A Mat Response to Deinstitutionalization

Dominic Lipuma
The relationship between architecture and mental health, in regards to psychopathology, or mental illness, has been one of great contention. They have been estranged since the age of deinstitutionalization that began in the 1960s, and, with this abandonment of architectural issues, the two still have yet to be reconciled. As a result, further social issues have manifested, with higher proportions of the mentally ill making up prison and homeless populations throughout the United States, in addition to an overall lack of proper mental health treatment. According to a 2012 report by the New York State Office of Mental Health, “Nearly 40% of adult New Yorkers with serious mental illness did not receive mental health treatment in the past year.” The problem has not been solved, but rather transferred somewhere else in what has been referred to as “transinstitutionalization.”

This thesis references the wave of new ideas for architecture’s response to mental health during the 1960s, based on a new understanding and approach to mental illness in society, with the proposals for Community Mental Health Centers (CMHCs). These facilities formed the architectural basis of the Community Mental Health Act of 1963, which was ultimately never fulfilled, marking the wave of deinstitutionalization and the closing of psychiatric hospitals without these CMHCs in place. Therefore, this thesis picks up where the ball was dropped back then, proposing a new architectural solution based on further research and insight that has since taken place.

The architectural typology of the asylum, based on the Kirkbride model, reflected society’s validation (and, therefore, more serious and humane treatment) of mental illness. However, the actual outcomes and depictions in popular movies have shown the admirable intentions of the Kirkbride model, based on monumental, symbolic, and hierarchical organizations of isolation, failed.

Due to these failures of both tested and proposed architectural solutions, in conjunction with the rise of pharmacology, a major shift in strategy from environmental and architectural treatment to biological treatment has taken place over the last half-century. This has left a “hole” within the field of architecture, leaving space for a new solution to be offered in regards to an architecture designed and built specifically for treating psychopathology.

An approach to architecture that also came out of this radical era of the 1960s was the “mat” building. Mat building involves the minimum organization necessary and a flexible, integrative typology that fosters engagement with the community and surrounding context in which it is located. However, in addition to utilizing the mat strategy, this thesis offers a new sensitivity to a temporal experience of program. The Mat-Collective Community Mental Health Center does not express a hierarchical representation of power, but rather reflects the user’s temporal experience as a result of an investigation of metrics, program, and place.
Institutionalization
Kirkbride Plan - Asylum

Plan: New Jersey Lunatic Asylum, 1847

Deinstitutionalization
Community Mental Health Center

Plan Diagram: CMHC Study, 1967

Mat-Collective

Plan: Venice Hospital, Le Corbusier, Guillermo Jaffiano de la Fuente, 1964

Isolated
Exclusive
Disengagement

Dissociation

Integrated
Inclusive
Engagement

Association
A MAT
RESPONSE
TO
DEINSTITUTIONALIZATION
“Buildings are inert objects, but our experience of them transcends the physical realm and extends into our deepest consciousness. Architecture, in particular, which moves beyond mere building, strives to **enhance the human condition and promote emotional well-being through the manipulation of space, light, material, and form.**”

A Mat Response to Deinstitutionalization

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I. Contention, Executive Summary
I. Architecture and Mental Health

The relationship between architecture and mental health, in regards to psychopathology, or mental illness, has been one of great contention. They have been estranged since the age of deinstitutionalization that began in the 1960s, and, with this abandonment of architectural issues, the two still have yet to be reconciled. As a result, further social issues have manifested, with higher proportions of the mentally ill making up prison and homeless populations throughout the United States, in addition to an overall lack of proper mental health treatment. According to a 2012 report by the New York State Office of Mental Health, “Nearly 40% of adult New Yorkers with serious mental illness did not receive mental health treatment in the past year.” The problem has not been solved, but rather transferred somewhere else in what has been referred to as “transinstitutionalization.”
II. Re-entering the progressive conversation of the 1960s

This thesis references the wave of new ideas for architecture’s response to mental health during the 1960s, based on a new understanding and approach to mental illness in society, with the proposals for Community Mental Health Centers (CMHCs). These facilities formed the architectural basis of the Community Mental Health Act of 1963, which was ultimately never fulfilled, marking the wave of deinstitutionalization and the closing of psychiatric hospitals without these CMHCs in place. Therefore, this thesis picks up where the ball was dropped back then, proposing a new architectural solution based on further research and insight that has since taken place.
III. Architectural issues specific to the mental health typology

The architectural typology of the asylum, based on the Kirkbride model, reflected society’s validation (and, therefore, more serious and humane treatment) of mental illness. However, the actual outcomes and depictions in popular movies have shown the admirable intentions of the Kirkbride model, based on monumental, symbolic, and hierarchical organizations of isolation, failed.
Due to these failures of both tested and proposed architectural solutions, in conjunction with the rise of pharmacology, a major shift in strategy from environmental and architectural treatment to biological treatment has taken place over the last half-century. This has left a “hole” within the field of architecture, leaving space for a new solution to be offered in regards to an architecture designed and built specifically for treating psychopathology.
IV. Mat Building: Strategy and Typology

An approach to architecture that also came out of this radical era of the 1960s was the “mat” building. Mat building involves the minimum organization necessary and a flexible, integrative typology that fosters engagement with the community and surrounding context in which it is located. However, in addition to utilizing the mat strategy, this thesis offers a new sensitivity to a temporal experience of program. The Mat-Collective Community Mental Health Center does not express a hierarchical representation of power, but rather reflects the user’s temporal experience as a result of an investigation of metrics, program, and place.
Institutionalization

Kirkbride Plan - Asylum

Plan: New Jersey Lunatic Asylum, 1847

Deinstitutionalization

Community Mental Health Center

Plan Diagram: CMHC Study, 1967

Mat-Collective

Plan: Venice Hospital, Le Corbusier, Guillermo Julliano de la Fuente, 1964

- Isolated
- Exclusive
- Disengagement

- Dissociation

- Integrated
- Inclusive
- Association
- Engagement
The history of the built environment’s response to treating psychopathology illustrates a discrepancy between intention and effect. Unlike the 19th century era of institutionalization, marked by the monumentality and isolation of old asylums, and, in response to today’s failed aftermath of deinstitutionalization, the Mat building strategy may provide an alternative solution to the successful care and treatment of those afflicted with serious mental illness.

The architecture of a mental health center should not symbolically or stylistically express its institutional nature, as a means of lessening the stigma associated with failed psychiatric hospitals. As Candilis, Josic, and Woods describe in diagramming their Mat project, the Berlin Free University (1964), “The external expression of differences in function and nostalgia for representative form also tend to segregate the [mental health center] into specialized disciplines only.” Therefore, “We seek rather a system giving the minimum organization necessary to an association of disciplines. The specific natures of different functions are accommodated within a general framework which expresses [mental health center].”

Utilizing this approach, the characteristics of Mat building, when applied to the design of a mental health center, may instill the client’s sense of autonomy, while also still maintaining safety and necessary surveillance, based on the seriousness of the client’s condition. It may provide essential flexibility and allow room for growth, accommodating the constant flux of patients coming in and out. The mental health clinic as Mat building may be less oppressive on the site, offering a means of co-habitation of multiple programs, while also providing greater opportunities for public interaction and contextual engagement with the surrounding community.
The institutionalization of mental illness marked the recognition of psychopathology as a valid condition deserving proper, humane care and treatment. This was reflected in the monumental architecture of “asylums,” following the “Kirkbride Plan” design model in the mid-19th century. State hospitals were constructed under this model, based on the tenets of “Moral Treatment,” throughout the United States. They were built in rural areas, away from the pollution and chaotic energy of industrialized, booming city centers, growing larger in scale to accommodate more and more patients. Yet, despite ideal intentions, asylums acquired a negative stigma due to poor conditions, involving overcrowding and inhumane treatment methods, acquiring names such as “madhouse” and “snake pit.”

These issues gained greater attention in the 1960s, which marked a period of newfound concern for and understanding of mental illness. With this societal shift in understanding, came a new design approach reflected in proposed Community Mental Health Center (CMHC) design studies. The Community Mental Health Act (CMHA) of 1963 was enacted, seeking to establish community-based care for the mentally ill through the federally-funded construction of CMHCs across the United States. This progressive thinking in architecture and design was also paralleled in the development of “Mat” building, coined by Alison Smithson.
The resulting period of deinstitutionalization, which saw the closing of state psychiatric hospitals, reduced the asylum population from its peak in 1955 at 558,000 to just 45,000 today.¹ However, the idealized intentions of the CMHA, which marked a societal shift in the understanding and treatment of mental illness towards community-based care, were never fully realized, mainly due to a lack of funding. As a result of the closing of state psychiatric hospitals and the release of patients with nowhere to go, a rise in both prison and homeless populations of those who qualify as mentally ill has taken place. This “transinstitutionalization” has not solved the problem but transferred it somewhere else, out of sight and out of mind.

This thesis aims to pick up where the ball was dropped during this radical period in the 1960s of unfulfilled design strategies for CMHCs, employing the integrated Mat building design approach as a new alternative to mental health architecture in today’s context of even greater understanding in the treatment of mental illness.

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II. Institutionalization and the Evolution of the Asylum Typology
“The Stone Cutter” (The Cure of Folly), Hieronymus Bosch (c. 1450-1516), Museo del Prado, Madrid, Spain
Public Hospital (for Persons of Insane and Disordered Minds), Williamsburg, Virginia, 1770

Considered the first public building in North America devoted to the treatment of the mentally ill.

2 story, brick masonry construction.

Contractor, Benjamin Powell, directed to provide yards for patients to walk and take in air. A fence was placed around the site.

24 patient “cells,” designed for security and isolation.

Building expanded with the adding of a female ward in 1821 and the addition of a third story in 1841. There were 300 patients by 1859, 400 in 1883, and 450 by 1885.
Sanborn Map, Williamsburg, VA, Jan. 1904

(The hospital burned down in 1885 and was replaced by the Eastern State Hospital shown in the map)
Panopticon, Jeremy Bentham, 1791

The Industrial Revolution in England created a wave of new ideas in building, among them Jeremy Bentham’s Panopticon. Bentham boasted of his enlightened architectural idea, writing, “Morals reformed—health preserved—industry invigorated—instruction diffused—public burthens lightened—Economy seated, as it were, upon a rock—the gordian knot of the poor-law not cut, but untied—all by a simple idea in Architecture!”

However, the Panopticon came to be known as a symbol and model for societal control, power, and surveillance. Michel Foucault describes this in Discipline and Punish, stating, “But the Panopticon must not be understood as a dream building: it is the diagram of a mechanism of power reduced to its ideal form.”
(120 foot diameter)

Scale: 1'-0" = 1/16"
New Jersey Lunatic Asylum, Trenton, 1847

The first public mental hospital in the state of New Jersey.

Founded by Dorothea Dix, an advocate and activist for better, more humane treatment of the mentally ill.

Designed utilizing the model of the Kirkbride Plan: (developed by Thomas Story Kirkbride) a linear plan with corridor wings “en echelon” (staggered to allow each wing to receive ample natural light and air). This was based on the philosophy of “Moral Treatment.” The building itself was seen as part of the cure of mental illness.
1/4 mile diameter

Site Plan

Google Earth, Trenton, NJ

Elevation
Scale: 1'-0" = 1/64"

Plan (480 feet long)
Scale: 1'-0" = 1/64"
St. Elizabeth’s Hospital, Washington, D.C., 1852

The first federally operated psychiatric hospital in the U.S.

At one point (in the 1950s), housed over 8,000 patients and employed 4,000 people.

Design guidelines based on the Kirkbride Plan: institutional, imposing, fortress-like, with extensive surrounding grounds.
Greystone, Morristown, New Jersey, 1872

Built to alleviate overcrowding at the New Jersey Lunatic Asylum in Trenton.

First built to house 350 patients, but throughout its multiple expansions it reached a peak of over 7,700 patients, suffering severe overcrowding.

Architect: Samuel Sloan

Design guidelines based on the Kirkbride Plan, separated by wards.
Buffalo State Hospital for the Insane, Buffalo, New York, 1871

Architects: Henry Hobson Richardson and Frederick Law Olmsted (designed the grounds).

Red sandstone and brick construction.

Style: “Romanesque Revival”

Design guidelines based on the Kirkbride Plan.
1. Public Hospital, Williamsburg, Virginia, 1770
2. New Jersey Lunatic Asylum, Trenton, 1847
3. St. Elizabeth’s Hospital, Washington, D.C., 1852
4. Greystone, Morristown, New Jersey, 1872
5. Buffalo State Hospital for the Insane, Buffalo, New York, 1871

Scale: 1'-0" = 1/64"
Overview: Growth of the Asylum Typology

1.

2.

3.

4.

5.

Scale: 1'-0" = 1/256"
Critique

Failure of the Asylum Typology

What does it mean to say that a building does not “work”? 

1. “...if a building, regardless of purpose, collapses because of a poorly designed structure, crushing its inhabitants, pundits agree that the building did not work.”

2. “If a building is designed for a specific purpose, and that purpose can never be fulfilled because of errors in planning, discerning observers might reasonably agree that the building does not work.”

“Given that in the past three decades almost every industrialized country has rejected the confinement of the mentally ill in large-scale buildings, one could argue that linear plan hospitals did not work.”

Buffalo State Hospital, second floor interior corridor, 2008, Christopher Payne, *Asylum: Inside The Closed World Of State Mental Hospitals*
“Linear insane asylums are an extreme case of these changing fortunes over time: considered ideal at the time of their invention, they are now considered nearly useless.”

III. Deinstitutionalization and Community Mental Health Centers
Deinstitutionalization as a Response to Failed Asylums and Mental Health Treatment Practices

1955: Congress passes the Mental Health Study Act
appoints Joint Commission on Mental Illness and Mental Health

1961: Commission on Mental Illness and Mental Health issues report

1963: Community Mental Health Act (CMHA) signed by President John F. Kennedy
provide grants to states for the establishment of local mental health centers, under the National Institute of Mental Health
Community-based care: (alternative to Institutionalization) - starts wave of Deinstitutionalization

(Only half of the proposed centers are built (none are fully funded), and no funding for long-term operation)

1965: Adoption of Medicaid - accelerates Deinstitutionalization

1970s: Under the Reagan administration, the remaining funding for the act is transferred to a mental health block grant for states

Present: Since the passing of the CMHA, 90% of beds devoted to mental health patients have been cut at state hospitals. This has resulted in a dramatic rise in the percent of mentally ill among the nursing home, prison, and homeless populations.
JFK signs the Community Mental Health Act of 1963, photo, Bill Allen, Associated Press
Psychiatric context implies an environment which:

1. maintains the social skills which the patient possesses
2. restores lost or damaged social skills
3. prevents the acquisition of bad or irrelevant habits while in the hospital
4. helps him to develop necessary and relevant new skills

Criteria/Guidelines for Analysis:

<table>
<thead>
<tr>
<th>SITE</th>
<th>ASSESSMENT OF PROBLEM</th>
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<tbody>
<tr>
<td>PROGRAM DATA</td>
<td>Solutions</td>
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<tr>
<td>Existing Mental Health Services</td>
<td>Chronic Patient Experience</td>
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<td>Evaluation of Need</td>
<td>Acute Inpatient Psychiatric Experience</td>
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<tr>
<td>Building Requirements</td>
<td>(Teaching, Research, and Service)</td>
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<tr>
<td>Climatology</td>
<td>Outpatients</td>
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<td>Hospitalization</td>
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<td>Family Study Unit</td>
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<td>Patient Care Unit Teams</td>
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<td>Teaching, Research and Service and the Patient</td>
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A Project Could Involve Construction of a Single Facility for all Essential Elements of Service

A Project Could Involve Construction of a Network of Facilities for all Essential Elements of Service

A Project Could Involve Construction of a Single Element Within a Scattered Network of Services

A Project Could Involve Construction of an Element of Service to an Existing Facility of Service

Diagrams adapted from 1967 CMHC study
CMHC: Architectural Response/Concepts

The Community Mental Health Center is a Bridge between hospital and community, between illness and health.

Those most greatly in need of help require the greatest encouragement to seek help.

Program requirements are bound to change.

The Community Mental Health Center should complement existing services, not replace them.

Mental health requires opportunity for play and relaxation as a counterpoint to the pressures and constrictions of city life.

The mentally healthy individual is not merely free of disease; he is productive and creative.

The Community Mental Health Center should court associations with other productive, social and cultural agencies.
Mental illness does not entirely reside in the individual; a CMHC should treat social problems as well as personal illness.

People who need help need it now.

The program must not be a one track assembly line.

Financing of the CMHC can follow a multiple resource pattern.

There must be no walls between the mental health center and the community.

The Community Mental Health Center should enhance the capacity of people to experience life.

The community and the hospital interpenetrate in the successful Community Mental Health Center.

Planning the form and function of the CMHC demands the teamwork of architects and mental health specialists.

Diagrams adapted from 1967 CMHC study
CMHC: Architectural Response/Concepts

Security vs. Autonomy

“Globally, a third of all patients admitted for psychiatric care are involved in violent incidents.”¹ Violence and aggression is usually a response to stress, and the architectural environment of psychiatric care facilities’ focus on security contributes to patients’ stress, thereby paradoxically making the environment less safe. Increasing a patient’s sense of autonomy and interaction with others reduces stress. The design of the built environment can cater to this by providing shared spaces with moveable furniture, sound-absorbing surfaces to reduce noise, and optimizing the amount of natural light and air in the building.

Gradient: Private to Public (Bed to Community)

Multiple Scales: Individual, Group, Community

Diagram: “Hierarchy of Human Association,” Alison and Peter Smithson

Community Flow
CMHC: Building Design Proposals

Case Study A, CMHC/metro-suburban-rural situation, David A McKinley Jr (AIA), AR Foley (MD), 1967
Case Study F, CMHC/heterogeneous urban situation, William W Caudill (FAIA), Alfred Paul Bay (MD), 1967
In a recent article in the Journal of American Medical Association, titled, “Improving Long-term Psychiatric Care: Bring Back the Asylum,” the authors state, “This was the original meaning of psychiatric “asylum” – a protected place where safety, sanctuary, and long-term care for the mentally ill would be provided.” In today’s failed aftermath of deinstitutionalization, they say, “It is time to build them – again.”

“The asylum population in the US peaked at 558,000 in 1955, and since then a series of moves has reduced the number of patients in state-run mental hospitals to 45,000.”

“Given the doubling of the US population, this represents a 95% decline, bringing the per capita public psychiatric bed count to about the same as it was in 1850—14 per 100,000 people.”

“Approximately 10 million people in the U.S. have a serious mental illness.”

“Between 1998 and 2006, the number of mentally ill people incarcerated in federal, state, and local prisons and jails more than quadrupled to 1,264,300.”

“Since 2006, mental-illness rates in some county jails have increased by another 50 percent.”

“For every $2,000 to $3,000 per year spent on treating the mentally ill, $50,000 is saved on incarceration costs.”

“Prisoners with mental illness cost the nation an average of nearly $9 billion a year.”

“For every $2,000 to $3,000 per year spent on treating the mentally ill, $50,000 is saved on incarceration costs.”

“Severe mental disorders cost the nation $193.2 billion annually in lost earnings.”

Percentages of inmates with mental health problems (as of 2004)

- Federal Prisons: 44.8%
- State Prisons: 56.2%
- Local Jails: 64.2%
Environmental  Biological Treatment

**Antidepressants**
(in millions)

**Antipsychotics**
(in millions)

Source: IMS Health, a healthcare technology and information company
Aftermath of Deinstitutionalization - Statistics

Number of Conditions (officially-recognized disorders) listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM), published by the American Psychiatric Association.

Source: Mental Health Biomedical Research Centre, National Institute for Health Research, U.K.
Global adjustment for patients diagnosed with schizophrenia

Global adjustment is a score that factors symptoms, life adjustment, and work and social functioning. It’s measured on a scale from 1-8. (The lower the score, the better the functioning).

These results represent the scores of schizophrenia patients assessed over a 15 year period by researchers Martin Harrow and Thomas Jobe in the Chicago area, comparing patients both on and not on antipsychotic medication.

These results suggest that those schizophrenia patients who fare better tend to stop taking medication, or that patients who stop taking medication tend to fare better.

Change in states’ spending on mental health (2009-2012)

Up to 30 percent of the homeless population is thought to be seriously mentally ill. This is five times the rate of the general population.
Rates of Institutionalization (per 100,000 adults)

- Prisons and Jails
- Mental Hospitals
- Combined
IV. Mat Building
Case Studies

Centraal Beheer, 1968-72

Ysbanpaad Orphange, 1961

School & Home for HIV Orphans, 2006-7

Venice Hospital, 1964-65
“How to Recognise and Read Mat-Building”
- Alison Smithson, 1974

“Mat-building can be said to epitomise the anonymous collective; where the functions come to enrich the fabric, and the individual gains new freedoms of action through a new and shuffled order, based on interconnection, close-knit patterns of association, and possibilities for growth, diminution, and change.”
The 9m x 9m cellular module allows for flexibility and growth of the program. However, this singular scale results in restrictions within the building as well.
Cellular Modularity - Flexibility

Module: 9m x 9m (29.5 ft)
Ysbaanpad Orphanage, Aldo van Eyck, Amsterdam, 1961

Physical model, aerial photo

Photo, courtyard

Photo from “Team 10: In Search of a Utopia of the Present,” 2005

Built-in furniture within the plan, use of the circle for gathering spaces (social interaction), precedent from Anasazi “kiva” typology. Use of different scales for children and adolescents.
The plan blurs the boundary between interior and exterior space.
School & Home for HIV Orphans, Koji Tsutsui & Associates, Uganda, 2006-7

Separate program connected by interlocking roofscape. System allows for continued expansion and spatial flexibility.
Plan, ground level
Venice Hospital, Le Corbusier, Guillermo Jullian de la Fuente, 1964-65

Photomontage of Venice Hospital over the city. Atelier Jullian, third project, 1966

Model of third level patient cells
“...the psychological aspect of the spirits of the visitor plays a major therapeutic role, by creating around the patient an atmosphere which stimulates his will to live and transforms the hospital, a machine for healing, into a hospital for life.”" - Le Corbusier

**Strategies**

“Horizontal Hospital”

3 Levels:
1. Ground/First Floor - Liaison with the city, includes general services and public access
2. Second Floor - Medical Technology: preventive care, specialties, and rehabilitation
3. Third Floor - Area of hospitalization (individual patient rooms), visitors

Modularity:
2.96 m (~ 10 ft)

3 Scales:
1. Unité Lit (bed unit) and for ambulatory patients
2. La Calle (the street)
3. Campiello (small square) and Le Jardin Suspendu (the hanging garden) “where patients will find all required for their convalescence and progress in their return to society.”

V. Summary of Characteristics
Mat Strategies
Institutionalization
Kirkbride Plan - Asylum

Deinstitutionalization
Community Mental Health Center

Mat-Collective
Plan: Venice Hospital, Le Corbusier, Guillermo Juliano de la Fuente, 1964

Isolated
Exclusive
Disengagement

Dissociation
Integrated
Inclusive
Association
Engagement
“The external expression of differences in function (are these as important as similarities?) and nostalgia for representative form also tend to segregate the university into specialized disciplines only.”

**Dissociation**

“We seek rather a system giving the minimum organization necessary to an association of disciplines. The specific natures of different functions are accommodated within a general framework which expresses university.”

**Association**
Mat-Cohlective - Characteristics

Mat building is...

a “...horizontal weave of programmatic and circulatory elements, a play of solid and voids stabilized within a legible geometric order.”¹

both object and fabric: “Instead of defining a distinct object, mat-building weaves itself into the surrounding context, creating a building that performs like a city, or transforming part of the city into a building.”¹

“antigural, antirepresentational, and antimonumental. Its job is not to articulate or represent specified functions, but rather to create an open field where the fullest range of possible events might take place.”²

“...porous interconnectivity, in which transitional spaces are as important as the nodes they connect. Externally, they are loosely bounded. Their form is governed more by the internal connection of part to part than by any overall geometric figure. They operate as fieldlike assemblages, condensing and redirecting the patterns of urban life, and establishing extended webs of connectivity both internally and externally.”²

Claims for Environmental Performance

1. Mat buildings allow for greater adaptability in the use of space.

2. Mat buildings use land efficiently.

3. Mat buildings are inherently energy conserving.

4. Mat buildings reduce the overall need for transportation.

5. Mat buildings create their own microclimates.

Jourda and Perraudin Architectes, Mont-Cenis Academy, Herne. Envelope ventilation diagram.

“Mat” Response

“Dismantling and reframing programme and composition, mat-building envisaged architecture as a dynamic, flexible armature.”

Having reached the hypothesis that Mat-building is most suitable for mental health architecture, this thesis will analyze the characteristics and strategies that make up the Mat typology and develop, refine, and apply them to a design for a Mat-Collective Community Mental Health Center on Roosevelt Island.

Through the analysis of existing mental health facilities and their programmatic requirements and function, the goal of this thesis is to apply the Mat building typology to this specific program as a means to express the user’s temporal experience.

Mat Building involves 3 compositional principles:

A. Metrics
B. Program
C. Place
A. Metrics

“Moore Neighborhood”

“von Neumann Neighborhood”
Cellular Automata¹

“Cellular automata (CA) are discrete, abstract computational systems...CA are (typically) **spatially and temporally discrete**: they are composed of a finite or denumerable set of homogeneous, simple units, the atoms or cells. At each time unit, the cells instantiate one of a finite set of states. They evolve in parallel at discrete time steps, following state update functions or dynamical transition rules: the update of a cell state obtains by taking into account the states of cells in its local neighborhood.”

“The mark of CA consists in their **displaying complex emergent behavior**.”

“CA are abstract, as they can be specified in purely mathematical terms and implemented in physical structures.”

**Architectural Tr anslation into 3-D Space**

“Application of generative form in 3-D space”

“Responsive Benches - Cellular Automata Based Geometry,”
http://www.l-e-a-d.pro/research/05-iws5/143

The Modulated Grid

“A mat-building is a large-scale, high-density structure organised on the basis of an accurately modulated grid. A first look at any mat-building geometry shows a ground plan in the form of a regular grid that constitutes the general order.”

“Frankfurt, Berlin and Venice have the red and blue series of Le Corbusier’s Modulor in common. In each of the three proposals just a few centimeters provide the starting point for designing buildings hundreds of metres in size.”

“In addition, the Modulor series forms the module which is multiplied in both directions to create all kinds of variations. In Frankfurt, Berlin and Kuwait half modules were also employed. In Venice, there are few complete modules in the plan since most lack a quadrant.”

“The formal construction of the Venice Hospital starts with consecutive additions: several “Unités de Lit” or bed modules (based on a module of 2.96m, a Modulor dimension) combine with several service rooms to form a “Unité de Soins,” or treatment module. Four Unités de Soins and the respective corridors constitute a “Unité de Bâtisse;” and finally, the hospital consists of a specific number of Unités de Bâtisse, square rooms about 60m along each side. Le Corbusier uses a completely different procedure to form a size very similar to the one used by his colleagues in Berlin.”

“Finally, the analysis of the underlying patterns in each case study revealed a complex grid of strips forming a tartan-like fabric. Each strip can be understood to be a widened grid line that houses a set of specific functions. This purpose-built grid is simply a framework or fixed base upon which a volume may (or may not) be built. It is precisely this ambiguity that enables compositional flexibility resulting in stratified and profusely perforated buildings.”

B. Program
Mat-Collective Community Mental Health Center (CMHC)
**Programming: List**

**3 Scales:**

**1. Community (Public)**

![Diagram showing the relationship between individual (private) space, group space, and community (public) space]

<table>
<thead>
<tr>
<th>Community Amenities</th>
<th>Administration/Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day Care</td>
<td>Reception</td>
</tr>
<tr>
<td>Convenience Store</td>
<td>Director’s Office</td>
</tr>
<tr>
<td>Media Center (Forum) for meetings/research presentation/film/music</td>
<td>Billing Office</td>
</tr>
<tr>
<td>Ferry Terminal</td>
<td>Psychiatrist Offices</td>
</tr>
<tr>
<td>Library</td>
<td>Storage</td>
</tr>
<tr>
<td>Public Restrooms</td>
<td>Janitor’s Closet (J.C.)</td>
</tr>
<tr>
<td>Shipping/Loading Area</td>
<td>I.T. Room</td>
</tr>
<tr>
<td>Trash Area</td>
<td>Laundry</td>
</tr>
<tr>
<td>Parking</td>
<td>Social Counseling (Social Work)</td>
</tr>
<tr>
<td>Outdoor Spaces (Park/Recreation)</td>
<td></td>
</tr>
</tbody>
</table>

**Educational**

Research Labs - Affiliated with Cornell University (connection with new Tech Campus) - Psychology, Environmental Psychology, Sociology, Psychiatry
2. Group (Semi-Public)

Group/Gathering

- Art Room
- Music Room
- Small Library
- Group Meeting - Conference
- Recreation Room
- Fitness Center/Gym
- Storage
- Kitchen
- Dining
- Restrooms

3. Individual (Private)

Individual

- Exam Rooms
- Nurse Stations
- Individual Patient Rooms (include private restrooms, patios/shared courtyards)
**Programming:** Translating Corbusier’s Modular Module - Building Block

Venice Hospital - Bed Unit Module

---

**Module - Building Block**

- Dimensions:
  - Width: 2.75 m
  - Length: 2.96 m
  - Bed: 1.83 m x 1.13 m
  - Other: 1.35 m x 1.40 m

---

**SUMMARY OF CHARACTERISTICS AND MAT STRATEGIES**
Bed Unit (Individual Space): 9’ x 10’ = 90 sf

Small Group Space: (= 5 bed units) 20’ x 22.5’ = 450 sf

Large Group Space: (= 8 bed units) 24’ x 30’ = 720 sf

Recreational Space: (= 40 bed units) 60’ x 60’ = 3,600 sf

Treatment Unit: 75’ x 75’ = 5,625 sf

Building Unit: 200’ x 200’ = 40,000 sf

SCALE: 1’ = 1/64”
Mat-Collective: Community Mental Health Center, Roosevelt Island, NY

Program Relationship

SUMMARY
Ground Level (Public) - Community Amenities

Day Care  
NSF Total: 3,600 sf

Convenience Store  
NSF Total: 3,600 sf

Media Center  
NSF Total: 5,625 sf

Ferry Terminal  
NSF Total: 5,625 sf

Library  
NSF Total: 5,625 sf

Total Program Area - Ground Level (not including circulation, toilets and mechanical):
<table>
<thead>
<tr>
<th>Area</th>
<th>NSF Total</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Restrooms</td>
<td>Per Code.</td>
<td></td>
</tr>
<tr>
<td>Shipping/Loading Area</td>
<td>720 sf</td>
<td>[ ]</td>
</tr>
<tr>
<td>Trash Area</td>
<td>720 sf</td>
<td>[ ]</td>
</tr>
<tr>
<td>Parking</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>Outdoor Spaces</td>
<td>TBD</td>
<td></td>
</tr>
</tbody>
</table>

+/- 25,515 net sf
### SUMMARY

**Level 1 (Public) - Administration/Service, Education**

<table>
<thead>
<tr>
<th>Room</th>
<th>NSF Total:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception</td>
<td>720 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>Billing Office</td>
<td>720 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>Storage</td>
<td>720 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>Janitor’s Closet</td>
<td>4 @ 90 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>I.T. Room</td>
<td>720 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>Laundry</td>
<td>3,600 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>Social Counseling</td>
<td>4 @ 90 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>Director’s Office</td>
<td>450 sf</td>
<td>![Icon]</td>
</tr>
<tr>
<td>Psychiatrist Offices</td>
<td>2 @ 90 sf</td>
<td>![Icon]</td>
</tr>
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</table>

**Total Program Area - Level 1 (not including circulation, toilets and mechanical):**

13,680 net sf
<table>
<thead>
<tr>
<th>Room Type</th>
<th>NSF Total</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapist/Counselor Offices</td>
<td>10 @ 90 sf</td>
<td></td>
</tr>
<tr>
<td>Doctor Offices</td>
<td>2 @ 90 sf</td>
<td></td>
</tr>
<tr>
<td>Secretary Office</td>
<td>450 sf</td>
<td></td>
</tr>
<tr>
<td>Staff Room</td>
<td>720 sf</td>
<td></td>
</tr>
<tr>
<td>Guard Work Room</td>
<td>720 sf</td>
<td></td>
</tr>
<tr>
<td>Private/Public Restrooms</td>
<td>Per code.</td>
<td></td>
</tr>
<tr>
<td>Research Labs</td>
<td>4 @ 720 sf</td>
<td></td>
</tr>
</tbody>
</table>

+/- 13,680 net sf
**Mat-Collective: Community Mental Health Center, Roosevelt Island, NY**

**Program Relationship**

**SUMMARY**

Level 2 (Semi-Public)

<table>
<thead>
<tr>
<th>Room</th>
<th>NSF Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Art Room</strong></td>
<td>720 sf</td>
<td><img src="image" alt="Art Room" /></td>
</tr>
<tr>
<td><strong>Music Room</strong></td>
<td>720 sf</td>
<td><img src="image" alt="Music Room" /></td>
</tr>
<tr>
<td><strong>Small Library</strong></td>
<td>3,600 sf</td>
<td><img src="image" alt="Small Library" /></td>
</tr>
<tr>
<td><strong>Group Meeting</strong></td>
<td>10 @ 720 sf</td>
<td><img src="image" alt="Group Meeting" /></td>
</tr>
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</table>

**Total Program Area - Level 2 (not including circulation, toilets and mechanical):**

Total: 10 @ 450 sf
<table>
<thead>
<tr>
<th>Room Type</th>
<th>NSF Total</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation Room</td>
<td>3,600 sf</td>
<td></td>
</tr>
<tr>
<td>Fitness Center/Gym</td>
<td>720 sf</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>4 @ 90 sf</td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td>720 sf</td>
<td></td>
</tr>
<tr>
<td>Dining</td>
<td>3,600 sf</td>
<td></td>
</tr>
<tr>
<td>Restrooms</td>
<td>Per Code.</td>
<td></td>
</tr>
</tbody>
</table>

+/- 25,740 net sf
Mat-Collective: Community Mental Health Center, Roosevelt Island, NY

Program Relationship

**SUMMARY**

Level 3 (Private)

**Exam Rooms**
- NSF Total: 10 @ 90 sf

**Nurse Stations**
- NSF Total: 10 @ 180 sf

**Patient Rooms**
- NSF Total: 200 @ 90 sf

---

Total Program Area - Level 3 (not including circulation, toilets and mechanical):

---

Total Program Area (not including circulation, toilets and mechanical):

Total Building Area:
+/- 20,700 net sf

+/- 85,635 net sf

+/- 114,000 gross sf
Mat-Collective: Community Mental Health Center, Roosevelt Island, NY

Program Relationship

SCALE: 1’ = 1/64”

Ground Level (Public - Community Amenities)  Level 1 (Public - Admin./Service)

Level 2 (Semi-Public - Group/Gathering)  Level 3 (Private - Individual Patient Rooms)
C. Place

VI. Proposed Site - Roosevelt Island, NYC
“The Island Nobody Knows,” Cover Image, MoMA Exhibition, 1969
“Over the years, this bit of land just two miles long and 600 yards wide has served as a proving ground to test civic-minded and architectural ideas proposed in a spirit of experimentation. A quirky scrap of the city, Roosevelt Island boasts such amenities as an underground pneumatic tube system for transporting garbage and the first commissioned aerial tramway in the United States. In the 19th century, the island was home to an insane asylum, an almshouse, a prison, a charity hospital, and a smallpox hospital—warehouses for the human unwanted, kept safely segregated from the rest of the population by the treacherous currents of the East River.”

- Angela Riechers, archpaper.com, July 2012
History of Development - Roosevelt Island Evolution

Colonialism

Minnahanonck ("It’s nice to be here," “Long Island”), Canarsie Tribe

Varcken Eylandt (Hog Island), 1637
The Dutch raise hogs on the island

Manning’s Island, 1666
British take control

Blackwell’s Island, 1686

Manning’s son-in-law, Robert Blackwell, becomes owner

City of New York buys Blackwell’s Island, 1828
Welfare Island, 1921

NY State’s Urban Development Corporation (UDC) takes a 99-year lease of the island, 1969

Johnson-Burgee Plan (Unfinished), 1969-1970s

Roosevelt Island, 2015 (present)

Roosevelt Island, 1973

Roosevelt Island, Cornell Tech Campus, 2017
Map, 1879: Figure/Ground, Comparison of Scales - Central Park and Blackwells Island (now Roosevelt Island)
Rem Koolhaas, Zoe Zenghelis
New Welfare Island Project, 1975-76

“Rem Koolhaas, German Martinez, and Richard Perlmutter designed New Welfare Island for the south end of Roosevelt Island (once known as Welfare Island). This theoretical project extended Manhattan's grid, in this case between Fiftieth and Fifty-ninth streets, onto the island, in a manner similar to that used for Koolhaas's and Zenghelis's Roosevelt Island Redevelopment competition entry. Each newly created lot was intended to support competing structures—formally, ideologically, and programmatically—corresponding to what they viewed as Manhattan's dominant characteristic. Just north of the "travelator," a moving pavement extending to the rivers, is a convention center. To its south, amid vacant lots reserved for future use, are Kazimir Malevich's "Architecton," an interior harbor housing a 1932 Norman Bel Geddes yacht, and a "Chinese" swimming pool. The New Welfare Hotel, a city within a city, which looks toward Manhattan, is situated at the bottom of the island."

“At the top of the aerial view, the Queensboro Bridge passes through a convention center, a monumental gateway to Manhattan. Farther south, a tecton—a Suprematist device from the work of Kasimir Malevich—hovers over a streamlined Art Deco yacht designed in 1932 by Norman Bel Geddes. At the island's tip the six towers of the New Welfare Hotel rise up opposite a wandering fragment of Manhattan that includes Rockefeller Center and Times Square (including the proposed Sphinx Hotel, designed by Elia and Zoe Zenghelis). The New Welfare Hotel, designed by Koolhaas, Perlmutter, and Derrick Snare, is separately rendered in the third drawing; it is a center for dancing, dining, and general urban pleasure. Overall, Koolhaas writes, the Roosevelt Island project is intended as a visual interpretation and resuscitation of some of the themes that made Manhattan's architecture unique; its ability to fuse the popular with the metaphysical, the commercial with the sublime, the refined with the primitive.”

(MoMA), Rem Koolhaas, Zoe Zenghelis, New Welfare Island Project, Roosevelt Island, New York, NY, Aerial perspective, c. 1975-76
FEMA Flood Zone - Roosevelt Island
Usable island footprint, taking into account future flooding
Possible Sites

Taking into consideration FEMA’s study of future floodplains in conjunction with rising sea levels, Roosevelt Island is left with a much smaller buildable footprint. Therefore, site selection for the Mat-Collective Community Mental Health Center will be based on areas not at risk.

Extending Manhattan’s Grid

*Delirious New York*, Rem Koolhaas, 1978:

Mat view:

“The Grid’s two-dimensional discipline also creates undreamt-of freedom for three-dimensional anarchy. The Grid defines a new balance between control and de-control in which the city can be at the same time ordered and fluid, a metropolis of rigid chaos.”

---

Possible Sites - Open Spaces
ROOSEVELT BRIDGE
MANHATTAN PARK
OCTAGON FIELD
LIGHTHOUSE PARK
CAMPOBIANCO FIELD
PONY FIELD
COMMUNITY GARDEN
MANHATTAN
QUEENS
Site Location

The Mat-Collective CMHC will be located within the “safe zone” on Southpoint Park, directly southwest of Cornell’s proposed tech campus. This site provides the opportunity for direct interaction and engagement within an active urban fabric. In association with Cornell, the building will provide educational support as a testing ground for research.
Infrastructure: Transit

Proposed Ferry Terminal

A ferry terminal will provide infrastructural support for the Mat-Collective CMHC, while also integrating the larger NYC community, fostering public engagement and interaction directly on the site.
VII. User Focus: Spatial Scopes
Mental Illness Spectrum
Based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)

Least Severe

Personality disorders
Paraphilic disorders
Neurocognitive disorders
Substance-related and addictive disorders
Disruptive, impulse-control, and conduct disorders
Gender dysphoria
Sexual dysfunctions
Sleep–wake disorders
Feeding and eating disorders
Somatic symptom and related disorders
Dissociative disorders
Trauma- and stressor-related disorders
Obsessive-compulsive and related disorders
Anxiety disorders
Depressive disorders
Bipolar and related disorders
Schizophrenia spectrum and other psychotic disorders

Most Severe
Spatial Scope/Activity: Institutionalized Patient

Perspective Vignettes: Film Stills from One Flew Over the Cuckoo’s Nest (1975) and Girl, Interrupted (1999)

New Jersey Lunatic Asylum, Trenton, 1847 (partial plan)

Plans

Movement

Activity/Daily Routine

Level of Activity

Emotional State/Brain Activity/Awareness Level

Time (hours)
Spatial Scope/Activity: Institutionalized Patient

Kirkbride Model Characteristics:

Validated mental illness:
- expressed through the monumentality of the institutional, Victorian-era architecture of the asylum
- Intention: humane treatment, new therapeutic treatments, generate changes in public perception of mental illness (reduce stigma)

- Kirkbride Plan:
  - based on tenets of “Moral Treatment”
  - Linear plan
  - Central administration building flanked by two wings made up of tiered wards
  - hierarchical segregation of residents according to sex and symptoms of illness
  - Each wing subdivided by ward
  - more “excited” patients placed on lower floors, farthest from the central administrative structure
  - better behaved, more rational patients situated in the upper floors and closer to the administrative center
  - seclusion from suspected causes of illness
    - patients’ asylum experience more comfortable and productive by isolating them from other patients with illnesses antagonistic to their own while still allowing fresh air, natural light, and views of the asylum grounds from all sides of each ward
    - place patients in a more natural environment away from the pollutants and hectic energy of urban centers
  - Extensive grounds with cultivated parks and farmland
    - Landscaped parks served to both stimulate and calm patients’ minds with natural beauty
  - Farmland served to make the asylum more self-sufficient by providing readily available food and other farm products at a minimal cost to the state
    - Patients were encouraged to help work the farms and keep the grounds
      - structured occupation was meant to provide a sense of purpose and responsibility which, it was believed, would help regulate the mind as well as improve physical fitness
    - Patients encouraged to take part in recreations, games, and entertainments which would also engage their minds
Kirkbride Model
New Jersey Lunatic Asylum, Trenton, 1847

SPATIAL SCOPE
## Spatial Scope/Activity: Ideal - Mat-Collective CMHC

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECURITY</td>
<td>1-2-3-4-5-6-7-8-9-10-11-12</td>
</tr>
<tr>
<td>SECURITY</td>
<td></td>
</tr>
<tr>
<td>SECURITY</td>
<td></td>
</tr>
<tr>
<td>SECURITY</td>
<td></td>
</tr>
<tr>
<td>SECURITY</td>
<td></td>
</tr>
<tr>
<td>RESEARCH</td>
<td></td>
</tr>
<tr>
<td>OUTING</td>
<td></td>
</tr>
<tr>
<td>FITNESS</td>
<td></td>
</tr>
<tr>
<td>FITNESS</td>
<td></td>
</tr>
<tr>
<td>ART</td>
<td></td>
</tr>
<tr>
<td>ENTERTAINMENT</td>
<td></td>
</tr>
<tr>
<td>MUSIC</td>
<td></td>
</tr>
<tr>
<td>EAT</td>
<td></td>
</tr>
<tr>
<td>THERAPY</td>
<td></td>
</tr>
<tr>
<td>SLEEP</td>
<td></td>
</tr>
<tr>
<td>SLEEP</td>
<td></td>
</tr>
<tr>
<td>SLEEP</td>
<td></td>
</tr>
</tbody>
</table>

*Note: The grid represents the ideal daily activity schedule for Mat-Collective CMHC.*
1/4 mile diameter

Institutionalized Patient

Film Still: *One Flew Over the Cuckoo’s Nest*, 1975

Deinstitutionalized Patient

Plan Diagram: CMHC project proposal study

Mat-Collective Patient

Candilis, Josic, Woods – Berlin Free University sketch, 1964

Site Plan: New Jersey Lunatic Asylum, Trenton, NJ

Site Plan: CMHC project proposal study

Site Plan: Venice Hospital, 1964
Psychiatrist’s Perspective: Daily Routine

Ferry Terminal [7:22 am]
CMHC Entrance [7:25 am]
Patient Counseling Session [8:00 am]
Meeting [10:00 am]
1. Inpatient, Schizophrenia (high-risk)

The high-risk patient has access within a specific zone of the building with a higher level of security. In accordance with his treatment, he is slowly granted access to other areas of the center.

2. Inpatient, Bipolar Disorder (low risk)

A patient determined low-risk, after evaluation, is permitted access to all spaces designated for patient use under supervision, including those outdoors.
3. Outpatient, Major Depressive Disorder (MDD), released from inpatient treatment a week ago

An outpatient, recently admitted from the center, is now back in his parent’s home, a few miles from the center. He comes back for counseling/therapy sessions twice a week.

4. Outpatient, Bipolar Disorder, released from inpatient treatment two years ago

An outpatient, admitted from the center two years ago, has been living in his own apartment, five miles from the center. He now comes for counseling/therapy sessions once a month to check in.
VIII. Precedents
“How does one combine the efficiency of a central organization with the freedom and autonomy of a decentralized complex? The hospital needs to allow control and protection while maintaining a free and open atmosphere. In terms of function it should be a logistically optimized hospital, but in terms of experience it is anything but a hospital.”
- JDS Architects

Balance of Contradictions:
Decentralized/Centralized
Freedom/Control
Openness/Closure
Privacy/Sociability
Planning Strategy

Plan diagrams, BIG Architects

Photos, JDS Architects
Worcester Recovery Center and Hospital, Ellen Zweig Associates, Inc. and Architecture+, Worcester, MA, opened 2012

Plan diagrams, Architecture+
Planning Strategy

01 MAJOR PROGRAM ELEMENTS

02 MAJOR PROGRAM ELEMENTS

INHERENT NATURE
Syracuse Behavioral Healthcare - Mental Health Clinic
329 N Salina St, Syracuse, NY

Exterior south facade, photo by author

Building Tour (November 10, 2015): Bill Ruckyj, Director of Operations; Kathi Meadows, Outpatient Service Director
Group meeting room, evaluation, photo by author

Second floor, admin. offices, photo by author

First floor plan, Associated Architects - Syracuse, provided by SBH
Patient Room Precedent
La Certosa del Galluzzo, Florence, Italy

This figure-ground diagram illustrates the covered/enclosed spaces vs. the open spaces in the plan. The interlocking program juxtaposes private and public space at multiple scales, forming a microcosm of a city. It provides a balance of spontaneous moments for gathering and interaction with moments of isolation and privacy.

This planning strategy may be translated within the Mat-Collective CMHC building, which is also a type of city as building, allowing for necessary social engagement at multiple scales, in balance with both open and closed spaces.

Le Corbusier drew inspiration from the individual monk cells of this monastery for his new housing solution. This housing prototype may also serve well as precedent for the individual patient rooms within the center.
Le Corbusier’s sketch of a monk cell in the Certosa del Galluzzo

Aerial photo, G.A. Rossi
“OMA’s Nexus World in Fukuoka, Japan, offers a very convincing example of a constructed housing mat. In this case, the site is split into two blocks, each with a defined perimeter. Parking and public space is integrated into the ground floor, along with access to the living spaces above. Instead of penetrating the site progressively from the exterior, residents reach their apartments by passing to the interior and then up through a porous fabric of courtyards and patios. Out of a fundamentally regular system (buildable, rational), a high degree of variation is achieved through local adjustment, and through the activation of void spaces within the fixed fabric.”

Plan drawing, diagram illustrating circulation from the street and up into the individual housing units. The building is open at the ground level, filtering the pedestrian in and up into the private residences.

Plan - second level, individual housing units (six variations). Juxtaposition and balance of both open and closed spaces.

Section diagram highlighting the flow of natural light.
IX. Bibliography
REFERENCES


Smithson, Alison. “How to Recognise and Read Mat-Building,” Architectural Design (AD), September 1974.


X. Appendix
### Severe Mental Illness/Serious Emotional Disturbance Status by Program Category

<table>
<thead>
<tr>
<th>Program Category</th>
<th>Total Clients*</th>
<th>SMI/SED</th>
<th>Not SMI/SED</th>
<th>Unknown</th>
</tr>
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<tbody>
<tr>
<td>Total</td>
<td>180,204</td>
<td>146,734</td>
<td>33,470</td>
<td>0</td>
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<tr>
<td>Emergency</td>
<td>4,260</td>
<td>3,288</td>
<td>972</td>
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<tr>
<td>CPEP Crisis Beds</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>0</td>
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<tr>
<td>CPEP Crisis Intervention</td>
<td>2,022</td>
<td>1,599</td>
<td>423</td>
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<tr>
<td>CPEP Crisis Outreach</td>
<td>165</td>
<td>136</td>
<td>29</td>
<td>0</td>
</tr>
<tr>
<td>CPEP Extended Observation Beds</td>
<td>93</td>
<td>82</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Crisis Intervention</td>
<td>1,693</td>
<td>1,260</td>
<td>433</td>
<td>0</td>
</tr>
<tr>
<td>Crisis Residence</td>
<td>26</td>
<td>22</td>
<td>4</td>
<td>0</td>
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<tr>
<td>Crisis/Respite Beds</td>
<td>219</td>
<td>158</td>
<td>61</td>
<td>0</td>
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<tr>
<td>Home Based Crisis Intervention</td>
<td>146</td>
<td>123</td>
<td>23</td>
<td>0</td>
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<tr>
<td>Inpatient</td>
<td>11,433</td>
<td>11,110</td>
<td>323</td>
<td>0</td>
</tr>
<tr>
<td>Outpatient</td>
<td>123,762</td>
<td>98,053</td>
<td>25,709</td>
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<tr>
<td>Residential</td>
<td>31,780</td>
<td>31,298</td>
<td>482</td>
<td>0</td>
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<td>Support</td>
<td>34,637</td>
<td>28,523</td>
<td>6,114</td>
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</table>

Statistics provided by the New York State Office of Mental Health (OMH)
### Clients Served By Program Category By Age Group

<table>
<thead>
<tr>
<th>Program Category</th>
<th>Total Clients*</th>
<th>Below 18</th>
<th>18-64</th>
<th>65 And Above</th>
</tr>
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<tbody>
<tr>
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<td>180,204</td>
<td>35,704</td>
<td>130,377</td>
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</tr>
<tr>
<td>Emergency</td>
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<td>841</td>
<td>3,246</td>
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<tr>
<td>CPEP Crisis Beds</td>
<td>7</td>
<td>0</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>CPEP Crisis Intervention</td>
<td>2,022</td>
<td>366</td>
<td>1,580</td>
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<tr>
<td>CPEP Crisis Outreach</td>
<td>165</td>
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<tr>
<td>CPEP Extended Observation Beds</td>
<td>93</td>
<td>5</td>
<td>81</td>
<td>7</td>
</tr>
<tr>
<td>Crisis Intervention</td>
<td>1,693</td>
<td>298</td>
<td>1,315</td>
<td>79</td>
</tr>
<tr>
<td>Crisis Residence</td>
<td>26</td>
<td>26</td>
<td>0</td>
<td>0</td>
</tr>
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<td>219</td>
<td>4</td>
<td>210</td>
<td>5</td>
</tr>
<tr>
<td>Home Based Crisis Intervention</td>
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<td>145</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Inpatient</td>
<td>11,433</td>
<td>1,770</td>
<td>8,514</td>
<td>1,146</td>
</tr>
<tr>
<td>Outpatient</td>
<td>123,762</td>
<td>29,666</td>
<td>85,062</td>
<td>9,021</td>
</tr>
<tr>
<td>Residential</td>
<td>31,780</td>
<td>297</td>
<td>28,812</td>
<td>2,667</td>
</tr>
<tr>
<td>Support</td>
<td>34,637</td>
<td>5,597</td>
<td>26,498</td>
<td>2,527</td>
</tr>
</tbody>
</table>

![Bar Chart](chart.png)
# New York State: Mental Health Demographics

## Clients Served by Program Category by Race/Ethnicity

<table>
<thead>
<tr>
<th>Program Category</th>
<th>Total Clients</th>
<th>Race/ Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>White</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180,204</strong></td>
<td>80,747</td>
</tr>
<tr>
<td>Emergency</td>
<td><strong>4,260</strong></td>
<td>1,688</td>
</tr>
<tr>
<td>CPEP Crisis Beds</td>
<td><strong>7</strong></td>
<td>1</td>
</tr>
<tr>
<td>CPEP Crisis Intervention</td>
<td><strong>2,022</strong></td>
<td>719</td>
</tr>
<tr>
<td>CPEP Crisis Outreach</td>
<td><strong>165</strong></td>
<td>57</td>
</tr>
<tr>
<td>CPEP Extended Observation Beds</td>
<td><strong>93</strong></td>
<td>36</td>
</tr>
<tr>
<td>Crisis Intervention</td>
<td><strong>1,693</strong></td>
<td>775</td>
</tr>
<tr>
<td>Crisis Residence</td>
<td><strong>26</strong></td>
<td>11</td>
</tr>
<tr>
<td>Crisis/Respite Beds</td>
<td><strong>219</strong></td>
<td>85</td>
</tr>
<tr>
<td>Home Based Crisis Intervention</td>
<td><strong>146</strong></td>
<td>47</td>
</tr>
<tr>
<td><strong>Inpatient</strong></td>
<td><strong>11,433</strong></td>
<td>5,282</td>
</tr>
<tr>
<td><strong>Outpatient</strong></td>
<td><strong>123,762</strong></td>
<td>55,696</td>
</tr>
<tr>
<td><strong>Residential</strong></td>
<td><strong>31,780</strong></td>
<td>13,301</td>
</tr>
<tr>
<td><strong>Support</strong></td>
<td><strong>34,637</strong></td>
<td>16,781</td>
</tr>
</tbody>
</table>

Statistics provided by the New York State Office of Mental Health (OMH)
New York City: Mental Health Demographics

Prevalence of serious mental illness (SMI) among adult New Yorkers

Source: 2012 NYC Community Mental Health Survey

Prevalence of chronic physical health problems and unhealthy behaviors by serious mental illness (SMI), NYC 2012

Source: 2012 NYC Community Mental Health Survey
Prevalence of past-year mental health treatment among adults with serious mental illness (SMI), NYC 2012

Source: 2012 NYC Community Mental Health Survey

Numbers do not add up to 100% due to rounding

- No medication or counseling: 39%
- Medication only: 14%
- Counseling only: 15%
- Medication and counseling: 30%
- In treatment, category unknown: 1%

Statistics provided by the New York State Office of Mental Health (OMH)
Nearly 40% of adult New Yorkers with serious mental illness did not receive mental health treatment in the past year.

Adult New Yorkers with SMI were more than twice as likely to report fair or poor general health as those without SMI (43% vs. 20%).