Schizophrenic Architecture
SCHIZOPHRENIA

WHAT IS IT?

A chronic brain disorder affecting millions of people worldwide. It describes a scattered or fragmented pattern of thinking. It is actually a SYNDROME, so there are a lot of symptoms associated with it, and as a result, different patients may experience different symptoms.

Photo Credit: Image adapted from 3DMedical redrawn by Krystol Austin, Assoc. AIA
**SYNDROME**

1. **PRODROMAL**
   - Withdrawal
   - Negative Psychotic Symptoms
   - Like a decrease in motivation or flattened affect

2. **ACTIVE**
   - Severe Symptoms
   - Positive Psychotic Symptoms
   - Such as Delusions & Hallucinations

3. **RESIDUAL**
   - Poor Concentration
   - Cognitive Psychotic Symptoms
   - Difficulty maintaining attention & memory

**THE PHASES**

The cyclic symptoms of schizophrenia and their phases demonstrated. They mostly follow this order, but sometimes may also vary.

**PSYCHOSOCIAL REHABILITATION**

1. **MEDICATION**

2. **SLEEP | RETREAT**

3. **THERAPY**

4. **WORK | VOCATIONAL**

5. **FAMILY | COMMUNITY**

**STRUCTURE | CULTURE**

A holistic approach designed to help people with chronic mental health disease. The goal of psychosocial rehabilitation is to teach emotional, cognitive, and social skills to help those diagnosed with schizophrenia to reintegrate into their communities.
THE DOPAMINE HYPOTHESIS
THE COMMON PATHWAY TO DYSFUNCTION

Dopamine is a neurotransmitter made in the brain, it acts as a chemical messenger between neurons to control our movement, feelings and emotions which may affect our motivation to repeat or enact certain behaviors just to name a few. In patients with schizophrenia, many studies have shown that dopamine in overactive or underactive quantities can trigger its development or onset.

NEGATIVE SYMPTOMS

Mesocortical Pathway

Over-activity of the Mesocortical pathway induces Negative & Cognitve Symptoms when there is decreased D1 receptor stimulation

Aim of Treatment:
INCREASE
Dopamine Nuerotransmission

POSITIVE SYMPTOMS

Mesolimbic Pathway

Over-activity in the Mesolimbic Pathway induces Positive Symptoms of Schizophrenia when there is increased D2 receptor stimulation

Aim of Treatment:
SLOW DOWN
Dopamine Nuerotransmission

Photo Credit: Image Adapted from (2016), Neurainflammation in Schizophrenia: A Critical Review and The Future. Illustration redrawn by Krystol Austin, Assoc. AIA

Ideal treatment regimen should increase stimulation in the Mesocortical Pathway while decreasing the activation of Mesolimbic Pathway.
URBANISM X SCHIZOPHRENIA

It's common sense that a "manufactured" environment would affect our psychological wellbeing, and while the pathology of schizophrenia is formally unknown, it's been well documented since the 1900's that urbanism is the locus of the schizophrenic epidemic. To many, this provides evidence that cities are universally bad for our mental health (Bell 2016).

The effect of architecture and urbanicity on our phenomenological experiences are often casually overlooked as causal factors as opposed to the actual genesis of it. With rapid urbanization comes a decrease in socialization and human contact with nature.

This brings about questions on the role architecture plays in our mental health, while the link between these two are becoming clearer. Literature on Schizophrenia and the unsavory effects of poor city living are typically found separately.
As a profession, we should be deeply concerned about what is happening to the human psyche when such a deep defining part of our evolutionary experience is being rapidly diminished. (Gullone, 2000). This challenge calls for us to not only document, but re-engineer the way we think about living.

For my thesis proposal Schizophrenic Architecture, I pro-port to stand in the gap between the two [architects and psychologists]. Rurality has more to offer than its trans-locality to urbanism; biophilic design should be made a necessary component of architecture. For me:

“It’s no longer about nature’s place in human society, but humanity’s place in nature and the intrinsic benefits that can have in preserving and maintaining our mental health.”
OBJECTIVE
THESIS PROPOSITION

SCHIZOPHRENIC ARCHITECTURE

As such, this thesis aims to develop a biophilic design series of prototypes for the treatment, management, or prevention of Schizophrenia through the architectonics of Forest Therapy.

"An Ecological Hypothesis for a New Mental Ecosystem"

DISCLAIMER

Once Triggered Schizophrenia requires consistent treatment and lifelong medication, however, this thesis is proposing to reduce the amount of medication required for an existing prognosis.

Simultaneously, it aims to prevent the development of the disease in psychologically healthy individuals living in urban conditions.
Due to the fact that the natural environment has shaped our cognitive and emotional apparatus, it may be possible to naturally relegate dopamine levels in persons with Schizophrenia without the use of medication.

Nature when made in reference to this thesis will always focus on the environmental considerations of a Forest.

The 14 Patterns of Biophilic Design (Terrapin Bright Green, 2014) is an existing outline for improving mental health and well being. By intersecting this knowledge with identified research on schizophrenia, a design toolkit for this disease was established.
**CRITERIA OF EVALUATION**

**BIOPHILIA, SCHIZOPHRENIA & FOREST THERAPY**

**VISUAL CONNECTION TO NATURE**

**NON - VISUAL CONNECTIONS**

**LIGHT**

The view of nature through natural light is critical to our psyche. Not only is it essential to perceive and then to evaluate our surroundings, but it lowers blood pressure, increases cognitive performance and regulates sleep. (Terrapin Bright Green, 2014)

**SOUND**

Auditory, haptic, or olfactory stimuli engender a deliberate and positive reference to nature, its living systems and natural processes. Nature’s sounds can reduce blood pressure and stress hormones, which improves our feelings and positively impacts our cognitive functions (Terrapin Bright Green, 2014)
**Criteria of Evaluation**

**Biophilia, Schizophrenia & Forest Therapy**

**Thermal Control & Airflow**

**Fractals | Biomorphic Forms**

**Wind**

Subtle changes in air temperature, relative humidity, airflow across the skin, creates ideal areas for place-making through improved perceptions of temporal and spatial pleasure (Terrapin Bright Green, 2014)

**Golden Ratio**

An infinite complex series of patterns, symbolic references to contoured, patterned, textured or numerical arrangements that persist in nature are called fractals. The ability to perceive something as infinite as a forest, lowers avolition and improves depressive moods.
**CRITERIA OF EVALUATION**

**BIOPHILIA, SCHIZOPHRENIA & FOREST THERAPY**

**RAISE OR ELEVATE**

**PROSPECT OR VIEWS**

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**HEIGHT**

Freshest most purified air is found at the top or highest points of nature. Viewing nature at high altitudes rejuvenates the body and lowers consistent negative feelings and emotions.

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**TRANQUILITY**

When a patient is in a vulnerable state and uncomfortable in his/her surroundings, a savanna landscape overhead, open, elevated or distant views can offer a sense of calm, safety and control. It also reduces boredom, irritation and fatigue. This is known formerly known as the Biophilic Prospect Pattern. (Yu, 2016)
Central Question: What are the Architectonics of Forest Therapy?

CRITERIA OF EVALUATION
BIOPHILIA, SCHIZOPHRENIA & FOREST THERAPY

MATERIAL CONNECTION

WATER THERAPY

WIND
Material connects with nature, barefoot, hand or otherwise feels grounding and gives a general sense of shelter and safety. This is of particular importance to the Paranoid Version of Schizophrenia. This largely reduces negative psychotic effects while improving cognition.

TRANQUILITY
The presence of water brings humans to a calm and meditative state. The touch, feel, smell and taste of water or humidity in copious amounts can leave one feeling inspired, while heightening the powers of your other senses.
EVALUATION GAP

PANOCEPTION X SCHIZOPHRENIA

As the Criteria of Evaluation developed, it was noted that there was a treatment gap in the design apparatus. The salutogenic approach using the Biophilic Hypothesis accounted for the negative and cognitive psychotic effects, however none of them accounted for the positive psychotic effects.

Due to the fact that person’s with schizophrenia struggle with medication and regimen compliance as a result of delusions about not having the disease; this portion of the hypothesis was developed by introducing the idea of Panoception.

At the core of Panoception is the idea of central inspection. Essentially, there are some activities that are best executed when humans think they are being overseen. This technique may be used to reduce the likelihood of a patient not adhering treatment requirements.

Originally introduced by Bentham, it was eventually incorporated into the design of a panoceptive prison where the person being watched, can’t see the watcher, and as a result maintains compliance with the specified program. Due to the circular nature of the concept, this idea was coupled with treatment programs for community and socialization.
Research Question: How can treatment be incorporated into the design apparatus?

CRITERIA OF EVALUATION

PANOCEPTIC HYPOTHESIS

PLAN

Designing in circularity allows for a multiplex & layered approach which denote areas of privacy, social interaction and community. This may be intersected with psychosocial techniques of rehabilitation and culture to maintain the undertone of perceived surveillance. Maintaining sight-lines are especially critical for medication compliance which will combat positive psychotic symptoms.

SECTION

Designing in circularity and playing with the levels in section are critical for medication compliance which will combat positive psychotic symptoms, as the patient never really knows when they are being watched, even in times when they may perceive themselves to be the “watcher”.

PANOCEPTION

RETREAT

FAMILY

COMMUNITY

PUBLIC

PRIVATE

EXPAND

COMPRESS

COMPRESSION & SIGHTLINES

SEMI PRIVATE

WATCHER

WATCHED

EXPAND

COMPRESS & SIGHTLINES

SEMI PRIVATE

WATCHER

WATCHED

WATCHER

WATCHED
THE CONCEPT
PROGRAM X TREATMENT

SLEEP | RETREAT
Ensuring space for long term residence are relaxing. Abunds nature and reflective space are vital. First is a critical component of the management of the disease, many patients struggle with sleep as a result of the chemical imbalance in the brain, ensuring the program can naturally induce sleep works to reduce the amount of medication required, which becomes a critical dimension to this project.

SOCIALIZE
Family & Community are critical components for long term recovery. Ensuring the patient feels heard, included, and supported in their journey is also critical for compliance with treatment. Spaces for socialization should feel incidental and informal to maximize the potential benefits.

REHABILITATE
Rehabilitation through medication, psychotherapy, and biophilia will remain consistent tenants in the design apparatus. Having spaces that are open for use rather than prescriptive can increase feelings of privacy and have different modes of therapy to be introduced and practiced.

RELAX
Through transient prototypes which take advantage of the different views, architectonics and experiences that may be found in the forest.

WORK
Having the patient feel vital to the consistent ecology and development of the community through farming and learnt vocational skills helps to build self esteem and confidence over time, which increases their feelings of value and self worth. This may also be done by using low tech, easy made design solutions which help to bolster feelings of contribution.

THE MASTERPLAN
A biophilic design series of prototypes for the treatment, management, or prevention of Schizophrenia through the architectonics of Forest Therapy in the Cockpit Country, Jamaica.

FUTURE GOAL

REPEAT
RAPID DESIGN INVESTIGATION

TESTING THE CRITERIA OF EVALUATION
DESIGN DEVELOPMENT
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