

**A COMPLEMENTARY AND ALTERNATIVE HEALTHCARE CENTRE:
ADAPTIVE REUSE
OF THE
DOROTHY WOOD BUILDING
WINNIPEG, MANITOBA, CANADA**

By
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A Practicum
Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements for the Degree of

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Faculty of Architecture
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FACULTY OF GRADUATE STUDIES

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MASTER OF INTERIOR DESIGN

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ABSTRACT

Stress is an outcome generated from today's contemporary pace of life. Due to an increase in stress and stress related problems within Canadian society, studies have been undertaken to combat, prevent and treat or reduce stress within our daily lives. One of the emerging trends used to combat against stress is the use of Complementary and Alternative Medicine (CAM) practices. Our society is beginning to turn to Complementary and Alternative Health Care practices (CAH) as an answer to not only assist recovery or improve illness, but also to increase wellness and reduce everyday stress. Therefore, CAH may be used as a reactive choice to an existing illness or ailment, or as a proactive and preventative approach to managing stress and health. Given these issues, the purpose of the practicum is to create a centre which will allow people of Winnipeg to both proactively and reactively manage their health and wellness. The building that will house this CAH centre is the Dorothy Wood Building. It is 33,250 square feet and is located within the Grace General Hospital complex in Winnipeg, Manitoba Canada.

Through the completion of a literature and precedent review as well as the development of the design programme, it is proposed that the building be partially reused as a CAH centre for the primary use of Baby Boomers residing in Winnipeg. The outcome of this research-based design proposal is a CAH centre that guides an experiential journey towards holism.



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1.0 INTRODUCTION AND PROJECT OVERVIEW

1.1 PROJECT OVERVIEW

The objective of this practicum is to develop a research-based design proposal for a Complementary and Alternative Healthcare (CAH) Centre within the Grace General Hospital complex in Winnipeg, Manitoba, Canada. The centre will allow people of Winnipeg to both proactively and reactively manage their health and wellness. This practicum explores how the topic of wellness has become an important concept to individuals combating stress, and how holism can assist individuals in reaching wellness.

In particular, stress and health have become increasingly important to the Baby Boomer generation across societies. The Baby Boomer generation represents the large population of people born between 1946 and 1964. Occupying one third of all people in Canada and the United States, the Baby Boomers represent one of the largest demographic categories. Today, people of this generation often find themselves stuck with children still living at home and caring for their aging parents. A typical complaint of this generation is the feeling of being pushed and pulled by conflicting responsibilities with little time for themselves (Stewart-Pollack & Menconi, 2005). Their lives require juggling and they report high levels of stress.

Now that this group is aging, designers are beginning to design and build a greater number of buildings to suit this demographic category (Gallup, 1999). A large percentage of these buildings include healthcare facilities and wellness centres. It seems clear that

the design of interior spaces where health and wellness is promoted is becoming not only more desired, but needed, by these Baby Boomers.

The design of a healthcare environment that focuses on Complementary and Alternative Medicine (CAM) requires that many factors be taken into account. First, the underlying philosophies and ancient practices of CAH must be considered: the powerful relationship of mind, body and spirit; the significance of holism; the emphasis on the natural; and the journey one follows to ultimate wellness. Second, an exploration into what is occurring in healthcare environments today must be addressed in order to understand issues that could affect the proposed design. Today, issues such as privacy, choice and control have significant impacts on the design of healthcare settings (Stewart-Pollack & Menconi, 2005). Providing opportunities for social support by accommodating spaces for friends and family members, has affected the layout and design of healthcare spaces. Third, connecting people to nature with views to the outdoors, interior gardens and water elements has proven to be restorative within healthcare environments (Kaplan & Kaplan, 1989; Ulrich, 2000). Fourth, an environmental design that provides opportunities for its users to experience feelings of peace, reflection, contemplation and spiritual connection must be explored. These characteristics will result in a psychologically supportive environment.

1.2 STRESS

Although stress can be defined in a number of ways, here it is defined as the process by which a person responds psychologically, physiologically and often behaviorally, to a situation that is demanding or threatens wellness (Ulrich, 1993). This tends to occur more and more within society as people feel greater pressure within their daily lives. Though stress, at minimal levels, can be positive and improve human performance, for the purpose of this practicum, only negative stress will be addressed. Negative stress must be mitigated before it has detrimental effects on psychological wellness and physical health.

As Gerlach-Spriggs (1998) and Ulrich (1993) state, we have known for many years that stress affects every organ in our system – from the heightened arousal of our senses, to elevation in blood pressure, increases in heart rate, increase in muscle tension and changes in brain wave function. These types of physiological responses prepare individuals for coping with stress. According to a poll conducted by Ipsos-Reid for CTV and The Globe and Mail (2002), the often cited causes of stress were jobs or work (43%), finances (39%), children (10%), health (7%), school (5%) and even driving/traffic (3%). As for the pace of modern life, four in ten Canadians admitted that they feel stressed because the world around them is changing too quickly.

Throughout much of the scientific research, outdoor recreation in the wilderness and/or in urban centres has been named as one of the most important psychological benefits for mitigation of stress (Kaplan & Kaplan, 1989). Although the words “recovery” and “restoration” are commonly used interchangeably when referring to stress, restoration is a broader concept that is not limited to stress recovery situations but

can be effective in mitigating against stress (Ulrich, 1993). Further inquiry into the topic of restoration will be reviewed in the literature section.

1.3 TRANSITION IN HEALTHCARE

Within the Canadian healthcare system changes are being made as our society is beginning to realize the importance of mitigating against stress. The three ‘buzz’ words in current healthcare practice are *wellness*, *integration* and *preventative* (Archilles, 1999). With respect to *wellness*, it is believed that if patients are educated in wellness (nutrition, diet, fitness and healthy lifestyles), then they will live healthier lives and need less access to healthcare, which will put less strain on the government (Gallup, 1999). Therefore, hospitals are now attaching health clubs or ‘healthplexes’ or ‘wellness centres,’ and referring patients to such centres for recovery (Gallup). These healthplexes are only one of several examples that illustrate that a change in the design of healthcare environments is occurring. From making hospital rooms more like bedrooms to allotting space for more social interaction among patients, the interior environment of healthcare is changing. One such example is the Riverview Health Centre in Winnipeg. Their centre’s slogan is, “Riverview Health Centre – the hospital that feels like home” (Riverview Health Centre, 2004). This homelike atmosphere is exemplified through the use of color, textures, comfortable furnishings and artwork that is typically found in home environments.

Integration of conventional medicine and alternative medicine practices is becoming more and more common among practitioners. In a study by Ramsay and Walker (1999) the authors found that a substantial portion of what people described as alternative therapies were provided by their conventional medical doctors. Respondents

reported that 23% of medical doctors gave them herbal therapies, 35% relaxation techniques, 17% homeopathy, and 24% acupuncture. Ramsay and Walker also reported that this prescription of alternative therapies by doctors who once used only conventional practices is becoming more and more common. Further, among conventional and alternative practitioners, the sharing of information, patient referral and using a combination of therapies has increased. This growing relationship between conventional and alternative medicine is making the boundary between these two professions less pronounced.

The *prevention* of illness is now being promoted by the conventional healthcare system. The healthcare system has always had a *reactive* approach to illness yet the federal government is promoting the prevention of illness to reduce the amount of patients who need to be treated in hospital environments (Tatar & Verhoef, 2001). This will not only reduce government spending in healthcare but also promote and maintain a healthier Canadian population.

1.4 COMPLEMENTARY AND ALTERNATIVE HEALTHCARE

1.4.1 The Emergence of CAH

The increase in the practice of CAH has occurred substantially within the past ten years (Achilles, 2001). The terms “alternative therapy” and “complementary care” have become part of everyday language when referring to health-related practices and therapies. The definition of CAH has been debated over the years, but can be defined as:

a broad domain of healing resources that encompass all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the politically dominant health system of a particular society or culture in a given historical period. (Office of Alternative Medicine Research Methodology Conference, Cited in Achilles, 2001, p. 12)

CAH includes acupuncture, massage therapy, homeopathy or naturopathy, relaxation therapy and herbal remedies to name a few (see Appendix 6.3 for explanations). Along with conventional medicine, these therapies and treatments are now being used more often in clinics and hospitals. Most importantly, as a special report in Consumer Reports (January, 2007) stated, these therapies are being tested in clinical trials, and reliable evidence about safety and effectiveness is starting to emerge. With more and more research being conducted, and positive findings being published, it is likely that more people will be willing to use CAH.

According to Statistics Canada's, Canadian Community Health Survey (2003) an average of 20% of the Canadian population, between the ages of 40 and 65, has had contact with alternative healthcare providers. In a study conducted at the Beth Israel

Medical Centre in Boston, Dr. David Eisenberg and his colleague's (1998) surveyed 2,055 people by telephone and found that 42% of people who used alternative therapy used it to treat an existing illness, while 58% attributed its use to the prevention of an illness and/or health maintenance. This interest in alternative therapy has been fueled by Internet marketing, dissatisfaction with mainstream medicine, and the desire of patients to be actively involved in their own healthcare and to reduce tension and increase wellness (Eisenberg et al. 1998).

Tataryn and Verhoef (2001), explain that the people who choose to use CAH over conventional healthcare report that they do so because: a) CAH works with the body's own self-healing mechanisms; b) the patient develops a relationship between mind, body and spirit; c) the patient is an active participant in CAH; and d) CAH is holistic. Further, with more of the population recognizing the importance of self-care, it seems possible that the number of patients who need to be treated within hospitals could decrease.

1.4.2 The Holistic Approach of CAH

As a holistic approach, CAH encompasses a wide range of benefits. Though CAH modalities, treatments and therapies vary greatly, the foundation of all treatments focuses on the principle of holism. Holism comes from the Greek word meaning all, entire and total (Yuan et al., 2006). It was first termed by the South African Scholar Jan Christian Smuts from the Greek word *holos*, which means whole (Achilles, 2001). Holism is a system where the whole is not only greater than the sum of the parts, but the parts are related in such a way that their functioning is conditioned by their relationship to each other.

In CAH, a holistic approach recognizes that a multi-faceted approach contributes to achieving and maintaining good health. Good health involves more than just a focus upon the physical body. Attention must be paid to aspects such as the emotional/mental and spiritual well-being of a person as well (Barnes P, Powell-Griner E, McFann K, Nahin R., 2002). Holistic health refers to a philosophy of medical care which views various aspects (physical, mental and spiritual) of life as closely interconnected and equally important approaches to treatment. If a part of the system is not functioning properly, then other parts of the system will be compromised also. Therefore, CAH is founded on the principle that in order for a person to achieve full health and well-being, concentration must be placed on all elements that make up the whole (Barnes et al.).

Holistic health is not, itself, a method of treatment, but instead is an approach to how treatment should be applied. The traditional medical approach to medical care is to correct physical symptoms using standardized methods such as perscription drugs or surgery. In this approach, the patient is only passively involved (Ramsay & Walker, 1999). In contrast, holistic approaches to health are wide and varied. When the concepts of holistic health are put into practice within the healthcare system, therapy takes on a new dimension; traditional medical care is expanded to encompass a broad spectrum of therapies coordinated to meet the totality of a particular individual (Ramsay & Walker). The focus is no longer on just the disease, as explained above, but on the whole person. The role of the patient also changes in learning how choices, actions and attitudes affect his or her condition, and how one can be an active participant in the healing process (Interview with a Homeopath, 2007).



INVESTIGATION METHODS

People within Canadian society have heightened their efforts to combat negative stress and increase health and wellness, which may in turn increase Quality of Life. These efforts have subsequently led to greater use of Complementary and Alternative Health Care (CAH) over the last ten years (Ulrich, 2000). To investigate this relationship further, literature was reviewed, precedent analyses were completed, and face-to-face interviews were conducted.

2.1 Literature Review

Negative stress can lead to ill effects on an individual's physical health and psychological well-being. To alleviate stress, people are turning to CAH for relief, to increase wellness, and to proactively manage their health. Through the use of CAH practices, people strive to achieve wellness which may subsequently contribute to a high quality of life. Subtopics related to the concept of wellness include: a) privacy, b) the restorative benefits of nature and c) the theory of supportive design. The adoption of a holistic model of care is necessary to create a strong foundation for the caring of individuals within a CAH centre within this proposed CAH centre. The literature review provides a summary of models of care that exist, and those that are emerging, within healthcare environments.

2.1.1 WELLNESS

2.1.1.1 Wellness Theory

The field of healthcare has undergone a transformation during the past 50 years, from an emphasis on the importance of physical health to a more balanced perspective that now promotes the achievement of wellness through the pursuit of holistic health (Hawks, 1994). Though the word “wellness” has been present in the field of healthcare for some time, the concept of wellness is considered an emerging topic among the majority of the public today (Purves, 2002). In 1947, the World Health Organization (1995) defined wellness as, “physical, mental and social well-being, not merely the absence of disease”(p. 347). In 1961, Halbert L. Dunn, known as the creator of the modern wellness movement, defined wellness as “an integrated method of functioning, which is oriented to maximizing the potential of which an individual is capable” (p. 4). Dunn also coined the term, “high-level wellness,” where he described wellness not as an end or goal but as an ongoing journey of self-creation, leading to ever-higher levels of functioning. With the idea of wellness growing over time, today, the Canadian Health Network (2005) explains the theory as:

more than just not being sick: it is a positive state of health. The concept of wellness refers to a level of physical and emotional harmony that affords maximum resistance to disease and supports a sustained living of joy. Wellness involves the health of the whole person: mind, body and spirit. It is believed that positive wellness provides the most effective protection against disease by enabling you to draw upon your inner healing abilities. (para. 2)

Achieving wellness – where an individual’s health has reached a level of physical and emotional harmony – can be influenced by the concepts of restoration in the form of nature, supportive design and privacy.

2.1.1.2 Privacy

Privacy and Wellness

The ability to choose to achieve a desired level of privacy is therapeutic because it provides an opportunity for destabilization or system maintenance (Stewart-Pollack & Menconi, 2005). Privacy allows for one to remove themselves from a specific environment, whereby preventing excessive stimulation, allowing and enforcing this therapeutic effect. System maintenance is associated with wellness and similarly, the desire for wellness is described as a strong underlying motive for seeking privacy (Stewart-Pollack & Menconi).

Privacy theorist Altman defines privacy as both a process by which we control access to ourselves or a group and a condition of selective distance or isolation. Further, he reveals the need for privacy is universal, where privacy needs are expressed and recognized differently according to culture (Stewart-Pollack & Menconi, 2005). Because of cultural differences, as well as individual and personal preferences, privacy theorists have researched many types of privacy throughout time and across cultures related to the built environment.

People seek privacy for a variety of reasons: when we are ill, sad, tired and anxious; we need it for spiritual, intellectual, creative and physical development; we need it when we are stressed, we need it to rejuvenate, to contemplate and for emotional

release (Stewart-Pollack & Menconi, 2005). The benefits of receiving privacy are many. Central to the benefits of privacy is well-being, but also include: increased QOL, restoration, rejuvenation, creativity, autonomy and recovery (Altman,1975; Stewart-Pollack & Menconi). As one of the key concepts of privacy, choice and control are essential to our overall well-being within the built environment.

Privacy and Environment

Environments that allow for privacy to occur, provide a refuge that has been shown to promote healing by providing rest, recovery and contemplation (Pedersen, 1997). Privacy does not mean removing oneself from the presence of others in the environment. Instead, it involves *controlling* the amount of contact with others in the environment. Therefore, privacy may be viewed as a boundary control process. As Pedersen states, “this involves both restricting and seeking distraction to achieve a desired degree of access to the self by others at a particular time and in a given set of circumstances” (p. 146). Therefore, the design of built environment can allow individuals to achieve their desired degree of privacy by studying the different *types* of privacy individuals seek (see Table 1, p.21). Developed by Pedersen, *solitude* allows an individual to retreat, where they are not seen or heard. For example, going to one’s bedroom and closing the door permits a person to be undisturbed. *Isolation* involves using physical distance to separate oneself from others to obtain privacy. Going for a drive in a car alone would be an example. *Intimacy with family and friends* allows an individual to be alone with the people closest to them, for which they can acquire social support. The intent is to reduce contact with outsiders while increasing interaction with

that group. *Reserve* is keeping one's feelings and ideas to one's self rather than expressing them openly to other people. It is a form of verbal disclosure of personal information from others, especially strangers. Lastly, *anonymity* allows an individual to experience the feeling of being lost in a crowd. Going to a concert alone or shopping in a mall alone would be examples. These types of privacy can be achieved by taking into account individuals' social and psychological needs in the design of the built environment.

The experience an individual has within an environment has a great deal of influence on the way the individual will act and how the individual will feel in a certain environment. This subsequently affects the individual's physical and psychological health and wellness. Environmental stress may occur in an environment where there is a lack of control over levels and types of stimuli or when there is rapid change within the environment (Stewart-Pollack & Menconi, 2005). Many studies have been carried out, which investigate the relationship between individuals, the environment and the influence that privacy can have on that relationship.

Through research by such environmental psychologists such as Roger Ulrich (2000) it has been found that it is crucial to design spaces that allow people to feel comfortable; to be alone or among friends within healthcare environments. Ulrich states that not only is privacy crucial at attempting to achieve comfort in an environment, but that having contact with nature will also calm the mind, reduce tension, stress and anxiety.

2.1.1.3 Benefits of Nature

The benefits of being close to, or experiencing nature have long been recognized and studied. For years, artists have recognized the power of retreating to nature for creative or inspiration purposes or to provide for spiritual renewal (Stewart-Pollack & Menconi, 2005). For over 20 years, Kaplan and Kaplan (1989) have researched the psychological role nature plays on individual lives. The question driving their research over this period asks, “Is the effect of nature on people as powerful as it intuitively seems to be?” (Kaplan & Kaplan, p.inside cover). They have found that yes, nature is a very powerful restorative tool affecting the human psyche. Further, Marcus and Barnes (1999) have also conducted many studies including one that questioned where people choose to go when they are stressed. Overall, 95% of the respondents reported a positive mood after spending time outdoors, from feeling anxious, depressed and stressed to calm and more balanced. Similarly, Ulrich (1987) carried out a study of gallbladder patients over a ten-year period with the same doctors and the same treatments. Six of the patient’s rooms overlooked a park with trees while the other six patients faced a brick wall. His study showed that the patients connected to nature had fewer post-surgical complications, needed less medication and had a shorter hospital stay than those facing the wall.

As shown above, published research within environmental psychology suggests that time spent in contact with the natural environment does positively affect psychological and physiological well-being – more focused attention, emotion that is anchored, relaxation, stress reduction and clearing of the mind (Kaplan & Kaplan, 1989; Pedretti & Soren, 2006; Ulrich, 2006). Most importantly, the natural environment allows for restoration.

Restoration from Nature

At the end of a busy work week or when pressures of everyday life swell to a critical point, individuals often feel frazzled, worn out and ready for respite. These individuals, then, in turn commonly express this fatigue by expressing they have to “escape” or “get away from it all”. This is what Kaplan and Kaplan (1989) term “mental fatigue”. Kaplan and Kaplan explain that mental fatigue is brought on by difficulty focusing or attempting to pay attention to something while expending great effort in doing so. They hypothesize that when an individual experiences mental fatigue, the underlying cause is “directed attention” - forcing ones self to pay attention to something, which requires a great deal of effort. As individuals have found themselves spending longer hours perusing one activity (work, for example) directed attention has become essential for human functioning in the modern world (Kaplan & Kaplan). Further, experiencing fatigue reduces an individual’s ability to adapt to stress (Olsen, 2007). Therefore, mental fatigue is the result of an overworked capacity for directed attention and subsequently, recovery is sought.

Recovery occurs through the process of restoration. “Restoration” is defined by Hartig (2005) as, “the process of renewing physical, psychological and social capabilities diminished in ongoing efforts to meet adaptive demands” (p.2). Though recovery can occur in a variety of environments, ideally, achieving this requires environments and activities that make minimal demands on directed attention.

The concept of restorative environments emphasizes the recovery aspects of places, which allows people to be distracted, to relax, to free their minds and to distance themselves from ordinary aspects of life (Pedretti & Soren, 2006) (see Table 2, p. 22). In

a focus group organized by Dr. Patricia Novick at Harvard University, nurses were asked to describe a restorative environment (Maddox & Mah, 2006). The nurses stated that such an environment is one that feels totally unlike a workspace in that it facilitates reading, meditation, relaxation, and other short-term activities that restore a sense of calmness and focus.

Many researchers, across a variety of disciplines, state that it is *nature* that provides the highest level of restoration for individuals (Hartig, 2005; Kaplan & Kaplan, 1989; Ulrich, 2006). Nature also assists in increasing stress recovery in individuals. Landscape Architect and Planner Frederick Law Olmsted wrote specifically about his belief that viewing nature could produce stress recovery and lead to restored mental performance or recovery from mental fatigue (Kellert, 1993). Ulrich & Parsens (1992) state that stress recovery has been found to be more rapid when individuals view nature settings on video tapes compared to viewing other scenes such as urban settings for example. They found a difference in individuals' blood pressure, skin conductance and muscle tension. Further, other findings have suggested that viewing unthreatening natural landscapes tends to promote faster and more complete restoration from stress than does viewing landscapes that are free of nature. These studies suggest that short-term exposure to natural scenes can promote recovery from mild and even acute stress. Research by Kaplan and Kaplan indicate that aesthetic, natural settings not only give pleasure and are satisfying to experience but also support human functioning, provide a context in which sensory information can be managed and provide recovery from stress and mental fatigue. It is these characteristics of nature that make it a restorative element. For this reason, many researchers believe nature is not only beneficial, because it is restorative,

but because it is necessary. Below, four characteristics of restorative settings, developed by Kaplan and Kaplan are described.

Being Away

Many individuals seeking a restorative experience speak of needing to “get away” or “escape”. These expressions, mentioned previously, are also commonly used when one experiences mental fatigue. Attempting to recover from mental fatigue usually involves removing oneself from the source of the fatigue. This can be carried out physically, where one physically removes themselves from one environment to another – or conceptually, where one allows their mind to take them somewhere else, such as in a day dream. Kaplan and Kaplan (1989) explain three different types of “getting away” in further detail. One involves “getting away” from something such as a distraction. This may include a quiet country farm or even a quiet room in a home without a television where one physically experiences a new or different environment. Getting away from content may include putting aside work one normally carries out and escaping anything that may remind that individual of the particular content (Kaplan & Kaplan). Finally, getting away may involve taking a rest from pursuing conceptual or mental effort of any kind. A combination of the above three types of getting away yields the strongest restorative effect for an individual.

Extent

Extent describes how content and structure can occupy the mind for a period of time. The environment must engage the mind by providing enough to see and to think about in order to support exploration (Kaplan & Kaplan, 1989; Pedretti & Soren, 2006). Individuals often describe this as being “in a whole different world”. This feeling can arise in many contexts such as at the theatre and it is also present in the design of some museums, where the environment is dressed and presented with the intention of taking individuals back in time so they can experience living in the past (Kaplan & Kaplan). There must be sufficient connectedness to allow oneself to build a mental picture and sufficient scope to make formulating the picture in one’s head worthwhile (Kaplan & Kaplan). Scope allows one to feel as though they are in a different world by creating an environment large enough to explore.

Fascination

Fascination relates to a setting or to objects in a setting that can hold one’s attention without effort. This is what allows for involuntary attention to occur. Kaplan & Kaplan (1989) describe that fascination is important to the restorative experience because it attracts people and keeps them from getting bored. More importantly, it allows people to function without having to use directed attention – the cause of mental fatigue.

Within nature, many individuals report feeling fascinated by viewing content and processes of nature (Kaplan & Kaplan, 1989). This naturalistic value encompasses a sense of awe and wonder, which is derived from an intimate experience of nature’s diversity and complexity (Kaplan & Kaplan). Individuals are also attracted to landscapes

and settings because they allow time for reflection to occur (Pedretti & Soren, 2006). Although Kaplan and Kaplan state that natural environments are restorative, healthcare spaces must also act as places of restoration.

Compatibility

Compatibility refers to the match or fit between personal purposes or inclinations and the kinds of activities encouraged and supported by the setting (Pedretti & Soren, 2006). If an individual's purposes fit the demands of the environment, and the environmental patterns that fascinate also provide the information needed for action, compatibility is promoted (Kaplan & Kaplan, 1989). The concept of compatibility is seen in a study conducted by Talbot and Kaplan in 1986 (Sited in Kaplan & Kaplan) where participants reported a "sense of oneness" with the environment while spending time in nature. The participants felt as if they, themselves were not just visitors of the environment, but their personal purposes of being in that environment were supported by the environment. They could carry out the activities they needed to with ease. By this one statement, it is evident that the environment supported and met the needs of the participants.

The four characteristics of restorative settings: being away, extent, fascination and compatibility aim to support human functioning within the environment both physically, psychologically and spiritually. These types of environments are further supported in Roger Ulrich's Theory of Supportive Design.

2.1.1.4 Theory of Supportive Design

Developed by Ulrich in the 1990's, the theory of supportive design investigates how experiences with environments affect our physical and psychological well-being (Stewart-Pollack & Menconi, 2005). Ulrich's focus specifically lies within the design of healthcare environments. He believes that interior designers can promote wellness by creating physical surroundings that are "psychologically supportive" (Ulrich, 2000).

For Ulrich (2000), this involves designing spaces that provide for three things. Firstly, a sense of control must be in place. Uncontrolled situations are stressful and therefore the personal control of lighting as well as control and access to privacy should be considered in healthcare environments. Secondly, having strong connections with supportive staff and access to places to spend time with close friends and family are beneficial. Access to social support will reduce stress and improve health. In one study, Ulrich found that having a fold-down bed in a patient room allowing a friend or family member to stay overnight had beneficial effects on the reduction of stress in those patients. Thirdly, access to positive distractions can provide individuals with immediate benefits. Ulrich (1995) states that laughter and views to nature both have very rapid benefits in reducing blood pressure. According to Ulrich, nature is the most effective positive distraction for allowing an individual to feel as though they have escaped into a whole other world. He argues that this theory is a key starting point for understanding how design affects medical outcomes (see Table 3, p.23).

2.1.1.5 Design Considerations for Wellness

The above theories represent considerations that should be taken into account when designing a CAH environment. These can be used to inform the spatial design of the purposed CAH centre (See Table 1, p. 21, Table 2, p.22 and Table 3, pp.23).

Table 1: Privacy

Literature Influence	Consideration	Description	Benefits	Design Implications
Pedersen (1997) Privacy and the built environment.	Solitude	Allows an individual to retreat without being seen or heard.	Allows for individuals to contemplate. Allows for self-discovery and planning. Allows for rejuvenation.	Prospect spaces where an individual can look out from, viewing the environment around them and contemplate at the same time.
Pedersen (1997) Privacy and the built environment.	Isolation	The use of physical distance and separation from others while carrying out an activity.	Allows for individuals to contemplate. Allows for one to recover self-esteem and loosen inhibitions.	Window seats, private seating areas.
Pedersen (1997) Privacy and the built environment.	Intimacy with Family and Friends	Allows one to be alone with loved ones while excluding others.	Allows individuals to minimize outside social inputs so one can maximize social interactions within their group. Allows for satisfaction of all privacy needs.	Seating arrangements that allow privacy for family groupings. Family overnight rooms, space in patient rooms for family/friend to stay over.
Pedersen (1997) Privacy and the built environment.	Anonymity	Going unnoticed in a crowd of strangers.	Allows people to experiment with new behaviors without fear of social criticism. Allows people to 'do their own thing'.	Healing Garden: watching others, passively relaxing amongst greenery and nature.

Table 2: Nature

Literature Influence	Consideration	Description	Benefits	Design Implications
“Being Away” Kaplan and Kaplan’s Characteristics of Restorative Settings.	Rooms within Rooms	Temporary places of respite. Opportunity for one to physically move themselves somewhere and then for their mind to follow.	Allows people to take their mind somewhere else. Places that allow people to get away are often restorative. Can allow people to be close to nature and to contemplate.	Window seats, prospect spaces, deep spaces (such as the deeper room within the healing garden).
“Extent” Kaplan and Kaplan’s Characteristics of Restorative Settings.	Journey	Wellness is an ongoing journey of self-creation, leading to ever-higher levels of functioning.	Can positively take one’s mind elsewhere rather than thinking of one’s current state. Offers reflection, meditation and exploration.	Spaces organized with the sense of a journey through the space in mind.
“Compatibility” Kaplan and Kaplan’s Characteristics of Restorative Settings.	Connection	Viewing a sequence of spaces creates a sense of connectedness through the built environment.	Views through and to spaces & framing viewpoints allow people to get lost in their thoughts.	Offers views to end goal, which is wholeness (signified by the ramp) throughout the journey. Understanding of spatial orientation.
“Fascination” Kaplan and Kaplan’s Characteristics of Restorative Settings.	Landmarks & Focal Points	Stimulating similar sensory experience found in nature of wonder and awe through complexity and diversity.	Symbolically reproducing sensory experience I may find in nature is restorative and allows for reflection. Holds one’s attention without effort, reducing mental fatigue.	Rich environment with diversity of colors and textures. Water features Natural materials

Table 3: Theory of Supportive Design

Literature Influence	Consideration	Description	Benefits	Design Implications
Roger Ulrich's (1997) Theory of Supportive Design.	Options and choice	Offering options and choices enhance the feeling of being in control. Creates a psychologically supportive environment.	Uncontrolled situations can be stressful.	Privacy versus socialization, choices in light levels, type of music, seating options, quiet versus active waiting areas.
Roger Ulrich's (1997) Theory of Supportive Design.	Positive distractions	Promotes wellness by offering access to positive distractions: provides immediate benefits.	Can lower blood pressure reduce muscle tension and reduce heart rate. Increases physical and psychological well-being.	Providing opportunities for fascination and of views to nature via windows to outdoors. Water features, art in areas where users may be sitting for a period of time.

2.1.3 Planetree Model of Care

2.1.3.1 Models of Care

A model of care is a framework that establishes how particular healthcare services will be delivered within a healthcare system. A model of care can encompass aspects of care delivered by healthcare providers within the healthcare system as well as services and programs delivered by non-providers within the community.

Over the years, healthcare has begun to evolve away from a "disease-centred model" and toward a "patient-centred model" (Stanton, 2002). In the older, disease-centred model, physicians make almost all treatment decisions based largely on clinical experience and data from various medical tests. In a patient-centred model, patients become active participants in their own care and receive services designed to focus on their individual needs and preferences, in addition to advice and counsel from health professionals.

Covering all aspects of life, the Planetree Model of Care represents a model of care that advocates patient-centred care. Developed in 1978 as a non-profit organization, Planetree (2007) encourages QOL aspects and healing in all dimensions: mental, emotional, spiritual, social and physical. It is a model of care that represents a holistic approach to the delivery of healthcare and as in CAH, allows patients to be active participants in their own healthcare and well-being to yield the best possible restorative and healing environment.

The Planetree model of care takes into account ten core components, which Planetree recognizes as vital in the delivery of healthcare (see Table 4, p.27). Most impressive, is the recognition of Architecture and Interior Design Conductive to Health

and Healing. The Planetree philosophy believes that home-like, barrier free environments that encourage family involvement and support patient dignity improve human satisfaction and promote positive outcomes related to health (Planetree, 2007). Healthcare environments that adopt the Planetree philosophy are encouraged to develop spaces for libraries, kitchens, lounges, activity rooms, chapels and gardens. Additionally, the organization strongly believes that, “healing gardens, fountains, fish tanks and waterfalls should be provided to connect patients, families and staff with the relaxing, invigorating, healing and meditative aspects of nature” (Planetree, 2007 www.planetree.org/about/components). They believe that these factors personalize, humanize and demystify the patient experience in healthcare settings.

Another reason for adopting this model of care is because the Planetree model encourages the use of CAH use within all facilities. They recognize that a growing number of individuals desire CAH treatment options because they are less toxic, less invasive, are holistic and natural. To meet these needs, Planetree facilities have instituted therapeutic massage, Reiki, acupuncture, Yoga and Tai chi as well as meditation (Planetree, 2007).

The value and philosophy behind the development of any healthcare facility is essential in creating a strong foundation for the caring of individuals within a healthcare centre, how the centre will run and what activities will be provided for, to the community. The incorporation of this model will greatly influence this CAH centre in the programming of the spaces made available to its users. The values and core components supporting the Planetree philosophy offers a model of care upon which the design of this Practicum's CAH centre can build its philosophical foundation. The Planetree philosophy supports similar values that have appeared throughout the literature when looking into the design of this CAH centre. Not only does the Planetree philosophy recognize healthcare environments as patient-centred spaces where individuals can manage their own healthcare, but it also recognizes the importance and supports the use of Complementary and Alternative Medicine; the Planetree philosophy supports the main ideas behind restorative spaces, such as those seen in the previous literature topic on nature.

2.1.3.1 Design Considerations of the Planetree Model of Care

Table 4: Planetree Model of Care Core Components

Core Components	Description	Benefits	Design Programme Influence
Human Interactions	Encouraged to create cultures that offer different types of interaction	Allow patients and staff to receive nurturing, compassionate, personalized care.	Range of spaces and privacy levels offer a range of interaction types.
The Importance of the Nutritional & Nurturing Aspects of Food	Food is recognized as a source of pleasure, comfort and familiarity	Food is essential for health and the healing process.	Healthy juice bar for patients and visitors.
Empowering Patients thought Information and Education	Today's healthcare consumer demands to be educated, empowered and involved in managing their healthcare. Availability of educational seminars and Internet.	Allows for patient to feel as though they are active participants in their health. Reduces uncertainty and fear.	Offer an education space with access to the internet, books and space for talks, seminars and presentations to take place
The Importance of Family, Friends and Social Support	Supports and encourages involvement by family and significant others whenever possible.	Allows for feelings of support, familiarity, reduces fear.	Offer seating arrangements that allow privacy for family groupings. Offer space in patient rooms for family/friend to stay over.
The Importance of Inner Resources	Chapels, gardens, and meditation rooms that allow for prayer, reflection.	Allow spirituality to flourish and in turn, for people to heal faster.	Healing garden. Privacy in seclusion can allow spirituality to flourish. Spiritual room.
The Importance of Human Touch	Variety of services involving touching the patient.	Helps to reduce stress and re-energize.	CAH treatments and services available.
Healing Arts: Nutrition for the Soul	Use and availability of music, funny movies and art.	Playfulness and serenity are beneficial atmospheres for all individuals in a restorative environment	Controllable music in each room through PA-type of system.
Architecture and Interior Design Conductive to Health and Healing	Encouraged to develop libraries, kitchens, lounges, activity rooms, chapels and gardens. "Healing gardens, fountains, fish tanks and waterfalls connect patients, families and staff with the relaxing, invigorating, healing and meditative aspects of nature".	Support patient dignity and improve human satisfaction. Personalize, humanize and demystify the patient experience in healthcare settings.	Home-like, barrier-free, healing gardens, water fountains
Healing Communities	Expanding the boundaries of healthcare. Working with schools, organizations,etc to offer wellness info to the larger community.	Creates healthy communities.	Open, welcoming to all people of the community and city.
Complementary Therapies	A growing number of patients are desiring options, which are more natural, less toxic, less invasive and holistic, to complement more conventional medical approaches.	May find own beliefs, values & philosophical orientations toward health and life.	Offering a focus on Complementary and Alternative Therapies.

2.2 Precedent Review

2.2.1 Riverview Health Centre

Location: Winnipeg, Manitoba, Canada

Architect: Stantec Engineering and Architecture

Square footage: 260,000

Riverview Health Centre (RHC) provides specialized therapeutic and restorative health services in a supportive environment that recognizes the cultural, spiritual and ethnic diversity of the community. Rather than institutional sterility found within many hospital settings, the centre is filled with color, textures, comfortable furnishing and artwork, making the Centre a "hospital that feels like home" (Riverview Health Centre, 2004) (figure 1 and 2). This was the purpose of the design. It was architecturally designed by Stantec to look and feel more like home than a hospital because of research collaboratively carried out by the planners and the centre. This research confirmed that a home-like environment had a tremendous positive impact on patient attitude and well-being (Riverview Health Centre, 2004).



Figure 1 and 2: Home-like elements.

RHC was also sensitively designed to use full potential of natural daylight entering the building. Most of the Centre's windows are 4'-0" wide with many seating spaces located within close proximity so patients and their friends and families can sit and gaze out onto the beautiful grounds filled with grasses, trees and flowers (figure 3).



Figure 3: Views to the outdoors.

Within the centre many CAH procedures exist. In addition to the labyrinth located in the worship centre (figure 4), RHC recently launched a Relaxation Network on its closed circuit television. As Wagner (2004) states, "it has long been known that meditation improves physical well-being, relaxes and sharpens the mind and invigorates the spirit". This network provides uninterrupted programming and features nature photography, natural sounds and inspiring music (see Table 5, p.30). This Network was implemented to give patients and residents a soothing alternative to other channels and to allow them to sit back, relax and let the sights and sounds take them to a peaceful place (Wagner, 2003).



Figure 4: Wheelchair accessible labyrinth within the Chapel.

2.2.1.1 Design Considerations of Riverview Health Centre

Looking into the design of the Riverview Health Centre has raised critical design considerations, which will inform this practicum.

Table 5: Riverview Health Centre

Consideration	Reason for use	Design Implication
Roger Ulrich's (1997) Theory of Supportive Design	Offering options and choices enhances the feeling of being in control.	Privacy versus socialization, choices of lighting levels: dimmable, variety of music, seating options in waiting rooms, quiet versus active waiting areas.
Pedersen (1997) Privacy and the built environment.	Going unnoticed in a crowd of strangers allows people to experiment with new behaviors without fear of social criticism. Allows people to 'do their own thing'.	High backed seating to allow for privacy. Watching others, passively relaxing while looking at greenery and nature.

2.2.2 Glasgow Homeopathic Hospital

Location: Glasgow, United Kingdom

Architect: Maclachlan Monaghan Architects

Square footage: 25,000

The Glasgow Homeopathic Hospital (GHH) is a centre for the Integration of Complementary and Orthodox Medicine. The goal of the centre was to develop a place of peace, beauty and healing, which focused on the holistic needs of patients (www.ghh.uk, 2007). The building's form is quite simple; two wings at right angles connected and designed specifically to face the central outdoor therapy garden.

The patients and staff of the centre confirm that viewing the garden from the building's large curtain walls of glass is therapeutic and inspiring. The garden not only breaks up the sense of institutional regularity, but also draws in the natural world to the healing environment (Scher, 1999). As the director of the centre states, "We wanted a garden that would not only give patients and staff as awareness of the rich, seasonal renewals of light, color, form and texture, but provide a practical demonstration of the way that contact with nature can help people recover more quickly and regain their balance, serenity and health" (www.ghh.com, 2007) (see Table 6, p.32).

The interior concept was designed to be "a place of beauty and healing" (www.ghh.com, 2007). To achieve this, the designers not only wanted to have art pieces within the building but for the building to actually be art itself. In carrying this concept through to design, inspiration from natural world was sought because nature is universally accepted as beautiful. This is illustrated in the light and airy interior. The color scheme of the centre supports the healing atmosphere. By using soft colors on the

largest surfaces, a light and airy interior is enhanced. This is offset at specific points with stronger concentrations of color on smaller surfaces. This is an effective way of drawing attention to specific areas of interest or cueing patients. For example, the use of deep violet chairs in a waiting area followed after a corridor of lightly colored wall signals to patients to stop.

The functional building elements were also planned out carefully. Café and retail spaces were centrally located to optimize access and use, while accommodation spaces that were lesser in significance in constructional terms were intended to reflect the flow of the building (www.ghh.com, 2007) .

Overall, the design of this centre shows that designing a modern hospital does not have to be a cold, threatening environment but can also be designed with the comfort of the patient in mind.

2.2.2.1 Design Considerations of the Glasgow Homeopathic Hospital

Studying the design of the Glasgow Homeopathic Hospital has brought up issues such as the positive effects of natural light and the connection with nature will inform the design phase of this practicum.

Table 6: Glasgow Homeopathic Hospital

Consideration	Reason for use	Design Implication
Natural light	Natural light affects people's mood, reduces depression, influences serotonin levels, which reduces pain and stress.	Curtain wall of glass Light, airy interior, windows in all patient rooms
Connection with Nature	Reduces institution feel Contact with nature can help people regain balance, serenity and health.	Healing garden, with a curtain walls of glass to support the connection and offer patients the opportunity for fascination and contemplation.

2.2.3 The Scripps Centre for Integrative Medicine

Location: San Diego, California, USA

Architect: Schmidt Scanlon Gordon Architects, Jain Malkin Interior Designer

Square Footage: 9,000

The Scripps Centre for Integrative Medicine in California grew out of a vision that a group of doctors had to better care for their patients. They developed a program called Healing Hearts, which blended conventional medicine with yoga, group support, exercise, acupuncture, music therapy, meditation and healing touch. The success of the program was so great that a centre was built specifically for this integrative approach to take place. With the centre came a single place where people could have their mind, body and spiritual wellness assessed.

Completed in 2004, the goal of the design was to develop in the built environment a physical expression of the mind, body and spirit connection that is the basis of integrative medicine (Malkin, 2005). Because of this, the centre was designed based on the Golden Ratio (figure 5). This became the guiding principle for the Centre's design because the Golden Ratio is intrinsically embedded in all that we see in nature. To the Greek mentality, the Golden Ratio was and is an attribute of beauty. Both ancients and moderns realized that "there is a close association in mathematics between beauty and truth. It is thought that buildings employing this geometry have been known to evoke a sense of harmony and well-being.

The centre used one of nature's most compelling forms to express the Golden Ratio and the fluidity of mind, body and spirit – the nautilus shell. This form therefore, shapes the interior architecture of this facility in space planning, ceiling design, and a

myriad of details, including the glass-wall fountain at the entry, the pattern of the carpet, and the design of ceramic tiles in bathrooms (figure 6).

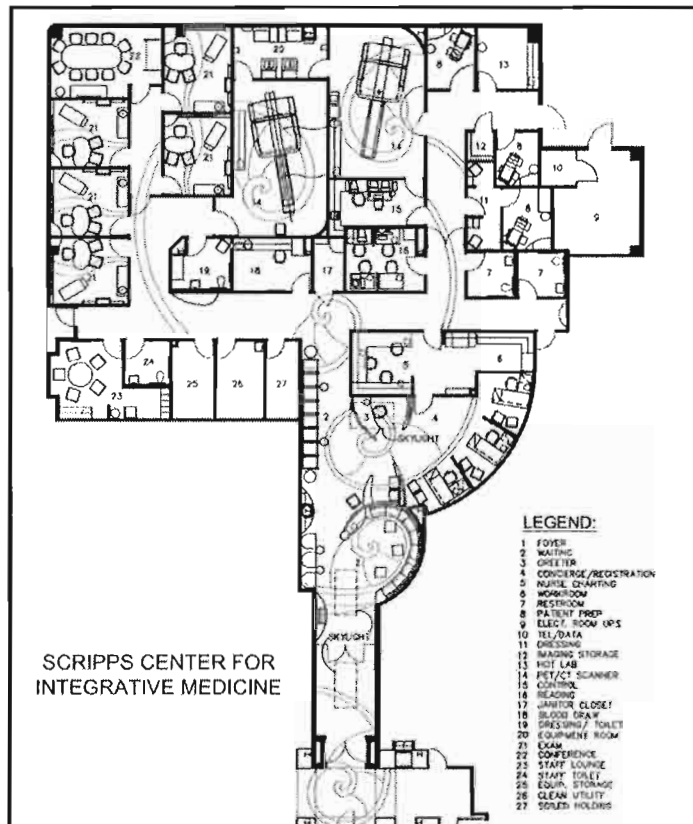
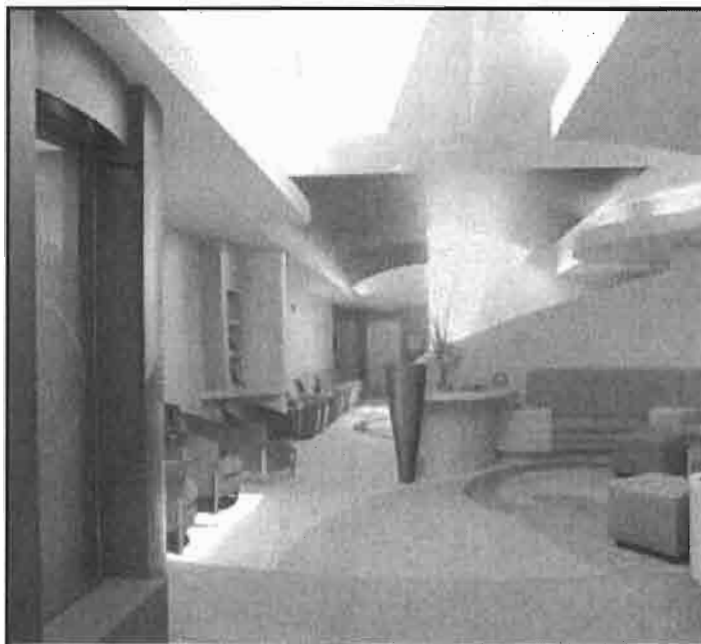


Figure 5 & 6: Plan of Scripps Centre for Integrative Medicine and view upon entry into space facing reception. Source: Malkin (2005), photographer: Michael Campos.

Upon entry, the designers wanted to inspire hope in those who arrive experiencing fear and anxiety. This was carried out using natural light and color. A shaft of light from a skylight draws visitors to the greeter desk. The skylight glazing is embedded with a holographic prism that creates the color spectrum, and the form it creates on floors and walls, changes



continually throughout the day. The rainbow spectrum is identical to the seven charkas, of the body and, metaphorically, the rainbow is considered a sign of hope in many cultures.

The waiting area has many sculptural forms, especially in its ceilings. Several choices ranging in degree of privacy are offered to patients in this space. These include:

- 1) built-in banquette seating with ottomans and a high wall spiraling around it for those who desire seclusion (figure 7)
- 2) 2) seating right across from the greeter and
- 3) 3) seating for patients who come in with family and friends for social support may choose lounge chairs facing each other (figure 8) (see Table 7, p.37).



Figure 7 & 8: Choices of privacy given in reception area.
Source: Malkin (2005) photographer: Michael Campos.

Staff have a break room with natural light and a conference room with a full-wall view of the ocean are coveted amenities. Exam rooms have an area dedicated to consultation and an area for examination. Exam rooms have vaulted ceilings with an area of wood over the exam table. All have views of the ocean or gardens. The wall alongside the exam table has the Centre's design motif "the Golden Mean" printed on its vinyl wallcovering (figure 9).



Figure 9: Exam room showing consultation & examination area.
Source: Malkin (2005) photographer: Michael Campos.

2.2.3.1 Design Considerations of the Scripps Centre for Integrative Medicine

Looking at the design of the Scripps Centre for Integrative Medicine brought up issues such as the positive effects of natural light and color, positive distractions and privacy, which will inform the design phase of this practicum.

Table 7: Scripps Centre for Integrative Medicine

Consideration	Reason for use	Design Implication
Flow	Allow users to feel comfortable. Reduces feelings of being in a harsh environment.	Flow can be enhanced by using organic architecture with curved walls and circulation spaces. Organic forms respond to the human body more readily and is more natural in form. Organic design reflects our existence as an integral part of our natural environment.
Natural light and color	In many cultures, colored light) e.g.: the rainbow) is a sign of hope.	Many skylights, with colored holograms. The wrapping of light over the sculptural ceilings.
Privacy	Supports a range of privacy users may require depending on the type of person they are and how much support they need.	Cocoon areas, choice in seating in waiting area based on mood and how users face medical issues: with fear or head-on.
Positive Distractions	Can lower blood pressure reduce muscle tension and reduce heart rate. Increases physical and psychological well-being.	Provides a range of positive distractions such as water fountain at front entry, sculptural forms in ceiling.

2.3 Interviews

To increase the understanding of CAH, individual face-to-face interviews were conducted with local doctors, practitioners and technical experts who offer CAH services. These interviews allowed for a greater understanding of the field, and provided background information as to some of the issues that are important in the Winnipeg context. The data obtained was used to develop theoretical concepts that could inform the spatial design of the purposed CAH centre.

2.3.1 Methodology

Open-ended interviews were used as the primary investigation technique for a number of reasons. Conducting face-to-face interviews allowed me to ask for more information if necessary. Further, conducting interviews at the subject's place of work allowed existing CAH interior environments within Winnipeg to be observed.

2.3.1.1 Participants

After obtaining approval from the Joint-Faculty Research Ethics Board from the University of Manitoba, 26 potential subjects were contacted for an interview (see Appendix 7.1). Potential subjects were contacted using the Manitoba Yellow Pages and Winnipeg's Mind, Body, Spirit Directory. Altogether, thirteen subjects agreed to participate in the study; six male, seven female. Subjects interviewed ranged from 20-30 years to over 60 years in age. As doctors, practitioners and technical experts, their professions included: a traditional Chinese medical doctor, a huna kane practitioner, homeopaths, naturopaths, a reiki master, chiropractors, an energy healing practitioner, a

yoga instructor, a massage therapist and physiotherapist. Subjects were interviewed over a four-week period from March 15, 2007 to April 16, 2007.

The types of spaces in which the subjects conducted their practices also ranged considerably: from clinics with a few therapy/consultation rooms to clinics with herbal pharmacies attached; and from small additions added onto the personal homes of practitioners to large clinics with education centres and clinics for students to practice in. A yoga studio was also observed. For analytic purposes, interviews were recorded with a personal voice recorder and transcribed. A summary of the findings was mailed to all participating subjects as a source of feedback (see Appendix 7.2).

2.3.2 Findings

The analysis of data revealed that most questions were answered with similar responses by all of the interview subjects. Explained below are the summarized responses as well as a quote supporting each interview question:

1) The majority of individuals who visit CAH practitioners do so mainly as a reactive approach to managing their health. Many times, it is as a last resort. Many times individuals seek CAH come because they are fed up with conventional medicine. These people are usually desperate and are ill. However, there is a small percentage of individuals who see CAH practitioners for preventative and proactive measures.

“The biggest thing is when they’re sick and they are not getting better with medical doctors. They get frustrated, they’ve been through the circus of being on drugs or antibiotics and they’re not getting anywhere. So, unfortunately we end up being like a last resort for many people. There is the odd; I would say 15-20% of people that do come to see me for preventative measures. I think it’s growing, I think that more people are realizing that they’ve got to do something sooner than later”.

(Personal interview Doctor of Naturopathy)

2) The majority of individuals who come to see CAH practitioners are female. Mainly because they are more open to trying new things.

“More female. I actually have a lot more male than I was originally told I would have. We were told that 85-90% of our practice would be female but I would have to say that mine is more like 65-75%. Yah, I’ve actually had quite a few men come through. I gather that there has been a stigma with using natural medicine but I don’t know if it’s the wives doing their research and making the men go. They’re sick right, they need the help and sometimes they’re the best patients because they will actually do what you tell them”.

(Personal interview with a Doctor of Naturopathy)

3) Most CAH practitioners rely on word-of-mouth for advertising. Some of them also have websites and are in the Manitoba Yellow pages or Winnipeg’s Mind Body Spirit Directory. In the last three years 98% of the interview subjects have seen an increase in the amount of people who have come to see them and all of them anticipate a further increase in the number of people who will come to see them in the future.

“It has increased very fast, at least 50% over 2 years”.

(Personal interview with a Traditional Chinese Medicine Doctor)

“Yes, it’s growing because it’s becoming more acceptable and people are becoming more desperate.”

(Personal interview with a reiki master)

4) The majority of CAH practitioners I interviewed believe that the actual, physical space their patients experience has a major effect on comfort level. Most of them also believe that it is their presence and persona that aids the individuals who come to see them feel comfortable. This is one strategy a clinic employed to create a comfortable and relaxing atmosphere.

5) Most of the interview subjects felt that they didn't need anything more in their space to allow people to feel more comfortable. 62% of the spaces I visited were not wheelchair accessible. These practitioners noted that being wheelchair accessible would increase comfort for individuals coming to see them.

6) While at work, most of the interview subjects spend the majority of their day sitting, talking with and listening to patients in a type of consultation correspondence. They also spend time standing while administering treatments and remedies to patients.

7) All of CAH practitioners that were interviewed believe the field of Complementary and Alternative Healthcare will continue to grow in the future.

“It is becoming more and more of an option for people. More and more, health insurance companies are covering it. I don't think Medicare will ever fully cover it however. I think though that more and more people are beginning to realize that we need a combination approach. We need a complementary approach to medicine. We need the science from medical doctors but we need to employ these old traditional techniques that are timeless and actually work”.

(Personal interview with a Doctor of Naturopathy)

2.3.3 Themes

After the interviews were analyzed, key words and themes emerged from the data. They were then arranged and organized into headings. These headings represent the underlying theories of CAH therapies practiced by the interview subjects, and as such, could possibly be used to inform the spatial design of the purposed CAH centre. The key themes below are first defined and then identified and explained in reference to the interviews and their importance in the field of CAH. The themes include:

Holism/Holistic Care

Defined as:

- the whole is more than the sum of its parts (Aristotle).
- a disturbance on any level will radiate to all other levels (Merriam-Webster On-line Dictionary, 2007).
- the idea is that every aspect of the world is in a relationship with every other aspect, so that if one aspect changes, so will the rest, because these aspects are not separate entities but one (Merriam-Webster On-line Dictionary, 2007).

Interview:

- “Unity resides in holism: oneness, the totality of all the related parts” (Interview with a Chiropractor).
- “You are bringing your body to fix your soul and your mind” (Interview with a Doctor of Naturopathy).
- “I find that holistic medicine – what the founder of homeopathy said is you treat the person as a whole, you don’t isolate body parts. To a homeopath it is very funny when you go to an ears, nose that throat specialist. It’s like ok, the *problem* is in the ears, nose and throat but where did it come *from*? It doesn’t mean that it’s in the ears, it can be urinary system, it can be heart, we’re all one unit” (Interview with a Doctor of Homeopathy).

Natural/Nature/Pure

Defined as:

- derived from the word *natura* meaning the course of things, natural character (Merriam-Webster On-line Dictionary, 2007).
- it is often taken to mean the natural environment and those things that have not been substantially altered by human intervention.

Interview:

-“In my holistic care, I would like to be in a care facility where I can look out my window. So if I look out to the nature from the window, it is a different feeling, you know? The window is the best way. Something happens in the brain, I can’t explain...a hope” (Interview with a Doctor of Homeopathy).

Connection/Connected

Defined as:

- an association or the relationship between 2 or more things, spaces, people etc. (Merriam-Webster On-line Dictionary, 2007).
- causal or logical sequence, to become joined (Merriam-Webster On-line Dictionary, 2007).

Interview:

-“Examining the patients is all about the relationships and connections to other parts of the body. From the toes to the heart from the hands to the thyroid. We address all of your body” (Interview with a Doctor of Naturopathy).

Flow/Journey

Defined as:

- a smooth continuity, a smooth uninterrupted movement or progress (Merriam-Webster On-line Dictionary, 2007).

Interview:

- “Generally speaking, it is an inner journey for them to weave through, it is what they need to explore” (Interview with a huna kane practitioner).

Balance

Defined as:

- conceptual sense: is used to mean a point between 2 opposing forces that is desirable over purely one state or the other (Merriam-Webster On-line Dictionary, 2007).
- stability between interacting elements, an aesthetically pleasing integration of elements (Merriam-Webster On-line Dictionary, 2007).
- mental and emotional steadiness (Merriam-Webster On-line Dictionary, 2007).

Interview:

- “You need to be totally balanced. That’s why it is important to work with the elementals – air, wind, water, fire, earth” (Interview with a Traditional Chinese Medicine Doctor).

Release/Shed/Flush/Discharge

Defined as:

- to relieve from something that confines, burdens or oppresses (Merriam-Webster On-line Dictionary, 2007).
- when applied to a person, it suggests a helpful action.

Interview:

- “Our body is a holder of our memories...we go over the body, releasing all of those memories. Releasing and reframing. Letting the heavy stuff go. Everything we do is releasing” (Interview with a Huna Kane Practitioner).

2.3.2.1 Design Considerations from Interview Themes

The above themes represent the underlying theories of CAH therapies practiced by the interview subjects. These were used to inform the spatial design of the purposed CAH centre.

Table 8: Interview Themes

Consideration	Description as it applies to CAH	Design Implications
Holism/ Holistic Care	The whole is more than the sum of its parts. Every aspect of the world is in a relationship with every other aspect, so if one changes, so will the rest, because the aspects are not separate entities but 1. Unity resides on Holism: oneness.	In the built environment, unity is established by repetition in shape, forms, pattern and/or texture. This creates harmony within the environment. Spaces must relate to all others and read as one.
Natural/ Nature/ Purity	Use of natural substances and remedies. Do no harm.	Use of products and materials that are natural or that have been inspired by nature.
Connection/ Connected/ Relationship	All parts are connected. Connection between Mind Body and Spirit.	Use of Thresholds: literal or implied can connect or distinguish spaces. Subtle thresholds – connection. Large thresholds – welcoming. Deliberate, lower thresholds – private. The threshold between the building and the natural environment will be subtle, fostering a connection.
Journey	Weave down one's path or inner journey. Journey is always changing, fluid, moving.	Organic design , curved shapes to envelope users, allow people to flow through the space, provide comfort and reassurance. Non-threatening and non-confrontational. More closely related to the body.
Balance	Must offer different disciplines to balance all aspects of a person – physical, emotional and spiritual. Without this approach, no person can achieve health.	The symbol of the Mandala is used to restore a loss of inner balance – it's symmetrical, geometric shape symbolizes balance and the strive towards wholeness.
Release/ Shed/ Flush/ Discharge	Free, discharge, shed toxins, negative memories and emotions to become less heavy and experience weightlessness.	The mind needs space above it to think clearly, the body needs enough space around it to feel comfortable. Example: double volume spaces, views to and through spaces. Weightlessness, floating, airy: cantilever forms, suspended forms in flight, transparency.

2.4 Investigation Techniques and Findings Summary

Information pertaining to the field of CAH was gained from a variety of literature as well as from face-to-face interviews. The review of this information allowed for key theories and themes to be identified and are below summarized.

Firstly, environments that allow for privacy provide a place of refuge that has been shown to promote healing by providing rest, recovery and contemplation (Pedersen, 1997). Privacy does not mean removing oneself from the presence of others in the environment. Instead, it involves *controlling* the amount of contact with others in the environment. Secondly, relief from mental fatigue from today's contemporary pace of life may be promoted through restoration - the process of renewing physical, psychological and social capabilities (Kaplan & Kaplan, 1989 p.2). The concept of restorative environments emphasizes the recovery aspects of places, which allows people to be distracted, to relax, to free their minds and to distance themselves from ordinary aspects of life. Thirdly, the theory of supportive design investigates how experiences with environments affect our physical and psychological well-being (Stewart-Pollack & Menconi, 2005). Ulrich believes healthcare environments should be "psychologically supportive" and therefore, should allow for 1) individuals to feel a sense of control, 2) an environment that allows for strong connections with supportive staff and access to places to spend time with close friends and family to reduce stress and improve health and finally 3) access to positive distractions such as views to nature.

Further, with respect to face-to-face interviews, key themes emerged from the transcribed data and represented the underlying theories of CAH therapies practiced by the interview subjects. Themes such as 1) holism, holistic care 2) nature, natural, purity,

3) journey and 4) release, shed, discharge and flush were identified as underlying, recurring themes that emerged from the interviews.

The consideration of these theories will inform the spatial design of the proposed CAH centre, which, in turn, will allow individuals to proactively and reactively manage their health and wellness in a positive, restorative environment. The knowledge gained through literature and face-to-face interviews assisted in the development of the design programme explained next.



3.0 PROGRAMME

3.1 Site Analysis

Site Description

The site selected for this practicum is located within the Salvation Army Grace General Hospital complex in the neighborhood of St. James-Assiniboia in Winnipeg, Manitoba, Canada. The Grace Hospital, as it is commonly known, prides itself on caring for mind, body and spirit by caring for patients whole being - physical, mental, spiritual and social. The hospital provides surgical, mental health, medicine, emergency and critical care programs.

Site Analysis

The Dorothy Wood Building is located at 408 Booth Drive (Figures 10, 11 and 12). It is attached to the Grace Hospital by an underground tunnel corridor, which starts at grade in the Dorothy Wood Building and opens to the hospital below grade. The site is bound on the north by Booth Drive, which supports residential development and Bruce Middle School; on the east by a nurses residence and the hospital's psychiatric ward; on the south by the Grace Hospital, Sturgeon Creek and Portage Avenue; and on the west by Sturgeon Road (Figure 10). The land in which surrounds the site is mainly used for residential development and healthcare facilities such as the Grace Hospital, the Assiniboine Clinic and the Grace Hospital Hospice Centre.

The site for this programme is defined as the total area in which the Dorothy Wood Building sits and the area in which it is surrounded and influenced by. This area is based on adjacent buildings, vehicular and pedestrian routes.

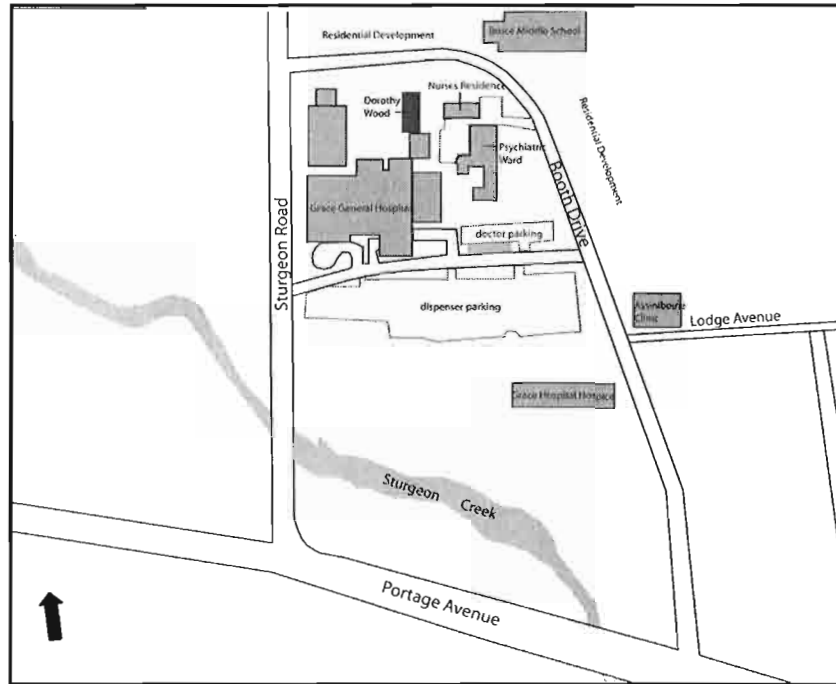


Figure 10: The Dorothy Wood Building and surrounding site.
Not to Scale.



Figure 11 and 12: The Dorothy Wood Building.

Context



Figure 13: Surrounding influences affecting the Dorothy Wood Building.
Source: Google Earth (2005).



Figure 14: Exterior view of the tunnel connecting the Dorothy Wood Building and Grace General Hospital.



Figure 15: Interior view of the tunnel connecting the Dorothy Wood Building and Grace General Hospital (looking towards the Dorothy Wood Building).

Vehicular Circulation

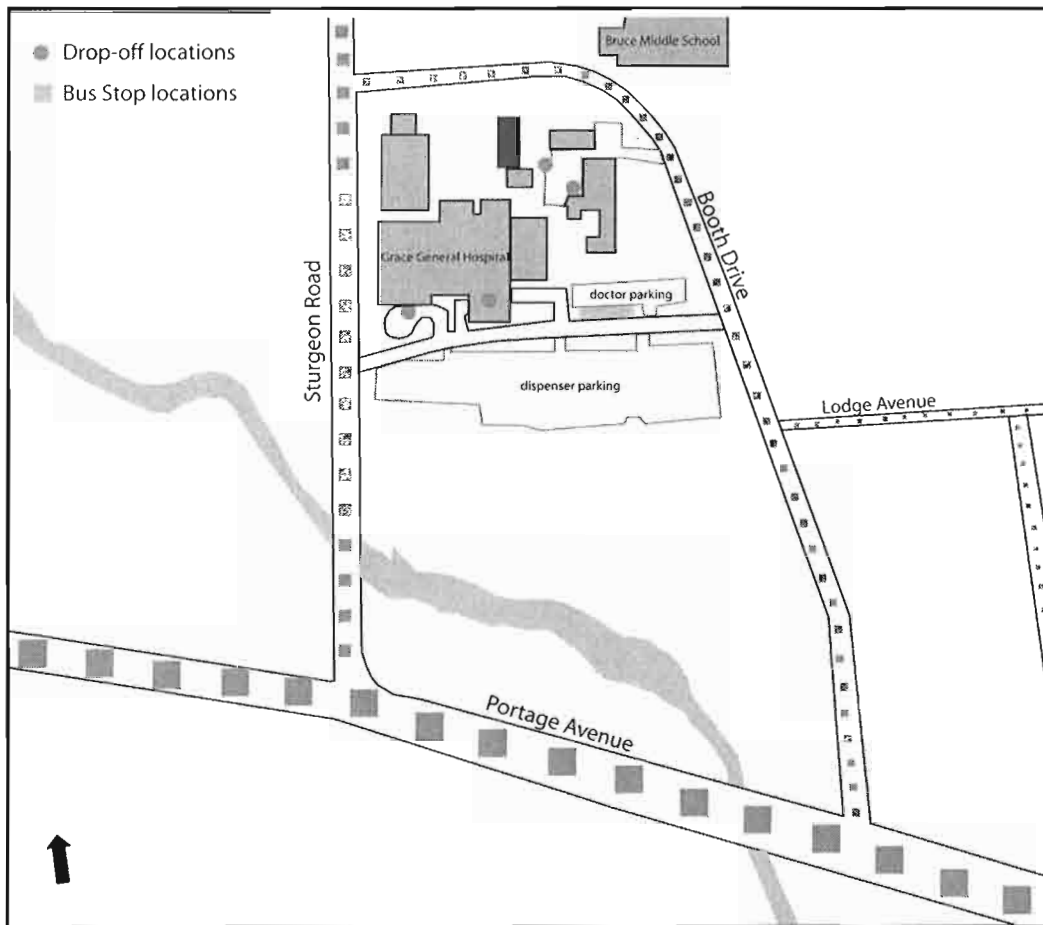


Figure 16: Vehicular circulation surrounding site.
Not to Scale.

Pedestrian Circulation

Figure 17: Main pedestrian sidewalk facing north.

Figure 18: Main pedestrian sidewalk facing south.

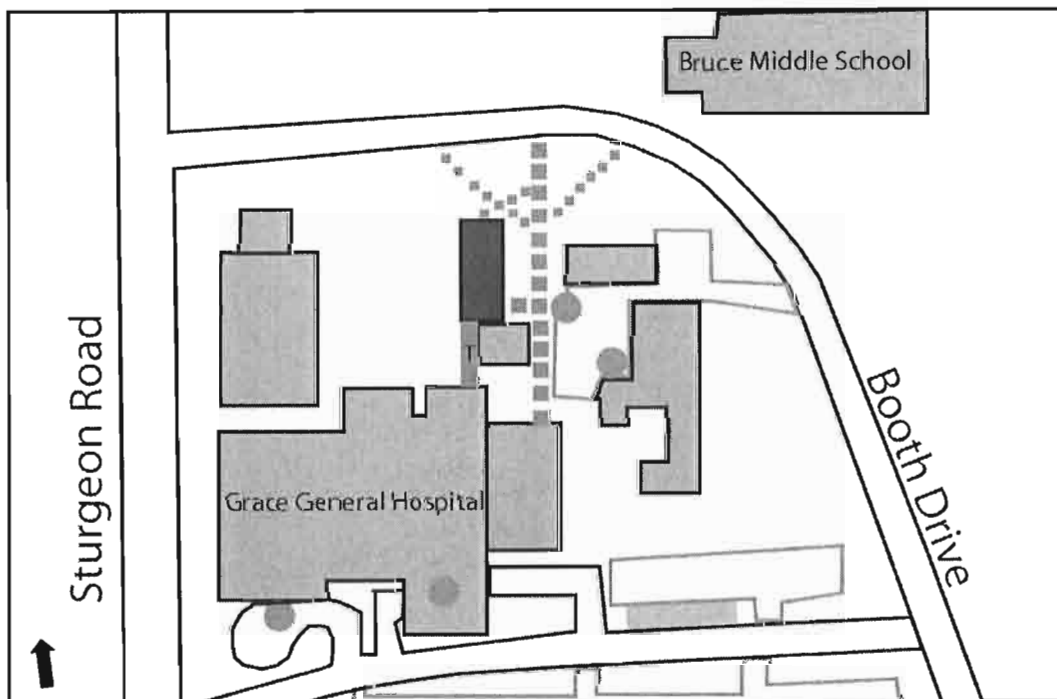


Figure 19: Pedestrian circulation affecting site.
Not to Scale.

Views

Figure 20, 21 & 22: Views to and from site.

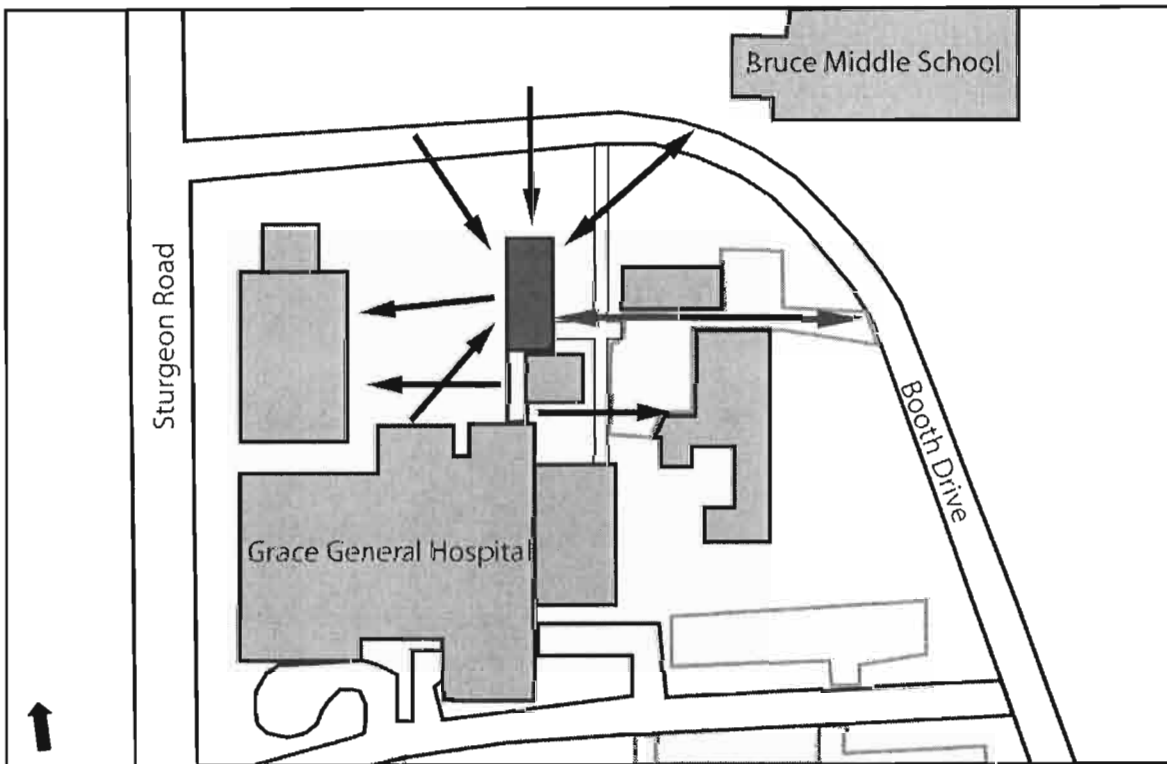


Figure 23: Views to and from site.
Not to Scale.

Site Opportunities

- Free Public Parking along Booth Drive.
- Large open spaces surrounding building to the north, west and north-east allows for building expansion in future if necessary.
- Site is set back from Booth Drive, therefore, limits noise.
- Free public parking located closely on Booth Drive as well as in the parking lot in front of the Grace General Hospital.
- Large amounts of vegetation and green spaces surrounding the site allow for optimal views out of the building to these spaces.
- Physical connection to Grace General Hospital via a tunnel gives users the choice of using conventional or complementary medicine as well as supports the use of integration between the two.

Site Constraints

- Building is set back from the Booth Drive and Sturgeon Road, therefore most views to the site from other locations are not completely free from obstacles.
- Higher-than-normal noise levels from vehicular traffic is the greatest along Booth Drive in the mornings (between 8:00-8:30) and mid afternoons (around 3:30) when classes at Bruce Middle School begin and end. (Lightest vehicular circulation occurs on the weekends).
- High concentration of buildings in the Grace Hospital complex does not allow for easily understood access to the Dorothy Wood site.

3.2 Building Analysis

3.2.1 Building Description

The Dorothy Wood building is 33,250 square feet and is comprised of five levels. Presently, the lower level (below grade) is used for storage. The main floor houses a day care, speech and language services centre, and an auditorium (Figure 24). The levels two to five are used as offices and meeting rooms. Figure 25 is typical of floors two to five. Rooms available for out-of-town patients and families are also available on levels four and five. Patients needing a place to stay overnight before early morning surgery may find this convenient, as would families wanting to be near their loved ones during hospitalization.

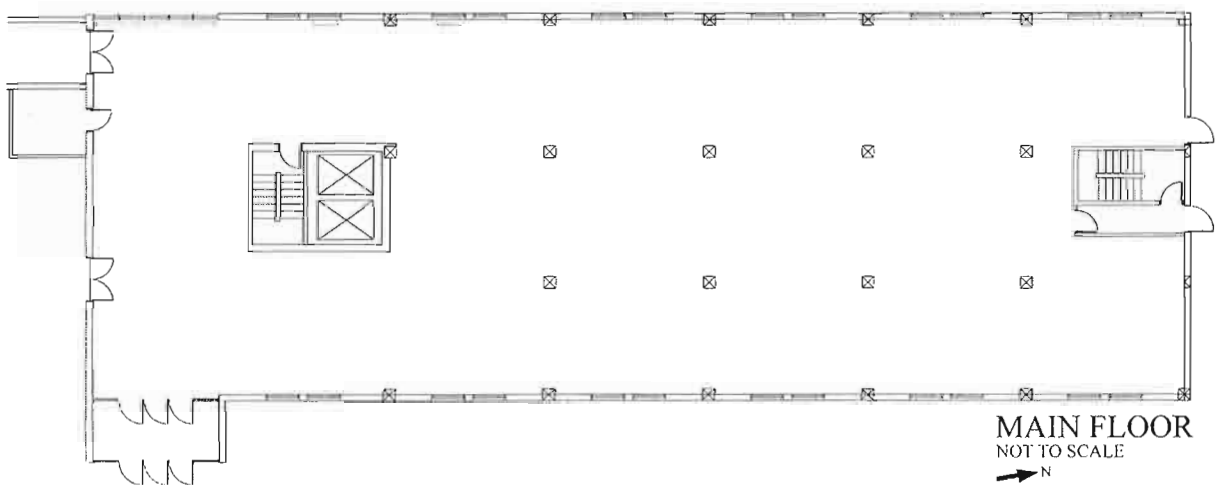


Figure 24: Main level plan

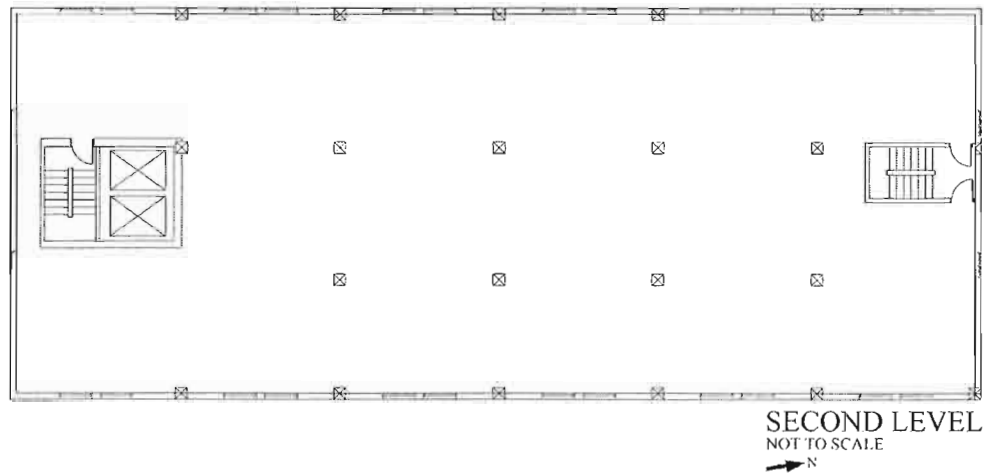


Figure 25: Typical plan of levels two to five.

In the past, the Dorothy Wood building was used as a residence for nursing students for the Hospital's Nursing program. In 1998, the Grace Hospital School of Nursing program closed and in 2004, the School of Nursing building was renamed as the Dorothy Wood building in honor of an instructor with 40 years of service to the school (Grace Hospital, 2005). At present, the building is used for storage, doctor's offices, a daycare and also houses a hotel for family and friends of patients staying within the hospital. Because the building is five stories and exceeds the square footage requirements for this project, only a portion of the building will be renovated for the proposed CAH centre. Of the 33, 250sq.ft. available, only 22,000sq.ft. will be utilized for the CAH centre. Further, the CAH centre will be situated on the first, second and third floors.

The Dorothy Wood Building will be redesigned through adaptive re-use for the purpose of this practicum. Adaptive re-use is defined as, "the process of changing a buildings function to accommodate the changing needs of the users" (Brand, 1994). It is considered to be an acceptable approach for this practicum for a number of reasons. First,

the surrounding community will benefit from converting this underutilized building into new use. Second, the majority of the architectural space will be preserved with only small revisions to existing portions of the structure. And finally, as Brand explains, adaptive reuse is the highest form of recovery with the least cost output.

The fourth and fifth levels of the Dorothy Wood Building will remain as they are at present. As such, they will continue to be used as office space and as rooms for overnight stays. The basement will also remain as is. Levels one, two and three will be redesigned to house the proposed CAH centre.

3.2.2 Building Analysis

Building Envelope

- Rectangular, symmetrical form.
- Exterior walls are brick (figure 26).
- Canopy along east side of the building clearly identifies main doorway entry (figure 27).
- Secondary entrance located from the tunnel to the Grace Hospital along the south side of the building (figure 28).
- Two fire exits located on the north side of the building.
- Windows evenly spaced along west and east (figure 26).



Figure 26: Exterior of the building.



Figure 27: Entrance to the building.



Figure 28: Tunnel connection to the Grace Hospital.

Identifiable Structural Features

- Interior walls – steel-studded drywall, gypsum, gypsum covered with brick, gypsum covered with wood paneling.
- Columns – concrete.
- Curtain wall (figure 29).
- Flooring – concrete with ceramic tile in entry and carpeted throughout.
- Ceiling – suspended T-bar ceiling.

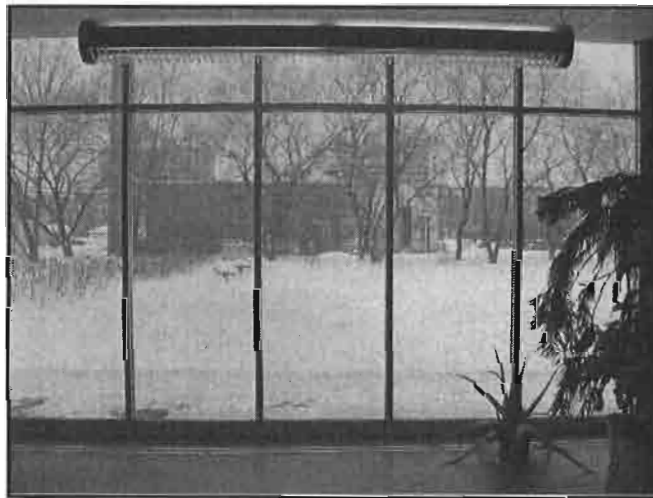


Figure 29: Curtain wall.

Mechanical Systems

Heating: hot water system fed through low wall type or floor type continuous convector units, tube radiation placed along exterior wall of building (Einarson, 2007).

Ventilation: most windows fixed with operable and controllable transom to allow for some natural ventilation.

Lighting: lighting throughout: 2x4 recessed fluorescent with diffusers, fluorescent uplights within entry, compact fluorescent wall lights down corridors on fourth and fifth floors.

Plumbing

Sprinkler system: sprinklered throughout.

Plumbing walls: throughout centre of building extensively (due to existing family and patient overnight rooms).

Special Systems

Alarm: the building is protected with a security and fire alarm system.

Surveillance: the entry corridor is monitored by two surveillance cameras.

Card access: building is secured by card access for doctor's offices and family overnight rooms after 5:00pm, seven days a week.

Main Circulation Systems

Elevator: one system is located on the south side of the building with access to all levels.

Stairways: the main stairway is located at the south end of the building, beside the elevator with a second stairway at the north end of the building (Figure 30).

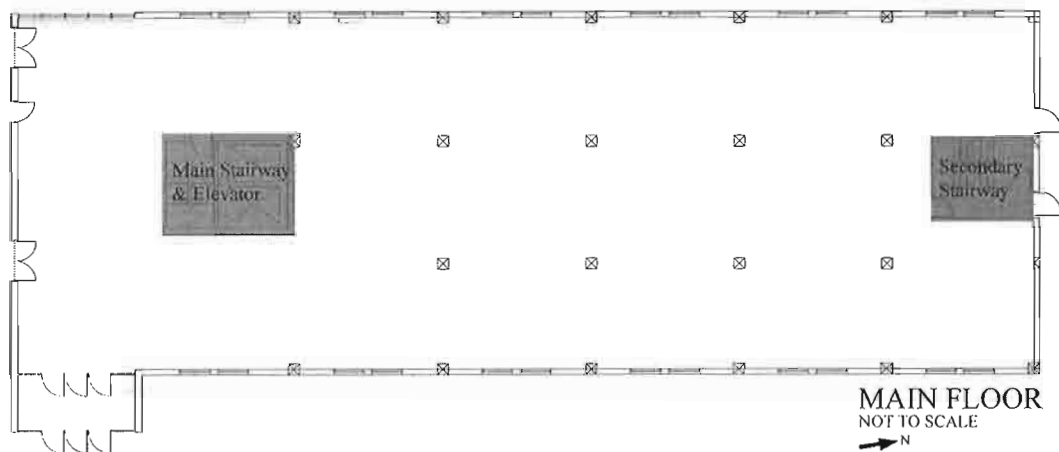


Figure 30: Main circulation systems and maintenance support.

Influence of Natural Light

- Symmetrical, evenly spaced windows on the east and west side of the building allow natural daylight to enter.
- The small windows lining the north and south side of the building do not allow for large amounts of light to enter.
- The south side is blocked by the neighboring Grace Hospital and the north does not receive direct sunlight due to orientation.

3.2.2 Opportunities

- The building is under-utilized, with many rooms vacant.
- Overnight rooms and some office spaces to be retained.
- The existing building entrance and circulation spaces are accessible for those with mobility impairments (not including washrooms).
- Conventional medical doctors could refer patients to the facility.
- Patients staying within the hospital could use the facility during their stay.

- Gives patients the option of using conventional medicine, CAH or an integrative approach.

3.2.3 Constraints

- Many people who use CAH practices do so because they do not believe or do not wish to use modern medicine. Therefore, concern could arise regarding the centre's attachment to a conventional hospital. However, the conveniences of a centralized full-service facility is deemed to be the most beneficial.
- The interior environment between the present hospital and the CAH facility will be strikingly different.
- Ventilation and heating system outdated.
- Small windows.
- Washrooms are not universally accessible.

3.3 Human Factors Analysis

3.3.1 Client Profile: The Salvation Army, Canada and Bermuda Territory along with the Winnipeg Regional Health Authority (WRHA)

The Salvation Army, Canada and Bermuda Territory own all buildings and all parking areas on the Grace General Hospital campus. The hospital is administered under the direction of the Grace Hospital Board of Management, which itself is incorporated under the Governing Council of the Salvation Army, Canada and Bermuda Territory (Einarson, 2007).

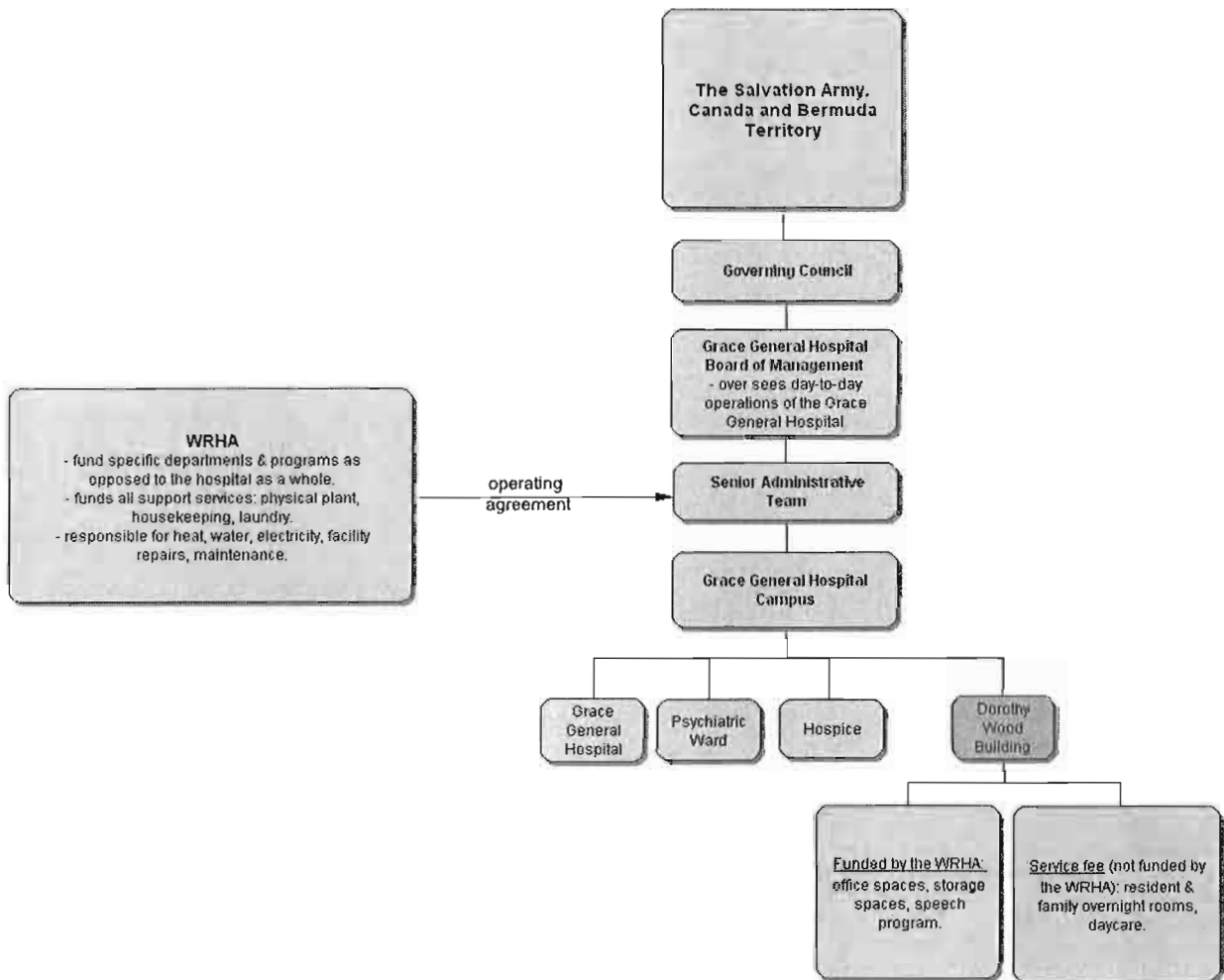


Figure 31: Client Operatory Structure

3.3.2 User Profiles

Constituting one third of all people in Canada and the United States, Baby Boomers represent one of the largest demographic categories (Friedman & Krawitz, 2002). Though this change is occurring gradually, designers are beginning to design and build a greater number of buildings to suit this demographic category (Gallup, 1999). A large percentage of these buildings have been in the form of healthcare facilities and wellness centres to prepare for future demand. Friedman and Krawitz explain that the drive to provide these types of buildings for Baby Boomers will continue to prompt architects and interior designers to design facilities specifically for this demographic.

The user group for this practicum will be between the ages of 40 and 65. Just over six million people were aged 45 to 59 in 2001, according to Statistics Canada (2001). Today, people of this generation often find themselves stuck with children still living at home and caring for their aging parents. A typical complaint of this generation is the feeling of being pushed and pulled by conflicting responsibilities with little time for themselves (Stewart-Pollack & Menconi, 2005). Their lives require juggling and they report high levels of stress. The people within this baby boomer generation are also becoming aware of the importance of self-care and are attentive to a sense of the spiritual (the combined mind-body relationship). This, as Gallup (1999) suggests, could be attributed to their upbringing in the 1960s and 1970s. According to Barnes et al. (2002), a nationwide government survey found that women were more likely than men to use alternative methods of healthcare. Women were also found to report more stress than men. People with higher education levels and adults who live in urban areas versus adults who live in rural areas were more likely to use alternative medical systems, biologically

based therapies, and mind-body therapies to reduce stress. According to the Winnipeg Regional Health Authority (2000), the highest concentration of this age group in Winnipeg is found within the community area of Assiniboine South (<http://www.wrha.mb.ca/howcare/decsup/files/population/demographicprofilevol12000.pdf>, 2000).

The Primary user group for this practicum:

- have a high school education
- live within the St. James area
- are mainly women
- are between the ages of 40 and 65
- are attentive to a sense of the spiritual
- are looking to increase the quality of life through natural remedies and activities
- report to have experienced stress
- are either dealing with an illness or have no illness and chose to proactively manage their health and wellness.

Administration and support staff will also be considered primary users of the facility.

Secondary user group: includes people living outside of St. James within Winnipeg.

Tertiary user group: includes family and/or friends of the person who attend the centre and visitors who have not been to the centre before.

3.3.3 User Needs and Behaviors:

Table 9: User Needs and Behaviors

Healing Garden	
Functional Needs	<ul style="list-style-type: none"> - allow for users to sit in it, walk through it, passively relax, socialize, think. - hard seating, pivot seating.
Sociological Needs	<ul style="list-style-type: none"> - seating options to encourage social interactions with others or to allow one to contemplate by one's self.
Physical Needs	<ul style="list-style-type: none"> - as a pass-through space, it allows all users access to it. - must have clear and defined pathway for people with mobility impairments.
Physiological Needs	<ul style="list-style-type: none"> - experience wonder, awe and fascination by viewing nature and getting "lost in thought". - can be used by staff of their breaks as release.
Psychological Needs	<ul style="list-style-type: none"> - variety of seating selections offer choice.

Main Reception	
Functional Needs	<ul style="list-style-type: none"> - registration process. - healthcare workers to assess who patients need to see if patients don't have a regular CAH practitioner they normally see. - receptionist to answer telephone and greet people, receive payment for classes. - sit-down registration for handicapped. - large column of information, large and bold to signal to users. - answer wayfinding questions.
Sociological Needs	<ul style="list-style-type: none"> - interaction with staff either at the desk.
Physical Needs	<ul style="list-style-type: none"> - wheelchair accessible counter height.
Physiological Needs	<ul style="list-style-type: none"> - sound of soothing music and water feature draws users inside and sets the mood directly upon entry to aid in calming users and encouraging them to feel comfortable.
Psychological Needs	<ul style="list-style-type: none"> - main entry, straight into reception area is immediately apparent, friendly, understanding and welcoming.

Urgency Department	
Functional Needs	<ul style="list-style-type: none"> - patients treated immediately without an appointment to relieve pain. - area for users to sit, wait and divert thoughts for short periods of time. - reception desk/nurse station to monitor scheduling times and users. - 4 treatment rooms to offer reiki, massage and acupuncture: full consultation rooms.
Sociological Needs	<ul style="list-style-type: none"> - variety of seating spaces permits socialization, solitary privacy or privacy with family/friends. - use of half walls or wall slats to connect users to the spaces beyond the emergency department, yet maintaining physical privacy.
Physical Needs	<ul style="list-style-type: none"> - wheelchair accessible throughout. - acoustic privacy in treatment rooms increased through use of carpeting.
Physiological Needs	<ul style="list-style-type: none"> - waiting area and treatment rooms to be affected by natural light and views of nature to reduce blood pressure and heart rate and allow for fascination, wonder and awe.
Psychological Needs	<ul style="list-style-type: none"> - choices given by offering a variety of seating selections to allow each user to feel as comfortable, relaxed and less anxious as possible.

Studio	- for individuals to come and practice yoga, tai chi and Pilates classes.
Functional Needs	- see table 11 .
Sociological Needs	- fosters interaction with others yet allows for individual privacy through meditative classes.
Physical Needs	- barrier free.
Physiological Needs	- must have high level of acoustic control to allow for meditation without noise infiltrating from adjacent spaces.
Psychological Needs	- connection to the outdoors fostered via windows to aid in meditation and relaxation.

Juice Bar	
Functional Needs	- variety of seating types. - solid surface counter, storage of fresh fruits and vegetables, refrigerators, sink.
Sociological Needs	- supports social interaction: spot for people to meet, wait for others, sit and socialize.
Physical Needs	- seating must allow for wheelchair accessibility.
Physiological Needs	- fosters social interaction.

Staff Room	
Functional Needs	- allow for staff to retreat, rest, eat, socialize, watch TV and rejuvenate, on breaks. - kitchenette and dining table. - couches and comfortable seating. - three season room and outdoor access.
Sociological Needs	- variety of space: dining table, quiet area and outdoor patio allows for choice in privacy or socialization.
Physical Needs	- barrier-free.
Physiological Needs	- connection to the outdoors and natural light.
Psychological Needs	- view and access to outdoors.

Education Room	
Functional Needs	- desks for seminars, talks and education classes on treatments. - space to access the Internet.
Sociological Needs	- social interaction fostered through seminars and classes.
Physical Needs	- task chairs for seminar, classes and internet activities.
Physiological Needs	- must have high level of acoustic control for presentations and reduction of noise movement from use of audio equipment. - appropriate lighting to allow for tasks to take place, or have lights dimmed during audio equipment use.
Psychological Needs	- access to Internet to look up information regarding health: patients can educate themselves to actively manage their health. Consumers are demanding to be educated. This assists in feeling as though they are taking control of their health.

Consult/Therapy Reception	
Functional Needs	<ul style="list-style-type: none"> - registration process. - scheduling appointments. - healthcare workers to organize patients from when they come in, move to waiting area, to consultation rooms and then leave.
Sociological Needs	- interaction with staff either at the desk.
Physical Needs	- wheelchair accessible counter height.
Physiological Needs	- sound of soothing music and fireplace draws users to the reception desk allowing them to feel comfortable.

Waiting Areas for Consultation/Treatment Rooms	
Functional Needs	- comfortably permits people to sit and wait for a Consultation or Therapy or friend/family member.
Sociological Needs	- seating and walls permits socialization or privacy, alone or with friends/family.
Physical Needs	- barrier free.
Physiological Needs	- variety of seating options for comfort, privacy and feelings of control.
Psychological Needs	<ul style="list-style-type: none"> - view to ramp and outdoors. - quiet space with music playing, books to read, videos playing, Internet access and a variety of seating options.

Consult/Therapy Room	
Functional Needs	<ul style="list-style-type: none"> - sit and converse with CAH practitioners at desk. - treatments take place on treatment bed. - room should allow for either: just consultation at desk, or both consultation and therapy on treatment bed. - some rooms do not need a desk for the function to take place (example: massage).
Sociological Needs	- seating option if joined by family/friends or meet with the practitioner alone.
Physical Needs	- barrier free, acoustic control.
Physiological Needs	<ul style="list-style-type: none"> - rooms to be affected by natural light and views of nature to reduce blood pressure and heart rate. - quiet space with soft music playing. - temperature to be warmer than normal: people's body temperature become cooler while undergoing most treatments.
Psychological Needs	- view to outdoors.

Patient Room	- for patients who need to or wish to stay overnight.
Functional Needs	- see table 11.
Sociological Needs	- daybed/window seat for family or friend to stay overnight for social support. - ample seating space to visit with family and friends.
Physical Needs	- visitor furniture to be light weight and easily movable to accommodate changing social density and furniture arrangements.
Physiological Needs	- connection to the exterior fostered via windows to aid in reducing blood pressure and lowering heart rate.
Psychological Needs	- personal toilet, sink area and shower in each room to support privacy needs. - private rooms allow for increased control of temperature, lighting, telephone, television, access and music.

Nurses Station	- station for registered nurses who are educated in CAH.
Functional Needs	- close to patients in patient rooms, close to elevator to meet people visiting. - see table 11.
Sociological Needs	- interacts with patients, family/friends, doctors, need private space to work without being interrupted also.
Physical Needs	- need to easily move between desk and patient rooms.
Physiological Needs	- views of the outdoors to allow for release from workload.

Spiritual Room	
Functional Needs	- allows for users to come to meditate, read, think and pray – whatever they need to do spiritually. - stiff seating areas, pillows on floor to sit also.
Sociological Needs	- allows for quiet interaction with others or alone privately.
Physical Needs	- allows users to be in a variety of positions: sit on knees, sit with legs crossed in meditation, on the floor on a seat.
Physiological Needs	- must have high level of acoustic control to allow for contemplation without noise infiltrating from adjacent spaces.
Psychological Needs	- connection to the outdoors fostered via windows to aid in meditation and relaxation.

Administration	
Functional Needs	- human resources, accounting services and bookkeeping. - deals with insurance coverage's. - space to support computer & general office work.
Sociological Needs	- social contact with other staff members, visual privacy from non-staff members.
Physical Needs	- high level of acoustic controls through the use of ceiling tile, carpeting and wall insulation to carry out work effectively.
Physiological Needs	- Views of the outdoors via windows to allow for release from workload.

Filing	
Functional Needs	- storage of office supplies. - staff should be able to easily and quickly find medical files for Consultation/Therapy visits.
Sociological Needs	- social contact with other staff members, partial visual privacy from non-staff members.
Physical Needs	- ample space to open filing cabinets without feeling blocked in.
Physiological Needs	- connection to reception space, the outdoors via windows and healing garden allows for release from workload.

Ramp	
Functional Needs	<ul style="list-style-type: none"> - main circulation path to move from 3rd and 2nd levels down to main level. - allow users to walk the ramp, contemplate, think, release negative emotions and memories. - platforms off of ramp to bring users close to the “calm” centre.
Sociological Needs	- room to walk alone or with a friend/family member.
Physical Needs	- barrier free w level areas that meet National Building Code standards.
Physiological Needs	- connection to nature via windows and connection to centre mandala below.
Psychological Needs	- offers prospect points. Can watch others experiencing their own journey.

Pharmacy	
Functional Needs	<ul style="list-style-type: none"> -display shelves for all naturopathic, homeopathic and herbal Chinese Medical remedies. - drop off and pick-up area, cash register.
Sociological Needs	- interaction with staff either at the desk.
Physical Needs	- wheelchair accessible counter height.
Psychological Needs	- pharmacy is located on the circulation path one follows to exit the building after individuals have undergone consult/treatment sessions.

Resource Area	
Functional Needs	<ul style="list-style-type: none"> - pamphlet information. - shelving for books and magazines to reference information. - Internet access, round tables to sit and talk.
Sociological Needs	- seating arrangements and placement offers opportunities for people to interact socially or to be by one’s self.
Physical Needs	- comfortable seating in reading area to encourage and assist in longer stays.
Physiological Needs	- connection to nature via windows and connection to centre mandala.
Psychological Needs	- access to Internet to look up information regarding health – patients can educate themselves to actively manage their health. Assists in feeling as though they are taking control of their health.

Support Services	
Functional Needs	<ul style="list-style-type: none"> - housekeeping – small area for storage of cleaning carts and cleaning supplies for patient rooms and family overnight rooms. Use of existing main housekeeping space in the Grace Hospital as well. - janitors closet – all cleaning supplies, slop sink.

3.4 Functions and Aesthetic Requirements

3.4.1 Function and Treatments

The proposed centre could be operated by The Winnipeg Regional Health Authority (under Manitoba Health). Users could either be referred to the centre by their doctor or would pay a session fee upon entry. Sessions could be purchased in any duration depending on the users needs and desires.

The CAH treatments and therapies that will be offered in the proposed CAH centre were determined based on actual surveys conducted in both Canada and the United States in 2002 by McFarland, B., Bigelow, D., Zani, B., Newsom, J. & Kaplan, M. From these surveys, it was determined that the public most commonly sought, and used, CAH treatments and therapies including chiropractic, acupuncture, homeopathy, naturopathy and massage therapy. The surveys also showed that people mainly used CAH as an additional form of healthcare rather than an alternative to conventional medicine.

In 2002, the National Institute of Health also conducted a survey in Canada and the United States to determine if CAH had actually become an integral part of healthcare. They found that 36% of adults had used some sort of CAH in the last year. They also found that apart from prayer, the CAH modalities most commonly used were natural products such as herbs, meditation, chiropractic, yoga and massage (National Institute of Health, 2002).

Given the findings of these surveys, the treatments and modalities that will be offered within the proposed CAH centre, are listed in Table 10 (p.72). As classified by the National Council of Complementary and Alternative Medicine (NCCAM), the different categories or domains include: 1) Alternative Medicine Systems, 2) Mind-body

Interventions, 3) Biologically-based Therapies, 4) Manipulative and Body-based Therapies, and 5) Energy Therapies. (See Appendix 7.2 for treatment descriptions).

Table 10: NCCAM Categories

NCCAM Category:	Description:	Treatments Include:
1) Alternative Medicine Systems	Forms of alternative medicine that are built upon a complete system of theory and practice.	- Chiropractic - Homeopathy - Naturopathy - Traditional Chinese Medicine
2) Mind-body Interventions	Forms of alternative medicine designed to enhance the mind's capacity to affect bodily function and symptoms.	- Meditation - Yoga
3) Biologically-based Therapies	Forms of alternative treatment that use substances found in nature.	- Naturopathy - Natural Therapy
4) Manipulative and Body-based Therapies	Alternative treatments that are based on manipulation and/or movement of one or more parts of the body.	- Chiropractic - Massage Therapy
5) Energy Therapies	Alternative treatments that involve the use of purported energy fields.	- Reiki
6) Exercised-based Therapies	Not part of the NCCAM classification but important to include in the proposed health centre. Exercise-based Therapies include a variety of traditional forms of physical exercise in order to improve health and longevity, to increase muscle mass as well as to treat specific health conditions and to relieve stress.	- Tai Chi - Pilates

Spaces that will support these modalities and their auxiliary functions within the centre include: reception area, administration office, file storage, pharmacy, juice bar staff room, waiting areas, consultation/therapy rooms, doctors offices, family overnight rooms, patient rooms, locker rooms, a studio space, an education space, resource area with Internet access and a library, a healing garden atrium, a spiritual room, an urgency department, a nurses station and a support services area.

3.4.2 Table 11: Furniture, Fixture and Equipment Requirements

Area	Activities	Item and Quantity	Approx. Dimension
Healing Garden	Sit, socialize, passively relax, read, watch, listen.	Fixed bench seating (2)	18"D x length varies
		Fixed pivot single seating (10-12)	18"D x 18"W x 18"H
Main Reception	Check in, ask questions, fill out health & insurance forms.	Cash register (1)	24"W x 24"L x 24"D
		Telephone (1)	8"W x 9.5"L
		Reception counter (1)	13'-0"L x 30" W x 30"H
		Task seating (1)	18"W x 18"L x 18"H
		Computer (1)	18"W x 18"L x 15.5"H
		Fax/printer (1)	2'-0"W x 2'-0"L x 1'-0"H
Urgency Department	Patients are treated right away without an appointment to relieve pain via acupuncture, reiki, massage. Small reception and waiting area, 2 treatment rooms.	Check in Desk	9'-6" L x 30"D x 30"H
		Treatment/Examination table (1)	24"W x 68-72"L
		Highback seating (1-2)	26"W x 29"D
		Equipment table (1)	12"D x 34"H
		Low stool (1)	18"Dia. x 18" – 24" adj.
		Closed shelving for supplies (2)	36"H x 18-22"D
		Open shelving for supplies (2)	16-28"H x 12"D
		Telephone (1)	9.5"L x 8"W
		Single sink (1)	18"D x 36-40"H
Studio	Listen to music and instructor, participate in movement classes.	Preparation closet	2'-0"D x 3'-0"W x 6'-0"H
		Sound system (1)	TBD
		Mirror	2'-0" W x 5'-0"L
Locker Rooms	Change for movement classes.	Floor mat (25)	63-73"L x 20"W
		Mirror (3)	TBD
		Locker (18-22)	12-18"D x 64-76"H
		Bench (2-3)	14-17"H x 3-4'-0"L
Juice Bar	Sit, drink, socialize.	Hook (6)	1" x 1"
		High stools (5)	18"Dia.
		Bench seating	30"W x 36"L
		Waste receptacle behind counter (1)	2'-0"W x 2'-0"L
Staff Room	Sit, eat, drink, socialize, read.	Undercounter refrigerator (2)	1'-8"W x 26"D x 2'-3"H
		Telephone (1)	8"W x 9.5"L
		Table (2)	3'-0"W x 4'-0"L
		Task seating (16)	18"W x 18"D
		Microwave (1)	2'-0"W x 1'-3"H x 1'-0"D
		Refrigerator (1)	3'-0"W x 2'-7"D x 5'-6"H
		Double Sink (1)	3'-0" W x 1'-9"D
		Dishwasher (1)	2'-9.5"H x 2'-0"W x 2'-0"D
		Sofa (2)	6'-6"L x 2'-6"D
		Lounge chairs (4)	26"W x 29"D

Table 11 Cont.

Area	Activities	Item and Quantity	Approx. Dimension
Education Room	Seminars, discussions, group therapies, search the Internet, socialize, listen to presentations, watch videos.	Television and DVD player (1)	
		Computer (6)	18"W x 18"L x 15.5"H
		Horizontal task surface (6)	Custom millwork
		Lounge Chairs (4)	26"W x 29"D
		Task seating (12)	18"W x 18"L
		Projector (1)	
Waiting Areas for Consults/Treatment	Sit, wait, read, socialize with family and friends.	Lounge seating (5)	26"W x 29"D
		Built-in seating (1)	Custom millwork
Consult/Therapy Rooms	Vairity of treatments, conversing with CAH practitioners, examinations.	Treatment/Examination table (1)	24"W x 68-72"L
		Consultation Desk w/ drawers (1)	30"W x 30"H x 42"L
		Highback seating (3)	26"W x 29"D
		Computer (1)	18"W x 18"L x 15.5"H
		Equipment table (1)	12"D x 34"H
		Small stool (1)	18"Dia. x 18" – 24" adj.
		Closed shelving for supplies (under/over counter) (2)	36"H x 18-22"D
		Open shelving for supplies (over counter) (2)	16-28"H x 12"D
		Telephone (1)	9.5"L x 8"W
		Hook (3)	.5" x 1"
		Preparation closet w/ shelving (1)	2'-0"D x 3'-0"W x 6'-0"H
		Single sink (1)	18"D x 36-40"H
Patient Rooms	Look out windows, listen to music, sleep, visit with family and friends, talk on the telephone, watch TV, read, cleanse and change.	Open shelving (1)	12"D x 3'-0"L
		Bed (1)	87"L x 39"W
		Desk (1)	3'-0"L x 24"D x 30"H
		Visitor seating (2)	18"W x 18"L
		Window bench/bed (1)	87"L x 39"W
		Single sink (1)	18"D x 16"W x 36-40"H
		Side table/cabinet (1)	20"W x 18"D
		Toilet (1)	36"W x 18"H
		Telephone (1)	9.5"L x 8"W
		Clothes closet (1)	2'-0"D x 4'-0"L x 7'-6"H
		Shower (1)	4'-0"L x 4'-0"W
Nurses Station	Staff area (mainly registered nurses) who look after patients in patient rooms, answer questions from friends and families, correspond with doctors.	Computer (1)	18"W x 18"L x 15.5"H
		Telephone (1)	9.5"L x 8"W
		Counter (1)	9'-0" L x 30"W x 30"H
		Photocopier (1)	2'-0"W x 2'-0"L x 3'-0"H
		Fax/printer (1)	2'-0"W x 2'-0"L x 1'-0"H
		Task seating (1)	18"W x 18"L
		Docette/filing space for charts (6)	3'-0" L x 18"W

Table 11 Cont.

Area	Activities	Item	Approx. Dimension
Spiritual Room	Quiet space. Allows users to come to meditate, read, think and pray – whatever they need to do spiritually.	Alter (1)	4'-0"L x 12"D
		Hard seating (2)	5'-0" x 18"D x 18"H
		Floor pillows (6)	2'-0" x 2'-0"
Administration Office	Accounting office, general administration duties.	Horizontal work surface (Systems furniture) (2)	7'-0" W x 7'-0"L
		Task seating (2)	18"W x 18"L
		Computers (2)	18"W x 18"L x 15.5"H
		Telephone (2)	8"W x 9.5"L
		Fax/printer/photocopier in 1 (1)	2'-0"W x 2'-0"L x 1'-0"H
File Storage	Storage of patient files and office supplies.	5-drawer file cabinets (6)	42"W x 28"L x 64"H
		Cabinets w/ adj. Shelving (4)	4'-6"L x 2'-0"W x adj. H
		Horizontal work surface (1)	8'-0"L x 2'-0"W x 34"H
Ramp	Pass-thru space, walk, watch others, listen and contemplate	N/A	N/A
Pharmacy	Drop off remedy info, pick up remedies, converse with pharmacist, waiting area close by.	Cash register (1)	24"W x 24"L x 24"D
		Shelving	1'-0"D x varies
		Undercounter cabinets (2)	2'-0"D x 3'-0"L
		Consultation counter (1)	5'-0" L x 30"D x 30"H
		Under the counter refrigerator (1)	1'-8"W x 26"D x 2'-3"H
		Task stools (1)	18"Dia. x Adj.H
		Computers (1)	18"W x 18"L x 15.5"H
		Docette shelving for Literature (2)	2'-0" L x 3"D
Resource Area	Read, search the Internet, socialize, collect pamphlet information, become informed.	Open shelving for books (3)	18"D x 3'0"W
		Lounge chairs (4)	26"W x 29"D
		Round tables (3)	4'-0"Dia. x 30"H
		Task chairs	18"W x 18"
		Counter for computer terminals (2)	1 @ 18"D x 34"H x 6'-0"L 1 @ 18"D x 29"H x 6'-0"L
		Computers (4)	18"W x 18"L x 15.5"H
		Custom wrap-around upholstered benches (2)	18"D around column at 18"H
Support Services	Housekeeping – small area for storage of cleaning carts and cleaning supplies on each level.	Adj. shelving (4)	TBD

3.4.3 Table 12: Atmosphere and Spatial Character

Space	Desired Atmosphere	Nature of Activity	Spatial Quality
Healing Garden	Contemplative, restorative, relaxing, energizing.	Active and quiet. Public. Used 24 hours a day. Individual or small group.	Allows for distraction and fascination, interaction and social support.
Main Reception	Welcoming, friendly, warm.	Active, very public. Used 24 hours a day. Individual or small group.	Mainly used as a temporary stopping space for people checking in. Greatly affected by natural light.
Urgency Dept.	Calming.	Active and semi-public, quiet, used for short periods of time, space used 24 hours a day, Individual or small group.	Focus on creating fascination through focal points and positive distraction (artwork, water features).
Studio	Meditative, energizing, refreshing.	Active and quiet. Used during the day and evening. Semi-Public. Small groups.	Allows for connection with nature. Open plan.
Locker Rooms	Clean.	Active and noisy. Public. Used during the day and evening.	Clean, sanitary.
Juice Bar	Social, friendly, energized, stimulating.	Active and public, used during the day and evening. Varying degree of noise throughout the day. Individual or small group.	Choice and control offered by providing variety of seating arrangements, open plan, variety of views to other spaces.
Staff Room	Interactive, peaceful, and relaxing.	Active, semi-private. Used 24 hours a day. Individual, small or large group.	Gives users options based on their mood. Allows for distraction and interaction. Connection to natural light, nature.
Education Room	Highly technological, accessible and easy learning.	Active and noisy or passive and quiet. Used during the day. Public. Individual or small group.	Interactive, offers control of environment by offering choices of lighting, learning mode, etc.
Consult/ Therapy Reception	Welcoming, friendly and warm.	Active and semi-public. Used during the day and evening.	Mainly used as a temporary stopping space for people checking in and doctors corresponding with receptionists.

Table 12 Cont.

Space	Desired Atmosphere	Nature of Activity	Spatial Quality
Waiting Areas for Consult	Calming, contemplative, interactive.	Active and quiet. Used during the day, temporary seating space. Semi private. Individual or small group of family and friends.	Choice of privacy or interaction, allows for social support. Fascination through focal points and positive distraction (water features, videos). Connection to other spaces to allow 1 to get lost in thought.
Consult/ Therapy Rooms	Friendly, calming, relaxed.	During consultation: active. During therapies: passive and quiet. Private. Used during the day.	Natural light and connection with nature. Allows for social support via extra seating.
Patient Rooms	Relaxing, restorative, contemplative.	Active or passive and quiet. Used 24 hours a day. Private. Individual or small group.	Full of light, connection with nature via windows, focus on choice, control and social support.
Nurses Station	Helpful, welcoming, friendly.	Active and noisy. Semi Private. Used 24 hours a day. Small group.	Interactive space. Allows for social support. Open and easily accessibly to main circulation paths.
Spiritual Room	Contemplative, restorative, relaxing, energizing.	Very Quiet and maybe active. Private. Used 24 hours a day. Individual.	Affected by natural light. Open plan with private enclosures.
Ramp	Contemplative, releasing, opening of the mind.	Active and quiet becoming active and noisy as one progressed down to the main level. Used 24 hours a day. Individual or small group.	Becoming more open as 1 progresses down w/ increasing natural light and connection to nature. Open plan, journey. Used as a pass-thru and temporary stop place.
Pharmacy	Helpful, informative.	Active, public space used during the day and evening, used for short periods of time by users. Individual.	Mainly used as a temporary stopping space. Affected greatly by natural light.
Resource Area	Helpful, informative, interactive, social.	Active and public. Used 24 hours a day. Individual, large or small group.	Greatly affected by natural daylight. Open plan. Allows for both social interaction or time by one's self.
Support Services	Functional.	Active and noisy. Used 24 hours a day. Public, individual or small group.	Functional, clean.
Circulation	Mixture of free-flowing and contemplative with angular, direct circulation paths	Active and noisy and active and quiet. Used 24 hours a day. Public and semi-public, individual or small group.	Free-flowing curves slower and more sympathetic to the body. Contemplative. Angular paths create a direct, intentional connection between spaces.

Table 13: Color and Material Requirements

Space	Lighting*	Colors **	Materials**	Views
Healing Garden	Direct & diffuse natural light. Bright natural light levels. Suspended pendant downlighting.	Warm & cool combination: contemplation, stimulation.	Hard. Linoleum, stone, natural vegetation.	Views within the healing garden and to the outdoors.
Main Reception	Diffuse natural light. Recessed downlighting w/ diffusers (task), cove wall washers (ambient).	Warm tans and yellows to encourage welcoming and friendly atmosphere.	Hard. Stimulation through varying textures: stone, slate, cork, water, translucent panels.	View to main entrance and central elevator. Peek thru to ramp and resource area.
Urgency Department	Diffuse natural light. Cove uplighting & recessed downlighting, pendant lighting.	Cool greens to reduce tension and promote calmness.	Hard & soft. Familiar materials = comfort: carpet, fabric, wood, rounded stone.	View to main circulation corridor and feature water wall. Use of ½ open wall.
Studio	Direct natural light. Suspended uplighting.	Soft blue enhances meditation and allows for contemplation.	Hard & soft. Sheet vinyl, metal, fabric, translucent panels.	Focused view/meditation in mirror with reflection of outdoors via windows.
Locker Rooms	Recessed downlighting w/ diffusers. Diffuse natural light.	Warm tan.	Hard. Linoleum, wood, metal, plastic laminate.	Translucent, distorted view outdoors for privacy.
Juice Bar	Diffuse & direct natural light, suspended downlighting and track lighting.	Warm terra-cotta to encourage socialization.	Hard. Wood, cork, metal, slate, rough stone.	View to main circulation path, to secondary entrance and to ramp area. Visual openness.
Staff Room	Diffuse & direct natural light, under counter lighting, recessed downlights w/ diffusers, table lamps.	Cool blue-grey - restful.	Soft. Relaxing: cork, fabric, wood, carpet, engineered stone, p-lam.	View to outdoors via windows & open via exterior doorway.
Education Room	Diffuse natural light. Recessed downlighting (rows independent).	Warm & cool combination for stimulation.	Hard. Metal, wood, plastic laminate, cork.	View from elevator to education room entrance. View to ramp
Consult/Therapy Reception	Recessed downlighting w/ diffusers (task). Pendant lighting	Warm peach tones to encourage socialization.	Hard. Wood, cork, fire, stone.	View to both primary and secondary elevator. View to waiting area.
Waiting Area for Consult/Therapy Treatments	Diffuse & direct natural light, recessed and wallwashers downlighting w/ diffusers.	Warm peach to encourage socialization.	Hard & soft. Fabric, wood, cork, water, stone.	View to surrounding circulation paths, ramp and reception. Visual openness.

* For lighting specifications, see Appendix 7.3.

** For material and color specifications, see Appendix 7.4.

Table 13 Cont.

Space	Lighting	Colors**	Materials**	Views
Consultation/ Treatment Rooms	Diffuse natural light. Recessed perimeter uplighting & suspended uplighting.	Cool green reduces tension and allows for healing and peace.	Soft. Familiar materials = comfort: carpet, fabric, wood.	View to outdoors via windows.
Patient Rooms	Range of choice. Diffuse natural light. Recessed downlighting & ceiling mounted incandescent downlighting. Dimmers. Wall lights.	Cool blue-green reduces tension and allows for healing and peace.	Soft. Familiar, warm and soft materials = comfort: carpet, fabric, wood.	View to outdoors via windows. Prospect from window seat.
Nurses Station	Diffuse natural light, under counter task lighting, pendent downlighting, recessed downlighting w/ diffusers	Warm tans and yellows to encourage alertness and socialization.	Hard & soft. Wood, carpet, stone, fabric, plastic laminate.	View to elevator entrance and patient rooms.
Spiritual Room	Diffuse natural light. Wall lights. Lower light levels, dimmers.	Purples and violets to promote spirituality.	Soft. Carpet, fabric, wood.	Focused view/meditation within the room and to the outdoors. Eyes may be closed.
Ramp	Direct natural lighting. Halo of downlights suspended on stainless steel cables.	Warm yellows to enhance brightness of space.	Hard. Concrete, glass, metal.	To other points along the ramp. To centre of ramp and resource area on main level.
Pharmacy	Diffuse natural light. Pendant, cove uplighting (ambient).	Warm tans and yellows to encourage socialization and enhance brightness.	Hard. Stimulation through varying textures: stone, slate, cork, water, translucent panels.	View to: resource area and main exit.
Resource Area	Direct natural lighting.. Recessed downlighting w/ diffusers. Halo of recessed downlights suspended on stainless steel cables.	Warm tans and yellows to encourage socialization and enhance brightness	Hard. Stimulation through varying textures: stone, slate, cork, water, translucent panels.	View to: pharmacy and main exit. View up to ramp and outdoors via windows.
Support Services	Recessed downlighting w/ diffusers.	White – cleanliness.	Hard. Functional materials.	N/A
Circulation	Varies: Diffuse natural light, cove lighting, suspended indirect uplighting.	Neutral. Warm beige/tan.	Varies. Cork or carpet.	Varies.

* For lighting specifications, see Appendix 7.3.

** For material and color specifications, see Appendix 7.4.

3.5 Access and Life Safety Requirements

3.5.1 Building Code Analysis and Universal Design Requirements

According to the National Building Code of Canada (2005) the occupancy classification for this proposed building type is Group D: Medical offices and services. An overview to the building code design parameters applicable to undertaking such a design project can be further developed using the City of Winnipeg Building Design Summary Guidelines (2005) (See Appendix 7.5). Below are regulations the National Building Code of Canada has determined this occupancy must meet.

Fire Regulations

- Fire doors must swing with path of travel towards direction of exit.
- Floor assemblies shall be fire separated with a fire resistance rating of not less than 2 hours (p. 3-47).
- The building shall be sprinklered throughout (p. 3-47).
- Must have a fire-resistance rating of not less than 1 hour (p. 3-47).
- Every exit shall be separated from the remainder of the building by a fire separation having a fire-resistance rating not less than 1 hour (p. 3-116).

Public Corridors, Egress and Exits

- At the point where a doorway opens onto a public corridor or exterior passageway, it shall be possible to go in opposite directions to each of 2 separate exits (p. 3-97).
- Exit lighting, signs and emergency lighting must be provided.
- Travel point from any point shall not exceed 50m.
- Handrails are required on both sides of a pathway if greater than 1100mm wide with rail being 30-50mm dia (p. 3-95).
- Every floor area intended for occupancy shall be served by at least 2 exits (p. 3-110).
- The least distance between 2 exits from a floor area shall be one half the maximum diagonal dimension of the floor area having a public corridor (p. 3-113).
- The exits shall be located so that the travel distance to at least 1 exit shall be not more than 40m (p. 3-114).
- Exits shall be located and arranged so that they are clearly visible or their locations are clearly indicated and they are accessible at all times.
- If a vestibule is used as part of a horizontal exit, their clear width shall be not less than that of the exit doorways opening into them (p. 3-121).
- The surface of ramps and landings and treads shall have a finish that is slip resistant and shall have either a color contrast or a distinctive pattern (p. 3-118).

3.5.2 Universal Accessibility

The following accessibility issues will be incorporated to allow all users ease of access and use of the proposed healthcare centre. The following information was obtained from University of Manitoba's Universal Design Institute (2000).

- All principle entrances used by the public should be barrier-free and lead to primary services such as the reception area, elevators, services, directional information, telephones and lavatories (p.17)
- All principle entrances should be marked with tactile and Braille signage.
- Any ramp slope shall not exceed 1 in 10 (p.17)
- Doors must have a clear opening width of not less than 2'-8", be easily operable with 1 hand (p. 129).
- All operable controls (vending machines, telephones, light switches, door handles, elevators etc) should be located 1'-6" to 4'-0" AFF (p. 31)
- Corridor walls should be contrasting from the floor and not be entirely composed of glass or mirror which is difficult to distinguish by people with low vision (p.163)
- Floors should be slip resistant throughout, have a non-glare finish and not have heavily patterned designs (p.150)
- Lighted exit signs that flash and beep when the alarm system is activated is preferred for people with sight and hearing impairments (p.56).
- All washrooms shall be barrier-free and be located on each storey with barrier-free access with a minimum dia. of 5'-0" to turn around for wheelchairs or scooters (p. 92).

3.6 Spatial Requirements and Analysis

3.6.1 Floor Area Estimates

Table 14: Square Footage Requirements: per space

Space	Quantity	Approx. Unit Size (sq. ft.)	Total (sq.ft.)
Healing Garden	1	1,400.0	1,400.0
Main Reception	1	550.0	550.0
Urgency Dept.	1	1,150.0	1,150.0
Studio	1	650.0	650.0
Locker Rooms	2	300.0	600.0
Juice Bar	1	425.0	425.0
Staff Room	1	1,150.0	1,150.0
Education Room	1	750.0	750.0
Consult/Therapy Reception	1	350.0	350.0
Waiting Areas for Consult	2	308.0	615.0
Consult/therapy Rooms	9	141.0	1,270.0
Patient Rooms	4	333.0	1,330.0
Nurses Station	1	475.0	475.0
Spiritual Room	1	675.0	675.0
Administration Area	1	415.0	415.0
File Storage	1	350.0	350.0
Pharmacy	1	360.0	360.0
Resource Area	1	1,030.0	1,030.0
Support Services	6	67.0	400.0
Public washrooms	6	225.0	1,350.0
Subtotal			15,295.0
Circulation (40%) of total area			6090.0
Total			21,385.0

3.6.2 Spatial Adjacency Matrices

Table 15: Spatial Adjacency Matrices

	Healing Garden	Main Reception	Urgency Department	Studio	Locker Rooms	Juice Bar	Staff Room	Education Room	Consult/Therapy Reception	Waiting Area	Consult/Therapy Rooms	Patient Rooms	Nurses Station	Spiritual Room	Administration / File Storage	Ramp	Pharmacy	Resource Area	Support Services
Healing Garden		X	X	X	X	X	X	X	X	●	X	●	X	X	X	●	X	X	X
Main Reception			●	●	●	X	X	●	●	●	X	X	X	X	X	●	●	X	X
Urgency Department				X	X	X	X	X	X	X	X	X	X	X	X	X	●	●	X
Studio					●	●	X	X	X	X	X	X	X	X	X	X	X	X	X
Locker Rooms						●	X	X	X	X	X	X	X	X	X	X	X	X	X
Juice Bar							●	X	X	X	X	X	X	X	X	X	X	X	X
Staff Room								X	X	X	X	X	X	X	X	X	X	X	●
Education Room									●	●	X	X	X	X	X	X	X	X	X
Consult/Therapy Reception										●	●	X	X	X	●	X	X	X	X
Waiting Area											●	X	X	X	X	X	X	X	X
Consult/Therapy Rooms												X	X	X	X	X	●	●	●
Patient Rooms													●	●	X	X	X	X	●
Nurses Station														X	X	X	X	X	●
Spiritual Room															X	X	X	X	X
Administration /File Storage																X	X	X	X
Ramp																	●	●	X
Pharmacy																		●	X
Resource Area																			X
Support Services																			

*Doctor's offices and Family overnight rooms currently exist on the 4th and 5th levels.

Essential ●
Desirable ●
Non-essential X

3.6.2 Zoning Analysis

Main Level:

- Activities where individuals are seen immediately: pharmacy, reception, urgency department and studio.
- Where the most public and social activities are located: juice bar and seating area, healing garden.

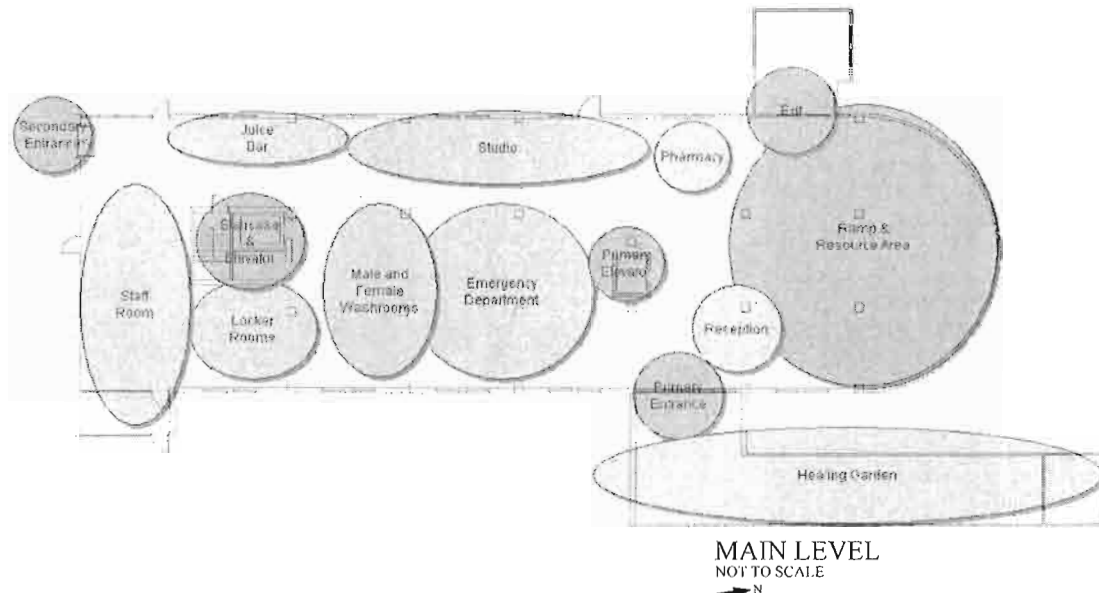


Figure 32: Zoning analysis: Main Level

Second Level:

- “no-rush” spaces: spiritual room, patient rooms, lounge area.
- Where the most private activities are located.

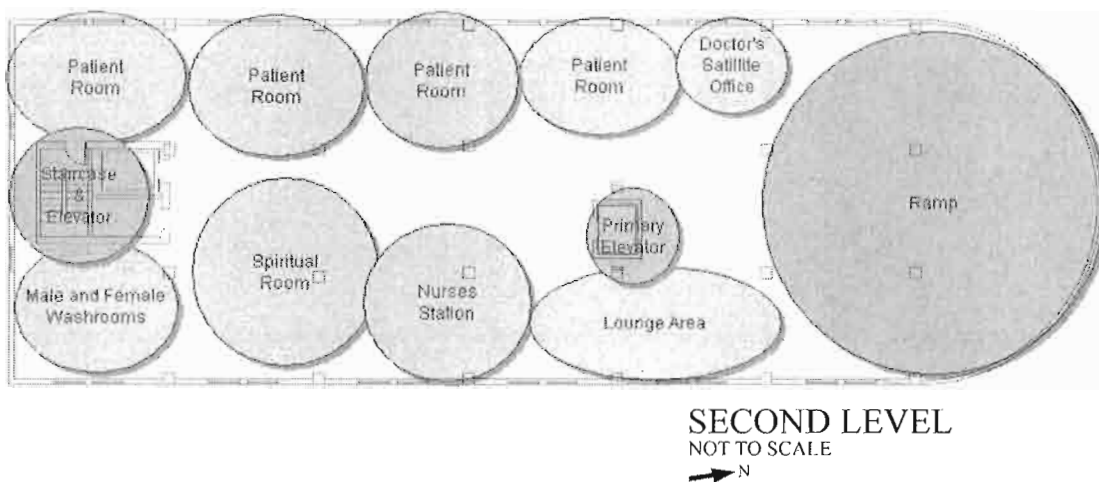


Figure 33: Zoning analysis: Second Level

Third Level:

- Where longer stays within the centre occur: Consultation and treatment rooms, education room.
- Where semi-public spaces are located.

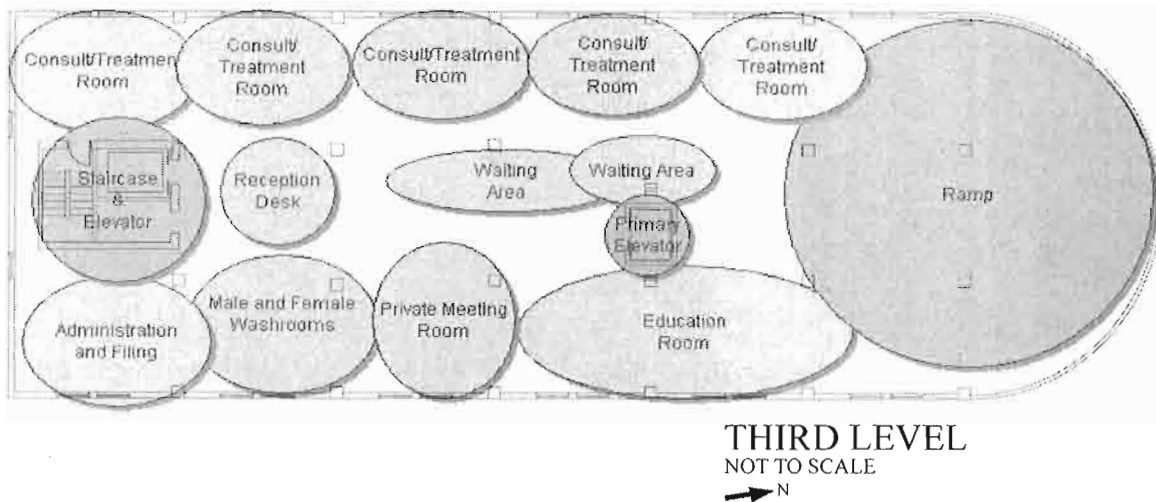


Figure 34: Zoning analysis: Third Level

3.6.4 Circulation Analysis

- Existing primary entrance into the Dorothy Wood Building is located along east side of the building. Secondary entrance is located from the tunnel to the Grace Hospital along the south side of the building. There are two fire exits located on the north side of the building.
- Through adaptive re-use, the main entrance will be moved to the northeast side of the building and main exit located at the northwest side of the building.
- There are 3 existing vertical circulation modes within the Dorothy Wood Building. The primary stairway and elevator located towards the south end of the building and the secondary stairway at the north end of the building. These circulation paths are located centrally within the building between the two rows of structural columns.
- Through adaptive re-use, the existing primary stairway and elevator (south end of the building) will now act as the building's secondary mode of vertical circulation. The existing secondary stairway (north end of the building) will be removed from the first three levels but will be retained on the fourth and fifth levels.
- The two new primary modes of vertical circulation will be a single car elevator lift located centrally within the building, servicing all five levels. This elevator will primarily

move users from the main floor upwards to other floors. Secondly, a large ramp will replace the part of the existing secondary stairway and serve as a primary source of egress to move users down and out of the building. This ramp will service only the first 3 levels.

The ground floor is comprised of very active and public spaces and activities, the second floor: mostly private spaces and activities; and the third: semi-private spaces and activities. The fourth and fifth levels are comprised of existing doctors offices and family overnight rooms.

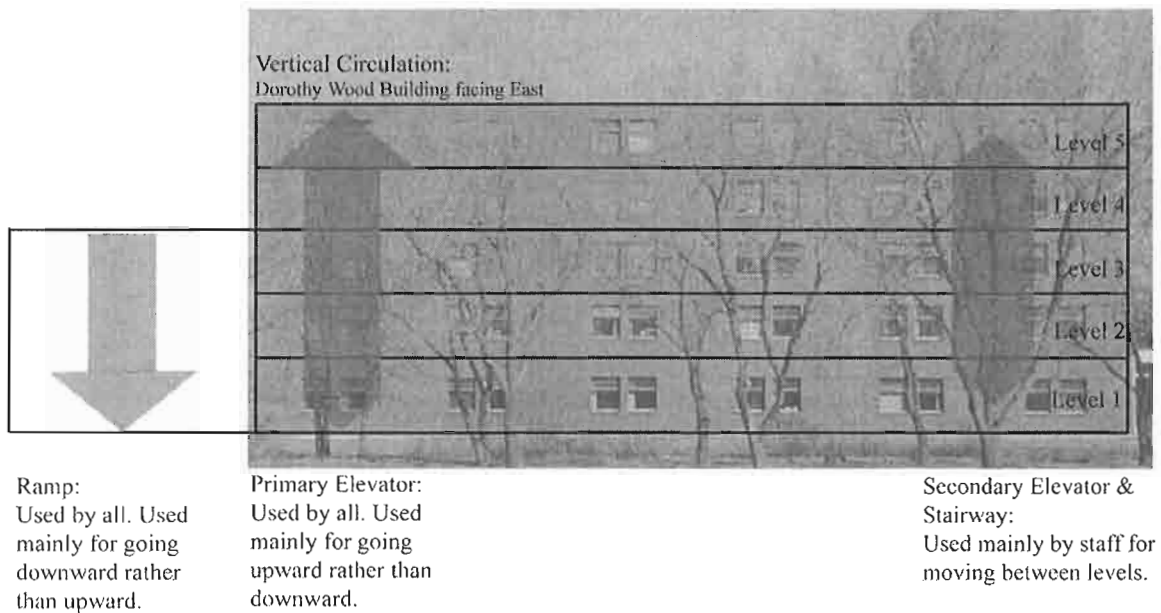


Figure 35: Existing circulation analysis

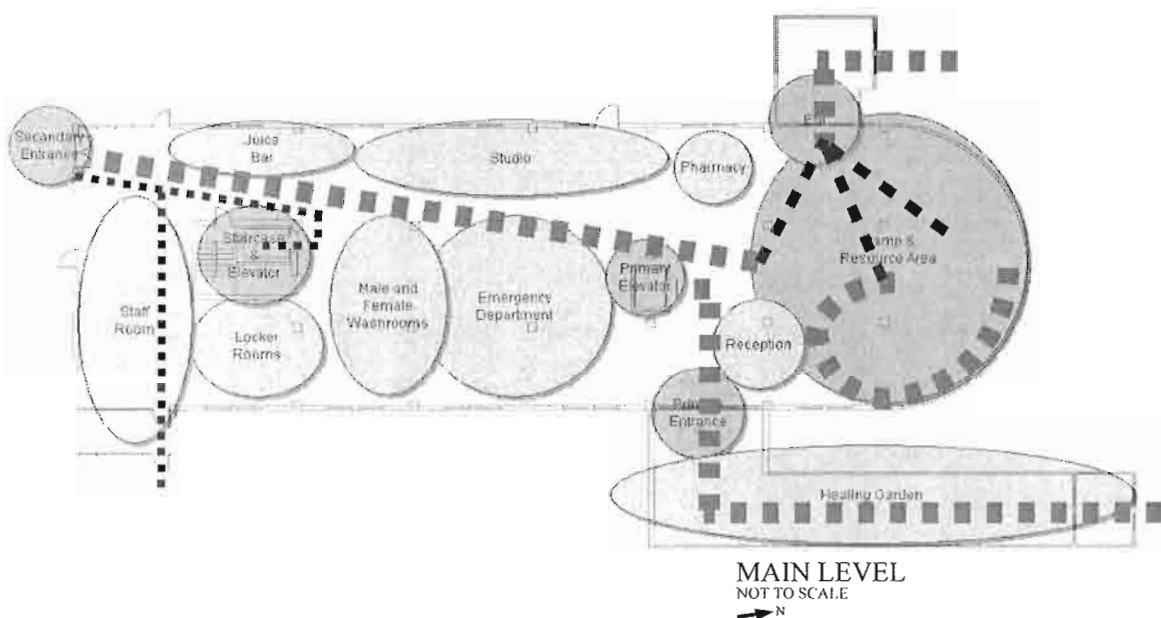
Privacy Gradient and Activities
Dorothy Wood Building facing East

Privacy Gradient	Level	Activities
PRIVATE	Level 5	Existing Family-Overnight Rooms
PRIVATE	Level 4	Existing Doctors Offices
SEMI-PRIVATE	Level 3	Waiting Areas, Consultation/Treatment Rooms, Filing Room, Administration Office, Education Room
PRIVATE	Level 2	Lounge Area, Patient Rooms, Nurses Station, Spiritual Room
PUBLIC	Level 1	Healing Garden, Reception, Emergency Department, Juice Bar & Seating Areas, Locker Rooms, Studio, Staff Room, Pharmacy, Resource Area

Figure 36: Proposed circulation analysis: Public to Private.

Main level Circulation:

- The circulation was designed to guide users through the space in order to experience the space in a particular sequence.
- Two primary circulation paths:
 - 1) runs from the road, through the healing garden, past the receptionist, into the elevator and up to the third floor.
 - 2) runs from the tunnel (south end) towards the architectural ramp feature (north end)
- This primary circulation path moves people directly from the entries towards major functional destinations, not through private spaces.
- Secondary circulation moves people off into these more private areas.



Second level Circulation:

- Main circulation path runs from the elevator, past the nurses station towards the spiritual room and off into patient rooms.
- Secondary circulation moves people off into the private areas.
- Most private level of the centre opened to the public. Therefore, circulation is less dense.

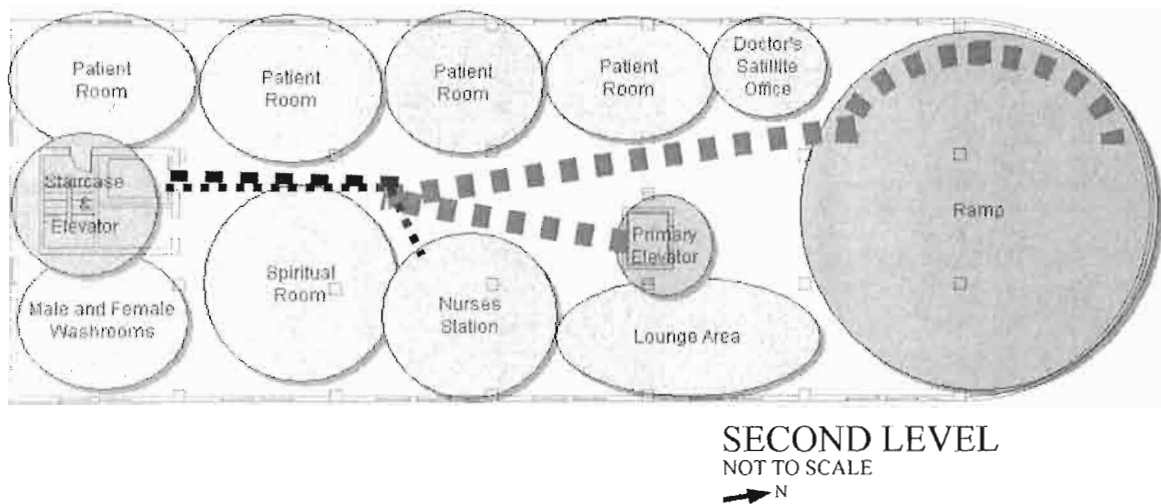


Figure 38: Circulation analysis: Second floor

Third level Circulation:

- One main circulation path from the elevator to the receptionist and back towards the ramp. Users move around the waiting area in the central core of the third level.
- Secondary circulation moves people off into the private areas of the consultation rooms.
- Semi-public level, quite active. Not as public as the first floor.

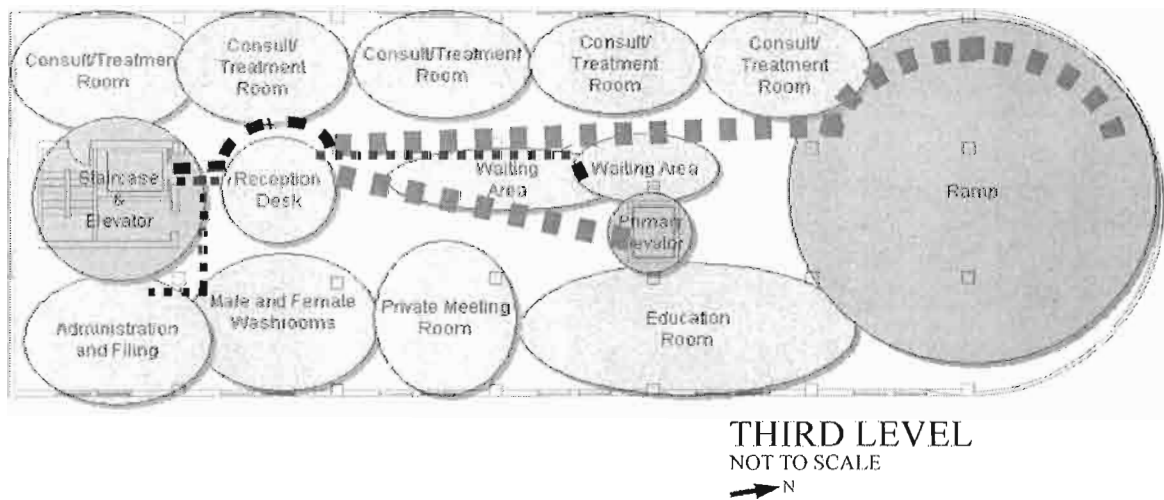


Figure 39: Circulation analysis: Third floor

3.7 Design Guidelines

The following design guidelines are a synthesis from the data obtained from the investigation techniques: literature review, precedent analysis and face-to-face interviews.

Issue: Holism

Objective: Individual spaces, which together comprise the entire centre as a whole, relate to all other spaces, in connection.

Concept: Consider unity through the use of repetition in shape, form, pattern, color and texture.

Objective: Holistic healing connects people and communities.

Concept: Consider providing open and welcoming spaces with transparent entries and/or public atria to connect people to one another in open social spaces.

Issue: The natural

Objective: The practice of CAH supports the use of completely natural remedies and therapies stressing the bodies own healing process and the reduction of harmful side effects.

Concept: Consider the use of materials that can be described as natural or that have been inspired by nature. (Example: the use of wood floors or vinyl floors with a wood pattern).

Objective: The dependence of the human psyche on nature has allowed the human capacity to accept today's technological fabrications *of* nature as an effective substitute *for* nature

Concept: Consider designing an extremely rich environment with a diversity of colors and textures, which may stimulate and reproduce a similar sensory experience, wonder and awe found in nature, identified by Kaplan & Kaplan (1989) as fascination.

Issue: Journey

Objective: The journey represents an individual's experience towards health and wellness, it is always changing, fluid and moving.

Concept: Consider the use of circular forms and elements to represent an ongoing, cyclical journey.

Concept: Consider curve elements to encourage a more slower, contemplative experience for the human mind, body and spirit.

Issue: **Choice**

Objective: Offering a variety of choices in healthcare environments reduces stress and enhances the feelings of being in control.

Concept: Consider choices in light levels and music in private areas, a range of seating options in waiting areas, quiet versus active areas.

Concept: Consider choices as they relate to the availability and choice of privacy and socialization.

Issue: **Privacy**

Objective: Allows users to survey their surroundings, watch activities with or without participating and experience a connection to the larger world including the outdoors and the centre itself. Privacy benefits our overall well-being, reduces stress and allows for rejuvenation and contemplation of one's current state.

Concept: Consider private seating areas such as window seats and prospect spaces.

Concept: Consider the use of spatial hierarchy from public to more private as users move through the building.

Issue: **Connection**

Objective: Connection of spaces within the built environment promotes a sense of unity, oneness and flow.

Concept: Consider the availability of views through and to adjacent spaces as well as framing viewpoints to create connectedness and an understanding of spatial orientation and depth.

Concept: Consider thresholds between the outdoors and interior of the centre to be as subtle as possible, fostering a direct connection between nature and the interior.

Issue: **Social Support**

Objective: Creating a psychologically supportive environment for users, includes designing spaces, which allow for social support from family and friends.

Concept: Consider furniture that is flexible in patient rooms such as light-weight, movable chairs to accommodate changing social density and furniture arrangements. Consider foldout sleeping chairs or beds in patient rooms for over-night guests.

Concept: Consider seating locations and arrangements in waiting areas that can accommodate for social support groups of family and friends.

Issue: **Contrast between visual openness and physical privacy.**

Objective: Visual openness encourages social interaction and a variety of views, stimulating the senses whereas privacy encourages individual contemplation and physical exclusion.

Concept: Consider the use of thin wall slats or half-open walls: half open, half enclosed such as an arch, a trellised wall or a counter height wall to help balance enclosure and openness. Semi enclosed spaces allow users to achieve optimal physical and visual privacy while still allowing them to observe everything around them.



2.0 CONCLUSION

This research-based design practicum is the result of a thoughtful merging of the design programme and investigation techniques including theoretical concepts gained from literature, precedent reviews and face-to-face interviews. The design guidelines gained from these investigations have been implemented within the built environment and have thus informed the design concept and design development stages of this practicum. The following is an overview of how the investigational techniques have been incorporated into the design in terms of spatial organization, design elements, lighting, color and materials.

Overall, the concept that guided the design and spatial experience of this centre was based on the notion of a journey:

From one's present state, a journey begins. A personal, inner journey towards holism.

Holism of health...of vision...of perspective...of life.

As a process, experience by forward movement on one's personal path, the movement towards attaining ultimate holism of mind-body-spirit can be reached over time.

The overall circulation of the building was designed to be experienced in a specific sequence down a “guided path”. This is because, in CAH, practitioners are not seen as authorities of health on which the patient is dependent, but rather as individuals who help in *guiding* others to wellness. Thus, circulation is guided. This journey, over time and through space, was further developed from inspiration attained during interviews.

“Generally speaking, we guide our patients down their path. It is an inner journey for users to weave through and explore”

(Interview with a Huna Kane and Reiki Master, 2007)

Through circular and angular circulation paths, users move down this guided path. Circular forms represent an ongoing, cyclical journey where a contemplative experience for mind-body-spirit can be experienced, whereas angular forms connect spaces in a direct relationship. The collection of these experiences within the design of this CAH centre brings users from their present state towards holism.

The healing garden is the first space experienced within the interior of the building. This space sets the tone immediately upon arrival that this CAH centre, offers restoration. Here, influences from Kaplan and Kaplan’s (1997) theories of the restorative benefits of nature are exemplified in the built environment. Many researchers, state across a variety of disciplines that it is nature that provides the highest level of restoration for individuals. Many people coming to the centre are facing obstacles. Many have turned to CAH as a last resort. In one of my interviews, an interview subject stated,

“Obstacles in one’s life are a sign of a need to pause and contemplate”.

(Interview with a Homeopath, 2007)

This space affords them the opportunity to sit and think, alone or with a friend in a place that allows for restoration of the mind.

It is believed by users and practitioners alike that undergoing CAH treatments is a very *releasing* experience. It was learned in the interviews that practitioners believe treatments discharge, flush and shed the body of its built up heavy, negative memories, emotions and toxins. For release to occur, space is needed. This release is achieved within the built environment by descending a large, three-story ramp at the culmination of a user’s visit to the centre. This ramp encourages movement and growth towards holism. The inspiration to design a circular form came from the concept of the mandala. Mandala is a form, which means “magic circle”. It is described as a universally occurring symbol of cosmic and spiritual wholeness, which strives to reconcile opposites 1 may experience in their life (Jung, 1964). It is believed that opposing forces and opposites along the circumference of the round mandala can balance one another and coexist in harmony within the still centre. The centre represents the *now*. Learning to live in the *now* brings joy, fulfillment and life satisfaction (Jung). Before the centre is reached, movement towards the centre while users descend the ramp occurs through the use of 4 platforms. These platforms cantilever out, suggesting weightlessness. It takes users away from the war of the opposites and offers a prospect space where 1 may pause to reflect, observe, contemplate and watch others experiencing their own journey. The walk of the

mandala offers the opportunity to let the mind-body-spirit slow down, continuing to let go of heavy emotions, memories and toxins. Elements such as weightlessness, transparency, cantilever and suspended forms further support this concept of release within the built environment.

Offering options and choices enhances the feeling of being in control and can assist in creating a psychologically supportive environment. Therefore, choices in lighting levels, a variety of seating and/or standing options and privacy options were programmed for in the spaces within the centre. These theories, based on Roger Ulrich's (1997) Theory of Supportive Design, were, for example greatly taken into consideration in the design and layout of the waiting room. Single chairs allow for the division of personal space and allow access to the Internet; Built-in banquette seating is more public where a children's play area is located; social support with complete physical privacy with friends and family is provided for in a private meeting room and a prospect space allows the connection to other spaces. The waiting area focuses on creating fascination through focal points and positive distractions such as nature videos, water feature and the Internet – further supporting the Theory of Supportive Design.

Privacy throughout the centre was greatly considered. Allowing individuals the opportunity to control the amount of access to the self can also be looked at in terms of varying amounts of transparency to the self. Allowing individuals to choose to achieve a desired level of privacy was key in the zoning and design of the space. Building on this notion of privacy and transparency, the concept of transparency was implemented within

the design of the ramp and resource areas as a design element. Here, transparency signifies communication and openness individuals should feel after the walk of the mandala – they are weightless, transparent and light from the release of heavy emotions and memories. The placement of a water feature within the centre of the mandala form further supports the concept of transparency within the space. The glass window wall enclosing the ramp and resource area also support this concept of privacy/transparency. The wall was designed so that each of the parts comprising the whole are constructed of varying amounts of transparency signifying ranges of privacy offered and respected in the centre.

Because CAH supports the use of natural remedies and therapies, this concept is reflected in the selection of materials. Materials that can be described as natural or that have been inspired by nature were chosen. The dependence of the human psyche on nature has allowed the human capacity to accept today's technological fabrications *of* nature as effective substitutes *for* nature. Materials natural in form, texture and color have been specified wherever possible throughout the centre. Designing an extremely rich environment with a diversity of textures and colors may stimulate a similar sensory experience of wonder and awe, found in nature. Further, materials that are comfortable and home-like, soft and welcoming such as carpet, fabrics, warm woods and windowcoverings will increase feelings of familiarity found within home environments.

The building was zoned so that specific spaces were affected by natural daylight. Each patient room and treatment room has access to natural light whereas washrooms and

janitor's closets are located off of the perimeter of the building and therefore receive no natural light. Artificial lighting was specifically selected to be soft and diffuse so that harsh, dark shadows would not be cast. Where users may lie on their backs during treatments, within patient rooms or the studio space, cove and/or suspended uplights were used so users would not look directly at the light source. The use of dimmers offer users a choice of illumination intensity in personal spaces. Sculptural lighting was selected in spaces where users may stop to think and contemplate such as in the healing garden, along the ramp and in the resource area.

Where possible, lamps are used that are full-spectrum with enhanced blue-light stimuli. This type of light is the closest artificial source to daylight with a Color Rendering Index (CRI) of 94 and a Kelvin temperature of 6800 degrees. According to George Brainard, a professor of Neurology at Jefferson Medical College, the blue portion of the spectrum is most effective in halting the body's production of melatonin (a hormone, which slows the nervous system) and reducing the production of the stress hormone cortisol. It also reduces the probability of depression and Seasonal Affective Disorder (known as SAD) (Davidson, 2001). These lamps also allow for a lower eye glare, reduce eye fatigue and allow for clearer vision. These lamps will replace all fluorescent lamps.

Overall, the main concepts and underlying theories that were identified during the research phase and subsequently applied to the built environment during the design phase of the CAH centre have, above, been identified. From an amalgamation of investigational techniques, this practicum demonstrates an interior design that offers the people of

Winnipeg, specifically Baby Boomers an opportunity to proactively and reactively managing their health and wellness.



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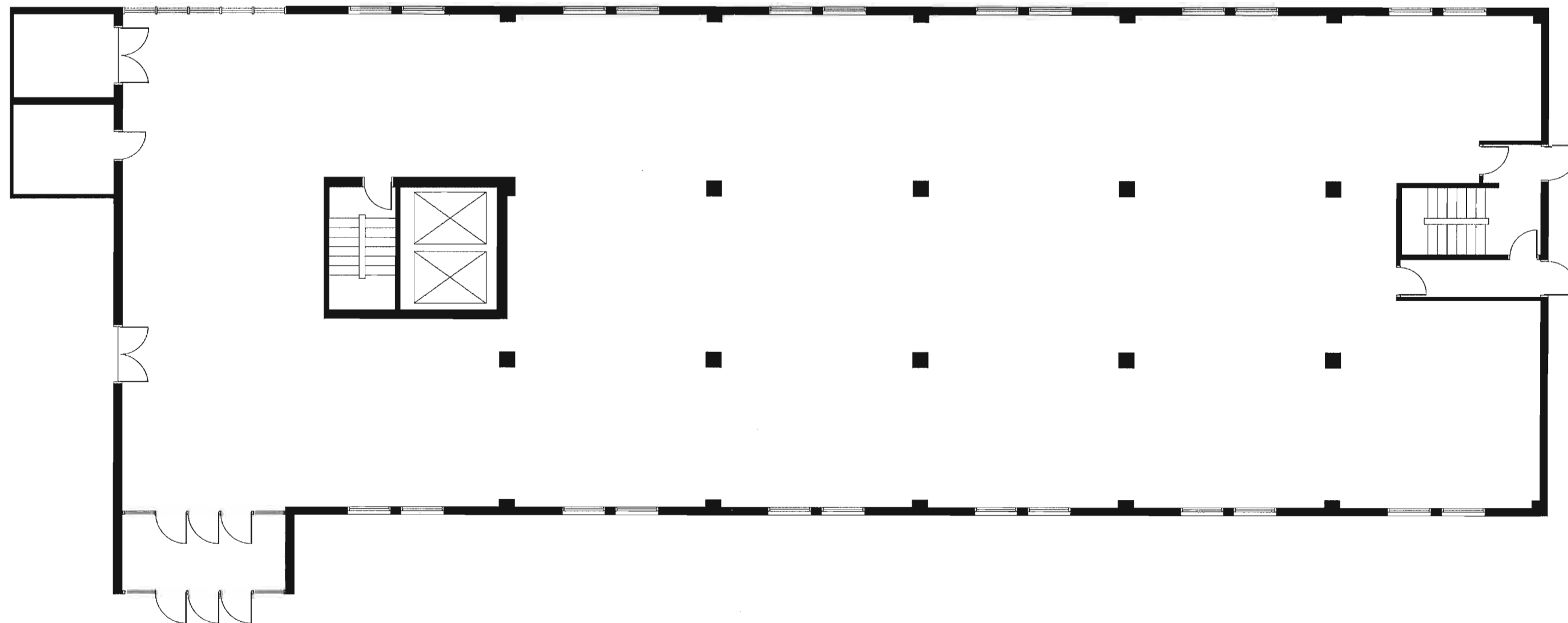
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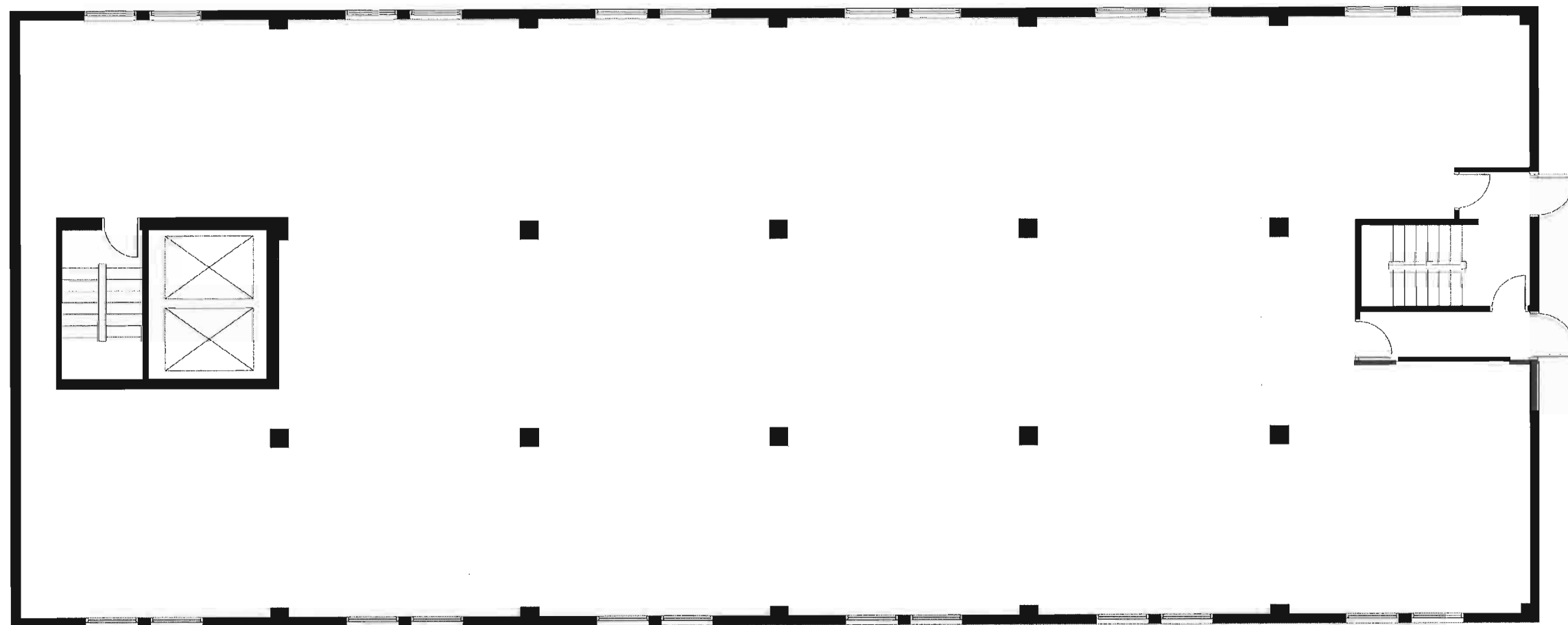
6.0 Drawing Set

A Complementary and Alternative Healthcare Centre



AsBuilt Plan: Main Level

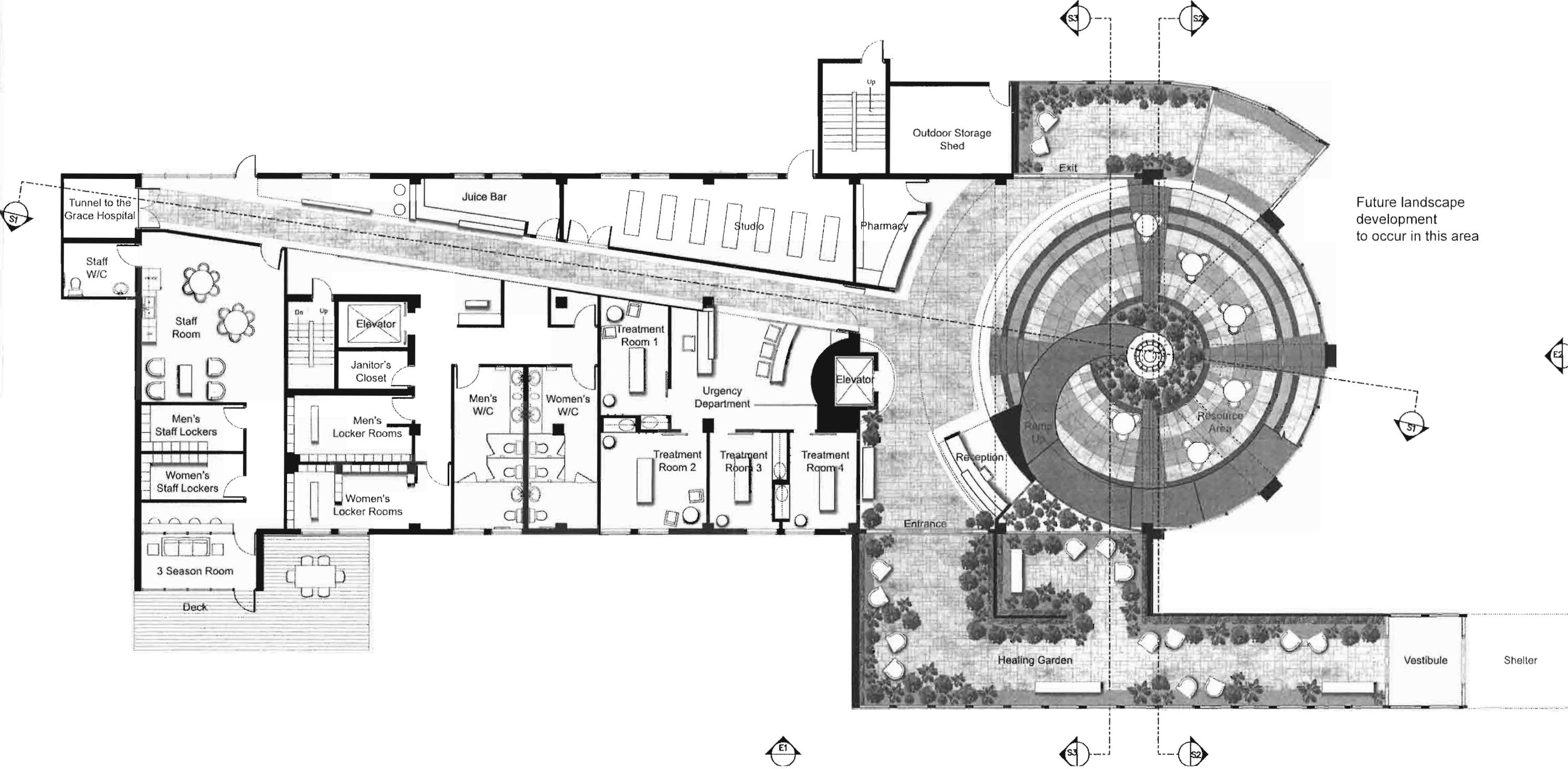
Scale: 3/32" = 1' - 0"



AsBuilt Plan: Level 2-5 Typ.

Scale: 3/32" = 1' - 0"

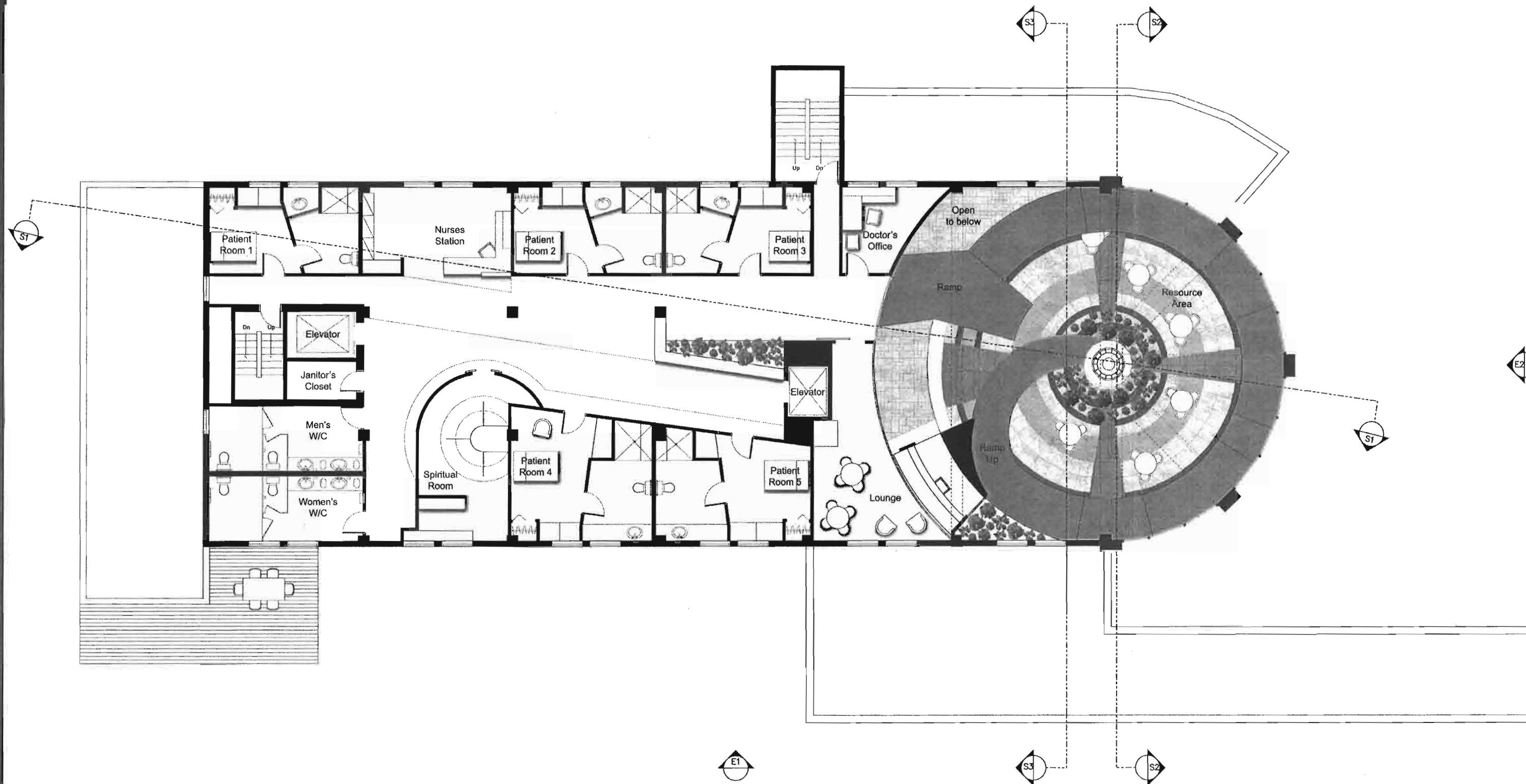
Future landscape
development
to occur in this area



Future landscape
development
to occur in this area

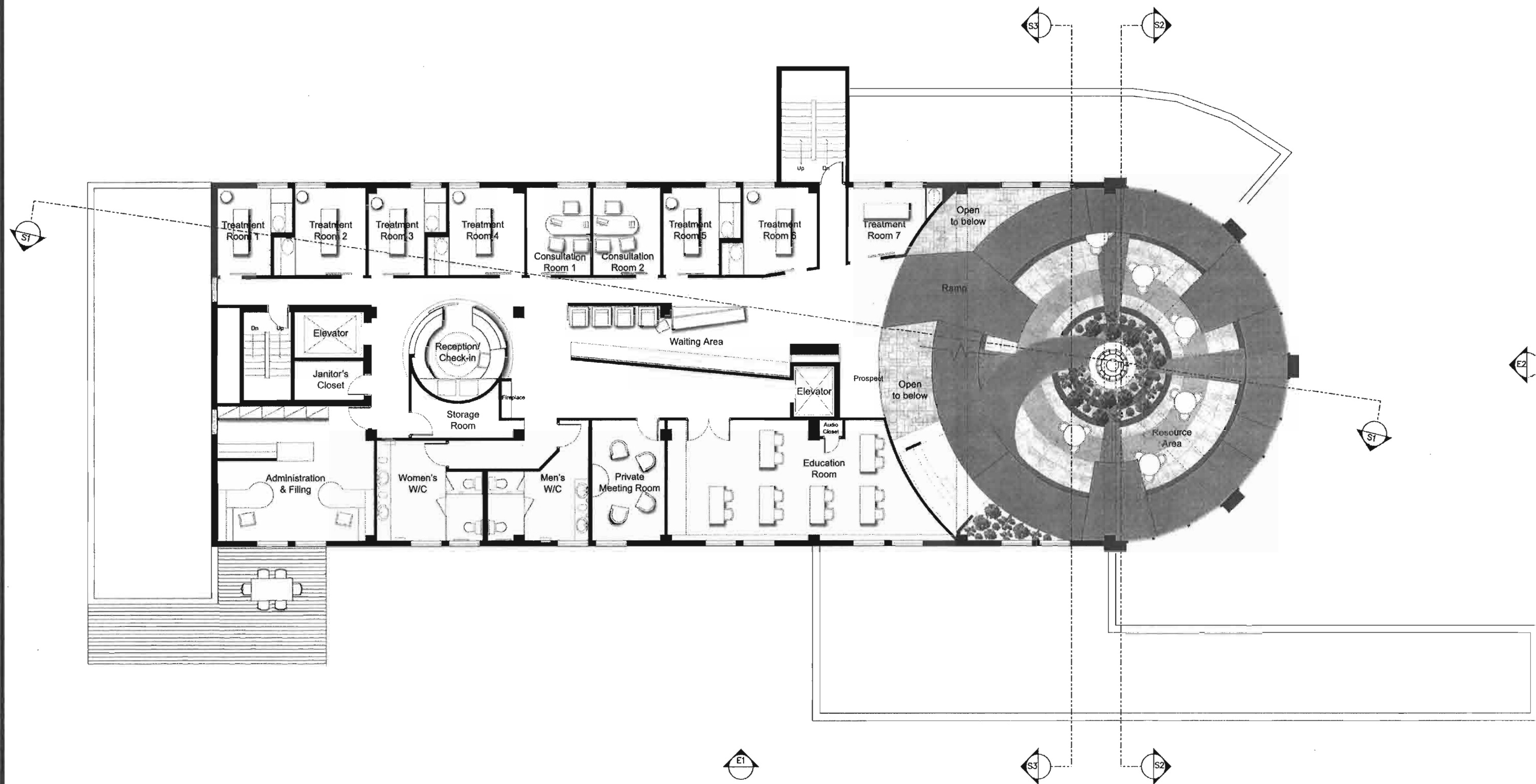
Plan: Main Level

Scale: N.T.S.



Plan: Second Level

Scale: N.T.S.



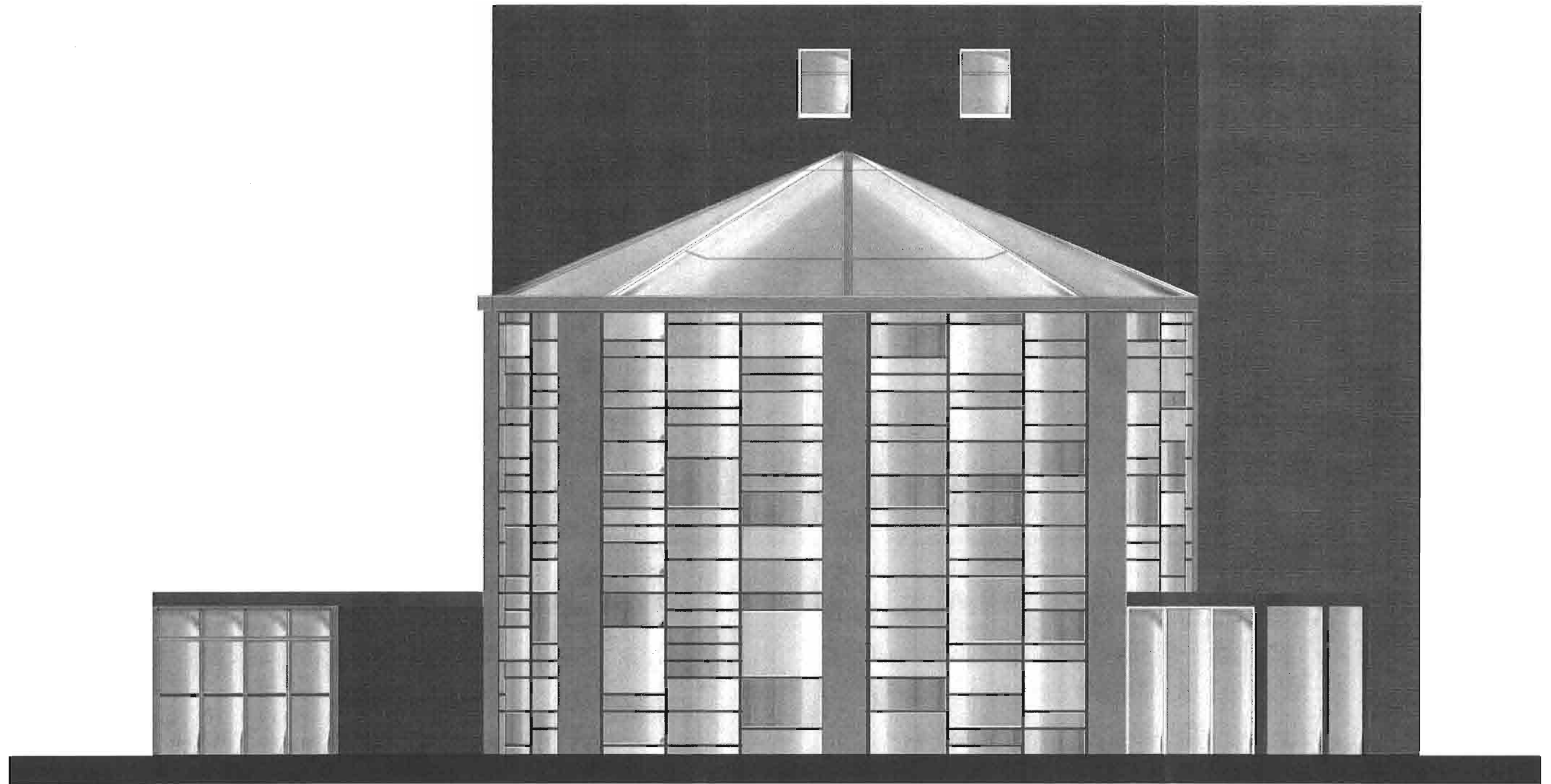
Plan: Third Level

Scale: N.T.S.



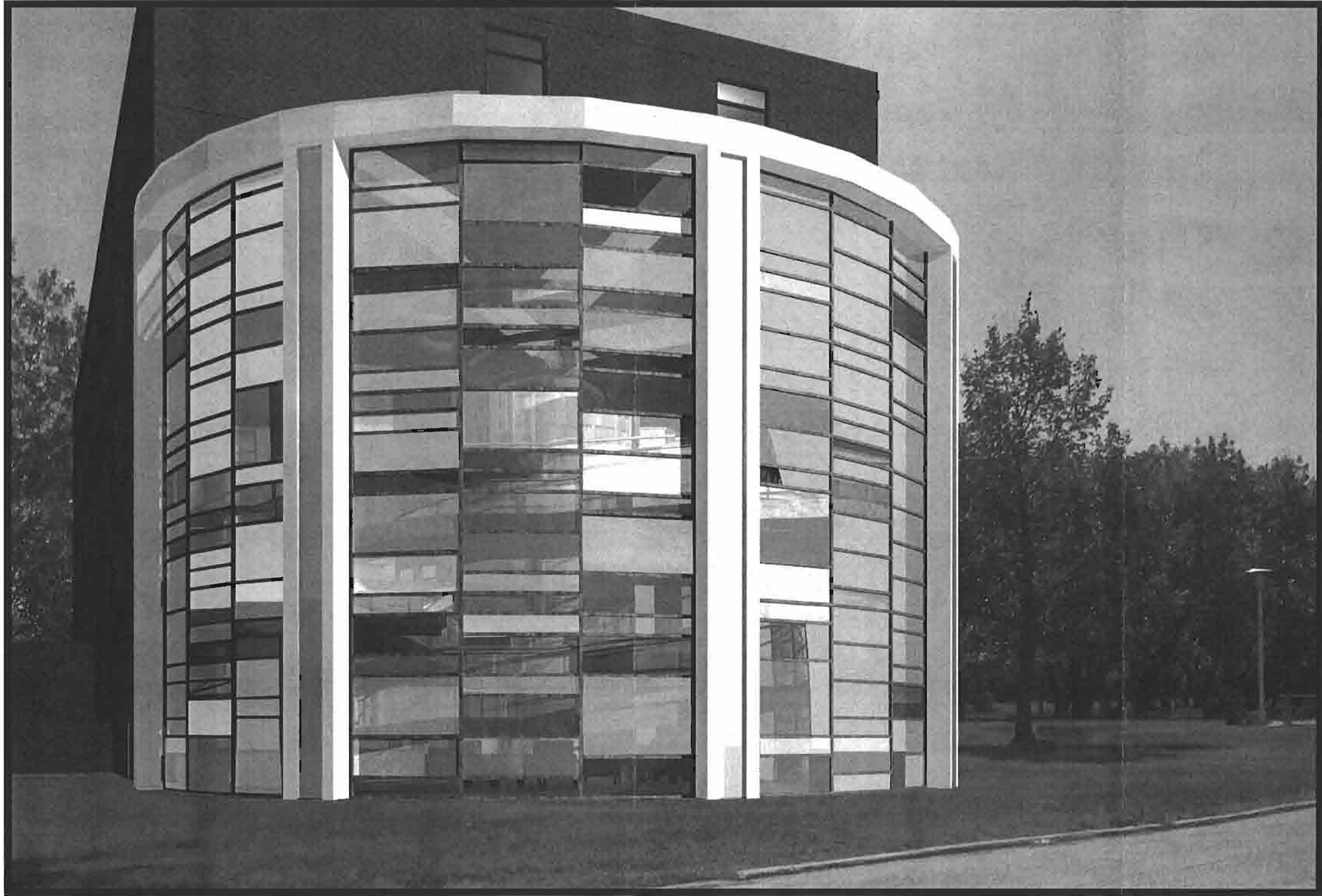
E1: Exterior Elevation

Scale: N.T.S.



E2: Exterior Elevation

Scale: 1/8" = 1' - 0"



Exterior Perspective
Facing Entrance



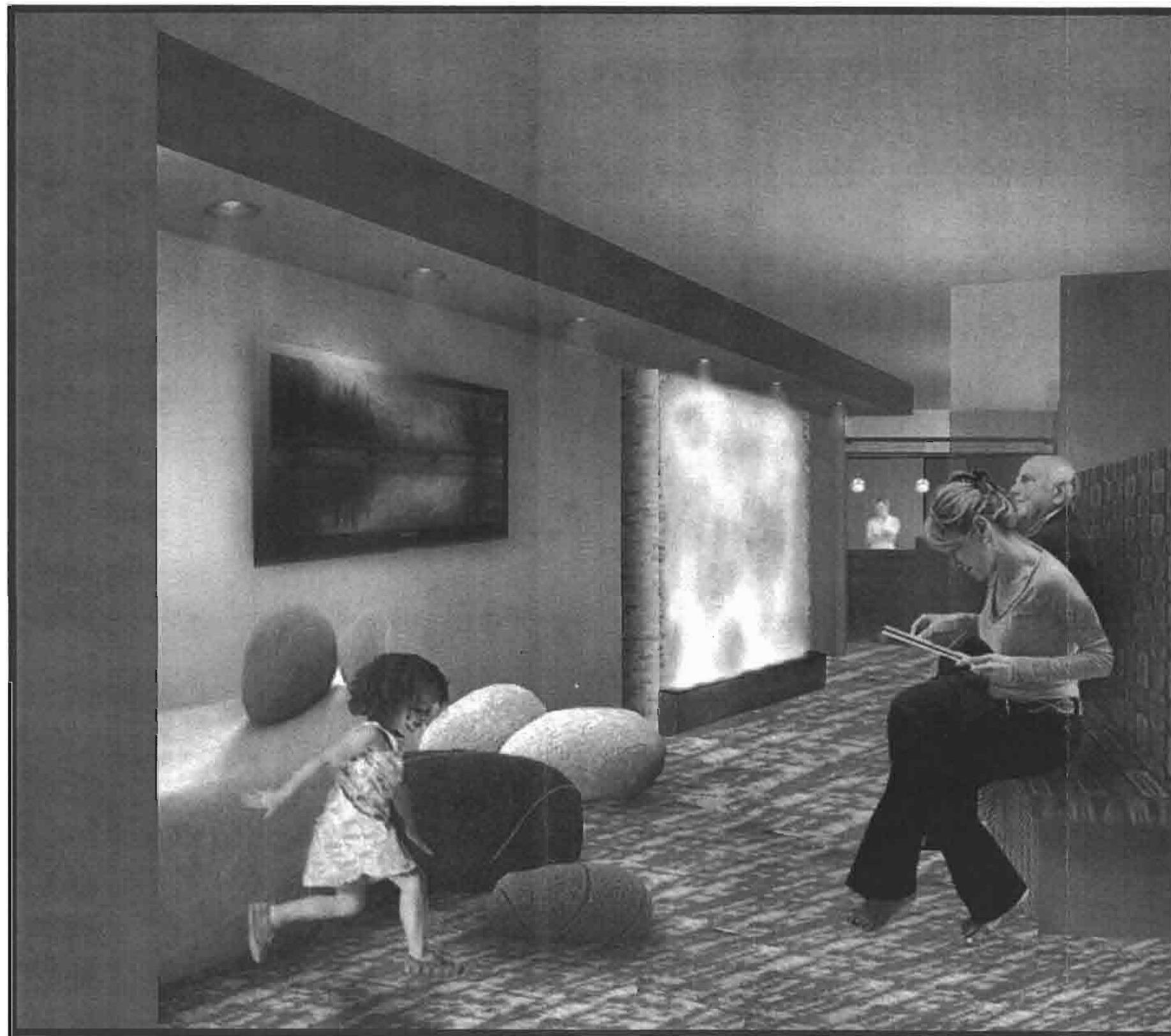
Interior Perspective
Healing Garden



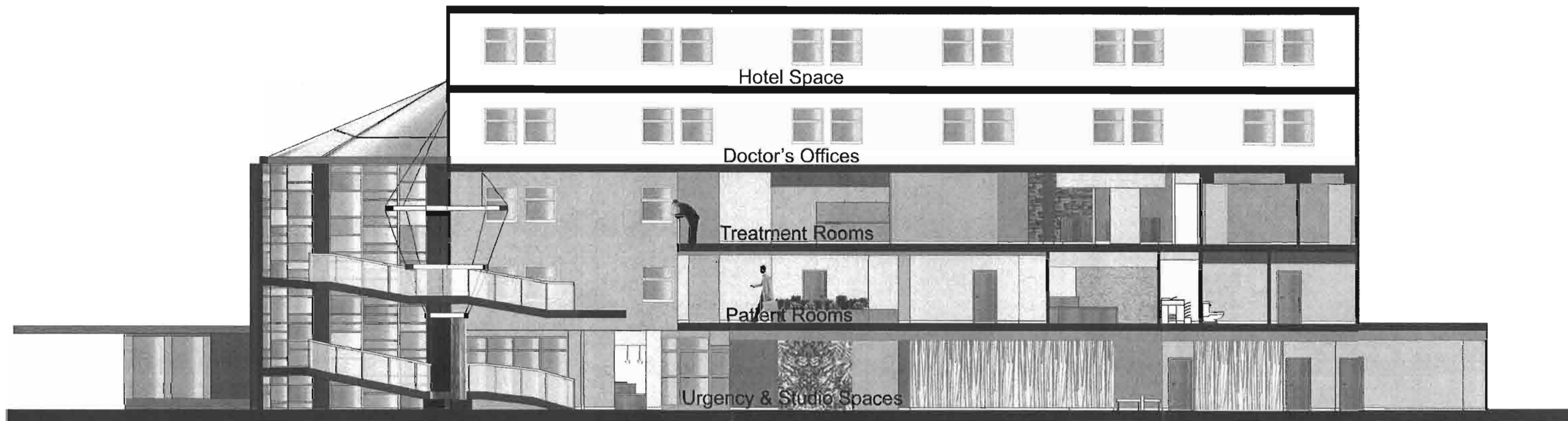
Interior Perspective
Main Reception



Interior Perspective
3rd Level Corridor



Interior Perspective
Waiting Area



S1 Section 1
Scale: N.T.S.



Interior Perspective
Descending Ramp





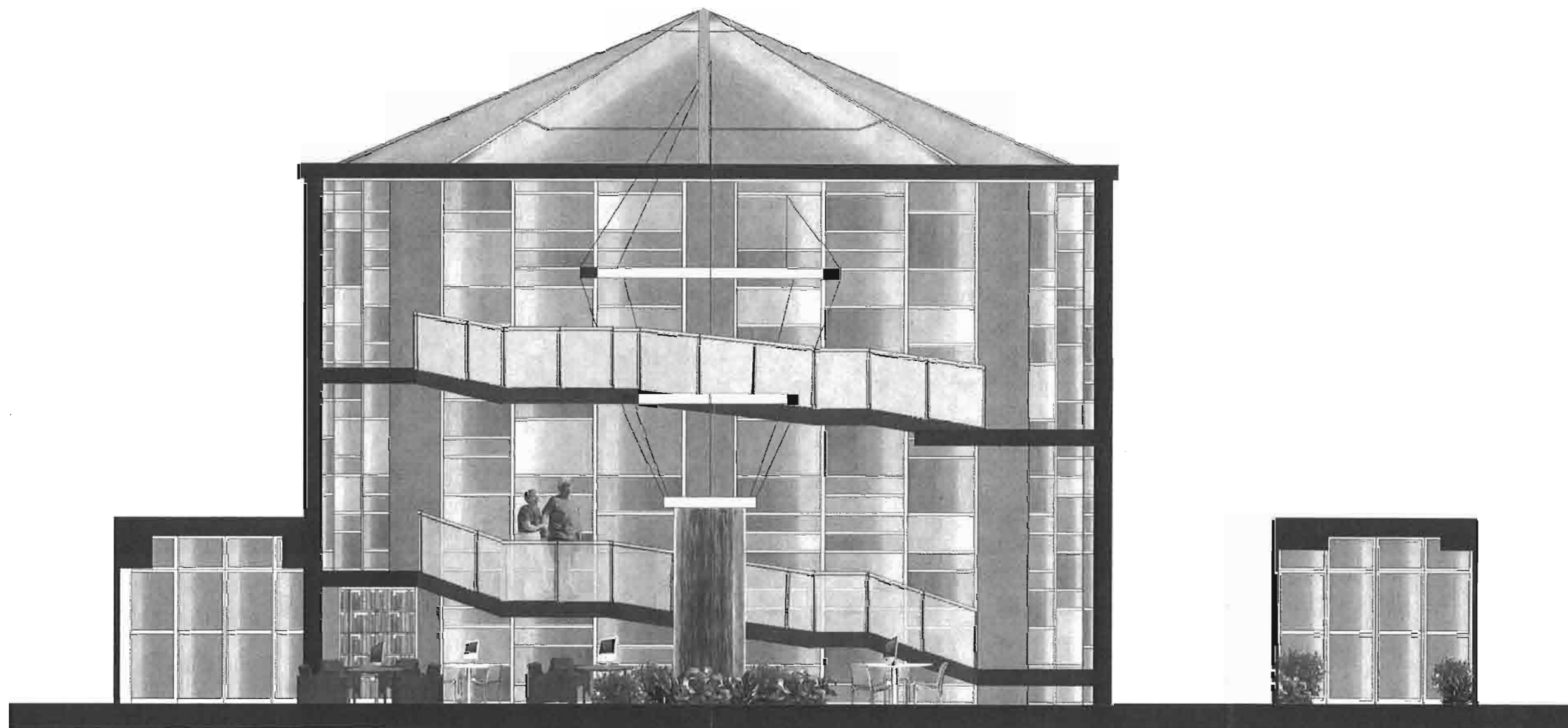
Interior Perspective

Resource Area



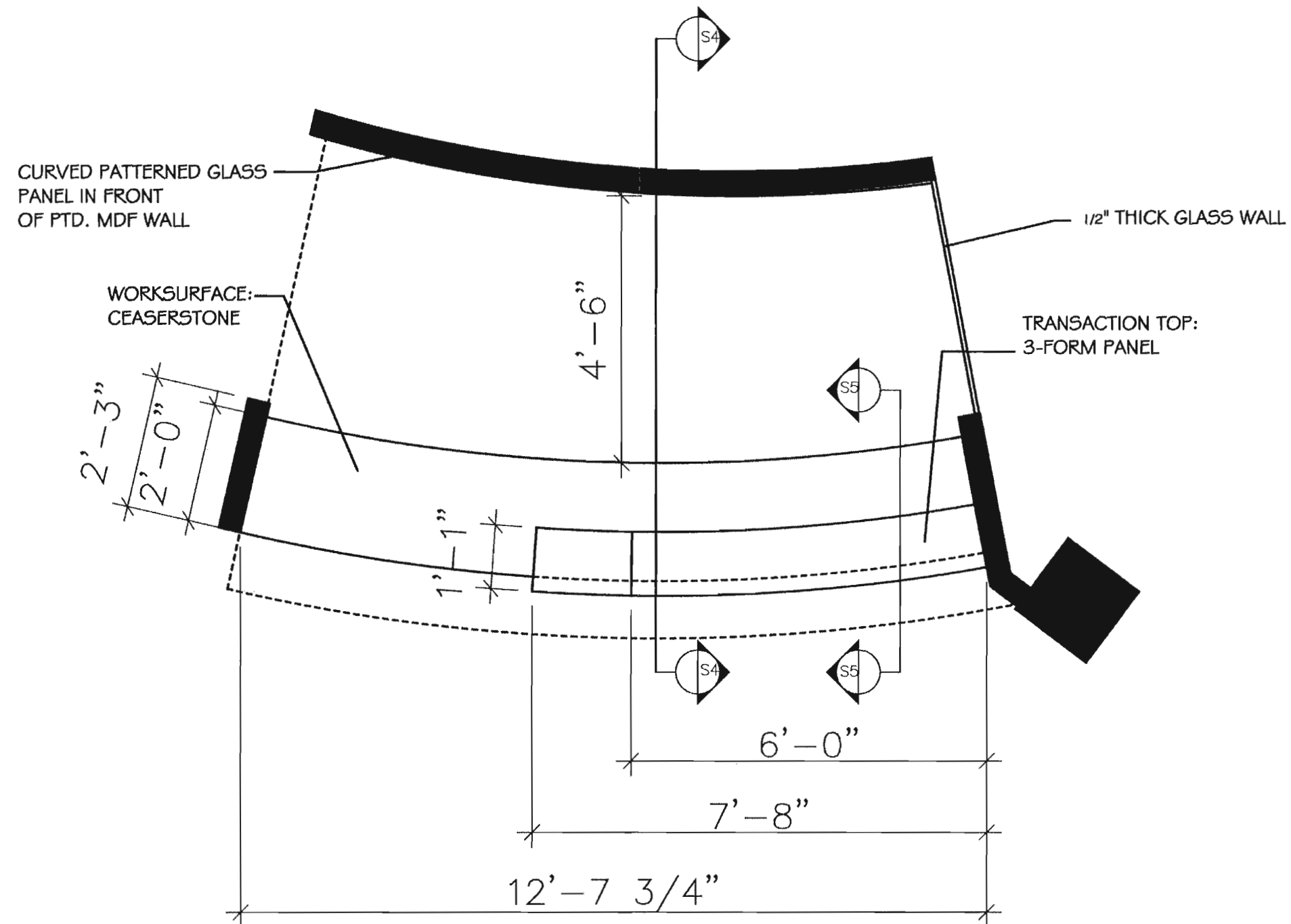
Interior Perspective

Resource Area



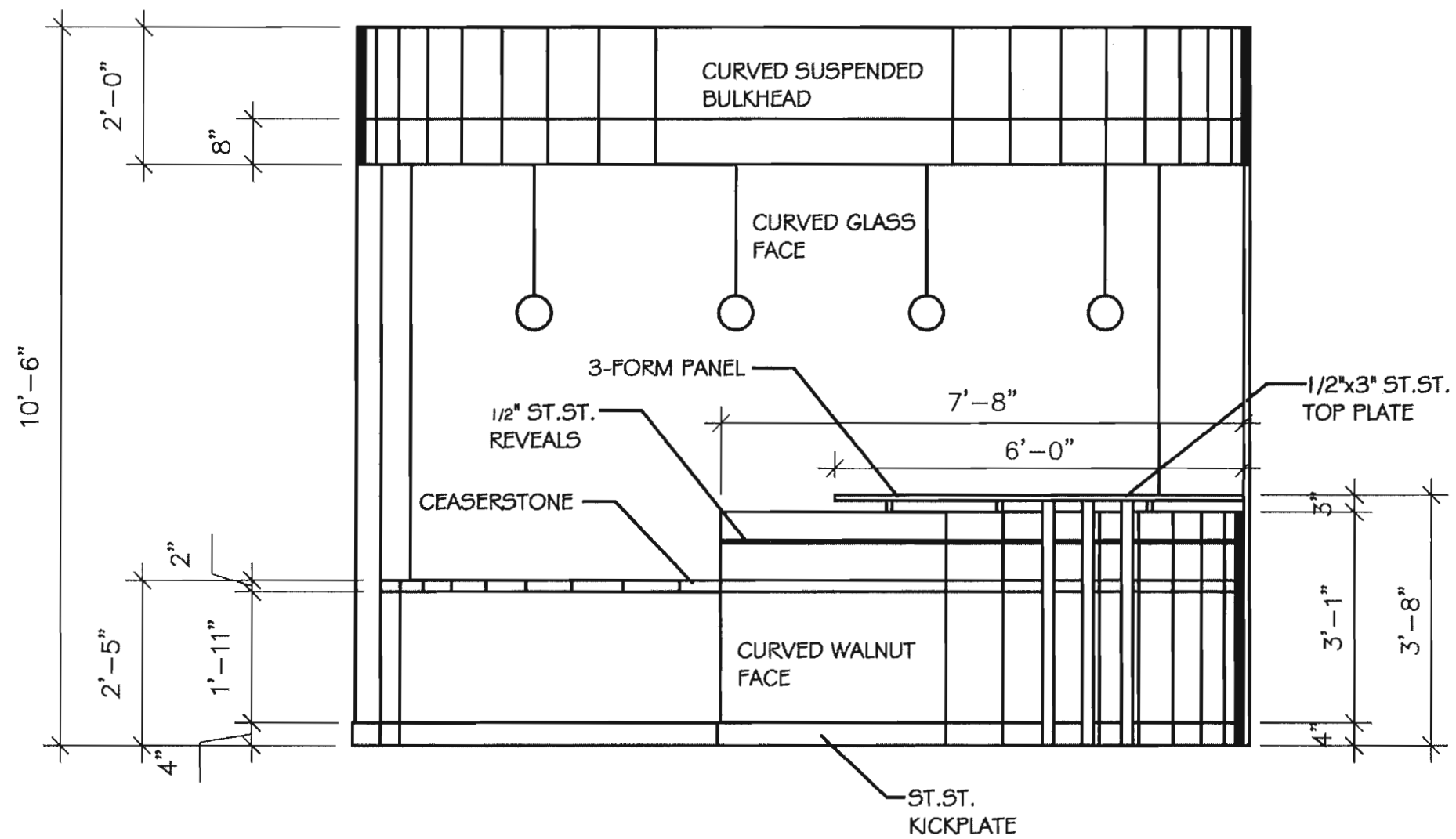
S2 Section 2: Resource Area & Ramp

Scale: 1/8" = 1' - 0"



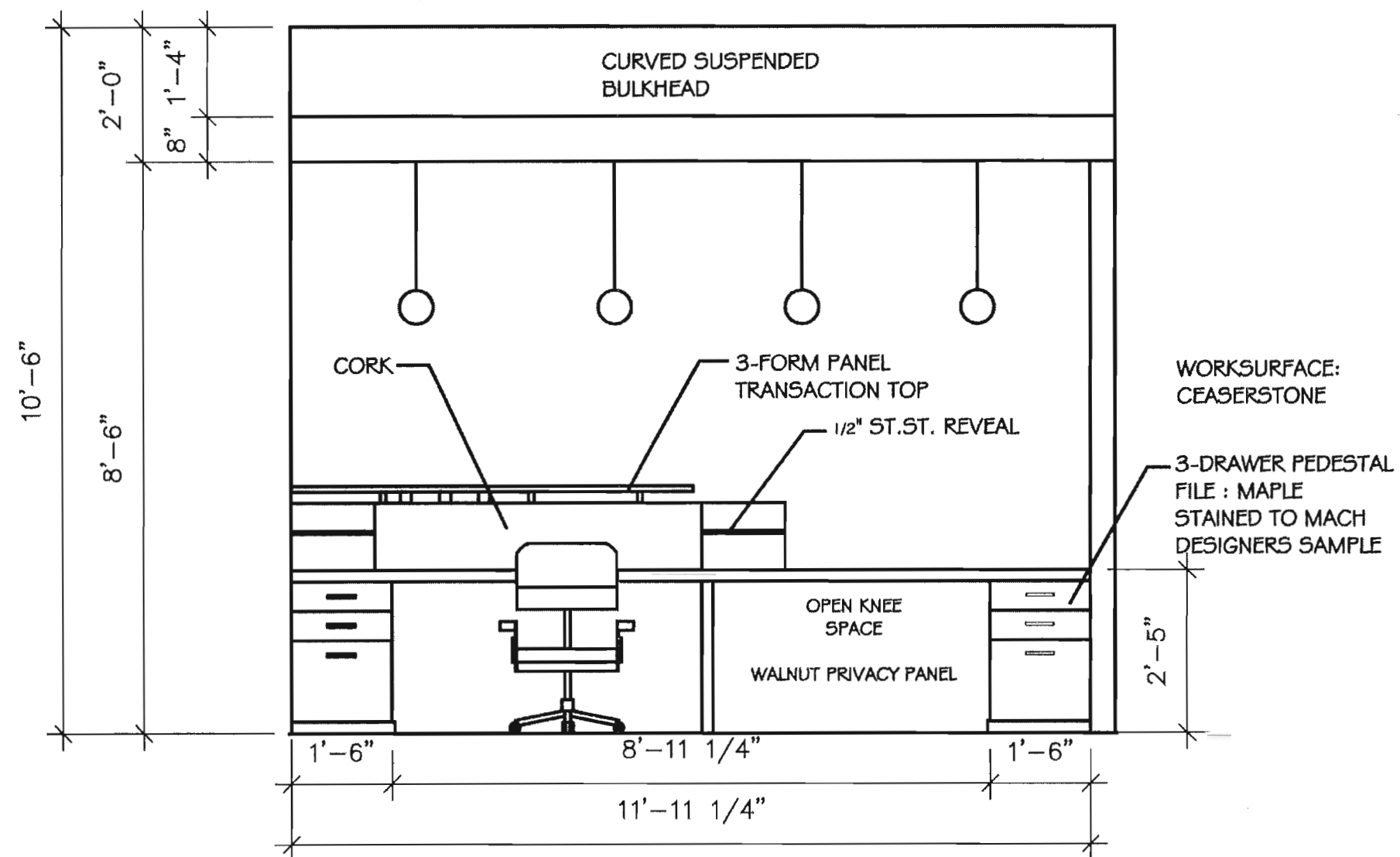
Millwork Plan: Reception Desk

Scale: 1/2" = 1' - 0"



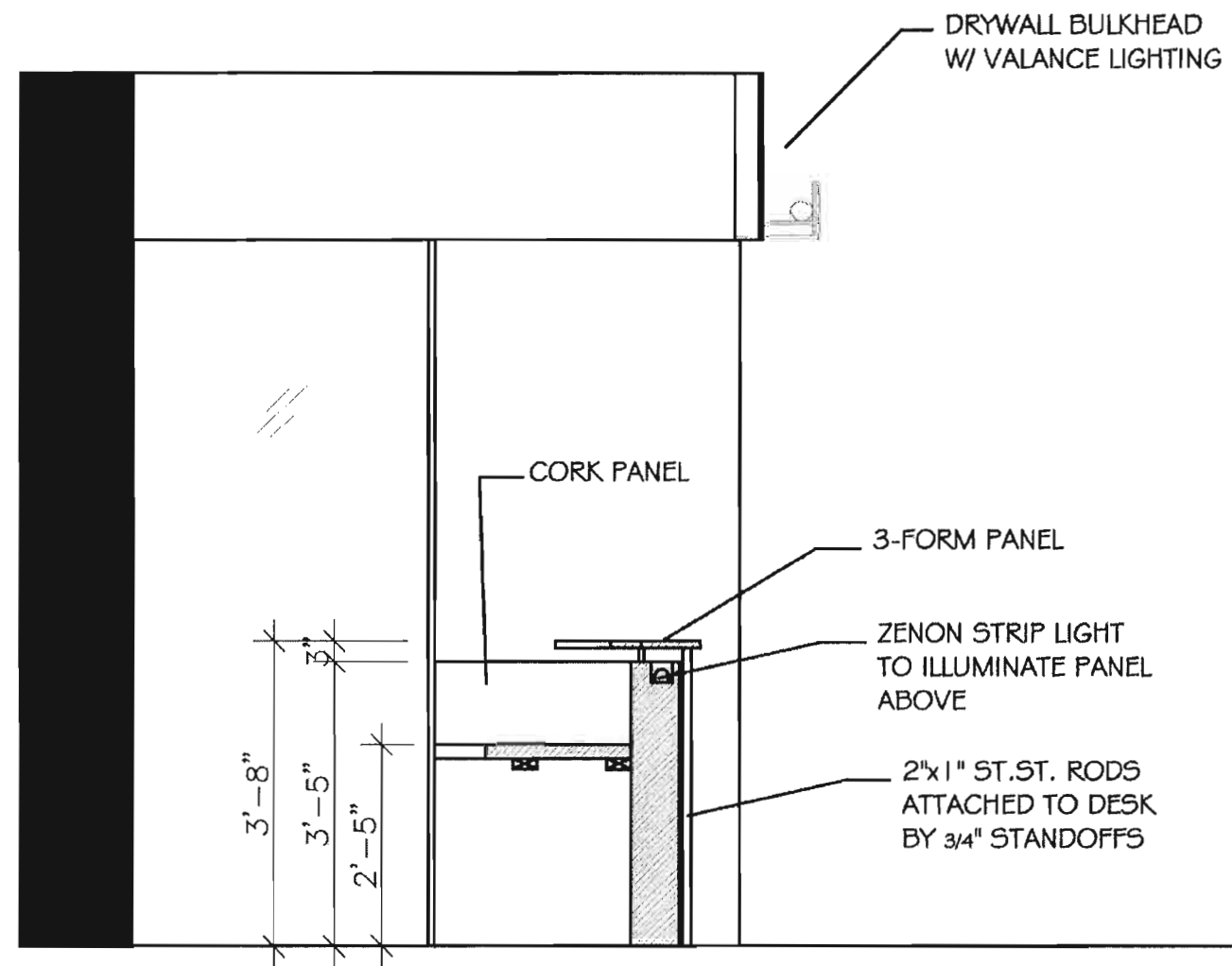
Millwork Elevation: Reception Desk

Scale: 1/2" = 1' - 0"



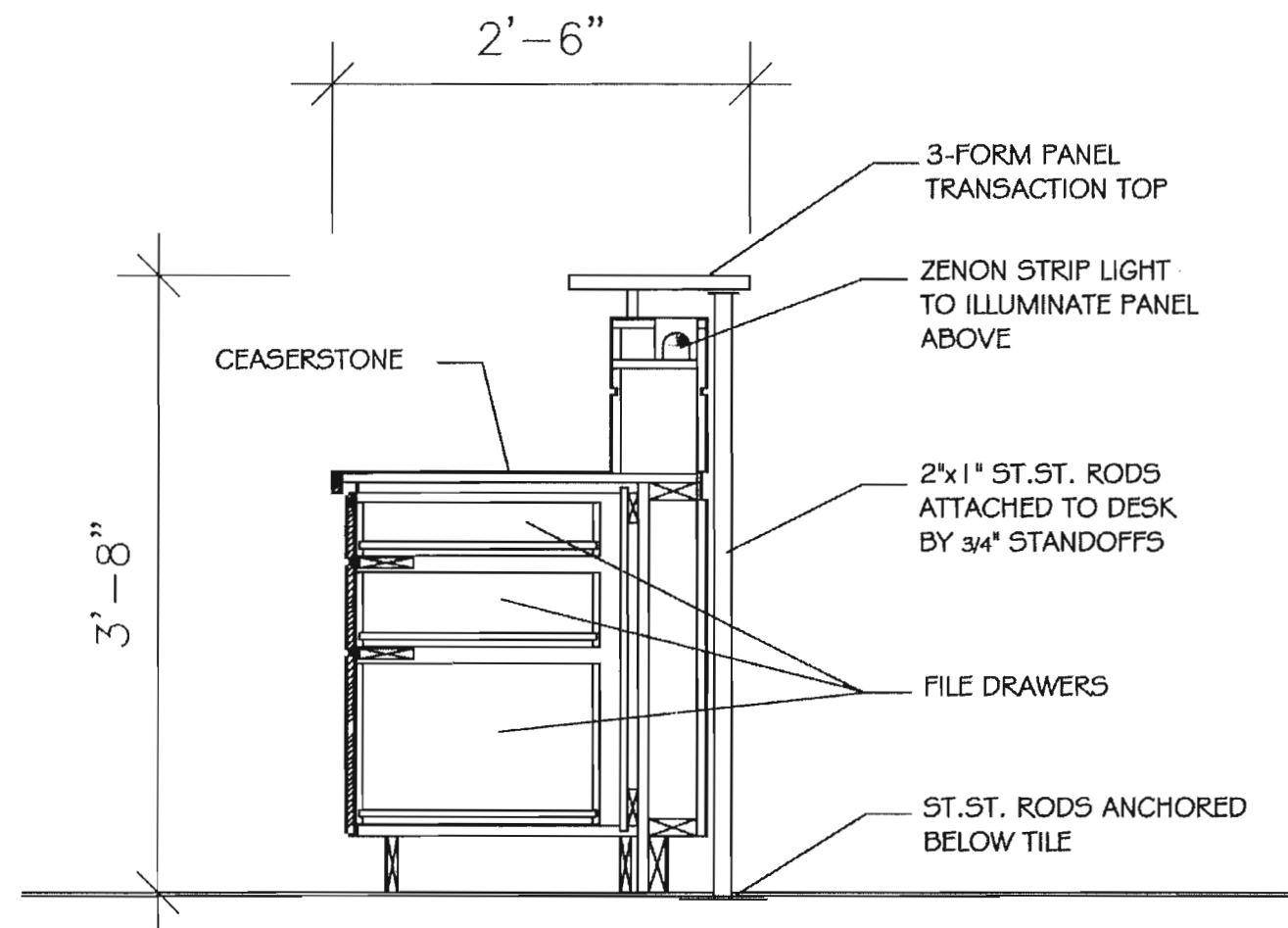
Millwork Elevation: Reception Desk

Scale: 1/2" = 1' - 0"



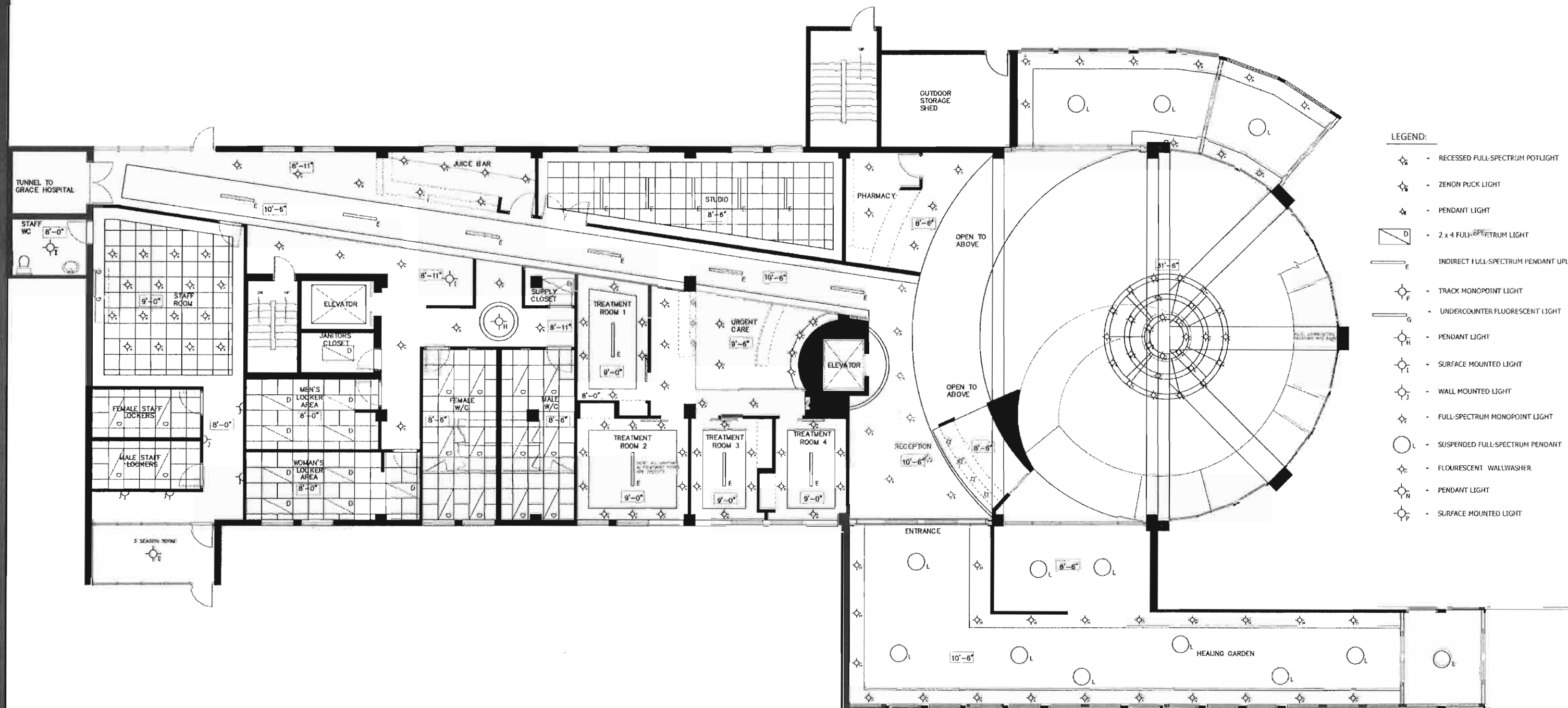
S4: Millwork Section: Reception Desk

Scale: 1/2" = 1' - 0"



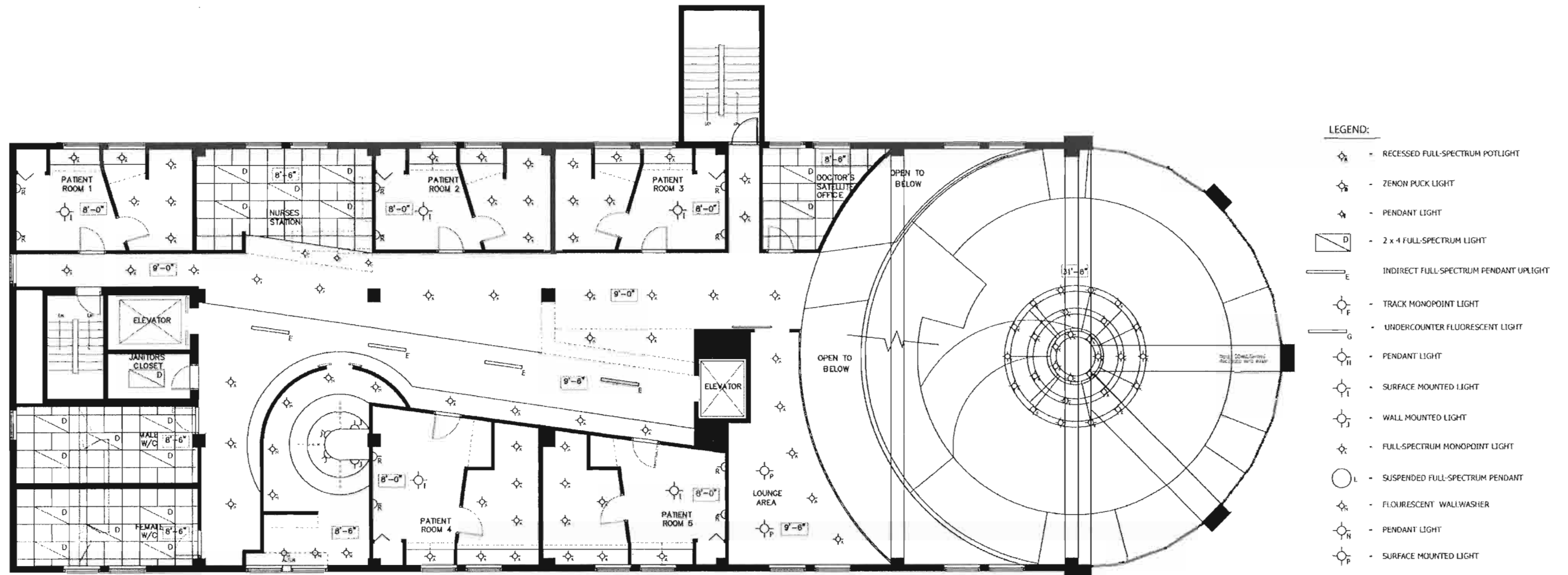
S5: Millwork Section: Reception Desk

Scale: 1" = 1' - 0"



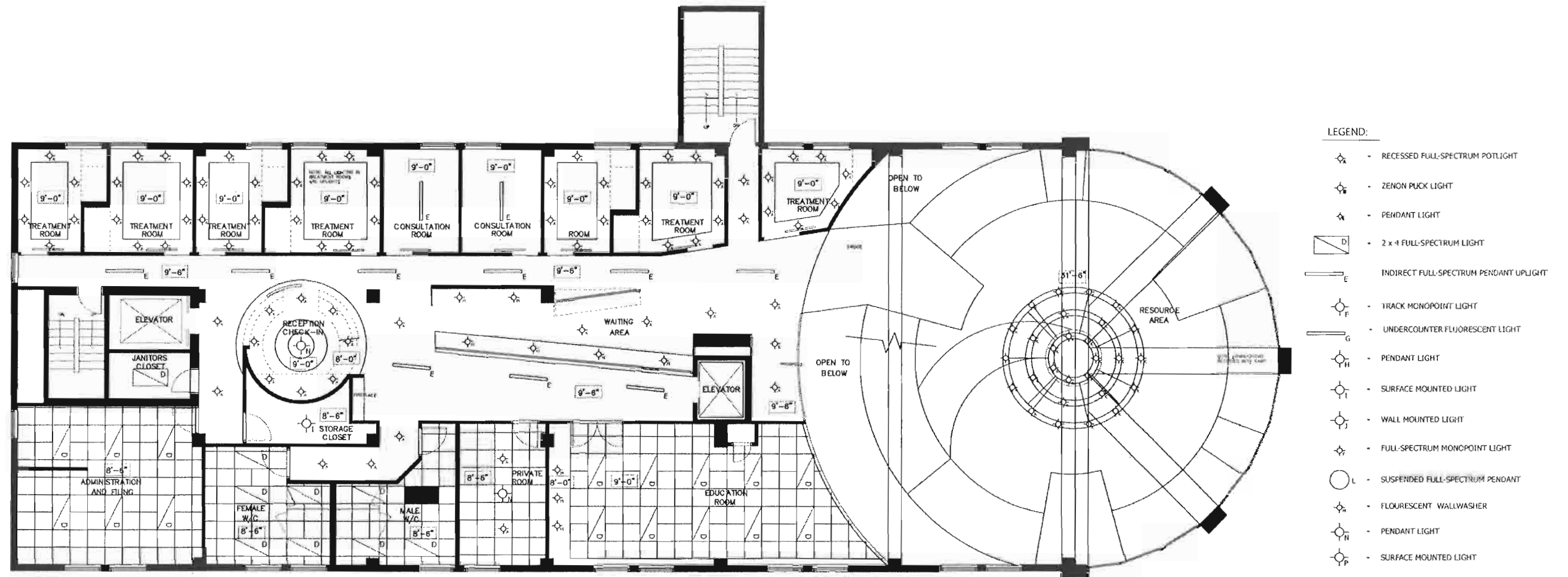
Lighting Plan: Main Level

Scale: N.T.S.



Lighting Plan: Second Level

Scale: N.T.S.



Lighting Plan: Third Level

Scale: N.T.S.

APPENDIX 7.1: U OF M ETHICS APPROVAL & INFORMED CONSENT FORM

APPROVAL CERTIFICATE

26 February 2007

TO: **Jennifer Gulenchyn** (Advisor C. Karpan)
Principal Investigator

FROM: **Wayne Taylor, Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2007:023**
"A Center based on Complementary and Alternative Healthcare: A Model for Healthcare Facilities of the Future"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- if you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to Kathryn Bartmanovich, Research Grants & Contract Services (fax 261-0325), including the Sponsor name, before your account can be opened.
- if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/ors/ethics/ors_ethics_human_REB_forms_guidelines.html) **in order to be in compliance with Tri-Council Guidelines.**

Informed Consent Form

Research Project Title: A Center based on Complementary and Alternative Healthcare: A Model for Healthcare Facilities of the Future.

Researcher: Jennifer Gulenchyn

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of Research

Due to an increase in stress and stress related problems within Canadian society, studies have been undertaken to combat, prevent and treat or reduce stress within our daily lives. One of the emerging trends used to combat against stress is the use of alternative medicine practices. Our society is beginning to turn to Complementary and Alternative Health Care practices as an answer to not only accelerate recovery or improve illness but also to increase quality of life and reduce everyday stress as a preventative measure in managing health. Therefore, the purpose of the Design Practicum is to design an interior healthcare environment, owned by the provincial government for the City of Winnipeg, which focuses on Complementary and Alternative Healthcare.

A synthesis of literature theories and information obtained from interviews with you, will serve as the basis for design in this project. Through interview techniques, I hope to gain a better understanding of the current spaces that exist in Winnipeg to understand what types of spaces are need to allow for the successful interior design of a large Complementary and Alternative Healthcare environment.

Methodology

After I have contacted you by telephone and you have agreed to participate, an interview date and time will be determined. Please note that the interview will take approximately 1 hour to complete. Following, I will send via mail, email or fax, a copy of the interview guidelines and questions as well as this informed consent form. This will occur at least 1 week prior to the interview. At the interview, I will ask you to sign the consent form in front of me. I will also ask if you have any further questions. Please do not sign the consent form prior to the interview. During the interview, questions will only be asked which pertain to 1) the field of Complementary and Alternative Healthcare and 2) how your interior space currently functions for your comfort and ease in carrying out day-to-day work tasks. Once our meeting is finished, your participation is complete. After I have completed all the interviews and the information obtained has been synthesized, you will receive a summary outlining the main themes that emerged from the interviews as a whole.

Risks and Benefits

There will be no risks anticipated beyond those encountered as part of a normal interview or everyday life to the subjects or to a third party.

You, the subject, benefit by being involved in a study that promotes the profession of Complementary and Alternative Medicine and the use of your products and treatments to the community. This practicum may act as an advertising tool for local Complementary and Alternative Healthcare clinics and centers within Winnipeg.

Further, the completed Practicum project will be available within the library system at the University of Manitoba where people will be able to look through the Practicum and learn more about the field of Complementary and Alternative Healthcare as a whole.

Recording Devices

I will ask if a personal recording device may be used during your interview. This allows me to give you my full attention, rather than trying to write down pertinent information while we are carrying out the interview. The use of a personal voice recorder will also allow the interview to be completed in less amount of time (approximately 1 hour). I will also ask if photographs of the clinic/center may be taken to which I will ask you to sign permission.

Anonymity and Confidentiality

Anonymity will be preserved for those subjects who wish to be kept anonymous. If you wish to have your identity kept anonymous, I will be the only individual who is aware of your identity.

At the end of this form, you will be asked if I may quote you in the final written Design Practicum. Your name will not be used in the written Design Practicum.

At the end of this form, you will be asked to sign a consent form allowing or forbidding photographs of your workplace to be taken. If any persons appear in photographs, they will be removed from the photograph digitally before the image is used in the Design Practicum.

No confidential records of any kind will be sought. I will be the only individual who will have access to the information collected on the voice recorder. By signing a consent form to quote, you are giving your permission for what you say in the interview to be used in the written Design Practicum. Questions asked will not breach privacy. Data received from you will be stored in a locked file cabinet in my office to ensure confidentiality. The data including interview notes and tapes, photographs and consent forms will only be used for the purpose of this Design Practicum and will be destroyed upon completion of the Design Practicum in December 2007.

Feedback

After you have completed your participation and the research investigation information obtained through the interviews has been synthesized, a summary of the interviews will be sent to you. No names will be used in findings. Only a summary of the main themes, which emerged will be explained.

After the design practicum is complete, you will be notified that you can access the Design Practicum on-line at Mspace¹: the University of Manitoba's digital repository (<https://mspace.lib.umanitoba.ca/index.jsp>).

Remuneration

You will be participating as a volunteer and will not receive any form of credit or remuneration.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

¹ Mspace is the University of Manitoba's digital repository. Mspace was developed by the University's Faculty of Graduate Studies and library system to allow public access to a collection of publications, including theses and dissertations by students at the University of Manitoba.

Researcher: Jennifer Gulenchyn

Phone Number:

Advisor: Cynthia Karpan

Phone Number: 474-6075

The Joint-Faculty Research Ethics Board has approved this research. If you have any concerns or complaints about this project, you may contact any of the above named persons or the Human Ethics Secretariat Margaret Bowman at 474-7122 or at margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Statement of Consent

I have read this consent form. I have had the opportunity to ask questions and I have been given meaningful answers in a language that I understand. I therefore give my consent to be a participant in this study.

Participant's Signature _____ Date _____

Researcher's Signature _____ Date _____

Contact Information

Name of Subject: _____

Name of Clinic/center: _____

Gender: _____ Male _____ Female

Age: _____ under 20 years old _____ 20-30 years old
 _____ 30-40 years old _____ 40-50 years old
 _____ 50-60 years old _____ over 60 years old

Permission to Quote

I hereby give my consent for Jennifer Gulenchyn to quote me during the interview conducted on _____, 2007, as part of Ms. Gulenchyn's Master of Interior Design Practicum project, as signed below. I understand that I, as a study subject will not be identified by name for quoting purposes or at any time throughout the practicum process. I understand that Ms. Gulenchyn will use only what I said in her Design Practicum project.

Participant's Signature _____ Date _____

Permission of Release of Photographs: Consent Form

I hereby give permission for Jennifer Gulenchyn to photograph (name of clinic/center) _____. I understand the digital images will be used for educational purposes only, in Ms. Gulenchyn's Master of Interior Design Practicum project. I authorize the use for these pictures to be reproduced and published in Ms. Gulenchyn's practicum.

Participant's Signature _____ Date _____

Release of Photographs: Conditions of Use

- 1) This consent is valid for the project only. Your consent to use images will expire after this time.
- 2) Images may or may not be published in the final report for this practicum project.
- 3) Original and duplicate, digital and hardcopy images will be destroyed upon completion of this project.
- 4) Any photographs containing human subjects will be removed from all photographs before they are included within the practicum project.
- 5) I understand that a copy of Ms. Gulenchyn's practicum may be published on Mspace, in which case, all photographs will be removed before the practicum is posted on the Mspace repository.
- 6) If **Permission of Release of Photographs: Consent Form** is not signed or fully completed, no photographs the space will be used in the practicum project.

Feedback Information

I prefer that the information listed under the **Feedback** heading above, be sent to me via:

_____ Email

_____ Phone

_____ Fax

_____ Mail

_____ Other

_____ I do not wish to be contacted with any information.

APPENDIX 7.2: CAHC TREATMENT DESCRIPTIONS

1) Alternative Medicine Systems

Chiropractic

Chiropractic is an alternative form of health that began in the United States more than 100 years ago. It is now a well-defined healthcare profession recognized throughout the developed world. There are three main hypotheses that chiropractic philosophy is based upon: 1) there is a fundamental relationship between the spine and health, which is mediated through the nervous system, 2) mechanical and functional abnormalities can adversely affect health and 3) the correction of subluxations will result in improved or restored health (Yuan *et al.*, 2006). Yuan *et al.* (2006) explains that overall chiropractors believe that by manipulating or adjusting the spine, a they will correct the spine and normalize the balance in the nervous system, resulting in improved organ function and tissue healing.

Homeopathy

Barnes *et al.* (2002 p. 2) state, “Homeopaths were among the first to recognize the need to understand the entire patient and the patient’s lifestyle before prescribing remedies and treatment procedures”. The Homeopathic philosophy resides in the idea that ‘like cures like’ which means that if a healthy person contacts a substance that induces coughing, then that same substance would be used as a homeopathic remedy for a patient with coughing to bring them back to health (Yuan *et al.*, 2006). The remedies are made with natural substances from the vegetable, animal or mineral kingdom. They are then given in liquid or pellet form to the patient in minute dilutions.

In diagnosing a patient, an extensive list of questions is asked of the patient, including a complete assessment of their mental and emotional state. All of the information is used to determine the particular remedy needed. It is believed that homeopathy works on an energetic and vibrational level (NCCAM, 2007).

Naturopathic Medicine

Naturopathic medicine includes the prevention and treatment of disease and the optimization of health through the use of natural agents and therapies that encourage the body’s innate ability to heal (Barnes *et al.*, 2002). The practice of naturopathic medicine incorporates traditional approaches with current evidence to treat the whole person in the least invasive yet effective manner. The emphasis is on holistic treatment, with attention paid to achieving harmony in the mental, emotional, physical, social and spiritual planes.

Traditional Chinese Medicine (TCM)

TCM stresses that balance is the key to a healthy body. Yuan *et al.*, (2006, p. 73) state TCM, “follows the theory of the Yin and the Yang, where the Yin and the Yang are in a constant state of dynamic balance. They represent opposite stages of a cycle, which constitutes the motive force of all the changes, development and decay of things”. Identifying the root cause of the disease is very important. Any long-term imbalance such as extreme climate change, overdue physical activity, heavy workload, excessive rest, unbalance diet, sudden emotional change can all be attributed to the cause of the disease. TCM Practitioners look for external signs of internal organs.

As a form of TCM, acupuncture involves inserting acupuncture needles at certain depths into the skin to treat a symptom or disease (Yuan *et al.*, 2006). They are inserted into specific points of the body to stimulate its own natural system to treat the disease. The patient should feel a sensation of fullness or radiating warmth when a desired depth is reached (Yuan *et al.*, 2006).

Acupuncture is normally used to treat lower back pain, head and stomachaches, arthritis, insomnia and constipation. Most people visit an acupuncturist because of pain, fatigue, cardiovascular disease, weight problems, mental disorder, allergy, migraine headaches, insomnia, skin disease and other diseases.

2) Mind-body Interventions

Yoga

Yoga is most often understood as a program of postures and breathing exercises directed to maintain a flexible and healthy body. However, in its original form, yoga is multi-dimensional, focusing on the ‘whole’ individual and not just the physical body. The word yoga is derived from *Yuj* meaning to unite (Yuan *et al.*, 2006). The connotation here is the union of body with mind and in a more holistic sense, of mind with spirit. Yoga brings one’s awareness to the eternal existence of this union, suggesting that the body, mind and spirit are in a continuum (Barnes *et al.*, 2002). This is accomplished through training and individual towards a successful practice of meditation. In practical terms, yoga is a systematic path of preparation for meditation and progress in meditation to a state of eternal joy and peace.

Yoga can be used to help improve exercise tolerance and lung function in people with asthma; improve glucose control in people with diabetes and reduce blood pressure.

Meditation

Barnes *et al.* (2002 p. 2) describe meditation as, “the practice of bringing one’s attention to the present moment to achieve better health, inner peace and a higher state of consciousness”. Various forms of meditation involve sitting, standing, lying down or rhythmic motion. In all forms, one’s attention is brought to a single focus to allow release

of the thoughts and feelings that create stress, confusions and disease. Body positioning and breathing are all used to optimize the energetic state by opening energy channels in the body, which helps release old energy and increase the receptivity of new energy (Yuan *et al.*, 2006). It is explained by Yuan *et al.* (2006, p. 80) that, “the process of meditation allows the person to free themselves from thoughts that draw their time, attention and awareness away from the present moment. Thoughts not in the present may be the source of great stress, worry, anxiety, or depression, which would ultimately affect physical health”. It is believed that by focusing on the present, one is able to enter a state of higher awareness, appreciation, and inner peace. This allows for increased balance, health, vitality and creativity.

3) Biologically-based Therapies

Naturopathy

Described above.

4) Manipulative and Body-based Therapies

Chiropractic

Described above.

Massage Therapy

Massage therapy involves pressing, rubbing, and otherwise manipulating muscles and other soft tissues of the body, causing them to relax and lengthen and allowing pain relieving oxygen and blood to flow to the affected area (Yuan *et al.*, 2006). Using their hands and sometimes feet, elbows, and forearms, massage therapists may use over 75 different methods, such as Swedish message, deep-tissue massage, neuromuscular massage, and manual lymph drainage (Yuan *et al.*, 2006). People use massage therapy as Complementary and Alternative Medicine for a variety of health-related purposes, from treating specific diseases and conditions to general wellness. People use massage therapy to relieve pain, rehabilitate sports injuries, reduce stress, increase relaxation, address feelings of anxiety and depression and aid in general wellness. Before treatment, the therapist will discuss the patients symptoms, medical history, the desired results and other factors such as work and stress levels. During treatment, the patient will lie on a special padded table and be either clothed or unclothed.

5) Energy Therapies

Reiki

Originating in Japan, reiki is a form of channeling healing energy. The reiki process as described by Barnes *et al.* (2002) includes placing ones hands onto another person, or at a

distance through the use of symbols. When one gives reiki to another person, they place their hands on the body in different positions for 3-5 minutes. Barnes *et al.* (2002 p. 2) goes on to describe that during treatment, “this healing energy is said to be channeled through the hands of a practitioner into the client's body to restore a normal energy balance and health”. Energy healing therapy has been used to attempt treatment of a wide variety of ailments and health problems and is sometimes used in conjunction with other alternative and conventional medical treatments. The person receiving reiki may experience heat, pulsations, muscle movement, emotional releases and deep relaxation. Reiki affects all levels of health – physical, mental, emotional and spiritual.

6) Exercise-based Therapies

Tai Chi

Tai Chi (short for Taijichuan) is a combination of Chinese martial arts with Chinese breathing training, energy flowing guidance and meditation progress (Yuan *et al.*, 2006). It is a mind-body harmonizing technique for health improvement and longevity. It is practiced for balancing mind and body to cultivate physical and psychologic health benefits. As the forms are practiced in slow but continual fluidic movements, the breathing is regulated as an integral part of this flowing meditation (Yuan *et al.*, 2006). The effect of mind regulation produces a sedative state directly on the central nervous system, which helps to stimulate and improve other systems of the body. The mind becomes clear and relaxed. The movements help to loosen tight muscles, make the joints flexible, and increase the posture, stability and balance of the whole body. Yuan explains that the main purpose of Tai Chi is to achieve health benefits and longevity by balancing Yin and Yang in order to reach holistic harmony.

Barnes, P.; Powell-Griner, E.; McFann, K.; Nahin, R. (2002) Complementary and Alternative Medicine Use Among Adults: United States. Centers for Disease Control.

Yuan, C.; Beiber, E.; Bauer, B. (2006) Textbook of Complementary and Alternative Medicine. Informa Healthcare: United Kingdom.

NCCAM (2007) National Center for Complementary and Alternative Medicine: National Institutes of Health. Obtained from: www.nccam.nih.gov.

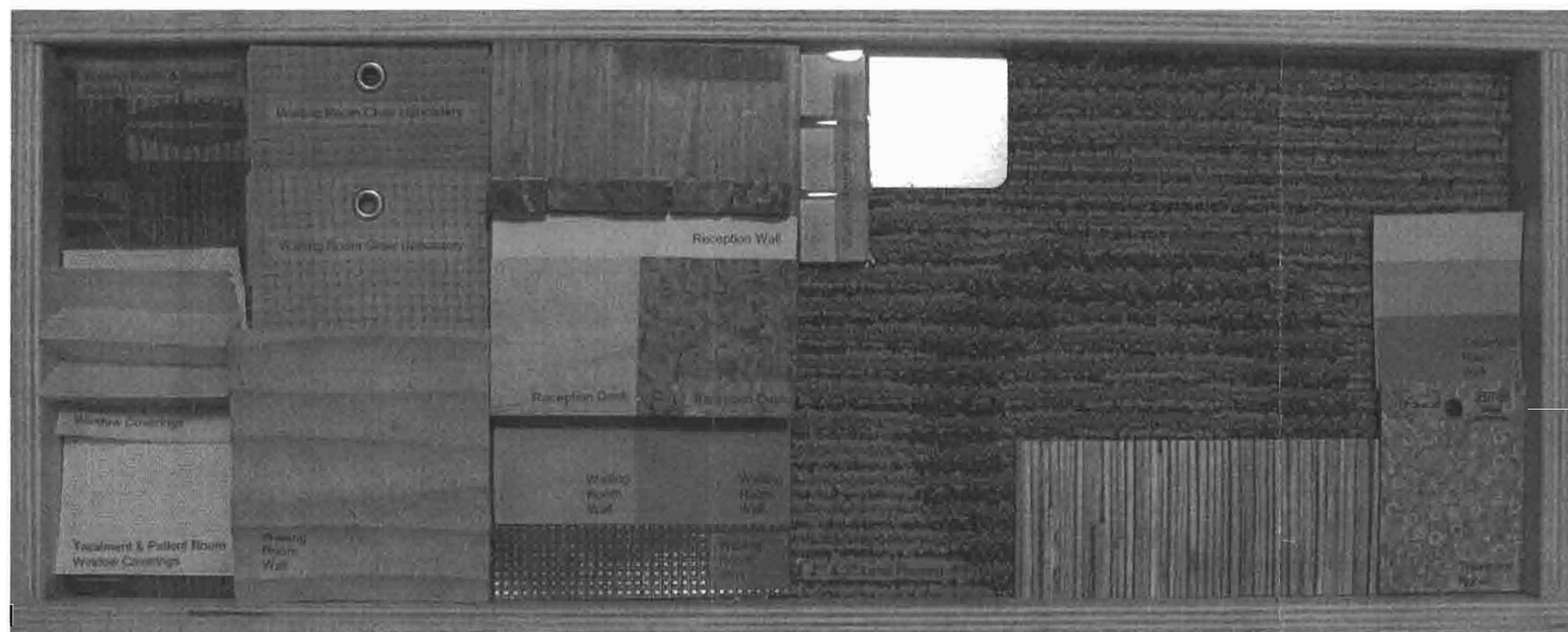
APPENDIX 7.3: LIGHTING SPECIFICATIONS

Code	Manufacturer	Product	Finish	Bulb
A	Contrast Lighting	T2000-05, 4 ¼ " dia. adj. gimble	Brushed Nickel	BlueMax 32 watt lamp CRI: 91 Kelvin: 5100
B	Zenon	Puck light	Silver plastic trim	MR-16, 50W
C	Alico Industries	Crescent FRPC6100-90-16M	Shade: Clear	50W max. bi-pin
D	Thomas Lighting Canada	Attune Fluorescent downlight with diffuser	N/A	BlueMax 32 watt lamp CRI: 91 Kelvin: 5100
E	Zaneen	LOFT Series Indirect Fluorescent uplight	Metal with Satin Aluminum Finish	BlueMax 54 watt lamp. CRI: 96, Kelvin: 5900
F	Tech Lighting	Track Monopoint light	Brushed Nickel	MR-16, 50W
G	Alico Industries	Teeline Undercounter task light, HF024 22"W x 1"D	White	T5 3500 degree fluorescent
H	LBL Lighting	Twilight 20	Stainless Steel	12V. Dimmable with 600W low voltage electronic dimmer.
I	Russell Lighting	Ceiling Mounted light	Opal frosted glass with antique bronze trim	120V-60HZ
J	Alico Industries	Guscio Single Lamp Wall Sconce	Chrome and Italian Pineapple Glass	120V Halogen
K	Juno Lighting	8" Enclosed Compact Fluorescent Downlight	Pewter Satin Finish	BlueMax CF lamp. 42 watts, 5900K, 94 CRI
L	Scabetti	Cibola Suspended Fluorescent Pendant Light	Bone China, Steel Cable	BlueMax CF lamp. 42 watts, 5900K, 94 CRI
M	Juno Lighting	6" CF Wallwash	Pewter Satin Finish	Triple Tube CF 32W
N	Terzani	Magdalena Suspension Light	Metal with Tin Plating	300W E26
P	LBL Lighting	Veneto Venti Ceiling Light	Mocha Glass with Satin Nickel Trim	3 x 100W E26
R	Techlighting	Firefrit Dimmable Wall Mounted Light	Glass and chrome finish	12 volt 35W halogen bi-pin lamp



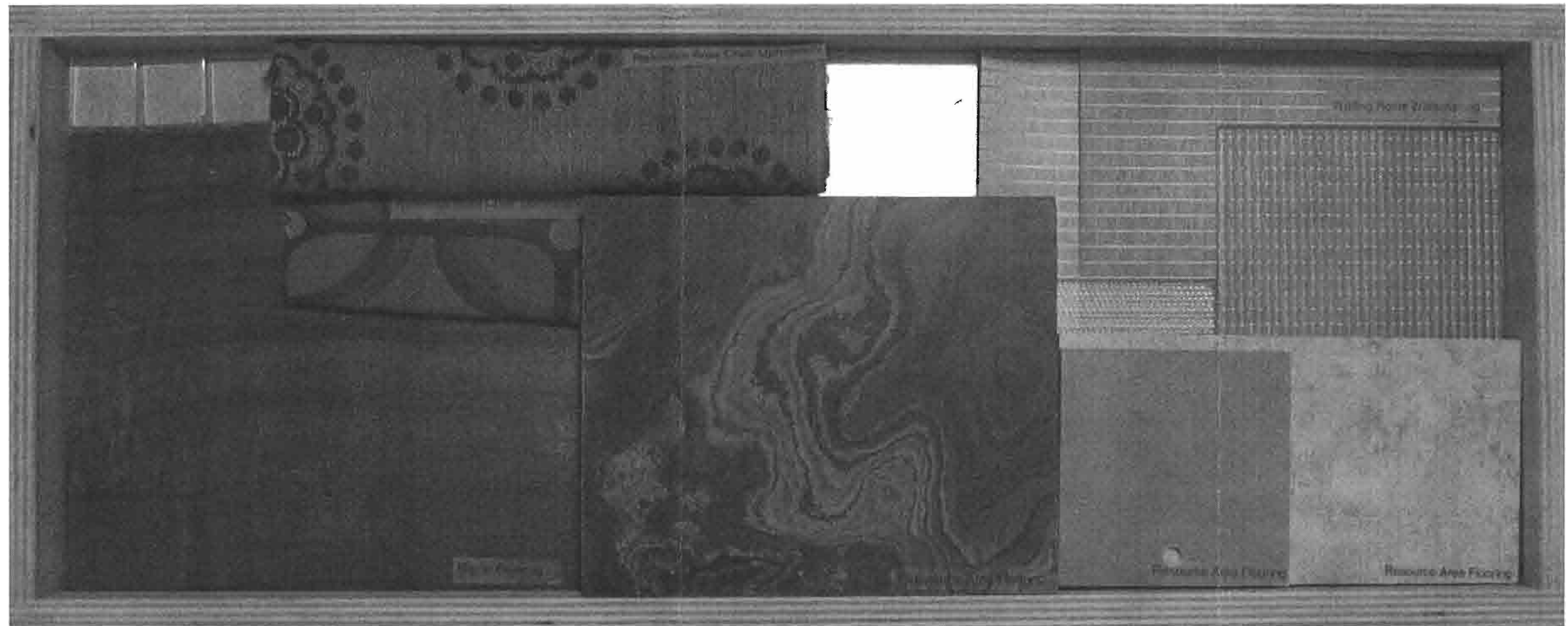
Material Board: Box 1

Healing Garden, Main Reception & Exit



Material Board: Box 2

Waiting Area and Treatment Rooms



Material Board: Box 3

Ramp & Resource Area

APPENDIX 7.4: MATERIAL SPECIFICATIONS

BOX 1: HEALING GARDEN ENTRANCE, MAIN RECEPTION & EXIT

1. FLOORING

NATURAL STONE

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
CT-1	GROPO GAMMA HONED TRAVERTINE	GLADIOLA FIELD	GLADIOLA	HEALING GARDEN, MAIN RECEPTION, MAIN CORRIDOR, EXIT
CT-2	JULIAN TILE	RIVER ROCK PEBBLE BOARDER	SLATE	HEALING GARDEN, EXIT

2. WALLS

GLASS

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
G-1	JOEL BERMAN GLASS STUIOS LTD.	STICKS	CLEAR	MAIN RECEPTION

PAINT

CODE	MANUFACTURER	COLOUR	LOCATION
P-1	BENJAMIN MOORE	ALMOND BISQUE CC-280	MAIN RECEPTION WALLS
P-2	BENJAMIN MOORE	VICHYSOISE CC-246	MAIN RECEPTION BULKHEAD

3. MILLWORK AND FURNITURE

PLASTIC LAMINATE

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
PLAM-1	FORMICA DECO METAL	SOLID METAL	BRUSHED ALUMINUM	MAIN RECEPTION REVEAL LINES IN MILLWORK

SOLID SURFACE

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
S-1	3FORM	CHROMA	MOSS	MAIN RECEPTION TRANSACTION TOP
S-2	CAESERSTONE ENGINEERED STONE	3241	WHITE SANDS	MAIN RECEPTION COUNTERTOP

UPHOLSTERY

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
FAB-1	DESIGNTEX	SOOTHE 2769-702	CHAPARRAL	MAIN RECEPTION BENCH, HEALING GARDEN CHAIRS

BOX 2: WAITING AREA AND TREATMENT ROOMS

1. FLOORING

CARPET

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
CPT-1	DESIGN WEAVE	CIRCLE	GREEN	WAITING AREA, TREATMENT ROOMS

2. WALLS

PAINT

CODE	MANUFACTURER	COLOUR	LOCATION
P-1	BENJAMIN MORRE	DIJON CC-210	WAITING AREA RECEPTION
P-2	BENJAMIN MORRE	CABOT TRAIL CC-480	WAITING AREA WALLS
P-3	BENJAMIN MORRE	ROSE TAUPE CC-726	WAITING AREA BULKHEAD
P-4	BENJAMIN MORRE	NATURE LOVER CC-726	TREATMENT ROOM WALLS
P-5	BENJAMIN MORRE	NIGHT TRAIN CC-770	TREATMENT ROOM ACCENT

RESIN

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
R-1	LUMICOR	BAMBOO	PRAIRIE	WAITING AREA WALL

MDF

CODE	MANUFACTURER	PRODUCT	PATTERN	LOCATION
MDF-1	FUNWALL INC.	MDF WAVE BOARDS	HORIZONTAL WAVES	WAITING AREA WALL

GLASS TILE

CODE	MANUFACTURER	PRODUCT	COLOR	LOCATION
GT-1	JULIAN TILE	GLASS MOSAIC TILE	OCEAN, BLUE, SOFT GREEN	WAITING AREA WATER FEATURE

3. MILLWORK AND FURNITURE

PLASTIC LAMINATE

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
PLAM-1	FORMICA	veneer	CATHEDRAL CHERRY	RECEPTION DESK MILLWORK
PLAM-2	FORMICA	LAMINATE	BELUGA MATTE	TREATMENT ROOM MILLWORK

WINDOW COVERINGS

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
WC-1	HUNTER DOUGLAS	BRILLIANCE PLEATED SHADES	TAUPE	WAITING ROOM UPHOLSTERY

BOX 3: RAMP AND RESOURCE AREA

1. FLOORING

SHEET VINYL

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
SV-1	TORLYS	WOOD PLANK	WARM CHESTNUT	RAMP

NATURAL STONE

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
CT-1	GROPO GAMMA HONED TRAVERTINE	GLADIOLA FIELD	GLADIOLA	RESOURCE AREA
CT-2	GROPO GAMMA HONED TRAVERTINE	GLADIOLA FIELD	MEDIUM BEIGE	RESOURCE AREA
CT-3	MALIKITE	MALIKITE	BROWN- GREY	RESOURCE AREA

2. WALLS

GLASS

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
G-1	JOEL BERMAN GLASS STUIOS LTD.	FROST	CLEAR	RESOURCE AREA

WALLCOVERING

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
W/C-1	PADDY MADDEN	SPLINE COLLECTION	ZONTI OCEAN	RESOURCE AREA

3. MILLWORK AND FURNITURE

UPHOLSTERY

CODE	MANUFACTURER	PRODUCT	COLOUR	LOCATION
FAB-1	ARCCOM	VIBE AC-68683	CITRINE #4	WAITING ROOM UPHOLSTERY

APPENDIX 7.5: CITY OF WINNIPEG BUILDING DESIGN SUMMARY



VERSION 1.5 NEW CODE
Effective Date March 28, 2007

**SUBMISSION FOR AN
APPLICATION TO BUILD
BUILDING AND SITE DESIGN SUMMARY**

COMMERCIAL PROJECTS

NEW CONSTRUCTION AND ADDITIONS

Submission requirements*

***Departments**

- **Planning, Property and Development**
 - **Zoning and Permits Branch**
 - **Plan Examination Branch**
 - **Fire Prevention Branch**
- **Public Works**
- **Water & Waste Departments**

Project Name: _____

Project Address: _____

For Office Use Only

Folder Number: _____

***If you have any questions, concerns or feedback regarding completion of this document,
please email Patti Regan at pregan@winnipeg.ca***

**It is recommended that applicants refer to the
“Guide – Building Permit Submissions for Commercial Projects”
for assistance in completing this document**

City of Winnipeg
Planning, Property and Development Department
Unit 31 - 30 Fort Street, Winnipeg, Manitoba
Telephone: 1-204-986-5140

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Section I - Application Information

- This form **MUST** be completed by the applicant and attached to the submission.
- For Partial Permits complete shaded sections – For explanation of permit types refer to document “Guide – Building Permit Submissions for Commercial Projects”
- Failure to fully complete submission will delay processing your permit application

A. General Information

1. Construction Address
Street No. _____ Street Name: _____ Unit No. _____
2. Value of Construction: _____
3. Construction Start Date: _____
4. Gross Floor Area: _____
5. Number of Storeys: _____

B. Plans, Documents and Fee required

1. Number of Plans required

- a) 4 copies of complete construction drawings (with site plan) and 2 sets of specs ☐
- b) 2 additional copies of architectural drawings (with site plan) ☐
- c) 1 additional copy, if Health Department approval required (with site plan) ☐

2. Documentation required

- a) A current copy of status or Certificate of Title ☐
- b) Letter of authorization from the owner ☐
- c) 2 copies of the appropriately completed Building Design Summary ☐

3. Fee

- a) Plan deposit of \$524.00 for construction over \$100,000 dollars in construction value ☐

C. Checklist for type of permit request: select one process

1. Full Plan Submission (for details see 3.2 of Guide – Building Permit Submissions for Commercial Projects) ☐

A FULL plan submission is a complete set of final architectural, structural, mechanical and electrical drawings and site plans. Partial permits may be issued to allow construction to proceed before a full plan review has been completed.

NOTE: Mechanical or electrical systems such as commercial cooking operations and manufacturing processes are permitted to be excluded from the Full Plan Submission, however, separate permits will be required for those mechanical and electrical systems.

- a) Request for a Partial Building (foundation) Permit (for details see 3.4.(1) of Guide) ☐
- b) Request for a Partial Building (structural frame) Permit (for details see 3.4.(2) of Guide) ☐

2. Shell Only Plan Submission (for details see 3.3 of Guide – Building Permit Submission for Commercial Projects) ☐

A SHELL ONLY plan submission is a set of plans for a completed building to a shell only stage and with no occupancy. *Note: Separate permits will be required for the development to the final stages of occupancy.*

- a) Request for a Partial Building (foundation) Permit (for details see 3.4.(1) of Guide) ☐

3. Partial Plan Submission (for details see 3.4 of Guide – Building Permit Submissions for Commercial Projects) ☐

A PARTIAL plan submission is a set of plans that are either preliminary drawings or missing the final drawings of either the architectural, structural mechanical or electrical drawings. Permits will be issued in stages based on the extent of the final drawings submitted for review.

NOTE: Mechanical or electrical systems such as commercial cooking operations and manufacturing processes are permitted to be excluded from the Partial Plan Submission, however, separate permits will be required for those mechanical and electrical systems.

- a) Request for a Partial Building (foundation) Permit (for details see 3.4.(1) of Guide) ☐

b) Request for a Partial Building (structural frame) Permit *(for details see 3.4.(2) of Guide)*

☐

Section I - Application Information cont'd

D. Checklist of information submitted

1. Design Summaries

a) Development Design Summary *(refer to Section IIIA of Submission for an Application to Build)*
Fully completed (mandatory)

☐

b) Building Design Summary *(refer to Section IIIB of Submission for an Application to Build)*

1. Fully completed for Building (full) Permit *(for details see 3.2.(1) of Guide)*

☐

2. Complete for partial Building (foundation) Permit *(for details see 3.4.(1) of Guide)*

☐

3. Complete for partial Building (structural frame) Permit *(for details see 3.4.(2) of Guide)*

☐

4. Complete for Building (Shell Only) Permit *(for details see 3.3.(1) of Guide)*

☐

2. Plans – Status of plan submission

Note: For a foundation permit the plans in BOLD must be submitted

1). Site Plans *(refer to Section II of Submission for an application to Build)*

a) General site plan

- Final

☐

- **Preliminary site plan, final to follow by** _____

☐

b) Lot Grade Plan

- **Final**

☐

- Final to follow by _____

c) Sewer and Water Site Servicing Plan

- **Final**

☐

- Final to follow by _____

2). Construction Drawings *(refer to Section 2 of Guide)*

a) Architectural drawings

- Final architectural

☐

- **Preliminary architectural, final to follow by** _____

☐

b) Structural drawings

- Final structural

☐

- **Final foundation and preliminary structural drawings**

☐

- Final structural drawings to follow by _____

☐

c) Mechanical drawings

- Final mechanical

☐

- Partial mechanical, others to follow

☐

- Mechanical drawings to follow by _____

d) Electrical drawings

- Final electrical

☐

- Partial electrical, final drawings to follow

☐

- Electrical drawings to follow by _____

☐

Signed: _____ Dated: _____

(Applicant)

Office Use Only:

Modifications made to this Section must be initialed by the Applicant, and signed and dated below:

Modified by: _____ Date: _____

Section I - Application Information cont'd

E. People (applicant to complete)

Applicant		
Company Name:		Phone No:
Contact:		Fax No:
Address:		Email:
Contractor		
Company Name:		Phone No:
Contact:		Fax No:
Address:		Email:
Owner		
Company Name:		Phone No:
Contact:		Fax No:
Address:		Email:
Architect		
Company Name:		Phone No:
Architect:		Fax No:
Address:		Email:
Code Consultant		
Company Name:		Phone No:
Contact:		Fax No:
Address:		Email:
Structural Engineer		
Company Name:		Phone No:
Engineer:		Fax No:
Address:		Email:
Mechanical Engineer		
Company Name:		Phone No:
Engineer:		Fax No:
Address:		Email:
Electrical Engineer		
Company Name:		Phone No:
Engineer:		Fax No:
Address:		Email:
Municipal Engineer		
Company Name:		Phone No:
Engineer:		Fax No:
Address:		Email:
Geotechnical Engineer		
Company Name:		Phone No:
Engineer:		Fax No:
Address:		Email:
Other:		
Company Name:		Phone No:
Contact:		Fax No:
Address:		Email:
Other:		
Company Name:		Phone No:
Contact:		Fax No:
Address:		Email:

Section II - Site Plan Checklists

Folder No. _____

All applications for new construction and building additions must be accompanied by a well-drawn, legible, detailed site plan that matches the construction drawings submitted with the application. *(This checklist MUST be completed and attached to the submission, and The City will not begin processing the permit application until the following information is provided:*

A. General Site Plan

This general site plan addresses the requirements of all departments involved in plan review

General Information	Yes	NA
1. North Arrow	<input type="checkbox"/>	
2. Drawing scale (not less than 1:500)	<input type="checkbox"/>	
3. Civic Address (if assigned)	<input type="checkbox"/>	<input type="checkbox"/>
4. Legal Description	<input type="checkbox"/>	
5. Street names	<input type="checkbox"/>	
6. Property lines, lot lines and all adjacent public rights-of-way	<input type="checkbox"/>	
7. Lot Dimensions	<input type="checkbox"/>	
8. Total lot area	<input type="checkbox"/>	
9. Construction access route(s) (indicated)	<input type="checkbox"/>	
10. Existing structures	<input type="checkbox"/>	
11. Proposed structures	<input type="checkbox"/>	
12. Existing sewer and water connections	<input type="checkbox"/>	
13. Location of fire hydrant(s) and sprinkler and/or standpipe connections	<input type="checkbox"/>	
14. Access routes / lanes for fire fighting	<input type="checkbox"/>	
15. Indicate site-surfacing material and show all curbs, wheel stops, parking fences and lighting. (Refer to Sections 1140 – 1142 inclusive of Zoning By-law No. 6400/94 or Section 230 of Downtown Zoning By-law No. 100/04.	<input type="checkbox"/>	
16. Dimensions of all projections (i.e. eaves, steps, landings, architectural features.)	<input type="checkbox"/>	<input type="checkbox"/>
17. Garbage enclosure(s)	<input type="checkbox"/>	<input type="checkbox"/>
18. Proposed on-site lighting	<input type="checkbox"/>	<input type="checkbox"/>
19. Proposed signage	<input type="checkbox"/>	<input type="checkbox"/>
20. Dimensions, location and type of surface of existing and proposed approaches, aisles/driveways, vehicle parking areas, loading, storage, etc.	<input type="checkbox"/>	
21. Proposed and existing private sidewalks with dimensions	<input type="checkbox"/>	<input type="checkbox"/>
22. Accessory structures (e.g. booths, fences, parking lots, planters, retaining walls, curbing, lamp standards, free standing signs, awnings, etc.) with dimensions and offsets/setbacks from property lines	<input type="checkbox"/>	<input type="checkbox"/>
23. Aisle, driveway(s) and approach locations. (Refer to Sections 1120, 1130, and 1140 of Zoning By-law No. 6400/94 or Sections 230 and 250 of Downtown Zoning By-law No. 100/04) and Private Approaches By-law No. 6546/95	<input type="checkbox"/>	<input type="checkbox"/>
24. Indicate total number of parking spaces. Spaces must be 8 ft. wide x 20 ft. deep, or 10 ft. wide if abutting a wall or a fence. (Refer to Sections 1120 and 1130 of Zoning By-law No. 6400/94 or Section 230 of Downtown Zoning By-law No. 100/04).	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	NA
25. Indicate total number of loading spaces. Spaces must be 12 ft. wide x 33 ft. deep, or 50 ft. deep depending on use and floor area. (Refer to Section 1151 of Zoning By-law No. 6400/94 or Section 240 of Downtown Zoning By-law No. 100/04).	<input type="checkbox"/>	<input type="checkbox"/>
26. Indicate all landscaping areas and identify material e.g. grass, trees, shrubs, ornamental paving, etc. (Refer to Section 1140 of Zoning By-law No. 6400/94 or Sections 230 and 250 of Downtown Zoning By-law No. 100/04).	<input type="checkbox"/>	<input type="checkbox"/>
27. For automobile sales, vehicle display areas shall be shown indicating surfacing and type of fencing (post and chain or bumper guard)	<input type="checkbox"/>	<input type="checkbox"/>
28. Vent racks and underground storage tanks complete with fuel re-filling areas	<input type="checkbox"/>	<input type="checkbox"/>
29. Storage Compounds with the surfacing indicated and the type and height of fencing around the compound.	<input type="checkbox"/>	<input type="checkbox"/>
30. Proposed surface alterations and enhancements or improvements in the public right-of-way including all landscaping, ditch modifications, and proposed hard surfacing. (Refer to Appendix "A")	<input type="checkbox"/>	<input type="checkbox"/>
31. Location of any proposed structures, portions of structures or services in the public right-of-way, including utility service connections. (Refer to Appendix "A").	<input type="checkbox"/>	<input type="checkbox"/>
32. Areas of the public right-of-way that will be encumbered, occupied or obstructed as a result of the proposed construction, including the installation of any hoarding, fencing, covered walkways, piles or shoring, or any portion of a construction crane that occupies or projects into the right-of-way. (Refer to Appendix "A")	<input type="checkbox"/>	<input type="checkbox"/>

Signed: _____ Dated: _____
(Applicant)

Office Use Only:

Modifications made to this Section must be initialed by the applicant, and signed and dated below:

Modified by: _____ Date: _____

Section II - Site Plan Checklists cont'd

Folder No. _____

B. Lot Grade Plan

This checklist MUST be completed and attached to the submission

The City will not begin processing the permit application until the following information is provided:

	Yes	NA
1. Lot grading plan(s) prepared and sealed by a Professional Engineer, Landscape Architect, or Architect.	<input type="checkbox"/>	
This information is required on all site plans:		
2. Civic address and legal description of the property	<input type="checkbox"/>	
3. Drawing scale (metric) and North arrow (no less than 1:500)	<input type="checkbox"/>	
4. Project location with reference to adjoining streets (street names) or dimensions to street corners at mid-block locations	<input type="checkbox"/>	
5. Legal dimensions of all property lines and total gross area	<input type="checkbox"/>	
6. Building location(s) and distances to other buildings, property lines, driveways, etc.	<input type="checkbox"/>	
7. Entrances to buildings and proposed geodetic floor elevation(s)	<input type="checkbox"/>	
8. Existing and proposed geodetic lot grade elevations (in metric) both on the site and on adjacent property, public right-of-ways, or easements.	<input type="checkbox"/>	
9. Drainage patterns indicated by flow arrows and slopes described in percentages	<input type="checkbox"/>	
10. Location of roof drain downspouts and sump pump discharge outlets	<input type="checkbox"/>	
11. Dimensions and location of all paved or impervious areas such as parking lots, lanes, driveways, sidewalks, curbs and gutters, roofs, etc.	<input type="checkbox"/>	
12. Catch basin locations with rim and invert elevations	<input type="checkbox"/>	
13. Location and elevation of sewer and water connections	<input type="checkbox"/>	
14. Lot grades to confirm drainage	<input type="checkbox"/>	
15. Distances to flood line if development is located within flood fringe area	<input type="checkbox"/>	<input type="checkbox"/>
16. Indicate Flood Protection Level (FPL) if development is located within flood fringe area	<input type="checkbox"/>	<input type="checkbox"/>
17. Size, location, and configuration of private approaches off of public right-of-ways including slopes described in percentages	<input type="checkbox"/>	<input type="checkbox"/>
18. Proposed location of garbage enclosures	<input type="checkbox"/>	<input type="checkbox"/>

For questions and/or additional information contact: **Water and Waste Department**
Customer Technical Services Branch
849 Ravelston Avenue W.
Winnipeg, Manitoba R3E 1S8
Phone: (204) 986-3484
Fax – (204) 222-2168

Signed: _____ Dated: _____
(Applicant)

Office Use Only:

Modifications made to this Section must be initialed by the Applicant, and signed and dated below:

Modified by: _____ Date: _____

Section II - Site Plan Checklists cont'd

Folder No. _____

C. Site Service Plan

This checklist MUST be completed and attached to the submission.

The City will not begin processing the permit application until the following information is provided.

	Yes	No	NA
1. Site Servicing Plan(s) prepared and sealed by a Professional Engineer <u>experienced in municipal design works (Municipal Engineer preferred)</u> .	<input type="checkbox"/>		
2. Size and location of sewer (waste water/sanitary and/or land drainage / storm water) and water (domestic/fire) service connections, fire hydrants, and siamese connections, including the connection details (i.e. – connection type, invert elevations, etc.) to the common mains. Wastewater/sanitary and land drainage/storm water connections shall be separate connections to the common sewer mains.	<input type="checkbox"/>		
3. Size, location (alignment), and material type of sewer and water mains and other underground utilities in the public right-of-ways or easements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Isolation details of water meter (including locations proposed for multiple metering) and meter by-pass c/w backflow prevention, inter-connections, location and layout. Include <u>fixture count</u> for large commercial sites to aid in meter sizing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Size, location, and configuration of storm water control devices including overflow locations. Sites greater than 1,000 m ² (10,750 ft ²) shall be serviced with an internal land drainage system including catch basin(s). (Normally, sites less than or equal to 1,000 m ² (10,750 ft ²) with no potential for future expansion may be drained via private approaches). Drainage is not permitted across sidewalks and boulevards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The pre-development and post-development peak discharge rates for 1:5 and 1:25 year City of Winnipeg design storms (storm water discharge must be controlled in accordance with Sewer By-Law 7070/97). In areas where gravel parking lots are permitted, the same storm water control conditions shall apply.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Maximum depth and extent of ponding (not to exceed 0.3 metres of depth on paved surfaces) for a 1:25 year City of Winnipeg design storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Size, location and type of roof drains where roof storage is used to restrict peak discharge rates or where roofs exceed 1,000 m ² (10,750 ft ²) in area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Construction note (recommended) indicating services are to be installed in accordance with latest revision of the City of Winnipeg Standard Construction Specifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Size and location of grit interceptors. Grit interceptors shall be constructed for all indoor parking and loading area applications. Interceptors installed in indoor areas shall be connected to the building's internal wastewater sewer system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Size, location, and configuration of drainage safety features must be constructed in accordance with City of Winnipeg Culvert and Drainage Inlet/Outlet Safety Guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For questions and/or additional information contact:

Water and Waste Department
Customer Technical Services Branch
849 Ravelston Avenue W.
Winnipeg, Manitoba R3E 1S8
Phone: (204) 986-3484
Fax – (204) 222-2168

Signed: _____
(Applicant)

Dated: _____

Office Use Only:

Modifications made to this Section must be initialed by the Applicant, and signed and dated below:

Modified by: _____

Date: _____

Section II - Site Plan Checklists cont'd

D. Appendix "A" – Site Plans

SUPPLEMENTARY INFORMATION

1. The Private Approaches By-law No. 6546/95 regulates the location, dimensions, and material types. An approval is required for new private walks and approaches or for relocating or widening existing private walks and approaches. A construction permit is required prior to the construction of private walks and approaches.
2. The City of Winnipeg Standard Construction Specifications which are available in Adobe Acrobat (pdf) format @ <http://www.winnipeg.ca/matmgt>, are applicable to work in the public right-of-way including private walks and approaches.
3. Permission to construct and maintain an encroachment must be obtained independently from the Building Permit Approval. Encroachment applications are received at the following office:
Planning, Property and Development Department
Zoning and Permits Branch
31 – 30 Fort Street
Winnipeg, MB R3C 4X7
For further information, call 986-5140.
4. A 'Use of Streets' permit will be required where any portion of a street (public right-of way) is encumbered, obstructed or occupied. (See sections 4.06, 4.07,4.08,4.09 & 4.10 of the Streets By-law No 1481/77.)
5. Cutting, breaking, tearing or removing of a road surface, or excavating within the right-of-way requires the City's permission, an excavation permit and the payment of street cut repair fees prior to commencing any work. Only Contractors licensed under the Streets By-law are permitted to work within the City's right-of-way. (See sections 4.06, 4.07,4.08,4.09 & 4.10 of the Streets By-law No 1481/77.)
6. For any work within the street right-of-way drawings must be submitted to the City of Winnipeg, Underground Structures and Microfilm Services Branch to obtain approval for construction within the right-of-way.

Section III - Design Summaries

Folder No. _____

A. Development Design Summary (Zoning) 986-5140

(This form MUST be fully completed and attached to the submission.)

1. Legal Description _____
2. Zoning By-law No. _____ ☐ Zoning By-law No. 6400/94 ☐ Zoning By-law No. 100/2004
3. Existing or previous use(s): _____
4. Proposed use(s): (specify) _____
- (The existing and proposed uses are needed to determine if more or less parking spaces are required.)*

Parking and Loading

5. Parking - number of stalls: Required _____ Provided _____
6. Parking surface: (specify) _____
7. Loading spaces required Required _____ Provided _____
8. Loading space dimensions: _____

Approvals

9. Zoning Agreements: (specify) _____
10. Conditional Use _____
11. Variance _____
12. Other approvals: _____

Site Coverage

14. Total Main Floor _____ square metres
15. Lot Area _____ square metres
16. Maximum allowed site coverage _____ square metres
17. Lot Coverage Provided _____ / _____ = _____ %
- Main floor area Lot area Lot Coverage

Floor Area Ratio

18. Total area of building (all floors) _____ square metres
19. Lot Area _____ square metres
20. Maximum allowed floor area ratio _____ / _____ = _____ / _____
- Total building area Lot area Floor area ratio

21. Building Height (feet/metres) Required _____ m Provided _____ m

Yard Setbacks

22. Front Required _____ m Provided _____ m
23. Sides Required _____ m Provided _____ m
24. Rear Required _____ m Provided _____ m
25. Encroachments: (specify) ☐ Yes ☐ No (specify type) _____

Signed: _____ Dated: _____
(Applicant, Architect, Landscape Architect, Surveyor. Other Qualified Professional)

Office Use Only:

Modifications made to this Section must be initialed by the Applicant, and signed and dated below:

Modified by: _____ Date: _____

Section III - Design Summaries cont'd

Folder No. _____

B. Building Design Summary (Plan Examination / Fire Prevention)

General Information for Section III

1. This form MUST be fully completed, including the seals of the respective design professionals, and attached to the submission. When necessary, additional analyses shall be provided and included with this Submission.
2. All references in Building Design Summary refer to the Manitoba Building Code.
3. Please indicate all items that are not applicable.

The City will not begin processing the permit application until the following information is provided:

1. Fire Protection, Occupant Safety and Accessibility (MBC Part 3 – Division B)

For Shell Only or Partial permits, for Part 3 only the shaded areas must be completed with the initial submission.

MBC - Section 3.1- General

- a. Major occupancy classification (3.1.2): _____
(Note: for multi-use/storey buildings, more than one major occupancy classification may be necessary)
- b. Other intended occupancy group(s): _____
- c. Building Area(s): _____ Square metres (Note: see MBC definition)
- d. Building Height _____ Number of storeys (Note: see MBC definition)
- e. Building Facing _____ Number of streets
- f. Building is sprinklered ☐ Yes ☐ No
- g. Firewall(s) (3.1.10) (Rating and grid line location) _____
- h. High Building (3.2.6) ☐ Yes ☐ No If Yes, additional analysis included ☐
- i. Design occupant load(s) (3.1.17): (specify occupant loads for various spaces when applicable)

- j. Alternative Solution(s): ☐ Yes ☐ No If yes, see attachment ☐

MBC Section 3.2 - Building Fire Safety

3.2.2 - Building Size and Construction Relative to Occupancy

- a. Construction article(s) (select from articles 3.2.2.20 to 3.2.2.83)

(Note: for multi-use, multi-storey buildings, more than one classification or construction article may be necessary)
- b. Construction: Non-combustible ☐ Non-combustible or combustible construction, singly or in combination ☐
- c. Floor assembly above basement (see 3.2.1.4) _____ (hr) fire separation (FS)
- d. Crawl space (see 3.2.2.9 and 3.1.11.6) _____
- e. Other floor assemblies _____ (hr) FS
- f. Mezzanine assemblies _____ (hr) fire-resistance rating (FRR)
- d. Roof assembly _____ (hr) FRR
- e. Roof assembly (see 3.1.14.2) _____
- f. Load bearing beams and columns _____ (hr) FRR

Section III – Design Summaries cont'd. B. Building Design Summary cont'd.

3.2.3 - Spatial Separation (Note: See Tables 3.2.3.1. A to D and Sentences 3.2.3.7.(1) to (6))

North Wall

- a. Limiting distance (LD) = _____ metres
- b. Exposing building face (EBF) = _____ sq m (area)
- c. Unprotected openings (allowable) _____ % (specify) > unprotected openings (actual) _____ % (specify)
- d. FRR = _____ (hr)
- e. Construction: non-combustible ☐ combustible ☐ f. Cladding: non-combustible ☐ combustible ☐

South Wall

- a. Limiting distance (LD) = _____ metres
- b. Exposing building face (EBF) = _____ sq m (area)
- c. Unprotected openings (allowable) _____ % (specify) > unprotected openings (actual) _____ % (specify)
- d. FRR = _____ (hr)
- e. Construction: non-combustible ☐ combustible ☐ f. Cladding: non-combustible ☐ combustible ☐

East Wall

- a. Limiting distance (LD) = _____ metres
- b. Exposing building face (EBF) = _____ sq m (area)
- c. Unprotected openings (allowable) _____ % (specify) > unprotected openings (actual) _____ % (specify)
- d. FRR = _____ (hr)
- e. Construction: non-combustible ☐ combustible ☐ f. Cladding: non-combustible ☐ combustible ☐

West Wall

- a. Limiting distance (LD) = _____ metres
- b. Exposing building face (EBF) = _____ sq m (area)
- c. Unprotected openings (allowable) _____ % (specify) > unprotected openings (actual) _____ % (specify)
- d. FRR = _____ (hr)
- e. Construction: non-combustible ☐ combustible ☐ f. Cladding: non-combustible ☐ combustible ☐

3.2.8 - Mezzanines and Opening through Floor Assemblies

(Note: Mezzanine(s) – Sentences 3.2.8.2.(1) and see also Sentences 3.2.1.1.(3) to (7).)

	Yes	N/A
a. Open mezzanine (max. 40%).	<input type="checkbox"/>	<input type="checkbox"/>
b. Enclosed mezzanine (max. 10%).	<input type="checkbox"/>	<input type="checkbox"/>
c. Interconnected floor space - (Sentence 3.2.8.2.(6).)	<input type="checkbox"/>	<input type="checkbox"/>
d. Interconnected floor space - (Articles 3.2.8.3 to 3.2.8.9) (Note: see 3.4.3.2.(6) Exits from Interconnected Floor space)	<input type="checkbox"/>	<input type="checkbox"/>

MBC Section 3.3 - Safety within Floor Areas

- a. Suite separation (3.3.1.1) _____ (Hour) Fire separation
- b. Major occupancy separation (Table 3.1.3.1) _____ (Hour) Fire separation
- c. Public corridor (3.3.1.4) _____ (Hour) Fire separation

- d. Dead-end corridor (3.3.1.9) _____ (m) (Maximum 6 m)

Section III – Design Summaries cont'd. B. Building Design Summary cont'd

- e. Suite egress (3.3.1.5) _____ No. of egress doors
- f. Janitor's room (3.3.1.21) _____ (Hour) Fire separation
- g. Common laundry room(s) (3.3.1.22) _____ (Hour) Fire separation
- h. Welding and Cutting room(s) (3.3.1.25) _____ (Hour) Fire separation
- i. Repair garage (3.3.5.5) 2 hr fire separation ☐ ☐
- j. Storage garage (3.3.5.6) 1.5 hr fire separation ☐ ☐
- k. Additional occupancy requirements (see Subsections 3.3.2 to 3.3.5) – (specify)

MBC Section 3.4 - Exits

- a. Minimum two exits [3.4.2.1.(1)] required. Number of exits provided _____ (specify number)
- b. Mezzanine exits/egress stairs (3.4.2.2) _____
- c. Distance between exits (3.4.2.3) = _____ m
- d. Travel distance (3.4.2.5) = _____ m
- e. Exit stair enclosure (3.4.4.1) _____ (hr) fire separation
- f. Exit lobby (3.4.4.2) _____ (hr) fire separation
- h. Exit capacity (3.4.3.2) - stair (width) _____ mm = _____ (number) persons
- i. Exit capacity (3.4.3.2) - door (width) _____ mm = _____ (number) persons
- g. Horizontal exit (3.4.1.6 and 3.4.6.9). ☐ Yes ☐ No
- j. Exit schematic provided (optional) ☐ Yes ☐ No

MBC Section 3.5 – Vertical Transportation

- a. Elevator shaft (3.5.3.1) _____ (Hour) Fire separation
- b. Elevator machine room (3.5.3.3) _____ (Hour) Fire separation
- c. Elevator size (3.5.4.1) = _____ mm x _____ mm

MBC Section 3.6 - Vertical Service Space

- a. Service (furnace) room (3.6.2.1) _____ (Hour) Fire separation
- b. Service (other) room(s) (3.6.2.1) _____ (Hour) Fire separation
- c. Incinerator room(s) (3.6.2.4) _____ (Hour) Fire separation
- d. Refuse (garbage) room(s) (3.6.2.5) _____ (Hour) Fire separation

MBC Section 3.7 – Washrooms Fixtures (See 3.7.2.2 and Tables 3.7.2.2 A to C)

- a. Occupant Load _____ /2 = _____ /sex
- b. Female Water closet Number Required _____ Number Provided _____
- c. Lavatory Number Required _____ Number Provided _____
- d. Male Water closet Number Required _____ Number Provided _____
- e. Lavatory Number Required _____ Number Provided _____

Section III – Design Summaries cont'd. B. Building Design Summary cont'd.

MBC Section 3.8 – Barrier- Free Design

- | | | |
|----|--|--|
| a. | Barrier-free protection (3.3.1.7) – (specify type) | _____ |
| b. | Barrier-free access provided to all main floor tenants (3.8.2.1) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. | Barrier-free access to upper floor(s) by elevator (3.8.2.1) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. | Barrier-free washrooms are provided (3.8.2.3) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. | Public entrance doors equipped with power door operators (3.8.3.3) | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Building Code Electrical Life Safety Systems

- | | | |
|----|--|--|
| a. | 3.2.4 – Fire Alarm and Detection Systems: Fire alarm is required | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. | 3.2.7 – Emergency Lighting: Emergency lighting is required | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. | 3.4.5 – Exit Signs: Exit signage is required. | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Fire Paramedic Service – Fire Prevention Branch – MBC/MFC

Manitoba Building Code

3.2.5 - Provisions for Fire Fighting

- | | | |
|----|--|--|
| a. | Access for fire fighting provided to basement, above grade storeys, roof | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. | Access routes provided for firefighters vehicles, including turnaround | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. | Location of hydrants indicated. | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. | Standpipe system is required (3.2.5.8, Table 3.2.5.8.) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. | Sprinkler system fire department connections indicated | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. | Standpipe system fire department connection indicated. | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Manitoba Fire Code

- | | | |
|----|--|--|
| a. | Part 3 – Indoor and Outdoor storage – Dangerous goods, etc. | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. | Part 4 – Flammable and Combustible Liquids | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. | Part 5 – Hazardous Processes and Operation, e.g. spray booths, laboratories. | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. | Other conditions/features. (specify) _____ | |

Note: Additional analysis may be required. _____

Responsibilities of the Designer:

I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 4555/87 and, upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law.

Signature _____

Date _____

Affix Seal over signature

Section III - Design Summaries cont'd. B. Building Design Summary cont'd.

2. Structural Design (MBC Part 4)

For Shell Only or Partial permits, only the shaded areas must be completed with the initial submission.

MBC Section 4.1 Structural Loads and Procedures

- | | | |
|---------------------------------------|------------------------------|-----------------------------|
| a. Design loads indicated on drawings | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Other effects/loads | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

MBC Section 4.2 Foundations

- | | | |
|---|------------------------------|-----------------------------|
| a. Subsurface investigation (soils) report included | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|---|------------------------------|-----------------------------|

MBC Section 4.3 Design Requirements for Structural Materials (check applicable references)

Material reference standards indicated:

- | | |
|---|--------------------------|
| a. Wood: CSA 086, Engineering Design in Wood | <input type="checkbox"/> |
| b. Masonry: CSA S304.1, "Design of Masonry Structures" | <input type="checkbox"/> |
| c. Concrete: CSA A23.3, "Design of Concrete Structures" | <input type="checkbox"/> |
| d. Steel: CAN/CSA S16, "Limit States Design of Steel Structure" | <input type="checkbox"/> |
| e. CSA S136, "Cold Formed Steel Structural Members" | <input type="checkbox"/> |
| f. Others – if applicable | <input type="checkbox"/> |

Shop Drawings (Div.C-2.2.7.3.)

Note: Documents listed below will be submitted prior to installation, if applicable

- | | Yes | N/A |
|--|--------------------------|--------------------------|
| a. Rigid steel frame, including design summary sheet | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Open web steel joists | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Structural connections | <input type="checkbox"/> | <input type="checkbox"/> |
| d. I-Joists, open-web wood joists, etc. | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Roof trusses, including girder trusses | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Glulam/Structural Composite Lumber (SCL) beams | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Hollow-core slabs | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Pre-cast structural members | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Stairs, handrails and guards | <input type="checkbox"/> | <input type="checkbox"/> |

Responsibilities of the Designer:

I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 4555/87 and Article 2.2.7.2 (Division C) of the MBC and upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law.

Signature _____ Date _____
Affix Seal over signature

Section III - Design Summaries cont'd. B. Building Design Summary cont'd.

3. Environmental Separation (MBC Part 5)

(Design Professionals to initial their items of responsibility)

MBC Section 5.2 Loads and Procedures

- a. Operating temperature _____
- b. Operating relative humidity range _____
- c. Operating static pressure _____
- d. Wind load calculations for environmental separation done by _____

MBC Section 5.3 Heat Transfer

- a. Analysis of condition control done by _____
- b. Placement and types of primary insulating layers in environmental separations (Describe) _____

MBC Section 5.4 Air Leakage

- a. Air-barrier systems utilized (Describe) _____

- b. Specified leakage rate (not mandatory) for building (Describe) _____

MBC Section 5.5 Vapour Diffusion

- a. Vapour barrier materials used and location (Describe) _____

MBC Section 5.6 Precipitation

- a. Roofing and flashing systems (Describe) _____

- b. Drainage and disposal systems (Describe) _____

MBC Section 5.7 Surface Water

- a. Methods used to control surface water (Describe) _____

Section III – Design Summaries cont'd. B. Building Design Summary cont'd.

MBC Section 5.8 Moisture in the Ground

- a. Methods used to control moisture in the ground (Describe) _____

- b. Penetration of service elements _____
- c. Methods used to accommodate penetrations by windows, doors, electrical services, mechanical services, etc.
(Describe) _____

MBC Section 5.9 Sound Transmission

- a. Walls _____

- b. Floors _____

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)

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Responsibilities of the Designer:

(Note: Seal applies to those items initialed)

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Signature _____ Date: _____
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Responsibilities of the Designer:

(Note: Seal applies to those items initialed)

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(Note: Seal applies to those items initialed)

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Signature _____ Date: _____
Affix Seal over signature

Section III - Design Summaries, B. Building Design Summary cont'd.

4. Heating, Ventilating and Air-Conditioning (MBC Part 6)

(Design professionals to initial their items of responsibility)

NOTE: Electrical systems such as commercial cooking operations and manufacturing processes are permitted to be excluded from the Full or Partial Plan Submission, however, separate permits will be required for those electrical systems.

MBC Section 6.2 Design and Installation

MBC Subsection 6.2.2 Ventilation

General ventilation (ASHRAE 62) - 6.2.2.1

- | | | |
|------------------------------------|-------|-----------------------------|
| a. Use(s): | _____ | (specify type of use(s)) |
| b. Rate(s): | _____ | (cfm/person) |
| c. Occupant Load(s): | _____ | (specify number of persons) |
| d. Ventilation capacity required = | _____ | (specify) |
| e. Ventilation capacity provided = | _____ | (specify) |
| f. Ventilation based on | _____ | (specify) |

Other space ventilation

- | | | |
|---|------------------------------|-----------------------------|
| a. Storage garage - 6.2.2.3 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Emergency generator ventilation - 6.2.2.4 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Air contaminant exhaust - 6.2.2.4 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Dust collection system - 6.2.2.4 & 6.2.2.5 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Welding and cutting operations (NFPA 51) - 6.2.2.4 & 6.2.2.5 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. Crawl Space/Attic or Roof Spaces - 6.2.2.7 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| g. Other conditions /features _____ | (specify) | |

MBC Subsection 6.2.3 Air Duct Systems

- | | | |
|--|------------------------------|-----------------------------|
| a. Fire Dampers (See Article 3.1.8.9) - 6.2.3.6 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Smoke Detector Control (see Article 3.2.4.12) - 6.2.3.7 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Exhaust Ducts and Outlets – 6.2.3.8 | | |
| d. Interconnection of Systems - 6.2.3.9 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Make-up Air - 6.2.3.11 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

MBC Subsection 6.2.4 Carbon Monoxide Alarms

- | | | |
|-------------------------------------|------------------------------|-----------------------------|
| a. Carbon Monoxide Alarms - 6.2.4.1 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|-------------------------------------|------------------------------|-----------------------------|

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)
I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 4555/87 and upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law.

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Signature _____ Date _____
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Section III - Design Summaries cont'd, B. Building Design Summary cont'd.

4. Heating, Ventilating and Air-Conditioning (Part 6) cont'd

(Design Professionals to initial their items of responsibility)

Other Systems

1. Repair Garage/Spray Booths

- | | | |
|---|------------------------------|-----------------------------|
| a. Auto-body repair shop - 6.2.2.4 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Service/repair garage (NFPA 30A) - 6.2.2.5 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Spray Booth (NFPA 33) - 6.2.2.4 & 6.2.2.5 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

2. Cooking Equipment

- | | | |
|--|------------------------------|-----------------------------|
| a. Cooking equipment (NFPA 96) - 6.2.2.6 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|--|------------------------------|-----------------------------|

3. Manitoba Fire Code (MFC)– Dangerous and Hazardous Goods

- | | | |
|---------------------------------------|------------------------------|-----------------------------|
| a. Flammable and Combustible Liquids | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Hazardous Processes and Operations | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

4. Mechanical Systems Requiring Separate Permit

☐ Yes ☐ No

- | | |
|----|-------|
| a. | _____ |
| b. | _____ |
| c. | _____ |

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)

I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 4555/87 and upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law.

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)

I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 4555/87 and upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law.

Signature _____ Date: _____
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Signature _____ Date: _____
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Section III - Design Summaries, B. Building Design Summary cont'd.

4. Heating, Ventilating and Air-Conditioning (Part 6) cont'd

(Design Professionals to initial their items of responsibility)

Fire Suppression Systems

1. Sprinkler Systems

- a. Sprinkler Systems (3.2.5.13) - NFPA 13 ☐, 13R ☐, 13D ☐ (check if applicable)
- b. Type of system: Wet _____ Dry _____ Other _____ (specify)
- c. Hazard _____
- d. Sprinkler shop drawings under engineers seal to be supplied by contractor ☐ (check if applicable)

2. Standpipe Systems

- a. Standpipe and Hose System - NFPA 14 ☐ Yes ☐ No
- b. Fire Pump (see 3.2.5.19) - NFPA 20 ☐ Yes ☐ No

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)

I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 455/87 and upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law.

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)

I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 455/87 and upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law.

Signature _____ Date _____
Affix Seal over signature

Signature _____ Date _____
Affix Seal over signature

Section III - Design Summaries cont'd. B. Building Design Summary cont'd.

5. Electrical - By-Law 36/2003 (Including Canadian Electrical Code)

This MUST be completed and attached to the submission

NOTE: Electrical systems such as commercial cooking operations and manufacturing processes are permitted to be excluded from the Full or Partial Plan Submission, however, separate permits will be required for those electrical systems.

5.1. General

- a. Non-combustible construction is required ☐ Yes ☐ No
b. Sprinklered ☐ Yes ☐ No
c. Service: _____ V _____ A _____ Phase _____ Wire
d. Service conductor routing: O/H _____ U/G _____

Details _____

- e. Ground fault protection required ☐ Yes ☐ No
f. Single line diagram provided ☐ Yes ☐ No
g. U/G cable ampacities: diagram: _____ detail: _____ table: _____
h. Rule 8-104 cable ampacity compliance ☐ Yes ☐ No
i. Grounding conductor size: (specify) _____
j. Grounding electrode: Water pipe _____ Artificial _____

IC ratings:

- k. Service entry _____ KA
l. 600V CDP _____ KA
m. 600V panel _____ KA
n. 208V CDP _____ KA
o. 208V panel _____ KA
p. Dielectric filled transformer clearance >3m _____
r. Transformer as per 26-242(3) if <3m _____
s. Working space requirements 2-308(1m) _____ 2-310(1.5m) _____
t. Panel locations shown ☐ Yes ☐ No
u. Exits from electrical rooms as per 2-310 ☐ Yes ☐ No
v. Sprinkler shielding provided ☐ Yes ☐ No
w. Flood plain requirement details _____
x. Landfill requirement details _____

5.2. Exit Signage – (see MBC Subsection 3.4.5)

- a. Exit signs required ☐ Yes ☐ No
b. Exit signs provided ☐ Yes ☐ No
c. Exit sign locations shown ☐ Yes ☐ No
d. Dedicated exit light cct./emergency lighting cct. ☐ Yes ☐ No

5.3. Emergency Lighting – (see MBC Subsection 3.2.7)

- a. Emergency lighting required ☐ Yes ☐ No
b. Emergency lighting provided ☐ Yes ☐ No
c. Emergency lighting locations shown ☐ Yes ☐ No
d. Emergency power supply DC _____ Generator _____
e. Emergency power duration ☐ ½ hr. ☐ 1 hr. ☐ 2hr
f. WEB compliance 46-106 _____ 46-304(4) _____

Section III - Design Summaries, B. Building Design summary cont'd.

5. Electrical cont'd (This MUST be completed and attached to the submission)

5.4. Fire Alarm System – (see MBC Subsection 3.2.4)

- | | | |
|---|------------------------------|-----------------------------|
| a. Fire alarm system required | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Fire alarm system provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Fire alarm system specifications provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Type of fire alarm: 1 stage_____ 2 stage_____ addressable_____ | | |
| e. Annunciator location(s) shown | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. Manual pull stations shown | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| g. Fire alarm detectors shown | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| h. Sprinkler system supervision provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| i. Latching supervisory zones provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| j. Zone schedule provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| k. Elevator control/alternate floor homing provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| l. Air-handling detector(s) provided for shutdown | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| m. Central vacuum shutdown required/provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| n. Cooking exhaust hood extinguisher connection provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| o. Audible signals shown | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| p. Visual signals provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| r. Central reporting required | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| s. Emergency power supply | DC_____ | Generator_____ |

5.5. Door Hardware/Control

- | | | |
|---|------------------------------|-----------------------------|
| a. Door holders provide | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Door holder FA release provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Smoke detection located per CAN/ULC-S524 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Electro-magnetic door locks provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Electro-magnetic door locks comply with MBC - 3.4.6.15.(4) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

5.6. Emergency Generator

- | | | |
|--|--------------------------------|---------------------------------|
| a. Emergency generator location shown | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. CAN/CSA C-282 compliance | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Trouble supervision | <input type="checkbox"/> Local | <input type="checkbox"/> Remote |
| d. Unit equipment provided in generator room | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Unit equipment provided in transfer switch room | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

5.7. Fire Pump

- | | | |
|---|------------------------------|-----------------------------|
| a. Fire pump required / provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Shown on single line diagram | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Required emergency generator provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Remote trouble supervision provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Fire alarm supervision provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. Transfer switch approved for fire pump service | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Section III – Design Summaries. B. – Building Design Summary cont'd

5.8. 5. Electrical cont'd.

Barrier Free Requirements

- | | | |
|---|------------------------------|-----------------------------|
| a. Fire resistance for elevator conductors required. MBC 3.3.1.7.(1)(a) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Assistive listening system required. MBC 3.8.3.7 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

5.9. Dwelling Units

- | | | |
|--|------------------------------|-----------------------------|
| a. Panel location shown | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Smoke alarms/circuiting/interconnection | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Heat detection required / provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Fire alarm audible device provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Kitchen receptacles | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. Mandatory circuits | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| g. Lighting / switched outlets | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| h. Switches/communication outlets in bathrooms | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| i. GFCI protection provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| j. AFCI protection provided | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| k. Voltage | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| l. Electric heat control | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

6.0 Electrical Systems Requiring Separate Permit

☐ Yes ☐ No

- a. _____
- b. _____

Responsibilities of the Designer:

I will provide construction reviews as required by Subsection 6.1 of the Winnipeg Building By-Law 455/87 and upon completion of the work, will provide a letter of certification in conformance with Subsection 6.3 of the By-Law

Signature _____
Affix Seal over signature

Date _____

Section III - Design Summaries,

B. Building Design Summary cont'd.

6. Schedule A (SHELL ONLY permits) *This MUST be completed and attached to the submission*

6.1 Electrical

1. Site Work Responsibility for:

- | | | |
|--|------------------------------|-----------------------------|
| a. Transformer/CSTE / Utility Coordination | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Service Conduit to building(s) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Service conductors to building(s) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Site Lighting (conduit / conductors) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Communications Pedestals, Conduits | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. Related Mechanical Site-works (pumping stations etc.) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| g. Other _____ | | |

2. Building(s) Shell Responsibility for:

- | | | |
|---|------------------------------|-----------------------------|
| a. Utility / Site Services | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Service Entrance Conductors | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Service Entrance Equipment | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Metering / Meter Centre | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Communications Service Conduit | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. Code Review related to Occupancy | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| g. Fire Alarm System and FA panel location – local /central reporting | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| h. Exits/Emergency Lighting (Battery backup) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| i. Site Lighting (conduit / conductors) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| j. Building (exterior) outlet rough-in | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| k. Building (interior) outside wall rough-in | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| l. Vapour Barrier Integrity | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| m. Other _____ | | |

3. Electrical Design Assumptions

- a. Service Size _____ V _____ A _____ phase _____ wire _____ KAIC
Service Conductor: ☐ underground ☐ overhead _____ CU AL
Ampacity _____ Detail / Table _____
- b. Connected Load (est) _____ kVA
- c. Demand Load (est) _____ kVA; based on WEB Rule 8-2 _____
(fill in applicable rule)
- d. Metering (circle): single meter OR multiple meters (circle one)
For multiple metering, service includes for the following sub-services with meters:
- e. _____ x 60A _____ x 100A _____ x 200A _____ x 400 A _____ x 600 A _____ x 800 A
- f. Block Heaters Number _____ (circle): controlled / uncontrolled
- g. Building is intended for Group _____ occupancy
- h. Fire Alarm system required ☐ Yes ☐ No
- i. Central Reporting ☐ Yes ☐ No
- j. Sprinkler System installed ☐ Yes ☐ No

Responsibilities of the Designer:

To the best of my knowledge, these design assumptions reflect the best-known estimates of the electrical requirements for the subject building. I agree that this form and the information hereon may be provided to others for future verification as part of further building and occupancy permit processes. It is my understanding that the building may not be occupied under a "Shell Only" permit.

Signature _____
Affix Seal over signature

Date _____

Section III - Design Summaries,

B. Building Design Summary cont'd.

6. Schedule A (SHELL ONLY permits) cont'd *(This MUST be completed and attached to the submission)*

6.2 Mechanical

NOTE: Mechanical systems such as commercial cooking operations and manufacturing processes are permitted to be excluded from the Full or Partial Plan Submission, however, separate permits will be required for those mechanical systems.

1. Building(s) Shell Responsibility for:

- | | | | |
|----|---|------------------------------|-----------------------------|
| a. | Roof Drainage and run-off / control flow | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. | Oil Interceptors | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. | HVAC: Roof Top Unit(s), furnace, boiler, ventilation assumptions and equipment capacities | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. | Provincial Inspections Required (gas / boiler) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. | Dampers / Fire Separations | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. | Vapour Barriers – Roof Penetrations | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| g. | Code Review –Occupancy considerations | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| h. | Sprinklering of building | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| i. | Fire Fighters (Siamese) connections – location(s) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| j. | Back-flow prevention | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| k. | Commercial Kitchen requirements | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| l. | Other _____ | | |

2. Mechanical Design Assumptions

- | | | | | |
|----|--|---|------------------------------|-----------------------------|
| a. | Heat Transfer | Ceiling _____ | | |
| b. | (Heat Gain / Loss) | Walls _____ | | |
| c. | | Floor _____ | | |
| d. | | Dew Point Acceptable | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. | | Air Barrier Type _____ | | |
| f. | Drainage | From building: _____ | | |
| g. | | From site: _____ | | |
| h. | Ventilation: | Use 1 (per ASHRAE 62) _____ Based on _____ occupants | | |
| i. | | Use 2 (per ASHRAE 62) _____ Based on _____ occupants | | |
| | | Use 3 (per ASHRAE 62) _____ Based on _____ floor area | | |
| j. | | Additional Uses attached | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| k. | Commercial Kitchen | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| l. | Interlock Exhaust / MUA | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| m. | Fire Alarm System Interface? | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| n. | Sprinkler System Required? | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| o. | Water Metering: single, multiple size(s) _____ x _____ (to be located in one room) | | | |
| p. | Gas Metering: single, multiple (number) _____ | | | |

- q. Fire Suppression: Included ☐ Yes ☐ No
- r. If Yes: Separate Pipe Size _____ Combined pipe size _____
- s. Based on NFPA _____
- t. Plumbing Fixtures w.c. _____ sinks: _____ other: _____ (fill in number)

To the best of my knowledge, these design assumptions reflect the best-known estimates of the mechanical requirements for the subject building. I agree that this form and the information hereon may be provided to others for future verification as part of further building and occupancy permit processes. It is my understanding that the building may not be occupied under a "Shell Only" permit.

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)
Engineer completing this form (include seal)
Responsible for *(Indicate all that apply)*

Responsibilities of the Designer:

(Note: Seal applies to those items initialed)
Engineer completing this form (include seal)
Responsible for *(Indicate all that apply)*

Signature _____ Date _____

Affix Seal over signature

Signature _____ Date _____

Affix Seal over signature

Section III - Design Summaries

B. Building Design Summary cont'd.

6. Schedule A (SHELL ONLY) cont'd

This MUST be completed and attached to the submission

6.3 Municipal

1. Site Work Responsibility for:

- | | | |
|---|------------------------------|-----------------------------|
| a. Grading / Catch basins | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Connection to underground infrastructure for site drainage | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Building water run-off | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Site Service Connections Water and Sewer | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Other _____ | | |

2. Building(s) Shell Responsibility for:

- | | | |
|---|------------------------------|-----------------------------|
| a. Connection to Infrastructure | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Site Drainage | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Site Service Connections water and sewer | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Engineer completing this form (include seal)
Responsible for *(Indicate all that apply)*

Signature _____
Affix Seal over signature

Date _____

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