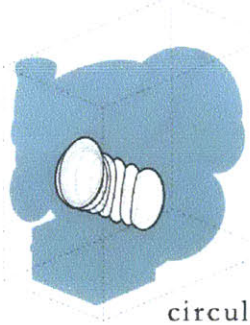
OCD room



non-OCD room

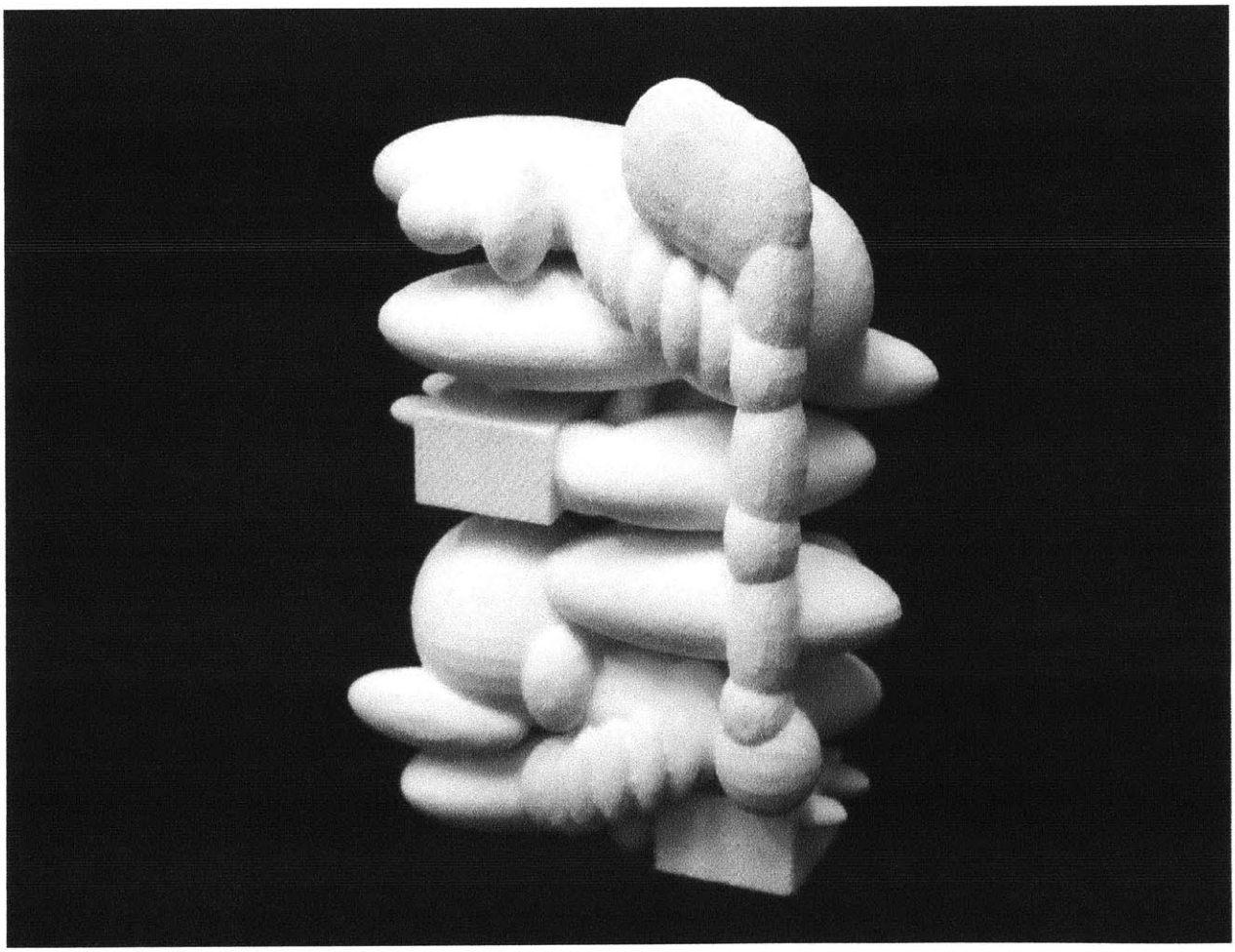


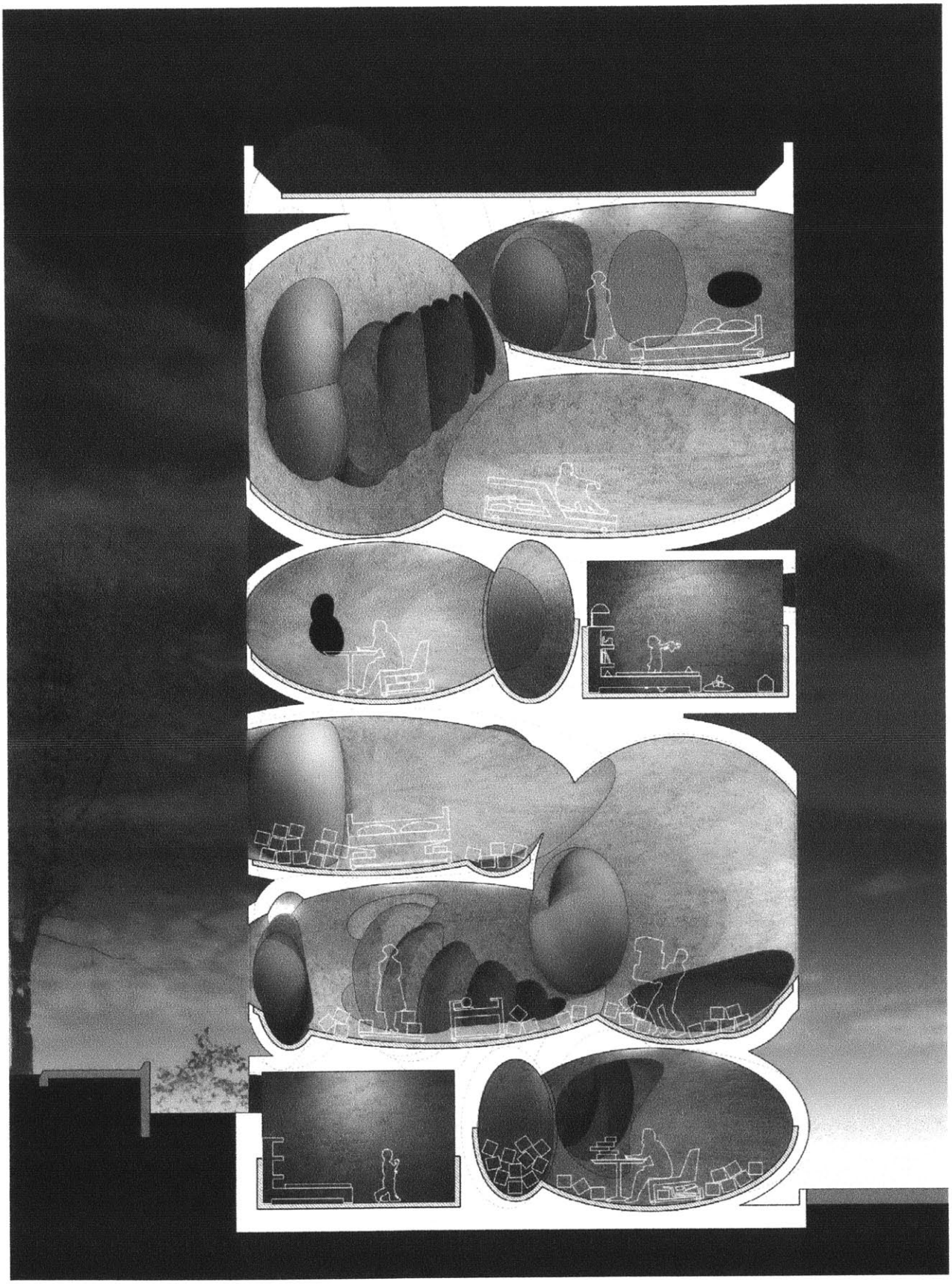
kitchen

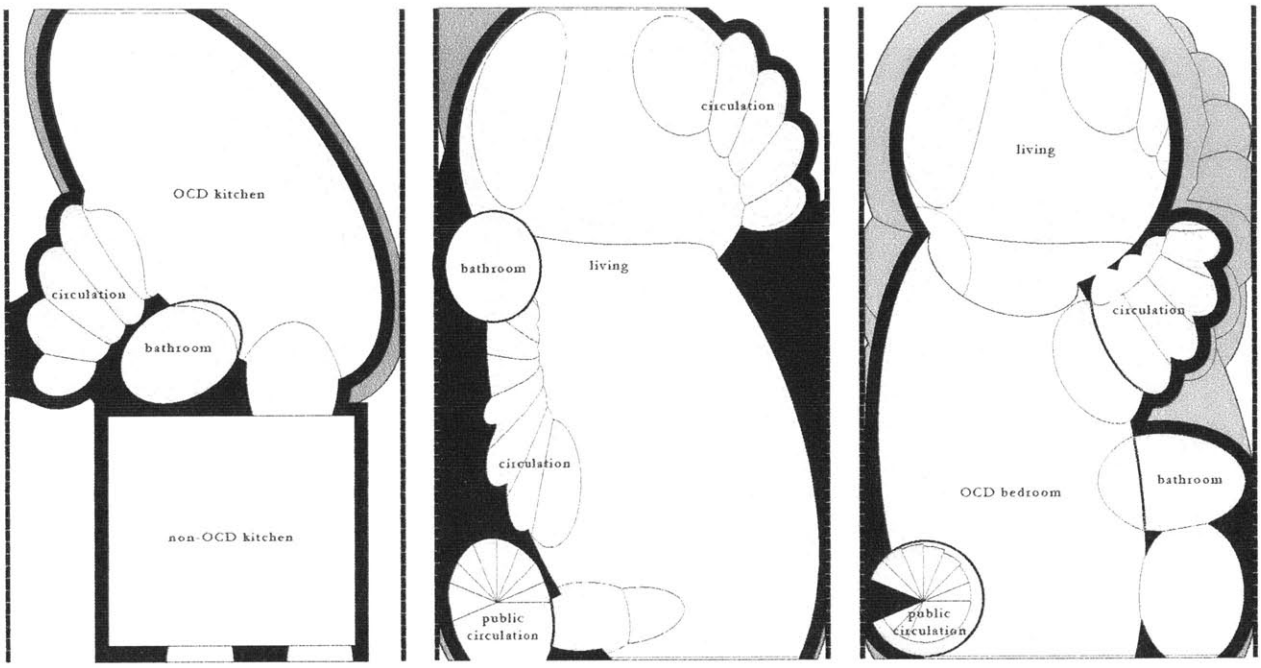


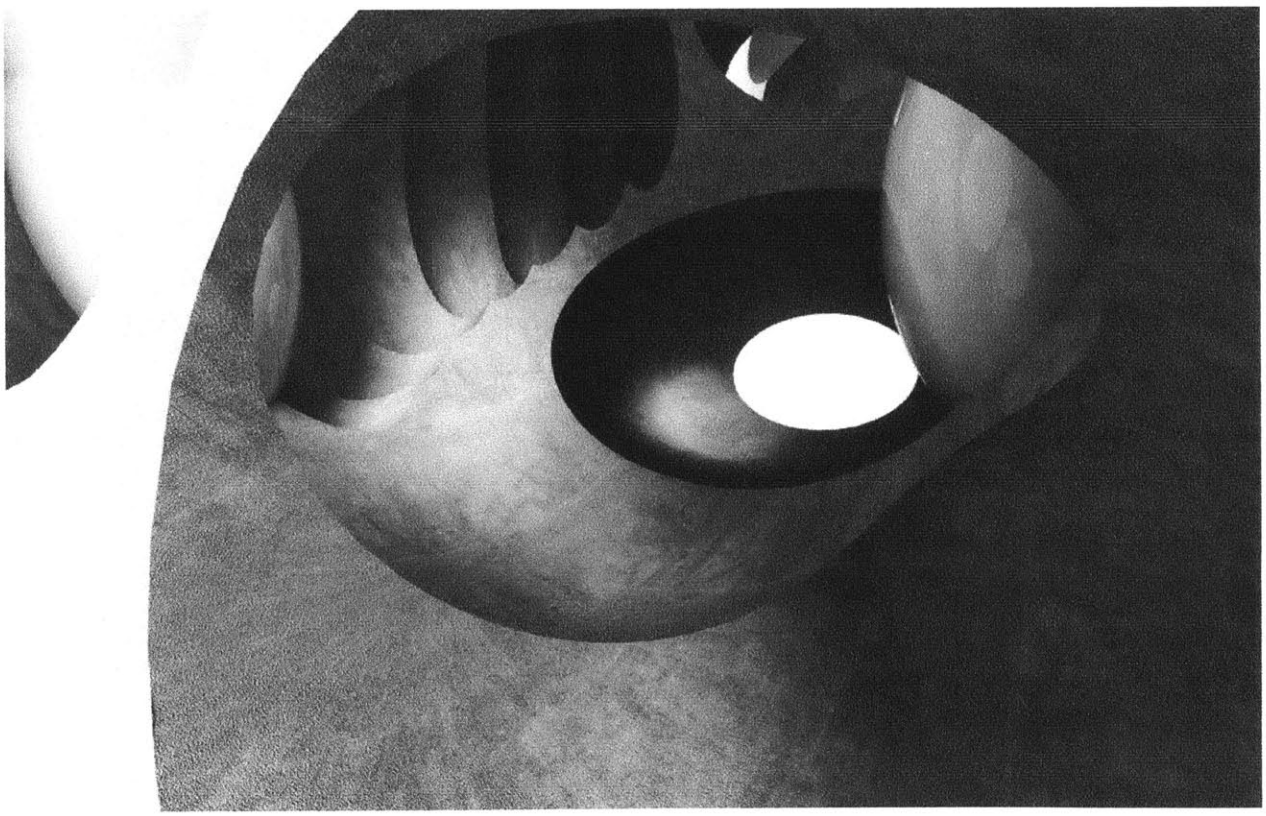
circulation

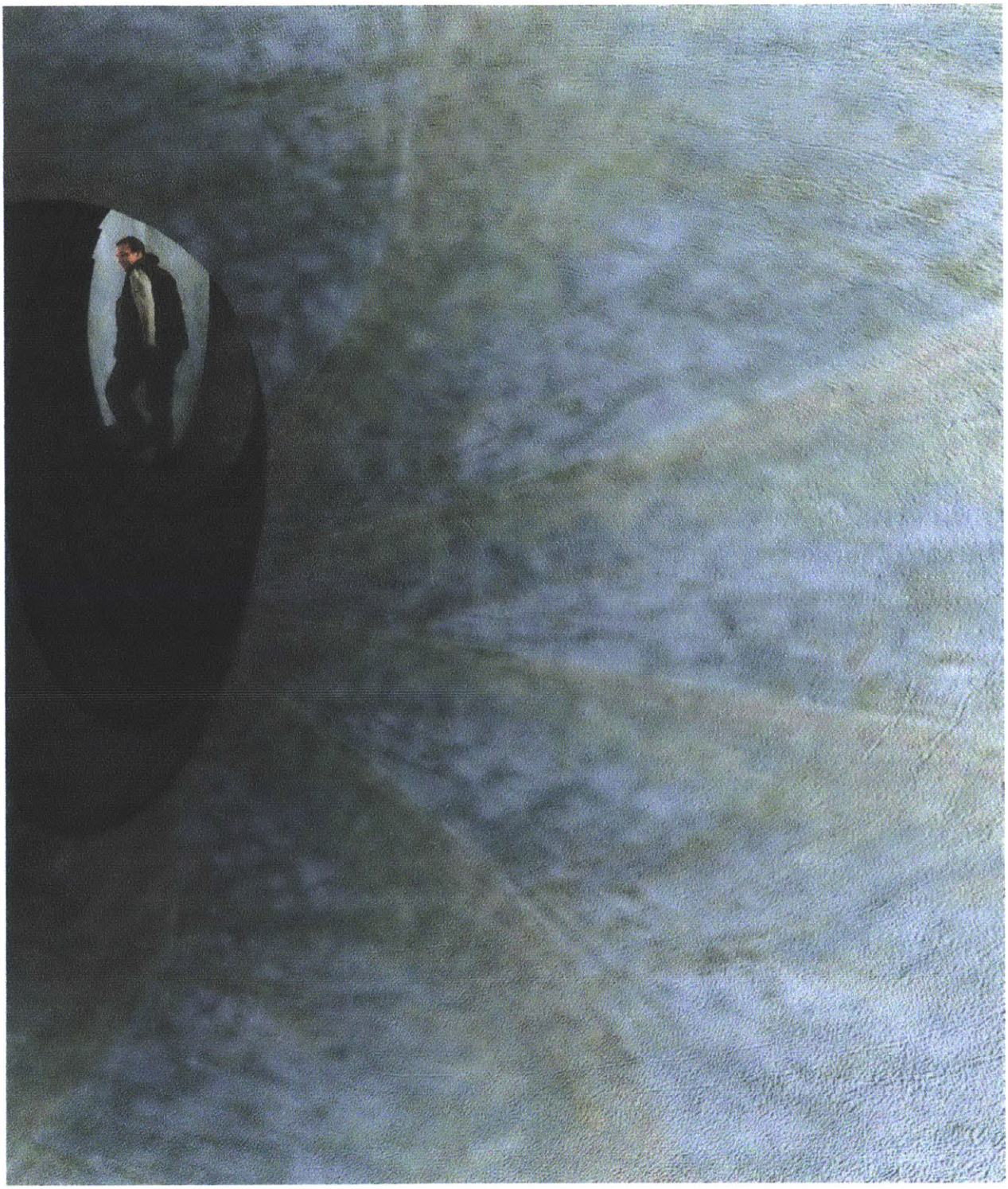
program organization diagrams for OCD house

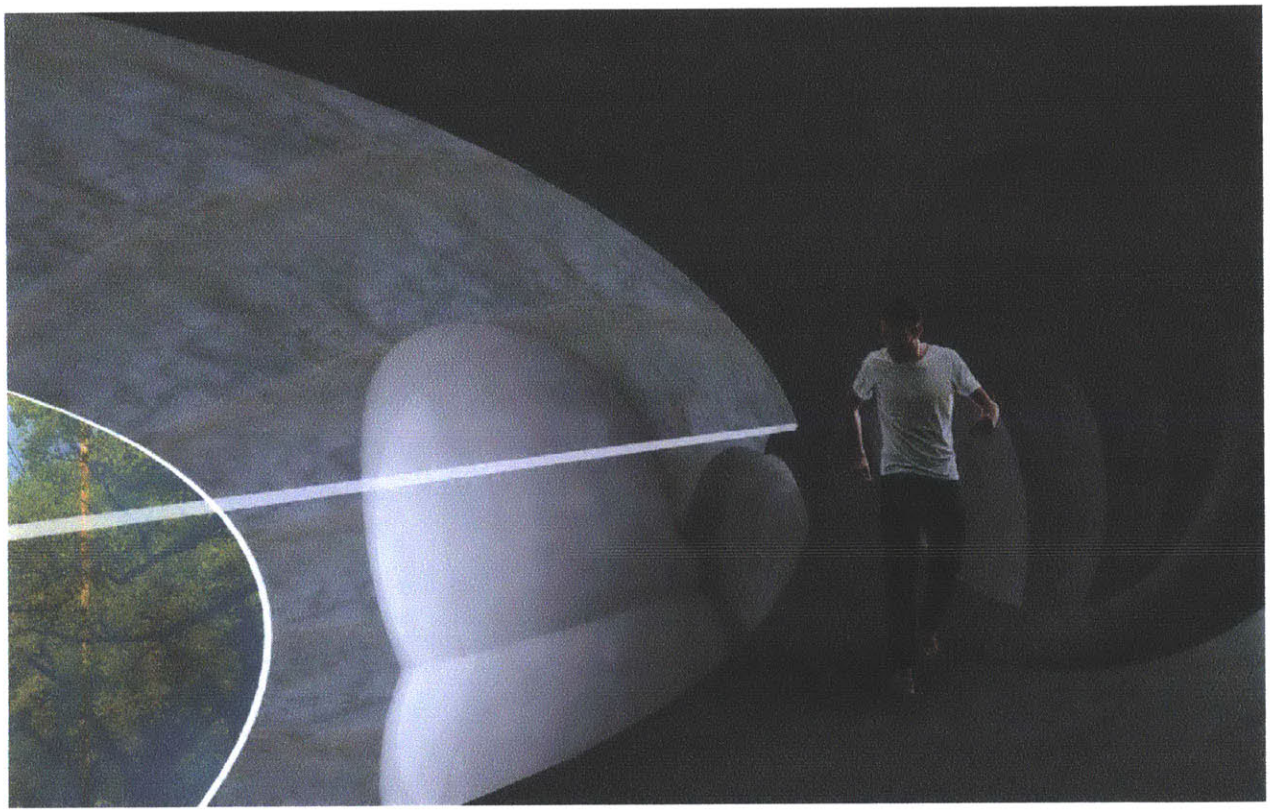


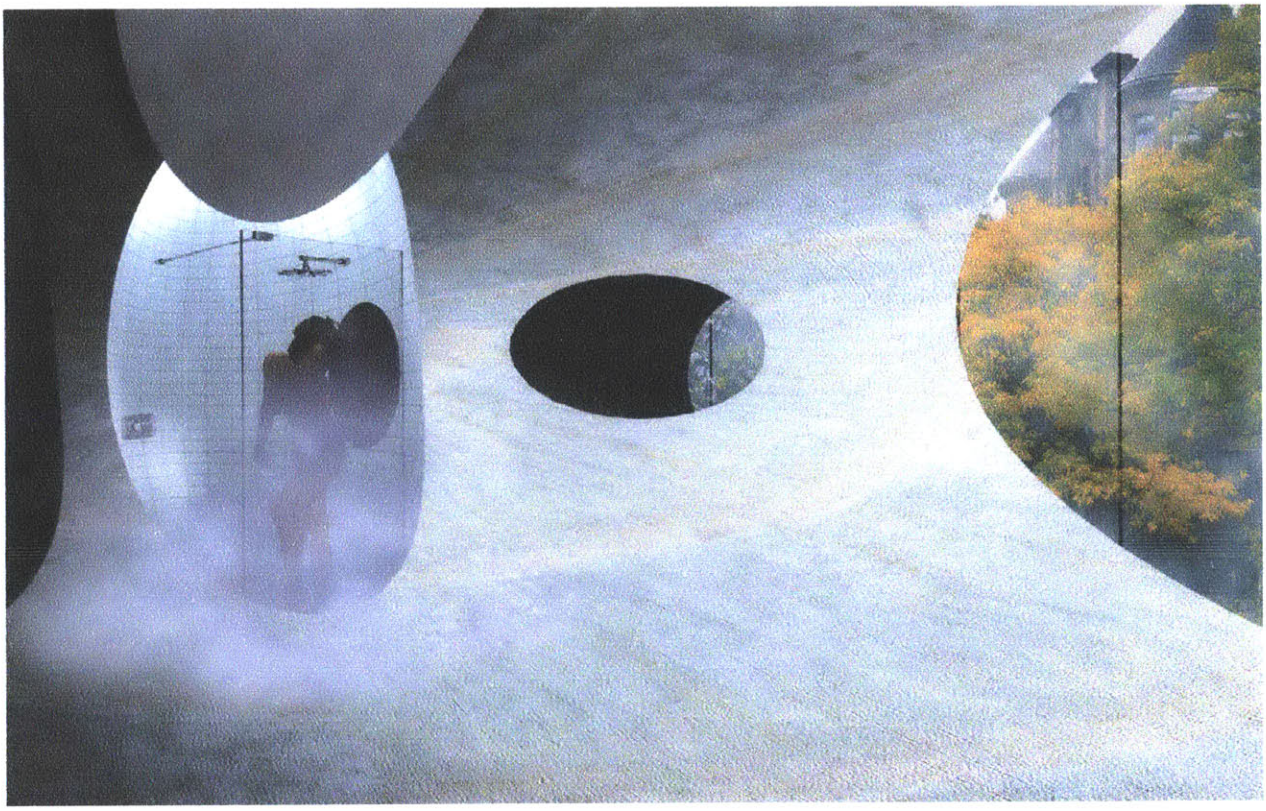


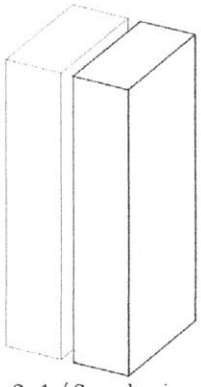

OCD kitchen
circulation
bathroom
non-OCD kitchen
circulation
bathroom
living
circulation
public
circulation
living
circulation
OCD bedroom
bathroom
public
circulation



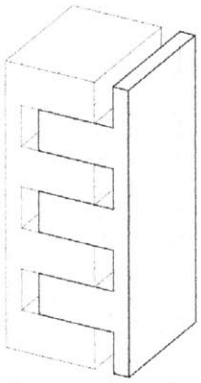




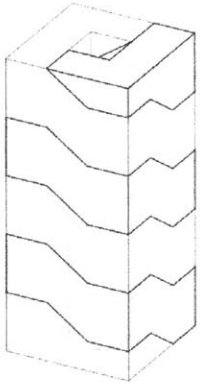




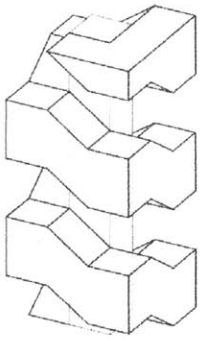
2 1/2 relationship



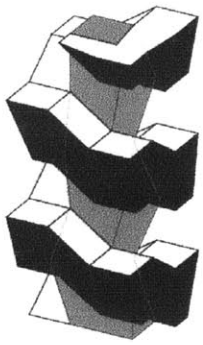
key and lock relationship



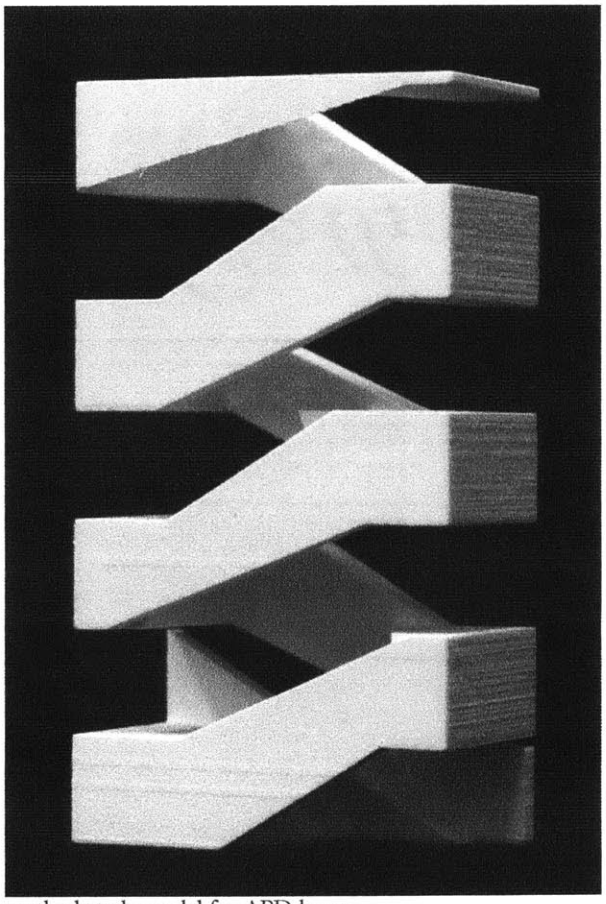
spiral relationship



in / out relationship



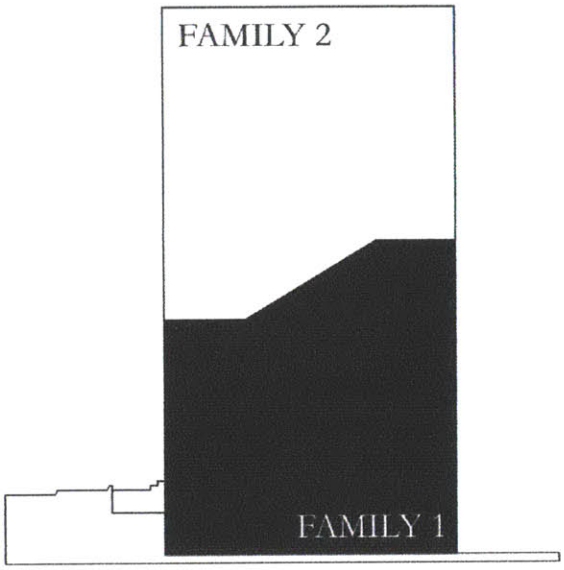
summation



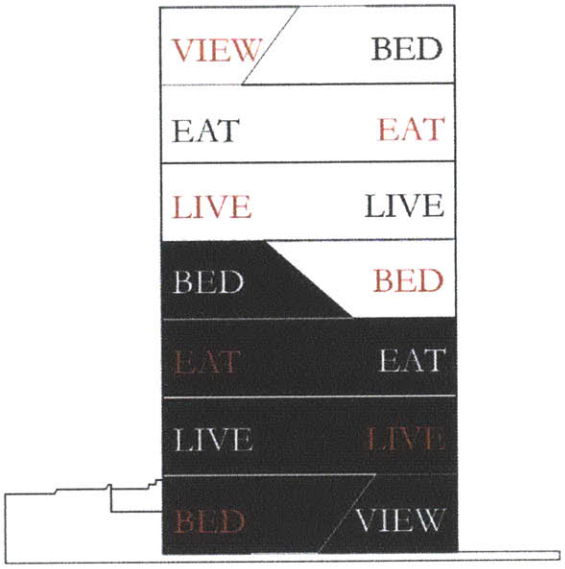
method study model for APD house

Condition Category: social
Response Attitude: appeasement non-treatment
Architectural Device: division

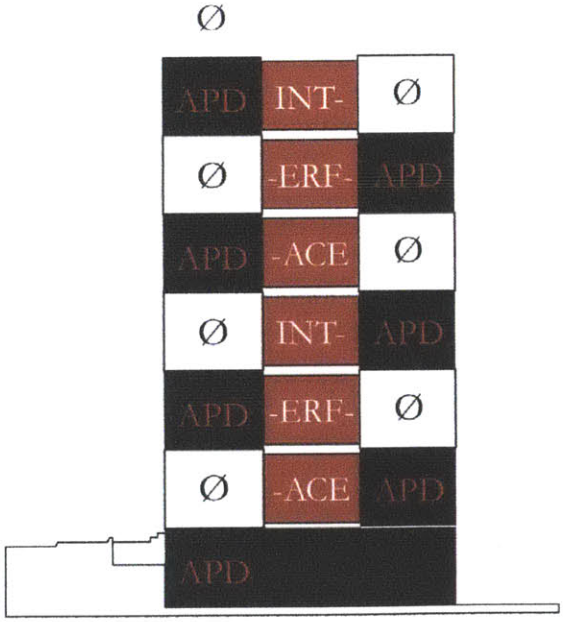
The clients in this scenario have one family member (for both apartments) suffering from Antisocial Personality Disorder. The aim for the design is to allow for a duality of space conditions--the social and the antisocial. Thus, the organization is conceived of as a closed box spiral. Inside the spiral is the antisocial space, smaller and quarantined space with limited light and access. The social spaces occur on top of the spiral--open spaces. The form is governed by the required space for the programs--so the floor space swells and shrinks accordingly. The wall are then lofted between levels and results in a warped effect. At the center of the spiral is the interface space--a controlled condition that mediates between the primary dual programs.



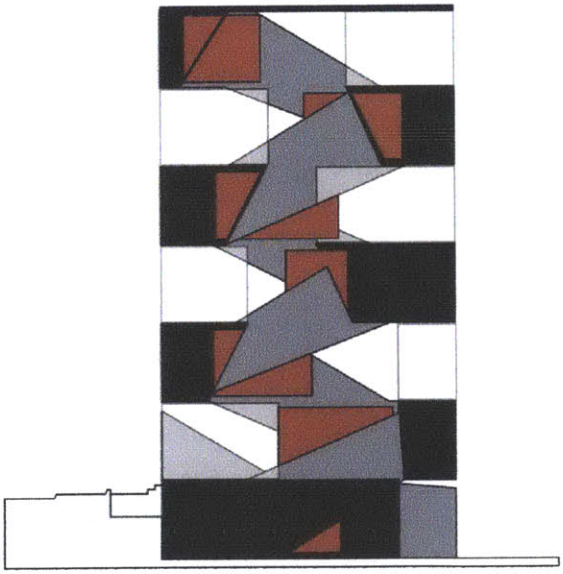
family partitions



program organization

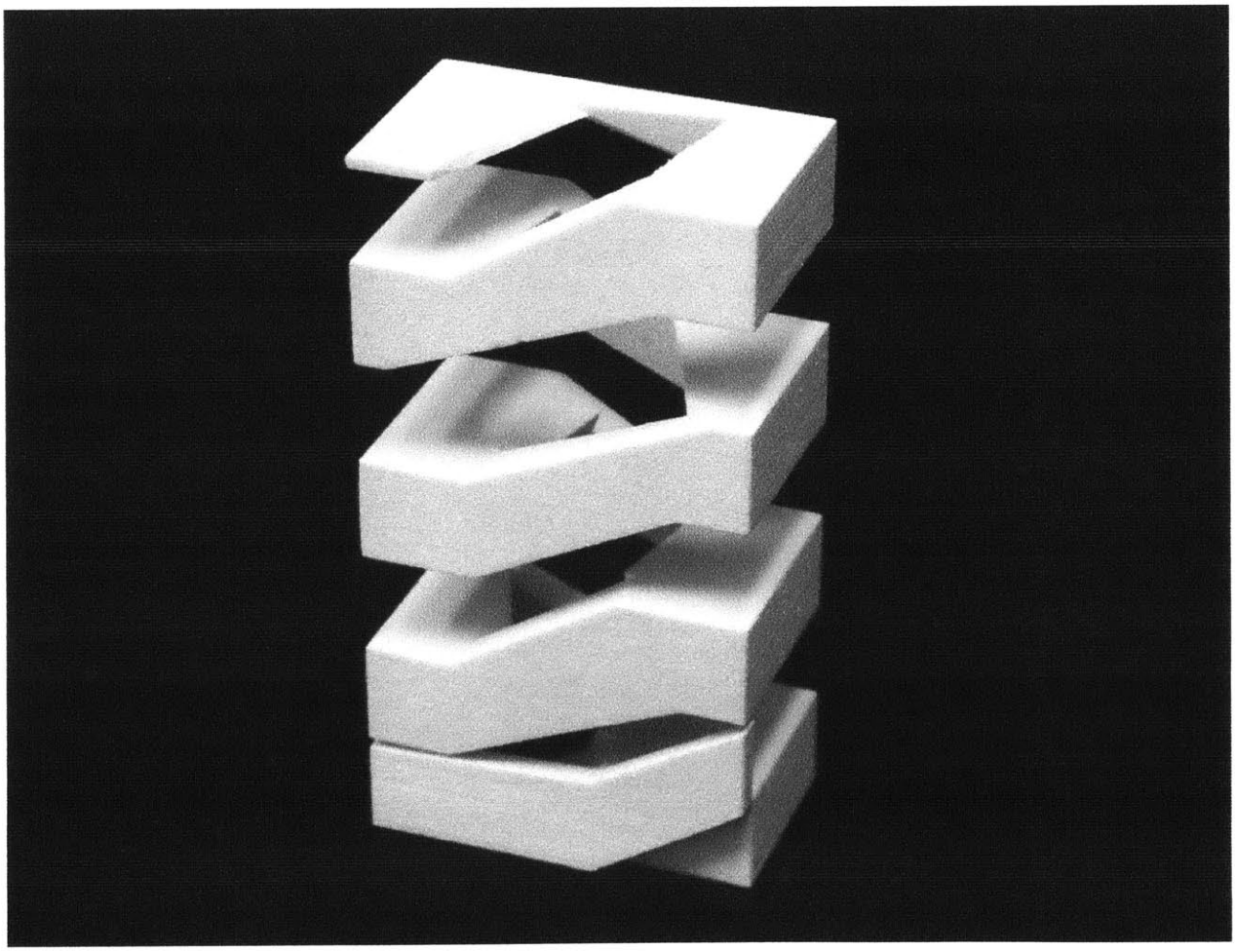


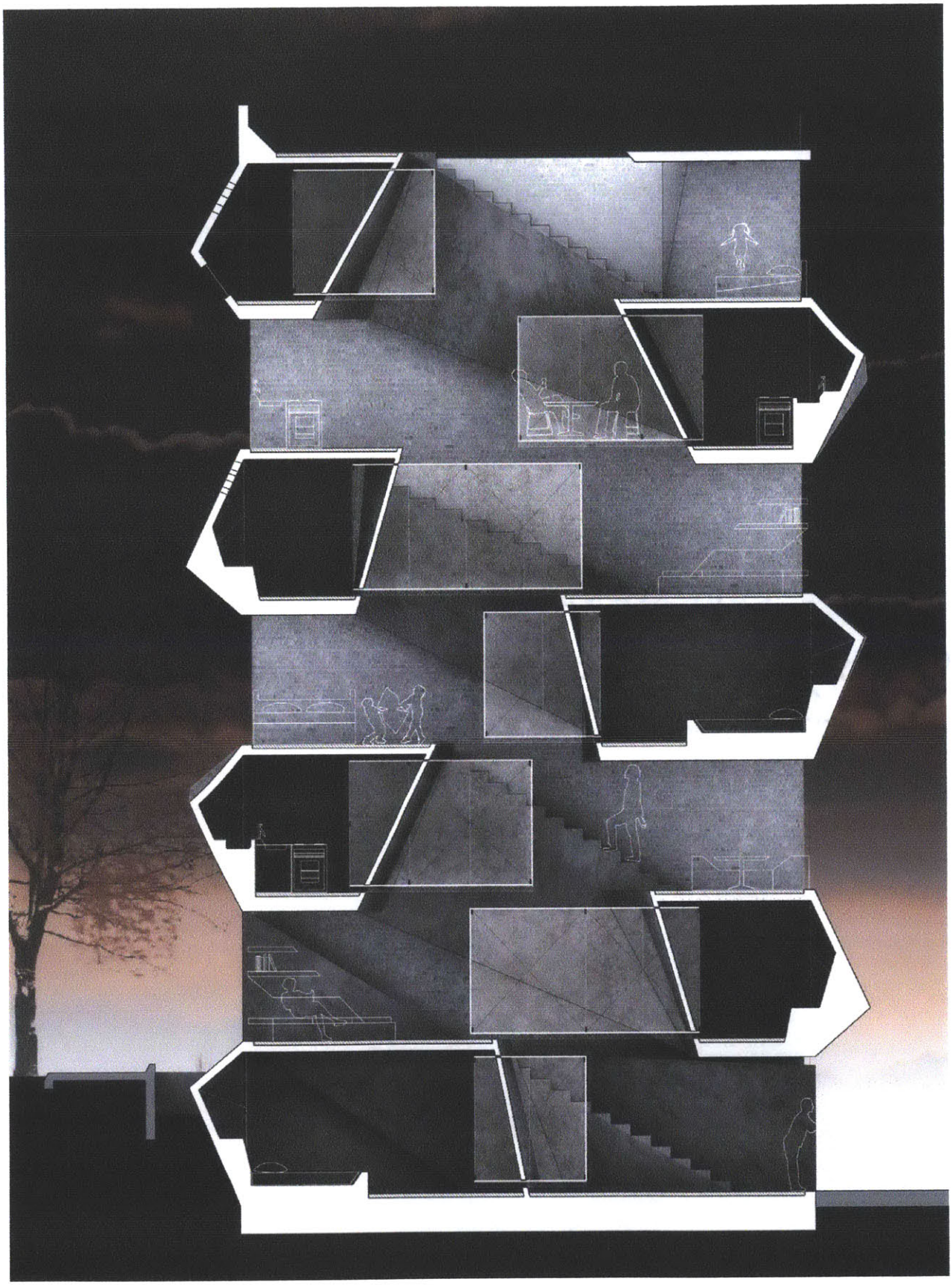
mindstyles



substance connections

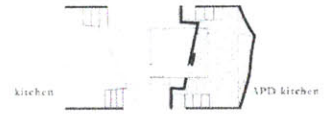
program organization diagrams for APD house

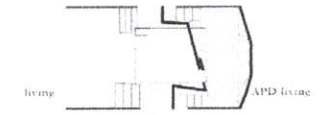


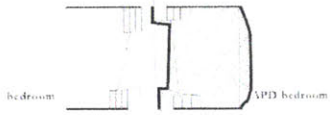


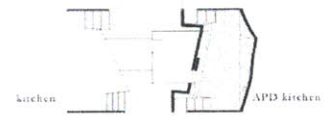
roof terrace
no access

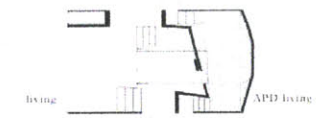
bedroom
APD viewing

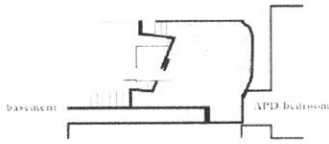

kitchen
APD kitchen

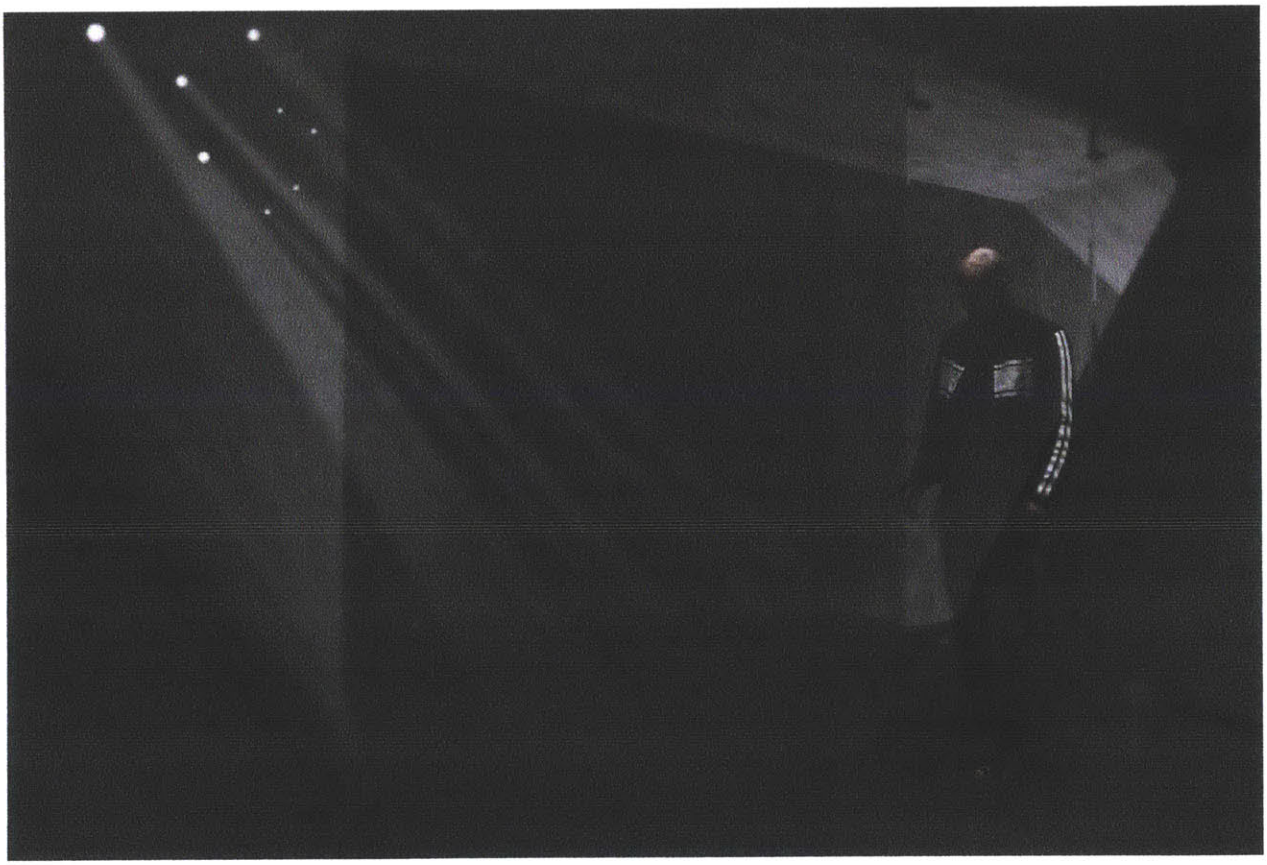

living
APD living

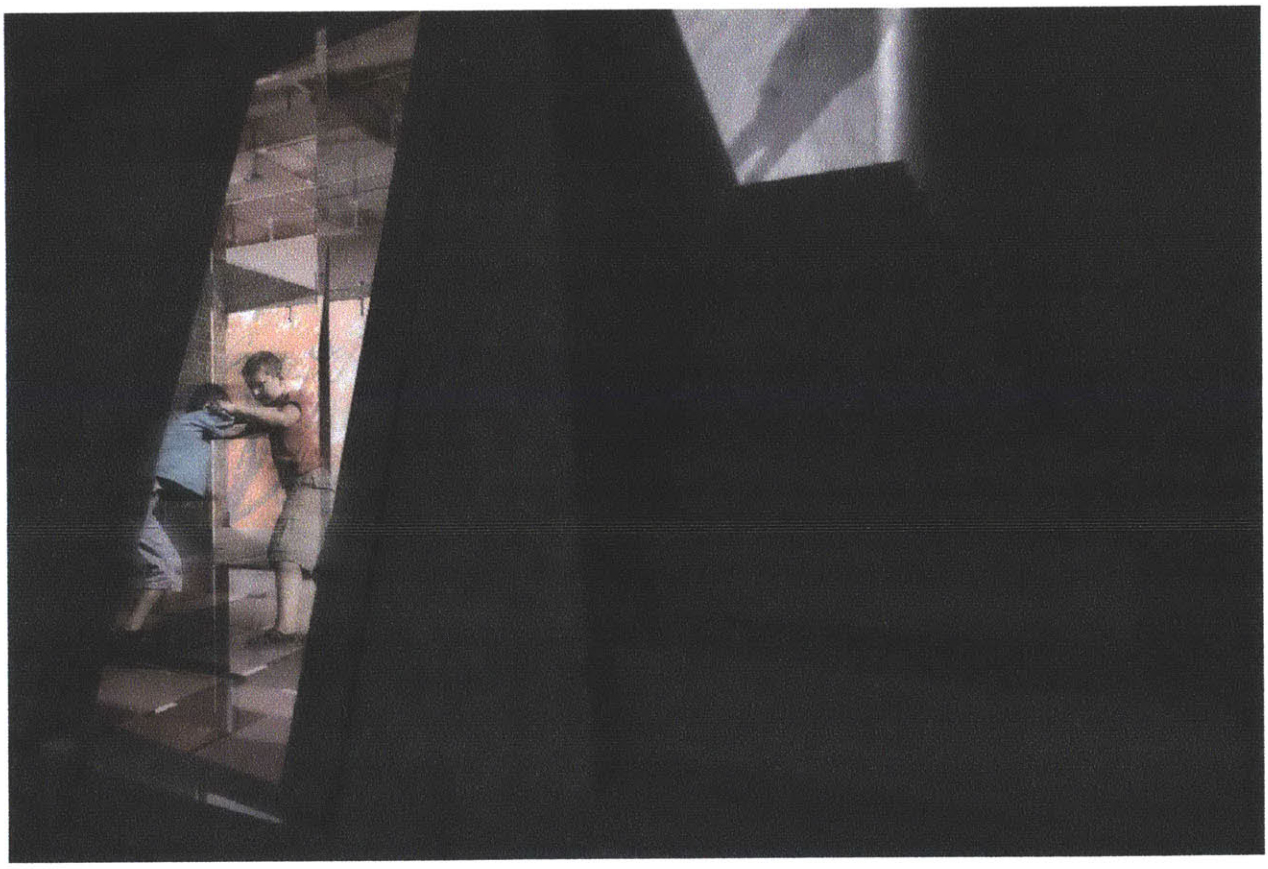

bedroom
APD bedroom

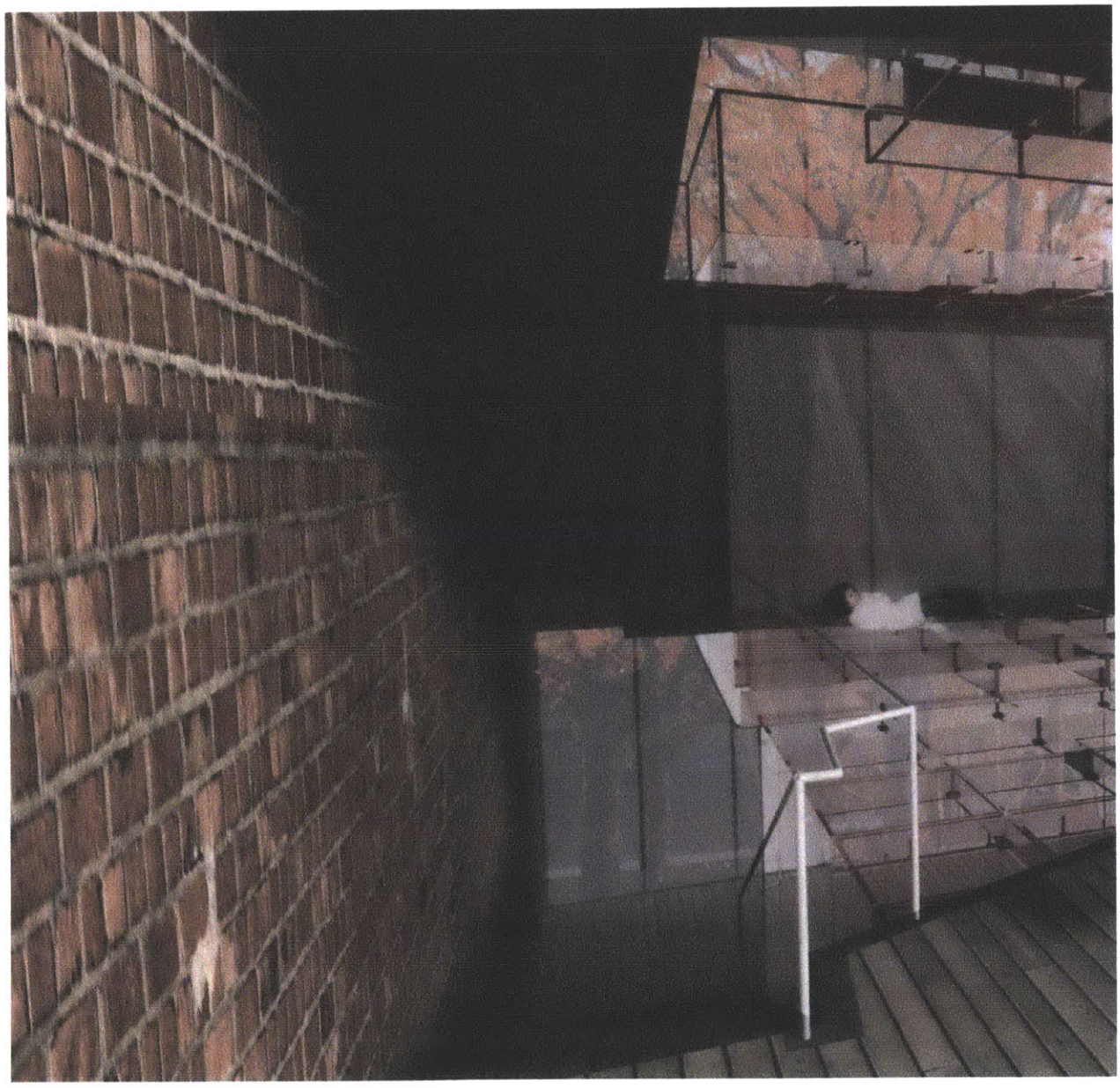

kitchen
APD kitchen

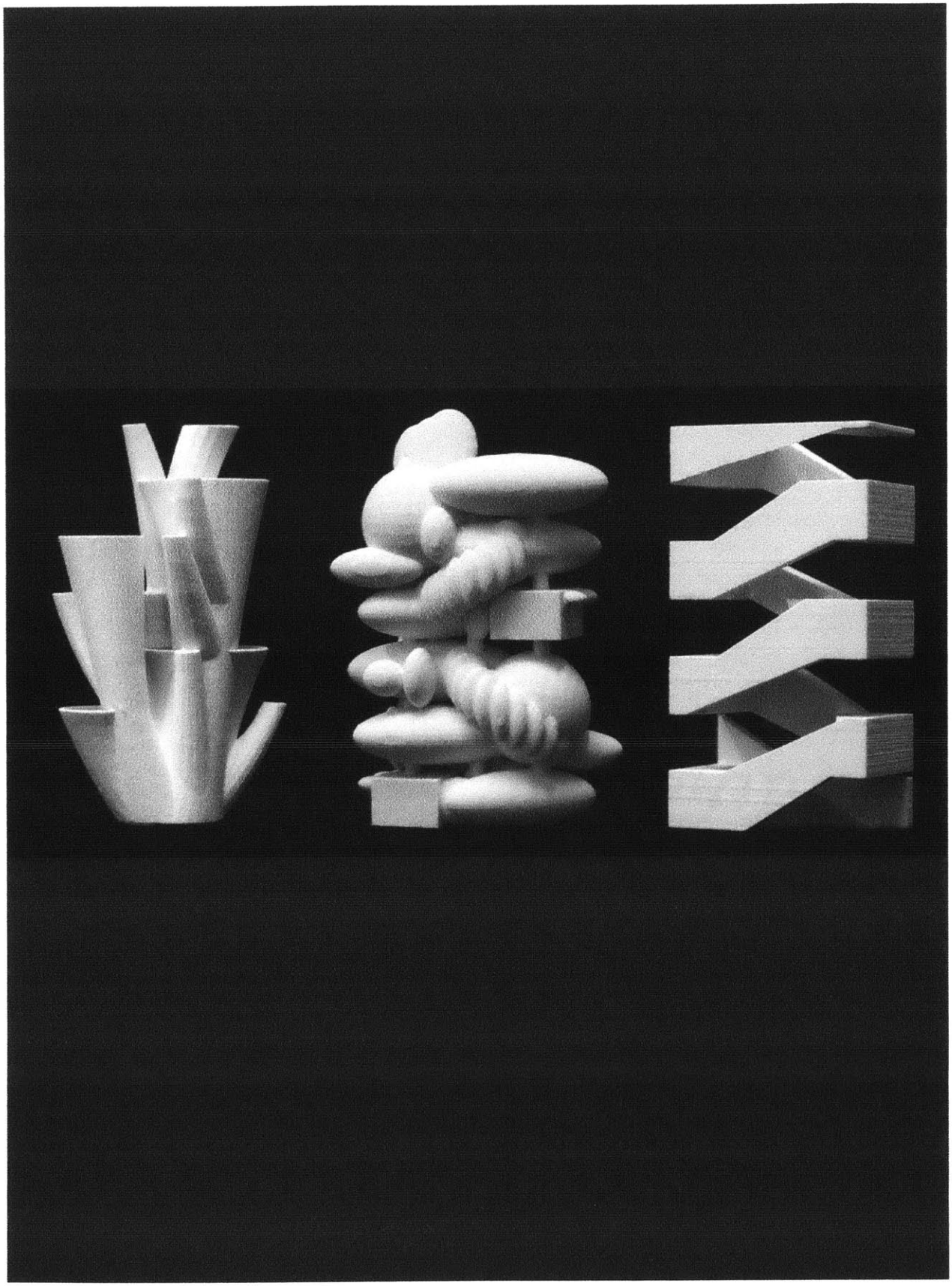

living
APD living


basement
APD bedroom





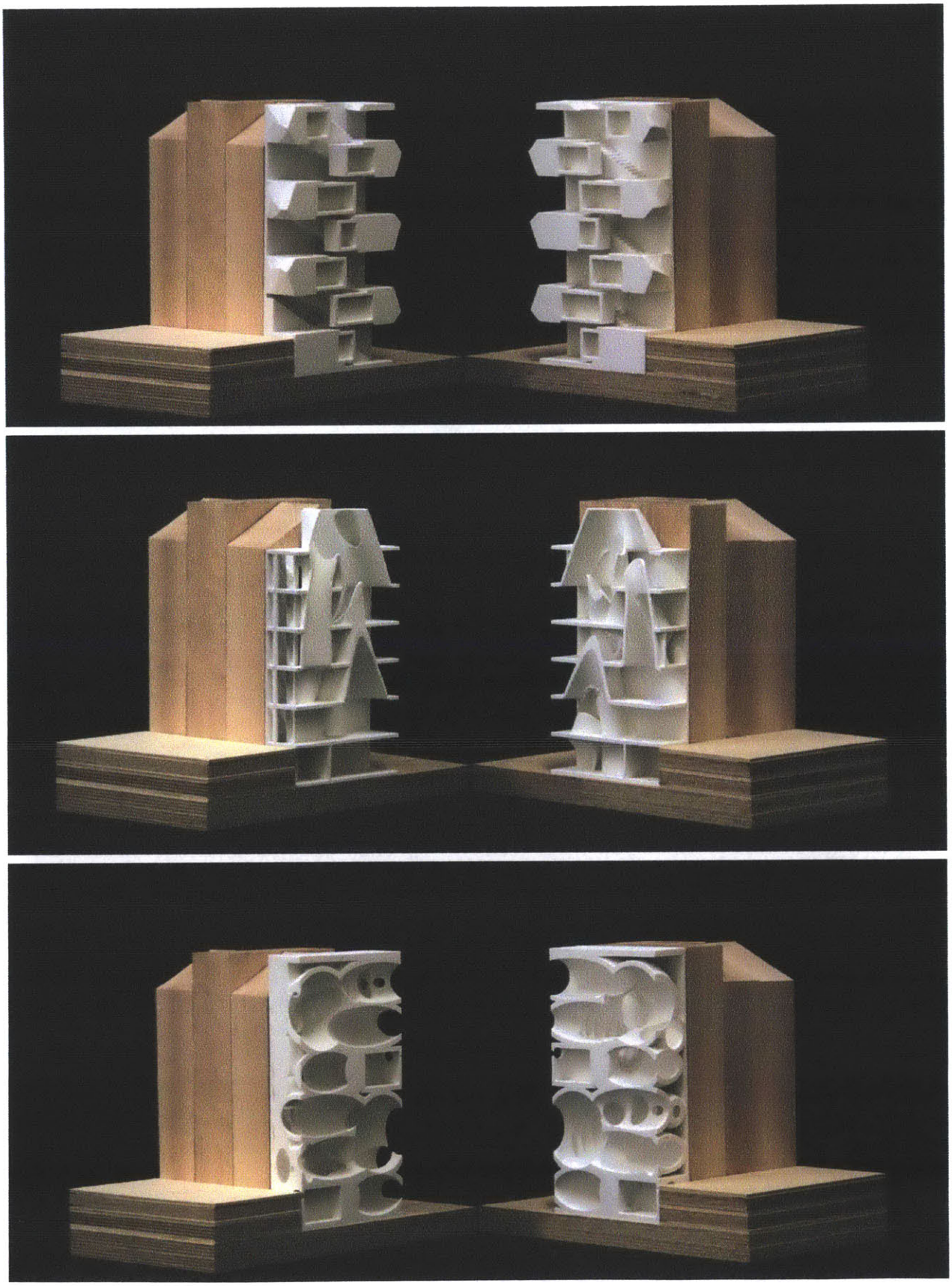


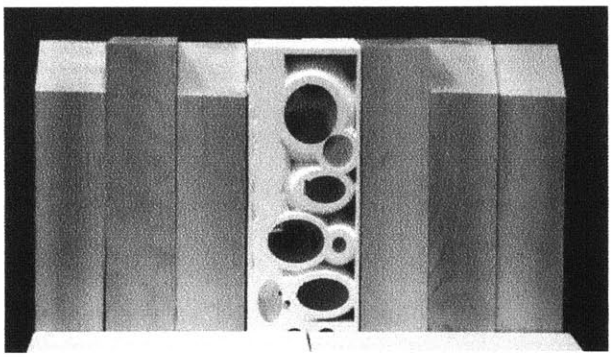


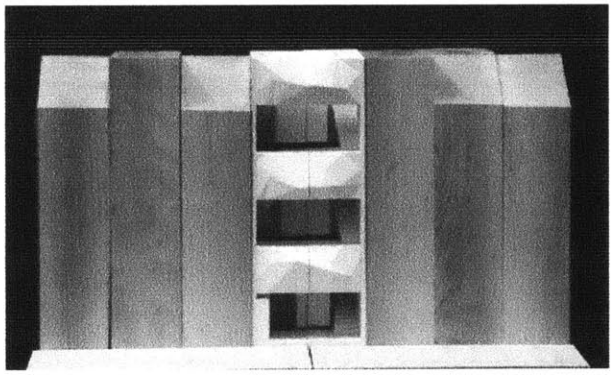
five

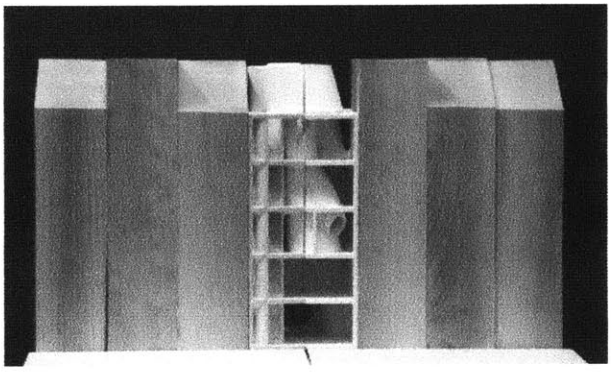
Appendices

The appendices contain additional work pertaining to the completion and development of the thesis.

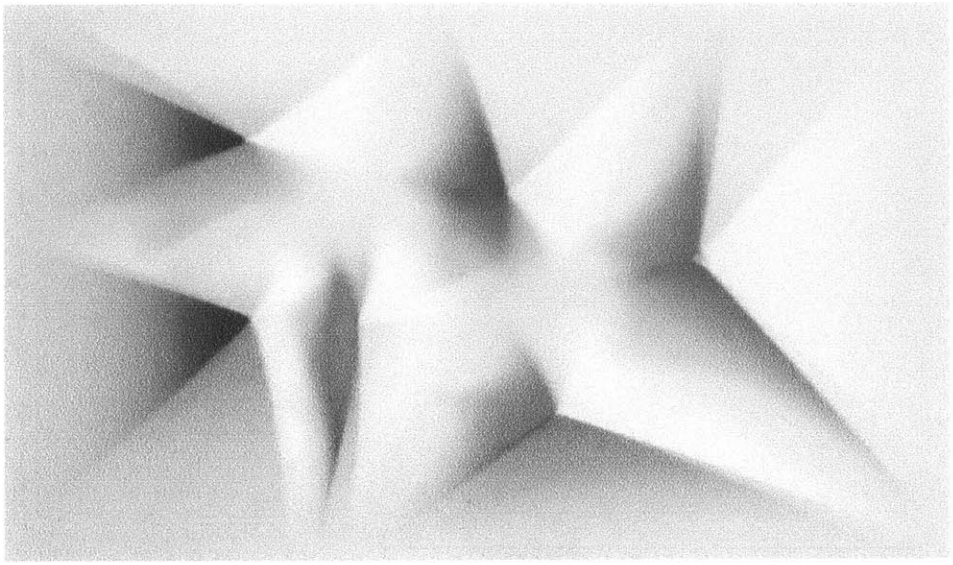


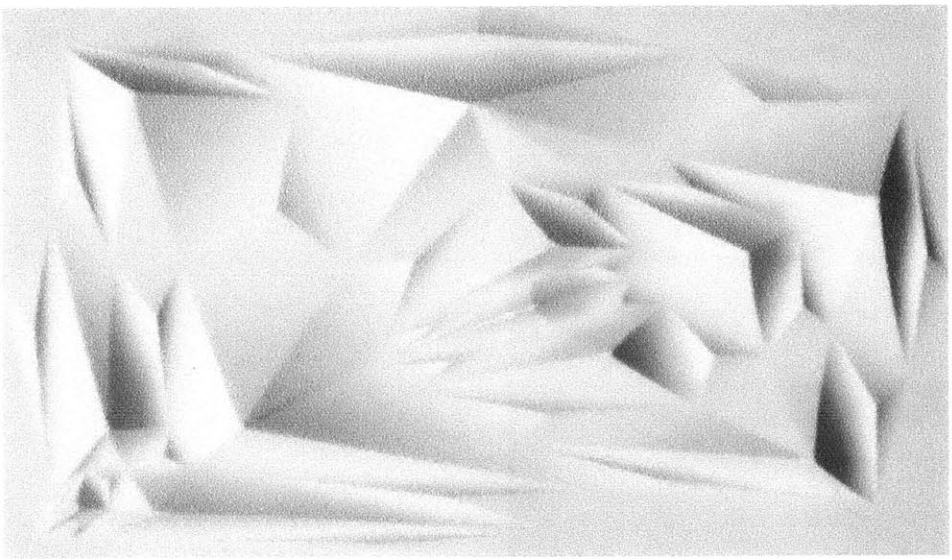


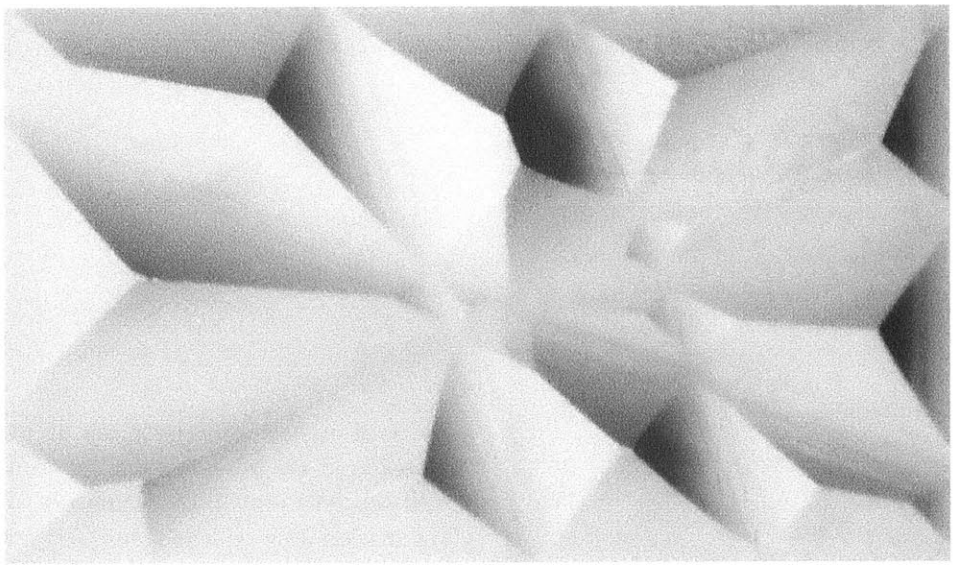


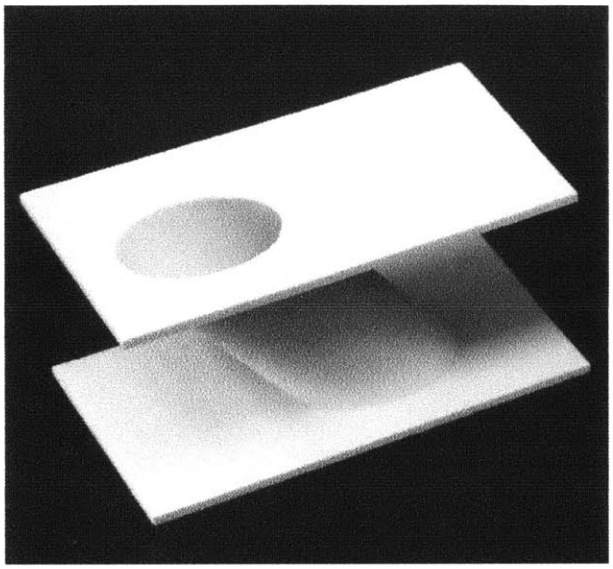


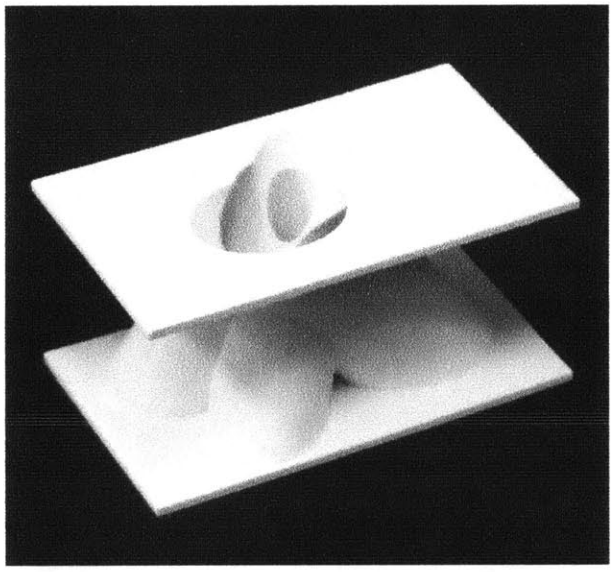
The final models were made out of wood for the context and the designs were 3d printed and cut at the center to reveal the section of the building. The models were built at 1' = 3/64" scale.

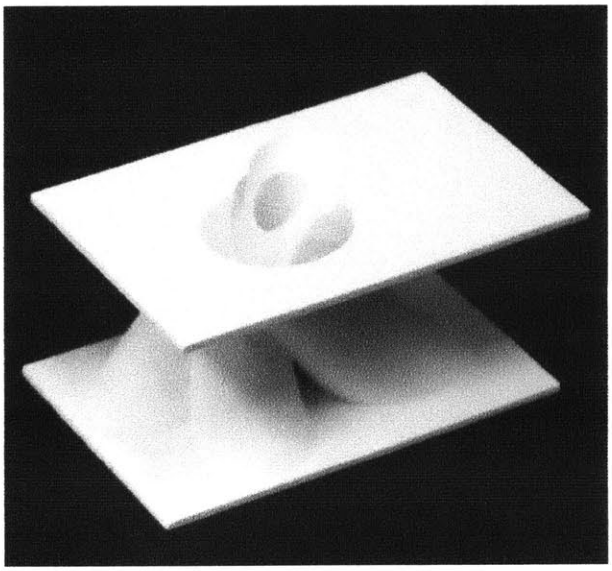








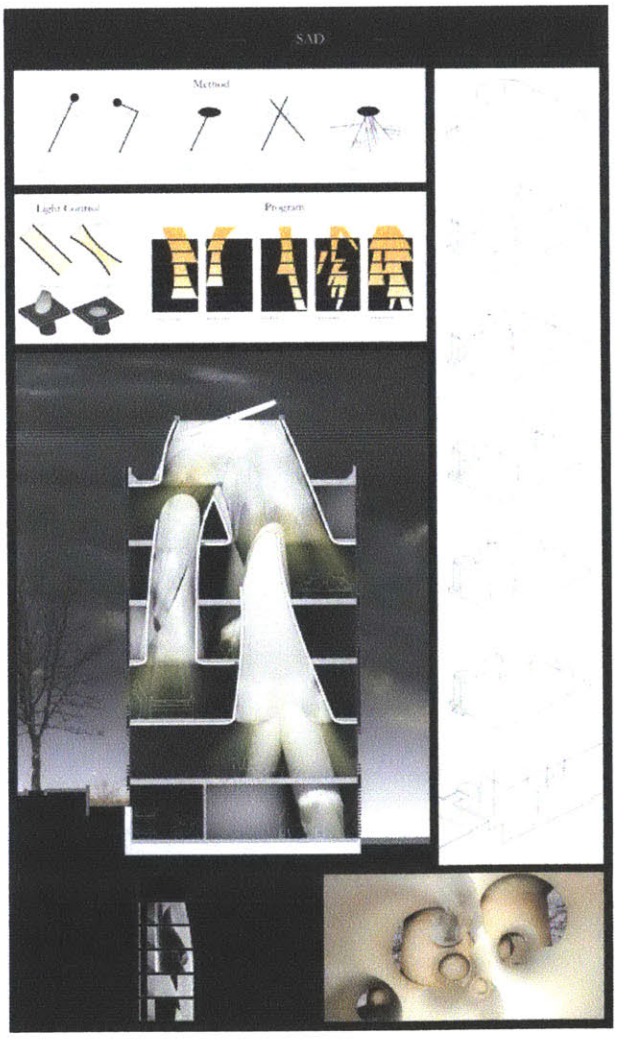


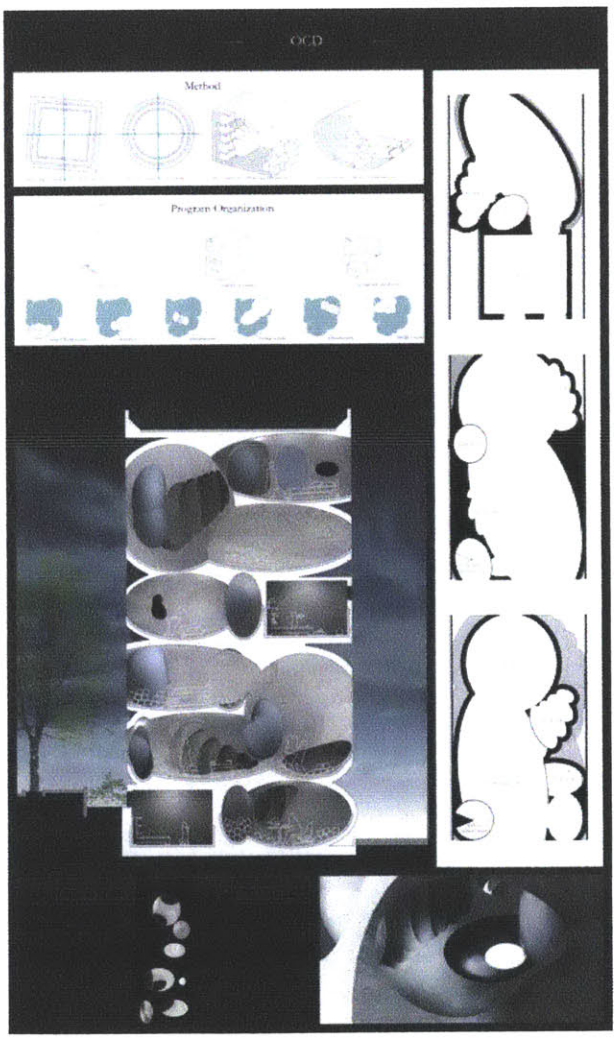


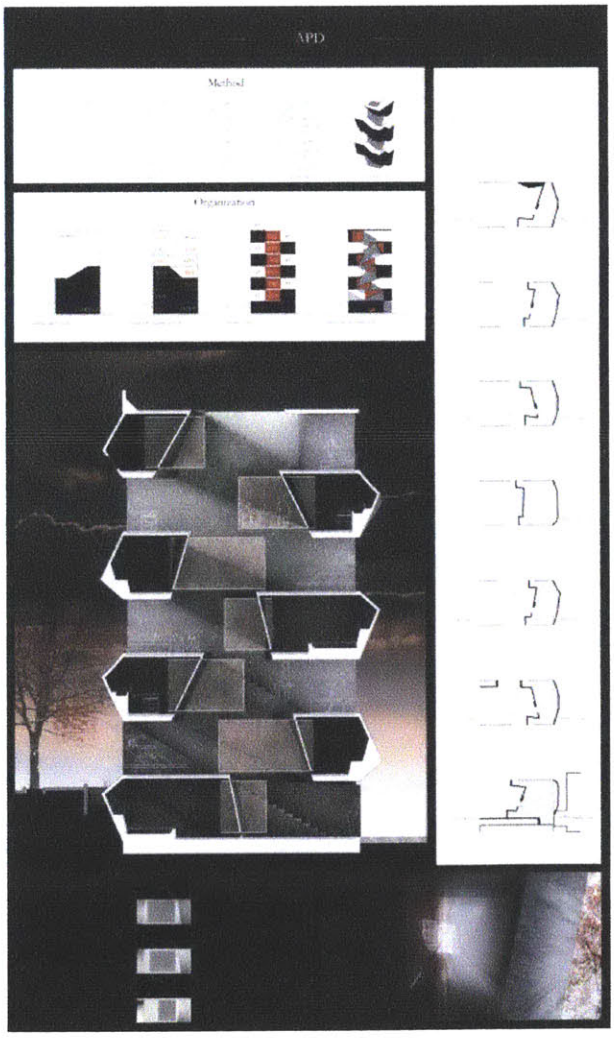
The models on the opposite page were process models for the OCD house. They were testing formal systems that had continuously curving surfaces. Ultimately, the boolean ellipsoid operation was selected over these surface-based methods.

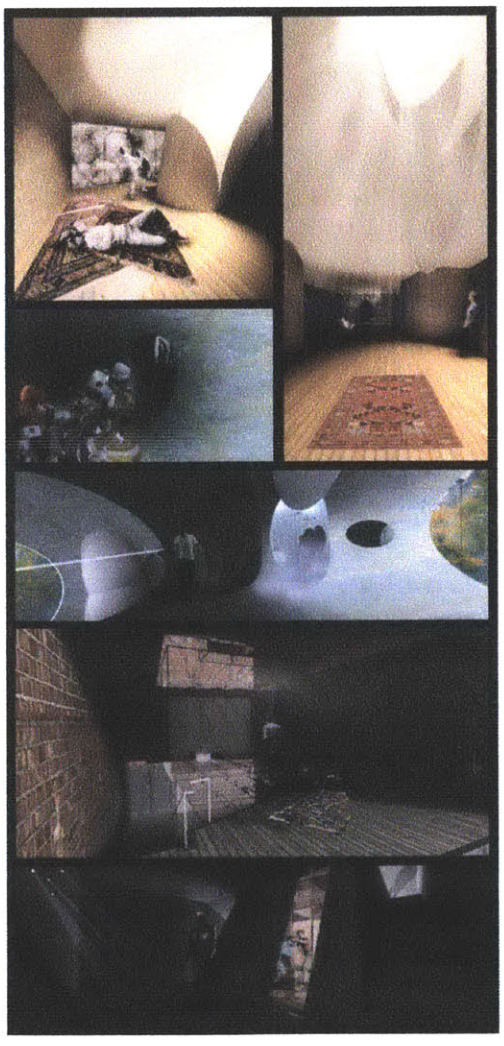
The models on this page were concept models for the construction of the light shafts of the SAD house. The top model model was the large primary light shaft and the second model shows small secondary cylinders intersecting with it. The final model in this set shows the tapering and skewing of the cylinders to create design spatial conditions.

These pages show the documentation of the thesis defense presentation made on May 17, 2013 at MIT.


SAD
Method
Light Control
Program


OCD
Method
Program Organization


APD
Method
Organization



Images Sources:

- page 12 - http://tris31.deviantart.com/art/The-Happiness-Machine-193647769

- page 14 - Francisco de Goya The Madhouse; http://www.etsy.com/listing/18329272/danvers-state-hospital-kirkbride-asylum; http://www.arthitectural.com/plot-jds-big-helsing%C3%B8r-psychiatric-hospital/

- page 18 - http://commons.wikimedia.org/wiki/File:Narrenturm_Vienna_June_2006_577.jpg; http://fathertheo.wordpress.com/2011/05/03/tom-o-bedlams-song/; http://www.kirkbride-buildings.com/blog/tag/Richardson; http://commons.wikimedia.org/wiki/File:Proctor_House,_McLean_Hospital,_Belmont_MA.jpg; http://www.arthitectural.com/plot-jds-big-helsing%C3%B8r-psychiatric-hospital/

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- page 22 - Google Maps`

- page 30 - Melancholia; Silver Lining Playbook; Psycho; Cable Guy; Lolita; The Fountainhead; Girl; Interrupted; The Shining; Homeland; Pi

- page 37 - Google Maps

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