Supportive Housing for Mental Health Recovery:

A Bio-Psycho-Social Approach

by

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A thesis

presented to the University of Waterloo

in fulfilment of the

thesis requirement for the degree of

Master of Architecture

in

Architecture

Waterloo, Ontario, Canada, 2007

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by examiners.

I understand that my thesis may be electronically available to the public.

Abstract

This thesis responds to the lack of psychiatric and infrastructural support during the transition from inpatient to outpatient care, and proposes a supportive housing model for patient recovery. It establishes an architecture to support a new model for mental health care using the bio-psycho-social perspective outlined in the psychological research section. Research into different methods of treatment, perception, and current patient infrastructure reveal that the existing framework does not suit the needs of patients caught between the secure levels of care in forensic institutions and those recovered enough to sustain themselves.

The psychiatric program is based on the bio-psycho-social perspective outlined in the psychology chapter of the thesis, which will be used to treat patients with schizophrenia, mood disorders and anxiety disorders. The architecture is designed to support this perspective, and is based on the research into perception and the architectural strategies needed in the design of a healing environment: community, security and privacy, patient control including spatial intelligibility, haptic and basic orientation, light, sound and positive distraction. The design is proposed for the Moss Park area in Toronto: where the actual site itself stretches from Dalhousie Street and Queen Street East to Mutual Street and Shuter Street. Its history and current amenities make it an ideal location for a design proposal, though multiple locations are envisioned across the GTA. The design presented in this thesis is envisaged as part of a network of varying care levels: follow-up care, supportive care and comprehensive care. The program for the site will consist of the supportive care programming, which is the middle level of care.

Acknowledgements

Dedication

"To all who've gone before us, and all who've gone ahead..."

Robbie Seay - Faith of Our Fathers

This topic is inspired by the lives of several people who have either gone through, or are currently working through the mental health healing process. It is dedicated to them, and to the countless others I've met along the way, who have asked me about my thesis, and then proceeded to share their personal stories in hopes that they could offer their support.

Thank you.

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Preface

The ideas behind this thesis were planted when I discovered that someone I care very much about was diagnosed with a serious mental illness. He had been misdiagnosed only to have it modified throughout treatment. Since that time, two other friends were diagnosed with a mental illness, differing from each other but with serious long-term repercussions. All three people were hospitalized at the beginning of their diagnosis, and the question I couldn't help thinking was:

> What does it feel like to wake up in a hospital, completely disoriented, not knowing how you got there, and to be told as you lay in a confined bed that you've been diagnosed with a mental illness?

This led to another question, namely, how does the hospital environment affect the recovery of mental illness? This question is loaded with issues: the stigma associated with mental illness, the problems with hospital designs, our perceptions of space, and how we view the treatment of mental illness in general. This thesis attempts to answer this question through the design of a supportive housing project meant to facilitate the bio-psycho-social perspective and a holistic approach to the mental health recovery process.

Introduction & Overview

Within the language of recovery there is a phrase, a challenge, a mandate: "Bring the full weight of who you are into your relationships." It means that we are free to bring all of who we are – every part of our story – into our decision-making process. It can be a part of the ways we talk, act and love others. It gives people the chance to know us, and it gives people the permission to be known. All individuals have things in their lives that make them unique. Most often this part of their story is connected to abuse, addiction, fear or pain. I have come to believe that the things that make us unique are the ways joy enters into our secrets, the way light exposes darkness. This is why we choose not to open these parts of our story up to others. Ultimately, it is our redemption that looks unique – it is the way healing comes, how long it takes, who is involved that makes us different.[1]

Dan Haseltine: Your Whole Self

In the winter of 2003, *Network Magazine*, created by the Ontario division of the Canadian Mental Health Association (CMHA), devoted an entire issue to the new Recovery Philosophy adopted by Ontario's Ministry of Health. It stressed that psychiatric staff members should provide support by empowering the patient individually, teaching better coping and learning skills to the patient, and following the patient's progress over a longer period of time.[2] This seems like a reasonable proposition; however, hospitals are only now moving into long-term outpatient care and illness treatment from what is typically inpatient diagnosis and symptom medication. Current focus is on containment and the prevention of patient harm: this is visible in current hospital facilities, where suicide and/or harm to others are prevalent fears. If engulfed in a psychotic episode, the patient is placed in an emergency isolation unit, medicated and under careful supervision. Once the episode has passed, the patient is hospitalized for a short period of time, and then passed on to specialized private-run facilities such as the Homewood, or they return to their lives prior to the episode. Often, the long-term needs of the patient are not addressed because the hospital staff and psychiatrist are not involved in the patient's life outside the facility, and the patient is then left alone dealing with their illness and the stigma now associated with their stay.

Many patients with serious illness have not learned to cope with their illness, and return to the lives they had prior to their episode. Some, especially in the U.S., end up in vicious cycles of hospitalization and homelessness, where the prescribed medication is unaffordable in their present living situations due to insurance premiums; they don't have contact information for follow-up care, and a lack of quality public healthcare. In some cases it is illness symptoms, like paranoia, that prevent the patient from seeking the treatment they need. The only times they receive treatment is when an episode recurs and they return

The Law of August 16-24, 1790, "entrusts to the vigilance and authority of the municipal bodies... the care of obviating and remedying the disagreeable events that may be occasioned by madmen set at liberty, and by the wandering of vicious and dangerous animals." The Law of July 22, 1791, reinforces this arrangement, making families responsible for the supervision of the insane, and permitting the municipal authorities to take all measure that might prove useful: "The relatives of the insane must care for them, prevent them from straying, and see that they do not commit offenses or disorders. The municipal authority must obviate the inconvenience that may result from the negligence with which private persons fulfill this duty." By this detour around their liberation, madmen regained, but this time with the law itself, that animal status in which confinement had seemed to isolate them; they again became wild beasts at the very period when doctors began to attribute to them a gentle animality.

Foucault, Michel: *Madness and Civilization*; 237-38

to the hospital once again for symptom medication. Ideally, a patient should be treated holistically, considering all aspects of their life, instead of through hospitalization cycles. This includes housing, accountability, medication, orthomolecular treatment, job placement, etc. As author Otto A. Will states in the forward to Principles and Practices of Milieu Therapy,

> *Sullivan believed that patients surrounded by affection and intimacy rather than hate or humiliation are better able to recognize their personalities and that the patients' social environment and what they learn from their communal experience contribute a great deal to recovery.*[3]

Part 2 of this thesis identifies three long-term mental illnesses: schizophrenia, mood disorders and anxiety disorders, and their corresponding treatments. It looks to both traditional views of mental health treatment and newer developing treatments and their philosophies. The present philosophy developing in Ontario is the bio-psycho-social perspective, which aims to treat the patient holistically, using drug therapy, psychological therapy, and social networking. With the new orthomolecular and nutritional therapies developing, the holistic treatment perspective can now use nutritional supplements in patient treatment to minimize the damaging effects of drug therapy.

The design of an architectural model for a therapeutic community will serve to support programs that enable patients to recover as much as possible from the above types of mental illnesses.

Part 3 looks at perception as a means to discover how the senses, self-perception, perception and proximity affect, challenge and ground a person within space. It ends by beginning to explore how architectural issues like tactility can affect a person's sense of stability and self.

Part 4 identifies how key architectural issues such as community, security and privacy, patient control, haptic and basic orientation, light, sound and positive distraction affect the healing process. It first looks at several current places of treatment, the Grand River Hospital, Whitby Mental Health Centre, Wood Green Mental Health Centre, the Homewood Health Centre, and Seven Oaks in Victoria, British Columbia. In addition to the above mental health facilities, inspirational places of healing, like hotels and housing are evaluated, namely: the Soteria House, the UHousing Competition, the Hotel Explora in Atacama, the Pousada de Santa Maria in Braga and the Four Seasons Resort at Sayan. While not places of mental health treatment, they are considered as precedents for a healing environment. Part 4 examines their different design approaches and philosophies, and identifies how well each architectural issue succeeds or fails to enable healing. Part 5 concludes the research section of this thesis.

The criteria learned from part four must take place in a facility geared not only

towards recovery, but also towards community and sanctuary. The facility is to be an oasis within the city of Toronto, where the building offers sanctuary from the city while supporting the patient's recovery. Residents must feel safe and unafraid in a facility that houses enough people to be a community without being overwhelmingly populated. Patients must be able to gather with others informally throughout the facility, while retaining the option of withdrawing into solitude when necessary. This means creating gathering points that aren't restrictive to residents but are destinations to be enjoyed. The facility must also present the patients with the opportunity to ultimately learn about themselves with the help of other patients and professional staff. Ultimately, recovery itself is unique for individual patients who must rediscover themselves in the process.

Part 6 consists of a design response, building on the theories established in the previous chapters. It offers a new model for mental health treatment, through creating a network of housing projects of differing care levels, and working through the design of the middle level of care. It adopts the bio-psycho-social perspective, and attempts to create it in an architectural model. This thesis believes the idea that a healing environment can be less costly in the long run, as the Farrow Partnership, exploring the evidence-based of Credit Valley Regional Cancer Centre, states that:

> *better designed hospitals and the one-time costs of designing and building optimal facilities are repaid directly through operational efficiencies. Illness is a costly condition, whereas wellness pays direct and indirect dividends both for patients and care givers.*[4]

Part 7 concludes this thesis by looking forward to how the design might succeed once built. It summarizes the biological, psychological, and social needs of the patients, and how the building responds to these needs. It surmises that as patients need time to proceed through the healing process, the building itself needs time to see how well it will be used by its inhabitants. It suggests that as many natural healing architectural properties are used in the thesis design, such as natural light and positive distraction, while still supportive the psychological program and communal gathering spaces within the building.

The appendices provide additional research and background information. Appendix A pertains to the intelligibility analysis of the design and four of the architectural precedents: the Grand River Hospital, the Wood Green Mental Health Centre, the Hotel Explora in Atacama and the Pousada de Santa Maria in Braga. Its conclusions have been summarized in the body of the precedents section. Appendix B explores the possibility of creating different organizations of patient bedrooms within the 6-bed unit of the design exploration.

This thesis proposes that mental health recovery can be better achieved through a continuous treatment approach, in a supportive housing facility whose

design and treatment philosophies are based on the holistic bio-psycho-social perspective in patient treatment. It recommends a network of bio-psycho-social supportive housing, buildings spread across the GTA, with varying levels of care. It proposes that patients be treated holistically in an urban setting that enables them to recover from their illness as much as possible. This thesis serves patients suffering from schizophrenia, mood disorders and anxiety disorders using some of the treatments outlined in Part 2. It builds on the architectural qualities listed in Part 4, by examining existing and inspirational infrastructure in the architectural precedents section. This proposal seeks to integrate a mixture of housing and mental health facilities that reflect the healing aspects of the previously mentioned resorts. Ideally, several facilities with differing care levels would be networked together, to be able to give patients with different needs varied location, while still being able to support each other.

Each facility would be easy to navigate, and provide varied places for structured and unstructured gathering to build community. They would offer opportunities for positive distraction, and housing to meet the individual patient needs. Some of the facilities could even work to support patients' families or friends who care enough to be involved in the treatment. Facilities would provide natural light wherever possible to minimize depression and claustrophobia, and minimize sound to reduce sleep disruptions. They would be located in a relatively urban area, to allow patients the freedom to begin life outside the facility, but still have a place to retreat from its chaos. These facilities would keep trained psychological staff on the premises, and the staff members would serve in various roles, from clinical psychologists, to nutritionists and job counsellors. Overall, it would be considered supportive housing whose purpose is mental health recovery.

The design exploration of this thesis looks at the middle range of care, supportive care, and focuses on a site in the Moss Park area in Toronto, bounded by Queen St. E., Dalhousie St, Shuter St., and Mutual Street. Its program provides residential accommodation for 41 patients and some family members and friends, with a holistic biological component treating patients with orthomolecular and nutritional therapy, a psychological component geared towards treating the patient with individualized therapy, and communal support and spaces for active and passive patient engagement within a social structure.

(Endnotes)
1   Haseltine, Dan: Relevant Magazine, March/April 2006; 38
2   Everett, Barbara: Network Magazine, W2003; 8
3   Will, Otto A.: Forward to Principles and Practice of Milieu Therapy; viii
4   Stanwick, Sean: Hospital News, February 2005; 20

Mental Health Background

Why such fascination with disturbed people? Do we see in them something of ourselves? At various moments, all of us feel, think, or act the way disturbed people do much of the time. We, too, get anxious, depressed, withdrawn, suspicious, deluded, or antisocial, just less intensely and more briefly. It's no wonder then that studying psychological disorders may at times evoke an eerie sense of self-recognition, one that illuminates the dynamics of our own personality…[1]

Most people would agree that someone who is too depressed to get out of bed for weeks at a time has a psychological disorder. But what about those who, having experienced a loss, are unable to resume their usual social activities? Where should we draw the line between sadness and depression? Between zany creativity and bizarre irrationality? Between normality and abnormality? How should we define psychological disorders? Equally important, how should we understand disorders – as sicknesses that need to be diagnosed and cured, or as natural responses to a troubling environment?[2]

David G. Myers: Psychology, 6th Edition

Psychology covers a wide range of topics, and is comprised of many and varied hypotheses used to discover the cause of why people behave in various ways. A first year psychology course text will cover topics ranging from critical thinking and childhood development, to memory and learning, to psychological disorders and their respective therapies.[3] It is impossible to cover this complete range of topics in one architectural thesis, therefore the psychological scope will be narrowed down to certain psychological illnesses – schizophrenia, mood and anxiety disorders – their respective treatments, and an overview of perception to facilitate architectural design.

1.0 Illness Background

Mental illness takes on a variety of forms, the most prevalent and in many respects, the most serious of which are schizophrenia, mood disorders, and anxiety disorders. Sometimes patients have concurrent disorders which may combine the aforementioned illnesses or other disorders with a second illness like an addiction, such as alcohol or drug abuse. Maladaptiveness is what distinguishes a diagnosed mental illness from the stresses or phobias many people have in life. As David Myers puts it, "maladaptiveness, then is the key element in defining a disorder: the behaviors must be distressing or disabling or put one at greatly increased risk of suffering or death."[4] If a person is found to be suffering with the maladaptive behaviours of a mental illness, help is offered through psychologists and psychiatrists. Generally speaking they believe that, as summarized by David Myers, "a mental illness (also called a psychopathology) needs to be diagnosed on the basis of its symptoms and cured through therapy, which may include treatment in a psychiatric hospital."[5]

On most indicators, youth aged 12-19 or 20-29 had the lowest prevalence of positive mental health and the highest prevalence of mental health problems.

Stevens, Thomas: *Mental Health of the Canadian Population*; Website

Surprisingly, many of the illnesses that are diagnosed have symptoms that show up at young ages; the majority of psychological disorder symptoms appear by the age of 24. David Myers states that:

> *symptoms of antisocial personality disorder and phobias show between the ages of 8-10… symptoms of alcohol abuse, obsessive-compulsive disorder, schizophrenia and bipolar disorder show at a median age of 20… [and] major depression hits at a median age of 25.*[6]

Health Canada goes even farther to say that:

> *nearly one-half of all admissions for one of the seven most common mental illness involved individuals between the ages of 25 and 44 years… [and] the high rates of hospitalization among young adults aged between 15 and 24 years [nearly 20%] attest to the impact of metal illnesses on young people.*[7]

The median and average ages these symptoms appear are during the formative years of young adulthood, where the self-defining process begins. At a time when a person is discovering who they are and learning to develop the necessary life skills to live independently and share the world with others, this can be a severe disadvantage in adjustment. It makes understanding the nature of the illness and learning life strategies for coping even more important. What is reasonably determined from these statistics is that the earlier the diagnosis, the better for the individual to learn to cope with their illness, and lead as close to normal life as possible.

Mental health is a broad field of illnesses and disorders. For the purposes of

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this thesis, schizophrenia, anxiety and mood disorders have been chosen due to their long-term effects and prevalence in society. People who have these disorders often have trouble coping in day to day life.

1.1   Schizophrenia

Schizophrenia has several forms, which include regular episodes and single occurrences of episodes of psychotic symptoms or psychosis. A traditional definition of psychosis is "restricted to delusions (false, fixed beliefs) or hallucinations in the absence of insight into their pathologic nature."[8] The illness presents itself in two types of symptoms, where they are not always "present in all schizophrenic patients, but some patients exhibit all of these symptoms at one time or another."[9] Positive symptoms involve "delusions, hallucinations, disorganized speech, and grossly disorganized or catatonic behaviour."[10] With these symptoms, recovery is more likely due to their usually sudden appearance.[11] The negative symptoms appear more gradually, and involve "withdrawal, anhedonia (decreased capacity for pleasure), anergia (diminished energy), and effective flattening."[12] Physiologically, in a schizophrenic there is more fluid in their larger brain cavities. (See Images 2-2 & 2-3) When positive symptoms occur, such as auditory hallucinations, there is more activity in those sensory regions in the brain, located in the parietal lobe.[13]

According to the chapter entitled Schizophrenia from the book Current Diagnosis & Treatment in Psychiatry, there are four main theories for the causes of schizophrenia: Dopamine, Serotonin, Glutamate, and Neurodevelopment. The dopamine hypothesis proposes that "schizophrenia was due to an excess of [dopamine] activity in the limbic brain areas."[14] This is because of "evidence that chronic administration of the stimulant D-Amphetamine increased the release of [dopamine] and norepinephrine and inhibited their reuptake."[15] In other words, the part of the brain that receives dopamine from the brain couldn't take it all in, leaving too much of it floating around the limbic areas.

The serotonin theory is based on the idea that "psychotomimetic properties of lysergic acid diethylamide (LSD)" were serotonin agonists and triggered hallucinations.[16] In other words, the theory is a hallucinogen in the brain triggered the positive symptoms of schizophrenia, by acting like too much serotonin and over-stimulating their receptors. However, "thought disorder, auditory hallucinations, and bizarre behaviour usually present in schizophrenia are generally absent in normal individuals who are given these agents."[17]

The glutamate theory is based on competitive receptors decreasing the level of glutamate in the brain, which "can produce a range of positive and negative symptoms and cognitive dysfunction in normal control subjects and in schizophrenic patients."[18] This means that having too little glutamate in the

I kept hearing the neighbours banging on the walls trying, so I thought to play on my nerves. My response was to run not just out of the house but to get as far away as possible. That meant getting away from everybody. I wandered round the countryside at night trying to avoid towns and villagers from which direction I could still hear the banging noise. I had paranoia and auditory hallucinations all mixed together. This however was not the end of the matter. I had other kinds of delusions. I thought I was responsible for all kinds of problems: wars, crime, disease etc.

Ellerby, Mark: *My Story*; Schizophrenia Society of Canada Message Board
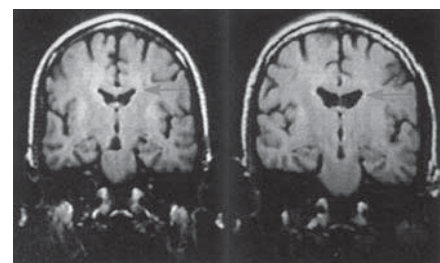
2.1 & 2.2: Normal Brain (left) and Schiophrenic Brain (right)

brain can influence the mental health of the brain.

The neurodevelopmental theory stresses the "pathologic processes that begin before the brain approaches its adult anatomical state in adolescence."[19] This suggests that the brain contains abnormalities from the uterus or childhood that leads "to the activation of pathologic neural circuits during adolescence or young adulthood (sometimes owing to severe stress), which leads to the emergence of positive or negative symptoms, or both."[20] Along those lines, psychiatrists believe that "relapse rates may be twice as high among families in which expressed emotion is high," suggesting environments with emotional outbursts of anger may trigger schizophrenic breakdowns.[21]

Treatment of schizophrenia includes: pharmacological treatments like neuroleptic and antipsychotic drugs to reduce positive and negative symptoms;[22] electroconvulsive therapy (ECT) to rapidly control agitated behaviour if absolutely necessary;[23] and psychosocial treatments. These psychosocial treatments combine long-term case management with supportive services aimed at maximizing "compliance with drug therapy, supporting the patients, fostering independent living skills, improving psychosocial and work functioning, and reducing caretaker burden."[24]

1.2   Mood Disorders

Mood disorders are divided into two major categories: Depressive Disorders and Bipolar Disorders.[25]

1.2.1   Depressive Disorders

When I'm really ill, I hear what's like a tape recorder in my head saying really horrible negative things: Your life isn't worth anything. It would be better if you weren't here anymore. You're destroying other people's lives. You're worthless… I don't have any ability to shut it off.

Reverend Ross, Isabella (Nunes, Julia et al.): *Beyond Crazy*; 87

Major Depressive Disorder features a Major Depressive Episode where there is "a period of at least 2 weeks during which there is either [a] depressed mood or the loss of interest or pleasure in nearly all activities."[26] Additional symptoms include

> *changes in appetite or weight, sleep, and psychomotor activity;* decreased energy; feelings of worthlessness or guilt; difficulty thinking, concentrating, or making decisions; or recurrent thought[s] of death or suicidal ideation, plans or attempts.[27]*

Generally these symptoms "last two weeks or more without any notable cause."[28] Included in the depressive disorders is Seasonal Affective Disorder, where symptoms of depression usually appear in the "fall and remit in the spring,"[29]

* Psychomotor concerns the study of movement resulting from mental activity - The Canadian Oxford Dictionary

though in some cases they appear in the summer. This pattern of "onset and remission… must have occurred during the last two years."[30]

Causes of depression vary, and as explained in the Mood Disorders chapter of Current Diagnosis & Treatment in Psychiatry:

> *Despite intensive attempts to establish its etiologic or pathophysiologic basis, the precise cause of major depressive disorder is not known. There is consensus that multiple etiologic factors – genetic, biochemical, psychodynamic, and socioenvironmental – may interact in complex ways and that the modern-day understanding of depressive disorder requires a sophisticated understanding of the interrelationships among these factors.[31]*

Theories examining the causes of depression include life events, biological theories, and psychosocial theories. Life events such as loss of a loved one can trigger depression. However, "fewer than 20% of individuals experiencing losses become clinically depressed. These observations argue strongly for a predisposing factor, possibly genetic, psychosocial, or characterological in nature."[32] However, noted is the possibility that trauma can affect the body, in that

> *emotional trauma can also precede the onset of endocrine disorders such as hyperthyroidism and Cushing's disease, both of which are commonly associated with psychological disturbance, most commonly in mood and cognition.[33]*

Biological theories include "the hypothesis that depression is caused by a neurotransmitter deficiency and that antidepressants exert their clinical effect by treating this imbalance."[34] But other neurotransmitters, hormones, and neuropeptides also modulate mood.[35] Thyroid problems affect both the developmental and mature brain. Some of their effects include "depression and cognitive decline."[36] Studies have also shown two interesting trends involving the thyroid, where "a small dose of thyroid hormones, preferably triiodothyronine (T_3), will accelerate the therapeutic effect of various antidepressants in women and will convert antidepressant nonresponders into responders in both sexes."[37] Also, "administration of thyrotropin-releasing hormone (TRH) may induce an increased sense of well-being and relaxation in normal subjects and in patients with neurologic and psychiatric disease, especially depression."[38]

Psychosocial theories are somewhat varied. They suggest that depression is: "anger turned against the self";[39] the result of "inadequate or insufficient positive reinforcement";[40] or learned helplessness combined with negatively interpreted life events. [41]

They said, 'This depression has informed who you are as a person. You have learned a huge amount of empathy, about caring for other people because of that illness.'

Reverend Ross, Isabella (Nunes, Julia et al): *Beyond Crazy*; 89

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Physiologically, depressed patients have problems sleeping. These problems include "interruptions throughout the night, early morning awakenings, and less frequently, difficulty falling asleep."[42] While sleep deprivation may not me the cause of mood disorders, the symptom goes hand in hand with the illness.

Treatments for depression are generally antidepressants, which are "usually initiated at a low dosage and increased over a 7- to 10-day period to achieve the initial target dosage."[43] However, the statistics are not completely inspiring, with only "Between 60% and 70% of persons with major depressive disorder" responding well to the treatment.[44] For those who do not respond well to drug therapy, electroconvulsive therapy (ECT) is often used.[45]

The key to keeping a patient well is the "establishment and maintenance of a supportive therapeutic relationship, wherein the therapist gains the patient's confidence and is available in times of crisis."[46] Psychotherapy is used alone or with drug therapy to maintain a patient's mental health. It is here where they learn to "be cognizant of the premonitory signs and symptoms of an impeding episode."[47]

1.2.2 Bipolar Disorders

Bipolar Disorders combine depression cycles with euphoric cycles that are just as maladaptive as the depressive ones.[48] These euphoric cycles are also called manic episodes and are "defined by a distinct period during which there is an abnormally and persistently elevated, expansive, or irritable mood… [that] must last at least 1 week (or less if hospitalization is required)."[49] This episode is accompanied by symptoms including:

> *inflated self-esteem or grandiosity, decreased need for sleep, pressure of speech, flight of ideas, distractibility, increased involvement in goal-directed activities or psychomotor agitation, and excessive involvement in pleasurable activities with a high potential for painful consequences… marked impairment in social or occupation functioning or…hospitalization, or it is characterized by the presence of psychotic features.[50]*

It is suggested that:

> *Bipolar Disorder accounts for one quarter of all mood disorders. It is likely that prevalence rates of bipolar disorders are underestimated, because of problems in identifying manic and, more so, hypomanic episodes.[51]*

Much like schizophrenia, people with early onset of Bipolar Disorder "are more likely to display psychotic symptoms and to have a poorer prognosis in terms of lifetime outcome."[52]

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The theories as to the causes of Bipolar Disorder are very similar to Depressive Disorder. In terms of life events, there is "no clear association between life events and the onset of manic or hypomanic episodes."[53] With the biological theories, most of them are the same for Depressive Disorder, with the exception of neurotransmitters, where the theory is reversed.[54]

Sleep patterns for the bipolar patient vary with the phase of the illness. As summarized in the Mood Disorder section of Current Diagnosis & Treatment in Psychiatry:

> *When depressed, bipolar patients may sleep too much; when manic, they sleep little or not at all, and typically report feeling fully rested nevertheless. As the manic episode intensifies, patients may go without sleep for nights, their insomnia further intensifying the manic syndrome… It is difficult to control an acute manic episode clinically if one cannot control the associated insomnia. Conversely, some bipolar patients may experience a manic or hypomanic episode after a single night of sleep deprivation.[55]*

Conventional treatment of Bipolar Disorder includes symptom containment using drugs. The depressive phase needs to be treated with drugs that do not trigger manic phases. The manic phase is likely treated with lithium, and combined with other drugs or antipsychotics if a patient is delusional. Long term maintenance is a combination of lithium and other drugs used to stabilize patients.[56] Other types of treatment may be found in the treatment section of this thesis.

1.3   Anxiety Disorders

When discussing anxiety, it should be remembered that "generally speaking, normal fears represent emotional reactions to real, external threats, and the emotional response is appropriately related to the actual danger."[57] However, "the symptoms of anxiety disorders occur either without obvious external threat or when the response to the threat is excessive."[58] As always, it is diagnosed when that fear prevents a person from living life in a normal way. The exception to this definition is Posttraumatic Stress Disorder, where:

> *By definition a patient cannot have posttraumatic stress disorder without having already experienced a traumatic event or events; therefore, such events must somehow be involved in the etiology of posttraumatic stress disorder.[59]*

Anxiety Disorders constitute among others, Generalized Anxiety Disorder (GAD), Panic Disorder, Posttraumatic Stress Disorder (PTSD), Phobias and

The comorbidity of anxiety disorders with other psychiatric disorders is high. For example, about 40% of patients with primary anxiety disorders will have a lifetime history of a DSM-IV depressive disorder. Further, inpatients who have other psychiatric disorders, significant anxiety symptoms often are associated with those disorders. Therefore, clinically significant anxiety symptoms will occur frequently in patients seen in clinical practice.

Shelton, Richard C.: *Anxiety Disorders*; 330

Obsessive-Compulsive Disorder (OCD), and generally reflect a sense of fear.[60] GAD is "characterized by at least 6 months of persistent and excessive anxiety or worry."[61] Sufferers are "continually tense and jittery, worried about bad things that might happen, and experience symptoms of autonomic nervous system arousal."[62]**

These symptoms of system arousal generally manifest themselves in terms of a Panic Attack, which is a symptom of the majority of anxiety disorders. A Panic Attack is a:

> *discrete period in which there is the sudden onset of intense apprehension, fearfulness, or terror, often associated with feelings of impending doom. During these attacks, symptoms such as shortness of breath, palpitations, chest pain or discomfort, choking or smothering sensations, and fear of "going crazy" or losing control are present.[63]*

Panic Disorder is

> *the presence of recurrent, unexpected Panic Attacks… followed by at least 1 month of persistent concern about having another Panic Attack, worry about the possible implications or consequences of the Panic Attacks, or a significant behavioural change related to the attacks.[64]*

Included in the Panic Disorder category is Agoraphobia, where there is a "fear of situations in which escape might be difficult, or help unavoidable when panic strikes."[65]

There are a few theories to the causes of anxiety disorders, which overlap and build on each other. The psychodynamic theory proposed by Freud suggests

> *two sources of such threat. The first, termed traumatic situations, involved stimuli that were too severe for the person to manage effectively and could be considered the common or natural fear response. The second, called danger situations, resulted from the recognition or anticipation of upcoming trauma, whether internal (by loss of control of drives) or external.[66]*

This created anxiety that "was called signal anxiety," which was a separate and more manageable response to trauma.[67]

The learning theory develops because "environmental cues become associated

The crushing pain in my chest jolted me out of sleep… Waves of terror lapped at my brain, drowning out any rational thought. I curled up in a ball, face down in the single futon, gasping for air. My heart was beating so fast, I was certain I was dying.

Honey, Kim (Nunes, Julia): *Beyond Crazy*; 71

** Autonomic Nervous System refers to the part of the nervous system reponsible for contol of the bodily functions not consiouscly direct, e.g. heartbeat - The Canadian Oxford English Dictionary

with anxiety-producing events during development."[68] This may be summarized by people learning to be anxious in a given situation because a stressful event took place there in the past.

Similar to depression, the cognitive theory in Anxiety Disorders "involve incorrect beliefs that interpret events in an exaggeratedly dangerous or threatening manner."[69]

Biological theories have been tested by drugs, and their reactions within people. These theories are based on the idea that "anxiety and fear have high adaptive value in all animals by increasing the animal's capacity for survival."[70]

Treatment for these disorders usually depends on the theory of the practitioner involved, but often, psychiatrists refer back to cognitive-behaviour therapy to treat patients as it extends

> *to the discovery and correction of distorted cognitive schema. The absence of exaggerated misinterpretations of cues leads to a reduction in symptom formation. Cognitive-behavioural psychotherapy has been used successfully to treat a variety of anxiety disorders, including panic disorder, phobias, and OCD."[71]*

For the most part "Behavioural or cognitive-behavioural therapy is the treatment of choice,"[72] but sometimes a "low dosage of a benzodiazepine may facilitate behavioural treatment."[73] However, medications in combination with psychotherapy should be reserved for more severely ill patients."[74] Medication is often used to relax the patient enough for treatments of systematic desensitization, where the patient must confront their phobias.[75] This approach, successful for phobias and OCD,[76] consists of

> *relaxation training, usually coupled with visualization of the phobic stimulus, followed by progressive desensitization through repeated controlled exposure to the phobic cue. This regimen is generally followed by extinction of the anxiety response. A cognitive-behavioural approach adds the dimension of managing the catastrophic thoughts associated with exposure to the situation.[77]*

In cases of PTSD, drug "results [of published double-blind, placebo-controlled studies] are generally disappointing."[78] Cognitive-behavioural therapy is best suited for PTSD because it helps to "explain why perceived threat was a more powerful trigger of posttraumatic stress disorder symptoms that was actual threat."[79] Usually they add to this "coping skills training or assertiveness training… to provide more adaptive reactions to fear and anxiety."[80]

In PTSD, new treatments are being developed, involving Eye Movement Desensitization Reprocessing (EMDR) where the

> *technique involves imaginal exposure to the traumatic event with eyes open, during which there is simultaneous verbalization of trauma-related cognitions and emotions, accompanied by continuous visual saccadic eye movements. According to Shapiro, this treatment is atheoretical, although it has been suggested that the eye movements in EMDR may be analogous to REM sleep-related eye movements hypothesized to serve a stress reducing function during sleep.[81]*

According to David Myers, obsessive-compulsive disorder is where "obsessive thoughts and compulsive behaviours cross the fine line between normality and disorder when they become so persistent that they interfere with the way we live or when they cause distress."[82] Obsessions are ideas or thoughts that are intrusive and cause distress, however, the patient knows that though he or she cannot control them, they are not imposed from external sources.[83] Compulsions are repetitive in nature to the point where it reduces obsessive thoughts, but they are not for pleasure, they are meant to prevent a fear.[84]

There are various theories associated with OCD. Some involve severe head trauma, [85] while others believe "psychic trauma is associated with the onset of symptoms… in susceptible individuals."[86] This may mean that an uncontrollable event in the past triggered the OCD symptoms. Treatment involves behavioural therapy which includes

> *exposure and response prevention. According to learning theorists, patients with OCD have learned an inappropriate active avoidance response to anxiety associated with circumstances that trigger their OCD symptoms. The clinician must encourage the patient to experience the aversive condition (exposure) without performing the compulsion (response prevention). Chronic exposure alone will reduce the anxiety associate with the exposure, but the compulsions will remain if not specifically restricted.[87]*

Medications may be used to treat OCD however they "rarely eliminate the OCD symptoms. Symptoms typically are reduced by 35% in aggregate and by 50-70% in most responders." [88] While not exactly inspiring, the author of the OCD chapter in Current Diagnosis & Treatment in Psychiatry stresses that:

> *Although symptom levels may fall by less than half of their baseline levels, such patients can experience a significant improvement in the quality of their lives and can function more effectively in society… The medications allow the patients to tolerate the obsessions, and the urges to carry out the compulsions, without acting on them. The combination of behavioural therapy with medication appears to be optimal for most OCD patients, as up*

to 25% of patients who fail one modality will respond to joint treatment.[89]

One final mode of treatment for OCD consists of family therapy, since members can "facilitate the OCD symptoms or antagonize the patient."[90] It is recommended that "at the very least, education regarding the patient's condition and the appropriate responses to that condition should be attempted," so family members don't interfere with the success of treatment. [91]

1.4   Illness Conclusion

The illnesses above have been chosen because of their long-term repercussions. At a minimum the illness is sometimes a momentary episode due to a breakdown, but even then its effects will last a lifetime as the patient learns to cope with all its implications. The risk for further breakdowns becomes more severe. Most of the time medications are prescribed; so many patients not only have their lives modified by their illness, but also by the drugs prescribed. They face the stigma associated with having the illness and being hospitalized or treated at some point, which can affect family relationships and jobs. The hope is that with treatment, patients can recover, and that the stigma of mental illness lessens as has the stigma once associated with the AIDS virus.

2.0   A History of the Therapeutic Community

There have been cycles in the humane treatment of patients over several centuries. These cycles have had many names, and they will likely continue as new information about mental health is processed. As David Kennard states "There is a curious phenomenon by which therapeutic communities can be seen as 'old hat' in one country or service at the same time as being seen as pioneering and innovative in another."[92]

2.1   The Madhouses and the Hôpital Général

Michel Foucault describes the history of treatment for madness and mental illness in Europe by beginning in the middle-ages, where he notes times of acceptance and exclusion. Its beginning, he argues, dates back to the end of the leper colonies. He not only identifies the places where madmen are "housed and provided for in the city budget,"[93] but also the ships of fools on which towns placed their mad to take them to remote regions of the world, and how such exclusions became rituals in cities leading into the beginning of the Renaissance.[94]

The mad then became figures symbolizing truth and reason in early Renaissance literature.[95] Their characters were the ones used to tell the truth in various fictional writings and signified a kind of acceptance of madness. It was "was present everywhere and mingled with every experience by its images."[96] Around this time in France, the Hôpital Général was created for the welfare and charity of the sick, though it was given

> *a quasi-absolute sovereignty, jurisdiction without appeal, a writ of execution against which nothing can prevail – the Hôpital Général is a strange power that the King establishes between the police and the courts, at the limits of the law: a third order of repression.*[97]

Used as a political tool, the governments in Europe began to house not only the sick, but also the criminal, the poor and the insane in the hospitals. During times of prosperity, that is

> *outside the periods of crisis, confinement acquired another meaning. Its repressive function was combined with a new use. It was no longer merely a question of confining those out of work, but of giving work to those who had been confined and thus making them contribute to the prosperity of all. The alternation is clear: cheap man-power in the period of full employment and high salaries; and in periods of unemployment, reabsorption of the idle and social protection against agitation and uprisings.*[98]

However, in times of crisis, when "the number of the poor sharply increased, the houses of confinement regained, at least for a time, their initial economic significance." [99] Foucault here implies that the main goal of these hospitals is to provide a place for the poor to exist without being angry that they are uncared for and unfed in times of need. He believes this took place throughout Europe since "even England, of all the countries of Western Europe the least dependent on the system, had to solve the same problems. [100] Madness at this time became a matter of exclusion, in that

> *madness in the classical period ceased to be the sign of another world, and that it became the paradoxical manifestation of non-being. Ultimately, confinement did seek to suppress madness, to eliminate from the social order a figure which did not find its place within it; the essence of confinement was not the exorcism of a danger.* [101]

Michel Foucault reasons that it is difficult to know exactly why the people housed in confinement were chosen, but he notes

> *there must have formed, silently and doubtless over the course of many years, a social sensibility, common to European culture, that suddenly began to manifest itself in the second half of the seventeenth century; it was this sensibility that suddenly isolated the category destined to populate the places of confinement. To inhabit the reaches long since abandoned by the lepers, they chose a group that to our eyes is strangely mixed and confused. But what is for us merely an undifferentiated sensibility must have been, for those living in the classical age, a clearly articulated perception.* [102]

The hospital then began to be used as a place "whose chief concern was to sever or to 'correct'." [103] Michel Foucault describes the new view of madness by writing:

> *During the classical period, madness was shown, but on the other side of bars; if present, it was at a distance, under the eyes of a reason that no longer felt any relation to it and that would not compromise itself by too close a resemblance. Madness had become a thing to look at: no longer a monster inside oneself, but an animal with strange mechanisms, a bestiality from which man had long since been suppressed.* [104]

It is this view of bestiality that led to treatments of sudden shock such as being plunged unaware into water, [105] bleedings and superficial abscesses, [106] or the use of iron shackles to confine. [107] Since madness was viewed as a tie to animality, it was easy to justify the treatment since the mad were not entirely human.

The measure of our mindfulness, the touchstone for sanity in this society, is our level of productivity, our attention to responsibility, our ability to plain and simple hold down a job. If you're still at the point when you're even just barely going through the motions - showing up at work, paying the bills - you are still okay or okay enough. A desire not to acknowledge depression in ourselves or those close to us - better known these days as *denial*, is such a strong urge that plenty of people prefer to think that until you are actually flying out of a window, you don't have a problem.

Wurtzel, Elizabeth: *Prozac Nation*; Page 55

2.2   Moral Treatment

Moral Treatment was the movement in the mid 1800's that led to the creation of the asylum. The treatment received in the asylum was considered revolutionary, as the primary goal of the madhouses that existed previously was strictly containment,[108] due to the previous understanding that the mad weren't considered human. These "institutions for the insane had been noted for the enforced idleness of inmates who were often chained or manacled, and lived in filthy overcrowded cells, where the smell could make a visitor vomit."[109] This was a notable difference from the poor workhouses, which demanded that residents be a productive member of society.[110] The asylum itself began with a relatively small group of residents, 120-200 people maximum with a staff to patient ratio of 1:5.[111] The practice was to "…engage the disturbed individual in a regular routine of useful, varied work, and do this within an intimate, family-like atmosphere in an attractive setting and location."[112] The asylum itself was located outside of their circumstances in rural areas, because it was assumed that the individuals' current residence was part of the problem.[113] It was kept small in order to give the patients work to do; both to help fund the facility and to give the patients a sense of purpose. It was also used to provide intimate groups of people to work with. This idea was nothing new; in England, there was a law requiring judges to ensure prisons had trades associated with them to "aid in their upkeep and assure their inmates of work."[114]

Currently, there is a stigma associated with the asylum: no longer was it a place of refuge and peace as originally intended, its initial success was its downfall. Both the US and UK governments were so impressed with the facilities and the successful patient therapies that larger and more densely occupied spaces were built, eventually housing 2000 to 3000 residents. The staff to patient ratios went far beyond the successful 1:5 original ratio. Housing such a large group of people meant the premise of the facility resorted once again to containment and exclusion. As the asylums were located away from the troubling environments of home, patients were now confined and segregated from the rest of society. At that scale and distance from cities, asylums then begin to resemble the confinement of the former madhouses they were meant to correct, though with differing views and without the same bestial treatment used. Instead of cages to confine and water to shock, drugs and electricity, then being developed, began to be used to treat the patients.

2.3   Milieu Therapy and the Therapeutic Community

Around World War II, two movements started to create communities of mental health patients, where they could inform and aid each other alongside the doctors and nursing staff. It was due mostly to the introduction of psychoanalysis.[115] As Michel Foucault describes it, Freud's contribution to the

field of madness was when he went

> *back to madness at the level of its language, [and] reconstituted one of the essential elements of an experience reduced to silence by positivism; he did not make a major addition to the list of psychological treatments for madness; he restored, in medical thought, the possibility of a dialogue with unreason.[116]*

In the UK the movement was called Therapeutic Communities, and in the US, it was labelled Milieu Therapy. As John Gunderson explains it,

> *milieu therapy has its primary roots in the therapeutic community movement, which emphasized the role of social and societal relationships in developing, maintaining and ameliorating mental illness and its symptoms.[117]*

The differences between the two terms are as follows: the therapeutic community consists of "forms of treatment where the patients are perceived and involved as the primary change agents."[118] It is patient and relationship focused. The Milieu is the "philosophical context of the hospital and the organizational structure of the hospital in which the treatment takes place."[119] While also relationship focused, it is more concerned with the patient's environment and his response to it. As the description of the Boyer House Foundation, a prominent Californian milieu, notes:

> *the therapist meets the client in the client's home, in a consulting room, at the beach, during a client outing, in the hospital during an acute episode, in the hallway, the parking lots and pretty much anywhere in between. The milieu is where the concepts and insights of the "in-office" therapies meet the reality of the client's daily life.[120]*

What both communities provide is a longer stay, where diagnosis is not the main function – unlike the majority of hospitals – and recovery is emphasized. This allows a much more detailed follow-through of patients by staff. Milieus such as the Soteria House are developed because of "dissatisfaction with conventional psychiatry and a concern with the spiritual, moral and social aspect of emotional distress" on behalf of the patient.[121] The goals of milieu therapy include: developing a structure for patient responsibility; providing a place for developing interactional and communicative skills; and providing a place where patients can think about themselves according to their illness.[122] They are organized by: structural program organization; involvement in planned activities; and validation (reminding the patient that their feelings are okay) and affirmation (helping patient self-esteem) processes.[123] While not all of these methods are beneficial for specific ailments - for example the suicidal will not benefit from validation alone - a combination of these elements is used for most patients.

[My] own recovery depended on sharing the possibilities of sobriety with others. Depended on helping.

Dr. Cunningham, Graeme (Nunes, Julia et al): *Beyond Crazy*; 269

Both methods also allow more patient involvement in the actual therapies themselves. Patients are encouraged to ask questions, choose activities, and participate in group events. In many therapeutic communities, the majority of group meetings are led by the patients, and the staff member participates as members and leaders, not as authority figures. There is evidence that "the new climate of consumers within the health services means that for the time patients can have a measure of power."[124] This communal organization has been taken to extremes, where clients or consumers, as patients sometimes prefer to be called, completely run their own facilities outside of hospital organizations. Examples of this are Synanon, which used to run in the US, and still runs in Berlin, Germany.[125] However, many milieus and therapeutic communities such as Soteria, Ecoworks, and the Boyer House still have staff members, who are present for patient support. In a more sinister view, therapeutic communities can be twisted around to an individual's view by either a staff member or a patient, but the idea is to help the patient learn about himself in a safe and understanding group setting.

Consistent and positive attributes between communities include: an informal and communal atmosphere; a central program of group meetings; sharing the workload for maintenance and community running; therapeutic roles of patients and residents; sharing authority; and valuing the approach.[126] A therapeutic model would enable the Recovery Philosophy developed over the last 20 years, to take shape, as patients can have a living community of support. As they are able to branch off into their own lives, they may still return to get group support from the community they left behind, while inspiring other patients to live with their illness and/or to survive it.

During the last century, various theories of psychology and psychoanalysis were being developed. Theories of mental illness changed from Freud's psychosocial theories of libidinal development,[127] to narcissistic views,[128] to insufficient positive reinforcement,[129] to cognitive models of learned behaviour.[130] As these views of mental illness etiology have shaped their respective treatments, so too have the changes in definitions for the various illnesses and their ability to be categorized by their symptoms. The definition of Schizophrenia itself, originally created in the early 1900's has changed drastically over the last century, as have the methods of its treatment.

2.4 The Last 20 Years

Over the last 20 years advances have been made in several aspects of psychology and psychiatry. We now have a bio-psycho-social approach to therapy and treatment. While there remain various schools of thought on treatment approach, most practitioners now combine drugs with therapy, and social and recurrent interventions for patients.

However, the most prominent advances have been made in the orthomolecular field of psychiatry, which holds that the emotional and mental states of a patient are at least partly due to a physiological or nutritional imbalance. This puts a slightly different spin on the bio-psycho-social philosophy. Where the biological part of the trio used to be comprised entirely of brain chemistry-altering drugs, new advances and technologies have launched vitamins, hormones, minerals and other natural substances in the spotlight.

At the same time nutritional therapy is advancing, in Ontario the increased financial strain on the public health care system has led to a shift from hospitalizing patients to out-patient therapy. For psychiatric patients this means that only intensely acute symptoms that manifest in self harm or violence are treated in the institutional setting, while everything else is managed within the community. In doing so, the onus rests on the patient to follow through with their respective treatment options, even when they may be cognitively unable to do so. This is where the new approaches to treatment begin to take precedence, as they are a response to no longer offering the treatments that patients are used to. When a patient requires more constant supervision, public housing may be sought, but in many cases doesn't offer psychiatric support for clinical long-term patients.[131] Instead, patients are expected to already be able to care for themselves when they arrive, and restrictions for remaining rest on their ability to function in society. They are expected to pay rent, perform chores, etc. But where do patients learn to obtain these skills once mental illness has set in? Past their psychotic episode, they are no longer hospitalized and see a therapist on an out-patient basis, which may mean one hour per day, every weekday at most. While the patient may have a psychiatrist understanding enough that the patient can call them whenever necessary, the implication is that family will care for the individual. However, this is difficult given that a patient's family does not necessarily have the skills to teach the patient, while working full time, and may even be part of the reason the illness began. There are several steps being taken to solve this gap: ACT groups, Consumer/Survivor Initiatives, and long-term follow-through. These initiatives are important, because as Elizabeth Wurtzel writes in her book Prozac Nation:

> *Depression was the loneliest fucking thing on earth. There were no halfway houses for depressives, no Depression Anonymous meetings that I knew of. Yes, of course, there were mental hospitals like McLean and Bellevue and Payne Whitney and the Menninger Clinic, but I couldn't hope to end up in one of those places unless I made a suicide attempt serious enough to warrant oxygen or stitches or a stomach pump. Until then, I would remain woefully undertreated by a Manhattan psychiatrist who could offer only a little bit of help amid the chaos of my home life. I used to wish – to pray to God for the courage and strength – that I'd have the guts not to get better, but to slit my wrists and get a whole lot worse so that I could land in some mental ward, where real help might have been possible.[132]*

A lot of good knowing did. Thanks to my father, I didn't have the money to see a therapist – I was still paying off bills from the fall – and Dr. Saltenstahl, who I liked very much in spite of her refusal to prescribe any pills, was overbooked both in her Harvard office and in her private practice. Besides, as she pointed out, the people in the mental health department at U.H.S. were meant to help students solve short-term problems only, and to refer them to long-term therapists if necessary. That was all she could do for me. She strongly urged me to do whatever I needed to do to get into therapy with a rigorous, smart doctor. Once again, I had to explain that circumstances had conspired to make that just about impossible, unless I dropped out of school and worked full-time. In the meantime, she felt compelled to remind me that if I were ever feeling suicidal, I could go to the hospital emergency room and check myself in. It seems that we were still operating with the same old rules: Once you feel desperate enough to be institutionalized, there is help available, and insurance to cover the cost; until then, you're on your own, kid.

Wurtzel, Elizabeth: *Prozac Nation*; 149-50

Struggling to find your way to decent mental health and peace of mind while having a mental illness is like being in a massive building, with no lights and the windows bricked up, trying to find your way out in total darkness…You may not be able to get out as fast as you want to, but it's a whole lot better than the odds if you just sit on your butt and pray to be rescued. You have to do the legwork.

Oland, Andrew (Nunes, Julia et al.): *Beyond Crazy*; 107

I am not browbeating myself here; I am only saying that true change, true life-giving, God-honoring change would have to start with the individual. I was the very problem I had been protesting. I wanted to make a sign that read "I AM THE PROBLEM!"

Miller, Donald: *Blue Like Jazz*; 20

The necessity for adequate patient support and clinical treatment has been proven over and over again, from groups advocating for patient needs to the famous and political leaders who advocate for the erasure of patient stigma. Margot Kidder, famous for her role as Lois Lane in the original Superman movies, prioritizes orthomolecular treatment for patients who are Bipolar. Margaret Trudeau once married to the former prime minister of Canada spoke about her illnesses to encourage people to seek the help that they need. During conversations where strangers ask about this thesis, they will sometimes divulge a personal or familial relationship with mental illness. These people inevitably address the need for adequate facilities, comfortable with the idea that by investigating the topic I have a better understanding of their illness than most.

Therefore, suggested is a middle ground in the mental health recovery process, which would take into account the bio-psycho-social approach now used by many psychiatrists. The biological approach would begin to use new advances in mental health treatment, like Orthomolecular Therapy, and nutrition. Psychological therapy would form the cornerstone of the psychological approach. And supportive and communal housing where group therapy and informal and formal gathering will form the social part of the approach. In a holistic fashion, job and life skills would be taught to patients, and psychiatric help available on a regular basis and in times of crisis.

3.0   Treatment Methods

There are many different forms of treatment available to patients, ranging from individual and group therapy to drug and electroconvulsive therapy. Treatment often depends on the doctor, as David Myers summarizes:

> *Those who believe that psychological disorders are learned will tend to favour psychological therapies. Those who view disorders as biologically rooted are likely to advocate medication as well. Those who believe that disorders are responses to social conditions will, in addition, want to reform the "sick" environment. Many therapists seek to integrate the insights from each of these views.[133]*

Added to this is the nature/nurture debate; whether genetics or environment is more of a determining factor. Anthony Storr elaborates by saying:

> *Geneticists, and many psychologists, assume that inheritance is far more important than environment in determining adult personality. Psycho-analysts believe that environmental factors, especially those [obtained] in infancy and early childhood, are the paramount forces shaping what people become.[134]*

Current hospital trends gravitate towards a Psychosocial Rehabilitation approach, where its goal is:

> *to improve the quality of life for persons with severe and persistent psychiatric disabilities by assisting them to assume responsibility over their lives and to function as actively and independently in society as possible. Of course, there will always be patients who may never be able to return to the community, such as highly institutionalized patients or forensic patients, but they should be the exception rather than the rule.[135]*

David Myers goes one step further by stating that "everything psychological is also biological."[136] He submits that psychiatrists usually subscribe to a "bio-psycho-social perspective" which combines genetics and physiology with inner psychological dynamics and social and cultural circumstances,[137] and involves "patients, family members and significant others… as part of the treatment team."[138] In any case, "[Psychosocial Rehabilitation] is holistic, with an emphasis on the whole person," which implies patient recovery needs a variety of treatment options with a strong, long-term support base in a healing environment.[139] These long-term support bases are not found in hospitals due to the desire to save money and reduce hospital stays for patients, and they have not yet been fully developed outside of the hospital environment.

I think to myself: I have finally gotten so impossible and unpleasant that they will really have to do something to make me better. And then I realize, they think they are doing all they can and it's not working. They have no idea what a bottomless pit of misery I am. They will have to do more and more and more. They think the psychiatrist ought to be enough, they think making the kind of cursory efforts any parents make when their kid is slipping away will be enough, but they don't know how enormous my need is. They don't know how much I will demand of them before I even *think* about getting better. They do not know that this is not some practice fire drill meant to prepare them for the real inferno, because the real thing is happening right now. *All the bells say: too late…* They still don't know that they need to do more and more and more, they need to try to get through to me until they haven't slept or eaten or breathed fresh air for days, they need to try until they've died for me. They have to suffer as I have. And even after they've done that, there will still be more.

Wurtzel, Elizabeth: *Prozac Nation*; 51

In the case of my own depression, I have gone from a thorough certainty that its origins are in bad biology to a more flexible belief that after an accumulation of life events make my head such an ugly thing to be stuck in, my brain's chemicals started to agree. There's no way to know any of this for sure right now. There isn't some blood test, akin to those for mononucleosis or HIV, that you can take to find a mental imbalance... Where my depression is concerned, the fact that Prozac in combination with other drugs has been, for the most part, a successful antidote, leads me to believe that regardless of how I got started on my path of misery, by the time I got treatment the problem was certainly chemical. What many people don't realize is that the cause-and-effect relationship in mental disorders is a two-way shuttle: It's not just that an a priori imbalance can make you depressed. It's that years and years of exogenous depression (a malaise caused by external events) can actually fuck up your internal chemistry so much that you need a drug to get it working properly again. Had I been treated by a competent therapist at the onset of my depression, perhaps its mere kindling would not have turned into a nightmarish psychic bonfire, and I might not have arrived at the point, a decade later, where I needed medication just to be able to get out of bed in the morning.

Wurtzel, Elizabeth: *Prozac Nation*; 345-46

These attitudes tie in very closely with the Recovery Philosophy, laid out by the Ontario provincial government. It promotes individual empowerment and the chance to "achieve independence and a quality of life that [the patient] didn't have during their illness."[140]

Ontario's new recovery philosophy, proposed in 2003, stresses that staff should aid the patient by: empowering the patient by helping them to make decisions for themselves, teaching better coping and learning skills to enable the patient to live as normal a pre-illness life as possible, and following the patient's progress over longer periods of time.[141] As patient care is delegated to the community due to the high cost of hospital stays, evaluating the patient's progress includes surveying the life of the patient outside of the hospital system. This becomes extremely helpful, as it is often in these outside situations when relapses occur, and the need for hospitalization becomes imminent. By providing support outside the hospital in forms such as Assertive Community Treatment Teams, Consumer/Survivor Initiatives and Intensive Case Management, it is possible to prevent some of the relapses that may occur, and help the patient to survive in their current situation. Assertive Community Treatment teams refer to taking mental health help into the community through emergency responses to patient and family concerns.[142] Consumer/Survivor Initiatives occur where former patients, (mental health consumers and survivors), help other patients survive their illness by example and by support. It is a form of group therapy run by former patients who want to help others going through the same things they did.[143] Intensive Case management is long-term support, where a patient's case is managed over the course of several years, rather than through a short hospital stay and referral system.[144] It can be described as a program

> developed to provide low-cost support to patients living in the community, many of whom were formerly chronically institutionalized. Case managers may help patients find housing; manage financial resources; get access to psychiatric clinics, rehabilitation services, and crisis intervention; and comply with medication regiments. Such assistance may enable patients to live in settings with no or minimal mental health worker-provided supervision. [145]

In both Psychosocial Rehabilitation and the Recovery Philosophy the onus is on the patient to want to change, to want to learn how to cope with their illnesses, and to improve their overall situation. As one former Homewood patient mentioned, "you have to want to get help" for it to work.[146]

The therapies that are the most prominent methods for treating mental illnesses with patients are: group therapy, family therapy, individual therapy, electroconvulsive therapy, psychosurgery, and drug therapy. As Herbert Meltzer et al. summarizes, the general idea of treatment, in terms of schizophrenia, is that

Although antipsychotic drugs are the mainstay of treatment of schizophrenia, important nonpharmacologic treatments are also available. These treatments are aimed at improving compliance with drug therapy, supporting the patients, fostering independent living skills, improving psychosocial and work functioning, and reducing caretaker burden.[147]

Other treatments that have been re-established and redefined as psychology has developed are: nutritional and environmental therapy, community involvement, physical activity combined with access to nature, and spirituality.

While summarizing the majority of treatment options available, this thesis is inspired by the holistic bio-psycho-social perspective. It intends to highlight nutritional and environmental therapy for the biological part of the triad; individual therapy and spirituality for the psychological part, and group and family therapy in a community setting for the social component.

3.1   Group Therapy

While group therapy is commonly used by both in and out-patient facilities, it is the most frequently used form of treatment in the therapeutic community. As Anthony Storr suggests, "man has moved a long way from the social condition of the hunter-gatherer, but his need for social interaction and for positive ties with others has persisted."[148] Most often it is viewed in terms of an illness support group; however, it can serve patients with varying mental illnesses and abilities. Generally, a therapist guides the interactions of six to ten people as they engage in issues and react to one another.[149] In the therapeutic community, this is one of the key ways of helping patients recover and to learn to reintegrate socially; here patients tend to take more of an initiative to lead the discussions. A benefit to the patients is that those who have recovered to a greater extent are able to apply their experiences in the group setting in order to help those who are able to handle less.[150] This form of treatment is beneficial in its ability to maintain connections with patients long after their release from hospital and the potential to follow them through over a longer period of time.

While this can be difficult for OCD and paranoid patients because they don't want to relinquish control,[151] or they lack basic trust,[152] for schizophrenics it is ideal because it provides an opportunity for "the modeling and acquisition of needed social skills."[153]

3.2   Family Therapy

Family therapy assumes we live and grow in relation to others, and provides an opportunity for several things.[154] Its importance is stressed in schizophrenia

I am here today to encourage others who live with mental illness, to tell them that the treatment works, that there is no shame in coming forward for help. If you feel you are being judged, and I certainly always felt that I was being judged, you must ignore the unfair prejudices that society may place on you.

Trudeau, Margaret (Galloway, Gloria): *Margaret Trudeau's 'Dark Place' of Despair*; article

with the fact that according to Herbert Meltzer,

> *expressed emotion predicts relapse of schizophrenia. Relapse rates may be twice as high among families in which expressed emotion is high, in comparison to families in which expressed emotion is low. Family treatment that reduces expressed emotion reduces the likelihood of relapse, especially if the patient's response to antipsychotic medication is less than optimal.[155]*

Family therapy engages the patient's family or personal circle in conversation with psychiatric staff members about the patient, their needs and their responses to stress and episode triggers. It provides the psychiatrist and family members with accurate information pertaining to the patient and illness in question. It also creates an atmosphere where families of patients with mental illnesses can support each other in a network as they support their family member. As Peter Loosen describes,

> *Patients should recognize that the illness may recur; they – and their close family members – should be cognizant of the premonitory signs and symptoms of an impeding episode (ie, insomnia, especially early morning awakening, loss of energy, loss of appetite and libido, and diurnal changes in well-being); and they should be told to return to their physician as soon as they have noticed any combination of the premonitory signs for, say, longer than 1 week.[156]*

This makes emergency responses easier by organizations such as Assertive Community Treatment Teams, as they already may have established connections with the family, and also provides long-term follow-through for the family as well as the patient. Herbert Meltzer describes its importance by saying "providing education and support to family members is a crucial component of a comprehensive treatment approach."[157]

3.3   Individual Therapy

While group and family therapy allows the people who influence the patient to participate in the treatment offered, there needs to be a mixture of therapies for patients, to compensate for the combination of introversion and extraversion within a person. Some people need to be alone because "at times, other people constitute a hindrance, interference, or threat."[158]   Jung's theory of balancing people and solitude is summarized by Storr in that

> *extreme extraversion led to the individual losing his own identity in the press of people and events. Extreme introversion threatened the subjectively preoccupied individual with loss on contact with external reality.[159]*

Storr suggests that "in the end, one has to make sense of one's own life, however influential guidance from mentors may have been."[160]   In individual therapy, "the analytical encounter is, after all, unique. No ordinary social meeting allows detailed study of the way in which one party reacts to the other."[161]   It allows for the capacity to be alone in the presence of another person, which "becomes linked with self-discovery and self-realization; with becoming aware of one's deepest needs, feelings, and impulses."[162]

Individual therapy has several different options, but as previously stated, therapists tend to use a combination of techniques to treat the individual patient. The most commonly known therapy technique is psychoanalysis, which "assumes that many psychological problems are fuelled by childhood's residue of supposedly repressed impulses and conflicts."[163]   This theory was developed by Freud at the end of the Victorian era, which promoted the repression of those impulses.

Most therapies are now divided into three categories: humanistic therapies, behaviour therapies and cognitive therapies. Humanistic therapies "aim to boost self-fulfillment by helping people grow in self-awareness and self-acceptance."[164] This type of therapy would help a patient come to terms with the nature of their illness, and enable the patient to help and understand the treatment options available. An example where this would be used would be to assist patients to break through any phobias they may have or to understand any disabling obsessions. Behaviour therapies "apply well-established leaning principles to eliminate the unwanted behaviour."[165]   This would be applicable in instances where compulsions are creating maladaptive behaviours and need to be corrected. Cognitive therapies "assume that our thinking colours our feeling[s], that between event and our response is the mind."[166]   It considers environment and the reaction of the patient, and works to establish new reactions to stresses that are considered harmful to the patient. In general "what any therapy offers is the expectation that, with commitment from the patient, things can and will get better."[167]   At an intimate scale, this is offered over a prolonged period of time, and helps see the patient though. When hospitalized, the patient begins some formal treatment as an inpatient, then is transferred to another doctor or be placed in outpatient care. It is best for patients if there is a minimum of transfers between doctors or therapists.

3.4   Electroconvulsive Therapy (ECT)

Electroconvulsive therapy is also known as shock therapy, though it's proponents believe it is now less violent than as described in Ken Kesey's *One Flew Over the Cuckoo's Nest*. A patient is placed under anaesthetic and muscle relaxants for the duration of the treatment, which is for only a brief time, in some cases only a few seconds. British Columbia's provincial general use documents even approve its

use during pregnancy.[168] Generally, it is relegated to severe depression and for those patients who do not respond to drug or other therapy.[169] Treatment of

> *a short course of ECT (eg, 6-12 treatments) may be useful as an adjunctive treatment to antipsychotic drugs of all classes, including clozapine, for patients with limited response to treatment and particularly when very rapid control of agitated behaviour is necessary.[170]*

A patient's view of the process is described in the following:

> *You put on hospital garb and climb into one of the beds lined up outside the procedure room. On my visits, usually I was one of six, and, surprisingly, the rest were all ladies…. When your time comes, you are wheeled into the treatment room, gel is placed on both your temples, and an IV needle is inserted in your arm for the anaesthetic. The anaesthetic is very short-acting (three minutes or so) and is combined with a muscle relaxant. Just as you drift off, a strap with the contact points is put around your head like a bandana. Before you know it, you wake up in the next room, are fed breakfast, and after your blood pressure is taken you are allowed to go in about an hour. The ECT procedure is totally painless….[171]*

The formal treatment of ECT is not going to be considered programmatically within this thesis due to its specialized nature, and because it is outside of the holistic approach since it is a last resort form of treatment.

3.5   Psychosurgery

Psychosurgery is the most drastic and least used form of treatment because it is irreversible; it cuts "the nerves [connecting] the frontal lobes with the emotion controlling centers of the inner brain [which calms] uncontrollably [emotional] and violent patients."[172] It is a less drastic and more updated form of the traditional surgical lobotomy, which cut out portions of the frontal lobe of the brain. This is also not going to be considered programmatically in this thesis due to the specialized surgical requirements. It is a last resort option and should be done in a specialized surgical hospital.
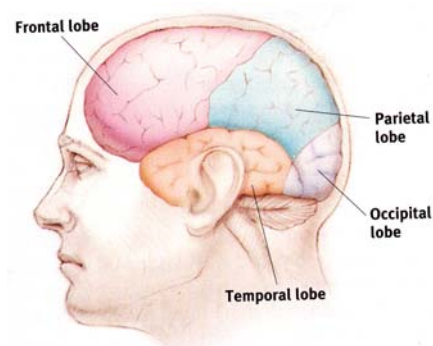
2.3: Model of the Brain

3.6   Drug Therapy

Various drugs are used to treat the different illnesses described at the beginning of this chapter. Antipsychotic drugs such as Thorazine are used to "damper responsiveness to irrelevant stimuli."[173] This type of medication would be used for schizophrenic patients among others, to control the psychotic episodes

arising from the various stimuli to the patient, real or imagined by blocking dopamine receptors in the brain.[174] Also used in schizophrenics are neuroleptics such as haloperidol, which are similar to tranquilizers.[175] Neuroleptics don't always work according to Herbert Meltzer, who found that

> *A comparison of the outcome of schizophrenia before and after the introduction of neuroleptics found that the proportion of patient benefits in the good treatment responsiveness group, as defined by minimal symptoms and adequate social functioning, increased only about 15%. This finding does not detract from the significance of antipsychotic treatment, which dramatically reduces positive symptoms in 60-70% of patients and enables many patients to live in the community, albeit unprepared for the outside world."[176]*

There are known side effects that can be disturbing. Effects like photosensitivity, glaucoma, neuroleptic-induced Parkinson's disease, and acute dystonia (trunk torsion) may be treated with other, related drugs or surgery.[177] Therefore, drug treatment for schizophrenia includes a multitude of drugs for their many side-effects as well. The drugs prescribed are also based on they varying types of positive and negative symptoms displayed by the patient. Pharmacologic: Treatments include use of Neuroleptics to reduce positive symptoms and other antipsychotic drugs like clozapine, which reduce negative symptoms.[178] These treatments don't prepare a patient for life outside a mental health facility, other psychotherapies must take place.

Antidepressant drugs and selective serotonin reuptake inhibitors (SSRIs) such as bupropion lift people from a state of depression.[179] They are

> *usually initiated at a low dosage and increased over a 7- to 10-day period to achieve the initial target dosage. The dosage may have to be increased further in some patients in order to achieve the best results. With suicidal patients, the physician must take extra care early in the treatment because behavioural activation can precede observable mood effects, providing patients with sufficient energy to act on suicidal impulses.[180]*

For those who are bipolar, often the mineral lithium is used to control the extremity of the moods, however, why it works in not currently understood. Mood stabilizers like clozapine and calcium channel blockers are often used in bipolar patients.[181] Side effects include: renal, liver and thyroid toxicity, and bone marrow suppression.[182]

Antianxiety drugs such as Valium tend to be the most prescribed and the most abused, and are used to treat anxiety disorders. They "reduce tension and anxiety."[183] Anxiolytics, such as benzodiazepines are also prevalent.[184] For obsessive-compulsive disorder, SSRIs and clomipramine are used.[185] Over all, "it

So for now, medication keeps me stable. What keeps me well is attention to exercise, faith, sleep, nutrition, stress levels, and social supports.

Hamid, Sarah (Nunes, Julia et al.): *Beyond Crazy*; 231

Even so, lethal or not, I doubt she meant for me to be swallowing these little pills every few minutes. But that's pretty much what happens to people who take any kind of medicine for anxiety: When a crisis comes on, they swallow one pill after another, in search of relief. Pop them like M & M's. On the bottle, it says, "Take three times a day, or as needed." *As needed?* Who do they think they're dealing with? *As needed*, in my case, means a pretty constant flow, a portable intravenous dripping in my arm - or, at the very least, new pills digesting in my stomach and entering my bloodstream at all times.

Wurtzel, Elizabeth: *Prozac Nation*; 278-79

is very important that the clinician be able to offer a broad range of potentially successful treatments and treatment combinations."[186] Side effects are similar to those found in depression treatments.

Storr notes that "many episodes of mental illness are preceded by periods of insomnia."[187] A phenomenon occurs where REM sleep is decreased in "people taking barbiturates, amphetamines, or alcohol. When the drugs are stopped, a rebound phenomenon occurs. The subject shows an increase in REM sleep as if he were trying to make up for what had been missing."[188] What this implies is that a lack of sleep affects brain, and that some drugs can potentially have the same effects of sleep deprivation. The body then tends to swing the other direction to account for its loss of sleep. There is evidence of this in the sleep patterns of bipolar patients, who have both excessive sleep and insomnia at various points in their illness episodes.

Drug therapy is a long and arduous process, much like the psychiatric therapy process: recovery is not an overnight occurrence, even with the new drugs being developed. One patient describes the process in the following two paragraphs:

> *Having tapped out the expertise of my GP, I began seeing a psychiatrist, after a long wait, to establish an antidepressant action plan. Over the next twenty months, I would go through another dozen drugs, dosages, and combinations. Each time my mom and I went to fill a new prescription, my heart brimmed with hope. And each time those expectations were dashed as my symptoms persisted and I suffered a myriad of side effects (dry mouth, nausea, jitters, sedation). Blood tests and ECGs became as regular as my doctor visits. My loving friends and family stood by, unable to do anything but hug me, as they watched me suffer through trial-and-error after trial-and-error. I cannot describe how physically and emotionally exhausting it was to ride the roller coaster of hope and side effects offered by each new array of pills. At the time, I was so depressed I underestimated the extent to which my family, best friend, and boyfriend suffered too, Now, in retrospect, I'm aware that their own mental health and spiritual strength were under constant strain.*
>
> *Eventually I said "enough," and in October 1998 – more than two years after the symptoms had started and around the time a very close family member passed away – I finally asked to be put back on drug Number 2. (By this time, the manufacturer had come up with a new slow-release formulation of the drug.) A very high dose is what finally got me stable. Of course, there was no reason to expect better results the second time around; I just lucked out. I attribute that luck to divine intervention and a gift from the soul of my departed aunt, who had been like another mother to me.[189]*

Sarah Hamid who wrote the above, aims to take herself off the medication

Dr. Sterling tells me that she has suspected from the start that the cache of feelings and behaviours that characterize atypical depression described my situation exactly. But she's never bothered to mention it because there isn't any reason to draw the symptoms of a depression into a particular category unless a therapist is about to prescribe an antidepressant. Enter Prozac, and suddenly I have a diagnosis. It seems oddly illogical: Rather than defining my disease as a way to lead us to fluoxetine, the invention of this drug has brought us to my disease. Which seems backward, but much less so later on, when I find that this is a typical course of events in psychiatry, that the discovery of a drug to treat, say, schizophrenia, will tend to result in many more patients being diagnosed as schizophrenics. This is strictly Marxian psychopharmacology, where the material - or rather, pharmaceutical - means determine the way an individual's case history is interpreted. But right now, lying in Stillman, I am in no position to do this kind of critical thinking. I am simply reminded of the way I've always felt that the onslaught of my depression occurred gradually and then suddenly - an ostensible paradox, but that's why its atypical.

Wurtzel, Elizabeth: *Prozac Nation*; 301

I only hope that whatever pill she gives me makes me feel well enough to plot my own end, to gather the medicines or other methods of destruction in order to make this suicide a success and not just one more wimpy attempt by another hysterical girl who wants help. Because I don't want their fucking help anymore.

Wurtzel, Elizabeth: *Prozac Nation*; 293-94

completely while learning the behavioural therapies needed in case her symptoms return again.[190]

Given the difficult trial-and-error process with the various drugs, and the length of time needed to establish a strong bond between a patient and psychiatrist, constant supervision may be necessary, especially in the case of a suicidal patient. However, if a hospital environment triggers a paranoid episode, it may not be the best place for them to be housed. If the patient happens to have a particularly strong family support system, it may also help to have them nearby, and within reach of any psychiatric help they may need themselves as their family member goes through this process. It is essential to remember that drugs alone do not solve the emotional health of a person, psychological therapy needs to be taken so that a patient can understand normal mood swings and other psychological phenomena.

3.7   Nutritional and Environmental Therapy

The Diagnostic and Statistical Manual of Mental Disorders stipulates that psychiatric conditions may arise due to ill-health, addiction or other reasons. For example, it lists depression as possibly resulting from another physical condition such as a debilitating illness, which is then treated differently from clinical depression.[191] There is a great fear among some psychological practitioners that mental health recovery is no longer about maintaining health, but pushing drugs to mask the symptoms. Dr. Sherry Rogers illustrates this point in her book Depression Cured at Last by writing

2.4: Body as A Container

> It is as though arthritis was a Motrin deficiency, and depression was a Prozac deficiency. There is no thrust to find the cause and get rid of it once and for all. Cure is not the goal. But addiction to symptom-relieving medications seems to be the focus. Is it a coincidence that the parent companies that own many insurance companies are pharmaceutical and chemical firms?

> And now with cookbook medicine being ruled by practice guidelines, you are even more powerless and unlikely to have someone interested in finding the correctable causes. Once you have a label or diagnosis, you are restricted by your physician and insurance company to certain drugs. A label becomes a dangerous thing, for it can be a one-way street to getting worse. You could die from that label, for finding the correctable cause is not part of the cookbook practice guidelines that are directing how medicine is practiced.[192]

Nutritional or orthomolecular therapy and environmental therapy look for the underlying physical causes to a patient's mental health problems while also treating their mental health. Joan Matthews Larson, author of Depression-Free
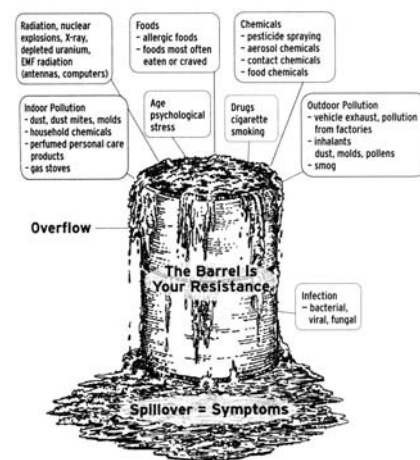
Naturally, discovered this due to her son's depression. She writes:

> *Feelings of hopelessness and despair commonly result when perceived failures and weaknesses are continually filtered through a depressed brain. That Rob was unable to get the help he needed had a profound effect on me, and led me through an enormous body of research confirming how alcohol and even prescribed drugs, and/or stress, and/or poor nutrition, and/or poor absorption alter or destroy many of the natural substances the human brain needs in order to create and regulate emotions. As a result, our brains alter physically - but the changes are expressed emotionally.[193]*

Her findings led her to create the Health Recovery Centre in Minneapolis, Minnesota, where she has been applying nutritional therapy to thousands of people for more than 20 years. Its overall medical philosophy is that "the role of drugs in your emotional health should be short-term - a bridge until proper natural balance has been achieved."[194]

In her research Joan Matthews Larson's uses Dr. Pauling's definition of orthomolecular therapy as is "the treatment of mental disease by the provision of the optimum molecular environment for the mind, especially the optimum concentrations of substances normally present in the human body."[195] It stresses that "Natural substances that belong in our bodies have remarkable low toxicity, especially when compared to drugs, which, in general, are highly toxic and sometimes prescribed in doses close to lethal levels."[196]

In explaining the difference in drugs and the natural substances necessary for a healthy brain, Joan Matthews Larson writes that "amino acids emerged as powerful tools for psychiatry because they convert to, or are our brain neurotransmitters… These natural brain substances are creating sanity and well-being."[197] The human body maintains a natural balance by "supplying enough of the natural amino acid tryptophan, which then converts to serotonin, fully loading all our serotonin neurotransmitters."[198] She goes on to describe that the transmitter is usually fine for releasing the serotonin, but there is sometimes little to transmit.[199] SSRIs block the reuptake to prevent serotonin backflow, while nutritional therapy aims to supply more of the substance needed to transmit. The supply is depleted because

> *ongoing stress, genetics, poor nutrition, alcohol, and drugs shortchange our natural supply of tryptophan to serotonin. And studies have correlated the depletion of tryptophan, and the decreased ratio between tryptophan and other amino acids, with suicide, depression, and even violence.[200]*

For patients who display severe signs of anxiety, the natural elements Zinc and B_6 play an increasingly important role. Vitamin B_6 aids in balancing the nervous system by utilizing protein for energy.[201] Matthews Larson has observed that

"brain depletion of dopamine and serotonin occur without B$_6$, creating ongoing anxiety and depression. B$_6$ slows the conversion of pyruvate to lactic acid; without B$_6$, there is an elevated level of lactic acid, creating anxiety."[202] Therefore, without B$_6$, serotonin gets depleted, and lactic acid increases, which poses problems. Studies have shown that "anxiety and depression have been observed in patients who develop zinc deficiency as a result of intravenous feedings."[203]

Schizophrenics at Minnesota's Health Recovery Centre have been treated with Omega-3, a fatty acid now being used to market eggs and other food products.

Joan Matthews Larson writes that "Omega-3 is vital because it provides the base from which the prostaglandin hormones are created. These hormones regulate every neurocircuit throughout the entire brain and body."[204] Therefore, these hormones can be added to a balanced diet to aid in regulating the neurocircuits that relay messages around the body. The idea is that if schizophrenics hear or see things due to their brain activity, balancing the hormone should help to regulate that activity.

This has been used successfully in several patients because they discovered a

> *fall in the level of PGE1 [prostaglandin E1] will lead to a potentially catastrophic series of untoward consequences including increased vascular reactivity, elevated cholesterol production, diabetic-like changes in insulin release, enhanced risk of auto-immune disease, enhanced risk of inflammatory disorders, and susceptibility to depression.[205]*

Other physiological items play into the potential for mental illness. Joan Matthews Larson believes that

> *mental health professionals often fail to recognize hypoglycaemic symptoms. They attempt to explain them as psychological phenomena… Hypoglycaemia can cause severe metabolic changes in your brain and nervous system, creating altered moods, emotional instability and behaviour changes.[206]*

Dr. J. Krop, an environmental physician stresses that people can have a total body burden, which consists of "past and present physical, chemical, biological contaminants in food, air and water, as well as the emotional state of the individual."[207] He compares that burden to a limited capacity container, where "anything above capacity causes spillover or, in other words, allergic symptoms and ultimately sickness."[208] An example can be found when "Dr. Pfeiffer discovered that blood histamine levels were elevated in the lab tests of obsessive-compulsive individuals. As these patients improved, their histamine levels dropped and their depression lifted."[209] The reverse was found in patients who were paranoid or had hallucinations.[210] The important discovery was that

"individuals with either high or low levels of histamine showed some degree of thought disorder and overarousal."[211] It meant that perhaps substances that blocked or created histamines could be used to treat patients.

Environmental Medicine also deals with the patient's environment in terms of allergies. Dr. Sherry Rogers even theorizes in her book that since the pancreas over-secretes if it's a target organ for a milk allergy, or the skin breaks out with a strawberry allergy, the brain can be a target organ to chemicals, sugars, and other substances. She writes

> *when the brain has symptoms it cannot wheeze and cough, it cannot break out in hives. But it can present a depressive mood. Other symptoms including seizures, migraines, rage, schizophrenia, autism, obsessive compulsion, panic attacks, flying off the handle for no reason, learning disorder, attention deficit disorders, and violent mood swings are just some of the many different types of symptoms that the brain is capable of.[212]*

Environmental Medicine suggests that product chemical off-gassing, nutritional and environmental allergies, and even dirty electrical current play a large role in the physical health of a person. These physical problems may very well affect the mental well being of a patient, and correcting them may solve their problems. Examples such as how mercury fillings affect the onset of Alzheimer's disease may be found in the book *Healing the Planet*: One Patient at a Time by Dr. Jozef Krop.

Chemical, food and environmental allergies can also take a long time to heal. Like drug combinations, it takes time to find the right allergen triggers for any patient. As Dr. Sherry Rogers notes on gluten sensitivity as a cause of depression, "you have to be off wheat entirely for 6 months before the gut will properly heal. If you have the slightest trace of wheat during that time, then you have to start all over again. Unfortunately, wheat is not easy to avoid."[213] There are systems for determining the correct allergens, but it takes time to do a detailed patient history and then to eliminate and reintroduce allergens to see the body's response. It is a trial-and-error effort, but the hope rests in the "80-20 rule [where] 80% of the people will be better with 20% of the diagnostic and treatment armamentarium."[214] Ideally this would take place in a highly supervised environment, both medically and psychologically, preferably with the help and support of the patient's family, with the proper nutrition readily available. This environment should be sensitive to patient needs, minimizing off-gassing and dirty electrical current among other things.

In more philosophical terms, working gives me more satisfaction in being human, I'm actually fairly happy being a human being these days.

Chovil, Ian (Nunes, Julia et al.): *Beyond Crazy*; 254

3.8   Community Involvement

Freud described psychological health as "the ability to love and work."[215] Brought

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forth originally in the Mad Movement of the 1800's, community involvement is a prominent part of the treatment in a therapeutic community. It constitutes both participation in the running of the community itself, and work in or outside of the community. The patients are expected to help clean, cook, and contribute in day to day activities to the best of their abilities. For some patients it will require some effort just to get out of bed and to relearn these processes, while for others, they will already be well prepared. For patients who are more able, they are encouraged to acquire jobs, and venture into the community. This is also part of the recovery philosophy, which empowers patients to obtain a lifestyle as close as possible to what they had prior to the onset of their illness. As Anthony Storr notes:

> *Social structures of the kind found in the army or in a business may not give individuals the same kind of satisfactions which they might obtain from intimate relationships but they do provide a setting in which the individual feels he has a function and a place.[216]*

This can be seen in the outdoor activity spaces used by several mental hospitals like the Homewood and by their support for the patient to venture out into the city of Guelph through their open doors and access to the local transit system. Seven Oaks uses this kind of setting in some of the buildings, where in the small communities of patients in each building, those who are able are encouraged to visit Victoria on their own.

3.9   Physical Activity and a Connection to the Outdoors

During the Mad Movement farming was encouraged both as occupation and therapy. Now, at the Homewood facility in Guelph, Ontario, and Ecoworks in England, gardening with others is a key component to a patient's therapy.[217] The connection to the outdoors is important for both facilities. Patients at the Homewood facility have expressed how therapeutic horticultural therapy is, and have theorized that cleaning out the dead brush while caring for the plants is a metaphoric process for what they themselves are going through.[218] Natural light, positive distraction, community and the haptic senses all play a part in this healing connection, which will be discussed later in this thesis.

Physical activity is equally important, the Homewood and the Seven Oaks facility in British Columbia both provide fitness gyms for their more mobile patients. In addition, the Homewood facility requests that all patients do at least one 20 minute walk around the facility daily and provides physical trainers to educate the patients on proper fitness.[219] This stresses the importance of physical activity in a patient's recovery and mental well-being. Since the trainers and horticulturalists are involved most of the time in an informal group setting, they see the patients outside of clinical office hours. It is in these settings that life

[The practice was to] engage the disturbed individual in a regular routine of useful, varied work, and to do this within and intimate, family-like atmosphere in an attractive setting and location.

Kennard, David: *An Introduction to Therapeutic Communities*; 35

While I lay in the hospital the thought came that there were thousands of hopeless alcoholics who might be glad to have what had been so freely given me. Perhaps I could help some of them. They in turn might work with others.

W., Bill (Alcoholics Anonymous): *The Big Book*; 14

Here I realized I could achieve one dream, to play ball well. Then I realized I could reach other goals.

Gladue, Mike (Porter, Catherine): *They're Hoping for Home*; article

Cleaning out the dead brush for the plants to grow is similar to cleaning out the dead spots in their lives.

Homewood Health Centre Tour Guide

and social skills may be enhanced, and the staff members are able to reinforce the idea of a holistic approach to healing through speaking to the patients about lifestyle and nutrition.

3.10   Spirituality

This is not a subject broached by many psychiatrists. According to Myers, "one-fifth to one-half of psychiatrists and clinical psychologists" in Canada and the US, and two-thirds in the UK are atheist or agnostic.[220] Therefore, while the practitioner may be open to different systems of faith, it can be difficult for the doctor to relate completely to the faith of patient. For example, clinical psychiatric illnesses can be hidden in terms of a patient's faith. In the Islamic countries "examples of OCD… are believed to be masked by religious rituals."[221] In the Catholic faith, this same illness might be shown in obsessively saying prayers to rosary beads to ward off evil. It is therefore important for a practitioner to understand these faith relationships to establish a proper diagnosis.

However, in his book Recovering the Soul, Larry Dossey introduces this idea faith and mind by saying:

> Local [scientific] theories of the mind are not only incomplete, they are destructive. They create the illusion of death and aloneness, altogether local concepts. They foster existential oppression and hopelessness by giving us an utterly false idea of our basic nature, advising us that we are contracted, limited, and mortal creatures locked inside our bodies and drifting inexorably toward the end of time.[222]

The spiritual side of mental health stresses that recovery can not come from the individual alone; it assumes we have lost a connection with a higher or more universal power; one that can give us new insight and inner strength.[223] The Big Book, the primary text from Alcoholics Anonymous states it best by saying:

> If a mere code of morals or a better philosophy of life were sufficient to overcome alcoholism, many of us would have recovered long ago. But we found that such codes and philosophies did not save us, no matter how much we tried. We could wish to be moral, we could wish to be philosophically comforted, in fact, we could will these things with all our might, but the needed power wasn't there. Our human resources, as marshalled by the will, were not sufficient; they failed utterly.[224]

Anthony Storr likens faith and prayer to the importance of solitude, and being comfortable in the presence of another (divine) being. He writes "prayer goes far beyond merely asking for benefits for oneself or for others. Prayer can be

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I must have understood that my material circumstances were such that I alone could keep myself from falling. I mean, if I were a rich kid with stable, self-sufficient parents whom I thought I could trust to attend to themselves and to me, and I were heading for a tailspin, I might feel free to let myself free-fall, knowing that someone else would provide a bottom upon which I might eventually bottom out. But what if are the only resting point you know of? What if you are absolute zero? What if only you can catch yourself?

Wurtzel, Elizabeth: *Prozac Nation*; 56-57

There I humbly offered myself to God, as I then understood Him, to do with me as He would. I placed myself unreservedly under His care and direction. I admitted for the first time that of myself I was nothing: that without Him I was lost. I ruthlessly faced my sins and became willing to have my new-found Friend take them away, root and branch. I have not had a drink since.

W. Bill (Alcoholics Anonymous): *The Big Book*; 13

I hate to admit it, but even after years of religious training I really don't believe in the afterlife. I still think that human beings, even our beautiful and wretched souls, are just biology, are just a series of chemical and physical reactions that one day stop, and so do we, and that is that. But I'm looking forward to this blank peace, this oblivion, this nothing, this not being anymore. I am looking forward to it for real. Or at least, this is what I tell myself. I tell myself I'm not scared, I tell myself I really want to die, and it never occurs to me until the last possible moment that what I really want is to be saved.

Wurtzel, Elizabeth: *Prozac Nation*; 316

a public act of worship; but the person who prays in private feels himself to be alone in the presence of God."[225] This can also be seen in aspects of meditation; the process of emptying yourself of what you currently possess and who you are, and allowing the truth and power around you to sustain you. Here, spirituality also reflects an acceptance by the divine, which can be key to accepting the self and can begin to erase the stigma associated with mental illness.

For the AA group, this means they "have written a book which [they] believe to be spiritual as well as moral. And it means, or course, that [they] are going to talk about God."[226] The 12 steps of Alcoholics Anonymous were once based on Christian foundations, primarily the acceptance of a higher power in place of one's own strength. Currently, they will accept any measure of faith or agnosticism in their meetings. Their method is an example of grace and mercy, and owning up to humanity's flaws. The steps are there as guidelines towards the recovery from alcoholism, but they rest in the idea that it is a higher power that sustains them throughout the process.

Other programs also operate in this manner for those in need. Among them is Sanctuary, in Toronto, which is a "Christian charitable organization that seeks to establish and develop holistic, inclusive and healthy community" and welcomes "people who have, for the most part, known only rejection and abuse."[227] Places such as sanctuary reach out not only to substance abusers, but make their ways into mental hospitals to reach out to those suffering within their walls. In reaching out to people with mental illness, acceptance can begin, allowing patients to feel as part of a community, which can begin to erase the stigma of mental illness. Because spirituality speaks to the essence of how a person defines herself, it is important to include it in the holistic approach to healing. With this in mind, many psychiatric and general hospital facilities offer non-denominational and multi-faith spaces dedicated to the faithful. Overall, as the AA Big Book notes, these programs submit to the idea that "God does not make too hard terms with those who seek Him. To us, the Realm of Spirit is broad, roomy, all inclusive; never exclusive or forbidding to those who earnestly seek. It is open, we believe, to all men."[228]

3.11   Thesis Treatment Focus

Patients, like all people, are unique. Dan Haseltine, in the Relevant Magazine article Your Whole Self writes "it is our redemption that looks unique -- it is the way healing comes, how long it takes, who is involved that makes us different."[229] This thesis focuses in on the unique needs of patients with schizophrenia, mood disorders and anxiety disorders by looking at the three key treatment philosophies within the holistic approach. Orthomolecular or nutritional therapy – a relatively new view in psychiatry – looks to correct a patient's unique nutritional imbalances and deficiencies in order to prevent psychiatric

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Severely depressed patients really do lack something within which other, less vulnerable people possess; an incorporated sense of their own value as persons.

Storr, Anthony: *Solitude*; 97

**and i'd like to
lay it down a little
or lay it down a lot
i don't want to hold it anymore
lay it down in pieces
or lay it down in whole
everything i've carried on my own**

Nordeman, Nichole: *Lay It Down*; CD

**I'll never forget Patty's words when she stood to testify to our small Sanctuary congregation just before being baptized. The words sounded innocuous enough, and simple, but they cloaked a world of painful complexity.
"When I was in a dark place, and nobody else could reach me," she said, "Jesus came and found me and set me free."
Few others present that day knew the story behind her seemingly stock evangelical statement. The "dark place" Patter referred to was a rubber room in a psych hospital. Nobody else could reach her because she was often straitjacketed, and always doped to the gills. She had completely lost touch with reality - perhaps a blessing in the short run, since her reality had been so very destructive...
[In her thirties], Patty was diagnosed as suffering from Muliple Personality Disorder. There's a different clinical name for MPD now... [Dissociative Identity Disorder] But for Patty, it was simple. It was hell. She'd meet people for the first time, only to discover they felt like they knew her very well - and sometimes called her by a different name. She lost time - hours, even entire days, just disappeared from her recollection. She'd find herself in an unfamiliar place and not know how she got there, or realize she was bruised or broke with no memory of how it happened...**

Paul, Greg: *God in the Alley*; 58-59

episodes from recurring. Community and group therapy provides patients with a group of people who share similar problems and can therefore understand better the inner struggles that surface because of these disorders. It also "gives people the permission to be known."[230] Add to this individual therapy with a psychiatrist, and all three parts to the bio-psycho-socio approach are present.

In order to accommodate the bio-psycho-social perspective programmatically, this thesis will develop individual and group spaces based on the aforementioned psychiatric programs. Psychiatric treatment spaces will be centered on the different types of therapy listed in this thesis. Rooms of varying scales will be made available for different sized groups of people to meet throughout the building. Larger group meeting spaces should house as many patients and staff members as possible, to allow for building meetings, and other community events. Medium and smaller spaces will be used for more intimate group settings. Individual therapy may take place in small group rooms, or in staff members' offices, as needed.

That's the thing about depression: A human being can survive almost anything, as long as she sees the end in sight. But depression is so insidious, and it compounds daily, that it's impossible to ever see the end. The fog is like a cage without a key.

Wurtzel, Elizabeth: *Prozac Nation*; 191

Nutrition, orthomolecular therapy, fitness and positive distraction are listed as part of the biological perspective in patient treatment. For this reason, spaces that support these premises are exceptionally important. A nutritional grocer and orthomolecular pharmacy are fundamental for patients. This gives doctors and pharmacists a direct relationship and helps to involve pharmacists in a patient's treatment. Patients may feel free to ask questions about the nutritional supplements they may take in order to recover. Housing a pharmacy and grocer within the building also gives patients an added level of responsibility: they are able to go to pick up their own prescriptions, groceries when they cook for themselves, and other needed products for life, such as toothpaste, laundry detergent, etc. A fitness facility, with proper physical trainers will add to this biological treatment perspective, taking into account the patient's body, which is directly linked to the mind. Positive distraction can be achieved by incorporating both a horticultural therapy program and greenhouse into the design. For individual patients, this may include areas where patients can have private spaces to take care of their own plants. A communal quiet outdoor space can serve this purpose as well, especially in the warmer months.

Many of these spaces may not only be used for the biological and psychological treatment, but by making them larger and group oriented spaces, they also serve to create social spaces for patients to meet within. However, since they are often pre-programmed by a type of activity or therapy, they don't always create places of casual relaxation. Adding social spaces with differing levels of privacy and quality gives patients the freedom to choose which environment they would like to be in. Proposed would be spaces such as a game or activity lounge, a quiet lounge, and a meditation space for informal spiritual gatherings. Outdoor spaces may serve this purpose as well.

All of this must take place in a facility geared not only towards recovery, but also towards community and sanctuary. While larger facilities are a wealthier resource for information and specialty care, the intimacy needed for community must remain small enough to allow the patients to feel comfortable in their surroundings. Therefore, proposed is a network of small facilities across the Greater Toronto Area, where information can be shared, and various facilities can be created to accommodate the many needs that will arise with individual patients. Each networked facility is to be an oasis within the city of Toronto, where the building offers sanctuary from the city while supporting the patient's recovery. Residents must feel safe and unafraid in a facility that houses enough people to be a community without being overwhelmingly populated. Patients must be able to gather with others informally throughout the facility, while retaining the option of withdrawing into solitude when necessary. This means creating gathering points that aren't restrictive to residents but are destinations to be enjoyed. The facility must also present the patients with the opportunity to ultimately learn about themselves with the help of other patients and professional staff. Ultimately, recovery itself is unique for individual patients who must rediscover themselves in the process.

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Perception

Individuals possess an unconscious and changing image of their bodies which is quite separate from what they know objectively and quantifiably about their physicality.[1]

Bloomer and Moore: Body, Memory, and Architecture

Architects traditionally are preoccupied with the visual patterns of structures – what one sees. They are almost totally unaware of the fact that people carry around with them internalizations of fixed-feature space learned early in life.[2]

Edward Hall: The Hidden Dimension

Perception and an understanding of how it can vary in mental health patients can provide useful design tools for an architectural language that suits the users. This chapter is an examination of how the body responds to space in terms of perception of the space itself, a person's proximity to others and objects, and how the space affects the body. These categories tend to bleed into each other, crossing boundaries, and are meant as tools for understanding analysis in the design phase of supportive housing for mental health recovery.

Perception varies by culture, and as the thesis is based in Ontario, the following North-American perspective seems appropriate.

1.0   Sense

The classical sense categories are sight, smell, sound, taste and touch where the "sense of touch [is] divided into five sensations: pressure, warmth, cold, pain, and kinesthesis (sensibility to motion)."[3] The modern view is of senses as systems, and they are the visual, auditory, taste-smell, basic orientation, and haptic systems. The basic orientation system "refers to our postural sense of up and down which, because of its dependence on gravity, establishes our knowledge of the ground plane."[4] The haptic sense "includes all those aspects of sensual detection which involved physical contact both inside and outside the
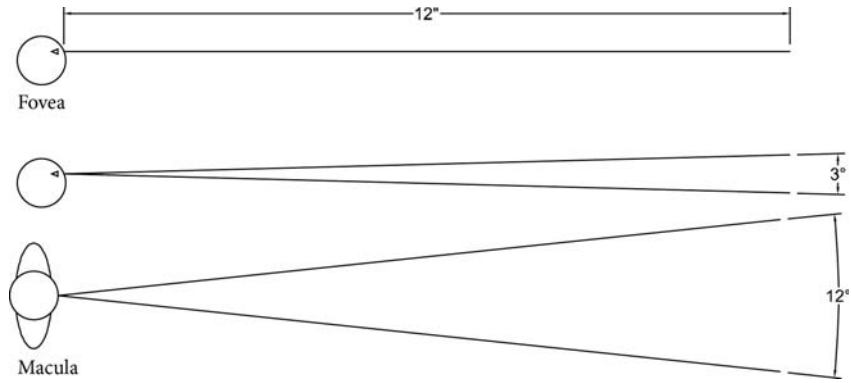
body."[5] It involves more of the sense of touch and is at a more intimate scale than the visual or auditory senses.

The most familiar and well-developed sense is sight. It has three parts: the fovea (which sees 1/96-1/4"), the macula (which sees 3 degrees vertically & 12-15 degrees horizontally and less clearly than the fovea), and peripheral vision.[6] The central differences in visual and auditory systems rest "in the amount and type of information that the two receptor systems can process, [and] in the amount of space that can be probed effectively by these to systems."[7] At a certain distance away, a visual barrier is far more prominent than a sound barrier.[8] An exception to this relationship would be found in a blind person, whose sense of hearing is far more developed due to the particular impairment.

Sight, sound and smell are more useful at distances, though sight is the farthest reaching of the three. The haptic and basic orientation systems are used in intimate distances because of their personal nature. Edward Hall summarizes the research of Michael Balint, who "writing in the International Journal of Psychoanalysis, describes two different perceptual worlds, one sight oriented, the other touch oriented."[9] He goes on to write that "Balint sees the touch oriented as both more immediate and more friendly than the sight oriented world in which space is friendly but is filled with dangerous and unpredictable objects (people)."[10] Bloomer and Moore in Body, Memory, and Architecture believe that

> *in spite of all that is known about the skin as an information-gathering device, designers and engineers have failed to grasp the deep significance of touch, particularly active touch. They have not understood how important it is to keep the person related to the world in which he lives.[11]*

Most architects studying the relationship of man to his surroundings go one step further in describing these intimate distances. More often than not they will say that

> *no other sense deals as directly with the three-dimensional world or*

similarly carries with it the possibility of altering the environment in the process of perceiving it; that is to say, no other sense engages in feeling and doing simultaneously.[12]

These ideas can potentially be used to help a patient stay grounded during times of psychotic breakdowns. John Zeisel describes grounding Alzheimer's patients with a sense of self by providing "continual environmental reminders of their history and who they are."[13] He believes it can be done by using "pictures of family members on the walls of their bedrooms and living rooms, framed reminders of their life's work and achievements, and a residential setting reminiscent of their previous homes" to give them and sense of people with pasts.[14] This is done to "stimulate brain regions that this group of people cannot stimulate themselves."[15] Perhaps by tapping into elements of the haptic sense that aid in grounding a patient, such as tactility, a psychotic breakdown may have less effect on the patient, and they might be able to come out of it more easily.

2.0   Self-Perception

One of the most important aspects of how space affects the body is how the body is felt or perceived by the individual in space. Bloomer and Moore postulate that our experiences of motion and stillness are dependent of our view of our own bodies.[16] They go on to write that "the most fundamental organizing principle in the formation of our body image is that we unconsciously locate our bodies inside a three-dimensional boundary," surrounding the actual body.[17] It is a bubble of sorts, where, the phone is an extension of the voice, the computer an extension of the brain, and the car is an extension of our legs. What this means is that:

> *the expansion of our actual identity requires greater recognition of our sense of internal space as well as of the space around our bodies. Certainly if we continue to focus radically on external and novel experiences and on the sights and sounds delivered to us from the environment to the exclusion of renewing and expanding our primordial haptic experiences, we risk diminishing our access to a wealth of sensual detail developed within ourselves - our feelings of rhythm, of hard and soft edges, of huge and tiny elements, of openings and closures, and a myriad of landmarks and directions which, if taken together, form the core of our human identity.[18]*

3.2: Personal Boundaries

This is based on the suggestion that "individuals possess an unconscious and changing image of their bodies which is quite separate from what they know objectively and quantifiably about their physicality."[19] It assumes that a person perceives with more than their sense of sight, and that we hold ourselves hostage

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by not utilizing all of our sensory systems.

Edward Hall summarizes in his sensory research that the eyes never see an object the same way at all times, the other senses and our ability to recognize objects fill in the missing information.[20] What can be translated from this is that seeing is an active task, our perception depends on our body placement with regards to what is viewed. This personal experience of our perception has to do with "the ebbs and flows, weights, rhythms, and surges that emanate from us [and] are inherent in the body and its movements."[21] Not only are they complex in that respect, not necessarily keeping time together, but they change according to the activity of the body, for example, as you increase your pace, your heart's rhythm also increases. Therefore, the sense of perception is altered by the circadian rhythms of the body, which can be altered as you move through a space. This means that potentially, a person in the midst of a panic attack, where the senses are heightened for any number of reasons, will view a given space in drastically different terms than a relaxed person.
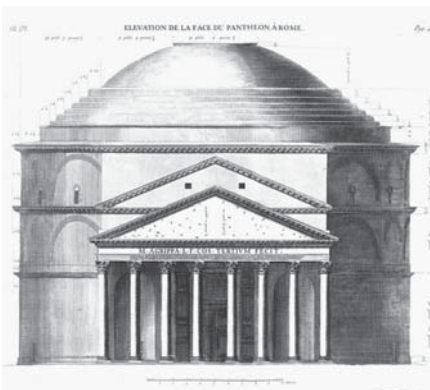
3.3: Pantheon Measured Elevation

3.4: Pantheon
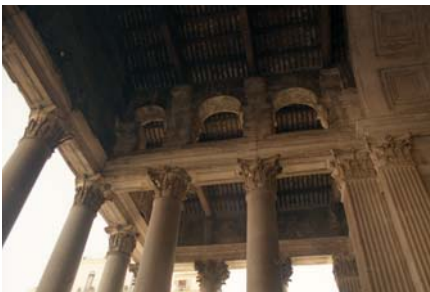
3.5: Pantheon Entry

What comes out of the personal experience of perception has to do with the concept of center. This can be viewed by dancers, who "speak of the constant need to find or feel one's "center"."[22] For many, "this is usually described as being in the region of the deep abdominal muscles,"[23] but when combined with the idea of the basic orientation system, the idea of center becomes a response "of geometry… [and] musculature with all its kinaesthetic ramifications, or orientation in response to the pull of gravity, and of a sense or feeling of inside."[24]

The senses begin to intertwine themselves in terms of perception. The Japanese developed spaces that utilized the entire body due to their limited space, and as Edward Hall writes,

> *not only are their gardens designed to be viewed with the eyes, but more than the usual number of muscular sensations are built into the experience of walking through a Japanese garden. The visitor is periodically forced to watch his step as he picks his way along irregularly spaced stepstones set in a pool.[25]*

A person's experience of the space changes as they move through it, as does their perception of their personal bubble, which is directly related back to their center, and sense of self. The question remains as to whether these physical changes should be introduced to people who have lost their sense of self through long-term mental illness, or whether providing places of challenge reinforce the idea of self when the patient is surrounded once again by the haptic environment that already grounds the patient. A patient's sense of self is important when discussing their individuality, and how to best treat them as individuals, giving them the opportunity to have a say in their own treatment. Grounding the

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patient enables them by giving them with a sense of territoriality. This, which will be discussed shortly, gives a person the ability to know their environment, which helps to ground the patient's sense of self within their surroundings.

3.0   Perception

Perception is affected by the sensory functions. For example, if the periphery of the eye sees movement above all else then

> *straight edges and alternate black and white bands are particularly noticeable. This means that the closer the walls of any tunnel or hallway, the more apparent the movement… This feature of the eye causes drivers in countries like France to slow down when they enter a tree-lined road from and open highway. To increase the speed of motorists in tunnels, it is necessary to reduce the number of visual impacts that flash by at eye level. In restaurants, libraries, and public places, cutting down on movement in the peripheral field should reduce the sense of crowding somewhat, whereas maximizing peripheral stimulation should build up a sense of crowding.[26]*

3.6: Tunnel

This may be applied in mental health situations, where patient concerns with over-stimulated spaces can be reduced by minimizing peripheral action in public and more crowded environments, potentially reducing the stimulation that leads to psychotic episodes associated with certain illnesses or slowing them down with peripheral objects. Horizontal bands have a different affect than the vertical, as they don't break up the space as you pass by them.

Not only does the periphery of the eye influence the navigation of a space, but so too can the haptic system, with regards to the "tactile qualities of the surfaces and edges we encounter."[27] Bloomer and Moore describe how "smooth surfaces invite close contact, while rough materials such as hammered concrete generate movement in wide radii around corners and more careful, tentative movement through corridors."[28] Cognitive design approaches can utilize these approaches to "signal special events and… trigger a slowing or quickening of one's pace."[29] This is often used in places where sight is limited, such as housing for the blind. However, on top of the haptic influences these tactile qualities have, they also convey certain architectural ideas in terms of strength and structure. A rough stone will seem more grounded and solid than a smooth wood veneer, and will more likely signal stability.

The sensory systems play an important role in the way a person perceives the scale of an object. There are in reality three views according to Bloomer & Moore in Body, Memory and Architecture: the actual measured view (which is never

3.7: Colonnade

truly seen), the sense of the object from a distance and the sense of being inside of the object.[30] Most people can recognize the feeling of being in the pantheon, which is why these images have been included.

4.0   Proximity

Territoriality, based on the study of animals, "keeps animals within communicating distance of each other, so that the presence of food or an enemy can be signalled."[31]   John Zeisel describes it in terms of "distinguishing one territory from another … when one moves from a familiar place to an unfamiliar one."[32] This begins to affect proximity, which is the term used to describe how close to an object or other person. For example,

> *an animal with a territory of its own can develop an inventory of reflex responses to terrain features. When danger strikes, the animal on it home ground can take advantage of automatic responses rather than having to take time to think about where to hide.[33]*

It is influenced by the study of animals, which use critical distances and attack distances along with social distances to determine safety. The critical distance encompasses the narrow zone separating flight distance from attack distance. For example, a lion in a zoo will flee from an approaching man until it meets an insurmountable barrier.[34] Edward Hall later goes on to describe how some schizophrenics experience "something very similar to the flight reaction. When approached too closely, these schizophrenics panic in much the same way as an animal recently locked up in a zoo."[35] While this distance is physically outside of the body, "such patients refer to anything that happens within their "flight distance" as taking place literally inside themselves."[36] This is akin to the sense of someone unfairly entering one's personal space or bubble. Social distances relate because of the way animals know their environments and where they require regular contact with their group as a matter of safety and maintaining health. It is a distance that when crossed, the animal "can no longer see, hear or smell the group - it is rather a psychological distance, on at which the animal apparently begins to feel anxious when he exceeds his limits."[37] This relationship is often referred to in terms of proximity.

Proximity is not only described in biological and sociological terms, but also in the physical distance from one person to another. It is influenced by our sense systems, which play different roles at the various distances apart. Proximity to another person can be described in four categories: intimate distance, personal distance, social distance and public distance, where each has a close and far phase. These have been chosen by Edward Hall due to the changes on voice

3.8: Personal Distances in Groups

3.9: The Various Distances According to Edward Hall in *The Hidden Dimension*

that must occur as the distance between two people increases.[38] In the intimate distance the presence of the other person may be "overwhelming because of the greatly stepped-up sensory inputs."[39] In the close phase in particular, "olfaction and sensation of radiant heat…are stepped up."[40] The whole body is used at this distance, not specifically the limbs. In the far phase, contact can easily be made, and "heat loss or gain from other person's body begins to be noticed by some subjects."[41]

Hall makes note that with personal distance, Hediger used it to "designate the distance consistently separating the member of non-contact species. It might be thought of as a small protective sphere or bubble that an organism maintains between itself and others."[42] In the close phase vision gives objects "roundness, substance, and form unlike that perceived at any other distance."[43] Surface textures, which are within arm's reach, are "very prominent and are clearly differentiated from each other," and therefore makes it a very tactile phase.[44] The far phase is "the limit of physical domination in the very real sense."[45] Features are clear, but two people may have to reach to remain in contact.[46]

In the close phase of social distance you can see in 60 degrees "the head, shoulders, and upper trunk… at a distance of four feet; while the same sweep includes the whole figure at seven feet."[47] In the far phase, visual details are lost while "business and social discourse conducted at the far end of social distance has a more formal character than if it occurs inside the close phase."[48] This distance allows people "to continue to work in the presence of another person without appearing to be rude."[49]

In the public distance Hall notes that "several important sensory shifts occur in the transition from the personal and social distances to public distance."[50] In the close phase flight reaction can take place in people, where "at twelve feet an alert subject can take evasive or defensive action if threatened."[51] Dimensions look flat and periphery fills in the surroundings.[52] The far phase is used for public speaking, so "not only the voice but everything else must be exaggerated or amplified."[53]

It is in the personal and intimate distances that the invisible boundary of intimate and personal space surrounding the individual becomes predominant and important. The boundary itself may be modified by "clothing… by badges, weapons, or any artefact, such as skis, an automobile, or an airplane, that connects directly with the body and is subject to body-reflex actions."[54] This bubble may become larger with the various daily implements but "schizophrenics and individuals under the influence of a hallucinogenic drug may dangerously distort their boundary and thus misread the significance of events in the environment."[55] Cognitive design tools become increasingly important at this point utilizing textures, colours, odours and the haptic system to reinforce spatial boundaries. By grounding the patient with tactile and personal visual

SUBJECT FEMALE ▶ MALE

SUBJECT FEMALE ▶ FEMALE

SUBJECT FEMALE ▶ OBJECT

SCALE ├────┤
1'0"

- - - - - SCHIZOPHRENICS
———— NONSCHIZOPHRENICS
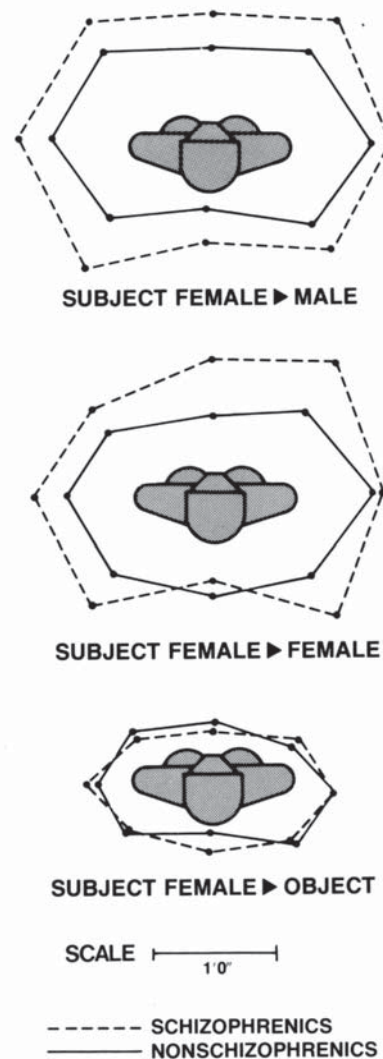
3.10: Personal Boundaries

cues while providing ample space around the patient it should help minimize the trauma cause in a psychotic episode.

It is possible to be in intimate situations with complete strangers; the body deals with it in subways, buses and elevators on a regular basis. These defensive strategies are demonstrated by remaining "as immobile as possible and, when part of the trunk or extremities touches another person, [by withdrawing] if possible. If this is not possible, the muscles in the affected areas are kept tense."[56] These reactions can be used to design for people suffering from panic attacks and other anxiety disorders since their reactions are the same, without the triggers.

5.0   Perception Conclusion

Personal perception can be altered by any number of things, both from within the person and from without. Tactile and personal visual elements may be able to ground a person defining their sense of self, but their inner sense of self also adds to the perception of the space they are within. Being able to withdraw into personal territory and being comfortable with one's environment is crucial to mental well-being, but so is aiding a person with self-discovery through a changing environment. What is needed is space that allows for breathing room, and isn't tight and constrained in public areas. But in order to be useful to patients, it needs to have a character that allows a sense of personal territory to develop, a distinct change from unknown to known and then to private. Aspects should be able to challenge physically the personal sense of center while still being located in familiar territory. It ought to be a safe place for self-discovery.

25

(Endnotes)

1   Bloomer & Moore: *Body, Memory and Architecture*; 37
2   Hall, Edward: *The Hidden Dimension*; 106
3   Bloomer & Moore: *Body, Memory and Architecture*; 33
4   Bloomer & Moore: *Body, Memory and Architecture*; 34
5   Bloomer & Moore: *Body, Memory and Architecture*; 34
6   Hall, Edward: *The Hidden Dimension*; 71
7   Hall, Edward: *The Hidden Dimension*; 43
8   Hall, Edward: *The Hidden Dimension*; 43
9   Hall, Edward: *The Hidden Dimension*; 60
10   Hall, Edward: *The Hidden Dimension*; 60
11   Bloomer & Moore: *Body, Memory and Architecture*; 60
12   Bloomer & Moore: *Body, Memory and Architecture*; 35
13   Zeisel, John: *Inquiry by Design*; 357
14   Zeisel, John: *Inquiry by Design*; 357
15   Zeisel, John: *Inquiry by Design*; 357
16   Bloomer & Moore: *Body, Memory and Architecture*; 37
17   Bloomer & Moore: *Body, Memory and Architecture*; 37
18   Bloomer & Moore: *Body, Memory and Architecture*; 44
19   Bloomer & Moore: *Body, Memory and Architecture*; 37
20   Hall, Edward: *The Hidden Dimension*; 67-68
21   Bloomer & Moore: *Body, Memory and Architecture*; 60-61
22   Bloomer & Moore: *Body, Memory and Architecture*; 58
23   Bloomer & Moore: *Body, Memory and Architecture*; 58
24   Bloomer & Moore: *Body, Memory and Architecture*; 58
25   Hall, Edward: *The Hidden Dimension*; 51-52
26   Hall, Edward: *The Hidden Dimension*; 51-52
27   Bloomer & Moore: *Body, Memory and Architecture*; 71
28   Bloomer & Moore: *Body, Memory and Architecture*; 71
29   Bloomer & Moore: *Body, Memory and Architecture*; 71
30   Bloomer & Moore: *Body, Memory and Architecture*; 38
31   Hall, Edward: *The Hidden Dimension*; 8
32   Zeisel, John: *Inquiry by Design*; 358
33   Hall, Edward: *The Hidden Dimension*; 8
34   Hall, Edward: *The Hidden Dimension*; 12
35   Hall, Edward: *The Hidden Dimension*; 11-12
36   Hall, Edward: *The Hidden Dimension*; 11-12
37   Hall, Edward: *The Hidden Dimension*; 12
38   Hall, Edward: *The Hidden Dimension*; 114
39   Hall, Edward: *The Hidden Dimension*; 116
40   Hall, Edward: *The Hidden Dimension*; 117
41   Hall, Edward: *The Hidden Dimension*; 117-18
42   Hall, Edward: *The Hidden Dimension*; 119
43   Hall, Edward: *The Hidden Dimension*; 119-20
44   Hall, Edward: *The Hidden Dimension*; 119-20
45   Hall, Edward: *The Hidden Dimension*; 120
46   Hall, Edward: *The Hidden Dimension*; 120
47   Hall, Edward: *The Hidden Dimension*; 121
48   Hall, Edward: *The Hidden Dimension*; 122-23
49   Hall, Edward: *The Hidden Dimension*; 122-23
50   Hall, Edward: *The Hidden Dimension*; 123
51   Hall, Edward: *The Hidden Dimension*; 124
52   Hall, Edward: *The Hidden Dimension*; 124
53   Hall, Edward: *The Hidden Dimension*; 124-25
54   Bloomer & Moore: *Body, Memory and Architecture*; 38
55   Bloomer & Moore: *Body, Memory and Architecture*; 38
56   Hall, Edward: *The Hidden Dimension*; 118

Architectural Precedents

I don't know if depressives are drawn to places with that certain funereal ambience or if, in all their contagion, they make them that way. I know only that for my entire junior year of college, I slept under a six-foot-square poster emblazoned the words LOVE WILL TEAR US APART, and then I wondered why nothing good ever happened in that bed.

But it wasn't just my bedroom. It was the whole apartment. It felt sickly, shady. I wouldn't be surprised to learn that it's been turned into a crack house or a shooting gallery since I moved out. Or better still, a halfway house for recovering vampires. The place was as dark at noon as it was at midnight. It was the perfect site for a nervous breakdown…

Since I barely left my bed after my miscarriage, except to roam the streets of Cambridge late at night, I lived my life, quite literally, in the dark. While our living room, with its southern exposure, was full of sun, no one ever spent any time in there because, ever since we'd decided to hide the ugly brown plaid couches under white cotton sheets, it looked like we were holding a wake. The rest of the house and all the bedrooms that pimpled off the long corridor in our railroad flat faced a courtyard to the north. And all of us, either because we were depressed or tired or had schoolwork, cocooned ourselves in our dark but paradoxically, vast rooms, lost in our troglodyte existence. The whole apartment seemed infected with some kind of craziness: Alden with her Zen Buddhism, meditating ten hours a day; and Samantha with her type A, overachiever schedule, afraid that if she slowed down, she'd turn into someone like me.

We had a fourth roommate… Both [Jean-Baptiste] and I began to suspect that this was the apartment from hell, that a miasma of depression and confusion had infiltrated the walls.

Elizabeth Wurtzel: Prozac Nation[1]

The maximum-security Hatch Forensic Institute, located at the rear of the Three Rivers State Hospital grounds, is a squat concrete-and-steel building surrounded by chain link and razor wire. Hatch houses most of the front-page boys: the vet from Mystic who mistook his family for the Viet Cong, the kid at Wesleyan who brought his .22-caliber semiautomatic to class. But Hatch is also the end of the line for a lot of less sexy psychos: drug fry-outs, shopping mall nuisances, manic-depressive alcoholics – your basic disturbing-the-peace-type wackos with no place else to go. Occasionally, someone actually gets better down at Hatch. Gets released. But that tends to happen *in spite* of things. For most of the patients there, the door swings only one way, which is just fine with the town of Three Rivers. Most people around here are less interested in rehabilitation than they are in warehousing the spooks and kooks – keeping the Boston Strangler and the Son of Sam off the streets, keeping Norman Bates locked up at the Hatch Hotel.

Lamb, Wally: I *Know This Much is True*; 65

1.0   Architectural Qualities

According to an Alzheimer's study in the Gerontologist,

> *environmental design… was correlated with resident psychotic problems. Those living in environments scoring high on privacy-personalization tended to have lower scores on the psychotic problem scale. The same was true for those living in facilities with higher scores on sensory comprehension scores.[2]*

Necessary limits should provide appropriate degrees of security without the impression of imprisonment.

RPG Partnership**:** *Mental Health Care Facility Planning*; 15

Gloria Shur Bilchik believes that "design isn't just an aesthetic luxury in health care, it's a core, health-related area."[3]   Many of the architectural elements necessary to provide a rehabilitative mental health community are seemingly contradictory, and they include: community, security, privacy, patient control, haptic and basic orientation, light, sound and positive distraction.   These elements often blend into each other, and culminate into a "critical feature of [a] mental health care environment… the quality and quantity of space: space both internal and external to the building, providing a variety of areas and experiences for the patients."[4] This variety of spatial experience is necessary when looking at the patient holistically, so psychiatrists, psychologists and nurses can review and evaluate the patient's interactions in a variety of circumstances.   What is desired is:

> *an environment that provides patients with the least restricted environment possible, while at the same time ensuring safety and security; a flexible environment to meet the changing needs of the patient and programs; spaces where the level of stimulation can be adjusted to permit the patient to regain control and concentrate on the therapy at hand; and spaces for the patients to relax, and where unstructured recreation and socialization can occur.[5]*

This design will incorporate a minimum drug use policy since "pharmacological agents can independently affect residents' agitation, anxiety, depression, and other behaviours," and the focus is a bio-psycho-social perspective using natural substances.[6]

1.1   Community

As mentioned in the psychology chapter, community is an integral aspect to mental health recovery. The foundation to creating a therapeutic community is creating an environment that serves the patients, and supports their rehabilitation and recovery to the fullest extent possible. As the RPG Partnership points out,

many aspects of 'community' that are understood and expected in our daily lives must be available here, but modified in recognition of the challenges of the illness. In other words, [it needs] a milieu that normalizes the hospital environment as much as possible.[7]

According to the Alzheimer and environment Study in the Gerontologist, "the degree of social withdrawal among residents decreased as the variability among the common spaces in a facility increased."[8] It implies that increased sociability reduces patient depression,[9] and that many varied spaces decrease withdrawal among residents. This means that the physical facility must promote and reinforce the skills needed to function in the community, it must "encourage… and positively reinforce socialization and interaction," without impeding the patient's right to choose to participate.[10] This means that there ought to be a significant amount of community spaces for people to share in a mental health complex such as lounges, kitchens, living rooms. These are spaces in which day to day life must take place, and must be inviting right from their entry; they include fitness and laundry spaces which seem necessary to live but not always communal. In apartments geared towards able seniors, the laundry room becomes the place to gossip, as there aren't many other community spaces.

To present a positive community, the facility must not appear institutional. The same Alzheimer study found that "persons living… with a more residential, less institutional environment expressed lower levels of overall aggression than those living in more institutional settings."[11] It is suggested that people at ease in a space are more apt to build a community with each other than those who are more aggressive.

This is directly involved in the patients' sense of personal space or territory, and their proximity to others. Community should mean that the patient can feel the draw to participate, without it being thrust upon their personal boundaries. For example, this extreme is found in the Japanese gardens described by Edward Hall in the previous chapter which illicit movement out of the participant. Ways of using the architecture to encourage community participation can come from corridors opening into group activities, or outdoor pathways into community gardens. The patient then has the ability to choose to participate, or to move on. Community also means providing situations where members can
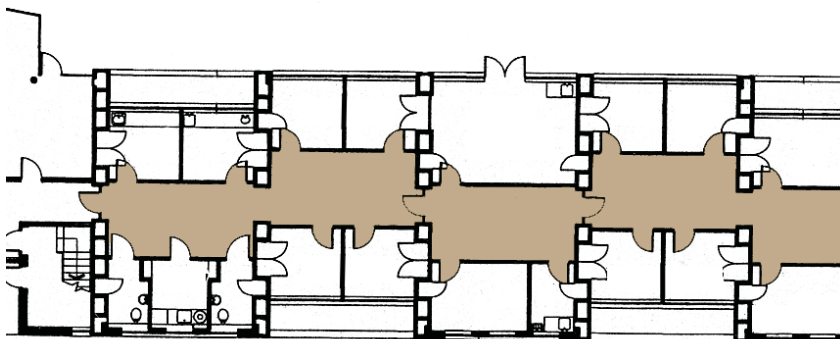
Space perception is not only a matter of what can be perceived but what can be screened out. People brought up in different cultures learn as children, without ever knowing that they have done, to screen out one type of information, while paying close attention to another.

Hall, Edward: *The Hidden Dimension*; 44-45

4.1: Corridor Alcoves from WG

spontaneously meet and discuss life and any issues that arise, like neighbours. Informal dialogue is crucial in building relationships between staff members and patients. Setting up spaces for informal dialogue is important in gaining trust and respect. Corridors with mildly organized seating along the way can provide opportunities to socialize above lounge areas and other given group spaces, so can seating in areas like laundry, which give opportunities for open discussion. Aligning spaces so that shared learning occurs in group settings can help too. This works best for group therapy situations.

Simple elements such as table layouts can build community as well. For example, Edward Hall recounts a study by Humphry Osmond of a female geriatrics ward. In it he studies people's relationship at the cafeteria, full of "36 by 72-inch tables [that] accommodated six people."[12] At these tables he notes that

> "corner situations with people at right angles to each other produced six times as many conversations as face-to-face situations across the 36-inch span of the table, and twice as many as the side-by-side arrangement."[13]

Also noted was the minimal conversation across the 72-inch length of the table.[14] Many people will suggest that large round tables seating eight to ten people are communal, and with good reason. They are often present at large gatherings such as weddings and other more corporate events. With their large capacity, it becomes more acceptable to sit one more person around the table, rather than have them sit alone at a second table. A kind of silent dialogue is set up, where a person will automatically join a full table, rather than start a new one, unless there are other people coming along after. However, it may be more advantageous to sit at a longer table, where more than one conversation may take place and a person has the option of joining in, or remaining silent but still feeling part of the group. In such cases as weddings, the round tables ensure that someone will not have a decent view of couple they came to see. This may mean that longer tables perpendicular to the head table may be better for the view. This may be useful when dealing with architectural issues such as positive distraction, where framed views of natural elements can serve to relax the patients in a communal setting.

4.2: Two Different Styles of Communal Tables. In the long table for 10 people, a variety of conversations can occur. In the circular table, each member can participate in the same conversation.

1.2   Security and Privacy

Security and privacy are two especially contradictory elements necessary in a mental health facility. While patients need to be safe from themselves and other patients, they also need various degrees of personal space. In its most secure form and to reduce opportunities for harm, patient areas need to be easily monitored, physical elements such as mechanical and electrical items need to be tamper-proof, tools for suicide such as hooks, shower curtain loops and curtain rods need to be modified, jumping opportunities eliminated, and

materials need to be impact resistant.[15] Building privacy walls also minimizes the strain of keeping a personal façade, it "can and does take over this burden for people… where the individual can "let his hair down" and be himself."[16] This is an important aspect to providing people with control. In many hospital settings, it is rare to give a patient a single bedroom unless there is a risk of self-harm. Even then, it is easily monitored and located where staff members can access it easily in case of emergency. However, by having a private room, a patient can recover from the stresses of being in a larger group through retreating into their own private territory.

4.3: The Fuller Hospital Dining Room View to Courtyard

The use of bedrooms or smaller alcoves in larger areas to provide adequate personal space, so that patients can avoid people or situations they know will cause unwarranted stress, while at the same time offering them the choice to participate in various activities.[17] As they choose to participate or withdraw from the community itself, their actions become "linked with self-discovery and self-realization; with becoming aware of one's deepest needs, feelings, and impulses."[18] This is exemplified by study published in the Gerontologist, dealing with environment and patients with Alzheimer's disease. It found that "residents in facilities with more privacy – more rooms that are individual and more opportunities for personalization – [patients had] less anxiety and aggression."[19]

4.4: The Fuller Hospital Dining Room Window

Privacy is not only visual, and as is suggested by Bob Horsburgh, "you can have privacy violated by smells and sounds so that it's not just limited to physical space."[20] Privacy in the form of personal space the patient himself is responsible, for is necessary in order to promote rehabilitation. While they may need a personal reminder to turn off the oven, it remains a space for them in terms of responsibility and personalization. The ability to make a space one's own will help give back a patient's sense of self and a sense of control over more than their personal boundary.

Privacy in group spaces is more difficult to address. Patients need visual access into spaces to assess their desire to participate. They also need spaces framed by walls to lean against and observe others, and views to see who may join them. This, combined with multiple egress routes begins to give patients come sense of control over their environment.

1.3   Patient Control

Patient empowerment can be obtained by giving the patient choices and allowing them to make decisions in terms of what to do or where to go. Jain Malkin says "it has been suggested that in all settings - not just hospitals - control reduces stress. When you know you have options, even in the most minimal sense, you feel better."[21] Control can be given in the simplest of terms to the patient

4.5: The Fuller Hospital Dining Room Window

through psychiatric program choices of food (menu or cooking it themselves), activities and treatment, and architectural choices of pathways to wander, room temperatures, lighting and television or radio programming. The architecture of a building can aid this spatially; by organizing spaces that give physical choices to the patient. These choices can be found in everything from the direction of a route to the type of physical challenges along the way. This is what territoriality does for mental health patients: knowing the building layout and the types of routes available to take enables the patient with choices, and grounds them in the experience of moving it.

Here is where the many varied communal spaces should influence design. A mix of spaces framing gardens, of different scales, utilizing different forms of light, or even on different floors may be necessary to encourage use and patient choice.

People tend to move toward spaces and through corridors that are more accessible from a greater number of spaces.

Ulrich, Roger: *The Role of the Physical Environment in the Hospital of the 21st Century*; 19

At the Bronson Methodist Hospital in Kalamazoo the designer established a healing environment by including "shortened walking routes for patients and families, with seating dispersed along the way."[22] Architecturally, this allows patients the option of choosing to participate in a group in a public place or remaining solitary in a crowd, and, as the RPG Group suggests, creates unstructured recreation and socialization.

Similar to issues of privacy, views into other spaces, for egress, or to see who may be approaching can also give a sense of control. It can be something simple, as in the ability to see who enters a seating area, or advance glimpses into who may be sitting in a group to decide if it's worth joining. Tools can be used to explore this, such as Space Syntax, which explores the idea that a person goes where they can see a destination (the connectivity of a space), and the number of rooms to be traversed in order to get to any other space in a building (the integration of a space). There is a correlation between the connectivity and integration of a space, called its intelligibility, where the most connected and most integrated spaces are also the most intelligible for people to walk through, and these are often the spaces most frequented by people within the building. For detailed analysis by software related to this concept please see Appendix A.

1.4   Haptic & Basic Orientation

Space Syntax research believes that spatial elements can be used to draw people into various spaces, making them easily visible and well lit. It also relates to the fact that people gather at a destination, a place with meaning, architecturally and personally.[23] This relates to views through spaces, but also to the haptic senses. Roger Ulrich, an expert in evidence-based design for architecture, has noted that "people tend to move toward spaces and through corridors that are more accessible from a greater number of spaces," which aids the patient by providing

options.[24]   However, some patients are cognitively impaired, and therefore signage should work on a variety of levels - texture, colour, sound - so that internal navigation is made easier. In addition, some colours and patterns can negatively influence patients, for example, an intricately woven pattern might appear during a psychotic episode as a number of insects or snakes crawling on the floor, and therefore agitate the patient.[25] For this reason, natural materials with minimal grains and veins would be best suited, because they will not appear as something else in a hallucination. Various wayfinding clues should even be located in the lower field of vision because those "physical cues… are more readily processed and attended than those above it."[26] Therefore changes in flooring to signify space changes would be more significant and noticeable than changes in ceiling patterns. For those patients who suffer from certain phobias, attention should be paid to scale, proportion and details, so that the space is not overwhelmingly large or claustrophobic.[27] This may be done by separating larger spaces with low partitions or screens, or built-in furniture such as shelving.

4.6: Multiple Paths of Egress are Essential when designing for patients with symptoms of paranoia.

In terms of perception cues, since textures like stone for its representation of strength and solidity, and the idea that it emphasizes a more relaxed pace than smooth surfaces, key interior locations for gathering should use stone and rougher textures while places to be passed by more quickly (such as corridors) should use smoother materials. Also, spaces of reflection can be more complex architecturally, playing with light or textures, and they reduce the speed you pass through more than simple spaces.

1.5   Light

In an article on Mental Health written by the Whole Building Design Guide, Robert Carr notes that "the New York Psychiatric Institute reports a dramatic drop in the number of patients who need to be restrained since occupying their new facility with its bright open spaces."[28] Natural light should be admitted wherever possible as it, as well as bright non-natural light, can improve depression, agitation, sleep, circadian rhythms, length of stay and Seasonal Affective Disorder.[29] On top of its ability to draw people into spaces, natural light has physiological consequences, and morning light can especially reduce depression in bipolar patients.[30] Roger Ulrich notes that "patients hospitalized for severe depression reduced their stays by an average of 3.67 days if assigned to a sunny rather than a dull room overlooking spaces in shadow."[31]

4.7: WG Corridor

Electromagnetic radiation can play a part in overall patient sensitivity to their environment. Using incandescent lights, while less energy efficient, give off less electromagnetic radiation because the current does not reverse flow as fluorescent lights do, causing more radiation.[32] They also give off a more natural light, and are easier on the eyes, which will serve to help boost patient circadian
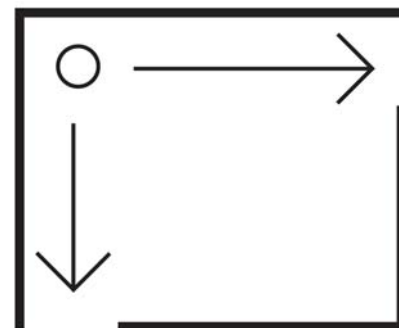
Exposure to morning light is… twice as effective as evening light in treating SAD.

Ulrich, Roger: *The Role of the Physical Environment in the Hospital of the 21st Cetury*; 21

rhythms.

Medications such as those treating schizophrenics can affect a patient's photosensitivity and eye sight, therefore while admitting natural light into a mental health facility is important, protecting photosensitive patients from harsh UV radiation is necessary.

1.6   Sound

A study by J. W. Black, a phonetician, demonstrated that the size and reverberation time of a room affects reading rates. People read more slowly in larger rooms where the reverberation time is slower than they do in smaller rooms.

Hall, Edward: *The Hidden Dimension*; 44

Sudden, loud sounds can have a profound physiological impact on a person, increasing heart and breathing rates and elevating blood pressure levels for several hours following the sound.[33] Not only does this affect a patient's privacy, but many mental health patients require minimum stimulation environments, in order to prevent agitation or psychotic episodes both inside and outside of buildings. In situations where "sound-absorbing ceiling tiles were in place, patients slept better, were less stressed, and reported that nurses gave them better care" than when they were in rooms that reflected sound.[34] Evidence suggests that sounds provide physiological stimulation, even when the patient is not awakened from sleep.[35] As Anthony Storr suggests, "many episodes of mental illness are preceded by periods of insomnia."[36] He also notes that

> *Although a few exceptional people can, without deterioration, survive without sleep for quite long periods, the majority of previously normal human beings exhibit psychotic symptoms like delusions and hallucinations after only a few days and nights without sleep.[37]*

This suggests, as previously discussed in the psychology section, that if a patient's circadian rhythms are off because they have not slept, they are at a greater risk of psychotic breakdown. A lack of sleep, or irregular sleep, can be extremely dangerous to a person with a history of mental illness.

Mosly I thought: It's better in the sun. Everything really does feel better when you wake up to light flooding through the window. It makes it harder to imagine the film of blackness that I could see wrapped around everything in Cambridge and New York in the cold and in the dark... Because by the time I left California, nothing seemed to matter much at all, as if the sun had stroked my brain and fried it to fritters.

Wurtzel, Elizabeth: *Prozac Nation*; 259

Sudden sounds can not only alter a person physiologically, but those physiological changes can also have a profound impact on the perception of a space. When woken up by a sudden and loud sound, fear can result, sending the heart racing. This fear will alter the perception of a space: while you may have felt secure sleeping, the sudden sound makes you feel insecure and that same space is sensed in a more negative view. Minimizing these sounds and gaining control over one's environment, even by the simple means of illuminating the space at night can help set a person back at ease. Sound-absorbing, natural materials should be used, like cotton or wool carpet, or textured stones and fabrics. Insulation and mass should be added to walls between patient rooms and staff offices, ensuring there are no holes for sound transmission. This would add to security, privacy and will prevent sound transmission. After all, research conducted by the Herman Miller organization suggests:

Even though a normal conversation is only half as loud as a ringing telephone or a quarter as loud as a copy machine, the "information content" of normal conversation makes it much more distracting that the much louder equipment noise in an open-plan office.[38]

The Herman Miller organization suggests that to mitigate the sound paths from distracting people designers have to "change the angles of the two diffracting paths (so that they miss the people in the adjacent workstations)."[39]

1.7   Positive Distraction

Positive distractions provide a means of escape from pain and present surroundings. In hospitals it has been noted that both artwork and connections to nature aid in providing positive distractions to patients.

Roger Ulrich notes that "the great majority of patients respond positively to representational nature art, but many react negatively to chaotic abstract art."[40] This does, however, depend on the art presented. Graphic or patterned paintings may not be suitable for a patient dealing with Obsessive Compulsive Disorder. Also, some dark landscape imagery may not be suitable for patients suffering from depression, or those paranoid that something is indeed seeking them.

4.8: Landscape Image

Having a connection to nature can be extremely important to a patient, as it provides a varied environment to the built one. While landscape paintings are a good distraction, actual escape into landscape is much more beneficial. As Roger Ulrich states, "hospital gardens… [foster] access to social support and [provide] opportunities for positive escape and sense of control with respect to stressful and clinical settings."[41] According to the RPG Partnership, access to nature should include: gardens and walking paths that do not contain dead-ends or locked doors which frustrate the patient; wandering space that allows for passive involvement; and therapeutic and formal recreation that encourages social interaction and community involvement.[42]

4.9: Abstract Geometric Image

Not only are the views restorative, but several private facilities have developed horticultural therapy programs, which aim to provide a therapy and positive experience using and caring for nature itself. It has proven very successful at the Homewood facility in Guelph. Natural materials and beautiful and serene landscapes can eliminate the institutional feel of a facility.[43] This is exemplified in the book Captivating, where John Elderedge writes:

Think of what it is like to be caught in traffic for more than an hour. Horns blaring, people shouting obscenities. Exhaust pouring in your windows, suffocating you. Then remember what it's like to come into a beautiful lake,

a garden or a meadow or a quiet beach. There is room for your soul. It expands. You can breathe again. You can rest. It is good. All is well… That is what beauty says, All shall be well.[44]

The Japanese gardens mentioned earlier made use of the whole body in terms of experience. Allowing the haptic senses to behold the scent, shade and textures of the materials grounds the body in the journey, and provides an escape from the rest of the institution.

1.8   Paradoxes

There are many paradoxes to creating a mental health facility, most notably the security and privacy necessary for patients. Facilities need to be open and inviting but provide security. The environment needs to be safe without being stifling. Patients require a choice on participation or withdrawal from situations that may trigger psychotic episodes. Patient empowerment should be encouraged without disrupting the other patients in the facility. Some of these paradoxes occur because of the different levels of care needed on an individual patient basis. A more secured facility can be used for patients who require more supervision. And those patients who require less support can be given more freedom. Architecturally programming spaces and buildings with different levels of care may mitigate some of the paradoxes, like security and privacy.

In many cases, it is the separation of public and private spaces and the architectural connections between them that will provide adequate and varied situations for the patient to be able to choose from. Creating unstructured recreation and socialization may also address these seeming paradoxes. The architectural categories of community, security and privacy, patient control, haptic and basic orientation, light, sound and positive distraction can be used to illustrate the benefits and drawbacks of many current places of care for mental health patients.

2.0   Hospital Precedents

Current trends of Canadian mental health facilities fall into three sections: acute care facilities such as general hospitals and emergency rooms; community care and transitional housing facilities including social and supportive housing and hostels for the homeless; and tertiary care facilities which are complex buildings that house a wide range of care and programs (both short and long-term). Acute care refers to patients who are in immediate need of emergency facilities. Transitional housing units are used to give people an address, a mailbox and telephone for their work environments, until they can get back on their feet again. Most Ontario transitional housing does not have trained staff on site, but maintains contact with facilities through the Centre for Addiction and Mental Health Housing Guide, and close hospital and psychiatric program ties. The following facilities have been chosen because they represent a variety of care levels and philosophies. The Grand River Hospital represents many front-line facilities; it often deals with patients who are at great risk to themselves or others, or patients who have not previously been diagnosed with a mental illness. Whitby Mental Health Centre and the Homewood in Guelph are two tertiary care facilities that offer a wide range of treatment options, but unless patients are forensic (meaning they've committed a crime) their stay within the facility is limited. The philosophies of both facilities are drastically different, one supports increased security while the other a resort-like atmosphere. The Wood Green Facility in England is a good example of bringing the support offered in tertiary care facilities to the community: it is a model for outpatient care, and using architectural strategies to support that. Finally, the Seven Oaks facility in Victoria offers a campus-style model that presents a wide variety of levels of care for patients, from containment to individual apartments. For some of these facilities, interior images are unavailable due to patient privacy and confidentiality restrictions.

4.10: GRH Location Plan

4.11: GRH Mental Health Unit Plan

2.1   Grand River Hospital (GRH) – Kitchener, Ontario

Our equipment is our environment and our staff.[45]

Andrew Palmer, Clinical Director, Adult Inpatient Psychiatry
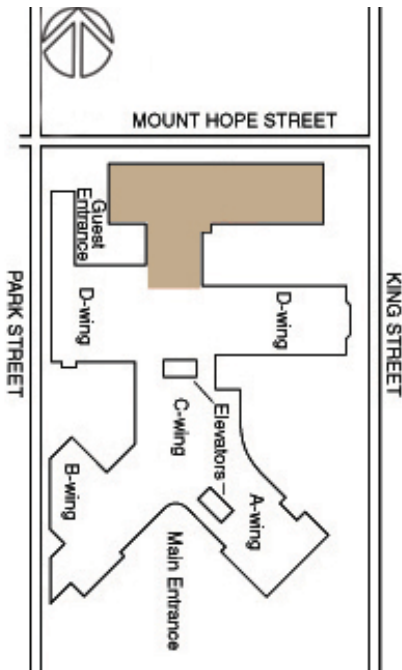
Programmatically, the GRH mental health unit is a good example of emergency mental health care: this is often the first place a mental health patient will be diagnosed with an illness. A patient might not pay attention to their symptoms until they are so destructive that they need hospitalization to compensate, and it is often the general hospital emergency room or their mental health unit that first receives them. Here they are placed on medication to modify whatever state they are in, and from this location they are referred to other places and programs.

The Grand River Hospital has two locations, one in the Kitchener downtown area, and one in the Kitchener Chicopee area called the Freeport site. The downtown building is an acute care facility whose focus is containment and patient safety. The unit is located in the bowels of the hospital; arriving at the entrance requires an elevator ride to the ground floor, then walking through a long dark corridor surrounded by maintenance and storage rooms, until arriving at the locked set of unlabelled doors. It is a 50 bed unit, which combined three

1	Cafeteria
2	ECT Room
3	Recovery Room
4	Staff Support Space
5	2-Bed
6	4-Bed
7	Isolation Room
8	1-Bed
9	Nursing Station
10	Office
11	Lounge
12	Patient Support
13	Group Room

formerly separate units into one long, narrow entity. The room types consist of isolation rooms and single, double and quadruple occupancy rooms. The beds are termed Schedule 1 beds, which mean "patients can legally be admitted involuntarily."[46] Due to the strong possibility of suicide, every attempt has been made to remove this option from patient consideration, including using Velcro shower curtain rings and collapsible shower curtain rods. Even the mechanical vents are metal plates with the smallest perforation possible and the call bell in tub rooms has been shortened to prevent hanging. The patient bedroom curtains are locked in the closed position between panes of glass in order to prevent suicide, which drastically limits the amount of light received in each room. Due to the size and shape of the unit, it is currently difficult to monitor patients, but with the hospital undergoing renovations, the unit will be divided into two separate groups, for easier surveillance and practicality. Currently, the nurses' station is pulled away from the main entrance and there is no easy view between them. A staff member must sit at the entrance to allow access in and out of the unit. Near the main entrance to the unit is the ECT suite. The mental health unit has limited funds and is slowly being refurbished with natural prints and artwork, while equipment is also being replaced.

4.12: GRH Main Entrance

Spatially, the unit is located with a small lounge in its exact centre; this is the common space for patients who are not receiving therapy at the moment. A second lounge is located near a corner, and away from staff member views, which makes it difficult to monitor patients who remain inside. Patients are encouraged to walk around the circular corridor, and not to remain in their rooms unless absolutely necessary. Staff members currently walk around the unit, checking each patient every 15 minutes, to ensure suicide prevention. Due to the sheer size of the unit compared to the limited scope of the staff space in the centre, staff members often complete a cycle of checking on patients, only to begin it directly after. Patients here are often at risk to themselves and others. The nursing stations themselves are broken into three groups to focus on patients, a central station near the lounge, a south station for the south end patients, and a small nurse's office at the north end, likely the result of combing three separate units. Separate from the nurses and the main offices are the staff lounge and locker areas. For the staff this makes it difficult to communicate with each other without using a telephone. Psychiatric staff members have nowhere to meet with patients except in their offices or in the patient bedrooms. Any other areas for meeting are beyond the main entrance to the unit.

Patients at the Grand River Hospital also have access to the psychiatric cafeteria, though access may be limited for patients with eating disorders: food would be brought to them instead to ensure proper nutrition compliance. There is also one large occupational therapy room located just beyond the secured entrance to the unit. Patients in these locations would be supervised by staff working directly with them.

The Freeport facility, in collaboration with Parkin Architect Limited, is in the design process to create an Independent Living Residence in the existing nursing unit just outside and linked to the main hospital building. This will provide 50 additional beds, larger activity areas, and enable patients to relearn skills used in living situation such as cleaning and cooking.[47] This unit will provide a community atmosphere and a longer stay, rather than a short-term unit focused on containment and security. These patients will have significantly more independence than those in the downtown building.

Community: At the Grand River Hospital, community is not currently emphasized due to its focus on being an emergency based centre for diagnosis and preservation of life. This is changing in two ways: the first with the division of the Kitchener location into two smaller units, and the second with the addition of the Independent Living Residence in the new Freeport Facility. Patients will be able to build on their community with new relationships as they stay there for longer periods of time with other patients and relearn skills many have forgotten.

4.13: Velcro Curtain Attachment

Security and Privacy: Due to its role in serving emergency mental health situations, security is very high, and patient privacy is much less of an issue. This is to ensure suicide isn't going to take place, addicts can detoxify in a safe environment after an overdose, and eating disorder patients can have their food and personal routines monitored. Any gathering place, such as lounges or group rooms try to be within easy range of nursing stations, though, due to the facility's layout, it sometimes fails. People entering the locked unit aren't seen until they turn the corner away from the entry, so they have a full time staff member sit at a table near the door, and away from everyone else. The focus is on patient security, but the visibility through the unit isn't there just yet, and views are broken up because of the large layout. The renovation should fix this by breaking it into two smaller units with more visibility. Security will likely be less stringent in the new independent living unit, however hopefully visibility will be improved both for patients and staff right from the beginning.

Patient Control: Patient control is also not emphasized in the mental health unit of the Grand River Hospital Kitchener location. Currently, patients have little choice in where they spend their time: in their rooms if there is a danger to themselves or others, or in the lounges, constantly supervised. There is little room for unstructured recreation and socialization, and few varied common spaces to choose from. They have little control over even opening or closing their curtains, they are enclosed between the window panes of glass to minimize suicide ideation, as it is a security risk. Patients may also be found walking around the circular corridor that surrounds the staff areas. It is understood that once patients regain control after an episode they may be granted more freedom and control over their own lives, but until then, they must be in a supervised space where staff maintain the control over the patient. The Freeport facility will

likely offer more variety in patient common spaces due to stressing independent living. Patients will likely be given more choice in treatment options since they will have passed the acute phase of their recovery.

Intelligibility: The intelligibility of the GRH is very straight-forward. The corridors are both the most connected and most integrated spaces within the unit, while the lounges, staff member offices and patient bedrooms and support spaces are all the least integrated and least connected. This indicates that the corridors are the central gathering spaces within the unit, rather than the patient lounges, even though the lounges are the spaces patients ought to be located in. For more detailed analysis, please see Section 2.0 in Appendix A.

Haptic & Basic Orientation: Attention to architectural detail is at its minimum in this environment. The focus resides in suicide prevention, so every possibility for that is reduced where possible. The environment needs to be adapted to problems of security with the patients: materials remain smooth and easy to fix or clean, and sightlines are intended to be long and very visible, though this doesn't always work. Patients are given a circuitous corridor to walk through unhindered, and they remain out of the way by being allowed to wander. Very little of this space grounds the patients in where they are at the moment, or challenges their haptic senses, so patients are left to wander in their drug-induced state.

Light: Very little natural light gets into the main group spaces due to patient rooms being located on the outside of the unit. This give patient rooms as much natural light as possible. Despite their location, natural light doesn't get into patient bedrooms due to the thick blue curtains drawn between the panes of glass in each window. Therefore, the healing effects of natural light are mostly ignored in favour of the security and safety measures for acute patients.

Sound: Due to the use of easily maintained materials, like vinyl flooring, sound transmission is very high, sounds are able to bounce off all surfaces. Quiet rest without medications is less likely in these situations, but since it is an emergency situation, medication use is much more prevalent anyway. The sound transmission will also, in all likelihood make it much easier for staff to react to an emergency patient situation. The location of patient lounge space next to the main nursing station creates many sound problems with pay telephones, television, and nursing activities., It can be difficult to hear and focus; hopefully patients don't occupy the rooms next to these spaces during the day time when the activity and sound levels are at there peaks.

Positive Distraction: There is a small fenced in area on the east side between the mental health wing and the rest of the hospital building enclosed to provide an outdoor space for patients to smoke. A staff member needs to be there with the patient at all times to ensure the patient doesn't escape. While this is an outdoor

setting to the unit with little vegetation, it doesn't provide inspiring positive distraction to the patients, it is mostly just a usable space for feeding a nicotine addiction. Artwork is slowly being added to the unit as funds become available, mostly natural scenes. But staff members express concern that patients may vandalize them.[48]

Having described the place in these terms, the staff members do recognize that inspirational elements are necessary for patient recovery, but the funding required to make such changes to the hospital is at a minimum. Most of it goes toward the necessary mechanical and equipment needs of the general hospital for emergency, surgical and other situations. There are intentions to make the space comfortable for both staff and patients, but the means to do so financially and architecturally are not always to be found.

The GRH mental health unit has several key architectural features. The first is that patient bedroom windows are all on the outside of the unit. This is to give them as much natural light as possible, though it doesn't really succeed with patient curtains drawn shut permanently. This orients all staff member and patient common spaces into the centre of the building, which attempts to give staff members quick access to patients if they are in need. Unfortunately, this means that staff member and common patient spaces do not receive the healing natural eastern light. Corridors are circuitous, which means patients can wander about freely. The unit can also be closed off in case of an emergency, which is important when caring for patients capable of self-harm. With plans underway to develop a living residential unit at the Freeport location, GRH is moving to establish a middle ground between emergency mental health care and outpatient therapy.

2.2   Whitby Mental Health Centre (WMHC) – Whitby, Ontario

The Whitby Mental Health Centre is a tertiary care facility designed to replace the aging asylum that began in the 1920's. It was built in a completely new location; the ruins of the aging building still remain in certain places. The new design, built in 1996, consists of several small pods of different levels of care all connected along a central spine, with one major entry area. The rooms are on the lakeside, while the entry side holds the support areas for staff and patients and its design proposes room for growth along both ends of the main corridor. The variety of patients housed within the building includes everything from those suffering from eating disorders to forensic patients who are "subject to detention under the Mental Disorder Amendments in the Criminal Code."[49] A complex system of security is required for such patients, and separating the patient groups into smaller units of approximately 20 patients allows the facility to close the doors to some patients, while allowing others to wander around.

The complexity and scale of this campus-style facility offers a wide assortment of support and treatment geared to provide "specialized care to people with unique or complex needs."[50] While it makes the effort to create more intimate settings for the patient, both the scale and the repetitive nature of the facility provides the potential for a patient to get lost within its boundaries. The similarities of all the spaces, while enabling comparisons of patient progress, take away from the consideration of the patient holistically. Only by creating unique pod entrances can they achieve and internal cognitive navigation system. However, such a large facility can serve to provide a significant amount of support by networking with smaller community settings. The 20-25 patient pods themselves likely have a central nursing station that is fully able to supervise the short wings of patients on all sides.[51]
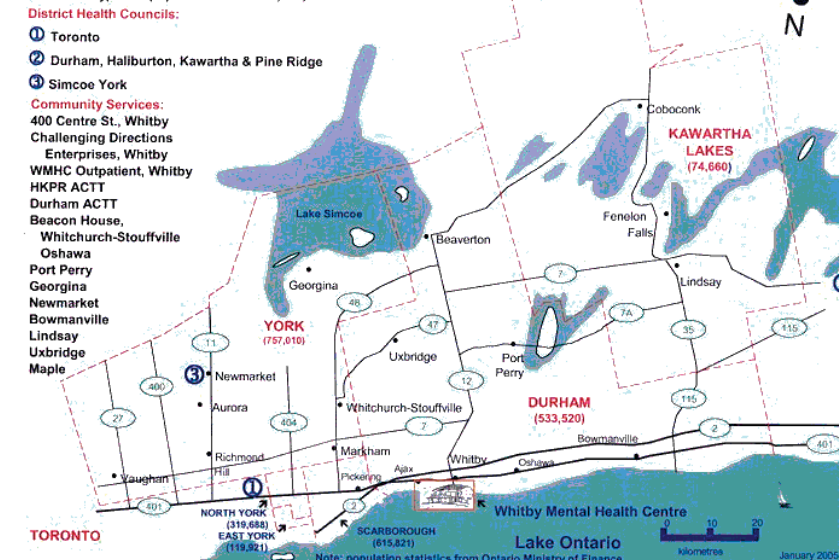
4.14: The Former WMHC, Before Redevelopment.

4.15: WMHC Location Map

4.16: Catchment Area for the Redeveloped WMHC.

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4.17: WMHC Unit Organization

4.18: WMHC Building 5 From the Patient Side

4.19: WMHC Entry Canopy

4.20: WMHC Interior Courtyard and Gathering Space.

Legend:
☐ Main Street
■ Clinical Programs
■ Services
■ Elevators
▨ Service Corridor

Whitby Mental Health Centre

① **First Floor Plan**

Building 5 Nutrition & Food Services, Lakeview Cafeteria, Housekeeping & Laundry

Building 4 Seniors Memory Disorders Unit

Building 6 Dual Diagnosis Service

Building 7 Forensic Assessment Unit, Main Stores & CSR, Traffic & Distribution, Image Centre, Wavelengths, Resource Centre

Building 3 Seniors Mental Health Unit, Central Activities Area, Vocational Rehabilitation

Building 2 Neuropsychiatry Rehabilitation Service, Plant Services, Recreation Complex

Building 8 Forensic Rehabilitation Unit

Building 1 Main Street Cafe, Rehabilitation Service, Day Treatment & Outpatients, Adolescent Stabilization Treatment & Transition Service

SMDU 4 · SMHU 3 · NPU/BH 2 · ADOL 1 · DDS 6 · 5 · 7 · FRU 8

Receiving
Medium Secure Admissions
South East Entrance

② **Second Floor Plan**

Building 5 Information Desk, Conference Rooms · Auditorium, Volunteer Services · Centre Shop, Chapel/Spiritual & Religious Care

Building 4 Psychiatric Rehabilitation A

Building 6 Psychiatric Rehabilitation B

Building 7 Forensic Transitional Unit, Community Resources Service, Best Practices/Library, Mail Room/Media Services, PRP Program Area, Patient Council, Patient Advocate, Neuropsychiatry Outreach

Building 3 Psychiatric Rehabilitation C, Diagnostic & Dental Clinics, Pharmacy, Medical Services, DDS Outpatient, CRP Outpatient, Employee Health

Building 2 Assessment & Stabilization Unit, Clinical Information, Consent & Capacity Review Board Hearing Room, Seniors Community Services, Memory Clinic

Building 8 Forensic Assessment Unit

Building 1 Skills training, Treatment & Education Place, Admitting, Switchboard, Community Response, Program Outpatient, Shift Managers, Security

PRA 4 · PRB 6 · PRC 3 · ASU 2 · STEP 1 · 5 · FTU 7 · FAU 8

Main Entrance
Admitting Entrance

Building 5 Level 3 Administration, Community Advisory Board

③ **Mezzanine** Purchasing, Business Office/Finance · Human Resources, Information Technology

February 7, 2005

Community: The building is meant to convey a residential feel with the materials and the sloping roof. The outside of the building is brick and glass, with the occasional structural steel element incorporated into key areas like the entry. The seven patient pods themselves feature metal sloped roofs, on two stories, so it begins to look like extended housing. Each unit could be seen as a smaller community on a longer street connected by the various support services and outpatient programs like vocation rehabilitation and DDS (Dual Diagnostic Service) outpatient programs. Rehabilitation is a primary focus of the facility, and treatment options are "multidisciplinary in approach and are both individualized and group oriented."[52] There are several places that act as meeting places along the main street, and they are the main lobby, the cafeteria, the coffee shop and the gymnasium.[53] These spaces are geared for informal and unstructured socialization, but are large due to the number of patients and staff that could gather in these areas. There is very little to engage the patient's sense of territory, since most of the patient bedrooms are identical and the only way to

identify the unit they belong to is by what is located outside of its entrance. The architecture provides large vistas into these common spaces through the use of security glass, which will allow patients to decide if they would like to join in and participate in the groups already there.

Security and Privacy: Security and privacy vary with each unit. The units where forensics diagnosis and rehabilitation take place require much more security, and will have less privacy for patients who need to be supervised. The same will likely go for patients who are in the more acute phases of their illness. However, since the facility is geared towards rehabilitation, as patients progress with their treatment they are moved to various units that have more freedom.[54] These units will likely have more patient privacy. Because there is only one entrance into each unit from the main corridor, all units have the ability to be locked down in an emergency.

Patient Control: All of the rooms are almost identical, no matter what the nature of the illness is, so there is little sense of ownership or individuality involved in the rooms: they are identified by the number on the door. As patients progress in their treatment they can be moved from unit to unit, so patients have even less of a sense of their own personal territory because it doesn't remain the same. Patient control is given to people who are stable enough to wander about the facility and meet with others at the various vocational rehabilitation spaces. Those that are less stable are given less control over their personal environment. In all likelihood, if a patient is well enough, outpatient care is recommended, which will provide the patient with even less of a sense of personal territory when they are in the building.

Haptic& Basic Orientation: The spatial organization is relatively easy to follow; a long corridor joins all the separate units, and separates them from the staff, volunteer and meeting spaces. There are subtle changes in interior materials in the gathering spaces: maple is used in many of the areas people touch on a regular basis, such as handrails, or wooden seating in the cafeteria.[55] Brick and terrazzo found in the same common areas give a rougher texture to the drywall and glass that permeates the rest of the public spaces, and creates a place of pause through their use. Glazing is used to bring in natural light and allow views throughout the common and often double-height spaces. These pockets of light should serve to break down the perceived length of the corridor, varying the experience as a person passes through it.

Light: Lots of light is able to get into the south-facing patient units and the main corridor of the facility. Depending on whether the patient controls the curtains, it can be a very positive and healthy environment for people suffering from depression. The glazed atria offer a great deal of natural light to both patients and staff, and provide ample light for the growth of vegetation indoors. Eastern light should be easily accessible, even if the patient's bedroom doesn't

4.21: WMHC Medium Secure Admissions Entrance

4.22: WMHC Patient Units

4.23: WMHC Central Stair Case at Main Entrace.

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face directly east.

Sound: In common spaces harder and more reflective materials are located, while "carpeting covers floors in the patient care unit."[56] This will help minimize acoustical distractions for patients as they relax and sleep, improving their circadian rhythms, and minimizing further breakdowns.

4.24: WMHC Glass Atrium Between Patient units.

Positive Distraction: There are plenty of spaces for positive distraction on the Whitby Mental Health Centre Grounds. The many courtyards between units are landscaped in such a way to provide ample space for relaxation in a natural environment, and are obviously meant for more than simply a place to go outside and smoke. Patients can even participate in the landscaping to various degrees with their horticultural therapy program. Stone, brick and large glazed areas surround these spaces on at least three sides, and in some cases trellises and landscaped retaining walls are included to frame pathways and seating. The landscape is still changing; it was one of the areas that could wait with budget constraints when the building was first opened 10 years ago. In some cases it remains empty, though staff members are working to change that. The pathways that walk through the various outdoor gardens are left uncovered; however the common interior spaces like the cafeteria bring vegetation inside, through using skylights to nourish the trees planted within. The lush vegetation will be immensely enjoyable when it's fully grown in, as it will cover the dreary grey stone of the building.
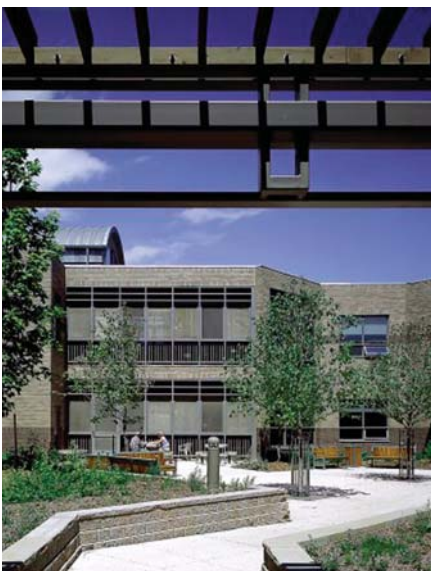
4.25: WMHC Patient Exterior Spaces, complete with vegetation, wandering paths and trellises.

The WMHC offers a wide range of programs, since it is designed as a complete comprehensive care facility, able to help anyone in need. It was designed right from the beginning to replace an aging tertiary care facility, and features several key architectural ideas. First, the complex is brand new and doesn't rely on existing layouts for redesign of the new facility. Second, patients are broken into smaller groups of 20-25 patients. This allows for varying degrees of security and the ability to lock down various units. There will always be forensic patients who need more security, which means facilities that are able to be locked down will always be required. Since the units are located on the southern side of the building, most, if not all of the patient bedrooms get natural light, and likely have access to common spaces with similar lighting. Because the building is so large, and contains a horticultural therapy program within it, the grounds have become substantial places for positive distraction to take place. Unfortunately, the sheer size of the building means that the patient bedrooms are likely all similar, which means patients have limits on how they can individualize their private spaces. The size of the building also makes it difficult for a sense of community to develop between patients.

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2.3 Wood Green Mental Health Centre (WG) – Haringey, England

Wood Green Community Mental Health Centre was a response to Government policy encouraging mentally ill patients to be treated in their home environment and no longer in psychiatric institutions, as was previously the case… The Haringey Health Care NHS Trust commissioned the new 'L' shaped facility on a corner plot in a high street location in Haringey. A conscious decision was to enable the new facility to be easily accessible for its patients and to be seen as part of every day life.[57]

Higgins Construction Company

4.26: WG Street Front
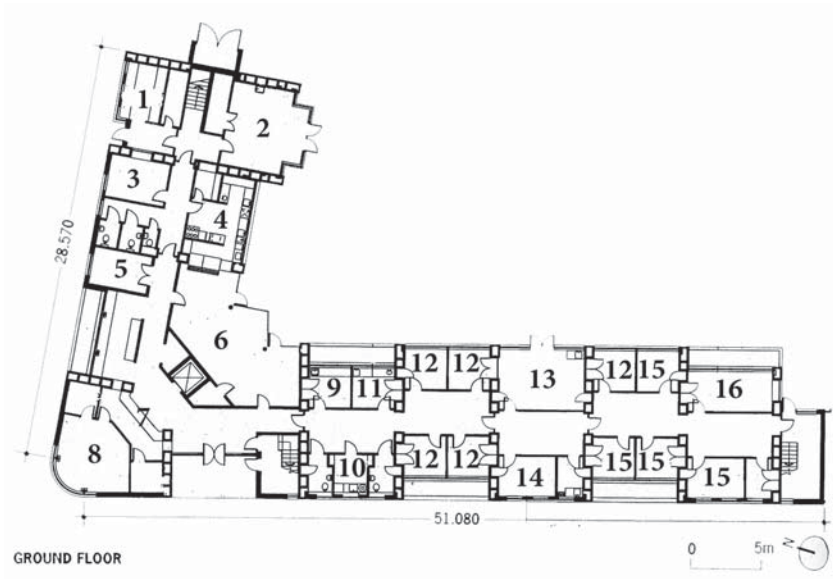
GROUND FLOOR

4.27: WG Ground Floor Plan

1	Waiting
2	Dirty Work Rm
3	Nurses
4	Kitchen
5	Plant
6	Cafe
7	Reception
8	Secretaries
9	Clinic
10	Utility
11	Mother/Baby
12	Interview
13	Family Therapy
14	Occupational Therapy
15	Psychologist
16	Domiciliary Advocacy Office
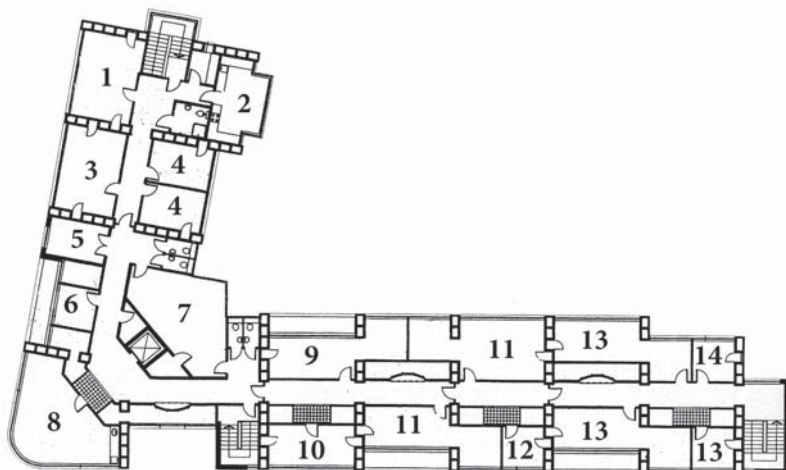
4.28: WG Second Floor Plan

1	Occupational Therapy
2	Kitchen
3	Noisy Room
4	Interview Room
5	Plant
6	Doctor's Office
7	Group Meeting Room
8	Staff Room
9	Student Resources
10	Seminar Room
11	Comm. Psych. Nurse
12	Head Psych. Nurse
13	Social Work Room
14	Admin./Co-ordination

4.29: WG Street Front

4.30: WG Elevation Detail

4.31: WG Entrance Lobby

According to Stephan Bradley, the client for the Wood Green Mental Health Centre, the project was "conceived as part of the programme of moving services out of Friern Barnet Hospital, a large and austere psychiatric hospital that was closed as part of the Care in the Community initiative in March 1993."[58] It is an outpatient care clinic that houses both the Community Mental Health Centre, and the Acute Day Hospital and is part of a network of facilities throughout Haringey, a London borough. As Rosalind Pajakowska summarizes:

> Although much controversy surrounds the execution of the changes, the basic movement has been to de-institutionalize and de-stigmatize this area of health care and make it more accessible.[59]

These units are joined in an L-shaped building where the reception is in its hinge. The layout is straight-forward, and natural materials have been used throughout the building.[60] The inventive mechanical system was incorporated into the design right from the beginning, and uses air intake from the courtyard and chimneys to create the stacked-air effect. It moves the air throughout the building in a "benign presence" according to critic Selina Eger.[61]

Community: The building is an attempt to both bring mental health care into the community, and make a community out of the patients living in the area. Due to the private nature of psychiatric care, the street facades look a little fortress like, which creates two sensibilities. The first is that a new member of the community seeking help for a mental health issue may not feel comfortable trespassing the envelope and entering into the facility. The second is that once inside there will be a feeling of security and safety; that whatever is said within its walls will not be disclosed to the public. Because it is a gathering place for patients in the community, most of the spaces within are either offices and admin areas, or patient group and activity spaces.
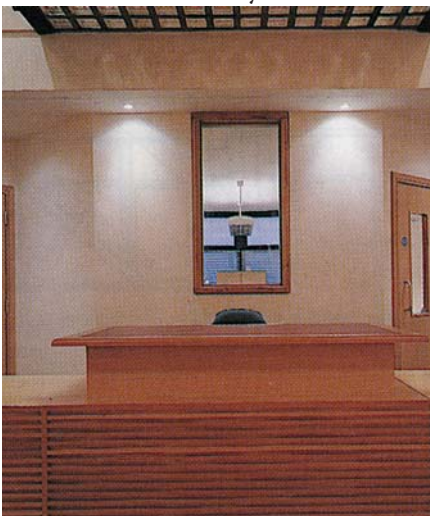
The corridors add a another aspect of community, providing secondary spaces for informal gathering. The corridor runs right through the length of the building wings through sets of glazed doors, but two-storey alcoves alternate on each side. The large group spaces remain in the hinge of the building, creating a centralized meeting place for groups of patients. The building also frames a large courtyard space that provides ample room in informal gatherings outdoors for the entire community.

Security and Privacy: Because this is an outpatient care program, patient security is not as necessary as in a full and acute psychiatric hospital. Also, since patients aren't living in the building itself, privacy and maintaining personal territory is not an issue; a patient's personal space remains outside of the community centre. But privacy is maintained through the use of the mechanical systems. The windows are inoperable, which means no discussion will be overheard on the busy streets. The mechanical system also provides thicker and more

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acoustically resistant barriers between community and interview rooms. Also, there are doors located at many of the mechanical system walls, which break up the sound travelling along the double-floor meeting spaces.

Patient Control: Assuming patients have the choice to participate in the variety of programs potentially offered at the Community Mental Health Centre, this remains all the choice they have within the building itself. Due to its status as a community centre and not housing, patients have little control over their settings within the centre. There are few group spaces, though the corridors themselves allow the option of views along their length and the alcoves on either side offer semi-private gathering spaces.

Intelligibility: The intelligibility of the spaces in the WG Mental Health Centre is consistent with good examples of well-connected and well-integrated spaces. The corridors and main patient lounge spaces are the most integrated and connected, which is good since they are the central gathering spaces, while private staff member and patient interview rooms are the least integrated and connected, which allow for some degree of privacy. For more detailed analysis, please see Section 3.0 of Appendix A.

Haptic & Basic Orientation: The space is simply laid out in two wings, with a corridor running through the center. Natural light is brought in above the glass doors linking the corridors together, so navigating the space is relatively easy. The use of brick brought in at all the mechanical chimney walls gives a tactility to each threshold that illustrates using rougher textures to highlight key spaces and slows people down as they cross through. The rest of the interior walls are plastered for a smooth effect and helps create the informal gathering spaces in the corridor by providing something smooth the rest against. The use of lightly coloured brick and wood give the space a warm glow that makes it seem less institutional.

Light: The use of birch wood, white walls, and yellow brick mean that any natural light found within the building is amplified, and creates a very warm setting. All of the community and office spaces have access to natural light, and the corridors are illuminated by skylights on the second storey. It creates a warm environment that emphasizes the subtle changes in material textures. Additional lighting is provided at key places along the corridor, usually in the second story alcove open to below to give additional light to the first storey informal gathering spaces.

Sound: Sound in the building doesn't appear to travel very far. The mechanical system spacing along with the brick used to encase it means that the sound is absorbed both by the texture of the brick and the gap between the walls. Also, because it is a fresh air intake that doesn't use heavy-duty mechanical systems, the sound level in the building is probably much lower, lessening the need for

4.32: WG Hallway Detail

4.33: WG Natural Light Wells and Informal Gathering Spaces

4.34: WG Community Courtyard

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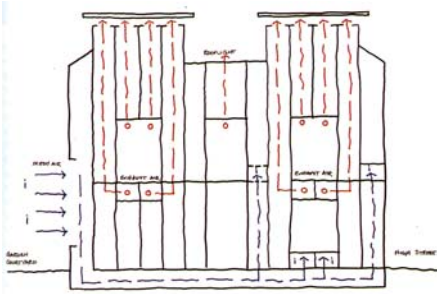
4.35: WG Mechanical System Diagram
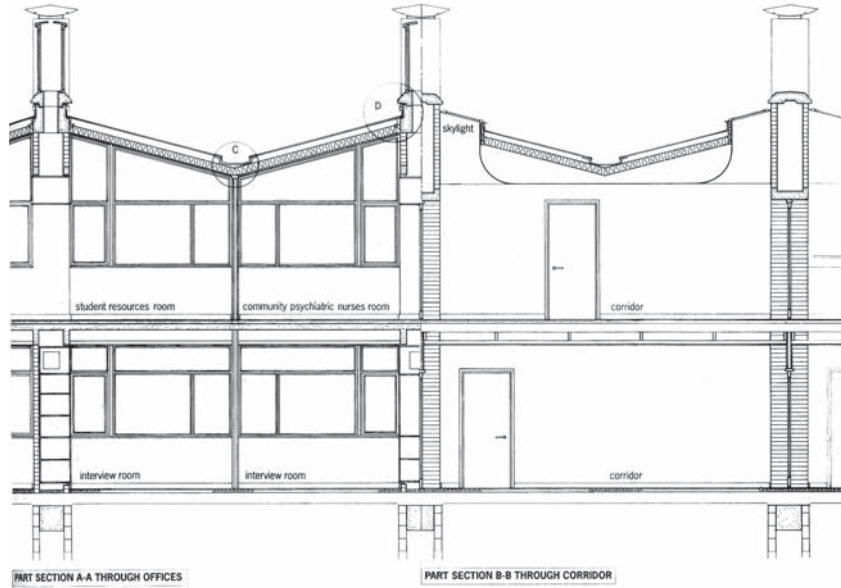
4.36: WG Mechanical System Section

raised voices.

Positive Distraction: Due to the L-Shaped nature of the plans, the building has every opportunity to provide an intensely enjoyable courtyard with the surrounding buildings for visitors and patients of the Community Mental Health Centre. However, when created in 1994 what remained is an under-planted and highly paved courtyard in the same pale stone as the yellow brick on the building. Likely conceived as a place to extend the larger group rooms, there are no intimate spaces within the courtyard to provide informal discussion or to sit and enjoy the weather. Even the café looks out into this stark and empty space, where more potential could have be realized. This would be one of the ideal places to improve this facility, and provide a space that not only serves the needs of the patients, but gives back to the larger community as well.

The WG Mental Health Centre's program is relatively unique, as it tries to bring the necessary functions of a mental health hospital into the larger community as outpatient treatment. Its goal is to provide a missing link between the complex levels of care offered at a long-term tertiary facility while enabling patients to remain where they are most comfortable; at home. Its organizational strategy supports this by providing an under-planted courtyard to support community. Natural materials and light make the interior spaces seem less institutional than the exterior. Its mechanical system takes into account the layout and works with the building to provide fresh air without large, cumbersome mechanical systems. It is a good example of the kind of supportive building that a patient can use within the community, though it yet lacks some occupational amenities for day to day life, and makes it difficult for staff members to encounter the patient in residential circumstances.

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2.4 The Homewood Health Centre (HHC) – Guelph, Ontario

Re-discovering the wonders of nature and the cycles of life can be a profoundly positive, renewing and reaffirming experience. Horticultural Therapy is unique in its use of living material, requiring nurturing and care. The care of plants provides tasks and activities to stimulate thought, exercise the body and encourage an awareness of the living, external environment.[62]

Mitchell Hewson, HTM

The Homewood in Guelph, Ontario is a privately-run and publicly supported 312 bed facility.[63] It is a tertiary care centre, like the Whitby Mental Health Centre, and consists of several wings that accommodate a wide range of patients with different acuities and illnesses from addictions to geriatric care. Its central architectural difference is that the building has been developed over generations instead of redeveloping in a new location. The patient rooms have a bed, desk and chair, all designed for ease of use. The facility promotes fitness by their gym area and 30 minute daily morning walks, and is described on their general tour as a kind of resort that promotes "improving the quality of life."[64] The Homewood Website describes the stay, where

4.37: HHC Original Buildings

4.38: HHC Existing Western Elevation
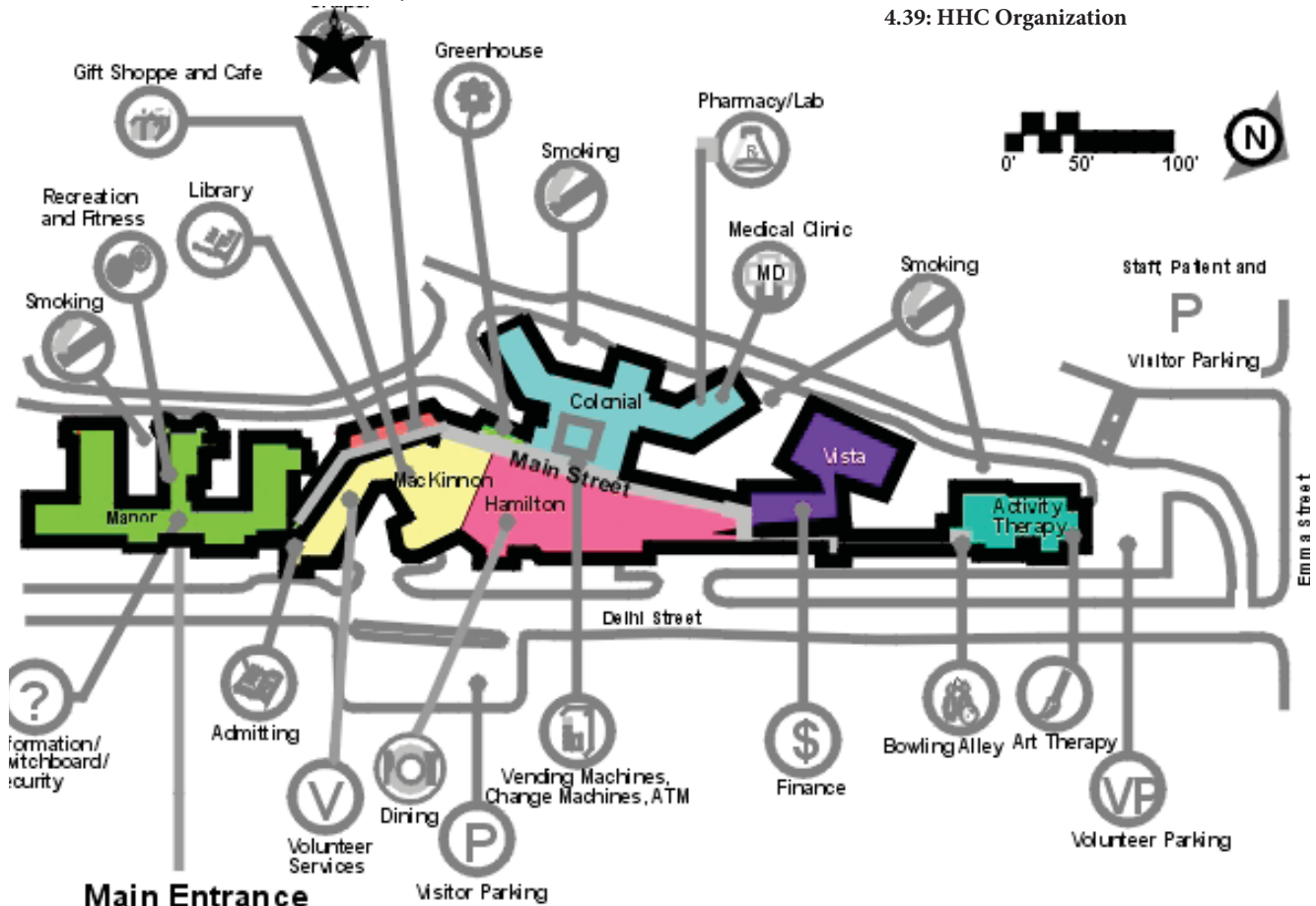
4.39: HHC Organization

4.40: HHC Large Dining Room

a typical day begins with a half-hour walk at 8 a.m. Following that, patients are involved in one or two different group sessions. After lunch, depending on the day of the week, patients participate in one or two group sessions. Evening activities are offered, but generally they are optional.[65]

This resort title implies that it cannot be afforded by every patient who wants to attend. Homewood offers activities such as horticultural therapy and crafts, while providing proper nutrition in a dining room with a servery that offers limited food choices to the patients. Socializing is promoted during activities and dining. The facility offers a multi-faith chapel and outdoor labyrinth for meditation, and a library for patients to read, research their illnesses and email family and friends. Because it is privately run, there is often a 6 month waiting list for admission, which detracts from patients getting the help they need when they decide to get it, for example addictions patients. As a result, there are a number of successful short-term outpatient programs that have been developed and the hospital serves between 3,000 and 4,000 patients per year.[66]

4.41: HHC Fitness Room

Community: Overall, because of its size and somewhat quick turnover, a sense of inpatient community is lost in favour of individual growth. The resort images also lessons the communal support system, and detracts patients who cannot afford it from attending. Most of the patients at the Homewood Health Centre cycle through their respective programs very quickly. However, their Integrated Mood and Anxiety Program (IMAP) places more emphasis on group work rather than individual counselling. It

offers a number of varied group opportunities. Some groups have an educational focus: self-esteem; anger management; leisure and lifestyle; anxiety and stress education. Other groups are considered to be more experiential: art therapy; music therapy; loss and grief group, and group therapy. There are also opportunities to be involved in recreation and leisure activities.[67]

4.42: HHC Small Fitness Pool

These groups form the foundation to the treatment program, which has a minimum length of stay of six weeks. It is in these situations that the patient realizes others feel the same way, and are able to get support from each other. The group spaces include various activity areas and most patients are free to walk the facility unless prohibited due to health concerns such as eating disorders. These spaces give patients a variety of places to meet, and plenty of opportunities to choose the activities they wish to participate in. It is the spaces for these activities that foster patient community.

Security and Privacy: Since the Homewood Health Centre is an amalgamation of hospital wings built over the last hundred years; the layout seems very haphazard despite the "Main Street" Corridor linking the units together. Bedrooms contain 1, 2 or 4 beds per room, so patient privacy is not a top priority.[68] This

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is understandable given that many patients are referrals from the local hospitals or clinics, and are still considered at risk for a breakdown. If patients in an acute phase of their illness are a danger to themselves or others the units can be secured to minimize people passing through their entrances.

Patient Control: Patients in established programs geared towards Psychosocial Rehabilitation are given the freedom to choose where to go and which activities to participate in, and when ready, are even permitted to leave the facility. Because their stay isn't overtly long-term, and rehabilitation gears patients to move on with their lives as soon as possible, patients have few opportunities to make their environment reflect their sense of self. There is little choice in which unit a patient may stay, and less over their room, especially if they are sharing it with other patients. Although the main street corridor links up the various group spaces and provides views into some of the more common ones, there are no places along the route for informal conversation or recreation.

4.43: HHC Typical Patient Room

Haptic & Basic Orientation: The accruement of spaces over time has led to two notable things. The first is that without the Main Street Corridor, navigating the facility would be extremely difficult. The Corridor ties the units and all the different therapy and recreational programs together, and gives the patient the choice of activities to participate in. The second thing it achieves is the uniqueness of each unit. It becomes very easy to have a sense of belonging within the hospital, as each patient unit can be considered a community and is easily identifiable from both the interior and the exterior of the facility. For instance, the colonial wing has three separate units on each floor, and each is easily distinguishable from the next. One has a large overhang on the second floor, and the other has two rotundas at the exterior corners.

4.44: HHC Activity Room

Light: Due to the length of the building and its accruement over time, the building is for the most part flooded with light, however, most of it is westerly. As patients are encouraged to explore the building and participate in different activities as soon as possible, the patients are afforded as much natural light as they can receive.

4.45: HHC Chapel

Sound: Sound transmission in the Homewood Health Centre is difficult to distinguish. Since most patients will have roommates in the Hospital, it is more difficult to filter out the sounds in patient bedrooms to allow for the healing benefits of uninterrupted sleep. However, walking through the environment, the silence is striking; people rarely lift their voices above quietly speaking, likely to reduce anxiety. The Main Street corridor changing direction as frequently as it does reduces sound transmission in the facility's busiest space. The use of plants throughout the space also helps, giving natural materials that absorb the sound waves fairly well from what can be judged on a tour of the facility.

Positive Distraction: The facility itself is full of positive distraction, with

4.46: HHC Library Computers

4.47: HHC Horticultural Therapy Program

developed programs such as their horticultural therapy program. Most of their programs are very well rounded, since they believe in treating every aspect of a patient, as the IMAP schedule shows by including physical activity every morning at 8am.[69] The facility is situated on a great deal of landscaped terrain, and patients are encouraged to participate not only in the adjoining greenhouse, but in maintaining the grounds themselves. The grounds contain a variety of landscapes, from herb and vegetal gardens, to flower gardens, to various walking paths and sport areas, and elements such as the labyrinth, and have only recently become gated to the larger Guelph community. This gives patients the more opportunity to build self-empowerment by creating routes the patient can choose from to simply wander, or to join in activities. Patients are also encouraged to keep their plants as they leave the program to remind themselves of the progress they made. It becomes a very tactile and personal reminder of their ability to recover.

4.48: HHC Property

The HHC, like the WMHC, offers a variety of comprehensive programming geared towards a number of mental illnesses. Every possible amenity is provided for in this building, and the program philosophy is that of a health resort. Its semi-private status has enabled it to develop community spaces like the greenhouse and dining room into comfortable places to be, instead of potentially colder, hospital-styled spaces. Unlike Whitby, the building has developed into its current state over more than a century. It is an accumulation of buildings that house different mental health issues, joined by a zigzagging main street corridor. This makes units more easily identifiable upon approach and means patients can orient themselves without difficulty within the building. Even from the exterior of the building, patients can identify which unit and window is their own because of the many architectural styles that take place.

4.49: HHC Property

4.50: HHC Exterior Garden Property

2.5 Seven Oaks – Victoria, British Columbia

Patients will live in comfort and dignity while learning the skills they need to manage their illnesses and return to the community.[70]

Rick Roger

The Riverview Mental Health facility is an aging centralized campus-style mental health facility in Coquitlam that is slowly undergoing restructuring by bringing acute mental health care back into the various British Columbia communities. As part of an effort to bring the Riverview Mental Health facility into the community, Seven Oaks was created to relocate some of the patients from the aging complex back to Victoria. The site consists of five buildings where patients of different acuities can be housed in intimate groups of five to ten people. One of the buildings is an apartment complex, one is an acute facility and the other three offer communal living situations. The apartment complex consists of several bachelor-style apartments with small kitchens that accommodate patients who are almost ready to return to a stable outside environment. These apartments empower patients through the responsibilities of caring for themselves. Within the apartment building is a coin operated laundry, and a larger group dining room. Its organization also suits families who wish to come to live with the patient before they return home. As a result, it is an extremely useful step in patient rehabilitation, as it is the closest to actual living conditions outside the hospital, and promotes independence.[71]
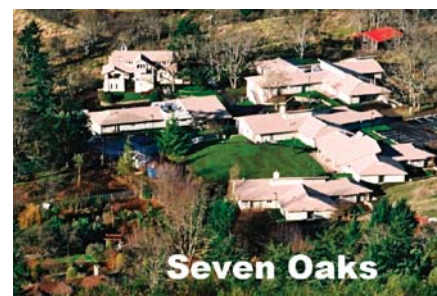
4.51: Seven Oaks Unit Organization

4.52: Seven Oaks Patient Apartments
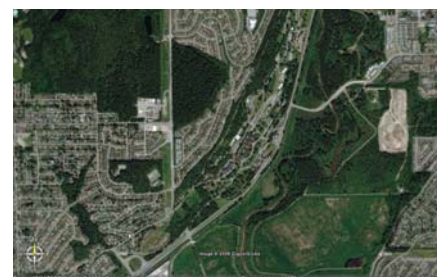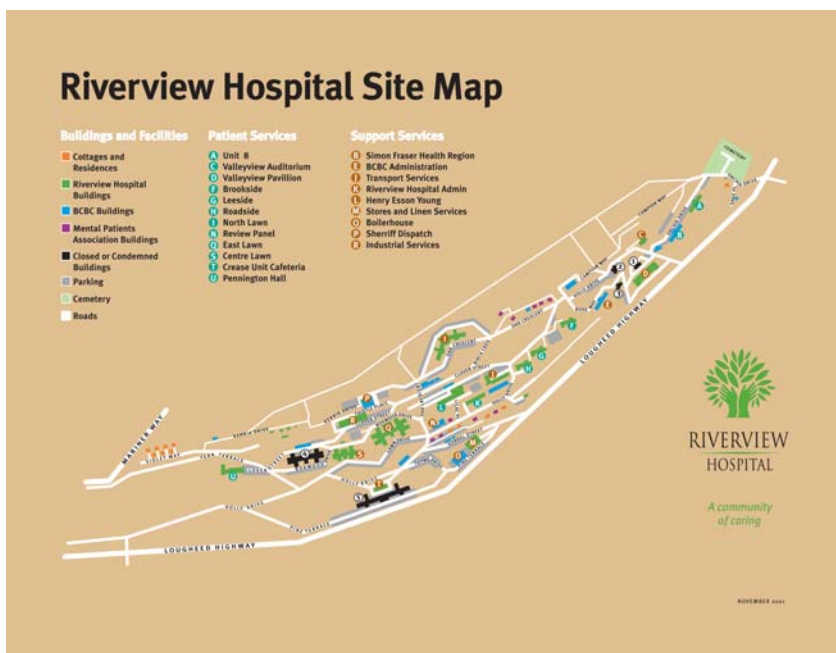
4.53: Aerial Map of Riverview Hospital Site

4.54: Original Riverview Hospital Site Map in Vancouver, before Seven Oaks was created in Victoria

4.55: Seven Oaks Group Dining Room

The communal buildings feature group kitchen, dining and living areas. They have private bedrooms and a secure entrance monitored closely by the staff. The entire facility is surrounded by a fence system for security, but the site itself has workout gyms and outdoor recreation facilities including a basketball court. This facility is successful in establishing community care in British Columbia, and there is a new and similar facility in Terrace called Seven Sisters, opened in February 2005, that will also house the northern and native patients of British Columbia. The group buildings aid in establishing a community support network, while the apartment complex provides the next step in rehabilitation. While little information is provided on outpatient care, it would be extremely beneficial for former patients to return to the facility in order to access Intensive Case Management and prevent possible relapses.

4.56: Seven Oaks Group Dining Room

Community: The variety and size of the units at Seven Oaks creates a very intense community of patients and staff in each unit. It is fostered in the common spaces of the unit. In the more acute units, this would be the living room and dining rooms. Though joined together, these are separated into two smaller and easily supervised spaces by low walls and millwork. In the long-term care apartments, these spaces are the larger lounges, and the laundry. These informal gathering spaces become the focus of unstructured social interaction. The exterior also focuses on community by creating spaces for group athletic activity and informal and recreational gatherings.

One of the main concerns with the Seven Oaks long-term unit is its segregation from the community at large. The whole facility is segregated away from the town, so reintegration into the community may be somewhat difficult, despite the step-down nature of the units. Once admitted into outpatient care, the patient is no longer served in this community, but must be recommended to facilities within the town. This can pose a problem for long-term follow-up care. Also, since "referrals are not for long-term residential placement," a sense of community has less time to build.[72]

4.57: Seven Oaks Moat: A Fenced in Exterior Space

Security and Privacy: Because of their acute status security is at a high level around some of the units. The "moat" is an illustration of this, with a chain link fence incorporated into the vegetation on the outside of some of the units. Privacy is also of less concern, due to the emergency and acute needs of the patients, though each patient does have their own bedroom.[73] However, in the long-term unit, the inverse is true. Patients are allowed more freedom, including the ability to come and go from the facility, and are afforded much more freedom in their personal space. Each unit contains one main supervised entrance.

Patient Control: While patients have their own personal space in their bedroom, it is unclear in the acute care units how much control they have over their environments. This is due to the nature of being an acute facility. In the bachelor apartments of the long-term care suites, patients have far more control over their

environments, and are able to cook and clean for themselves. Because of their limited length of stay, the patient has less time to develop a sense of territoriality than if it was a permanent address.

Haptic & Basic Orientation: The organization is fairly straightforward, with the patient bedrooms in one wing of the acute units, the staff area at another, and the common spaces acting as the hinge. Natural materials are used in the common spaces whenever possible, in the furniture and millwork. On the exterior, rough-hewn lumber creates trellises that frame the entry into the unit.

In the long-term care unit, there is one main entrance for the common spaces, and a few secondary entrances for the other spaces. The central lounge uses many natural materials to frame the spaces. Darkly stained, rough-hewn timber frames joists in the ceiling, thick grey stone is found in the central fireplace and light gauzy curtains cover the windows to create a space for pause and community.

Light: The common rooms are also highlighted by higher ceilings and white walls, allowing more natural light into the spaces. In the apartment unit lounge, the light adds to the sense of textures used throughout the space.

Sound: The acoustic properties of the space are difficult to tell, but with the use of carpeting in some of the public spaces and in the long-term patient suites, sound should be reduced in sleeping areas. The smaller communities of patients will create less noise than a multitude of patients.

Positive Distraction: There is plenty of positive distraction at Seven Oaks due to its setting in the Rocky Mountains. The surrounding area is full of natural vegetation and landscape and only adds to the experience of the outdoors. The landscape of the hospital area allows for informal gathering and also gives space

4.58: Seven Oaks Independant Living Unit Common Area

4.59: Seven Oaks Independent Living Unit Activity Area

4.60: Seven Oaks Outdoor Activity Area

4.61: Seven Oaks Group Patient Unit

4.62: Seven Oaks Bachelor Suite View

4.63: Seven Oaks Bachelor Suite View

for athletic recreation and community-building team events. Each window seems to offer a spectacular view of the outdoors, and even fences and gates are hidden behind vegetation.

The Seven Oaks facility's program is an attempt to take a large campus-like mental health infrastructure that serves an entire province and bring it into different communities, allowing patients to remain closer to their home environments. By organizing the facility into several buildings with varying levels of care, a kind of mini mental health campus, Seven Oaks tries to enable a patient's recovery by helping them transition down those levels. Community is critical in this environment; each unit has a small number of patients, and the central spaces are the communal ones like dining and kitchens. In these spaces, natural materials are used wherever possible to provide a comfortable place to be. The more secure units can be locked down if necessary, while the less secure units allow patients to come and go as needed. Because of its situation, Seven Oaks provides ample opportunities for positive distraction, though it remains somewhat distant from the larger Victoria community.

2.6   Hospital Summary

The above examples were included as a sample of treatment facilities available for patient treatment. The GRH is a front line mental health facility, receiving patients beginning treatment or dealing with those without an established mental health routine. Its organization is less than perfect, as a facility it has to make due with limited funding and an established building envelope. Containment and security are its primary issues not an architecturally healing environment due to the patients' acute state.

The WMHC and HHC are two tertiary care facilities where one has been redeveloped in a new location and the other is made up of additions over time. Both facilities provide ample resources for patients, and attempt to create healing environments through use of natural light, residential atmospheres, positive distraction and horticultural therapy programs. These facilities offer a broad range of care, but treating the patient in a non-institutional setting still has not been achieved. Patients are only there temporarily, and responding to a patient's individual personal environment is not yet achieved.

The WG mental health centre in England not only brings complex mental health care into the community, but it starts to work using several architectural issues. It brings in natural materials and light, quiet and calm heating and ventilation systems, and even begins to set up informal gathering spaces along the corridors. Positive distraction has yet to be attained, but it is possible to modify areas like the courtyard to achieve this. The only other thing missing is providing a long-term residential area, so staff members can support patients in their home environments.

The Seven Oaks facility in Victoria is a middle ground between tertiary care facilities and community programming. It brings a provincial mental health care system into larger communities, enabling patients to get treatment where they are from. The variety and size of unit types mean that patients are housed according to more individual needs and can build a community with fellow residents. Natural light and materials are used to lessen the institutional nature of the building throughout the interior and exterior spaces. However, it is not a facility geared towards long-term follow-up, which means patients will still have to transition out of the facility into other outpatient areas.

Some of the problems that arise from the traditional styles of hospital care come from the typical organizational strategies. Healing takes place either in a general hospital, its mental health wing or in the emergency department, or it consists of an entire specialty care facility. This leads to many problems. First and foremost, the treatment you receive depends entirely on the facility you enter. Treatments in acute facilities are based on emergency needs, usually drugging the patient to offer psychological care. In some outpatient cases, they even use ECT. Only

in larger facilities do treatment options begin to expand for the patient; options like horticultural therapy, nutrition and fitness become available. Second, while patients and their illnesses generally fit into categories, they remain individuals, and their treatment must reflect that. Many hospitals use corridor-style Main Streets, with identical units bridging off the corridor. It creates an easy-to-navigate repetitive atmosphere that gives all patients the same living conditions, which is not always beneficial. Third, the centralization of the hospitals into one major institution means that patients may have to travel long distances to receive treatment at the facilities, and do not recuperate in the environmental territory they are familiar with, and this may lead to a loss of a patients sense of who they are. What would be beneficial, is a system of small inpatient and outpatient supportive housing systems, that network together for resources, but provide holistic care on behalf of the patient.

Another reason these facilities don't work as well for patient recovery from mental illness is the potential for dependence on the institution on behalf of the patient. The patient becomes institutionalized, and relies on the small, intimate hospital setting, where they know the ropes and can no longer function outside the hospital walls.[74] Unless patients are retrained to take care of themselves and to deal with the daily stresses of life and their emotional triggers, they will continue to have problems readjusting, and therefore the cycle of breakdowns and hospitalization will continue.

In many of the facilities the general layout takes precedence over the remainder of the architectural issues that can contribute to an inspiring and healing environment. A few places will highlight natural environments and positive distraction, such as the Homewood facility, while others stress containment, like the Whitby Mental Health Centre. In the case of the Grand River Hospital, it is bound by existing conditions and lack of funding. In the case of Wood Green, every attempt has been made to work out ideas of privacy and community, where even the mechanical system works in relation to its central purpose. Not every facility succeeds in every aspect, but they try wherever possible.

3.0   Inspirational Precedents

Other inspiration for mental healthcare can be found in supportive housing, group homes and resort hotels. The following case studies represent a selection of models that focus on either community or individual healing processes. The Soteria house is a psychological model of how community and close relationships in a normative, non-institutional setting can bring about healing. The UHousing project is a large-scale housing development, centered on bringing together a larger community, while still retaining more individuality in the buildings, their layouts and elevations. It treats families and individuals differently, depending on their needs.

The resorts imply that a healing environment can be greatly beneficial to the individual, on a short term basis. The Atacama resort offers shared individual experiences, by creating spaces for both privacy and informal gathering. The Pousada de Santa Maria in Braga, caters directly to individual experience, while still seeking ways of bringing short-term communities together in places like the dining areas. The Four Seasons Resort in Bali is centered on individual experiences where even common spaces like the dining room and bars are oriented to suit one or 2 people sharing an experience at most. Its whole complex is a large, campus-style resort, which differs greatly from the other organizational strategies within this thesis.

As an alternative to the traditional institutional buildings usually used in mental health care, evaluating various models of hotels and resorts might be helpful because they provide restful and rejuvenating settings that aim to soothe the soul and calm the mind and body. Evaluating their design in terms of how well guests can see through spaces, natural lighting conditions, the way they create communal spaces and a relaxed and healing environment will be useful in understanding how to design for mental health recovery.

4.64: Soteria House Patient Therapy Illustration

3.1   Soteria House – San Francisco, California

To interests in the meaningfulness of madness, understanding families, and the conduct of research, I added on from my institutional experience; if places called hospitals were not good for disturbed and disturbing behaviour, what kinds of social environments were?[75]

Basically, the Soteria method can be characterized as the 24 hour a day application of interpersonal phenomenologic interventions by a non-professional staff, usually without neuroleptic drug treatment, in the context of a small, homelike, quiet, supportive, protective, and tolerant social environment.[76]

Loren R. Mosher

The Soteria House began in the early 1970's as an anti-psychiatry facility, dedicated to providing rehabilitation for schizophrenic young adults who "were public sector clients screened at the psychiatric emergency room of a suburban San Francisco Bay Area county hospital," without using medication.[77] Housing six patients and two staff at any given time, the facilities provide an intimate community network, where the patients, when able, assist in the running of the house and chores. If they are stronger, then the patients participate in the working environment. Patients who have moved on from the facility are invited to return to talk with the staff if they are in need, and they carry this intimate relationship along with them after living in the house. What

two random assignment studies of the Soteria model and its modification for long-term system clients reveal [is] that roughly 85% to 90% of acute and long-term clients deemed in need of acute hospitalization can be returned

4.65: Soteria House Entry

to the community without use of conventional hospital treatment.[78]

As a therapeutic community, it is closely interwoven and very successful due to its size, however the size of the staff means that they have a lot of responsibility towards the patients, and have less of a support system in place for themselves. There is limited help they can offer the patients outside the facility, and yet they are the ones who will be counselling the patients into working with those inside and outside the house.[79]

4.66: Soteria House Patients and Staff Contribute to the Life of the Building

The Soteria House is used and abused by its patients and staff. Patients draw on the walls, and use whatever space is available for therapy, activities, and general chatting. The house remains in its old form, accommodating the six patients and two staff members in many bedrooms, probably making some of the traditional living spaces into bedrooms themselves. This means the focal point is the same as many traditional houses, everyone seems to gather in the kitchen/dining area in the end to cook, discuss a multitude of topics, play cards, or do someone's hair. The common living room has been simply adapted to provide for the patients; craft paper is on the walls so patients can draw their emotions. As one staff member quotes, "we tolerate just about anything, except the patients hurting themselves or others."[80]

Due to the innovation of the Soteria House's psychiatric program, it would seem that the house was chosen most likely for its affordability, and its proximity to the hospital, in case of emergency. This means that the environment was less likely considered, and therefore, and design limited to the retrofit of bedrooms, and broken windows and walls. It may be assumed, however, that since hospital environments were considered unhealthy places to heal, the choice to place schizophrenics in a house was a deliberate one. A home environment provides patients with the opportunity to be themselves, without the structure of a stay in a hospital, and it allows patients the ability to personalize and modify their spaces throughout their growth and recovery. Though the reasons for its closure in 1983 are unknown, Soteria has been reproduced several times, including several locations in Europe. One of these locations is Soteria Bern, in Bern Switzerland.[81] The question remains, given its success rate, is there a way the architecture can support the program to allow more people to be healed and to encourage recovery once the patients are no longer in the house itself? Also, can this be done in such a way that it doesn't fall into a similar problem of the asylums?

4.67: Patients at the Dining table Chatting

Community: Community in the Soteria House is at its most intense. Since eight people maximum live there at all times, six patients and two staff members, Soteria provides a place to be intimately connected with people going through the same treatment. It has the living room and the kitchen for common spaces, and patients participate in the cleanup along with the staff members. Bedrooms are shared so patients retain an even more intimate relationship with their

4.68: Patients at the Dining table Chatting

4.69 & 4.70: Paper Covers the Walls of Bedrooms of the Soteria House to Allow Patients to Express Themselves.

roommates. Because the building is a renovated home, it was not designed specifically for the type of treatment that it houses, however the environment is residential and not institutional due to its building typology. Staff members live there in shifts for two full days at a time, so they develop their own relationship with patients, which is necessary in times of breakdown.[82]

Security and Privacy: Privacy is very difficult to maintain in the Soteria House because of the intimate nature of the people housed within its walls. Two staff members are always on duty in the house, so supervision is easily maintained. Since patients have roommates to be accountable to, private space to think or even to be alone in a crowd isn't always possible. However, since patients are not medicated in this facility, episodic breakdowns occur fairly frequently, and it makes the staff member's job easier to be so close to the patient. Since the nature of patient and staff member relationships is one of guidance and trust rather than rule and drug administration, the home feels much more secure than a hospital wing.

Patient Control: Patients have various degrees of control over their environment. They may not have their own room to take care of, but they participate in the chores of the house, like cooking and cleaning. As is evidenced in the video on the Soteria House, patients are given free reign to do just about anything, with the exceptions of hurting themselves or others.[83] They will use the garage to do ballet, or have walls covered in brown craft paper in order to visually represent their feelings. The patient is given whatever means necessary to work through their emotions. The building supports this only because it is an older and somewhat run-down house that is able to take regular abuse.

4.71 & 4.72: Soteria House Patients are Able to Personalize their Own Spaces to Establish a Sense of Grounding.

Haptic & Basic Orientation: The Soteria House was not designed with cognitive or haptic organization in mind; rather it was chosen to develop a new and drug-free rehabilitation program for first-time episodic schizophrenics. Its strength in organization is that it is in a small house, similar to many houses in the area, and small enough to navigate easily. Materials in cabinetry and furniture are all wood, likely since it is more able to withstand abuse than metal and plastic furniture. The floors are vinyl, likely for the same reason: to withstand abuse. Since the house is able to withstand abuse, for example the walls are covered in paper so they can be drawn on, patients feel secure in their illness that they can do whatever needs to be done to recover, and both the building and the staff members support them in this respect.

Light: Light wasn't a primary concern for the design of the Soteria house since it is an end to support the needs of a new psychiatric program. However, video footage recorded in 1972 shows that during the day time a great deal of natural light shines through the windows, especially in the kitchen and eating areas of the house.

Sound: Sound transmission ought to be at a minimum in this place due to the fact that patients are allowed control over their own treatment and emotional outlet choices. However, since most of the surfaces are hard and reflective, it is very likely that sound transmits throughout the building.

Positive Distraction: Because the building is a simple community house, there is little in the way of positive distraction. However, the video shows some of the surrounding area, and it appears to have a park and beach nearby, which would provide positive distraction for the patients. Since they are allowed to make their own program and treatment choices, and are able to venture out of the house as required, they have access to these spaces on a regular basis.

The Soteria House was developed as an alternative approach to drugs and hospitalization to help patients recover from schizophrenia. This is one of its most important features; it begins to prove recovery can take place using highly intensive individual and group therapy in a non-institutional setting. Programmatically it is important because it begins to combine holistic recovery in a domestic and non-institutional setting. The staff members who work with the patients also help with the cooking and cleaning, which means knowledge of nutrition is especially beneficial in this situation. While the building itself wasn't designed for the purpose of mental health recovery, it is important to note the benefits that arise from its use. Materials are resistant to any possible damage that may occur. Residents frequently gather around the kitchen and dining room table as a community, while their bedrooms and other spaces around the house create ample room for private discussion with therapists, or other activities and interests like ballet.

We ought to have a whole bunch of Soteria houses, have 'em rollin' all down the street you know get a bunch of duplexes and, and uh start building Soteria lands all over the place.

Patient at the Soteria House (Slanhoff, Susan): *Soteria Land Video*; http://www.moshersoteria.com

4.73 & 4.74: Soteria House Residents are Allowed to Pursue Their own Interests Througout the Building, Using Spaces in New Ways.

4.75: UHousing Street Front

4.76: UHousing General Site Plan

3.2   UHousing Competition, Germany

The project site had problems typical for the area… The careless and ignorant habits of early industry had left the vacated ground so polluted that the soil had to be removed and replaced to a depth of six metres. The Germans are very much more conscious than other people about this: they fear that trees and plants will bring toxins and heavy metals to the surface to be absorbed by people and animals.[84]

Peter Blundell Jones, Experimental Community

Part of a competition to rehabilitate a brown-field site, the social housing project called UHousing in Gelsenkirchen, Germany is about community. While the 7.5 hectare site is large, the design breaks up the project's 250 units into 3 smaller housing groups, to create a greater sense of community within the residences.[85] The plans site plan sets up the groups around a central, linear public space occupied by a rainwater collecting water feature running through it. The housing itself consists of various unit types, rented and owned.[86] The unit heights vary from one to four storeys, and rhythmically alternate lower and upper units along the length of each group of units. The front elevations also vary, protruding into the front yards by different lengths, adding to the uniqueness of each unit, and the rhythm of the front elevation.[87]

On the linear street side of the site, stores and businesses occupy the edge to create a public link to the remainder of the city. A kindergarten is located at the end of the site to teach some of the UHousing children. This offers a great deal of security to the children, as it is secluded with limited access thanks to the undulating topography that surrounds it.

Community: The units create community in several different ways. The 250 units create a sizeable community within the larger context of the city. These units are then broken into three groups, which creates more personal groups of neighbours centered on the large common water featured park. Each housing group bends at corners to create an even more intimate group of neighbours. Then in each corner, where the units change directions, the common spaces for those units are housed. This includes shared parking and storage, and circulation for units above the ground floor. Behind the front elevations are terraces, greenhouses and living rooms on the lower floors, making the transition from public to private spaces much more fluid. Since parking is located in the central corner of each group of residences, the U-shaped streets are much more pedestrian friendly, giving neighbours more opportunity to socialize. What the outdoor spaces potentially lack are informal places of gathering closer to the units. A more centralized staircase may have created these spaces rather than the individual staircases to each unit. Instead the central linear space is designed for those informal gatherings, though the community it serves may be

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too large for such unstructured moments to take place.

Security and Privacy: Because this is a residential project, each unit maintains a strong degree of privacy. The bedrooms are on the upper floors of the units, separating them from the busier public area. Privacy is added by the changing
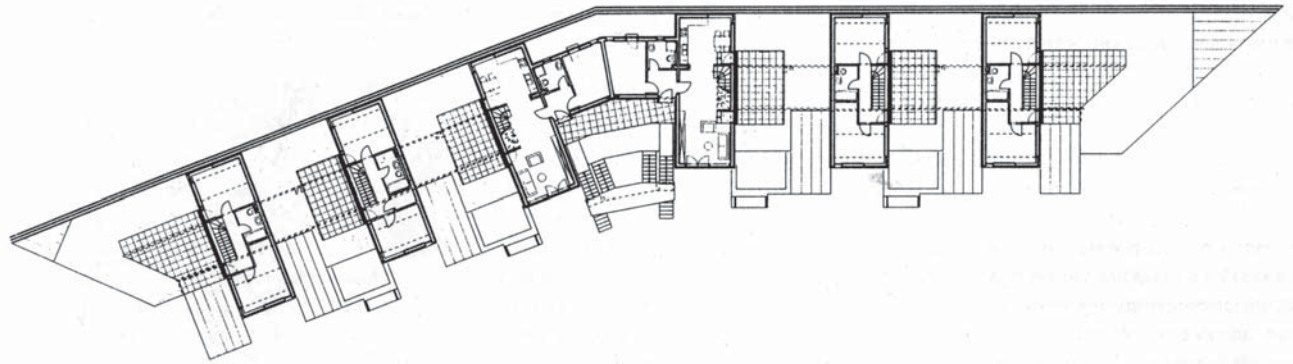
second floor plan
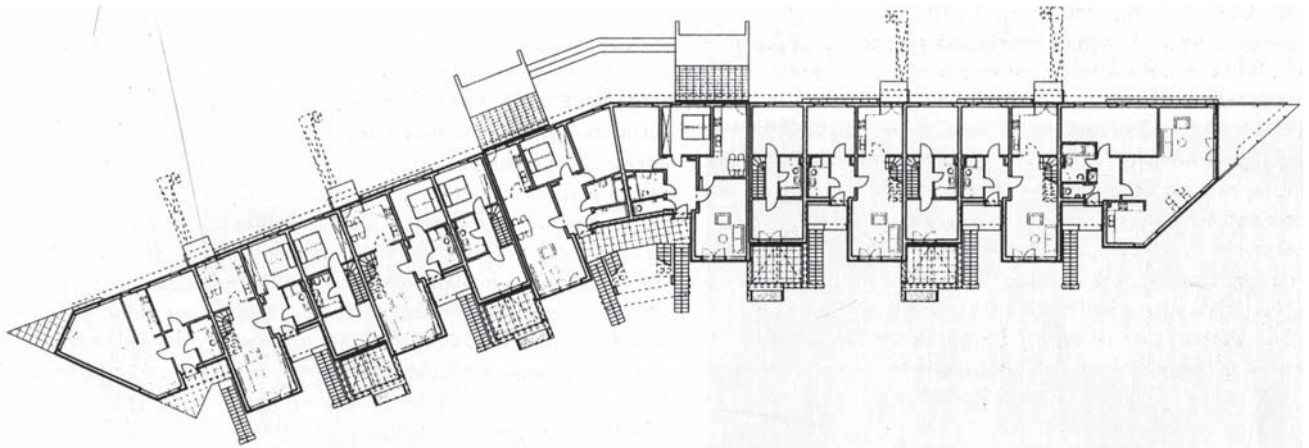
first floor plan
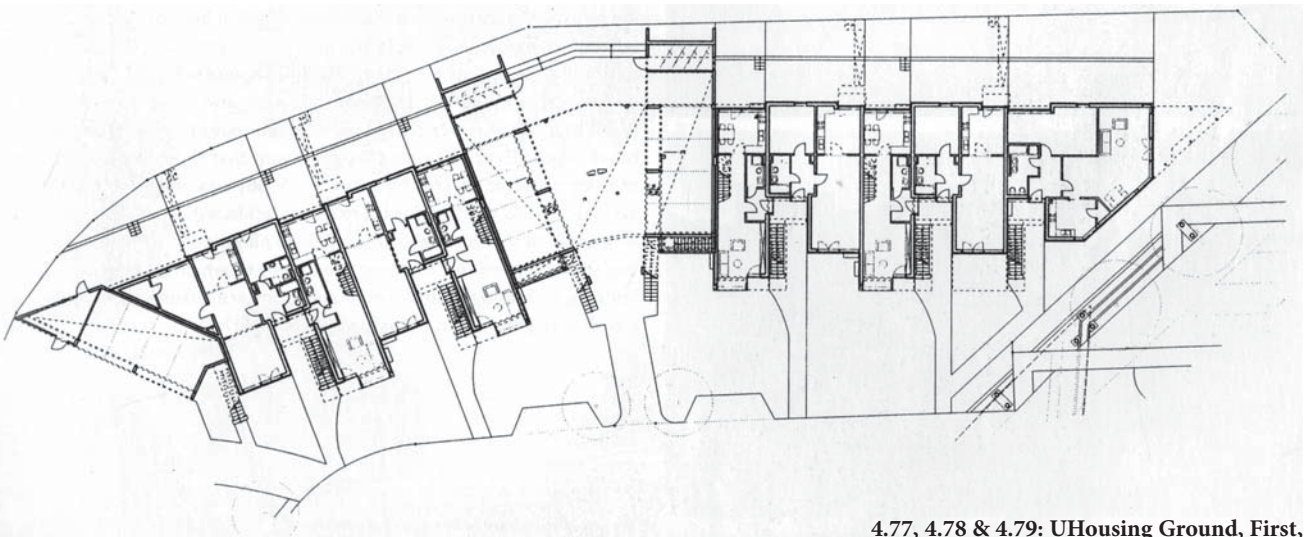
ground floor plan of typical cranked block (scale approx 1:650)

4.77, 4.78 & 4.79: UHousing Ground, First, and Second Floor Plans

4.80: UHousing Community Park

front elevation and staircases, giving each unit its own private entrance. The changing landscape also adds to the sense of privacy and security as unit elevations changes along the length of the site. Security is maintained by the intimate grouping of dwellings in the larger context. Strangers will seem out of place right from their first steps onto the site. Vegetation would add more privacy in front of individual units. This would create more areas outside to gather around, and provide some form of screening so sightlines into units are minimized.

Patient Control: Each resident has their own space, both in terms of bedrooms, and outdoor balconies and terraces, and front yards. They also have complete control of their own climate, which would be essential in patient recovery.

Haptic/Cognitive Organization: The central spine of the waterfront community creates an easy to navigate space for residents. The undulation of the main entries to each unit makes it relatively simple to know which space is your own; however, the somewhat repetitive rhythm may confuse some of the residences. The overall colouring and similarities between units make it a complete tapestry of housing, where parts may be indistinguishable from the whole. This could be disorienting for someone who has a cognitive impairment. Vegetation, individual landscaping, and building colour, would serve to mediate this. However, the units are grouped to make their entries simple to find, and their individual layouts are easy to navigate.

Light: Units are oriented in all directions, so there is no focus on the use of natural light. However, many of the units take advantage of some daylight conditions, using frosted glass in the living spaces to warm the interiors and create privacy, and in some south-facing units, creating areas for greenhouses and plants.

Sound: While the quality of sound elimination between the units is unknown, the front façade changes in depth, which lead to the assumption that sounds

4.81: UHousing Community Entry

4.82: UHousing Preschool Entrance

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4.83: UHousing Residences

4.84: UHousing Rear Facades

don't travel directly from one unit to another.

Positive Distraction: The site organization creates plenty of opportunities for positive distraction. The many courtyards between the groups of units, in addition to the central spine-like water feature create varied outdoor places for inhabitation. Ideally, vegetation and sheltered outdoor spaces would add places of quiet contemplation where they could be used in all types of weather, but there are no such public amenities. The topographic changes, however, do add to a sense of seclusion and privacy, especially at the kindergarten. The large public spine is ideal for large group settings, but does not currently inspire places for reflection, meditation and escape.

The benefit of examining a project such as UHousing is that it shows a large scale housing development broken into smaller groups of communities while still retaining a cohesive design strategy: a visitor is definitely aware of the extent of the project site. The facades and private entries to units vary in elevation and relief, creating many unique entry conditions for residents: once within a smaller group of houses, identifying a personal residence is simple, based on elevation configurations. The units themselves offer a range of accommodation to residents, as well as necessary community support such as day care. While the whole project may be a little large for mental health supportive housing because it's difficult to keep track of patients when necessary, it would be simple to add mental health support structure to this area by adding the necessary psychological support.

4.85: Atacama Aerial Photograph

4.86: Atacama Site Plan

3.3 Hotel Explora in Atacama, Chile

Like the Explora Hotel in Patagonia, the new one in San Pedro de Atacama is designed as a luxurious outpost in a rugged land, a comfortable haven from which visitors can explore a remote but beautiful place.[88]

Clifford A. Pearson

The Hotel Explora in Atacama, Chile is a large courtyard group of buildings that rest in the heart of the Atacama Desert. Its varying walls, roofs and screens diffuse the intense light. The social spaces in the lounge areas and in front of the individual rooms themselves allow for larger group gatherings, while providing opportunities for people to retreat from the crowds when necessary. The many alcoves create generous seating areas, and the windows and rooftop terraces and patios provide ample views of the surrounding desert and mountain landscape.
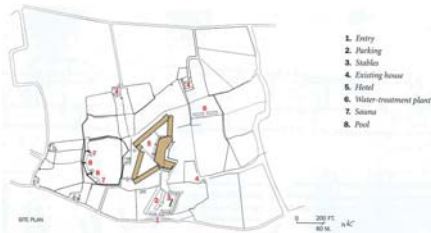
The ground floor of Atacama has several views down long corridors. The private areas that deal mainly with staff support allow for minimal views of areas, whereas the areas for guests and visitors allow for more fluidity and visual continuity. Using the Depthmap program you can see the visual cues and views throughout the inside of the space through the doors and openings. On the second floor you can see that it is the staff areas that are less visible and restrictive compared to the more public guest and visitor areas of the hotel main building. Larger public spaces have longer view throughout the spaces which guide guests throughout the building.

Community: The courtyard design of the Hotel Explora creates a community out of private individual suites. Each door fronts onto the courtyard, with windows looking into the surrounding desert landscape. The walls and benches around

4.87: Atacama Ground Floor Plan:

1	Entry
2	Music
3	Meeting
4	Chapel
5	Boiler
6	Laundry
7	Guest Room
8	Exhibition
9	Storage
10	Staff Bedroom
11	Staff Living Room

98
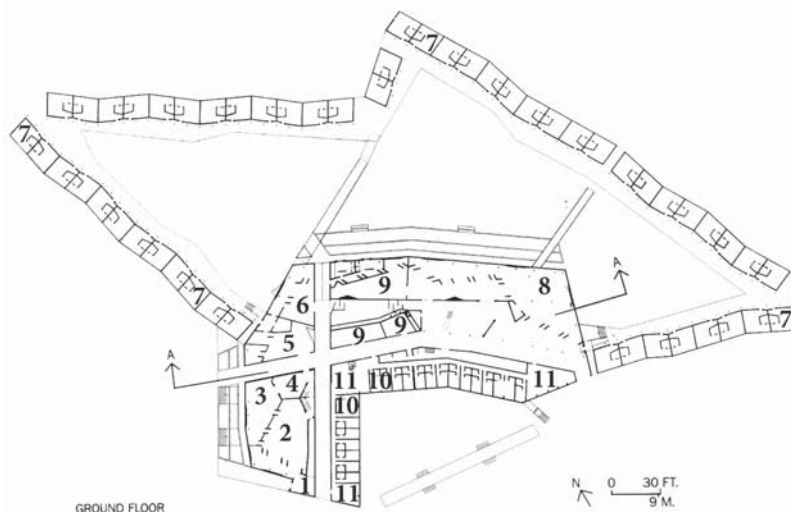
4.88: Atacama Second Floor Plan:
1   Main Street
2   Restaurant
3   Terrace
4   Lounge
5   Entrance Hall
6   Bar
7   Shop
8   Staff Dining Room
9   Offices
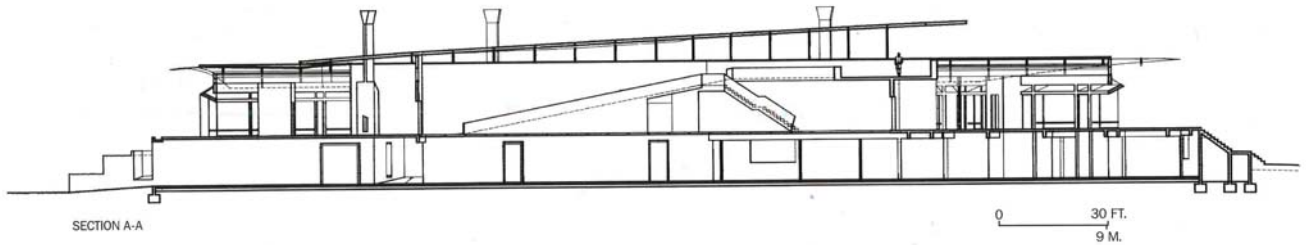
4.89: Atacama Building Section

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0   30 FT.
     9 M.

the walkway and in the outdoor lounge spaces present plenty of opportunities for informal dialogue between guests. The central building contains all the common spaces, as well as the staff spaces. These are organized so that as many guest spaces as possible also access the serene courtyard through ramps or corridors. The building shapes a community with its courtyard organization, but due to the frequent guest change-over, a sense of larger community isn't well established.

Security and Privacy: Privacy is maintained by each guest occupying their own

4.90: Atacama Courtyard

4.91: Atacama Guest Suite

suite around the courtyard, which also has its own entrance. Guests can retreat into the privacy of their own room instead of participating in the common spaces like the dining room, the art gallery or the chapel. However, should the guest decide to venture into the common spaces like the lounge, some privacy is maintained by the odd angles and the many partitions throughout. Seating is therefore in a much smaller group than the larger room could occupy, and this gives the resort a much more intimate feeling. Small, angled partitions give a sense of security in that you can easily lean against it while surveying the larger room. Sightlines are limited in length to the common spaces, but from the entrances to each common space, a visitor can easily see and be seen by whoever is already there. While seeing into a space would be welcomed by a patient to gage whether or not they wan to enter, they may not want to be easily visible from the entrance to avoid the onset of paranoia.

Patient Control: Guests have the option of venturing anywhere in the resort, and even into the extending landscape. They are able to maintain control over their own rooms, the climate and the lighting. Guests are also able to maintain some degree of privacy in the common spaces because of the way the partitions separate the larger spaces into smaller, more intimate settings, giving an extended feeling of shelter.

4.92: Atacama Dining Room

Intelligibility: The spaces within the main building of the resort are highly intelligible for guests. The most connected spaces, such as the lounge, the restaurant, and the exhibition spaces are also the most integrated, and have the clearest visual distances for guests. On the other hand, the staff member spaces are less connected, less integrated, and more hidden away from guests. This means guests can clearly identify which spaces they are free to enter, and which are off-limits to everyone except for staff members. Overall, the spatial intelligibility is very clear. For more detailed analysis, please refer to Section 4.0 of Appendix A.

4.93: Atacama Bar Space

Haptic & Basic Orientation: Two central corridors as well as two central staircases and ramps are important factors in the organization of the facility. Visitors have clear views into each of the common spaces as they approach and public spaces are easily visible compared to the private staff spaces. Natural light is used to guide people into the second storey public spaces, thanks to the high roofline which allows an abundance of indirect light. Also, the walls open easily to extend the common space onto the exterior sheltered terraces. These spaces are also framed by angled walls to create smaller, intimate spaces on the large outdoor terrace and serve to create some privacy in larger gatherings of people. This is extremely useful when unfamiliar groups of people are housed together in public spaces for short periods of time.

Natural materials like the wood structure, stone floors and fireplaces, and plastered walls create a light, airy and cooling effect. The materials, like the

plaster walls frame windows in such a way that light filters in through odd shapes, making it less direct and more subtle in the rooms it enters. The rougher materials are used in central gathering spaces at key moments of pause and rest, like the various fireplaces in the lounges.

Light: Natural light, both direct and indirect, is used whenever possible in the hotel Explora. Even the common spaces face north to some degree, to allow as much natural light as possible in this South American country. Because of the climate, windows are often used, to get as much air circulating through the resort as possible. But with the large overhanging canopies, the light is often indirect, which illuminates the space without the intense heat of the desert. This filtered light opens up the vertical circulation, and highlights the spaces above, guiding guests into those public spaces like the dining and lounge areas.

Sound: Sound is likely extremely easily deflected due to the variety of angled walls which would refract sound and their openings into the outside, which
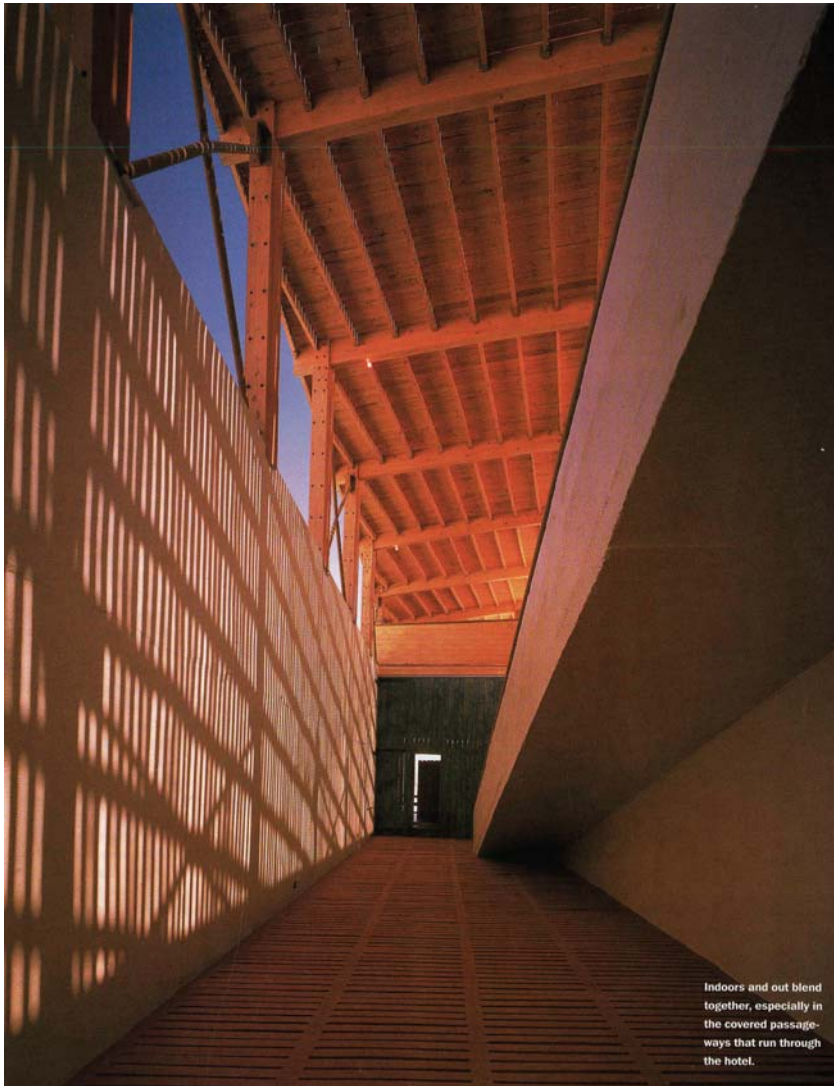
4.94: Hotel Explora Roof Ramp and Stair

Indoors and out blend together, especially in the covered passageways that run through the hotel.

4.95: Atacama Ramp to the Roof

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4.96: Atacama Elevation

should create a quieter environment.

Positive Distraction: While the courtyard is sparse due to the desert climate, the windows often frame views of the Chilean mountains in the distance. These mountains may be visited from the resort itself on day excursions. The courtyard itself is broken into two smaller areas by the ramps joining the second floor patios to the courtyard and single-storey guest suites. This also creates smaller, more private areas in the larger shared courtyard.

The resort in Atacama is meant as a retreat for guests. It is set in the wilderness, and offers guests a sheltered retreat from the desert. The reason it is included within a mental health thesis is because it is a healing environment that uses natural materials and lighting, and provides ample opportunity for informal gathering. The materials used in the resort are natural woods and stones, combined with a white plaster that helps flood the building with natural light. Staff member spaces are off to the side, which means guests feel free to congregate in the larger gathering spaces, or retire to the privacy of their rooms located off the courtyard. These larger spaces are designed to see who is inside them, and who may arrive to join groups gathered within. The partitions are at obscure angles, which provide ample opportunities for smaller groups to gather quietly within the larger space, and helps deflect and refract the sound.

3.4 Pousada de Santa Maria in Braga, Portugal

4.97: Pousada Exterior

This monastic retreat seems to rise from its site like a prehistoric monument, a man-made artefact that was once almost lost to nature… It comes as something of a shock to find a brightly coloured beach towel hung out to dry in one of the windows, or to watch a pair of children scampering down a cold stone staircase to the pool – signs of a magnificent ruin come to life.[89]

David Cohn

The closed-off courtyard style of the former monastery suits a small, contained group of guests. It creates a series of views from both to and from the courtyards. This promotes free access from the guest areas to the courtyard. The guest bedrooms are separated from the rest of the guest areas, allowing for privacy for the guests in a retreat setting.

Its guest rooms are on the west side of the building, in an L-shaped wing separated from the rest of the cloister. To get to the cloister you must walk down a lengthy corridor, past the administration area. Once you are there, all the common spaces radiate out from the courtyard cloister, which is attached to the local church on one side. The guest wing creates a second, public courtyard, with no direct access from the guest rooms to the ground level. Because the guest rooms are a floor above the courtyard, they maintain a degree of privacy that wouldn't be obtained otherwise.[90]

4.98: Pousada Exterior Courtyard

SITE PLAN

1. *Hotel*
2. *Church*
3. *Swimming pool*

N

0   100 FT.
30 M.
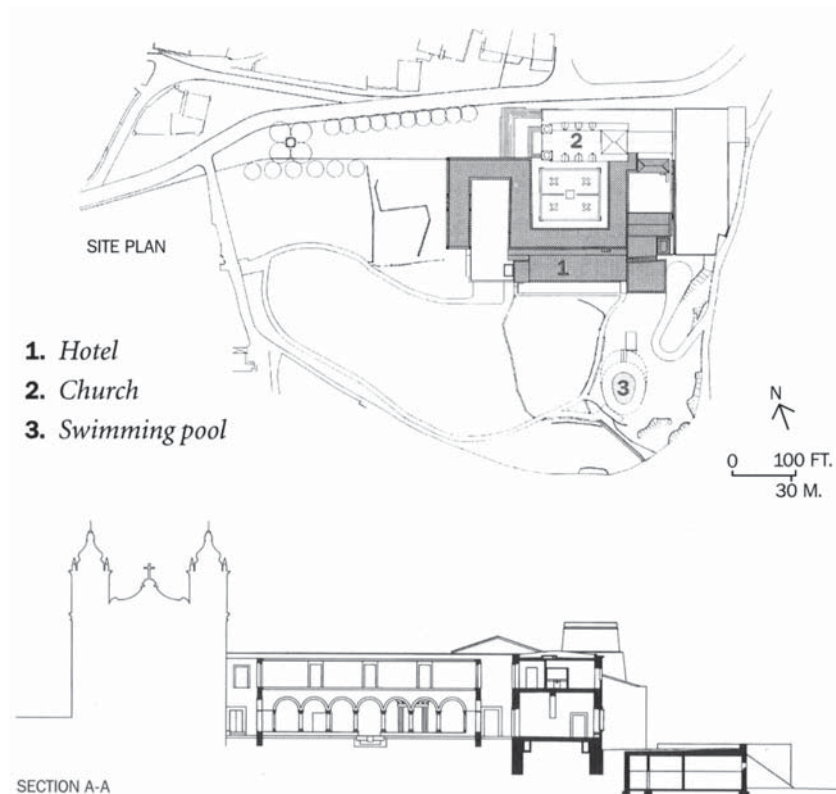
4.99: Pousada Site Plan

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4.100: Pousada Section

4.101: Pousada Floor Plan
1   **Entry**
2   **Administration**
3   **Cloister**
4   **Bar**
5   **Restaurant**
6   **Guest Rooms**

MAIN FLOOR

0   30 FT.
9 M.
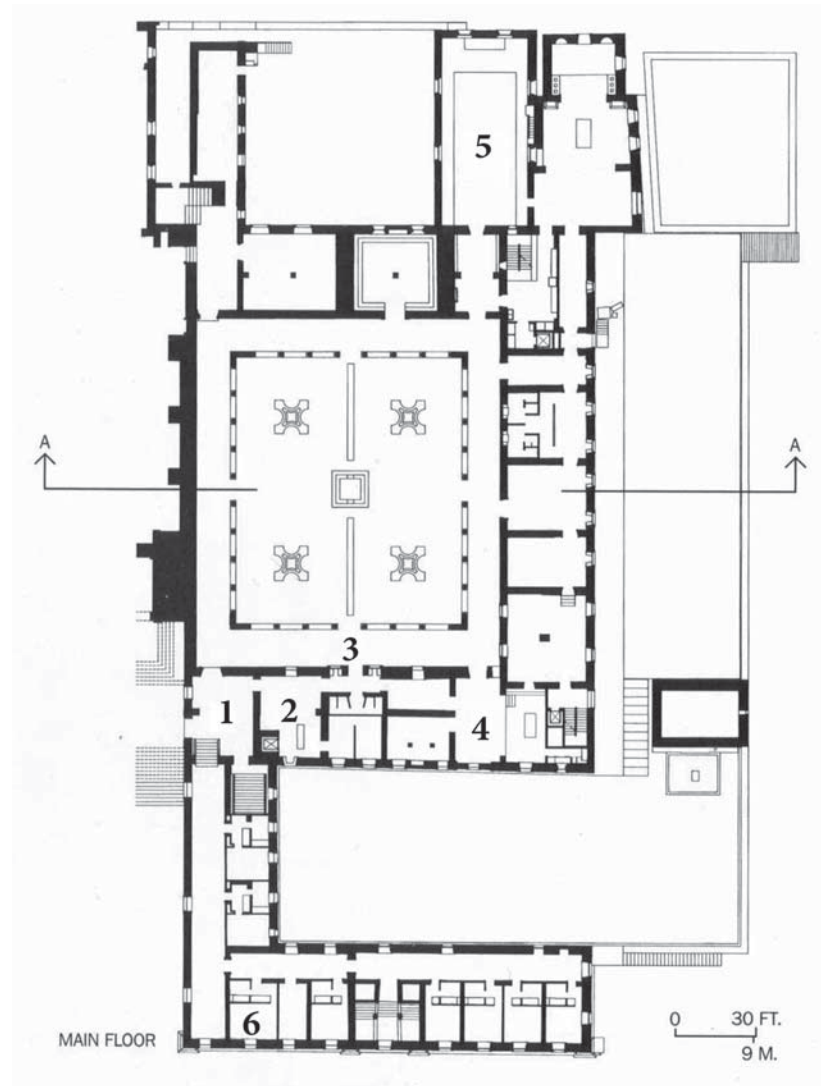
4.102: Pousada Interior Courtyard
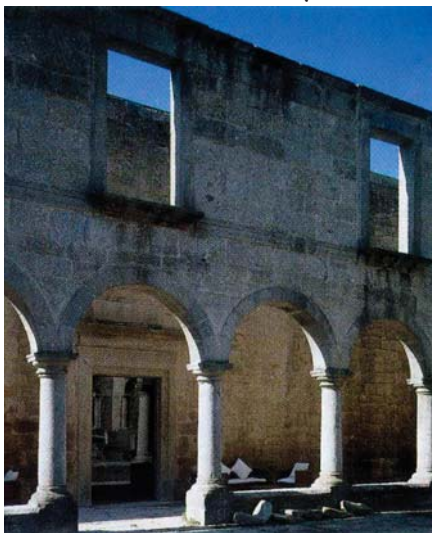
Community: The cloister setup in this renovated monastery suits a quiet community very well. As this is a relatively transient hotel, forming a community is not a priority. That being said, places for community gathering occur at different locations around the central cloister spaces. While, the hallway does open up to the common spaces such as the bar and restaurant, there are no places for informal dialogue and discussion, which help to create the sense of community within a place.

Security and Privacy: The administration area securely controls who enters the facility. Since guests have their own room in a wing separate from everything else they maintain an excellent degree of privacy. They also have the choice to participate in dining or in touring around the countryside, or remaining within the privacy of their own space.

Patient Control: Because the resort is not meant as a long-term residence, guests have minimal control over their private spaces, and do not develop a sense of territoriality. They maintain the option of travelling anywhere in the area, and

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of participating in any activities that may occur within the monastery walls. Their choice is in the freedom to go anywhere from the hotel, not necessarily in controlling their private suites, since the suites aren't a permanent residence.

Intelligibility: The intelligibility of the Pousada is very clear. The most connected and integrated space in the building is the courtyard itself, with the spaces that surround it as the next most intelligible spaces. Ideally, the spaces surrounding the courtyard, from where everything might be seen, would be the guest common spaces. The least connected and integrated, and therefore the least intelligible spaces are the guest bedroom suites on the west wing of the building. This works extremely well for identifying places of quiet and privacy. For more detailed analysis, please see Section 5.0 in Appendix A.

Haptic & Basic Orientation: The organization of the monastery resort is straight-forward. Everything communal is centered on the cloister in the center of the building, while the private guest rooms are located in the west wing. This creates a clear dividing line between the internal private and communal spaces. The level changes between the guest suites and the ground plane also creates a clear vertical division of public and private space.

4.103: Pousada Guest Suite

4.104: Pousada Entrance Materials
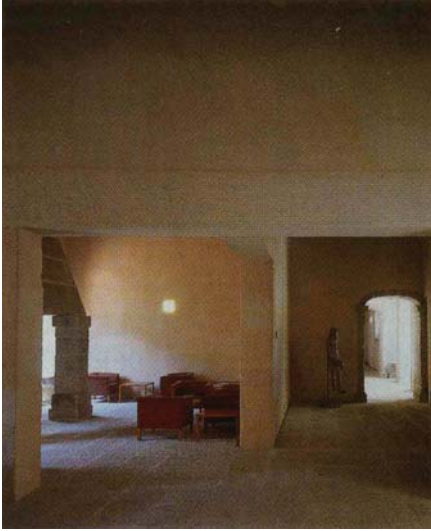
4.105: Pousada Common Spaces

4.106: Pousada Exterior Staircase
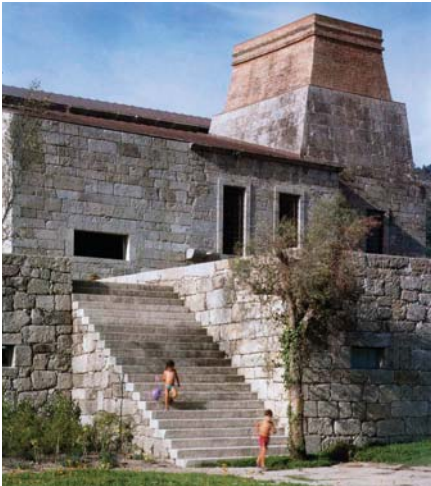
Light: The monastery was built in a time when windows were not excessively large. Therefore, natural light is filtered throughout the building by the space between the cloister and the interior spaces. The direct light is minimal; however the indirect light bounces nicely at low levels because of the smooth stone and white plastered walls throughout the building. This leads to darker and perhaps cooler spaces within the building; the dark light is a welcome relief to the bright light outside.

Sound: With the separation of communal spaces from the guest wing, it is easy to imagine that the guest suites are much quieter than the rest of the building. The mass of the stone walls will also lead to less sound transmission.

Positive Distraction: A formal garden in the cloister and the courtyard surrounded by the guest wing, and the pool to the south of the building provide ample opportunities for positive distraction, as does the surrounding Portuguese landscape. There are few activities within the resort; its prime function is one of meditation and serenity. The types of spa-like spaces within the building are an indication of this. This is a place where guests come to refresh themselves away from the bustling crowds, and makes this former monastery a new kind of sanctuary, a retreat from day to day life.

The Pousada is included in this thesis because the building is a quiet place to seek solitude and clear the mind: its program is centered on a courtyard scheme. If the Pousada were developed into a mental health facility its primary organizational strategy would separate the guest spaces from the rest of the communal spaces, giving them the ability to obtain privacy when necessary. This provides guests with the opportunity to join together as a group, or seek solitude. The materials used give it a richness and texture that asks people to slow down when passing through its spaces. Ample opportunities for positive distraction abound, especially through the internal courtyard: this is the central space for the whole building, almost everything radiates off of it.

3.5   Four Seasons Resort at Sayan, Bali

Whether walking from one of the terrace suites to the restaurant or from the main building to the pool at the river's edge, guests find themselves winding around and down the site, discovering new things at each turn.[91]

Tony Stanton

The village/campus-styled atmosphere of this resort emphasizes free access and travel of guests. It has a central building that houses many of the private rooms and amenities of the resort, such as the bar, the shop, the concierge, and many of the spa treatments featured on its website. It is a place of luxury and retreat, providing all the elements needed for relaxation such as privacy, aromatherapy, and fitness.[92]

4.107: Bali Resort on the Hillside Slope

4.108: Bali Resort Main Building

LOBBY LEVEL

N   0   20 FT.
          5 M.
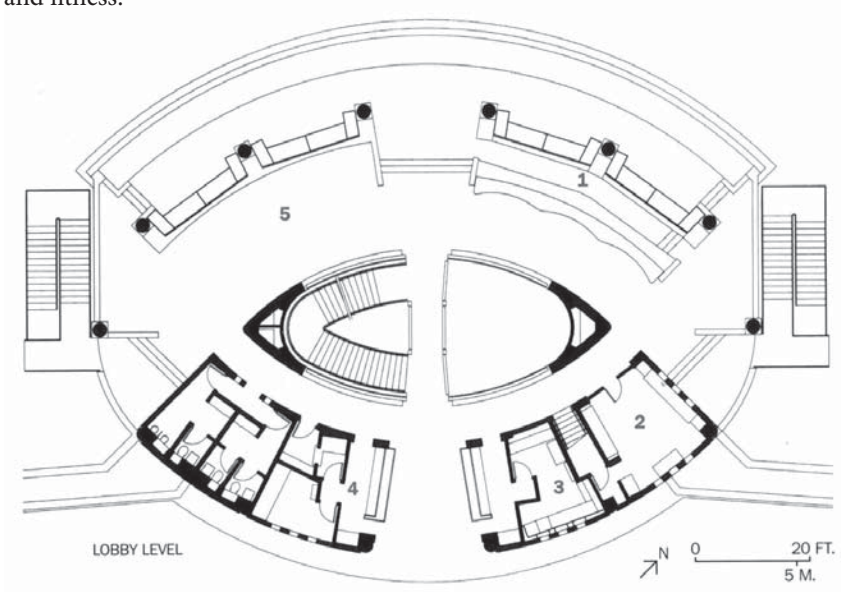
4.109: Bali Resort Floor Plan

SPA LEVEL

0   30 FT.
          9 M.
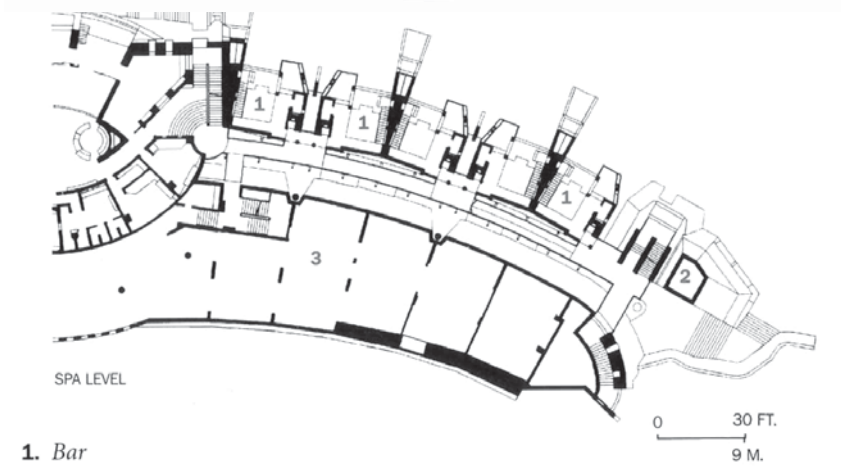
1. Bar
2. Shop
3. Concierge
4. Front desk
5. Seating

1. Duplex suite
2. Conference
3. Mechanical

4.110: Bali Resort Guest Wing

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4.111: Bali Resort Site Section

SECTION THROUGH SITE
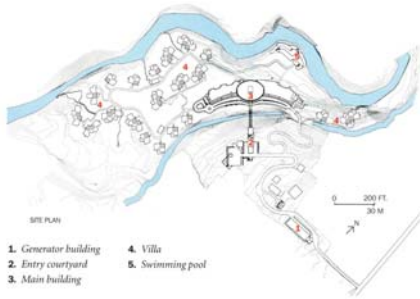
4.112: Bali Resort Site Plan

SITE PLAN
1. Generator building   4. Villa
2. Entry courtyard   5. Swimming pool
3. Main building

4.113: Bali Resort Bar

Community: The layout of this resort creates a village atmosphere of community, where everyone has their own private room, or villa, and share a variety of common spaces in the main, larger building. These common spaces include dining, recreational and spa-like activities. However, the common spaces are not oriented for community socialization, but for private experience. Multiple people may share the same view, but in cases like the bar overlooking the valley, it becomes an individual experience that may be shared with one other person simply due to its orientation. The beautiful walkways between the retaining walls do not allow for informal gathering, they are simply a means to a destination. Even the larger outdoor lounging spaces at the pool are meant for individuals rather than community; the chairs all face one way (likely for the view or the sun) and are not grouped together for discussion. Spaces are mostly arranged for privacy and intimacy.

Security and Privacy: The village design of the Four Seasons resort allows for a great deal of personal experience through the segregation of the larger villa-style units, and the many explorable pathways throughout the site. Guests can have their own private room in the larger facility, with an unobstructed view of the mountain scenery beyond, or their own private suite surrounded by lush vegetation that prevents views of others into the privacy of the room. Upper

4.114: Bali Resort Guest Villa Floor Plan

TYPICAL VILLA

4.115: Bali Resort Guest Villa Interior

floors even have reflecting pools built in to allow privacy of the lower floors. This makes it very experiential for the individual.

Patient Control: Guests have the option of wandering the many pathways of the area, lounging by the waters, venturing out to the main building's common spaces, using the many spa facilities, or remaining in the privacy of their own room. This resort is meant as a place to stay for short periods of escape, mostly for the wealthy. It is a place meant for relaxation and therefore guest privacy and choice of activities is central.

Haptic & Basic Orientation: The organization is fairly straight-forward. The main building houses the common spaces with a central corridor radiating out to the private rooms. The villas are scattered along the topography on pathways leading down to the river below. The resort provides a great deal of complex level changes for the wanderer, and keeps the mind occupied with the various twists and turns and height differences. There is a large spatial and experiential difference from the view at the bar or restaurant on the top floor of the main building to the villas surrounded by lush vegetation near the river. One gives the feeling of height and overlook, the other the sense of being enclosed and secure. The materials used are natural, with stone in the key common spaces, and wood used in rooms and villa suites. The walls are a washed white, which stands out in the lush vegetation, and adds a reflective surface to the light brought into the building.

Light: The buildings and their key views face north, but not directly, which lessens the heat from the sun in this tropical environment. Natural light is reflected off the walls into every guest space and is tempered by both the vegetation and large canopies and overhangs.

Sound: Sound is likely not an option because this is a resort for re-establishing a sense of inner peace, so voices are likely kept lowered. However, since all the private rooms and villas are oriented so there are no sight-lines, it is likely that sound transmission between spaces isn't a problem.

Positive Distraction: The Indonesian natural landscape abounds at this resort, and every opportunity is used to bring that landscape to the front doors of the villas. In some case it enters the bedroom suites completely. The villa walls completely open up onto a patio, which is extends it into the surrounding landscape. Showers and tubs in ensuites and the spa are even surrounded by lush vegetation. Most of the activities in the resort take place in the fresh air, even if the there is a canopy around it.

The Four Season Resort has been included because of its spa-like healing qualities. Its strength is its overall organization, though it would be difficult to achieve in an urban setting. It provides a main building that houses some

4.116: Bali Resort Building Entry

4.117: Bali Resort Walkway

4.118: Bali Resort Dining Area

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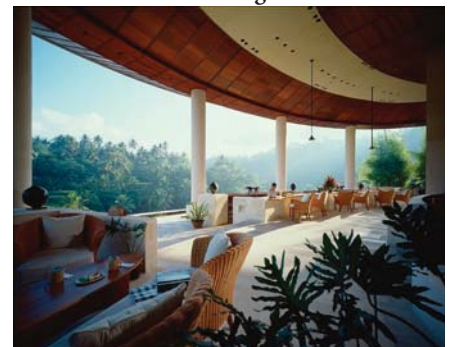
4.119: Bali Resort Guest Bath

guest suites and the central activity spaces for the whole complex. The larger guest units are scattered throughout the site, and grant the visitor a great deal of privacy. If made into a facility to treat mental health, it would be assumed that patients able to have more responsibility would be located in the units further away from the main building, while patients who need more intense therapy and supervision might be located within the main building. What the resort doesn't provide is a sense of community, as all the units are broken up and informal gathering spaces aren't included. The whole resort is meant to promote individual healing and privacy.

4.120: Bali Resort River Edge

4.121: Bali Resort Guest Villa

4.122: Bali Resort River's Edge Guest Villa
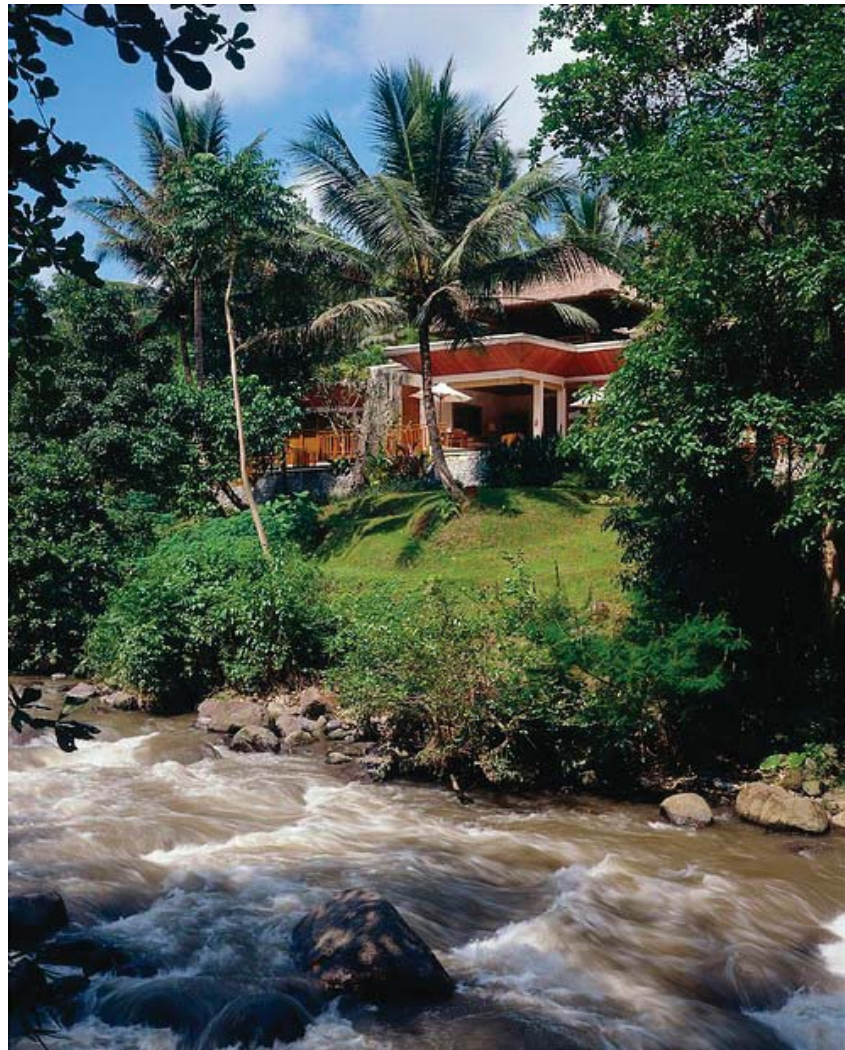
3.6   Inspirational Precedents Summary

The above facilities have been included as case studies for new models of mental health care design. The Soteria house is an entirely new psychological model for treating schizophrenia, and applying this model to the architectural concepts illustrated at the beginning of this section would likely lead to an entirely new building to promote mental health.

The UHousing competition reflects a desire to provide a sense of a larger community, while still trying offering opportunities for individual circumstances. Families or individuals could find places to live in this housing model, and this is necessary when building a community. Large and small open spaces make informal gathering a possibility, which creates a better sense of community between neighbours. If made into a mental health institution, additional psychological support could be added, and families could also receive treatment alongside the patient.

The resorts offer three different architectural models of healing retreats. They are all located in areas of relative isolation, becoming sanctuaries to their respective environments. All three use natural materials and lighting to guide guests through the spaces. They are all primarily focused on the individual healing experience, though the resort in Atacama provides more opportunities for informal gathering than the Pousada or the Four Seasons Resort. Drawing inspiration from these facilities, their organization, materials and use of the natural environment, and locating them in an urban setting may provide a newer model of mental health care. The central problem in using these models of resorts as mental health care facilities directly depends on the patients housed within. None of them could be secured in case of an emergency, but they all provide ample freedom to any patient stable enough to use it.

The above case studies form two distinct categories: community- individually- centered experiences. The Soteria house and the UHousing project investigate small and large communities and are meant to be used over a long period of time, while the resorts enable individual healing experiences, though for only short periods of time. Both are necessary in the design of a mental health facility; a patient needs to retreat into privacy and break into community at various points in the healing process.   The architecture can support these functions, by orienting private experiences away from community ones, and by using materials and light to enhance individual and group experiences.

4.0　　Architectural Precedents Conclusion

For mental health care recovery community, privacy and security, patient control, haptic organization, sound, light and positive distraction are key ingredients to bring into design. A healthy mixture of these environments can be difficult to achieve, and it begins with the primary treatment goals of the facility. In cases where security is the primary goal for dangerous patients, establishing community and patient control are not priorities, and materials must conform to safety standards. In resorts, individual experience is the primary focus, so community is normally not present, and often suites are isolated from the public areas of the resort. In social housing, community becomes the main focus, but their community spaces depend on the needs of the community they house. If it is privacy and security, egress and views become important, but if it is medical, then community spaces should focus on those needs of the residents. Ideally, supportive housing should accommodate both security and privacy, and establish spaces for communal gathering that support patients, while at the same time, allowing restful, healing environments to heal the individual. From the above examples, it remains clear that no two existing facilities, resorts, housing or hospitals are the same. They serve different purposes. And since no two patients are the same, this can be a good thing. What can be recommended from this section is that while facilities may differ in their programming, they can still look to the architectural issues to determine how the architecture can best support a healing environment.

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Background and Precedent Conclusion

The Psychological Research section of this thesis discusses new treatment philosophies for patients suffering from schizophrenia, mood disorder, and anxiety disorders. Historical mental health treatment cycled between containment and rehabilitation. The new and current trend in Ontario mental health treatment strives to be holistic in treating patients, using a bio-psycho-social perspective that relies on input from both the patient and the patient's family and circle of friends. While past biological views have focused on drug prescriptions to alter brain chemistry, this thesis takes the stance that before drugs are considered for long-term patient treatment, nutrition and environment should be assessed to ensure nothing is lacking. It is understandable that in certain psychotic states, such as the manic state of bipolar disorder, patients need to be sedated and hospitalized in order to begin the treatment process. However, once the patient is willing to obtain treatment, it should be through nutritional supplements, as they are less harmful to the body and mind under long-term care, and through psychological and social treatment.

The psychological treatment of patients should include standard therapy such as group, family and individual therapy, and non-standard treatment, like horticultural, skills and occupational therapy. This provides patients with informal situations for skills developments, and provides them with job opportunities as they discover more about themselves, which can lead to a sense of purpose patients define for themselves that they can continue to fulfil in life.

The social treatment of patients comes from group and community situations. It can be difficult to observe patients in group situations if they are only treated through outpatient care and see a psychiatrist once per week or less. Having a supportive community that understands the nature of a patient's illness provides a depth of support that even an understanding family and psychiatrist can not achieve. At the same time, supporting family members that care about a patient can be immensely helpful, as it provides them with the skill set needed to reach out to the patient properly, and to recognize illness symptoms as they develop. Having a therapist visit the patient's community to continually observe interactions can be difficult to do, because of the necessity for travel. A simpler way to support families is to provide a central place for patients, their families and friends, and staff members to work together in one environment that is within a larger urban setting. This provides additional staff member support through networking with existing mental health care infrastructure and job access and other support for families.

The perception section of this thesis begins to illustrate how individuals perceive spaces and objects personally, and how the act of passing through a space influences the view of the space. By looking at how the senses perceive what's around them, and how that affects self-perception and proximity to objects

and people, it begins to shed light on how the architectural design works with perception. This in turn leads to grounding a patient's sense of self in buildings, which allows a patient to develop a sense of territoriality in the facility, and enabling the recovery process.

The architectural research chapter begins to explore how architecture can speed up or hinder the healing process for physical and mental health patients. It looks at various qualities attributed to healing environments, such as community, security and privacy, patient control, haptic and basic orientation, light, sound and positive distractions, and applies them to existing hospital and inspirational facilities found in various parts of the world. In the end, the spaces that are the most inspirational seem to be the most individually healing, though they are not meant for long term stays. Places that focus strictly on security and harm prevention tend to overlook the healing of patients who are more advanced in their recovery process, but still need ample support to remain on the right track. Relatively few places look to accommodate patients on a longer term basis unless they are special needs cases, and often enough, patients need more than outpatient care to remain on the path to recovery.

Unfortunately, the majority of facilities where patients reside long- or short-term are focused primarily on containment, and except for some exceptional outpatient programs, have little to do with the effects of the illness on the patient outside of the hospital. With the advent of various initiatives, such as Intensive Case Management, psychiatric staff members are working to change this. Often patients with extremely dissimilar needs are placed into rooms and units that are identical to each other, and do not reflect their individuality. Though some facilities offer opportunities for personalizing spaces, in many secure facilities, patients have few options for activities or where to go, they must remain in a patient lounge, wander corridors, or participate in specific scheduled meetings. Sometimes the architecture hinders the patient acoustically, visually, or by reinforcing security over privacy. This is not always necessary for a healing environment, as alternative places such as the Soteria House and the various resort hotels attest to. If the architecturally restorative environments like the resorts can be amalgamated with the community developing structure of UHousing and the Soteria House, with the psychiatric support of mental health facilities, the beginning of a bio-psycho-social model for a mental health building may begin to take shape.

Design Exploration

Because I'd briefly been some version of okay when we first commenced treatment, Dr. Sterling knew that somewhere in my personality there was a giggly girl who just wanted to have fun, and she thought it was important that I be allowed to express that aspect of myself. She seemed to think that one fine day I might come into my exuberant self again, and that at McLean I'd have only mattressed wallpaper and iron-barred windows and the schizophrenic down the hall to indulge it with. Her goal was to see to it that I got the kind of care and treatment that I would have at a psychiatric hospital without actually being placed in such complete confinement. It is only because of her determination and dedication that I survived that year without actually being committed, and it is only because of her that I am alive today at all.[1]

Elizabeth Wurtzel

1.0   Vision

Currently there is a schism in the level of treatment between home-bound outpatient treatment and the treatment offered by emergency and full psychiatric hospital treatment. As the treatment approach in Ontario moves towards emphasizing the individual and outpatient-based bio-psycho-social perspective, facilities themselves must begin to offer varying treatments for patients to choose from. This is often impossible unless you have a facility large enough to warrant the variety of programming, such as the Whitby Mental Health Centre, or the Riverview campus-style hospital. However, a large-scale facility designed to keep forensic patients from hurting themselves or other patients may not be suitable for patients suffering from anxiety or paranoia. These facilities are sometimes located on the periphery of the city, away from family and support. While this works for those patients who may need to be removed from their home or personal environment to facilitate healing, there may be patients who have significant others and/or children. These patients may need to maintain close family relationships, keeping their family involved in order to eliminate problem behaviour that may trigger psychiatric breakdowns. The various needs of patients must be addressed to determine the best psychiatric programming to use in the facilities. In many cases this will overlap between patients, but some patients will require additional forms of treatment.

Therefore, since clinical needs vary from individual to individual, the proposed vision for this thesis is a network of facilities across the GTA (and even across the province of Ontario) that serve to share new psychiatric information and

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research, and provide intimate and holistic treatment for the patient in a non-institutional and healing environment. Many general hospitals across the province are establishing supportive connections to provide necessary programs in communities where they are needed, while pooling information and expertise into one larger institution. Examples of this are: the Scarborough Hospitals, which consist of both the Scarborough Grace and the Scarborough General Hospital;[2] Markham Stouffville Hospital, which consists of the Markham Stouffville Hospital location and the Uxbridge Cottage Hospital;[3] and the Grand River Hospital, which consists of both the Kitchener location and the Freeport location.[4] These hospital groups provide basic programs for each area such as emergency and birthing wards, while dividing specialty programs like cancer care and cardiac care between them. In this fashion, a network of facilities could be set up in Toronto to deal with the specialized needs of individual patients. Some could be set up to be more secure, with more intense individual and group therapy, and limited opportunities for patients to venture into the city; while others could be set up to provide more freedom for patients, with minimal support staff. Since patients require different levels of care, I would propose that this network of facilities be broken into categories, differentiated by those levels of care. They would be called Comprehensive Care, Supportive Care and Follow-up Care.

While the levels of care vary, these facilities would each still focus on the holistic treatment of patients using the bio-psycho-social perspective as the basis for treatment. They would use orthomolecular treatment and occasionally drug treatment, fitness, individual, group and family therapy, and community to help patients develop and maintain a healthy lifestyle. The site would be located in an urban setting, to utilize public infrastructure like transit and support the local economy through supporting local businesses. Placing the facilities in an urban setting allows the patients freedom to venture out, visit stores and run errands within the immediate area of the facility. If they are able to perform regular life activities due to the close urban surroundings, part of the stigma may be erased that is associated with mental illness as patients obtain more independence. Since patients will not necessarily have vehicles or drivers' licences, access to public transit is necessary, but even more important is the ability to walk to every needed convenience since the potential for paranoia may inhibit patients from taking public transit.

In addition to this, the psychiatric support available to the patients could also be used to reach out to the public. Psychiatric private practice could then become affiliated with the various facilities, either through occupying additional offices within the building, or through networking with the facilities to share resources and research. By networking with the facilities, ample opportunities are provided for outside patient support groups like the Assertive Community Treatment teams and Consumer/Survivor Initiatives mentioned in the psychiatric section of this thesis. There is potential for these networked private practices and support groups to assist patients who may be able to transition outside of the

facility. Enabling private practices to work within and alongside the facility can bring the public within the doors, and give some help or support to the larger community itself. This can serve to give back to the community, and in the longer term, reduce stigma through public acceptance.

2.0   Supportive Housing Program

Since the holistic treatment of mental health disorders includes the social perspective, it becomes imperative that treatment works with patients in their respective communities. Since a patient's community is often found outside of hospital walls, psychological programming needs to take place where the patient spends their life. In order to ensure a proper transition between inpatient and outpatient care, medical staff may need to supervise and observe patients in their daily routines. It can be difficult for practitioners to spend time with each patient on a day-to-day basis. A much simpler concept would be to break patients into liveable communities where a group of psychiatric staff members can work with patients regularly and help with their social skills and routine problems. The secondary benefit to ensuring housing is offered for patients within their own communities, is that their families or friends, people who may be involved in their lives may be able to live with the patients, and the group dynamic can also be evaluated and worked through by staff members. By allowing people outside the direct patient-physician relationship to be a part of the treatment, the patient is treated as a whole, and the benefit of treatment may help the patient's family and friends. This helps to break down the barriers between patients and the rest of the people in their lives, while erasing some of the stigma associated with the illnesses themselves.

Units of housing, combined with psychiatric support services of varying levels should be broken down into groups of 18 to 36 units. This is ideal for a supportive or cohousing model, where everyone pitches in to help out and to participate in community sponsored events. The Cohousing Handbook recommends this number of units since:

> *less than that and there are too few people for diversity and sharing. More than that and locks appear on doors. People can no longer recognize all the people who belong - which is to say all the people who live there or visit regularly, including the inlaws, business associates children and friends. Too large a community and they become suspicious.[5]*

2.1 Comprehensive Care

The Comprehensive Care facilities would be based on the bio-psycho-social perspective, and geared towards patients who need the most supervision outside of hospital care. Basic life skills are the focus of the social programming, since these patients potentially need to relearn the skills necessary for self-care including nutrition, food preparation and in some cases medications. Individual and group therapy would be part of a daily and weekly routine. Routine and community are the key aspects to developing the skill-set to work through social situations. Issues such as security would be more prevalent in this level of care; the ability for it to be locked down in case of emergency would be very important. All other architectural issues may come in second to the issue of security.

Since it is recommended that communities be no larger than 36 units, the comprehensive facility would house approximately 40 patients maximum, which could be placed in smaller, more intimate groups of 10-15 patients housed in within the larger group of 40. The slightly larger number of patients can be used since it is a total number of patients, not units, where as in cohousing, the number of residents may be four times that many. Psychiatric staff would be available at all times, including nursing and psychiatrists in a low staff member to patient ratio. The reason for the low ratio is because an Alzheimer's' Study in the Gerontologist found that "the higher the staff ratio, the lower are the verbal aggression scores among residents."[6] Staff members providing holistic care would include: occupational therapists, horticulturalists, physical trainers, librarians, IT personnel, receptionists, psychiatrists, nutritionists, orthomolecular pharmacists and nursing staff. Programs available for patient treatment and activities would include: horticultural therapy, physical fitness, nutrition, group, individual and family therapy, occupational therapy and skills training.

In order to provide as holistic a healing environment as possible for the patients, other programmatic elements would include visitors' apartments for family and friends who wish to stay for prolonged periods of time, and general activity spaces. There should be common lounges and spaces for informal gathering and community events, and training spaces for proper nutrition and other life skills. Spaces for meditation would be available, as well as spaces for activities such as horticultural therapy and other group activities. Since biology, health and physical fitness are to be a priority, spaces geared towards proper nutrition and fitness should be included. The majority of patients would have their own private space – their bedrooms – but a few patients dealing with OCD and paranoia, may require spaces where they can cook their own meals once properly trained and have their own washrooms.

2.2   Supportive Care

In Supportive Care facilities, patients need some staff presence, but with psychiatric support can (re)learn to lead normal lives. Patients require some degree of independence, but also need a regular routine of supervision and therapy to maintain mental health. They may need a consistent routine of daily therapy and treatment; however, it may consist also of occupational and job therapy as well. As in the Comprehensive Care facility, treatment will reflect the bio-psycho-social perspective, where the social aspects of treatment are oriented in group therapy, activities, and shared facility spaces. They will live with others for support, and staff members are available at all times in case of a crisis. Complete building security is not a requirement, and other architectural issues like psychological spaces and community might become more prevalent in its design. It is by minimizing the security that the building becomes programmatically less institutional.

Patients are encouraged to view the facility not only as a retreat from the city, but also as a stepping stone to venture forth from. Again, since communities should be no larger than 36 units, housed within the Supportive Care facility would be 41 patients maximum. To fit within this range of recommended unit numbers the unit breakdown consists of 26 units, where: 12 patients have private bachelor-styled units, 18 patients are grouped into three units of 6 patients, the remainder of units are broken into 2, 3, and 4-bed units for patients with families and close friends staying with them. There is potential within these units to accommodate younger patients with families in these settings, for example, adolescents who still attend school, as most illnesses strike people by the age of 25 years. Since the facilities should be placed in already established communities, finding and networking with local schools shouldn't be an issue.

Psychiatric staff members for supportive care include: occupational therapists, psychiatrists, nutrition specialists, horticultural therapists, orthomolecular pharmacists, physical trainers, on-call nurses and job counsellors. These staff members, 20 present during the day time, will help to teach the patients how to fully live with their illnesses and avoid situations that will potentially bring about a psychotic episode. They are hired as moral support to direct the patient's improvement, add to their confidence levels and to evaluate patients psychiatrically, but are also there to help out with routine household tasks if necessary. The on-call staff members remain a presence at all times, in case of a crisis, or if a patient needs to talk at any given time. In addition, psychiatric staff members may see the need to add spousal and family support groups to the therapy sessions. The day care provided would provide opportunities for ensuring patients' children remain mentally healthy.

To accommodate the reintegration of patients, and the erasure of stigma associated with stays in mental health care facilities, the supportive care facility

A Day in the Life of Mary:

7am	~ get up, eat, ready for the day
8am	~ daily exercise
9am	~ skills preparation in small groups ~ work with job counsellor for training & job experience
12pm	~ prepare and eat lunch with group ~ lunch preparation alternates from day to day
1:30pm	~ job/training in coffee shop ~ skills training or group activities
4:30pm	~ individual therapy on alternating days
5:30pm	~ dinner preparation and cleanup ~ dining lounge or apartment
7pm	~ chores or activities or free time
11pm	~ bed

can accommodate the variety of amenities needed for the therapy offered by the staff members similar to the comprehensive care facilities. On top of that, the building can present additional supportive activities for patients and their families, such as day care and nutritional dining areas. A public face may also be included in the architectural programming, giving back to the larger community. This public face may include a café for the public, a library linked with the Toronto Public Library System, and a nutritional and orthomolecular pharmacist and grocer. These venues also provide opportunities for employment by patients, and opportunities for the public to get their own questions about healthy lifestyles answered. Other local companies might be able to rent space within the supportive care facility, such as copy centres, landscape designers, photography studios, etc. Ideally, the supportive care facility would give back to the community by also providing a place of respite and refuge, allowing community members to be welcomed into an environment of peace for a brief period of time. They could use public amenities, such as the café, library and grocer, and sit in the calming outdoor spaces.

2.3   Follow-Up Care

A Day in the Life of Stuart:

6:30am ~ wake up, get kids up and ready for school and daycare
~ prepare breakfast & lunch
~ take nutritional supplements

8am ~ drop kids off at school/daycare
~ go to work

2:30pm ~ leave work early on Thursdays to pick up kids at school/daycare
~ other days work until 5:30

3pm ~ Thursdays group and private therapy with case manager
~ children can participate in their own sessions to ensure proper growth

5:30pm ~ prepare and serve dinner

6:30pm ~ family and children's activities
~ free time

8pm ~ get kids to bed
~ prepare for next day/free time

10:30pm ~ get ready for bed

In Follow-up Care, patients are independent, likely working through their treatment in a completely out-patient format. They will live apart from any primary facility, have full/part-time employment, have families or are able to live on their own. However, they will still need minimal long-term support. Psychiatric staff members would visit patients on approximately a weekly basis in their own environment, or patients would be able to visit with staff in their own offices. On-call suites would be made available for staff to stay in case of crisis. Building staff would provide maintenance of the facility, and small patient-initiated organizations could be set up on or near-site to provide family and children's support. Security for this level of care would be at a minimum, and architectural issues like developing community will be the strongest design factor.

Patient support infrastructure would include group therapy and activity rooms, and a green house monitored by the patients themselves. Patients would be able to initiate many of the group sponsored activities and therapy. They could create their own network of employment and day care for their needs, and integrate it into the larger community. Fitness, group session rooms and psychiatric meeting rooms would be included to ensure that the holistic approach to mental health care is continued in this facility with minimal support. Within the area, an orthomolecular pharmacist and nutritional grocer would be located to ensure patients are able to meet their nutritional needs.

Housed within the follow-up care group are 60 patients plus family and friends in differing apartment configurations. This is to remain within intimate

community standards; units can be broken into two groups sharing the same core psychiatric facilities, so that they meet the cohousing recommendations. Units may be broken down with the assumption that 20 patients would be in relationships with or without children, 15 people living with other family or friends, and 25 patients living with other patients or independently. Specialty accommodation could be created for geriatric patients and extended families that can offer or need support themselves, however this is not the premise of the program.

This thesis focuses on the supportive care facility in terms of design because it is in the middle and most difficult range of care. This design will be analyzed and used to conclude about the direction of future developments.

3.0   Site Analysis: Moss Park

In determining location, the qualifying factors are: an urban setting, natural light, access to a community park and public transit, and the presence of an established community that holds the necessities for everyday needs like grocery shopping, clothing stores, etc. Several initial sites in Toronto present such opportunities: High Park, Trinity-Bellwoods Park, Christie Pitts Park, and the Moss Park areas in Toronto just to name a few. Ideally they would influence the urban fabric around them, without destroying it. For the purposes of this thesis, the site chosen for the Supportive Care facility is located in the Moss Park area which is bounded by Queen Street E. to the South, Gerrard Street E. to the North, Sherbourne Street to the East and Church Street to the West. The site houses an armoury for the Canadian military, built in the 1960's. The site is only 3 -4 blocks away from Toronto's Eaton's Centre, and only 3 major blocks south of Toronto's Ryerson University Campus.

6.2: Moss Park Street Map

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6.3: Design Proposal on Site Map

The area has a reputation for crime, homelessness and poverty, the latter illustrated by the close of the local Toronto Dominion Bank branch in 1993 due to a loss of "hundreds of thousands of dollars over the past four years."[7] Gabe Gonda, in describing the location writes:

> *Other low-income parts of Toronto have nothing like Moss Park's range of community services, but their presence here hasn't pulled the area out of poverty. Instead, Moss Park has become a magnet for the needy.[8]*

In 2005, three soldiers from the armoury stood trial for the death of Paul Croutch, beaten on the park bench where he slept.[9] The history has not been helped by the architecture. In 1991, while several people were mugged in the lobby of their Shuter Street apartment, residents, especially seniors, live in fear of venturing outdoors.[10] The "current high-rise design is inhospitable and contributes to problems such as drugs, crime, and a bad state of repair."[11] Some of the walls that "give [drug] pushers a degree of privacy"[12] have been knocked down.[13]

Despite the need that faces the area, there is a broad sense of community in the population. Various organizations have tried community projects to ameliorate the park, the centre of the community. Currently there is a group of people named Homes Not Bombs who are fighting to get the armoury developed into emergency shelters for the homeless in the area.

6.4: Social Structure Locations Map

1.   St. Michael's Hospital
2.   Metropolitan Church
3.   St. Michael's Church
4.   United Way
5.   The Salvation Army Housing
6.   Community Centre
7.   Arena
8.   Fred Victor Centre
9.   Supportive Housing Complex
10.   Moss Park

6.5: Panorama 1: Metropolitan United Church

6.6: Business/Residential Location Map

Businesses

Supportive Infrastructure

Residential

Green Space
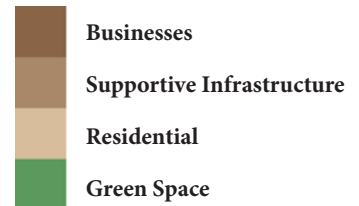
6.7: Panorama 14: Queen Street Businesses

6.8: Panorama Locations Map

0 ▬▬▬▬ 75m

6.9: Panorama 10: Moss Park @ Shuter Street

6.10: Panorama 11: Moss Park

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Other efforts like the community garden have been placed in hopes of taking "back the park from drug dealers and prostitutes."[14] One reporter, speaking to Eva Curlanis-Bart about the garden illustrates the situation, writing "just behind her, a prostitute opens the door of a car and gets in. It is 11:30 on Monday morning."[15] Local companies like Starbucks and the Fred Victor Centre support efforts like the community garden, where both "residents and street people grow vegetables in the garden for their own use."[16] Local residents describe the homeless who used the garden, like Jim, who "spends his summer stilling on a bench over here… but this is his plot and he comes in here and stands here and waters it and looks at it and eats from it."[17]

Other, more successful efforts in the area have been taking place, like children's hockey at Moss Park arena, renovated in 2005. [18] It is "the only arena in Metropolitan Toronto where the kids can play free of charge. It has been that way since the late Gord Summers started the league in 1957."[19] There is also a Monday night baseball league of various shelters that has been in place since 1988. The teams have become like family to each other.[20]

The goal is to create a facility that works with the existing community support infrastructure to network and share the resources that supportive housing can offer. By networking its resources, patients can begin to be an accepted part of a larger community, which begins to erase the stigma associated with mental illness. The site chosen for this thesis is currently a pay parking lot bounded between Queen Street East to the south, Shuter Street to the North, Mutual Street to the east, and Dalhousie Street to the West. Moss Park, the centre of the community itself, is two small blocks to the east of the site.

6.11: Panorama 13: Salvation Army @ Sherbourne Street

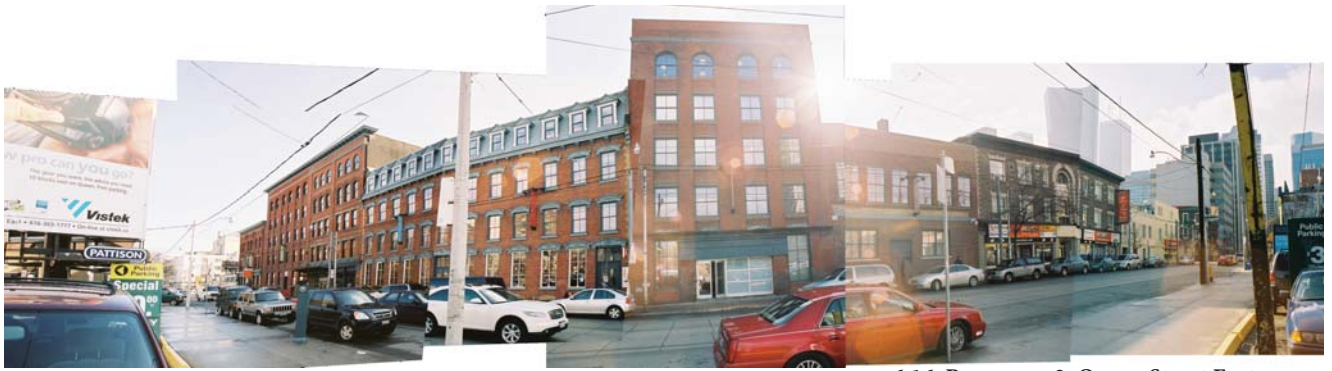**6.12: Panorama 2: Church Street**

6.13: Panorama 4: Dalhousie Street

6.14: Panorama 9: Jarvis Street and Queen Street East

6.15: Panorama 8: Jarvis Street

6.16: Panorama 3: Queen Street East

6.17: Panorama 7: Mutual Street

6.18: Panorama 6: Shuter Street

6.19: Panorama 5: Dalhousie Street

Since Queen Street is the location of most of the independent small shops and other commercial ventures, it is the most public of the streets on the site. However, the same holds true one street east, at Church Street, where other small stores and commercial opportunities lie. At the North of the Site, Shuter Street contains mostly low-level housing, of three stories, thought taller residences are in the construction process. At the Southwest corner of Shuter and Dalhousie Street, a 29 story condominium has just finished being created, reflecting the desire to densify the area, only three blocks away from Toronto's Eaton's Centre. Along Shuter Street, mid-range housing is developing, especially along Jarvis Street. Along the Moss Park area of Queen Street East, the building heights are anywhere between 2 to 6 stories high. Between Queen Street East and Shuter Street, peppered in the various street blocks are taller residential buildings of 12 to 18 stories in height. Surrounding the site itself, most of the buildings are 2-3 stories, along Dalhousie, Mutual and Shuter Streets, 4-5 stories on Queen Street, with a 12 story building on Mutual Street and a 29 story condominium on Dalhousie Street. Just south of Queen Street is Richmond Street, where many more businesses are located. To the West of Church Street is the Metropolitan United Church, and west of that is St. Michael's Hospital.

6.20: Site Plan

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6.21: Aerial View

4.0   Supportive Care Building Design

The bio-psycho-social perspective forms a treatment system encompassing the patient as a whole person. The biological part is covered in orthomolecular and nutritional care, and through physical fitness. The psychological care is reflected in the group, family and individual therapy of the patient. The architecture should be reflected in more than simply programming these spaces: it should provide opportunities for patients and staff members to use them effectively for the benefit of healing the patient. In the social role of the holistic treatment perspective, the architecture seems to get more prominence as it sets up the community group spaces, and works to create informal gather spaces for patients. However, it is possible that the architecture can do more than act as a psychological programming tool. It can provide a chemically and electrically healthy environment that orients spaces for natural lighting, informal gathering and intimate discussion with therapists.

The overall design of this thesis consists of housing 41 patients in a private, courtyard-style building fronting the very public Queen Street. The courtyard building serves to increase community by providing a central exterior gathering space for patients and staff alike. A landscaped courtyard also provides a sense of oasis and retreat from the city stresses of day to day life. Therefore, to create a positive and healing environment, patient spaces should face into the courtyard as much as possible to allow for views of the oasis space. Market housing in a similar courtyard style will occupy the north of the site to ensure that the prime building space is occupied, and to mitigate the cost of building the facility.

Shuter St.

Dalhousie St.

Market Housing
& Courtyard

Mutual St.

Design
Exploration
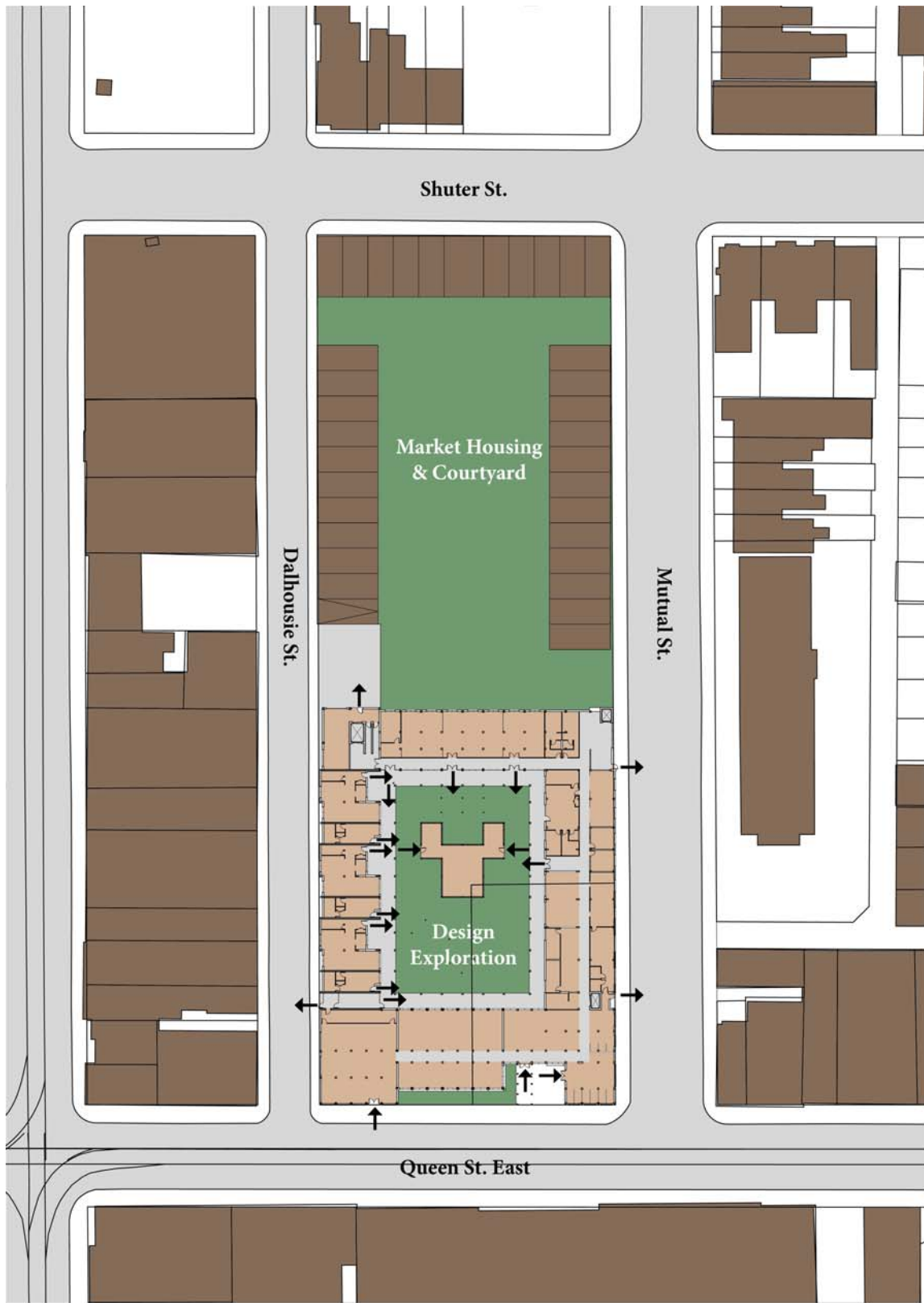
Queen St. East

6.22: Design Proposal & Egress Plan

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The main entrance to the Supportive Care Facility is from Queen Street East. It is marked by a large wooden trellis at the opening. Along Queen Street is the public face of the building, which includes a café, serving nutritional food and beverages, a library whose main resource is current and relevant information on the bio-psycho-social perspective. On the south-west corner, next to the library is a nutritional and orthomolecular pharmacist and grocer. Once you walk into the building through the main entrance, the reception is on the right hand side. In the case of the reception desk, it is mostly to ensure the public doesn't infiltrate completely into the privacy of patient rooms, and for staff members to remain able to contact patients when necessary. While signing in an out of the facility isn't necessary, it would become an accountability issue as patients learn to care for themselves. Directly in front of the main entrance is an interior garden, ready to be used by both the patients and the public. It contains a view directly into the courtyard of the building, visually linking the interior garden with the outdoor patient space beyond. On the right, past the reception, is the nutritional café. Its patio extends out into the open space at the entrance. Along the East side of the building, are the ground floor patient spaces. Walking past the reception desk and along the corridor is the central elevator and stair case to reach the second floor. The kitchen on the right is for serving both the café and the larger patient dining room beyond. On the left is the central set of washrooms for the public on the ground floor. Past the washrooms and kitchen is the patient dining room and servery. Patients have a choice of eating their food inside or in the courtyard on days when the weather is right. The dining room is framed by shelving and wood screens. Continuing along the floor is the horticulturalists' offices, linked through an exit to the greenhouse within the courtyard. The day care for resident children is located across from the laundry, and has access to an outdoor playground. In the North East Corner lies the residential elevator and stair case. Along the North Side of the building is the fitness facility. Along the west side at ground level are three bachelor units and the lower floor of three 6-bed patient units.

Within the central courtyard is a colonnade at its periphery, permitting residents to walk around in a covered walkway. The greenhouse separates the outdoor fitness area, suitable for tai-chi, and the day care play area, from the outdoor patio, seating area, and south facing gardens, where plants that can be cultivated for their nutritional value are located.

By walking up the main stair near the reception desk, you arrive at the second floor, which houses both the psychology and patient areas of the building. Along the South side of the building, are the patient meeting and group rooms, along with the staff member offices and administration spaces. At the lobby, the second floor has a waiting space, which overlooks the interior garden space. The large group room sits above the café, while the smaller group meeting rooms face into the serenity of the courtyard. Along the east side, the patient spaces exist. Above the café and dining room kitchen, is the occupational therapy kitchen, where patients can be trained to cook nutritionally for themselves. Across from the

occupational therapy kitchen, are the washrooms for the second floor. Beyond the kitchen and washrooms is the activity lounge, framed by shelves from the corridor to keep the space open without feeling intrusive. On the courtyard side of the corridor is the rooftop terrace, designed to provide an informal outdoor gathering space for the residents. Past the terrace is the quiet community lounge, which is broken into two smaller spaces for informal gathering and conversation. On the other side of the quiet lounges are the meditation and computer areas. Along this wing the community spaces go from louder to quieter as the person passes along the corridor; from more to less active.

Along the North section of the building five bachelor units, one guest suite and three on-call suites are located. The suites on the north side are designed to be south-facing, to receive as much natural light as possible. The corridor, therefore, ends up on the North side of the building. The second floor to the six-bed units is located on the West side of the building, with rooms facing both east and west to gain natural light. The second floor of the colonnade is planted, to provide a view more natural than a flat roof.
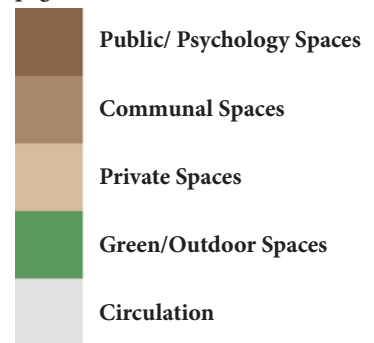
The south and east parts of the building are mostly planted rooftop on the third floor, with some storage and skylights allowing light and ventilation to the second floor. The roof is planted both for their nutritional value, for additional insulation, and to provide a more natural view to anyone living on the upper stories of the site. On the North side of the building, two bachelor units, and the lower floors of two three-bed and two two-bed units. These units face south for as much natural light as possible. In the North West Corner of the building the lower floor of a guest unit resides. Along the West side of the building the lower floors of three two-bed and three four-bed units are located, with the living spaces facing east to get the morning sunlight for its residents. The fourth floor contains the second floor to the two-, three-, four-bed and guest units.

The fifth floor contains two bachelor units and the lower floors for two two-bed, two three-bed and a guest unit, each facing south, for sunlight, with the corridor on the north side. On the sixth floor the second floors to these units are located. Above the guest unit is a mechanical penthouse.

The spatial strategy is organized so that the public aspect of the facility is located on Queen Street East. The coffee shop, library, pharmacy and grocer are located to provide resources to the community, where they can come in and support the supportive care facility. Above that and on the same principle is the clinical wing of the facility, where the offices and meeting rooms of the majority of staff members are located. The staff offices face the street to allow the patient meeting spaces to face onto the tranquility of the courtyard and to reinforce the idea that the community and private areas of the building are drawn away from the public street. Along the quieter Mutual Street, on both the ground and the second floor, are the patient community spaces, where patients can access the

courtyard and greenhouse. The dining room, kitchens (both occupational and supportive), the activity and quiet lounges, laundry, daycare, computer lab and meditation spaces are located in this wing of the building. The north side and the Dalhousie Street sides of the building contain the patient and guest units for the building, again drawing the private patient spaces away from the more public streets.
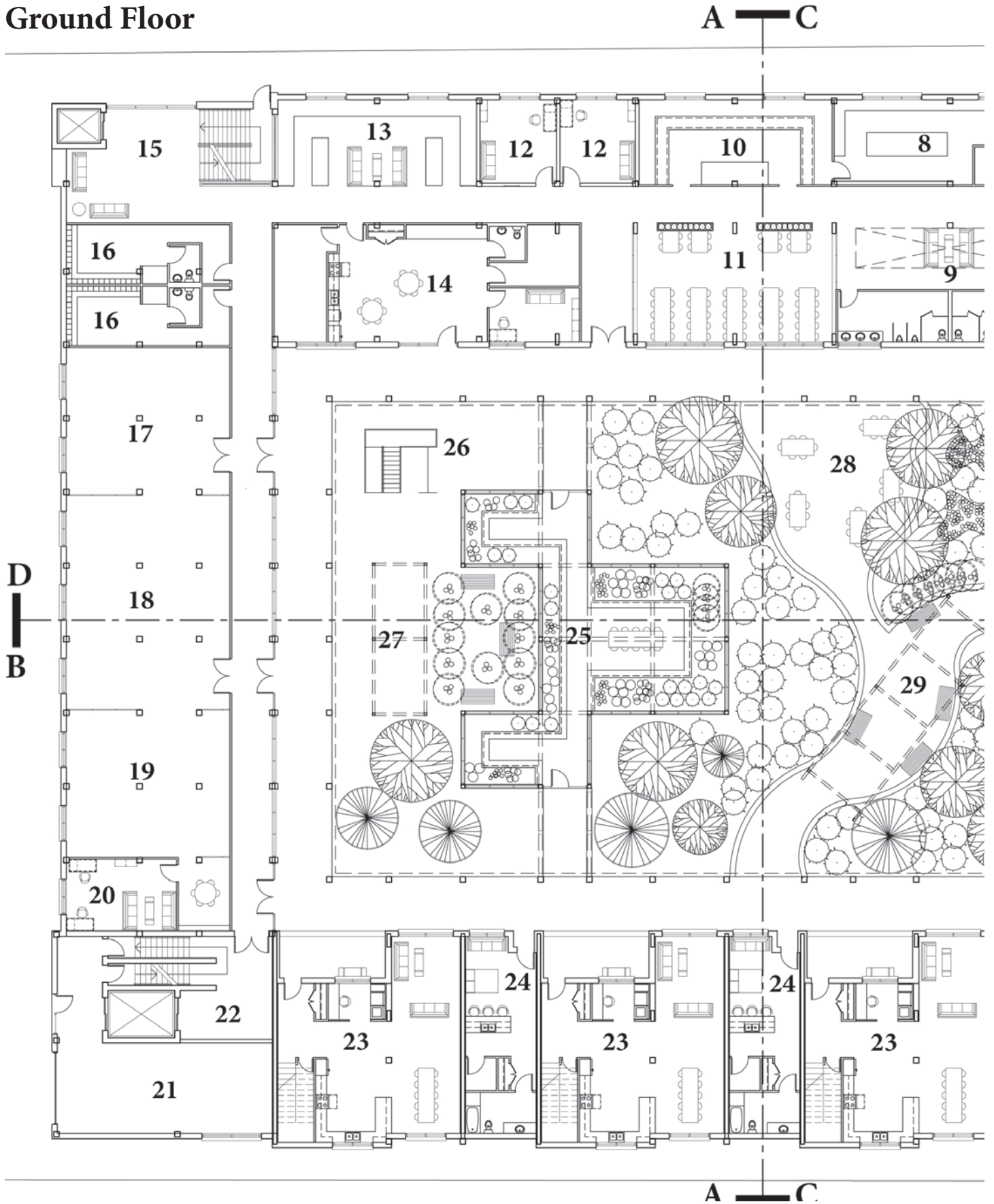
6.23: Floor Plan Zone Legend (on following pages):

Public/ Psychology Spaces

Communal Spaces

Private Spaces

Green/Outdoor Spaces

Circulation

6.24: Floor Plan Unit Legend (on following pages):

Bachelor Units

2 Bedroom Units

3 Bedroom Units

4 Bedroom Units

6 Bedroom Units

On-Call Suites

Guest Suites

Ground Floor

138
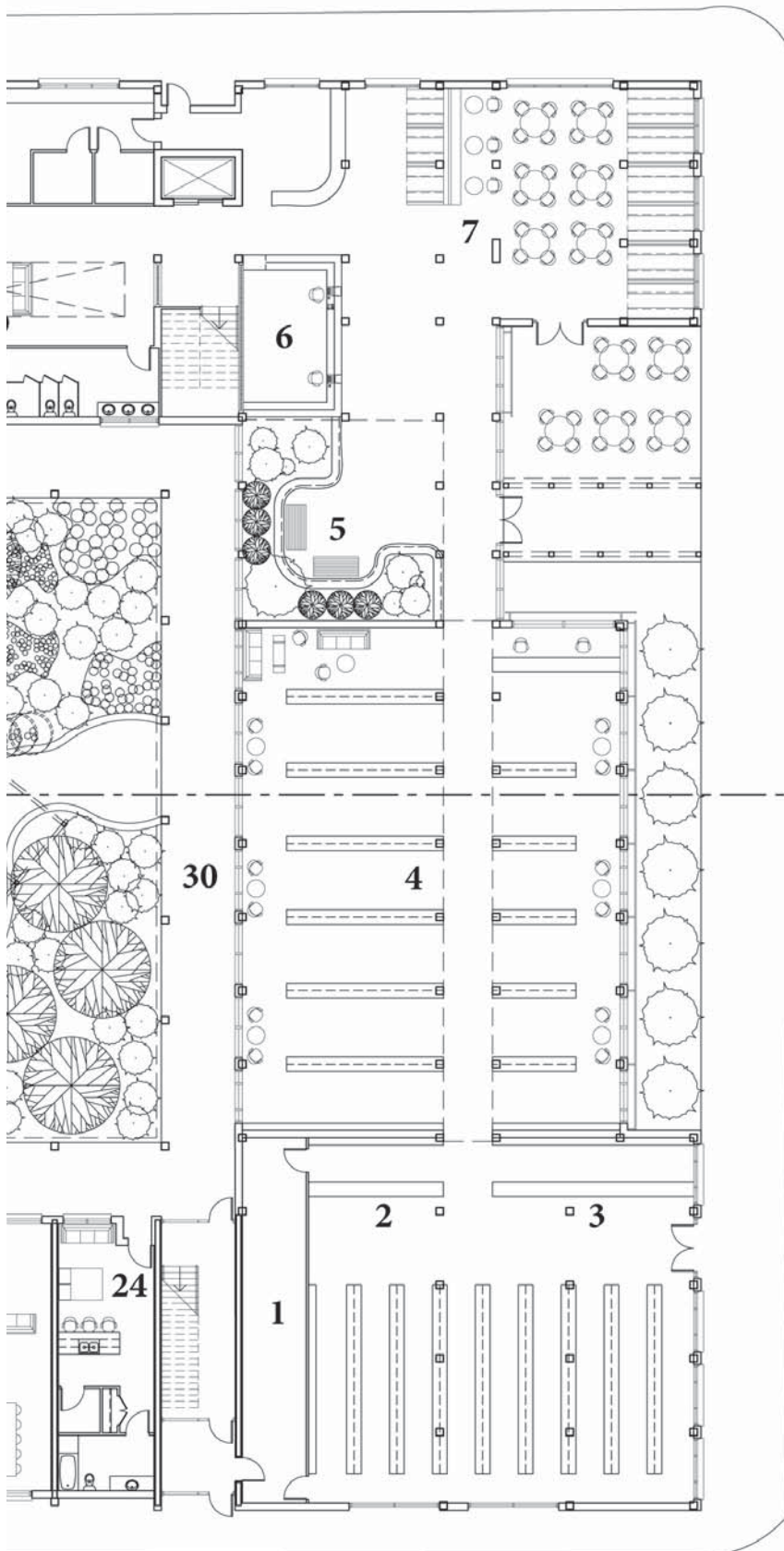
Legend:

1	Pharmacy/Grocer Storage
2	Orthomolecular Pharmacy
3	Nutritional Grocer
4	Library
5	Lobby
6	Reception
7	Cafe
8	Cafe/Dining Room Kitchen
9	Open Space for Installation
10	Servery
11	Dining Room
12	Horticulturalists' Office
13	Laundry
14	Day Care: (Storage, Office, etc.)
15	Residential Lobby
16	Change Room
17	Aerobics Area
18	Cardio Area
19	Weight Area
20	Physical Trainer
21	Loading & Garbage Area
22	Loading Transition Area
23	6-Bed Unit - Ground Floor
24	Bachelor Unit
25	Greenhouse
26	Playground Area
27	Outdoor Exercise Area
28	Outdoor Dining Area
29	Outdoor Relaxation Area
30	Cloister Walkway

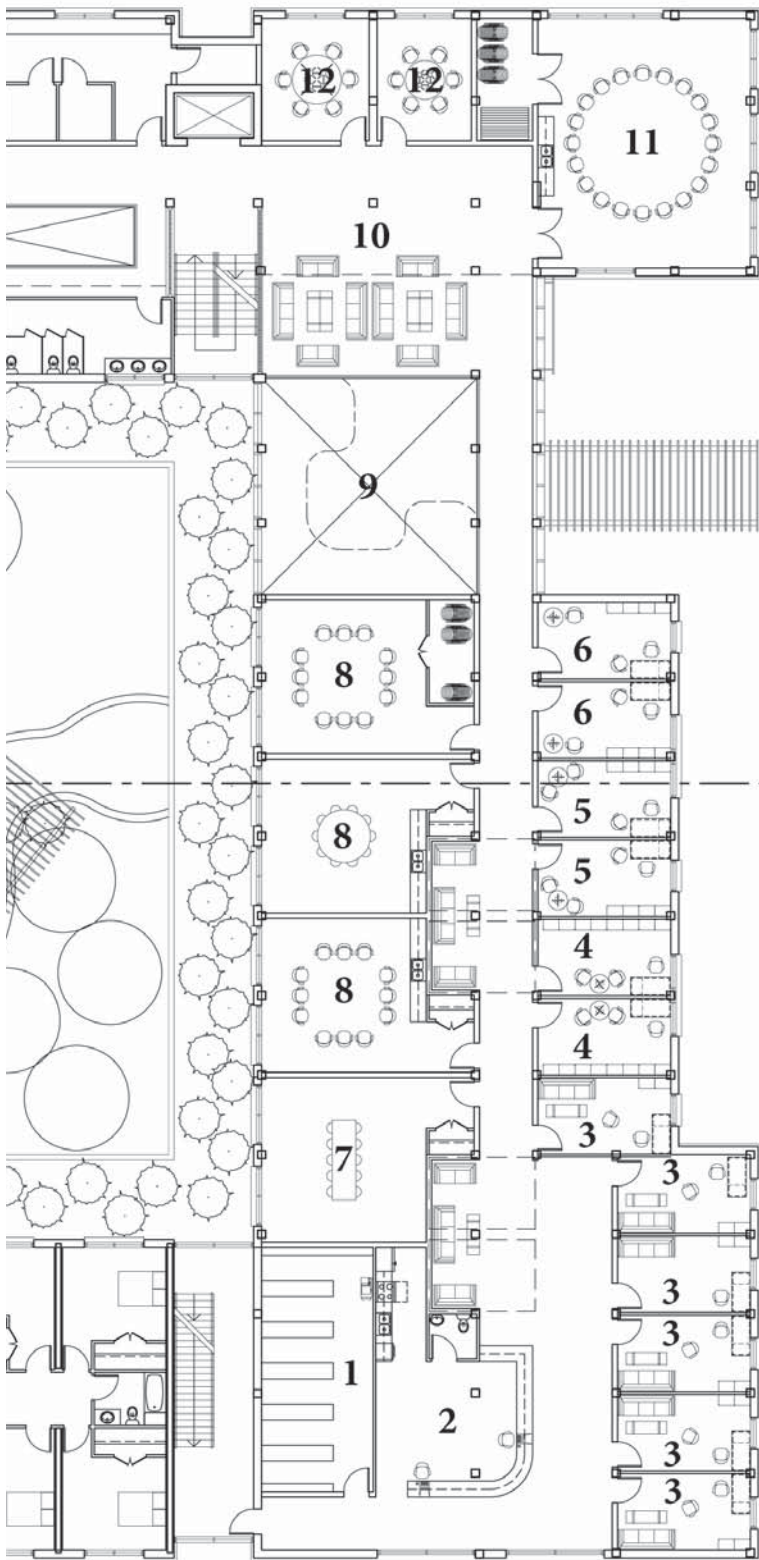**6.25: Private, Public & Communal Spaces**
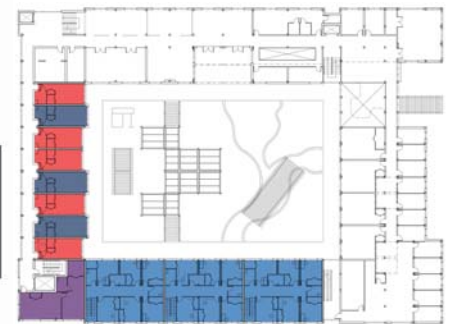

6.26: Unit Organization

6.27: Ground Floor Plan

A — C

19

17

16

14

13

9

21 20 18 16 15

22

23

22

D

22

23

B

22

23

22

24

25 25 25

A — C
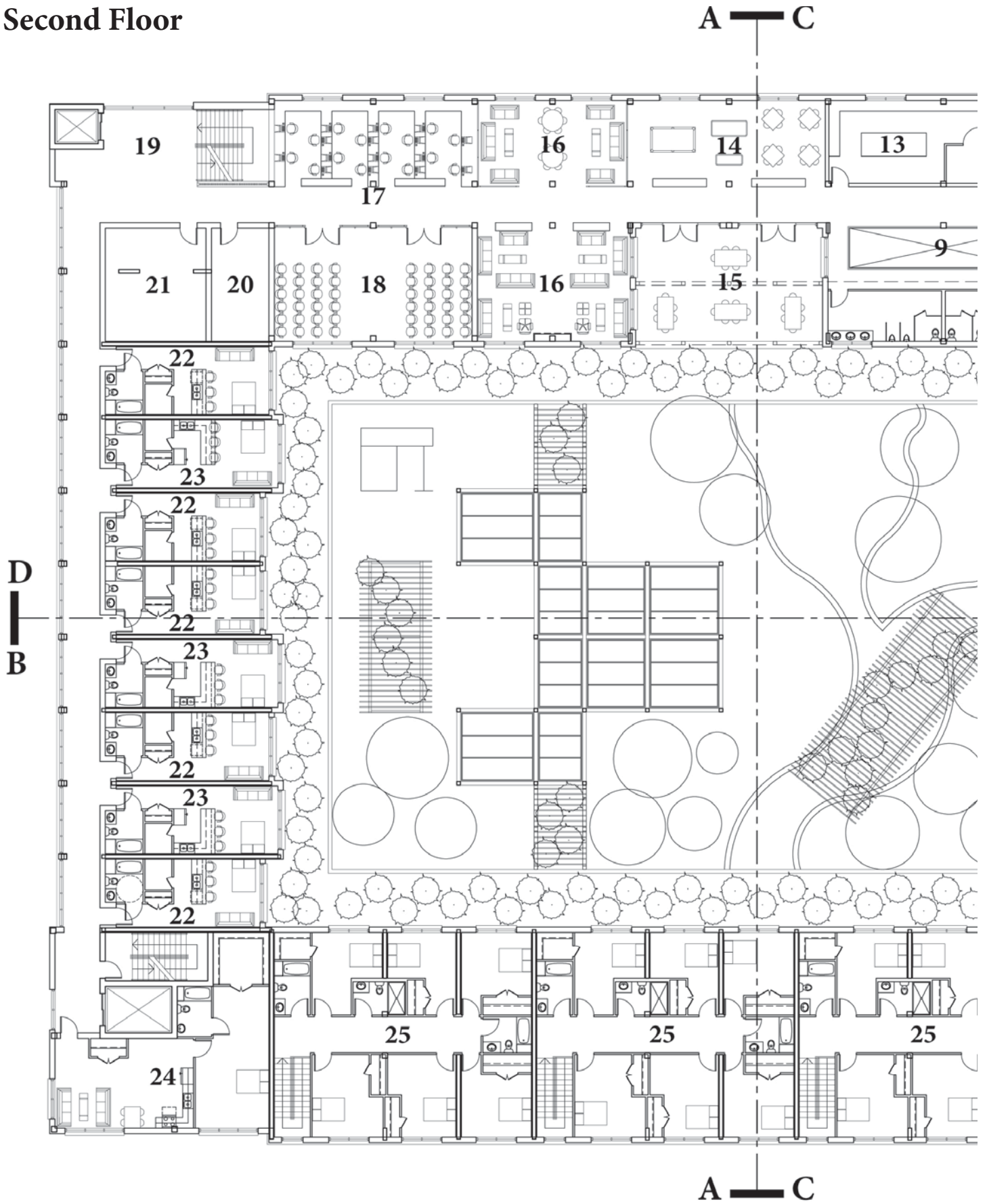
Legend:

1	Administration Storage
2	Administration
3	Psychologist
4	Job Counsellor
5	Nutritionist
6	Occupational Therapist
7	Staff Room
8	Medium Meeting Room
9	Open to Below
10	Second Floor Lobby/Waiting
11	Large Meeting Room
12	Small Meeting Room
13	Occupational Therapy Kitchen
14	Activity Lounge
15	Outdoor Patio
16	Quiet Lounge
17	IT Area/ Computer Lab
18	Meditation Space/Chapel
19	Residential Lobby
20	Clean Storage
21	Electrical/Mechanical Space
22	Bachelor Suite
23	On-Call Suite
24	Guest Suite
25	6-Bed Unit: Upper Floor

6.28: Private, Public & Communal Spaces

6.29: Unit Organization

6.30: Second Floor Plan

Third Floor
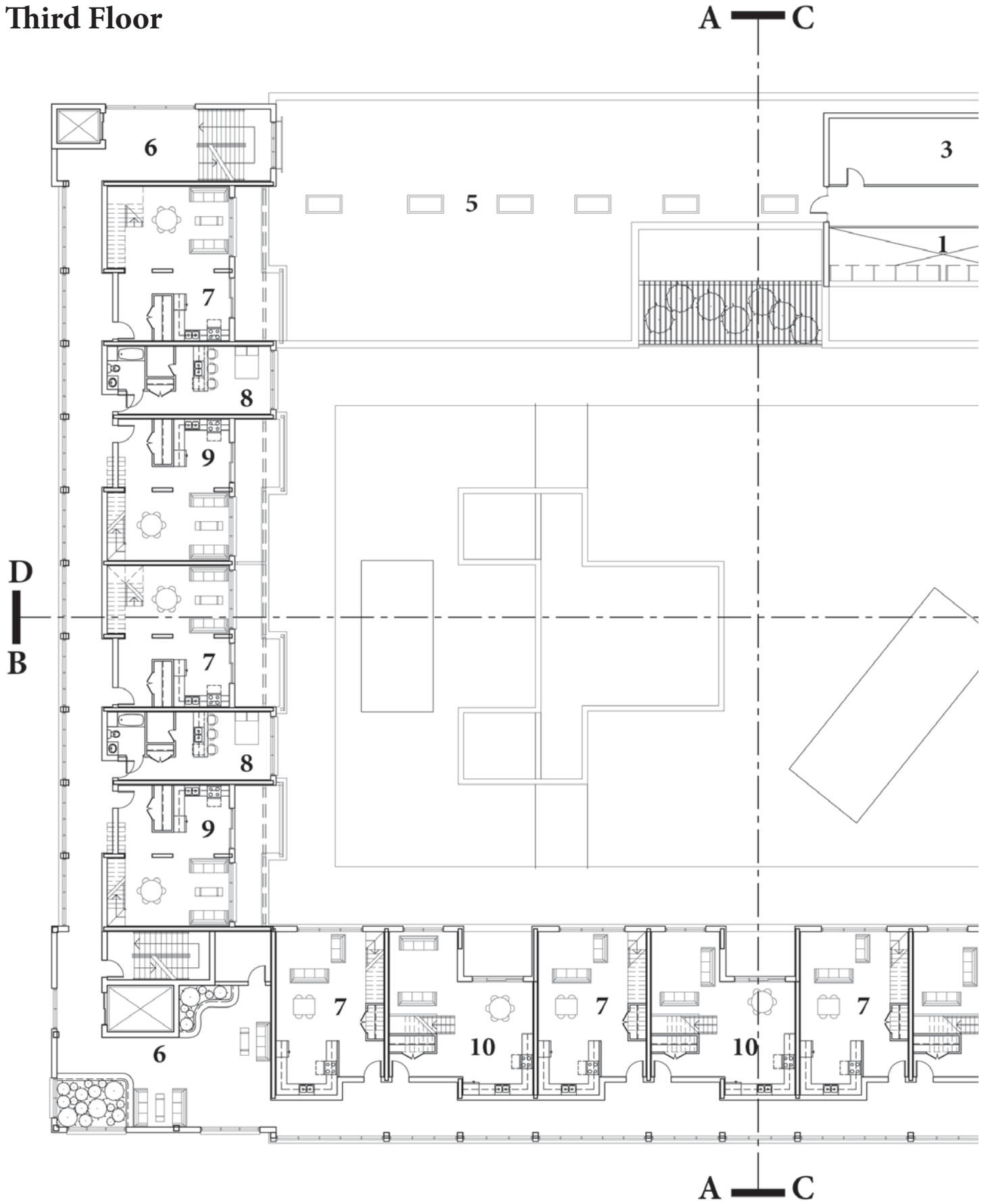
Legend:

1	Open to Below
2	Main Stair
3	Rooftop Garden Storage
4	Green Roof
5	Rooftop Garden
6	Residential Lobby
7	2-Bed Unit: Lower Floor
8	Bachelor Unit
9	3-Bed Unit: Lower Floor
10	4-Bed Unit: Lower Floor
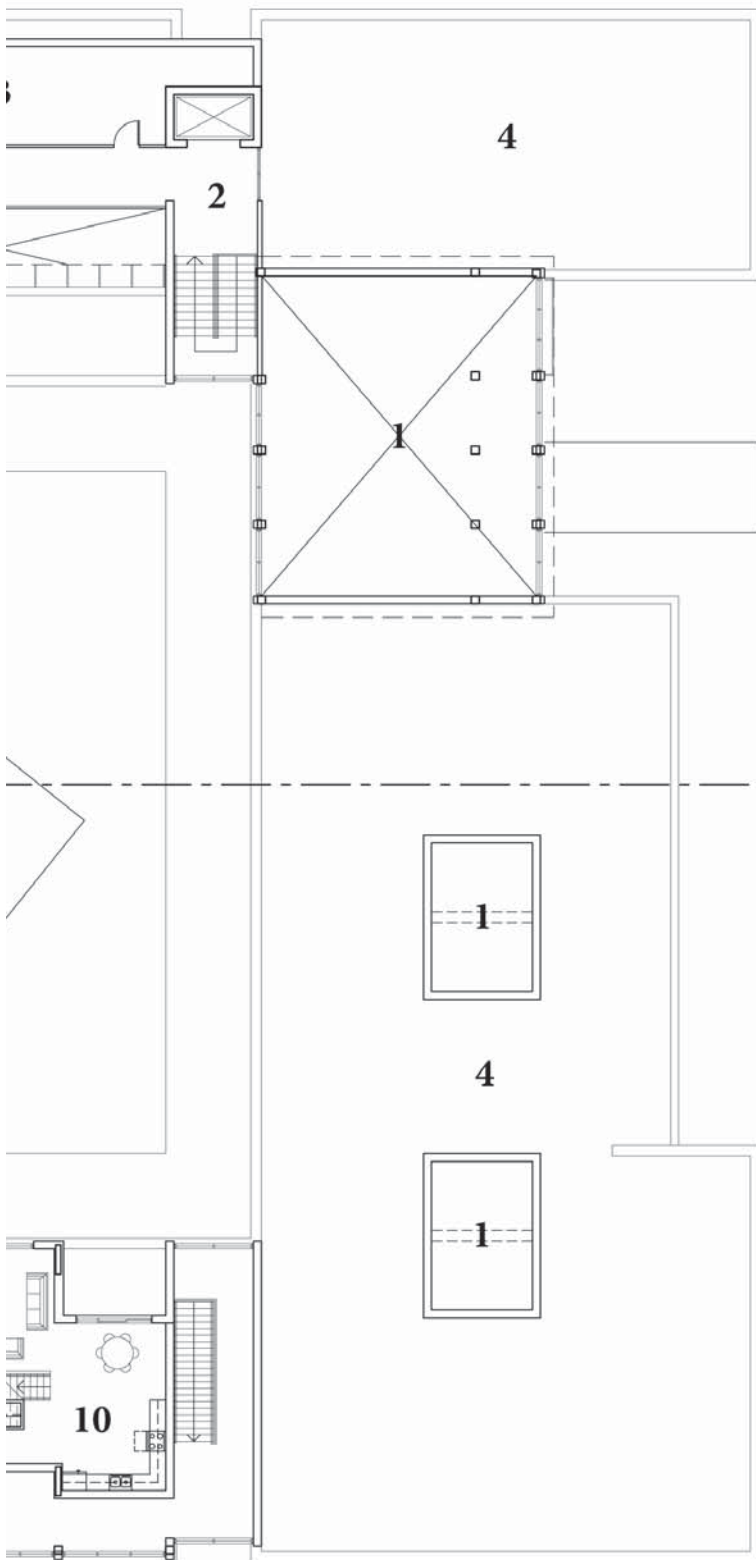
6.31: Private, Public & Communal Spaces

6.32: Unit Organization

6.33: Third Floor Plan

Fourth Floor

Legend:
1   Green Roof
2   Residential Lobby
3   2-Bed Unit: Upper Floor
4   3-Bed Unit: Upper Floor
5   Open to Below
6   4-Bed Unit: Upper Floor

D

B

6

6.34: Private, Public & Communal Spaces

6.35: Unit Organization

10

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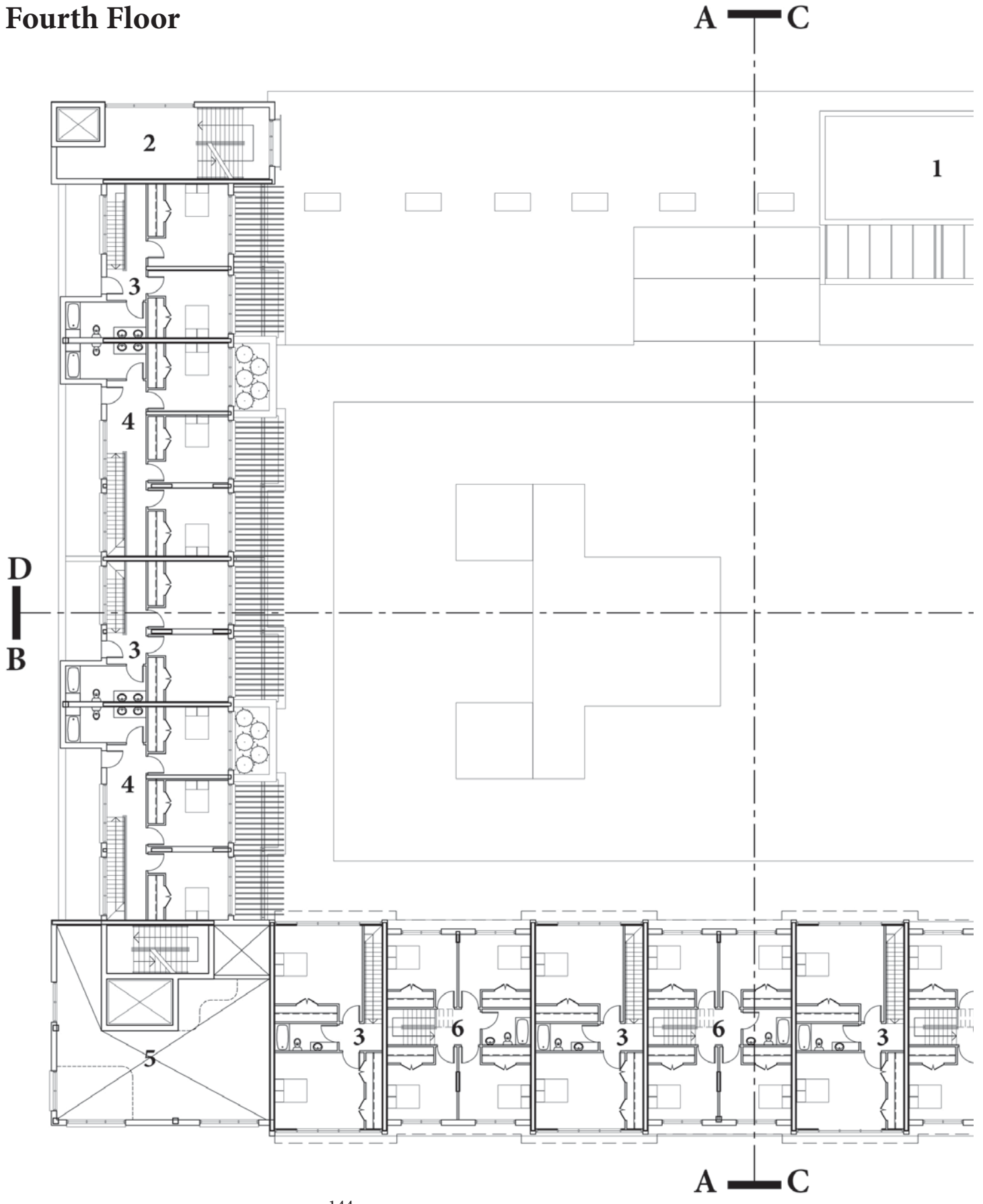6.36: Fourth Floor Plan

145

Fifth Floor

Legend:
1   Residential Lobby
2   2-Bed Unit: Lower Floor
3   Bachelor Unit
4   3-Bed Unit: Lower Floor
5   Guest Suite: Lower Floor
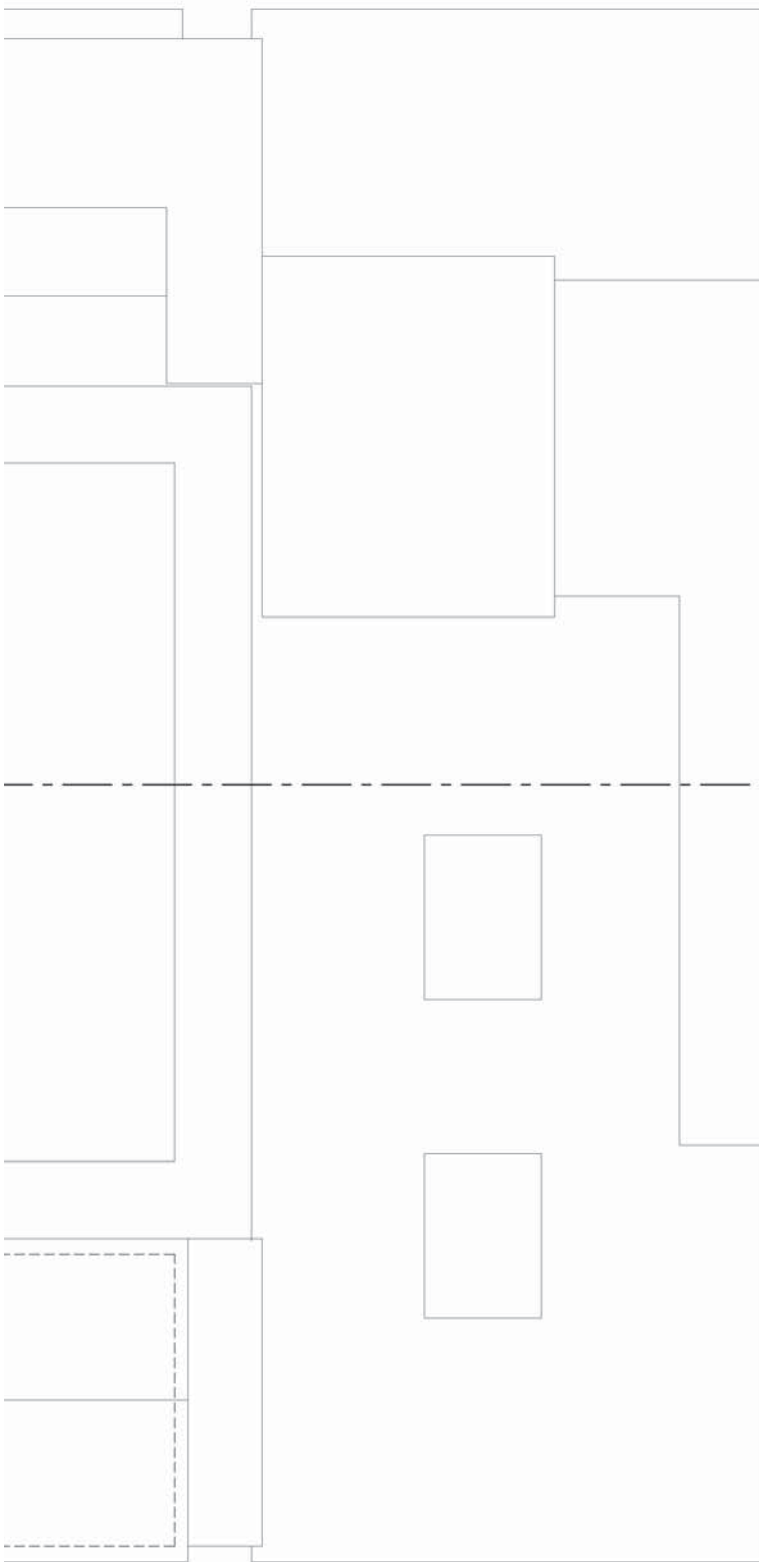
D

B

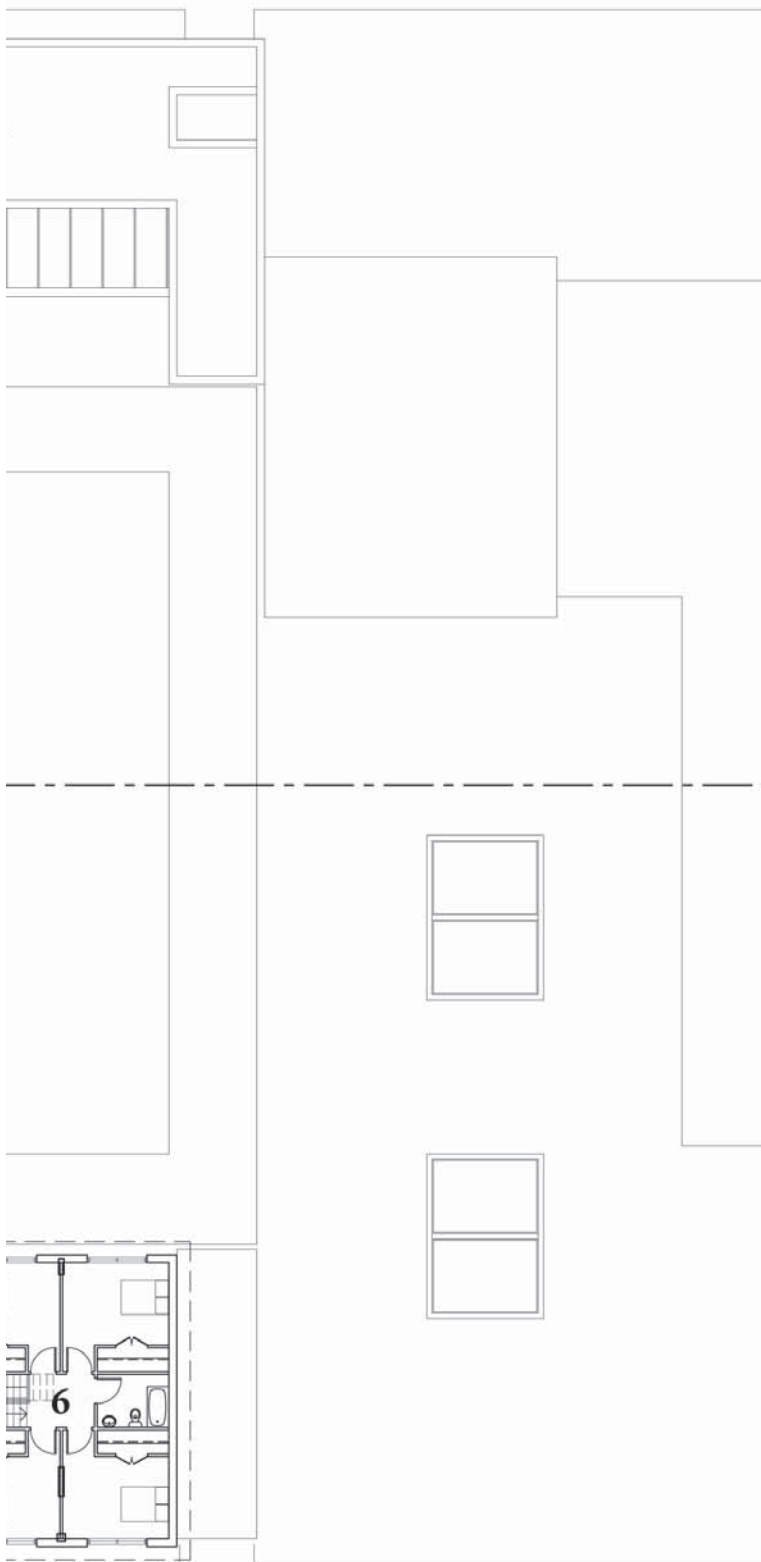6.37: Private, Public & Communal Spaces

10
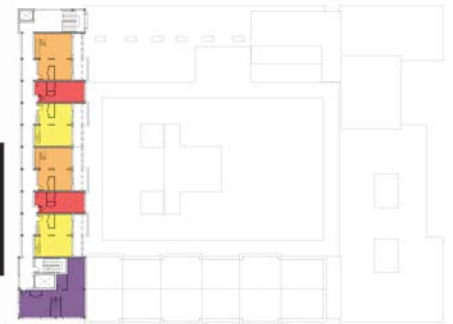
6.38: Unit Organization

0

6.39: Fifth Floor Plan

Sixth Floor

A C

D B

1

2

3

2

3

4

A C

148
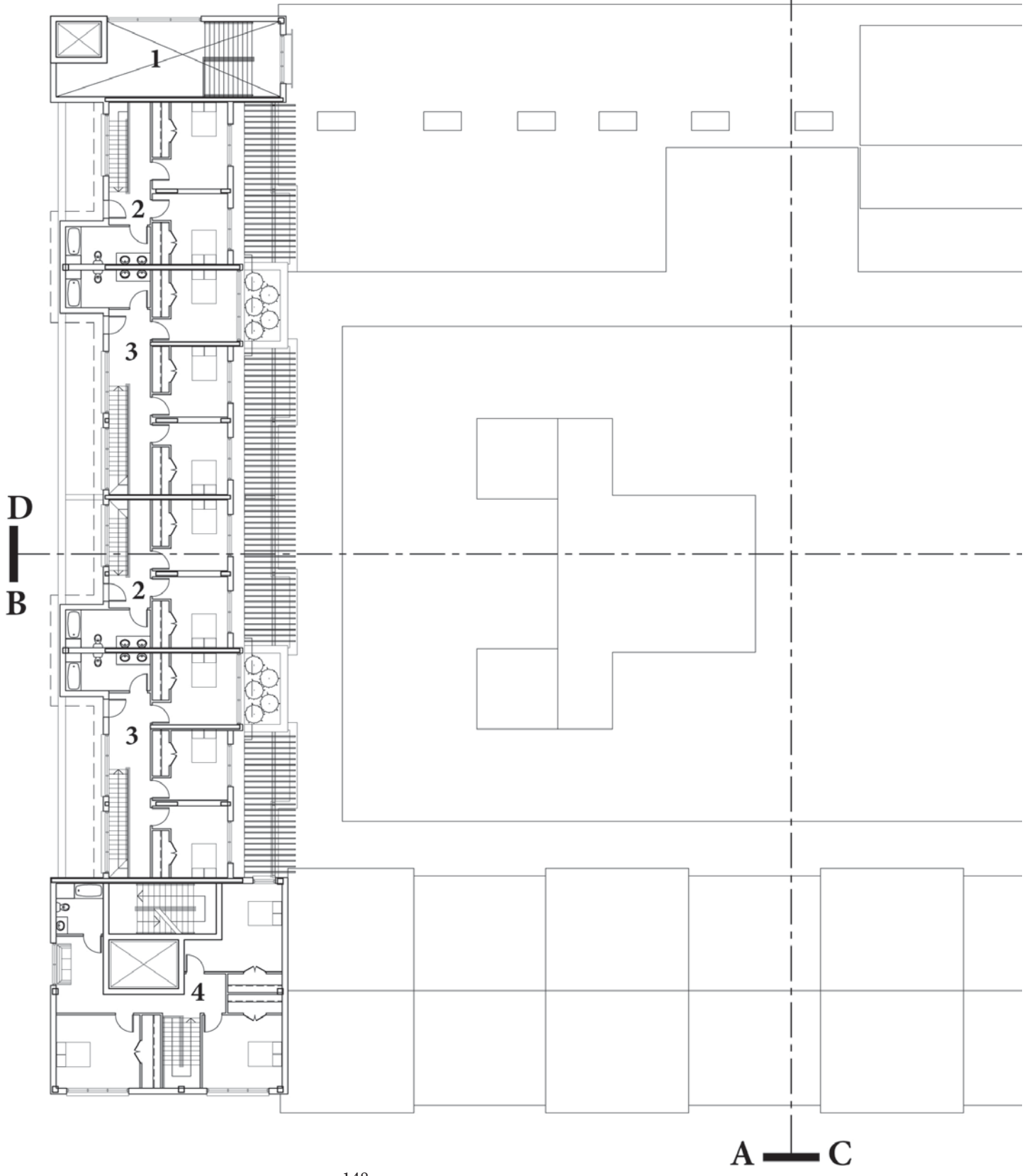
Legend:
1   Residential Lobby
2   2-Bed Unit: Upper Floor
3   3-Bed Unit: Upper Floor
4   Guest Suite: Upper Floor
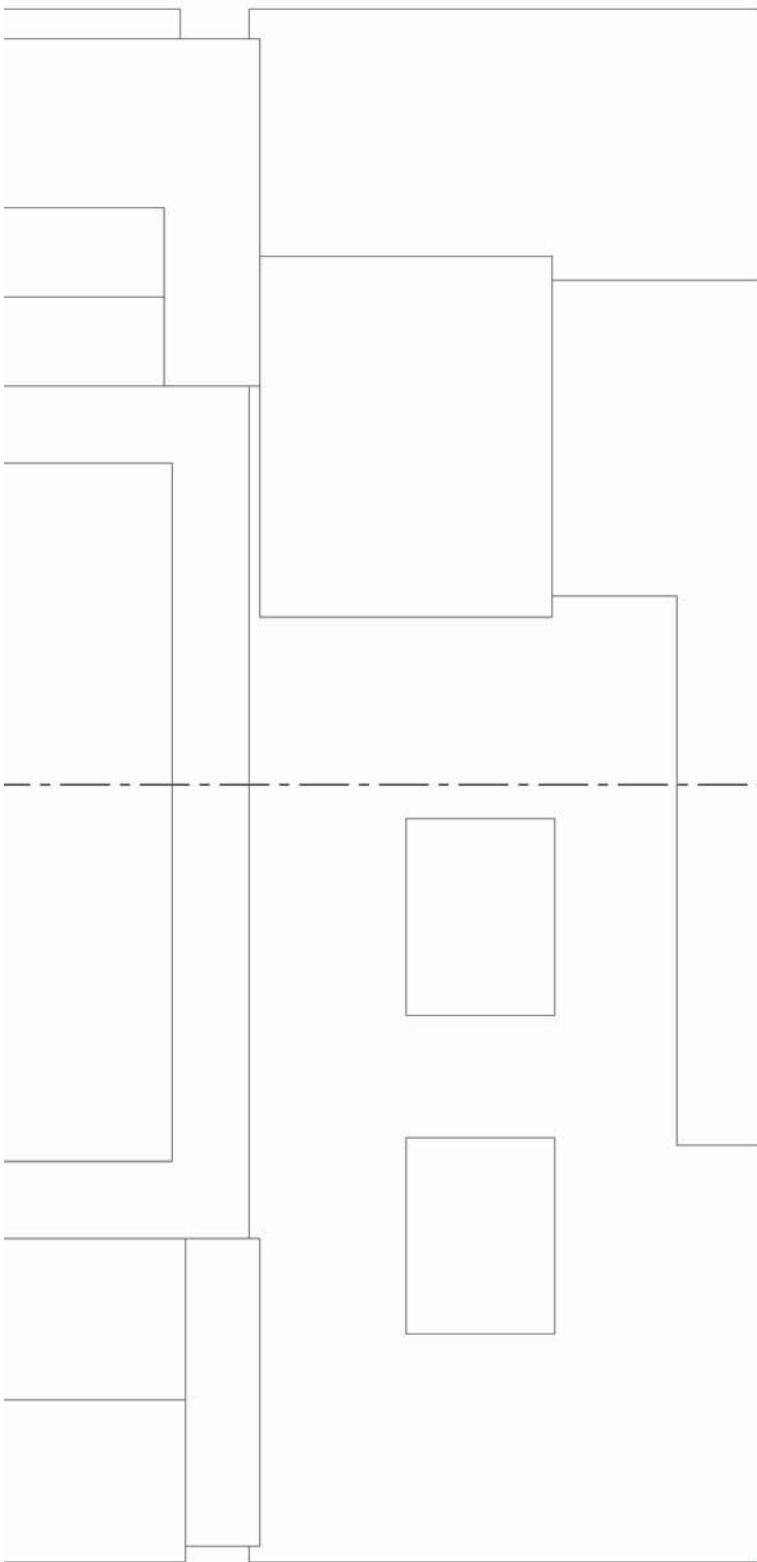
D

B
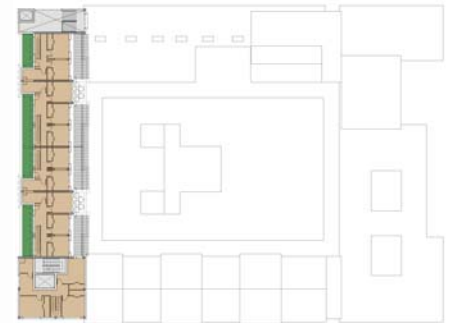
6.40: Private, Public & Communal Spaces
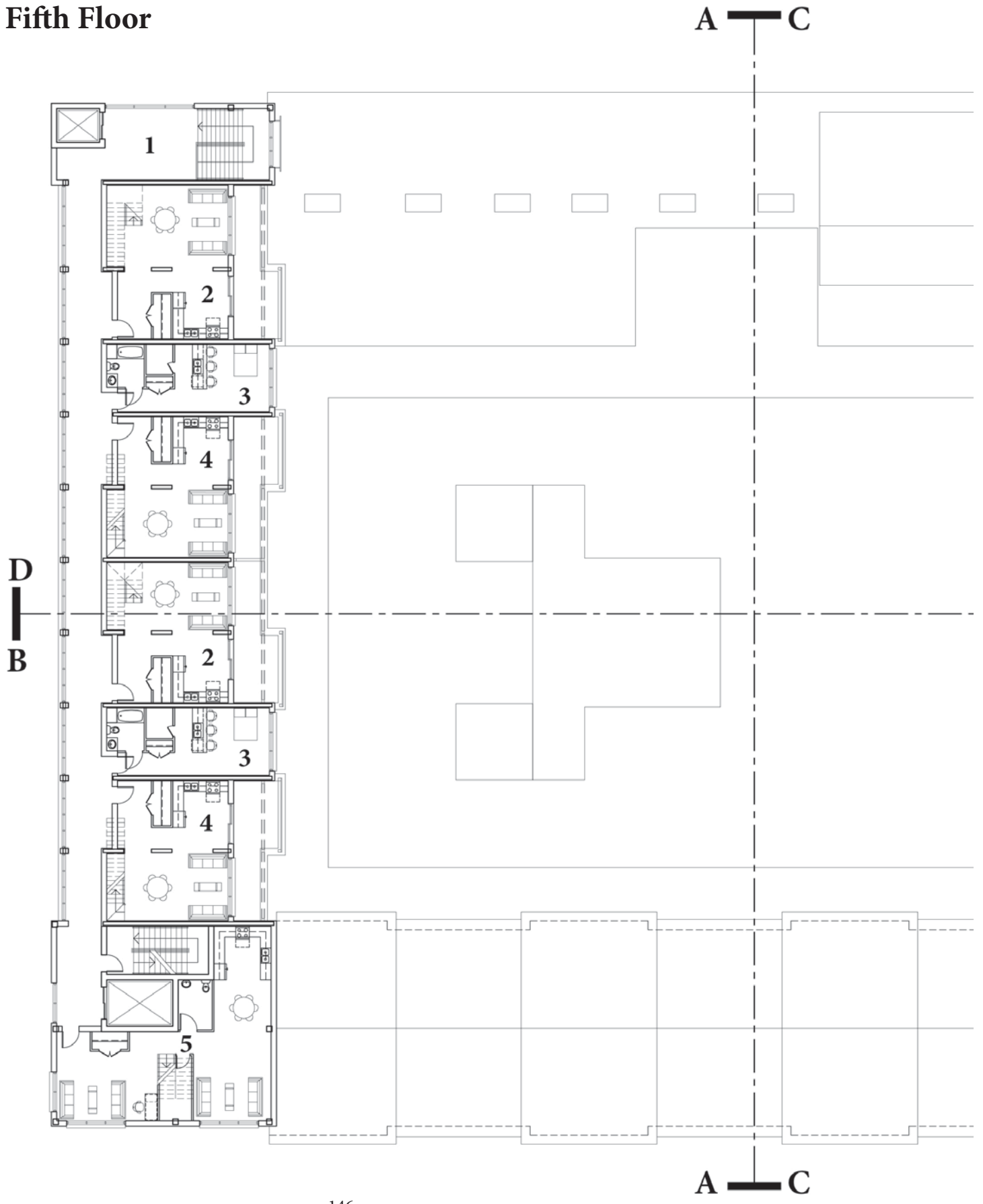
10

6.41: Unit Organization

0

6.42: Sixth Floor Plan

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Building Support Spaces: Seventh Floor
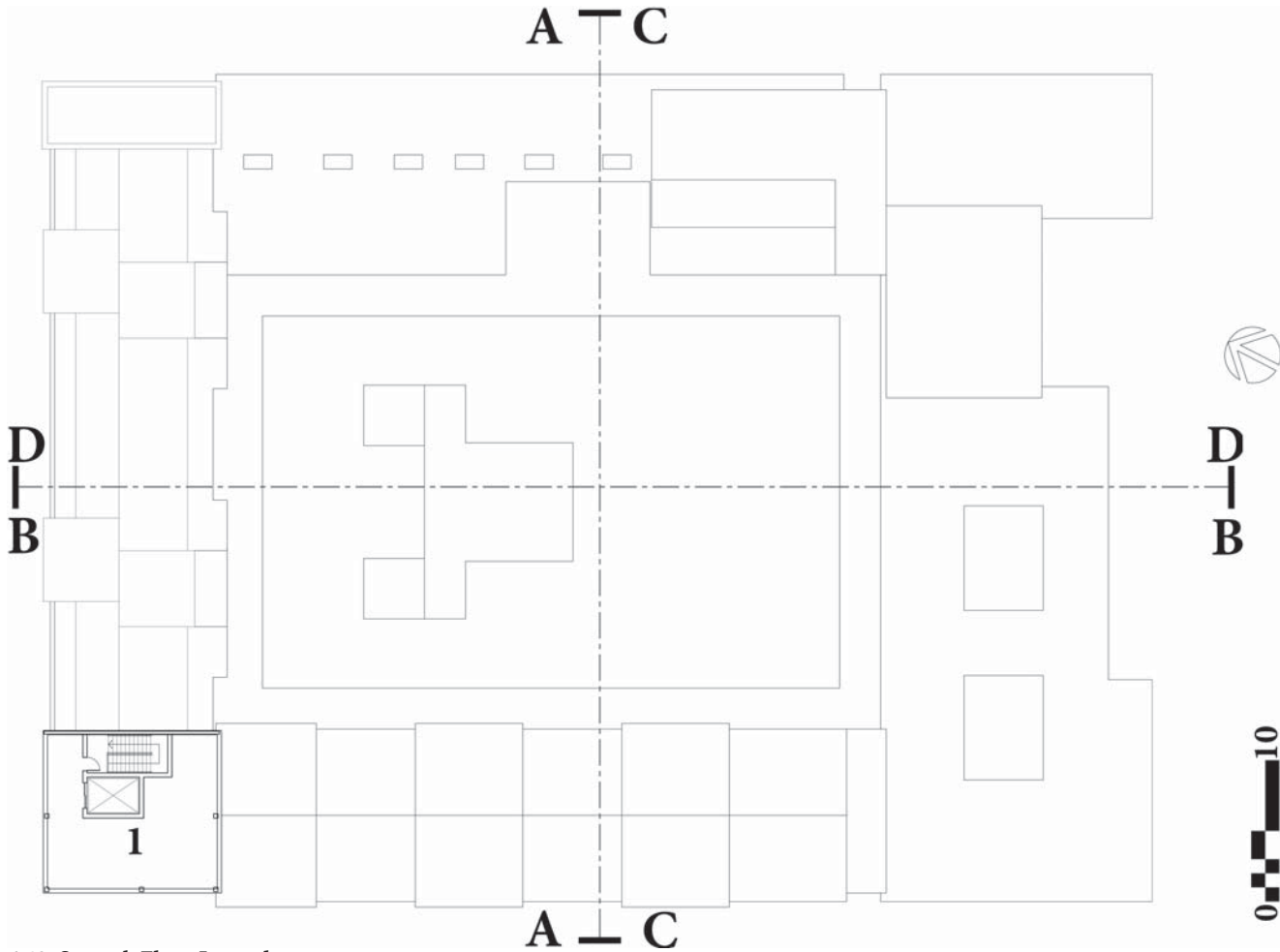
6.43: Seventh Floor Legend:
1   Mechanical Space

6.44: Seventh Fl. Mech. & Circulation Space
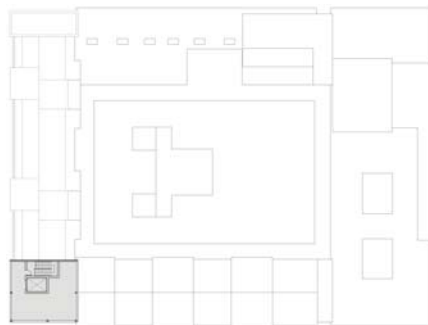
Building Support Spaces: Basement
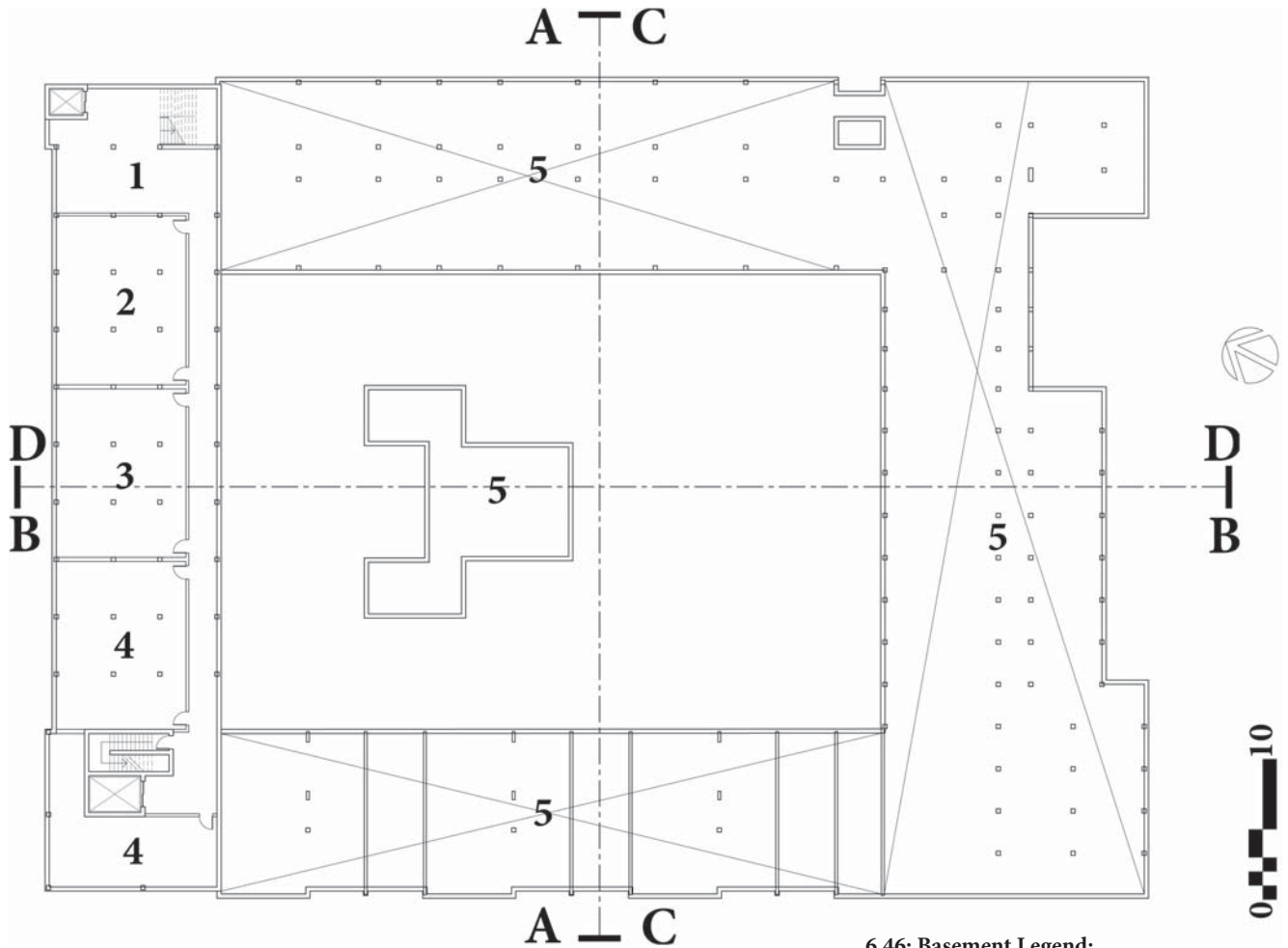
6.46: Basement Legend:
1   Residential Lobby
2   General Storage
3   Electrical
4   Mechanical
5   Foundations
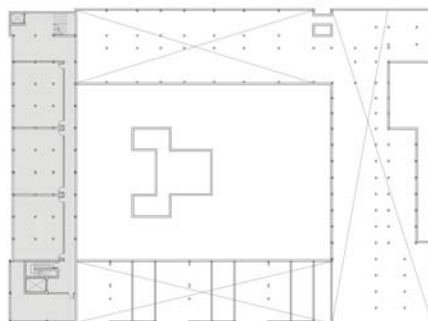
6.45: Basement Mech. Space & Circulation

6.47: Queen Street (South) Elevation

6.48: Section A-A

6.49: Mutual Street (East) Elevation

6.50: Section B-B

6.51: Shuter Street (North) Elevation

6.52: Section C-C

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6.53: Dalhousie Street (West) Elevation

6.54: Section D-D

6.55: Mutual Street View

6.56: Dalhousie Street View

4.1   Biological Perspective

The design of this Supportive Care Complex encompasses a few architectural strategies for maintaining the biological health of a patient. Wherever possible, natural and incandescent lighting, natural materials, planted exterior and interior spaces and natural ventilation and heating are incorporated into the design scheme.

Patient spaces should receive as much eastern light as possible, as mentioned in the architectural chapter, to help with depression and anxiety. Since there is an eight-story tower east of Mutual Street, the patient apartments are organized on the west side to ensure maximum eastern light if not in the patient bedrooms, then in the living and dining room (shared) spaces. The units are also located on the North Side of the complex but south of the 29-story condominium, to allow as much light as possible into the courtyard and into the units themselves. In the south facing units, porches with trellises and screens help to mitigate the light filtering into the south facing living spaces. In the deeper community spaces such as the community and psychiatric corridors on the second floor, natural light is brought in through skylights and a large glazed and planted lobby. The direct and potentially hot light is offset using wood screens to filter it and create more shaded areas. These skylights also serve to provide air circulation using the chimney effect.

Interior lighting is incandescent, since fluorescent lights produce a harsher light, and can create dirty, or high-frequency electrical current. This can generate severe migraines among other physical problems in residents.[21] Since the supportive care facility is in no way a surgical building, the necessity of bright fluorescent lighting isn't needed. Incandescent lighting will create a warmer and more soothing environment than fluorescent lighting.

Natural materials are used throughout the building. The flooring is resistant wood flooring, with minimum staining to prevent off-gassing effects. Any sound-absorbing materials, like carpet are of natural, cotton fibres, so that synthetic off-gassing doesn't bother patients or residents. A light tan brick and light stone are used throughout the building also to give it a secure and stable feeling without being overbearing, and stone is brought in at the places of pause, like the patient lounges on the second floor. The majority of the materials used are colours in lighter shades, to help natural light reflect further into the patient spaces. The natural materials chosen provide a soothing environment, while permitting the possibility of abuse by the patient.

Planted spaces are provided primarily within the actual courtyard itself and the main lobby space at the entrance. However, they are also provided in the balconies of patient units. The lobby is created as a two floor volume with an interior garden to relax in. It is meant both as a place to relax inside during the

6.57: Queen Street View
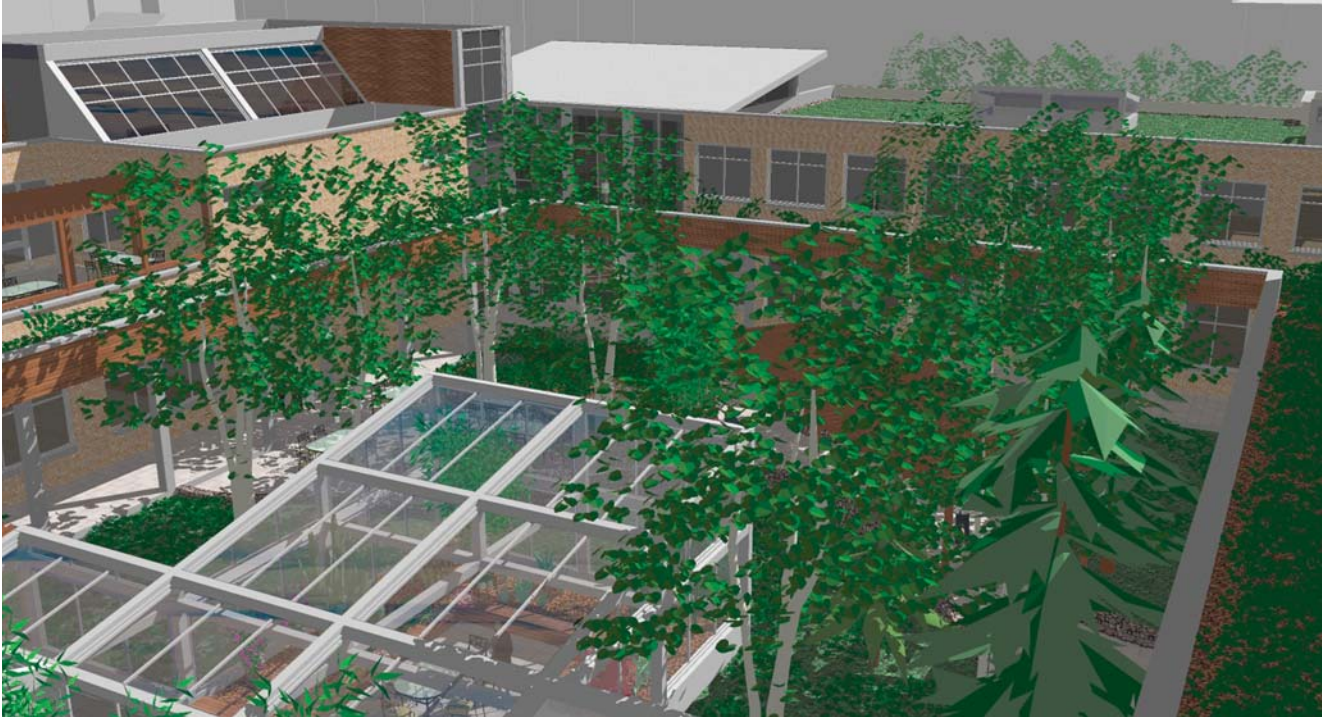
6.58: Courtyard View

colder months and as a visual example to the public of the kind of environment found within the facility.

The courtyard is not only meant as an oasis, but located within is the green house, where horticultural therapists can work with patients and plants. It is also available during winter months, and is designed to create a central teaching and working space, with plants located at the periphery. Wood frames the planting areas, raising the beds up to sitting height to allow patients to sit at the edges while the work with the plants. A recess under the bench is created to provide storage for various plant needs, and to accommodate someone who may need wheelchair accessibility. The greenhouse and sections of the courtyard landscape can be used to grow some of the plants needed for positive nutrition and healthy living. The green roof is used for planting plants which creates more natural views for residents in the upper floors and the plants are also used in cooking for the café and dining areas of the facility, and ensuring additional thermal capabilities for the building. The balconies on the North wing also have areas for planting, bringing the horticultural program to the patient's private outdoor spaces.

The café and dining areas are used to promote proper nutrition to residents and guests visiting the facility. The menu served in the dining area is designed by the nutritionists working with the various patients to ensure each patient gets their needed nutrient intake. The food in the café will have similar nutritional value for visitors having lunch or dinner; they can learn about proper nutrition through the café menu. A patient may be in the process of learning to cook for themselves as they progress with their occupational therapy. For that reason, an occupational therapy kitchen is included, so nutritionists can guide the patients as they learn to prepare menus and food for themselves.

The skylights in the psychology and community corridors exhaust the air through the chimney effect, while the tower that has the same effect in the residential wings will also house the central mechanical spaces in the roof. Natural air is brought through vents and windows on the lower two floors of the facility. In the summer months, this will aid in the cooling of the building itself. The heating would be direct solar heating where possible and combined with radiant floor heating, to keep the spaces quiet and soothing, and the temperature comfortable for people.

6.59: Courtyard View

6.60: Greenhouse View

4.2   Psychological Perspective

Psychological spaces can be broken into two categories. The first deals with the programming of the spaces themselves. The bulk of the group, individual and family therapy spaces are located in the public wing of the building, on the second floor. As previously mentioned, staff member offices are located on the street side of the wing, giving patient spaces such as group meeting rooms views into the quieter courtyard. Vegetation, located on top of the colonnade adds positive distraction to the space, which helps calm patients down. Additional staff member spaces are located in close proximity to the spaces they support, for example the physical trainers are located within the fitness spaces used by patients and staff members alike.

The administration staff members support the psychological staff members. Because of the diversity of expertise in the staff members, they provide multiple people for the patients and their family members to relate to. This is important, because as one former member of the Soteria House explains, having different people you feel comfortable talking with is essential to building trusting relationships, and this helps the healing process.[22] These staff members will also have strong connections to the orthomolecular pharmacist and nutritional grocer, ensuring that natural supplements can be easily obtained. This means there needs to be staff members who can organize and the schedules and arrange meeting on their behalf.

There are also three on-call suites located on the second floor for staff members who stay the night in case of crisis. These suites are meant to give the staff members some privacy, but they can be interrupted if necessary. Similarly, the guest units are meant for family privacy. Visitor or guest units are located in the north-west corner between the two residence wings. These spaces can be rented out inexpensively for long-term visitors, for example, to a patient's family or friends.

The second category for the psychological perspective uses the way the building guides patients through the spaces, and how they're used. Ideally the choices of patient spaces and personal spaces allow patients the security of being themselves without being on edge in group situations. They can relax their bodies, because patients don't have to be constantly in close contact to one another. The scale of the corridors themselves gives patients ample opportunity to pass by people without feeling like their passage is blocked. Egress, circular routes, secondary access gives the paranoid ways to set their mind at ease. So does viewing down the hallway.

Rhythm is used to help patients with self-perception within spaces. In this building it is used to help patients find their centers as they move within the building. This can be found in the use of skylights, columns and façade. The

6.61: Lobby View: Second Floor

6.62: Lobby View: Ground Floor

skylights along the second floor corridor create a regular rhythm of light spilling in the community spaces. The colonnade surrounding the planted courtyard uses the peripheral vision to sense motion, persuading people to slow down and relax as they journey through the space. The façade has a rhythm that lessens its severity. For example the upper residential units undulate to create a more penetrating and acceptable barrier, rather than the fortress-like exteriors some mental health care buildings possess.
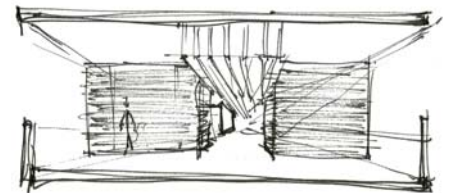
Material tactility is also used to ground a patient within the spaces of the building. Natural and textured materials give the building a more relaxed feel than strictly dry-walled and laminated finishes. Lightly coloured brick and stone is used in the community room walls to divide spaces and to create resting places for patients and residents to gather. For example, the stone is used inside to create a solid hearth. Wood is found throughout the building and is used wherever people sit down to relax. It is found in the edges of interior planters in the lobby and in the green house as a tactile and warm edge to sit on or lean against. It is also used to divide the spaces less formally, by creating screens, trellises, and shelving.

Trellises are used to frame the patient spaces both inside the building and outside as well. The natural and darkly-stained wood screens create a bit of a shelter, while still allowing some visibility into spaces for patients concerned about anxiety and its affects. The same wood also becomes trellises to create shaded areas of repose in the courtyard, a leading entrance at the Queen Street side of the building, and a screen to misdirect hot summer sunlight on the southern elevations. In the apartments with outdoor balconies (these are reserved for patients who are not at risk of suicide) wood screens and trellises frame the spaces to give shadows, and to provide a sense of privacy in part of the balcony itself. This provides outdoor spaces for patients to have a place of retreat and escape from the community, in addition to their private bedrooms.

6.63: Outdoor Trellis Idea

Horizontal screening is used in many of the community interior spaces because it isn't as noticed in the periphery as vertical screening may be. It is used to aid residents in seeing who comes to join them, and by allowing them to see who may already be in the space. Screening and trellises gives a place of pause. They provide a smaller enclosed space for retreat within the larger spaces they inhabit. The central staircases also utilize the screens so as patients descend into the community spaces, they can see who is there, and whether or not they want to join them.

6.64: Indoor Screening

6.65: Dining Room View

6.66: Quiet Lounge View

4.3   Social Perspective

As an integral part of the holistic treatment of a patient, the social perspective reflects the need for an understanding community that is actively involved in the recovery process. Several moves are made to draw the group of residents closer as a community, which will help strengthen relationships between patients who are trying to recover.

Reception is right at the entry, so it can keep track of patients and other people entering and exiting the building at all times. Patients, family members and friends are encouraged to use this entrance to sign in and out so that everyone is accounted for and the community is aware of where everyone is. This may seem overly secure for some patients, but to those who are overly paranoid, it will help them to know strangers are monitored closely. It can also be used as a reminder for staff members concerned about patients. They can be informed if they've re-entered the building, to chat about any recurring problems or symptoms.

The library on the ground floor will be part of the Toronto Public Library system. It can provide a service for the community by housing a section of research on the bio-psycho-social perspective in psychology, while also being able to access books from the other libraries. By making the larger Toronto Public library easily accessible, patients and larger Moss Park community members can request and pick up books at this location.

The corridors in the both the housing and the community and psychiatric spaces are geared towards informal gathering. In the psychiatric area the corridor opens up into informal seating areas between the meeting rooms. In the community corridors, the hallway opens up on both sides to the patient spaces such as the lounges and the dining room. Some of the areas are screened to provide a greater degree of privacy and security for patients who would rather see into a space before committing to enter it.

The green house itself creates a large group workspace and two smaller and more private areas to work in. These spaces are group focused and create a teaching environment in the central space, where patients can branch out as they work. The smaller side spaces also use the same orientation, but allow other patients to come in and work, even while a class may be going on. The greenhouse itself creates a few spaces within the courtyard, creating a sheltered grassy area for group fitness activities like yoga and tai chi, and the children's playground for the day care space.

Interior patient spaces are designed to look into the courtyard as much as possible: their layouts are framed to allow as much of a view into the oasis as possible. For example, the dining room is arranged so that people sitting at the

6.67: Second Floor Corridor

6.68: Active Lounge View

long, group tables, can all still see length-wise into the courtyard from the tables. These tables can allow multiple conversations to happen at one time, while still providing a group setting. Dark wood-stained screens are used to frame the space so that it lends some privacy to the people using the space. Low-walled planters separate and frame the space from the corridor, so no one feels like a person will walk into their backs as they are eating.

Likewise, patient meeting rooms and meditation rooms are oriented towards the serenity of the courtyard space, though the seating can be arranged in any way suitable for group conversation. The meditation room features the same horizontal wood screens to identify if and how the space is being used without being distracting to those within. It also allows residents the ability to decide if they wish to join whoever may be inside.

On the second floor above the dining room, a rooftop terrace is located, to add to the community outdoor space. It is removed slightly from the main courtyard area to provide a sheltered outdoor space, that uses the same trellises found throughout the building, but it is large enough to hold a couple of small groups of people informally.

6.69: Activity Lounge

6.70: Quiet Lounge

4.4   Building Conclusion

This supportive housing scheme seeks to enable the bio-psycho-social perspective. The natural materials, air ventilation, landscaped gardens and natural lighting work to help the biology of the patients housed within. Psychologically, the building works to frame the spaces the patients use, orienting as many of them to the privacy of the courtyard as possible. It gives spaces patients are responsible for, which also gives them their own private areas to retreat to, away from the larger community. This allows them to gain independence, which also aids them psychologically. The community spaces themselves are created wherever possible to be open and non-restrictive, so patients can join or leave as they please without feeling pressured. Architecturally, the screens help patients by allowing them to view into and out of spaces unhindered, helping them decide what options are best for themselves. The building layout itself helps to mitigate the city pressures by providing a more public façade to the larger community, while providing more private and personally owned patient spaces. Socially, community spaces are designed to provide small group setting as often as possible, providing as much personal space for patients as possible. Also, secondary community spaces like hallways and lobbies have alcoves and openings with seating to provide opportunities for informal gathering.

6.71: Meditation Space & Chapel

6.72: IT Area
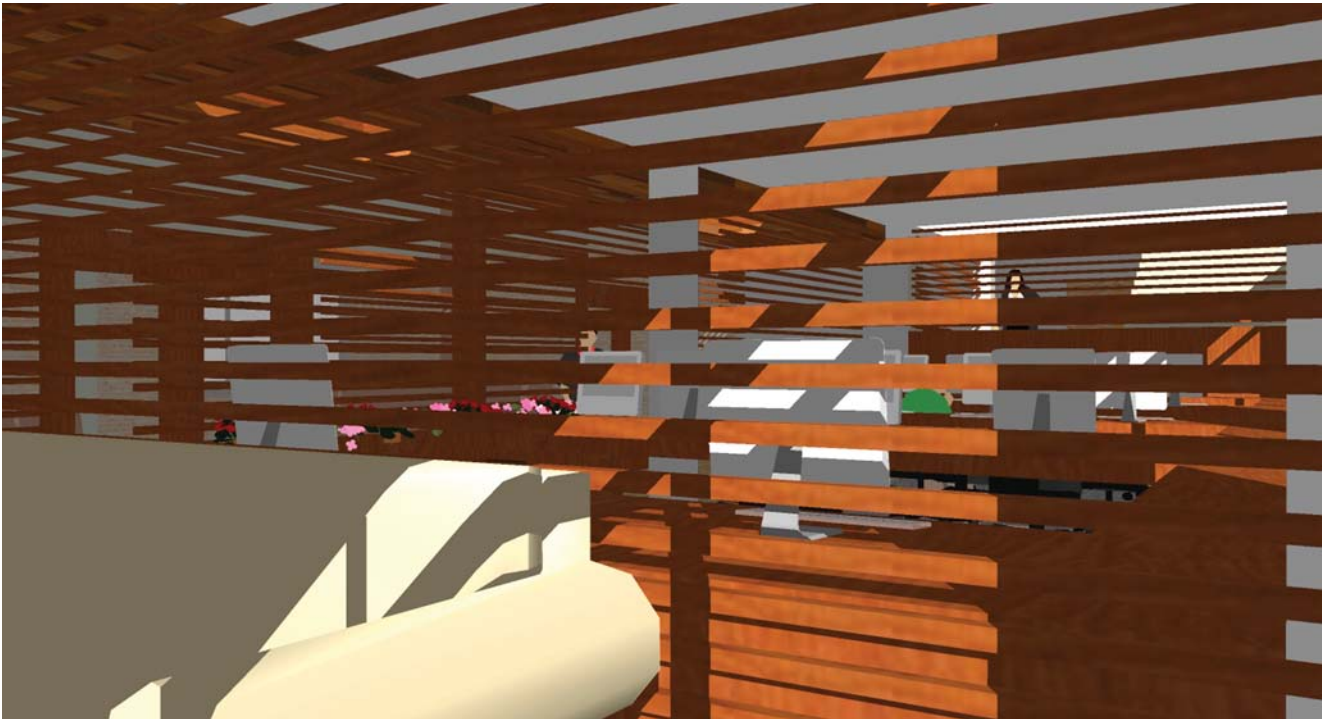
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1   Wurtzel, Elizabeth: *Prozac Nation*; 237
2   The Scarborough Hospital: *Home Page*; http://www.tsh.to/about/about_home.
        aspx
3   Markham Stouffville Hospital: *Home Page*; http://www.msh.on.ca/
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6   Zeisel PhD, John: Environmental Correlates to Behavioral Health Outcomes
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7   Moloney, Paul: *Moss Park Residents Use Petition*; article
8   Gonda, Gabe: *So Many Services, So Much Poverty*; article
9   Reinhart: *Defeated by His Demons*; article
10   Fine, Sean: *Living in Fear in Moss Park*; article
11   Israelson, David: *New Plan Will Revamp Moss Park*; article
12   Fine, Sean: *Living in Fear in Moss Park*; article
13   Lakey, Jack: *Drug Dealers' 'Shield' Shattered*; article
14   Finlay, Patti-Ann: *Gardeners Hope*; article
15   Gonda, Gabe: *So Many Services, So Much Poverty*; article
16   Gagné, Claire: *Urban Garden Yields Harvest of Hope*; article
17   Gagné, Claire: *Urban Garden Yields Harvest of Hope* (Jeanne Mott); article
18   Globe and Mail: *Game Off at Leaside and Moss Park*; article
19   Gerard, Warren: *Kids Feels the Joy of Hockey in Moss Park*; article
20   Porter, Catherine: *They're Hoping for Home*; article
21   Electrical Pollution: *Home Page*; http://www.electricalpollution.com/
22   The Soteria House: *Home Page*; http://www.moshersoteria.com/index.htm

Conclusion

I was left to live independently. That proved very difficult. The stigma of mental illness made me a virtual recluse. You can't go down the pub and face the inevitable question what do you do and reply you're schizophrenic. On my own the presence of the voices seemed to be magnified and there was little to help the depression this created. The answer was to live in sheltered accommodation - and as with my stay in hospital this improved things further. What I have learned about having such an illness is that one of the best things which can be done is to simply talk to the patient. I guess this can act as a distraction from dwelling on your problems. Living together in sheltered housing aims to provide such a context. Some kind of activity is also necessary but this can be a double edged sword – work can be stressful but then doing nothing can be the same so it is often necessary to balance the two. Variety in terms of people and activity is also necessary.[1]
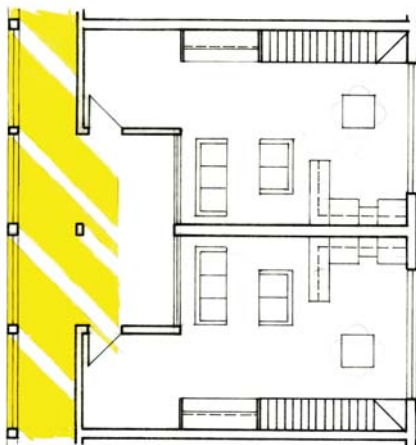
~ Mark Ellerby

1.0   Envisioning the Future

This thesis design has only gone so far in providing an architectural model for the bio-psycho-social perspective of mental health treatment. While aspects of each part are provided in the design, each could be pushed further in their various ways. In the biological perspective, certain elements may need to be combined more fully with the existing design. Living machines and a bio-wall could be integrated directly into the building systems, combining the horticultural therapy with education and a healthy environment. The living machine would filter pollutants out of sewage and rain water, while the bio-wall would filter pollutants and any off-gassing out of the air. Currently, patients take ownership of any interior plants, and the greenhouse remains a separate yet central entity in the supportive housing building. Mechanical systems as a whole could be integrated more directly into the building, with smog filters in place to mitigate pollution. Radiant floor heating has already been mentioned in terms of heating each space, and ventilation is achieved through the stack effect of skylights and the towers. Additional electrical consultants would be used to ensure that any outlets don't use high frequency electromagnetic current to prevent immune systems from being compromised. Materials within the building should be as natural as possible, reducing off-gassing, and its chemical effects on the body. Problems may arise in the construction phase of the project, where ensuring the quality of construction is adequate to provide for the needs of the patient, but a good supervisor will ensure that all conditions are met.
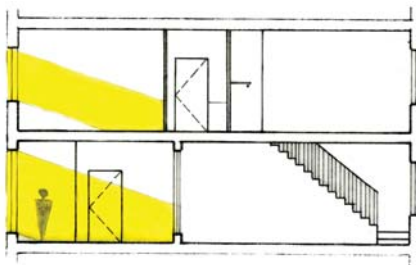

7.1: Integrated Patient & Staff Spaces

Pushed in the direction of the psychological perspective the erasure of mental health stigma might be the primary goal. Integrating psychological-based spaces like offices, interview and meeting rooms throughout the supportive areas of the buildings may lessen stigma as patients meet throughout with less programmed times and agendas. Informal meetings between patients and psychology staff members could be more frequent and less routine as patients gather in lounge and other activity spaces all over the building. This might be even more important in the less secure facility (i.e. Follow-up Care facility) where psychological staff members visit patients in their own spaces. Cognitively, while mixing psychological spaces within the rest of the community provides more opportunities for informal gathering, and integrates psychological staff members within the community itself, it reduces the sense of destination and gathering in spaces, and makes it harder to know where everyone is. This can pose a particular problem to any patient who may want to withdraw because their symptoms are resurfacing. The question of integrating psychological, community and patient spaces is mixed with the need to ensure patient privacy. Patients should in no way have their confidentiality breeched by other residents who happen to pass by. While residents of the building may know that other patients see the staff members on a regular basis, the extent of the issues discussed need to remain in confidence. Also, if members of the larger community enter into the building for mental health help, confidentiality may need to be more secure since patients may not feel comfortable with non-residents over-hearing conversations. In this way, separating the community spaces from the psychology spaces seems to be a better approach. Mixing the psychological spaces with the rest of the architectural programming also has its disadvantages in making spaces possibly less cognitively oriented. Residents may have more trouble navigating spaces, and community areas may seem less like destinations to gather within. In buildings requiring more security, such as the Comprehensive Care facility, a clearer delineation of communal, public, and private psychological spaces may be necessary.

In terms of providing more social interaction between patients, spaces could be provided throughout the facility, especially in the residential area, for residents to gather. This would provide patients with the ability to venture out as far as they wanted from their personal spaces, without feeling obligated to be social with everyone in their unit. Social spaces mixed programmatically within the rest of the building would allow more informal gathering spaces between neighbours, building up relationships within the community.

Determining exactly how the patients and the building will respond to each other is difficult. Ideally, patients would use the community spaces to chat and gather, especially at times when being alone isn't a healthy option. Hopefully, these community spaces will provide them with a sense of security in resting and building relationships with their neighbours. Since informal gathering is a key element in building a sense of community, the orientation of spaces provides many opportunities for this to take place. Space Syntax software can

7.2: Shared Living Room in Plan

7.3: Shared Living Room in Section

be used to check the visual and actual connectedness of spaces, which will reveal which spaces patients will actual congregate within. The courtyard itself is the best place to see and be seen within the whole design. It offers the most views in many directions. Secondary views and intelligibility of spaces indicate that the corridors are the most prominent gathering spaces within the building. Spatial intelligibility diagrams reveal that the most connected and intelligible spaces are the corridors, since they are connected to the most floors above ground. The strength in the design is its ability to create patient common spaces off the corridors, since this allows patients to see who may be passing by or already within spaces. Additional analysis can be found in Section 6.0 of Appendix A.

Knowing what patients will do with their freedom is difficult to determine in the design phase, however much of it they have. Ideally, they will spend it working on personal and group activities and projects, building computer and other life skills; and relaxing in the common spaces with other residents of the facility, building neighbourly and friendly relationships. Staff members, as patients grow and develop throughout their recovery, may change patient routines, giving them more freedom as required, and helping them to maintain skills that help the patient recover. Perhaps, patients may even spend time looking for a job, as they become responsible enough to be on their own. This is what will determine the facility's success: whether patients become confidant enough to be actively involved in their community during the recovery process and venture to move outside the premises, or whether they remain isolated individuals who will not leave their units because of fear or apprehension. This isn't meant to suggest that introverts automatically become extroverts, rather that a balance between the two is achieved for the individual. Patients obviously need their own personal time and space to be able to become members of their community. The building can support this by enabling the patient to feel comfortable in their surroundings, and develop a sense of territoriality. This will help patients develop a sense of security in the oasis of the building, finding refuge in it, while stepping out into the rest of Toronto for other errands or work.

In the design for the supportive care facility, the main problem may be the separation of the community spaces from the psychiatric spaces within the program. Many who practise psychology may cringe as they realize that patients will govern themselves throughout the day. However, this is the essence of the holistic treatment perspective: that the patient has some say in their own treatment options. The same staff members are as free as the patients to walk around the facility, and if patients need them, they are able to venture into the psychiatric corridor for guidance.

In the Comprehensive Care facility, screened spaces may be used less in favour of visibility within the building to ensure patient safety, but they could still be used to create a privacy boundary to the public exterior of the building. This may be the central way the supportive care facility differs from the comprehensive

7.4: Supportive Housing Unit Broken into Housing with Central Activity Space

care facility. Comprehensive care patients may need much more guidance and supervision, and staff members will be much more involved in patients' daily routines. Here at the supportive care facility, staff members will be available to patients in an ongoing relationship encouraging them to follow their treatment routines, but are willing to step back and allow patients to make their own choices. Patients could feel connected to the outside, without feeling as though the public could see into their private spaces. Interior patient communal spaces would be more open, giving patients the ability to see through them clearly. Resilient natural materials could be used throughout the facility, and natural lighting should be prevalent. A defined public entrance is necessary to ensure that the public and community aspects of the facility are kept separate. This ensures that patients feel secure within their own spaces.

In the design for the Follow-up Care facility, the changes would occur especially in the programming. Many more units would be accommodated within the facility, and outpatient care would be far more prevalent. Social spaces integrated with the housing units would be a very important element in the Follow-up Care facility. Since community spaces are a less prevalent element in its architectural program, informal gathering spaces will be essential in building resident relationships, and providing a social network for patients. Spaces that residents can share between neighbours and patients should be included for every five units in addition to the larger community spaces shared by the entire facility. Psychiatric staff members would still have offices to practice from, but these may not be their central offices. A greater number of outdoor community spaces would be more inviting to the public, reducing stigma by allowing the public entry, and supporting a variety of families within the community. Screening and trellises could be used to separate family dwellings and their private outdoor areas from each space, to give residents the opportunities for privacy while still being connected to their neighbours. Community spaces could be brought closer to residential units, creating pockets for informal gathering along the way for neighbours to meet up with each other.

7.5: Campus Model of Care Housing all 3 Care Levels

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2.0 The Future of Supportive Housing

As David Kennard writes in his book *An Introduction to Therapeutic Communities*, the treatment of mental illness shifts throughout the world in cycles. While some places largely focus on the containment of patients thought to be without hope of treatment, some patient advocates argue that patients can indeed be rehabilitated and integrated back into society. It is then assumed that as new discoveries are made concerning the brain and its relationship to the body and the environment, the theories that govern psychiatry and the treatment of mental illness will also change. The current trend in mental health is the bio-psycho-social perspective: a view that aims to treat the patient holistically as an individual with some say in their own recovery process. The problem that often resurfaces is the need to place patients in categories, so treatment may be administered to as many as possible, for as little expense as possible. Many practitioners follow the rule of 80% of patients being treated with 20% of the treatment. This is often seen in drug therapy, where companies who produce a medication want to see as many people treated with that medication as possible. If natural substances are ever able to be patented, the same thing becomes a possibility. This is the antithesis to holistic treatment, because the patient is no longer being treated as an individual, but as a group of patients sharing the same symptoms.

The same problem can occur when insurance companies get involved in patient care. Often they specify which treatments or drugs are covered for each patient, even if it might be the wrong approach: 20% of the treatment may be covered by insurance, but the other 80% that needs to be developed for the remainder of patients may continue to be underdeveloped because insurance won't cover the costs. This seems counterintuitive for insurance companies: if there is something less expensive available for patient treatment, that will require fewer hospitalizations and fewer drugs; this is less costly to the insurance companies in the end, and worth the effort of careful study and analysis. Often it is simply that they do not wish to take on the challenge of new treatments. Ideally, the 20% of treatment should take into account the whole patient by providing orthomolecular treatment in biologically healthy buildings, psychological treatment and support, and a community to feel accepted in. This should be the basic structure of patient treatment, and form the basis of its building design. Anything in addition to this, for example, the additional security and therapy needed for patients in a forensic institution, would be considered extra for those patients who fall out of the basic treatment range.

It is possible to accommodate the regrouping of patients into categories should a change in trends take place. A facility that began as a place for a variety of long-term illnesses may become one devoted entirely to schizophrenics instead. While this addresses common pharmaceutical needs between patients, it takes away from the possibility of meeting patients with different backgrounds, and

interacting with people who do not all suffer from with the same symptoms. This reduces opportunities for social skill development and isolates people according to their illness. It is then possible for the public to say: "That's the schizophrenic place, stay away from it."

Another possible change in Ontario's treatment philosophy may be that mental health becomes completely outpatient care, where patients shouldn't even have housing provided for them, and funding for group homes is abolished. Housing may need to be eliminated, but outpatient programming may still use the same architectural ideas to relax patients, and keep them stable as they seek treatment. While places like the Wood Green Mental Health Centre offer outpatient treatment such as this, housing is left to the patient or the patient's family to maintain. This can be terribly difficult if the patient or the family members do not yet have to skills to maintain the balanced environment the patient needs. Training is necessary, where psychological staff members can work with the families and patients to ensure that the patient environment is a healing one. This is much easier to achieve on site, and within a community who is going through a similar process.

The design presented is a specific response to an urban environment. The courtyard model provides as sense of refuge to the patients that live within, from the surrounding area. This model may not be suitable in every instance. Several building typologies have been investigated during the design process, some may fare better with the different levels of care, and with smaller or larger sites. For example, a campus style option was considered early on in the design, networking all levels of care into one group. However, this requires a larger site that an urban area can often afford, and creates a group of patients larger than might be comfortable at the scale of the community. Also, schemes of units broken into smaller and more open blocks were imagined; however, at the level of care of the supportive patient, this may seem like too much of public intrusion into the spaces. For this reason a closed courtyard scheme was developed, with public, private, communal, and psychological zones to help the patient retreat or advance as they are able to. It creates an area where the boundaries and people are known, which enables the patient to feel comfortable in their surroundings.

While history proves that the shift in containment and rehabilitation repeats itself, ideally psychiatric professionals will continue to pursue the bio-psycho-social perspective in each of its categories to try to improve patient recovery. This includes housing and community, psychological support, and a biologically healthy building for patients to recover in.

3.0   Conclusion

The bio-psycho-social perspective is the newest model in treating mental health patients in Ontario. It suggests that a patient suffering from schizophrenia, mood disorders or anxiety disorders should have a variety of treatment options available, each encompassing the patient's individual biology or physiology, psychology, and social community. This triad of treatment requires each part to be addressed and fulfilled for the patient to begin and continue the recovery process. Patient treatment takes time and effort, and it is in the best interest of the patient to be involved personally in the treatment options available. The biological part of the treatment, while traditionally drug-related, is viewed in this thesis as a more biological process, using nutritional supplements to replenish missing sources of nutrients and hormones such as serotonin. The psychological element relies on traditional psychological therapies such as group, family and individual therapy to work through patient issues and develop skills and abilities to recognize symptoms of their illness. The social aspect uses community to build up patient relationships with others, and to help them learn how to function with other people. This provides a social support network of people who understand the nature of mental illness and can guide each other using the Consumer/Survivor Initiatives as a guideline. Placing the treatment setting within an urban context allows the facility to exist as a resource for the community, which helps to erase stigma associated with mental illness.

Understanding perception begins to illustrate how the senses affect self-perception, which in turn affects an individual's proximity to objects and other people. This leads to understanding personal distances and boundaries, which then begins to reveal how spaces and settings begin to ground patients in reality. It illustrates the need to provide a variety of spaces for patients to use to challenge and help them understand their own sense of self.

The architectural precedents themselves contribute to the design in various ways. The hospitals illustrate the variety of patient needs and programs available, while pointing out that few of these facilities reach out to where the patients reside on a long-term basis. They reveal the desire to provide different treatment options because some are changing to suit outpatient treatment, and working toward getting patients to that point. The alternative housing of the Soteria House and UHousing projects illustrate that communities can be achieved at several scales, and that they are integral to the development of mental health recovery. The resorts demonstrate that individual healing can take place in therapeutic environments, but they do not account for long stays, or the need for community.

Using the architectural issues to present case studies illustrates different architectural attributes and how they help or hinder the patient healing process. These attributes can be used to determine whether or not existing healing spaces,

traditional health care facilities or other social structures enable mental health recovery. Traditional facilities do not always work the way they are intended: while they intend to support individual exploration, they are often designed to confine and supervise for short periods of time. Healing environments, such as resort hotels, allow much more individual choice, but aren't meant for long-term care either. The end result is often that patients whose treatment options are in between complete self-reliance and surveillance are left to seek help themselves, without the necessary guidance to do so. Long-term care options are not addressed the way patients and their families sometimes need, as there is minimal support throughout the patient's day and routine.

The goal of this thesis is to develop a new environment for the mental health healing process. It assumes substantial recovery is possible through the three tiers of the bio-psycho-social perspective, where a patient's treatment is completely holistic. The first part encompasses healing the body with natural substances, fitness and proper nutrition. The second tier of healing comes in with psychological treatment: group, individual and family therapy aimed at finding the reasons behind the illness, and developing the cognitive skills necessary to improve a patient's life. The third tier to improving a patient's mental health is through the establishment and maintenance of a supportive community. This is achieved through group therapy programs, and various other activities. Community is established through involvement in other people's lives, and is maintained through regular and chance meetings, where discussions of any nature may take place.

Architecturally, the new supportive housing model uses the bio-psycho-social perspective to work through patient spaces. Natural materials, light and air ventilation all work together to give the patient a biologically healing environment. Combining spaces varying privacy and security with the ability to interact with neighbours provides patients with options and choices that promote psychological growth. The social perspective is enabled by providing sheltered and unsheltered community spaces that guide patients to see who is occupying them, and whether or not they wish to join.

This design takes the form of a courtyard building in order to provide a sanctuary in the middle of an urban environment. Two of the resort case studies use this as a model for a healing environment. There is a public zone off Queen Street E. (on the south of the building), housing the public amenity space like the library, café and grocer. Above this are the psychological spaces. Along Mutual Street (the east side of the building), the communal patient spaces are located. Patient spaces focus into the courtyard as much as possible, in order to provide them with restorative views of nature and positive distraction. Residential spaces occupy the north and west of the building to obtain as much eastern and southern light as possible in patient spaces. It creates a shallow floor plate, with the corridors on the exterior: this generates a buffer zone of semi-private space from patient

living rooms to the streets outside. Screens are used to frame patient communal spaces, allowing the surrounding areas to be seen in order to promote patient control and to minimize possible paranoia. Wherever possible, such as in at the lobby on the second floor and the elevators on the third floor, informal lounge spaces have been added to allow patients the ability to see who may be arriving, or already there. Spaces with similar functions have been gathered together for the ease of the patient's navigation. The psychological zone was created to give staff members the chance to work together, while the communal zone allows patients to gather in whatever space they feel comfortable in, while being able to see who might be in the rooms next door.

The design uses natural materials and light wherever possible, and also tries to minimize the mechanical systems and off-gassing. It separates the psychological spaces from the public, communal and residential spaces in order to provide as much of a variety for patients to heal as possible. It also allows for informal gathering wherever possible to promote community in a neighbourly way. Different models may emphasize security less: the follow-up care design may not need a courtyard completely separated from the exterior of the building where residents and neighbours will come and go as they please. Strategically, informal gathering spaces will be more important, as community is developed between patients. In contrast, comprehensive care may place security as a stronger design feature, minimizing informal gathering spaces and emphasizing larger group gathering places in order to keep better track of patients.

The design proposed is one variation of many possible using the bio-psycho-social perspective. While others, like open courtyards, and secured buildings with residential wings off a common space may also suit the design program, this building typology is preferred for the Supportive Care program since it works to separate building zones and provides an oasis from the public of Toronto. This model for a holistic healing process means that attention needs to be paid both the psychological programming, and the spaces it occupies. The biological component, in terms of nutrition and fitness, influences the architecture through its use of plant material, natural materials, mechanical systems, solar gains and lighting and through psychological programming like food preparation and communal dining. The psychological element of holistic treatment looks to support spaces like private interview rooms, group therapy rooms and staff member spaces throughout the building. Its goal is also to provide a range of spatial experiences, so that the patient can be part of a formal or informal group, or have the opportunity to be on their own. The primary architectural goal is to support these spaces, making them comfortable for group and private discussion, minimizing sound transmission, and giving patients the ability to claim a sense of territory and individuality within the spaces. If patients are familiar with and unthreatened in their environment, they will be able to heal more quickly. For these spaces, egress, sound, and visual cues are important, giving patients the ability to respond to changes in their environment as necessary. The final component of holistic treatment is the social environment. Patients must be

provided with ample opportunities for informal gathering, without feeling obliged to join. Large corridors allow plenty of room to pass by, and gathering spaces on either side permit views in and out which gives patients the ability to choose to join a group, or withdraw, as necessary.

When designing a mental health facility in general, the following elements should always be taken into account in order to provide a healing environment for patients; natural light, a variety of spatial experiences, positive distraction, privacy, and carefully designed views to enhance the patients feeling of safety. The values of the facility, be they security, privacy or community will always mediate these factors to suit the needs of the patients it will house.

As most psychological practices indicate, recovery takes time. Whether it's testing for the proper amounts of nutritional supplements that are most needed for the individual patient, building relationships with other patients, or working through personal history that impacts patient psychology; the process is not an easy one to embark on. The same holds true for the architectural design of a facility geared towards mental health. It takes time to work through various architectural and psychological models and research appropriate solutions. It will take time once the building is constructed to ensure that it works to enable healing for the patients who reside within its walls. Patients need time to get used to their surroundings, and the new routines that occupy their days. Time will also be needed to determine whether or not the building gets used according to its original purpose. Evidence-based design is a tool that can help answer these questions, but it is usually used post-construction. For the moment, it can only be assumed that the facility will provide good discussion on the subject.

Also, as the above psychological research suggests, the resources of many need to be combined to provide the proper treatment process for a patient. The same thing occurs with the design of a building. To fully undertake the design of this thesis, the expertise of psychologists, nutritionists, fitness instructors, as well as mechanical, electrical and structural engineers needs to be maximized. The design of the facility needs to be completely collaborative in order to fully embrace the bio-psycho-social perspective.

(Endnotes)
1   Mark Ellerby: Schizophrenic Society of Canada Message Board; http://www. savweb.com/schizophrenia/discussions/viewtopic.php?t=331

Appendix A: Space Syntax Analysis

1.0   Introduction

Space Syntax is a theory developed by Bill Hillier in the early 1980s as a way of analyzing spatial configurations. His book *Space is the Machine* illustrates the principles of this chapter in detail. The theory has two parts relating to the intelligibility of a space, which relies on the assumption that people either rest where they have the least obstructed views in any direction, or, proceed into spaces where they have advanced visual cues.[1] The first part of the theory looks at the general layout of spaces and evaluates how connected they are to each other. Spatial configuration of rooms can be analyzed with software that represents rooms as rectangles and the connections between them, such as doors and windows, with lines joining the rectangles together. An example of this software is Axwoman, which uses GIS platforms to perform the analyses. For example, if a room is connected to a corridor in 2 locations, such as the meeting room in Wood Green Mental Health Centre, its connectivity will be listed as 2. Bill Hillier points out that the "connectivity is clearly a property that can be seen from each space, in that wherever one is in the space one can see how many neighbouring spaces it connects to."[2] From there a secondary analysis is created by looking at how many steps it takes to go from one room to another.[3] The fewer the steps or thresholds, the more integrated the space appears to be since it is connected to more rooms, though its integration "cannot be seen from a spaces, since it sums op the depth of that space from all others, most of which cannot be seen from that space."[4] The intelligibility of the space is represented when the connectivity of a space and its integration are combined in a graph illustrating the relationship between them: a strong intelligible graph shows increasing connectivity corresponding to increased integration in a linear fashion.[5] This linear graph of intelligibility should indicate that the analyzed spaces are scattered evenly along the increasing line representing connectivity and integration. It has been shown that the most integrated spaces will be the ones where people tend to gather or pass through, because there is more to see or pass by along the way.[6] This type of analysis has been used in several urban design proposals, to "simulate the effects of new designs."[7] In Axwoman analysis, the deeper shades of red indicate more connectivity or more integration, depending on the diagram indicated.

Depthmap analysis software was developed recently, beginning in 2002, to be an additional form of Space Syntax analysis. It enables the ability to bring CAD models into its system to be analyzed. Once brought in, the layers can be turned on an off to eliminate doors and windows for visual analysis. A grid is created so that a visual analysis can take place. It is similar to the connectivity

analysis in Axwoman, where the idea is that "all possible occupiable locations within the built environment would be categorised by their visual relationships to their occupiable spaces through a continuous map."[8] This creates "hotspots" which show the visual connection of one grid section to any other grid section in the plan.[9] The red areas are the most visibly connected spaces, while the blue zones are the least. Added to this is an axial map that allows visual sight lines to be created throughout the plan. This reveals where the strongest visual connections are physically possible: these can be modified to suit only physical connections like doorways, or visual connections such as windows. The colour scheme is similar to the visual integration maps: red lines are the longest and most prevalent sight lines within the building, while the blue lines are the least prevalent.

In both cases, the software requires some interpretation when it comes to space analysis. Clearly defined spaces separated by walls and doorways are easy to analyze, but alcoves and rooms open on one side become a more complex issue, and it is up to the user to attempt to solidify the idea of space when using the software. Analyzed below are four of the architectural precedents previously mentioned: the Grand River Hospital, Wood Green Mental Health Centre, the Hotel Explora in Atacama, and the Pousada de Santa Maria in Braga. Finally, also analyzed is the design exploration proposed in this thesis.
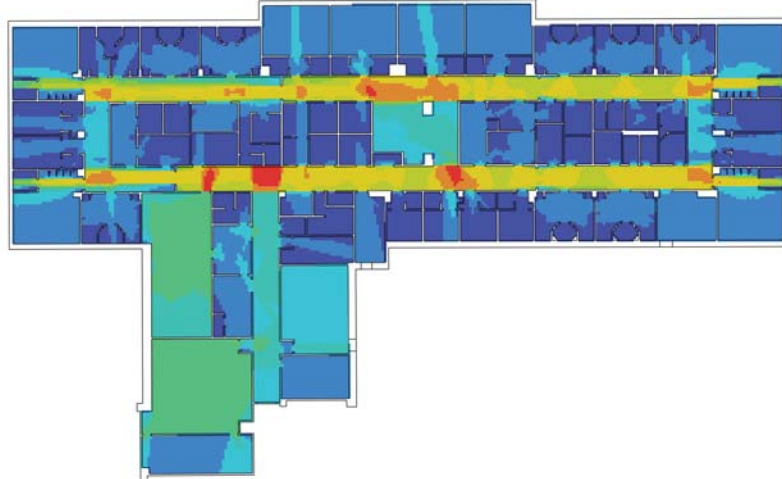
2.0   Grand River Hospital Analysis

The mental health unit, located in the north wing of the Grand River Hospital (GRH) in Kitchener, Ontario, is an amalgamation of three separate units, as mentioned in the architectural precedents chapter of this thesis. Its organizational strategy is typical of many hospital wings: it is a double-corridor layout, where patient rooms are on the exterior walls and staff and support spaces are located on the interior.

Analysis performed by Depthmap software reveals a number of eccentricities in its organizational strategy. The axial map shows that the longest views are along the length of the corridors. This makes complete sense according to the layout of the plan: the corridors running east to west are the longest spaces in the unit. Most of the rest of the spaces have much shorter views, crossing the width of the unit or entering into smaller rooms. One exception to this is the central lounge space. The views into this space can only be seen from the corridors at certain angles because of the sheltered wall on its south side. Another interesting trend is the dark blue lines at the very east and west of the unit. The four isolation rooms, 2 at either end, are the rooms that need to be the most supervised due to the special needs of the patients who may be capable of self- or other-harm. However, these have some of the most narrow and shallow views in the whole unit. This seems at odds with their general purpose since staff members need to carefully monitor their progress, and as such, need to stand in the entry alcove to do so. This is awkward for both patients and staff members: patient paranoia will be validated as they see the staff member supervising them, and staff members need to stand where there are no amenities to support their work. It would be no surprise then, to know that most of the patients and correlated staff members will congregate in the long corridors, as they can see the farthest and be able to tell what is going on around them. Patients who sit in the lounge spaces cannot see what is occurring around them, and will not likely want to remain there. This may also help to explain why patients would rather walk around the circular corridors than remain in the central or south-eastern lounge spaces.
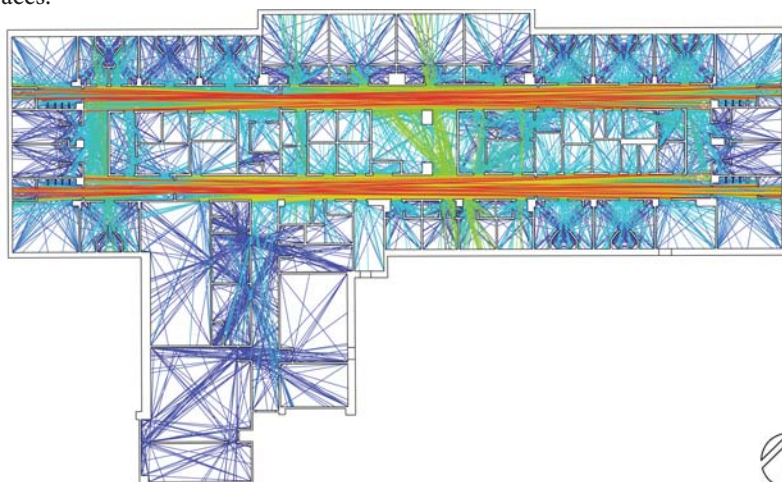
A.1: GRH Axial Map

A.2: GRH Visual Integration Map

Secondary Depthmap analysis of the Grand River Hospital reveals the main spaces where patients and staff members see the most from a particular location. The red "hotspots" indicate the areas in the floor plan where the most can be seen. The darkest blue areas are the places where few views occur. What is clearly indicated in this drawing is that the places where corridors meet are the places with the most views. In many cases the solid walls ensure the locations with the most visibility remain small. If patient security is very important, extending these areas of views would be beneficial, and locating important gathering areas at these points would help staff members ensure the safety of all patients.

Based on the above analysis, one suggestion would be to relocate the janitor's room and the staff washrooms away from the corner entry corridor and to move the patient lounge or central nursing station to that location. A second strategy would be to relocate the shower, bath and office spaces that terminate the entry corridor into the unit and place the nursing station or patient spaces there. These two small moves would give staff members direct visibility into patient spaces, treatment areas like the ECT room, and the entry to the unit. It would also open up the visibility of the spaces, especially if the patient lounge were in that corner where the corridors meet. Since it doesn't need to be completely enclosed, views from one corridor to the other would be drastically increased, enabling more visibility, and providing patients with the ability to rest in an area they feel secure in.

A.3: GRH Connectivity Diagram

The Axwoman GIS extension provides the opportunity to view more mathematically how the connectivity and integration of the spatial organization affects how people use the GRH mental health unit. The GRH connectivity diagram illustrates that the corridors are the most connected spaces in the entire unit. This isn't surprising, given that all the patient and staff spaces enter off the corridor spaces. The most connected spaces are often the ones people gather in, since they can see the most options before them.

The GRH integration diagram reveals how many spaces a person needs to travel

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through to get to another space. The deeper red tones indicate that spaces are more integrated than the lighter shades of pink and red. The circular corridors, being as connected as they are to all the patient and staff member spaces, are the most integrated spaces of the unit. The central patient lounge and nursing stations are fairly well integrated with the rest of the unit, being both in the middle of the unit, and connected to each other. This implies that there is more direct access from one to the other, which is important for security in a mental health hospital. The remainder of the spaces (patient rooms, staff member offices and support spaces) are minimally and evenly integrated, which is typical of a double-loaded corridor.

A.4: GRH Integration Diagram

The correlation of connectivity and integration seems fairly clear in the GRH mental health unit. The majority of spaces, patient rooms, staff member offices and support spaces are both minimally integrated and connected. This accounts for the clustering of spaces located at the bottom-left of the chart. The corridors are the most connected and the most integrated of the spaces, and they account for the spare data points in the upper right chart. Since people spatial intelligibility relies on the idea that people will go where there are the most connected and integrated spaces, it is no surprise that patients and staff members wander the corridors. Patient washrooms occupy some of the data for the least connected and integrated spaces. This is fine, since patients and staff members are not likely to gather there. But since the central lounge and nursing station are the places where people are expected to gather, it remains interesting that they are less connected and integrated than most of the corridors, which happens to be where patients are mostly found.

To improve in the connectedness and integration of the patient gathering spaces, it is suggested that those spaces be located at the end of the entry corridor. In all likelihood moving the central nursing station and lounge spaces to that location would increase their connectedness and integrate the spaces more fully into
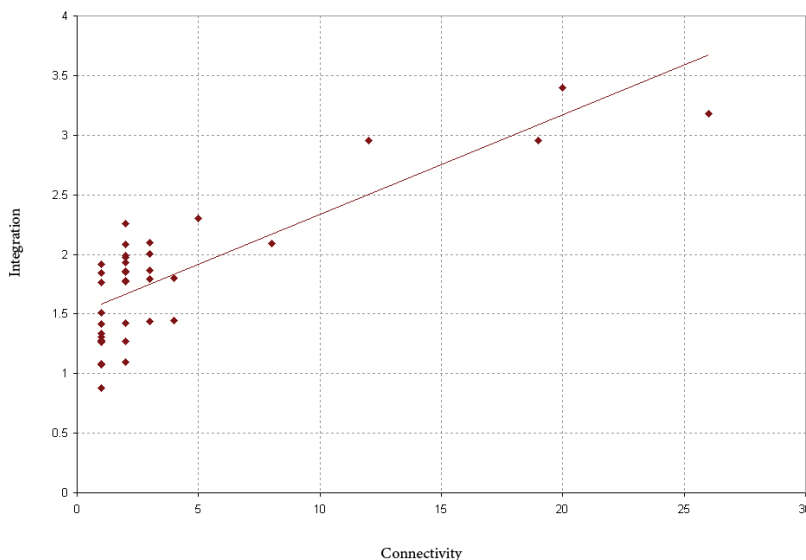

A.5: GRH Connectivity vs Integration Chart; the correlation indicates good intelligibility

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the surrounding unit, reinforcing the idea that people will gather in the most integrated and connected spaces both physically and visually.

3.0   Wood Green Mental Health Centre Analysis

The Wood Green Mental Health Centre (WG) is an L-shaped corner building, framing a courtyard. The Depthmap analysis on the ground floor reveals a few interesting bits of information. Its shape and layout is a double-loaded corridor that alternates areas for informal gathering on either side of the corridor. The axial map of the ground and second floor reveal some interesting trends. The longer corridor on both floors is where the longest views occur, with the shorter views branching off into out-patient therapy spaces. In the corner of the building, on the ground floor is the café, and on the second floor is the group/meeting room. These spaces form the hub for patient gatherings: these are the spaces meant for larger gatherings and community support. The café on the ground floor is relatively visible from various spaces such as the kitchen, but

**A.6: WG Ground Floor Axial Maps**
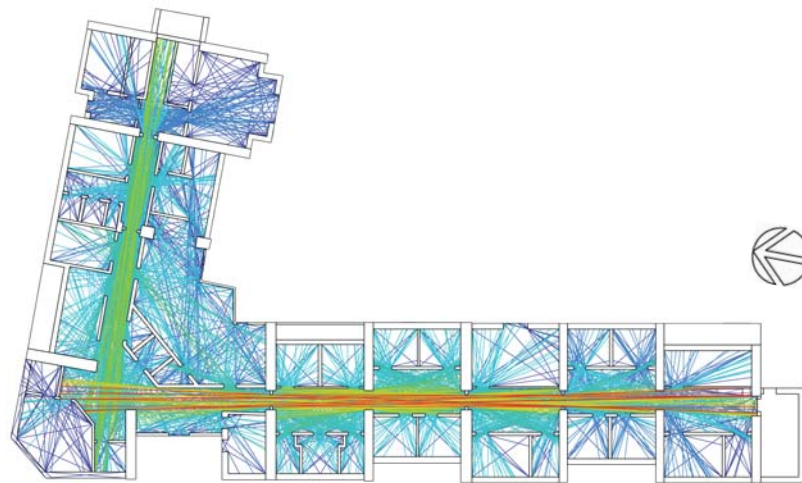
A.7: WG Upper Floor Axial Maps
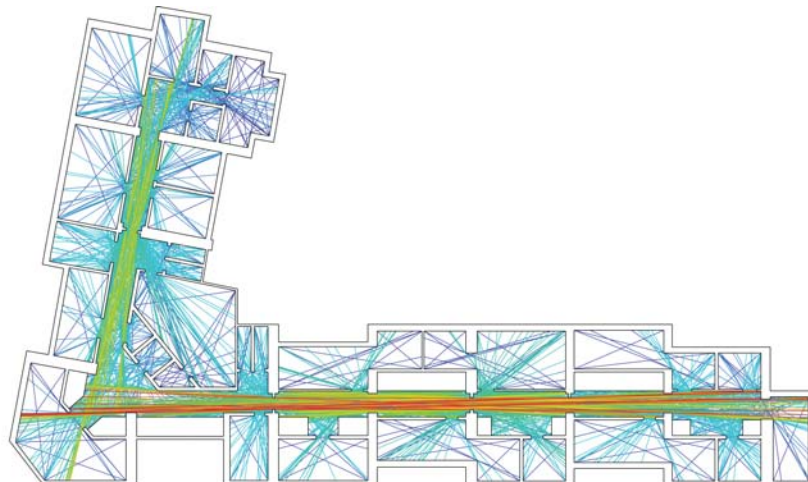
not nearly as visible as the corridors from which it is accessed: it has only two entries from the corridors. Such a prominent space geared towards community gathering and likely also project funding, isn't directly visible from the main entrance to the building. This is likely due to the fact that the elevator is located where the corridors meet, which restricts views from the staff member spaces and corridors into the gathering spaces. The same trend occurs on the second floor with the group/meeting room. While privacy is more of a concern here than the café, entry into the space is clearly not visible unless you turn a corner at the washrooms to find it. This means that one of the biggest gathering spaces is not very visible to those who wish to meet there. The spaces with the least visibility are those individual and small patient and staff member spaces. This seems reasonable, since privacy in therapy is very important.

The "hotspots" at WG are located on both floors where the corridors meet. This isn't surprising, since they afford the longest views down each wing of the building. On the ground floor, the café has much more visibility than the informal gathering spaces along the west corridor, which is somewhat surprising. From the facility's description, these spaces are meant to provide for informal gathering, yet the visibility is not clear as one would hope. On the second floor, the majority of spaces do not have long visibility, which makes sense according to the types of spaces that occupy the second floor: they are meant to be more private. A suggested improvement to the design might be to increase the width of the corridor to allow more views into the informal gathering spaces. This would allow patients more visual access along the corridor, which would give them a feeling of security as they see the people who approach the building. Also, locating the elevator closer to the central staircase and away from the center of the corner would create greater visibility throughout the building and into the more central gathering spaces. In the existing layout, both the reception area and the staff room are properly located in the area with the most visibility.

The connectivity of WG is very straight-forward. As with the GRH, the circulation spaces are the most connected spaces since the majority of rooms are accessed from the corridors themselves. Again, these images illustrate that both the café and the group meeting rooms are not as connected as they are intended to be. Despite their use as patient gathering spaces, they are only as connected to the corridors as the individual counselling and small patient group rooms. The reception space is only minutely more connected than the café space, and the staff member space is connected by the same amount as the group meeting rooms.

The integration of the spaces reveals again, similar to the GRH, that the corridors are the most integrated spaces in the building. However, they also reveal that the least integrated spaces are at the end of either corridor. This would indicate that the most privacy is achieved in these spaces, though they are no less private according to their program than many of the other spaces off the corridor. The
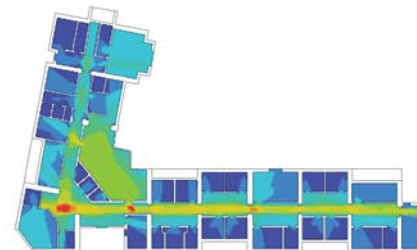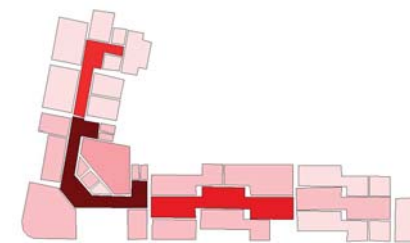

A.8: WG Ground Floor Visual Integration Maps
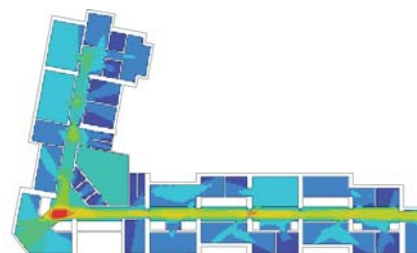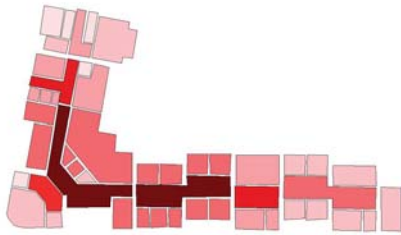

A.9: WG Upper Floor Visual Integration Maps
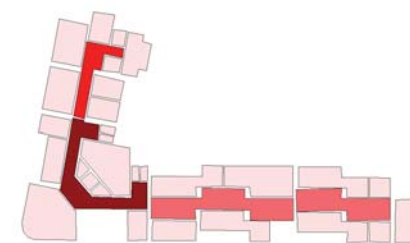
A.10: WG Ground Floor Connectivity Diagrams

A.11: WG Upper Floor Connectivity Diagrams

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**A.12: WG Ground Floor Integration Diagrams**

**A.13: WG Upper Floor Integration Diagrams**

reception area is the next most integrated, followed closely by the café on the ground floor. On the second floor, the group meeting space is only very minutely more integrated than the rest of the building spaces off the corridors. Perhaps, modifying the layout to move the elevators and to give additional access at the center of the corner would make these gatherings spaces more integrated within the whole building.

The connectivity and integration of WG's spaces is fairly consistent with what good trends should be. The most connected spaces are also the most integrated, while the least connected spaces are also the least integrated. The clusters at the bottom of the graphs represent the patient spaces that are small and not meant for larger groups. This indicates that patients and staff members are likely to be found where the corridors meet, at the entrance to the elevators. Unfortunately, the café and the group/meeting room are not as connected, nor

A.14: WG Ground Floor Connectivity and Integration Chart
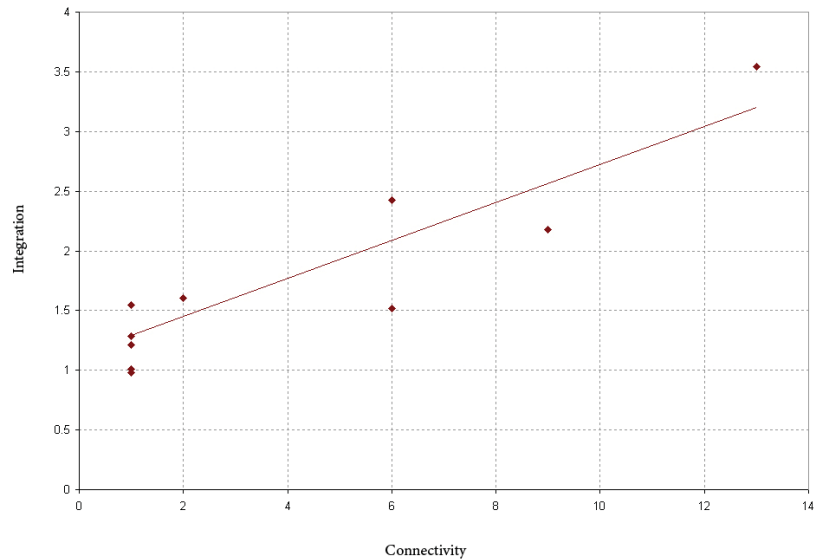
**A.15: WG Upper Floor Connectivity and Integration Chart**

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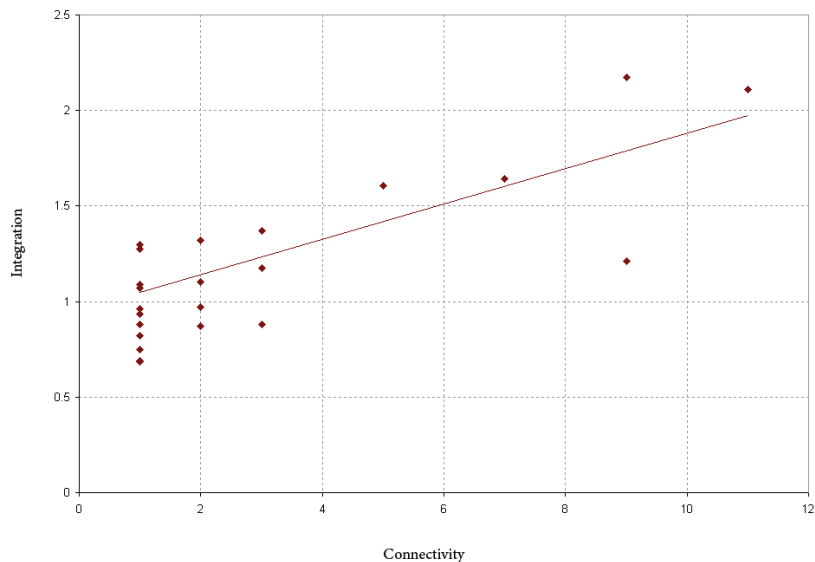
as integrated as they should be, given its central location, and its program. This implies that people are not as likely to gather in these areas as was hypothesized in the design.

The suggestion after the analysis of the WG Mental Health Centre would be to relocate the elevator core closer to the central staircase to give the central gathering spaces more prominence within the building. In doing so, the connectivity and integration of both the café and the group/meeting room should improve.

4.0   Hotel Explora in Atacama Analysis

The axial maps of the Hotel Explora in Atacama reveal many positive aspects in its layout and design. Both the ground and upper floors offer guest and staff member spaces. The staff member spaces are located in the south-eastern sides of the building are not easily visible unless you are up close to their entry. The guest spaces, like the exhibition area on ground floor and the dining area, lounge and bar on the second floor all have plenty of long views throughout their spaces. Staff members serving guests and the guests themselves have plenty of sightlines throughout this building as a result: it is extremely easy to see who is coming and going from where a guest is situated. Also, the main building in the hotel has several walls angled throughout the guest spaces to provide areas with more privacy, and they frame the views simply and effectively, making it so that there isn't one large space for everyone to gather. Places of meditation and relaxation, like the chapel on the ground floor or the bar on the upper floor offer fewer views, which suits their intended programs. Staff member corridors are separate from the main guest circulation spaces and take advantage of minimizing the views
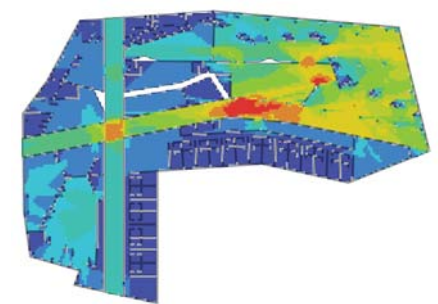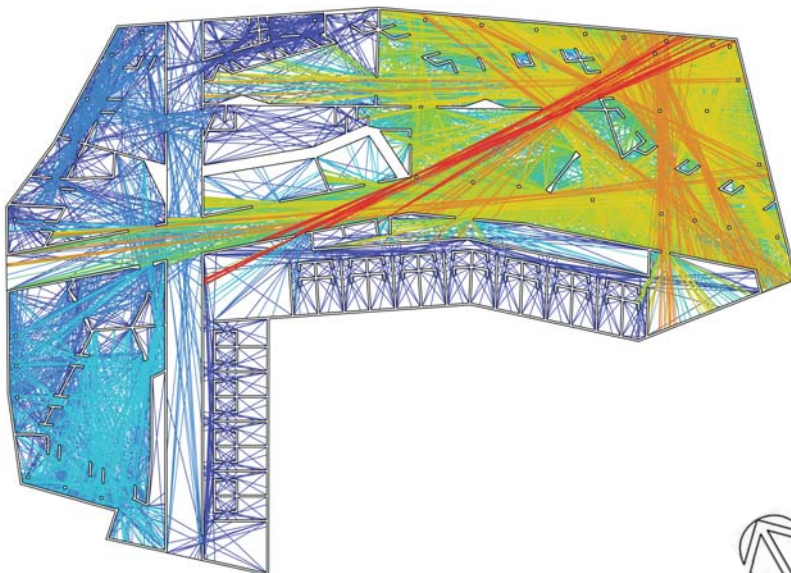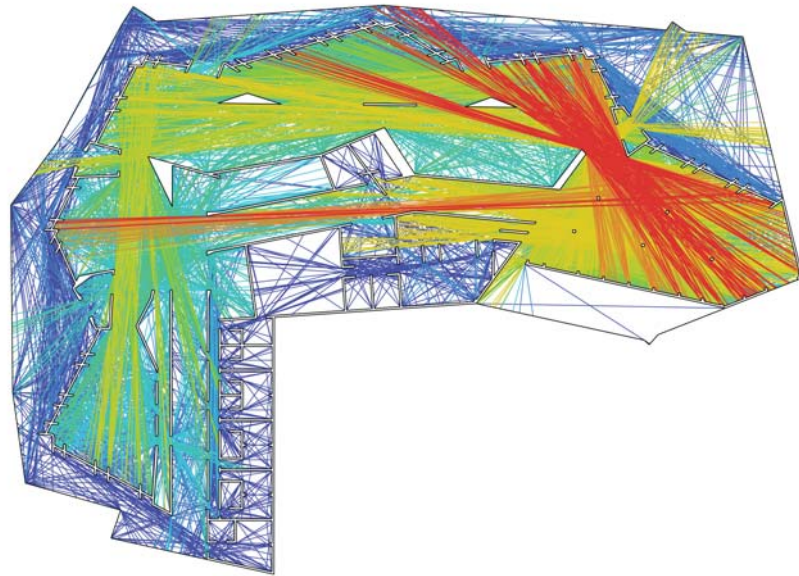

A.16: Atacama Ground Floor Visual Integration Map
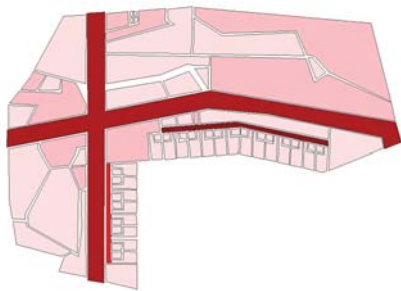
A.17: Atacama Ground Floor Axial Map
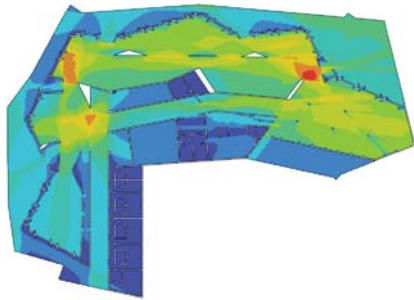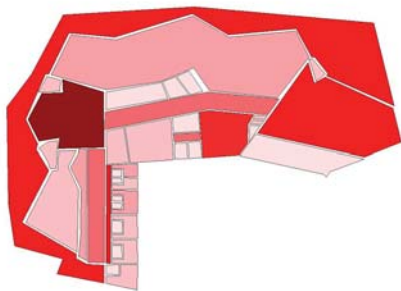
A.18: Atacama Upper Floor Visual Integration Map

A.19: Atacama Upper Floor Axial Map

A.20: Atacama Ground Floor Connectivity Diagram

A.21: Atacama Ground Floor Integration Diagram

into staff member quarters. This means that guests won't be visually tempted into an area that isn't meant for their use. It provides an additional boundary that allows guests and staff members some privacy from each other.

The 'hotspots' in the main building of the hotel can be found on the ground floor in the corridor leading up to the exhibition area. This is where the most can be seen in many directions. The resort takes advantage of this, by offering the art gallery off the main hotspot. Guests who are standing in this location may be drawn to the gallery's exhibitions, and a series of places where guests can choose their path guide them throughout the exhibition space. This is shown by the orange and yellow gradations in the visual analysis. The second floor has hotspots at the changes in space, for example, the shift from dining area to lounge, the shift from second floor lobby to corridor and to the exit to the exterior patio. In most locations, the staff member spaces are completely shielded from guest spaces, therefore not tempting guests to wander from guest areas. The secondary staff member corridors help to serve this purpose. On the second floor, guests are again guided around their own spaces by visual cues. The red to green colours clearly show where guests will gather and wander through, which is how the spaces are intended. The only exception to this is the bar on the second floor, where the bottle-neck entrance means less visibility from the rest of the building. However, since it is meant as a more intimate gathering space, it seems okay.

The connectivity diagrams reveal that the corridors on the ground floor and the lobby on the upper floor are the most connected spaces within the building. This isn't surprising, given the majority of spaces are located off the corridors on the ground floor. On the upper floor, while many rooms exit into the corridors, the lobby is still the most connected because the guest spaces all connect to each other and back around. This means that the Atacama Resort has a successful

layout with regards to the lobby being the most connected space: it provides a circuit for guests to wander around.

The integration diagrams of the Atacama Resort reveal a very significant pattern. On the ground floor, all of the spaces, including the staff spaces, remain in the deeper shades of red, with the corridor remaining the most integrated of the spaces. This indicates a very well integrated design. On the second floor, the most integrated spaces are the guest spaces, while the staff member spaces are the least integrated. Since the resort is geared towards the needs of guests, this means that the integration of spaces has been successful. It also means that while guests may gather in the central corridors, they are almost as likely to be found in the guest common areas as well, indicating a well thought out layout.

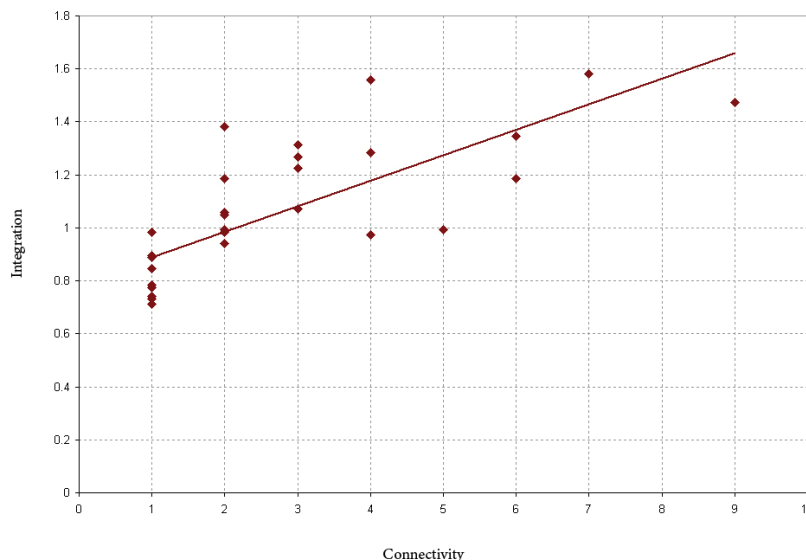The connectivity and integration graphs for the Atacama resort indicate that
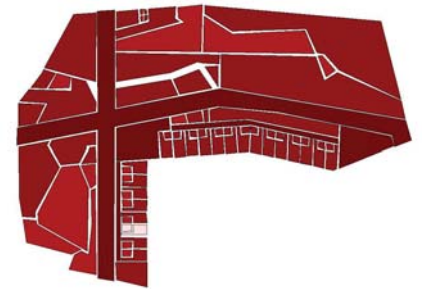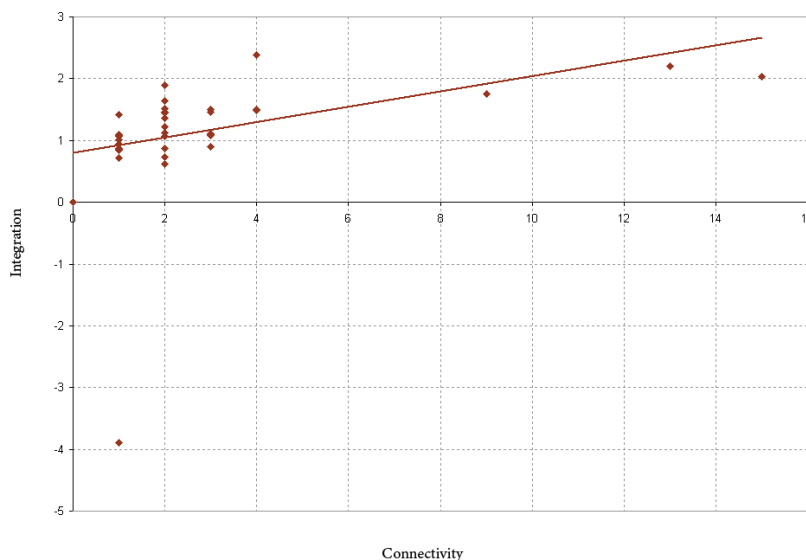
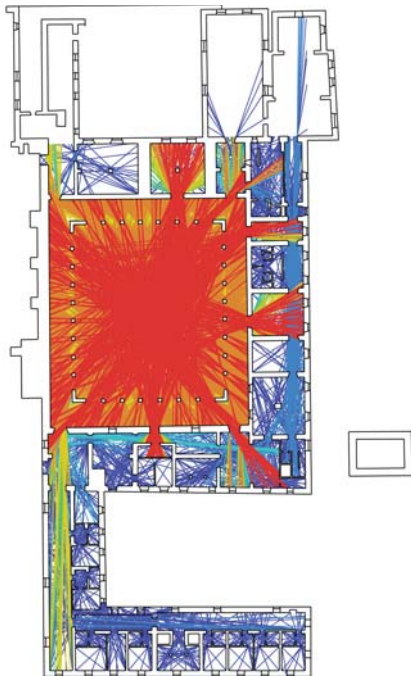**A.22: Atacama Upper Floor Connectivity Diagram**
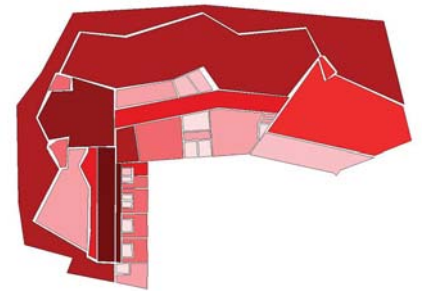
A.23: Atacama Upper Floor Integration Diagram
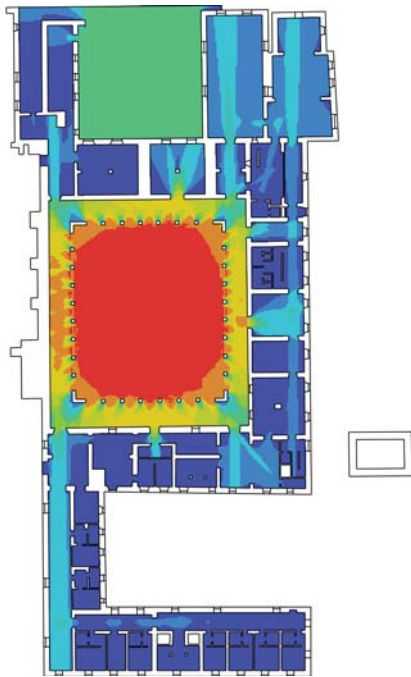

A.24: Atacama Ground Floor Connectivity and Integration Chart

A.25: Atacama Upper Floor Connectivity and Integration Chart; the variety of the scatter indicates the correlation of intelligibility is very good

A.26: Pousada Axial Map


A.27: Pousada Visual Integration Map

A-28: Pousada Connectivity Diagram

while the integration levels are quite high, there is a consistent slope in the graph, where clusters fall on both sides of the line. This suggests that the design of the Atacama resort is both well connected and well integrated, and implies that guests will be drawn visually throughout the building by the spaces that connect together, such as the exhibition and lounge spaces.

5.0   Pousada de Santa Maria in Braga Analysis

The axial analysis of the Pousada de Santa Maria illustrates what is typical of many courtyard buildings: the main views are found within the courtyard space itself, and peripheral spaces are more private. Guest suites, found at the west end of the building, are very private compared to the courtyard views. The axial map does indicate some eccentricities in the plan however. The reception area does not have a clear view of the courtyard, the guest suites, or the communal spaces beyond. This limits any kind of security advantage it might have. Also, the key communal guest spaces aren't located where the views of the courtyard bleed into the surrounding building. Instead, they are located at the east end of the building, where guests must pass through two other rooms to get to the kitchen and dining areas. Instead, the staff and administration spaces occupy the spaces where views into the courtyard are possible.

The visual integration diagram reveals that the best location for viewing the rest of the facility is in the courtyard itself. Guest suites have very little in the way of views throughout the building, which adds a feeling of security to the privacy already described. Guest and administrative views into the courtyard are limited to the few rooms that lay directly off of it. This means that from the

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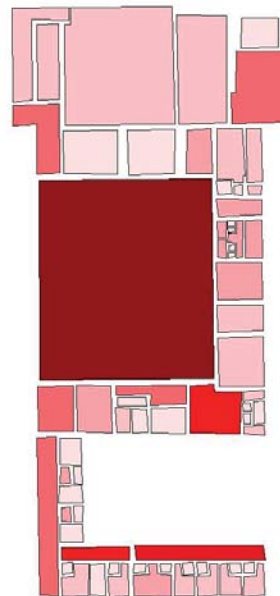
guest communal spaces, any views found are along the corridors that lead from one wing to another. A simple strategy to remedy this might be to relocated the administrative spaces to the east side of the building, while keep the guest communal spaces directly off the courtyard.

The connectivity diagram of the Pousada again illustrates that the most connected space within the building is the courtyard itself, though some of the corridor spaces are almost as connected. The guest suites remain as connected as the communal spaces, which seems unfortunate. The communal spaces may need to be emphasized more if this resort wants to promote gathering rather than seclusion.
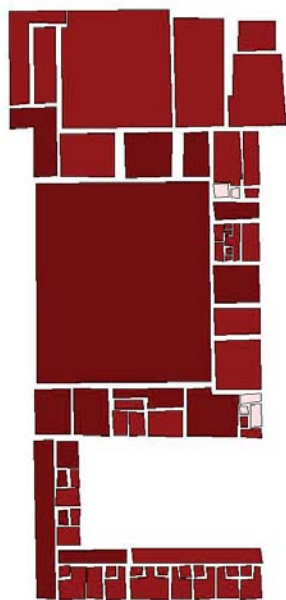
A.29: Pousada Integration Map
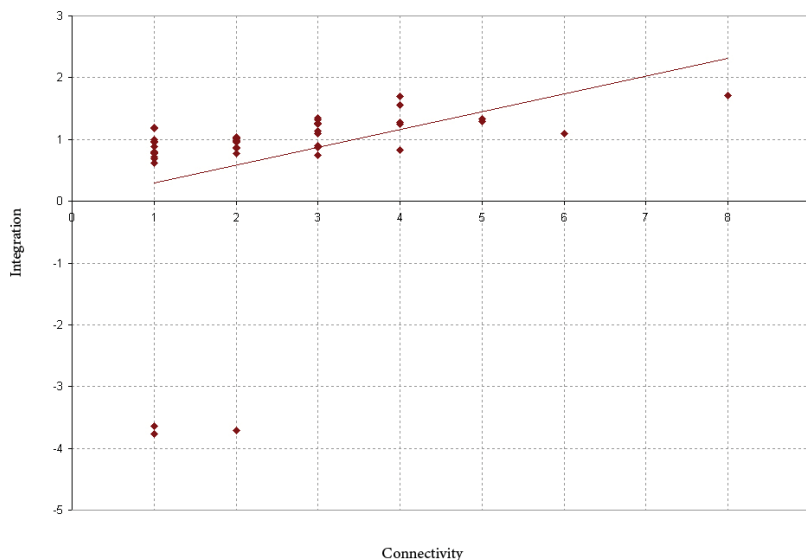
A.30: Pousada Connectivity and Integration Chart

The integration diagram reveals that despite the relative lack of connectivity in some spaces, the majority of them are equally integrated within the building. Therefore, guests will not necessarily feel as though on room is more important than the others. This may mean guests are not likely to wander the building, or will simply be found in the courtyard, the most connected space visually.

The connectivity and integration chart reveals a fairly consistent level of integration between the spaces. This means that the intelligibility of the building is unclear: rather than one space being emphasized more than another, the rooms don't exhibit more significance, one than the other. Travelling through the spaces a person is likely to be more distracted to enter into the courtyard, rather than proceed through the building from one space to another.

6.0 Design Exploration Analysis

The design exploration has been difficult in terms of creating the axial map for the floor plans. It required more memory than typical computers can access. As such, conclusions will be drawn from the visual integration maps and interpolated from the aforementioned case studies. Also, floor plans were modified in the North-East corner of the building after the diagrams were created. While there may be some differences, they are very minor and will not result in any major changes in the analysis data.

The visual integration maps of the floor plans are typical of the courtyard model, similar to the Pousada in Braga. The central area with the most views in any direction rests in the courtyard itself. The spaces framing the courtyard itself
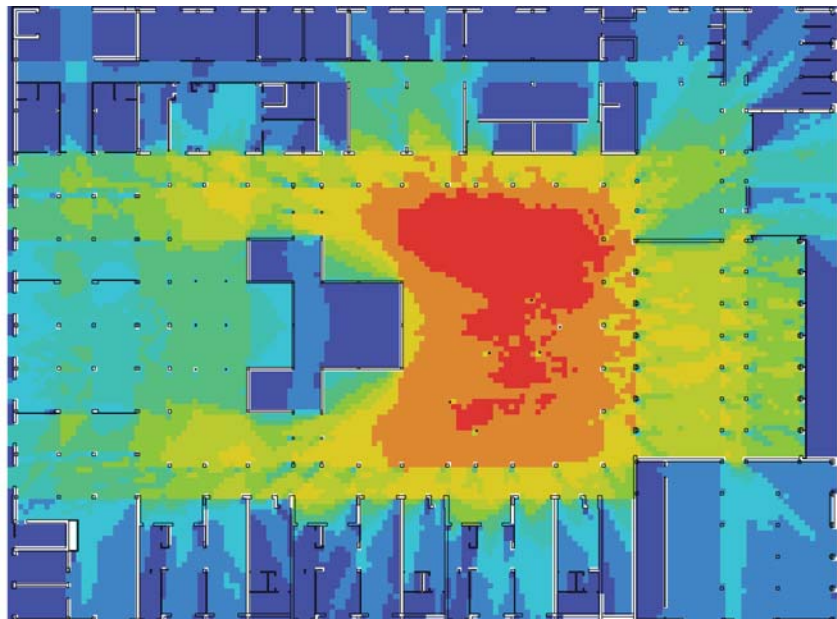
A.31: Design Ground Floor Visual Integration Map
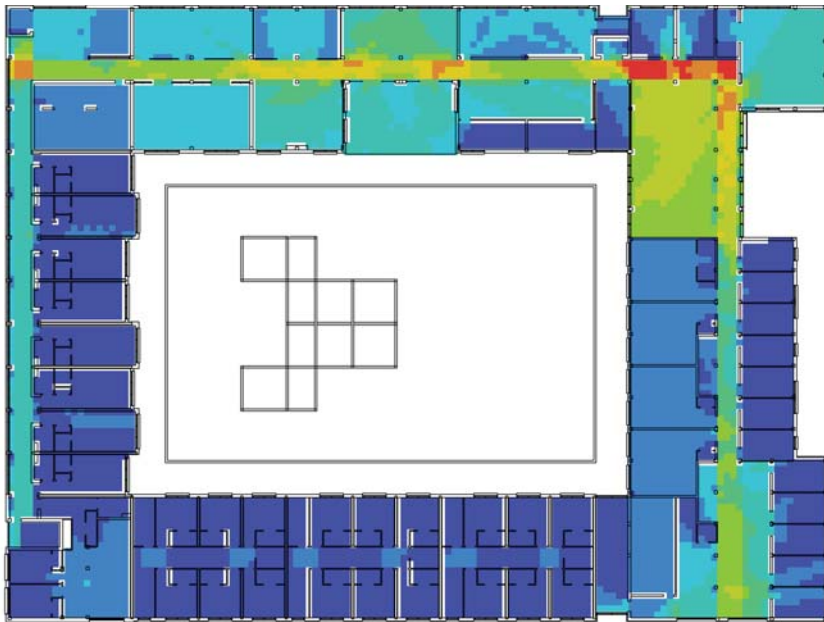
A.32: Design Second Floor Visual Integration Map

A.33: Design Fourth Floor Visual Integration Map
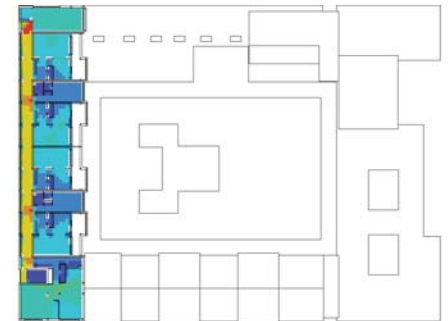
A.34: Design Fifth Floor Visual Integration Map

A.35: Design Sixth Floor Visual Integration Map

have some but limited visual connection with the courtyard, allowing for some privacy in the residential units. However, the communal patient spaces are much more visually connected with the courtyard. This is true on the upper floors; however, in some of the key hotspots, patient access isn't possible for example, the lobby space open to the floor below. The corridors on the ground floor remain very visual compared to the spaces that exit into them. On the ground and upper floors, the communal patient spaces on either side of the corridor allow much more visual access than the residential suites. This works well with the theory proposed, that people will gather in areas they can see, so being able to see the spaces before arriving should mean that patients will feel comfortable gathering there. As well, since those areas also provide greater visual access to the surrounding area, patients should be able to see what transpires around them, leading to feeling more secure in their surroundings. This is important

A.36: Design Third Floor Visual Integration Map

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A.37: Design Connectivity Diagram for the Ground Floor
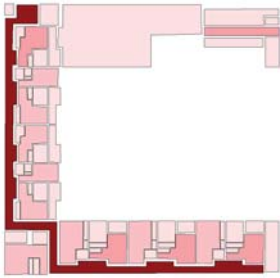
A.38: Design Connectivity Diagram for the Third Floor
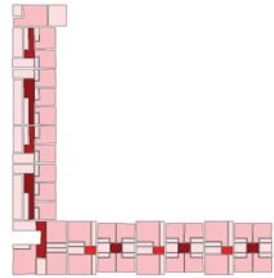
A.39: Design Connectivity Diagram for the Fourth Floor
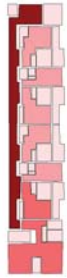
A.40: Design Connectivity Diagram for the Fifth Floor
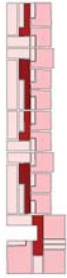
A.41: Design Connectivity Diagram for the Sixth Floor

A.42: Design Connectivity Diagram for the Second Floor
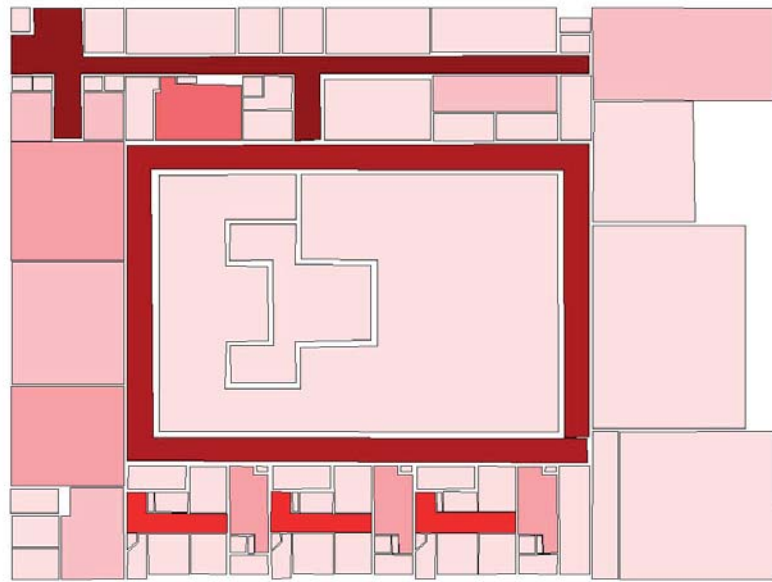
in establishing a territory for a patient: being comfortable in their surroundings grounds them where they are, and helps set a framework for building up the sense of self.

On the upper floors, visual spaces occur at the entrances to units at corridor, or within the hallways of individual units. This makes sense, since it is from these locations in particular that patients can see who is coming and going on their floors and within their own apartments. Deciphering the visual barriers in the visual and axial analysis takes some interpretation. For example, a room like the patient dining room is surrounded by screens that allow for some visual connection, but also frames the space as a wall or window does. Should visual analysis take into account the physical barriers that prevent a person or patient

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A.43: Design Integration Diagram for the Ground Floor
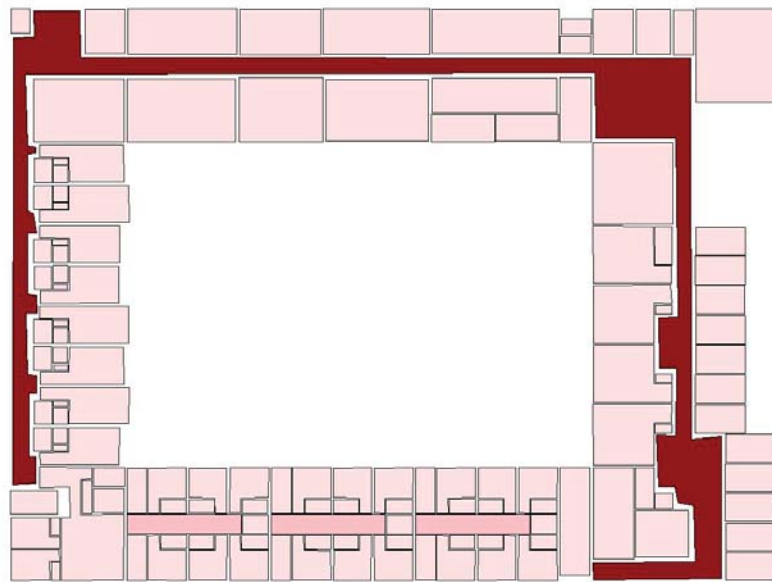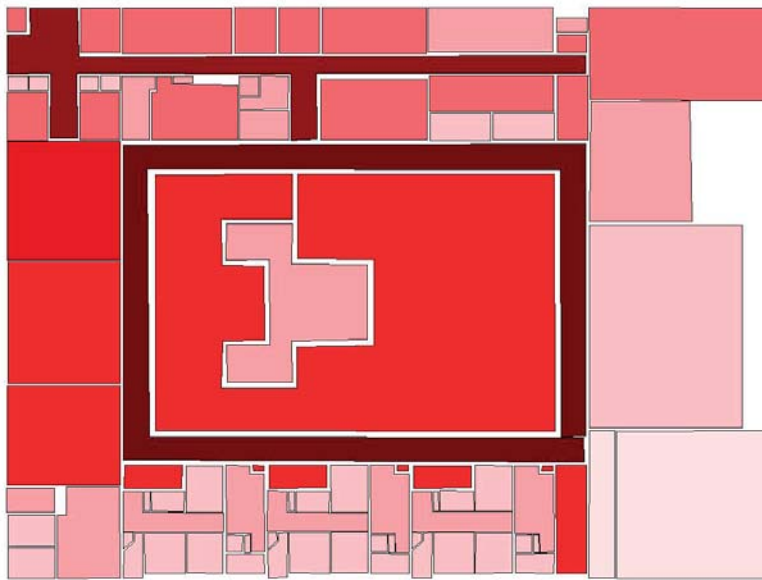
A.44 Design Integration Diagram for the Third Floor

from accessing the space, or show that there is no visual barrier?

The connectivity diagrams of the design exploration reveal a few things missed in the visual integration maps. The first is that the most connected spaces are the circulation spaces, since many of communal and residential areas enter and exit off the corridors. For example, it is clear that on the second floor, the circulation space is the most connected space on the floor plan, since all rooms and suites exit onto the circulation route. However, on the ground floor, it is clear that the fitness areas are very connected since they are rooms grouped together, and lead from one to the other. Unfortunately, it can be very difficult to evaluate this model based on the architecture that I have set up. A certain interpretation of the rules must take place when delineating spaces. Rooms connected by
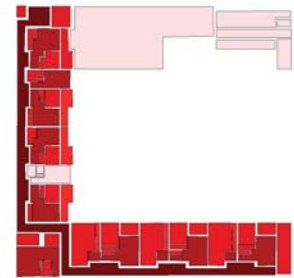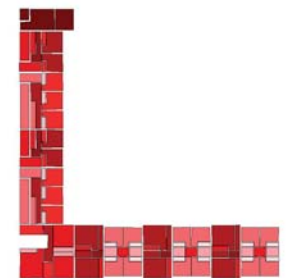
A.45: Design Integration Diagram for the Fourth Floor

A.46: Design Integration Diagram for the Fifth Floor

A.47: Design Integration Diagram for the Sixth Floor
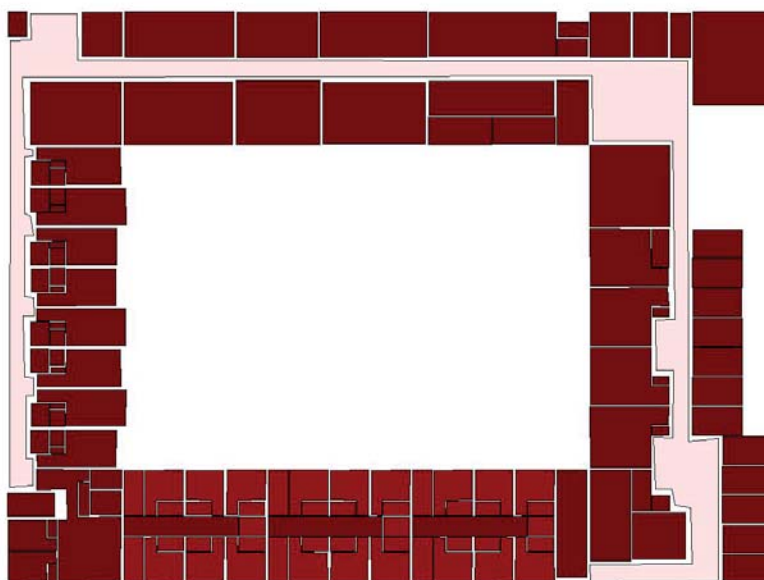
A.48: Design Integration Diagram for the Second Floor

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A.49: Design Connectivity and Integration Chart for the Ground Floor
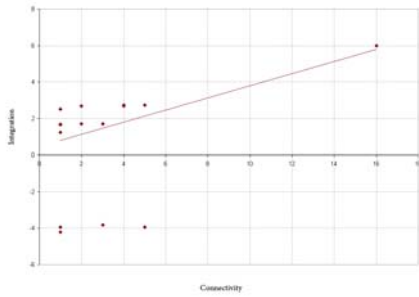
A.50: Design Connectivity and Integration Chart for the Third Floor
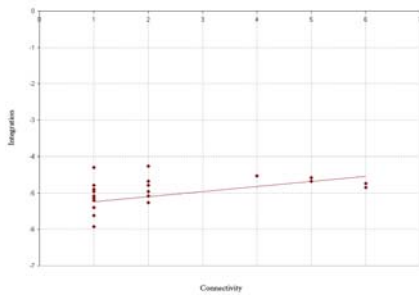
A.51: Design Connectivity and Integration Chart for the Fourth Floor
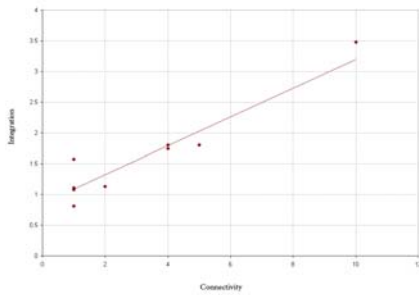
A.52: Design Connectivity and Integration Chart for the Fifth Floor
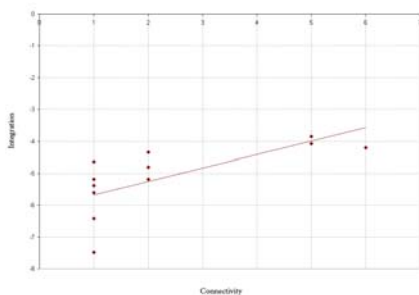
A.53: Design Connectivity and Integration Chart for the Sixth Floor

A.54: Design Connectivity and Integration Chart for the Second Floor; this differs greatly from the ground floor due to the corridor being far more integrated than any tother space
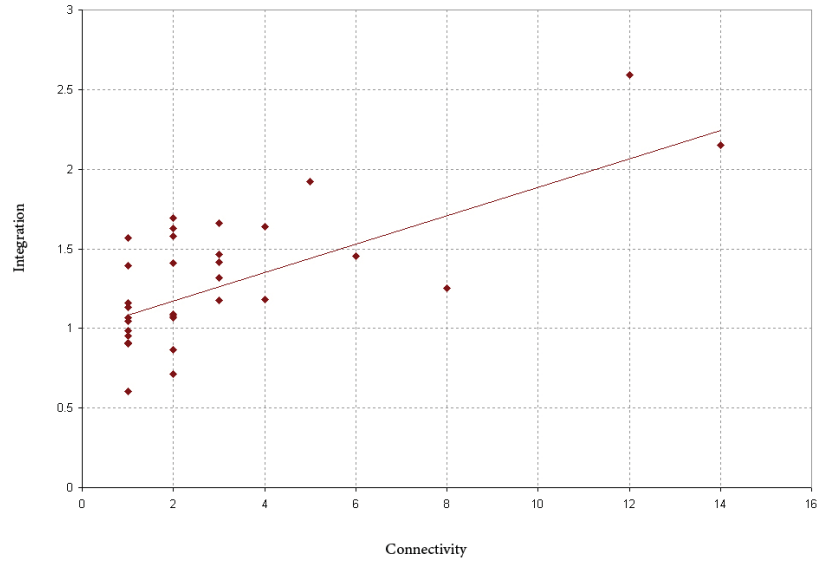
doors or small openings are easier to segregate, but how does a space like the active lounge get delineated? It has no wall between it and the corridor, but does contain bookshelves that work to separate the spatial activities that the two spaces contain. Also, does the visual connection to the space count if a person cannot access it directly through the path with which they can see it?

The integration of the spaces lends itself much more to analysis in the design exploration of this thesis. While on the second floor, the corridor requires the least amount of transition points to access any particular space, the remainder of the spaces are all integrated at approximately the same rate. On the other floors however, the circulation routes are integrated into the design much more than many of the other communal spaces. This implies that people will likely congregate in these spaces, and therefore informal gathering spaces along the corridor become necessary. If in the second floor, the communal spaces

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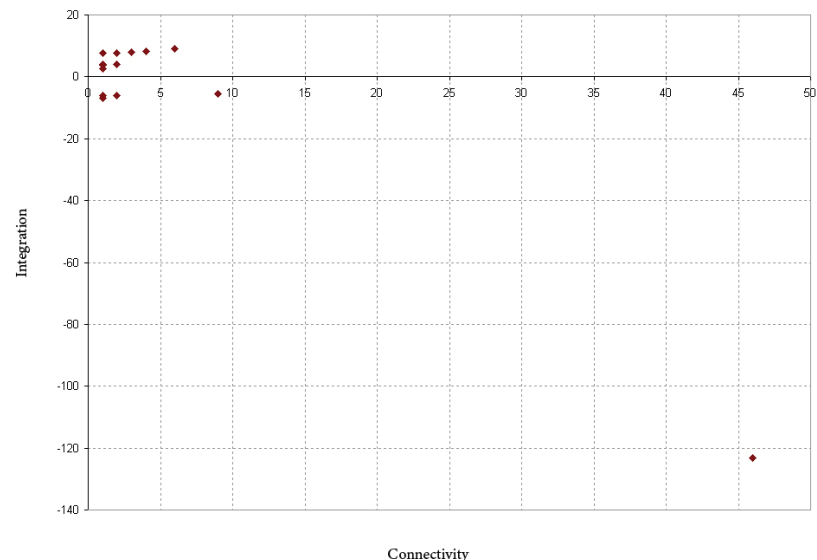
branching off the corridor were not listed as separate, perhaps the corridor would seem far more integrated than it does now. On the upper residential floors, the corridors are the most integrated in the design, which makes sense since everything exits into them.

With the exception of the second floor, which has no clear intelligibility, the majority of spaces increase their integration as their connectivity increases. Unfortunately, this is not as consistent a slope as would be expected. Many of the spaces scatter at the lower connectivity level, with a wide variety of integration. Likely, the reason behind the inconsistent data on the second floor is disconnected corridor on the west side of the building. The units on the west wing are not connected to each other or to the rest of the building, but are connected to the ground floor, which accounts for some data discrepancies. It can therefore be concluded that the second floor is not as intelligible as it could be.

It is difficult to tell if the integration and connectivity could be improved simply by changing the interpretation of spaces to include areas like the active lounge, of if showing it as a separate space is more valuable. If indicating it as a separate space, a strategy for allowing spaces to be more integrated may be to use the Atacama model, which has central corridors for access, while also transitioning seamlessly from one space to another, guiding the visitor visually around the guest common spaces. In this way, patients would have more than one route to choose in a building. The ground floor of the design exploration favours that solution, showing a central courtyard circulation space, while still enabling paths through spaces like the library and fitness areas.

7.0   Space Syntax Conclusion

Space Syntax software can be a useful tool in determining the areas patients will gather. In the Axwoman software, the most connected, integrated and most correlated spaces tend to be the most frequently travelled and used. In many cases, these are the corridors, though in some courtyard scenarios, these tend to be the courtyards themselves. Since people can see the most in terms of distance and in terms of choice, many people will gather in these locations, both formally and informally.

Depthmap software illustrates similar ideas, at a scale smaller than the room. It highlights zones where the most visual cues take place based on how integrated each grid point is to the rest of the floor plan. The hypothesis is that these zones will be the most frequented of all the spaces because it is easiest to see and see from these spaces. From there axial maps can be created that illustrate the actual views throughout the plan, though it can be difficult with some computers without enough memory to process the information.

What has been discovered through the added analysis in this appendix is that in courtyard buildings, the courtyards tend to take away from the visual integration of the corridors in plan. For obvious reasons, courtyards are the most integrated spaces within a building; they are connected to the most spaces visually and physically. The corridors themselves become the next most integrated spaces in the floor plan, and they are drastically more integrated than many of the spaces feed into them. The most intelligible buildings are often the u-shaped buildings, rather than the courtyard buildings, since the corridors become more important in transitioning from one space to another. For example, in the second floor, there is no differentiation between the patient common spaces. They are all equally integrated to the corridor. To obtain a more fluid integration of spaces, and accurate pattern of use for the design exploration, eliminating the corridor may seem more appropriate, especially in the second floor communal patient spaces. This would likely further identify the spaces patients will feel most comfortable occupying and differentiate between those used more frequently than others. This pattern might be similar to the design of the fitness and library spaces on the ground floor, where one space flows into the next in a fluid motion. In a redesign of this facility, this should be taken into account. However, given the nature of some patients, who may be cognitively impaired, the choice was made to promote a distinct corridor visually identifiable from the spaces on either side.

Ideally, an axial map of each floor would be constructed, but computer constraints have so far eliminated that possibility from this thesis.

(Endnotes)
1   Hillier, Bill: *Space is the Machine*; 129
2   Hillier, Bill: *Space is the Machine*; 129
3   Turner, Alasdair: *Depthmap 4: A Researcher's Handbook*; 1 www.vr.ucl.ac.uk/
           depthmap/depthmap4.pdf
4   Hillier, Bill: *Space is the Machine*, 129
5   Hillier, Bill: *Space is the Machine*, 129
6   Seebohm, Thomas: Lecture, February 2006
7   Hillier, Bill: *Space is the Machine*; 132
8   Turner, Alasdair: *Depthmap 4: A Researcher's Handbook*; 2 www.vr.ucl.ac.uk/
           depthmap/depthmap4.pdf
9   Turner, Alasdair: *Depthmap 4: A Researcher's Handbook*; 2 www.vr.ucl.ac.uk/
           depthmap/depthmap4.pdf

Appendix B: 6-Bed Unit Upper Floor

This upper floor of the 6-bed unit is used here as an example of the possibility for varying room configurations. Bedrooms are organized to provide one full washroom for every two patients, and each bedroom provides ample closet space and an alcove to place either their bed or their other furniture. Patients can arrange their furniture in any manner that suits them: this may be to place the bed where the patient can see anyone walking down the corridor, or to give the bed shelter from any visual distraction. While the bedrooms don't all face east to give morning light to the patients, the ground floor common spaces do.

B.1: 6-Bed Unit Second Floor Room Configuration

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