

A New Community Park for Wellness:
Revitalizing and Healing the Mind and Body

by

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A Practicum submitted to the Faculty of Graduate Studies of
The University of Manitoba
in partial fulfilment of the requirements of the degree of

MASTER OF LANDSCAPE ARCHITECTURE

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ABSTRACT



A New Community Park for Wellness presents a new vision for parks. It proposes a new era of park programming, the 'Community Wellness and Holistic Health Era' in order to improve our communities with design that highlights natural phenomena. Today, health is no longer about disease or death; it's about maintenance - getting outside, having access to fresh food and living a balanced lifestyle. Drawing on historical and contemporary wellness precedents, this practicum aims to create a community destination that promotes health and prevents disease in Winnipeg, Manitoba. It documents investigations into park programming and design, current trends in health and wellness, potential roles of light and water in landscape architecture, and light in modern and post-modern Scandinavian architecture. The final design integrates urban agriculture in the form of a four season greenhouse and community gardens, with indoor/outdoor exercise areas and therapeutic gardens. It emphasizes natural phenomena and processes related to light, water and energy in order to promote health and reconnect urban residents with time, place and the changing seasons.

ACKNOWLEDGEMENTS

I would like to thank my family, Jane, David and Stephen Hoag for their support, motivation and patience. My advisor Brenda Brown for her commitment and professional advice, and my committee members Wendy Simonson and Karen Wilson Baptist for their support and contributions. Also, Mike, Lana, Tamara, Holly, Allary, Matea and my grandparents Lucy and Harold Adams. Thank you all.

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VISION



Wellness Architecture presents a fresh opportunity to rethink our lifestyle. The future of our health is strongly connected to landscape and the role of landscape architects. We must reveal and shape urban space with specific relation to natural light, sound, smell and touch to connect people to the natural, healing elements of their environment. We should provide activities that promote wellbeing at a scale that engages all ages to foster a sense of community. With attention to new trends in health and fitness including alternative healing practices and experimentation with new materials and energy saving technologies, designs will create unique and inspiring experiences within our urban landscape.

Living a healthier tomorrow requires better choices today

INTRODUCTION

In January 2009, I set out for a three week adventure in Korea and Japan to visit with family. Unlike my other adventures that involved research and preparation, I left without any clue of what to anticipate. It was a trip of serendipity and adventure! Meeting with my brother, his friends and new acquaintances, I gained a new and insightful perspective of Korea. It was through my experiences in Asia that a practicum topic slowly emerged.

Most influential during my travels were the number of healthy and fit individuals of all ages that I saw walking each day and participating in outdoor physical activities such as tai chi and stretching exercises in local parks. Apparent throughout both Daegu and Seoul were new public outdoor exercise stations integrated into pocket parks or along green corridors in the more congested areas of the city, and in open green space in the less congested areas. I also took note of open air markets that offered healthy, fresh vegetables, fish and grains.

A unique and particularly inspiring health experience was my visit to a Jjimjilbang, a indoor, Korean bath and sauna house in Daegu, Korea. Similar in description to a Western spa or wellness centre, it was different in that the main attraction was a series of hot rooms used for relaxation and healing. Unlike traditional Finnish saunas I am familiar with, each of these indoor hot rooms was unique and they were arranged in a sequence. The first was a warm room with stone on the walls and a rustic wood floor and ceiling. Warm and cozy, the room was scented with lavender to induce relaxation and rest. The second was a slightly warmer room filled with amethyst. Believed to have healing properties, both walls and ceiling were clad with the stone. To encourage relaxation, the room had rows of heated stone benches for one to lay down on and rest. The two remaining rooms progressed in heat. The third was what I consider to be very hot and the fourth was inferno-like! Overall, this experience opened my eyes to the ways in which natural elements were used for healing. I couldn't help but wonder how amazing an experience similar to this would be outside or at least with views of the outdoors.

Inspired by my travels, I was compelled to design a park that stressed the importance of local, natural elements for health. Taking precedent from the Jjimjilbang, I wanted to provide new outdoor experiences, those sought after at indoor health facilities. With this in mind, I aimed to tackle our society's growing health concerns by providing a variety of outdoor sport and lifestyle activities that would encourage community relationships and ultimately, a better quality of life throughout the year.

As such, this practicum has investigated and taken into consideration park programming and design, current trends in health and wellness, with attention to light and water and a study of light in Scandinavian architecture. The first chapter 'Park Programming and Design' outlines the evolution of North American public parks and recommendations according to Galen Cranz. It then examines and discusses current Canadian health concerns and trends in order to propose recommendations for future park programming. The second chapter 'Water' discusses water as a healing and therapeutic substance by examining the history of healing waters and case studies of wellness centre precedents. The third chapter 'Light' reviews the importance of natural light to maintain optimal health with attention to architecture including greenhouses, atriums and conservatories, modern architecture and a study of Scandinavian architecture. Site location and opportunity are then examined, concluding with the final design. The site chosen for design is the Grant Nathaniel Athletic Grounds near Pan Am Pool, Winnipeg. My ambition is to create a community destination that will promote health and prevention of disease. The final design integrates urban agriculture - a greenhouse and community gardens, with outdoor fitness areas and therapeutic gardens.

A New Community Park for Wellness presents a new vision for parks. It emphasizes natural phenomena and processes - light, water and energy in order to promote health and reconnect urban residents with time, place and the changing seasons.

CHAPTER 1

PARK PROGRAMMING AND DESIGN



PARK PROGRAMMING AND DESIGN

Parks have and will always maintain a key role in the quality of urban life. According to Galen Cranz in *The Politics of Park Design* (1982), North American parks have been and continue to be mechanisms for urban renewal, presenting new visions for urban life. Social, economic, political and psychological processes have and continue to influence park location, size, shape, composition, equipment and landscaping. Previous visions and social functions are layered in most, if not all, urban parks today, creating a visual time line of social change.

Today, there is a need to re-address not only our parks, but also how our modern lifestyle affects our own health and that of our environment. Our busy, time-conscious society requires a new park concept that allows and assures ease of contact with nature while providing for sport and leisure activities, community association and the recovery of physical and psychological well-being.

The evolution of American parks can be separated in four eras: the pleasure ground, the reform park, the recreation facility and the open space era. Cranz identifies and describes each era of park programming and design beginning with the rise of the park system during 19th century to 1982, the year in which the book was published. Beginning with the 19th century, the North American pleasure grounds laid the foundation for confronting urban problems created by industrialization, urbanism and demographic growth. Their design concept addressed the rapid growth of cities and the population's disconnection from rural life. Physical and social ailments such as degraded health and sanitation conditions were in part remedied by providing a piece of the countryside in the city.

PLEASURE GROUND 1850 - 1900

The Pleasure Ground was built to appreciate the qualities of nature and being outdoors. It was a piece of countryside within the urban landscape and was to be enjoyed at one's leisure. The 'piece of countryside' offered fresh air, meadows, lakes, and sunshine and a place where Sundays could be enjoyed with leisure. Their picturesque design emphasized natural qualities of the landscape - sweeping meadows, dramatic views and vistas, providing city dwellers with a romantic image of rural countryside.

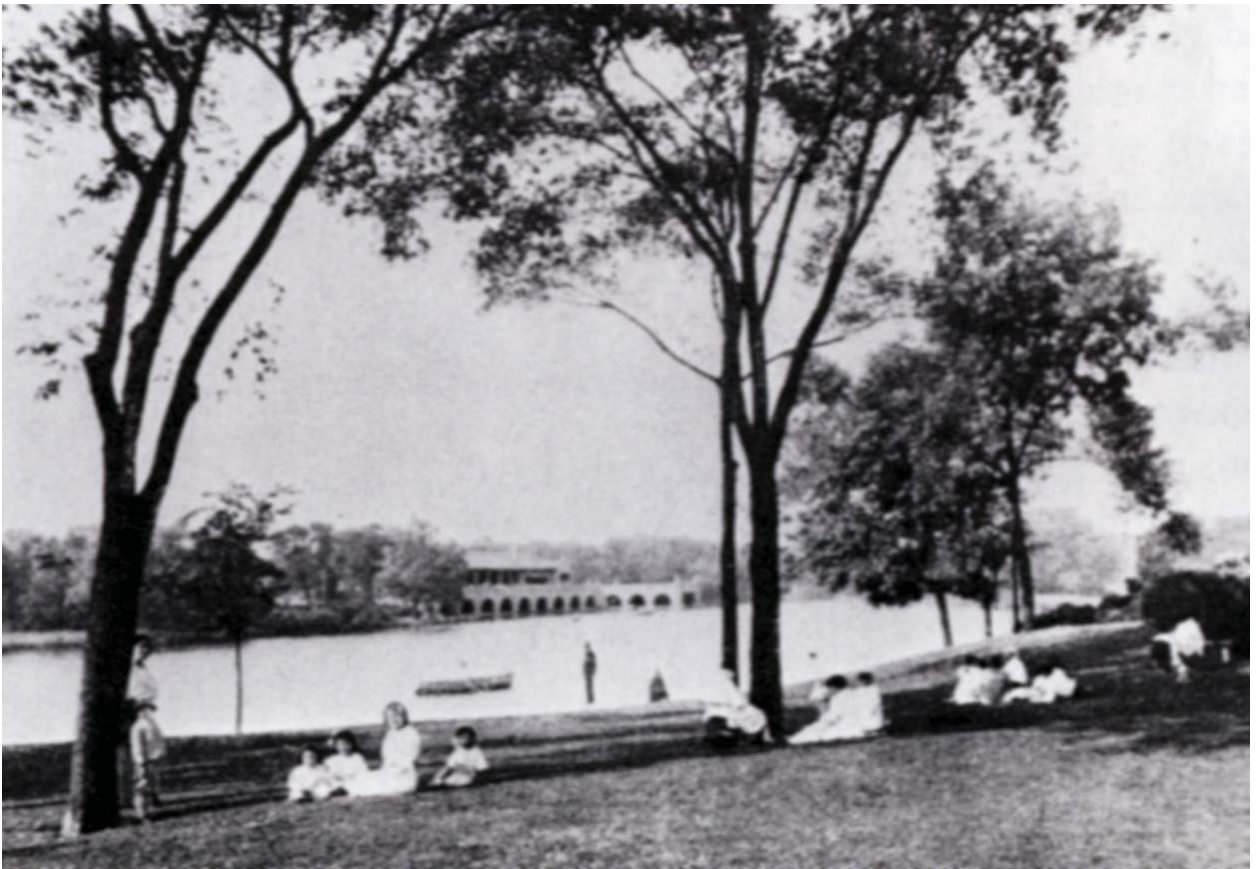


Figure 1.1: Douglas Park, Chicago
Pre-1900

THE REFORM PARK 1900 - 1930

The Reform Park was designed to organize activity for the urban masses which at this time often included new immigrants. Athletics was the primary goal of the reform park, with design now focused on utility, more so than beauty. Recreational services were demanded and the field house became the characteristic building type of the era. Unlike the pleasure grounds, the reform park segregated ages and sexes. Park designs were no longer undulating or picturesque. Instead, grass was abandoned for flat, hard surfaces to allow for baseball, track, sports and games.



Figure 1.2: Stanford Park, Chicago
c.1915

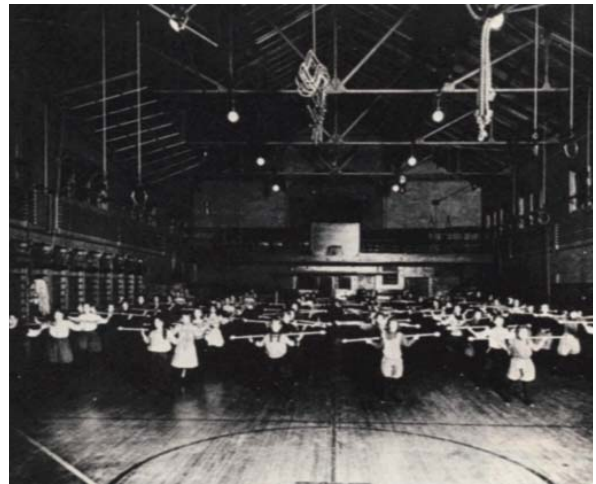


Figure 1.3: Field House, Seward, Chicago
c.1915

THE RECREATION ERA 1930 - 1965

Park administrators responded to an unprecedented growth in population, a high standard of living and an increasing amount of free time for leisure pursuits by providing modern parks and facilities such as playgrounds, parkways and stadiums. Increased leisure time transformed the view of parks, as they were now a necessary ingredient for an urban lifestyle.



Fig. 1.4: Detroit, c. 1952

Just for the fun of it...

The beauty of an outdoor pool... recreation... the thing playground equipment...

- 1. MIRACLE JUMP TO GO! Model 1010
- 2. MIRACLE SPINNING WHEEL Model 1000
- 3. MIRACLE ACTING UPON SPINNING WHEEL Model 1040
- 4. MIRACLE LEFT-TURN WHEEL Model 1015
- 5. MIRACLE RIGHT-TURN WHEEL Model 1015
- 6. MIRACLE REAR-A-RANCH Model 1015
- 7. MIRACLE PLYWOOD TOWER Model 1015
- 8. MIRACLE TRAMPOLINE SLIDE Model 1015
- 9. MIRACLE SLIDE Model 1015
- 10. MIRACLE SWIRL Model 1015

MIRACLE PLAYGROUND EQUIPMENT

Just for the fun of it... why not give some thought to your playground needs now?

Just for the fun of it... why not ask yourself if your playgrounds were overrun with weeds instead of children last year?

Just for the fun of it... why not make up your mind to do something about it right now?

Just for the fun of it... why not meet some imaginative Miracle Equipment... or better yet, an entirely new Miracle Playground?

Just for the fun of it... why not mail the coupon today for your FREE copy of Miracle's new Catalog and full details on Miracle's "On-The-Spot" Consulting Service?

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NAME _____
 TITLE _____
 ADDRESS _____
 CITY _____ STATE _____

Fig. 1.5: New ideology for Detroit parks

THE OPEN SPACE ERA 1965 and after

The Open Space Era aimed at preserving parks and other natural sites within the city. With an 'anything goes' attitude park designs now provided open space for recreational experiences, rather than recreational facilities.



Fig. 1.6: Central Park, New York, closed to auto traffic on Sundays
c. 1967

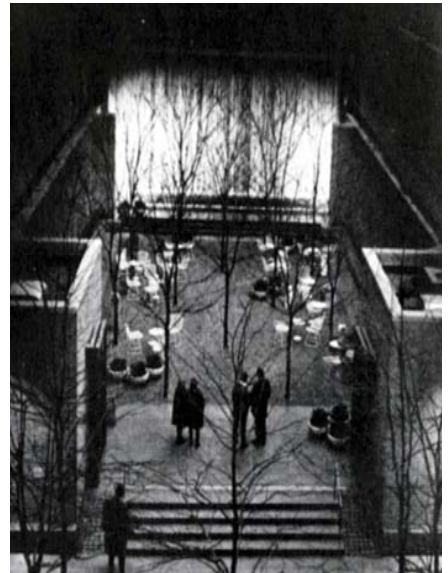


Fig. 1.7: Paley Park, New York



Fig. 1.8: A live outdoor performance at The Lyric in Assiniboine Park, Winnipeg

The ongoing function of urban parks has remained the same: to provide a space for leisure and play within the city, where the life, health and vitality of the city and its people can be enhanced and appreciated. Although there is a need to preserve and maintain our present day parks, we should continue to provide new visions that reflect and shape our social values. In 1982, Galen Cranz put forth three strategies for urban park programming that I believe are still applicable today. They are:

- 1) parks should be considered in terms of human potential and social movement for women, including holistic health centres,
- 2) Parks should provide day care facilities,
- 3) Parks should re-establish community gardens that were once present in many parks after WW2 (Cranz, G., 1982, p.250).

I believe an issue that should be addressed for current park programming is our general state of health. Canada has experienced an alarming increase in obesity rates among adults, youth and children over the last decade (CBC, 2009). Obesity is defined as having an excessive amount of body fat. The Body Mass Index (BMI) is a formula based on height and weight and is used to determine obesity. Adults with a BMI of 30 kg/m² or greater are considered obese. In 2004, a Canadian Community Health Survey found obesity rates to be approximately 23% among men and women aged 20 to 65, an increase of 11% from 1978/1979 reports, 25 years earlier (Statistics Canada, 2005). This increase contributes to a variety of potential health problems including diabetes, heart disease, liver disease, hypertension and cancer. For those who are obese, their quality of life is significantly affected. Lifestyle issues include difficulty in activities of daily living of which can lead to isolation and depression.

Most concerning is that Generation X (people born during the 1960's and 70's, ending in the early 1980's) is predicted to be the first generation not to out-live their parents. The

Canadian Medical Association found that the incidence of obesity has grown by more than 50% in children 6 to 11 and by 40% in youth aged 12 to 17 (CBC, 2009). This is related to children spending an average of three to five hours a day sitting in front of the television or a computer screen. The Active Healthy Kids Canada 2009 Report Card found that only 13% of Canadian children were getting 90 minutes of physical activity a day (CBC, 2009). Also troubling, overweight children are now more prone to health problems once confined to adults, such as high blood pressure, high cholesterol, depression and diabetes, and are more likely to become overweight adults. One of the best strategies to tackle childhood obesity is to improve diet and increase family exercise habits. Parents should act as role models promoting active lifestyle choices, with television and computer time limited to less than two hours a day to reduce sedentary time (CBC, 2009).

If obesity rates continue to increase, the cost of health care and social services will be astronomical. In 2005, obesity-related chronic conditions accounted for \$4.3 billion in direct and indirect costs, a figure that is assumed to be underestimating the total cost of excess weight in Canada (Public Health Agency of Canada, 2010). These costs can be attributed to new and expanding services. For example, the City of Winnipeg recently invested in a new bariatric ambulance allowing paramedics to handle patients that weighed up to 1,000 pounds. This purchase cost the taxpayer an estimated \$15,000 to \$20,000 more than the average cost of \$110,000 for a regular ambulance (Reynold, L., 2010).

Ironically, faced with a health crisis, our urban lifestyle of convenience, with services on demand and easily accessible, has led to physical activity being engineered out of our daily lives. Gyms and wellness centres cater to this lifestyle, providing a destination where one can quickly attach to their ipods or tune into television while having a quick workout. It's unfortunate to see that our cities contain primarily indoor fitness facilities, such as GoodLife Fitness, Snap Fitness or Shapes, while most of us know the stimulating benefits of being outside



vs.



Fig. 1.9: Indoor versus outdoor fitness spaces

in nature, or close to it, is a far greater remedy. Without integrating new trends in fitness and the qualities sought after in a wellness centre into our parks, I question if indoor fitness facilities will be a new form of park?

With this in mind, new parks can have a huge role in promoting healthy lifestyle choices and activities to avoid obesity, stress and related illnesses. Obviously our surroundings have an instant effect on us in terms of stress, happiness and energy level. Urban life is packed with energy drainers - noises, clutter, fluorescent lighting and lack of natural light. Natural areas and urban parks provide living and vibrant spaces that restore and boost our energy by connecting us with the natural world and its restorative forces - the sun, moon, light, sound, colour and energy. The atmosphere and experience of a urban park can also promote health by providing for a greater number of lifestyle activities such as yoga, walking, running and gardening.

Unlike traditional, curative approaches in medicine, holistic and alternative healing promotes practices that are grounded in the healing benefits of the natural world. Gaining ground among practitioners and the general public over the last twenty years, alternative healing and medicine is now being integrated into Western practice, specifically to treat acute and chronic conditions. This includes a range of practices that aim to promote well-being by considering the body, mind and spirit and by using ingredients found in our natural world for treatments and therapy. Drawing on age-old wisdom, such practices include:

- 1) Healing with medicinal plants: harvesting, drying, preparing and storing healing plants for treatment,
- 2) Healing with aromatherapy: stimulating ones senses with essential oils, flowers, herbs, fruit, spices,
- 3) Growing and consuming fortifying food: eating a nutritional selection of fruit and local produce,
- 4) Healing with natural energy: using natural phenomena such as colour, light, sound, and hydrotherapy,
- 5) Strengthening and healing with exercise, yoga and meditation: using mind and body to prevent stress and disease (Airey, R and Houdret, J. n.d.).

It is my premise that public parks should provide for these five sought after holistic health practices to create spaces where residents can relax, find solitude and feel rejuvenated through a closer connection to nature. Encouraging people to simply get outside and engage in a community setting that promotes health is the first step to combatting obesity and stress related illnesses.

THE NEW ERA

This practicum aims to expand upon Galen Crazz's recommendations to address our contemporary lifestyle. Today, health is no longer about disease or death; it's about maintenance - getting outside, having access to fresh food and living a balanced lifestyle. Popularized by today's media, celebrities and athletes, many people are taking a proactive approach to their own health with an interest in alternative and holistic health. I propose a new era of park programming, the 'Community Wellness and Holistic Health Era'. This era aims to improve our communities and urban environments with design that highlights natural elements and phenomena for healing. By integrating scientific knowledge in health and wellness, ecological design methods to support resource management and the provision of current trends in recreation and leisure activities for all ages, parks will improve the health of our environment, community and individual wellbeing. The following discussion on the use of water, light and design principles responsive to site, informs the concept of parks for healthy communities and individual wellbeing.

CHAPTER 2

WATER



WATER

Water is the elixir of life and the fundamental ingredient to health. It covers more than two-thirds of the earth's surface and is the most vital constituent in our bodies. Without an ample amount of fresh, clean water there would be no life on Earth. The scope of water's cleansing and rejuvenating powers for health and healing is immense. Water regulates body temperature, assists in digestion and absorption of food, hydrates our skin, removes toxins and waste from our bodies and transports oxygen and nutrients to each and every cell. Every chemical reaction within our bodies occurs in the presence of water. It is the universal liquid sustaining life for all living things. Poor water quality can be detrimental to human health causing serious and sometimes fatal conditions due to bacteria, water borne parasites and increased levels of heavy metals.

HEALING WITH WATER

In the last few years, the pursuit of wellness has intensified as many people have become increasingly concerned about their physical, social and psychological health. Various forms of wellness tourism have emerged, luring people to travel great distances and lengths in search of health. Wellness centres, holistic retreats, spas, spiritual pilgrimages, complementary and alternative therapies are unprecedented (ISA, 2010). According to the International Spa Association (ISA), the number of spas in the United States has grown at an annual rate of 20% in the last eight years, with growth from July 2007 to June 2008 at 24%. The ISA (2010) also found this demand generated an increasingly annual revenue of \$10.9 billion in the United States in 2007.

Connecting with nature for healing and wellbeing can be traced back and understood through the evolution of human's relationship to water. Historically, hot mineral springs were sought after for relaxation and to treat most disease. The Greeks and Romans introduced social bathing as a cultural activity for self and community improvement. Providing water to the masses and encouraging cleanliness, the Grecian bath was an essential part of the Greek gymnasium, the educational centre of the society. Following exercise the Greeks would sooth their muscles in warm baths before attending philosophical discussions in the *exedre*, or discussion room (Croutier, L., 1993, p.81). The Romans respect for water and love of cleanliness resulted in a public bathing experience unlike any other, combining physical fitness, social interaction and entertainment. Taking precedent from the Greek baths, the Romans built community *balneums* (hot pools), followed by monumental and extravagant baths known as a *thermae*. The Roman *thermea* (a Greek word for heat) was a multi-functional complex that reflected a holistic concept of health and that unlike the Grecian bath was made available to all social classes (Croutier, L., 1993, p.81). A welcomed social gathering spot, it embraced the idea of leisure that was based on the philosophy of both self and community improvement.



Fig. 2.1: The Diocletian Baths by Edmond Paulin, 1800

THE DIOCLETIAN BATHS

Set in landscaped gardens and orientated south-west, the bath could accommodate 1,600 bathers in the frigidarium (cold water pool), tepidarium (warm water pool) and calidarium (hot water pool). The hot baths faced the winter sun to gain as much solar heat as possible. In some of the more elaborate buildings, the sweat room had enormous windows facing south-west and a sand floor that absorbed solar heat during the day and released it at night (Behling S., & S., 2007, p. 98).

Cleanse, purify and heal

impressive aqueduct system established in 312 B.C. by Appius Claudium Caecus. The aqueducts supplied the country with water and allowed water to be used not only for utilitarian purposes, but also for pleasure (Croutier, L., 1993, p.81). In 33 B.C. the Roman statesman Marcus Vipsanius Agrippa (62-12 BC) encouraged the integration of engineering, architecture and landscape by transforming the capital with temples, aqueducts, and introducing the first public Roman bath. This great respect for water was manifested by numerous Roman Ceasers and philanthropists with the construction of many magnificent and lavish *thermaes* and sculptural fountains. The monumental Baths of Diocletian (260 AD) and Caracalla (217 AD) although in ruins, can still be visited today in Rome. Impressive to see in rendering (Figure 2.1) Edmond Paulin highlights the scale at which *thermaes* were built and the elaborate architectural detail of their design. Set on approximately 32 acres of land and available to all social classes, the Baths of Diocletian included: a library, galleries, a gymnasium, gardens and entertainment for as many as 6, 000 people (Croutier, 1993, p.84). The ornate and luxurious floors were mosaic and the walls were covered with Egyptian marble, frescoes, stone and glass. Unlike the Diocletian Baths, the Caracalla Baths offered extensive landscaped grounds which featured gardens, grottoes nymphaea watered by fountains and springs, shaded porticos

with sculptures and tree-lined promenades (Croutier, 1993, p.84). A typical routine at either bath included a workout in the *palestra* (exercise court) followed by an elaborate bathing practice that consisted of: the *tepidarium* (tepid bath), the *caldarium* (hot bath), the *laconium* (room with intense dry heat) and the *frigidarium* (cold bath). The *tepidarium* was the largest and most luxurious room in the *thermae*. Here, the bather would relax as they were anointed with oils to soothe the skin. The *caldarium* included small private bathing stalls that offered a choice of hot or cold water, and the *laconic* was the hottest chamber where ones body would be vigorously massaged and dead skin scraped off. The bather would then take a refreshing, cold dip into the *frigidarium* or cold plunge pool and retire to the outer rooms, which included the library and gardens to relax and socialize (Croutier, 1993, p.85).

As the Roman Empire collapsed, so too did the *thermae*, falling into disrepair. It was not until the Renaissance era, that Paracelsus' mountain mineral springs at Pfaeffers, Switzerland and towns such as Spa, Belgium; Baden-Baden, Germany; Evian-les-Bains, France and Bath, England were established around natural thermal waters considered to have healing properties. It was also during this time that saunas and steam baths also re-emerged as a social practice. By the mid-19th century, rapid advances led to clinics and hospitals for medical treatment, replacing the need or desire of mineral waters for healing. Many existing spas were converted into vacation or health clinics, promoting "holidays for health" for aristocrats and the wealthy by offering luxurious treatments and accommodations. By the late 19th century, spas became opulent escapist holidays at seaside or lake-side resorts. Dream-like, they were designed as miniature Renaissance villas, grand hotels or estates with picturesque parks and gardens. In summary, the developments in medicine during the 19th century made existing spas exclusive forms of luxury that catered to the wealthy. In providing a connection to nature for leisure and healing, the spa had in-fact created the urban public park. Thus, the spa which once provided a connection to natural elements such as mineral waters became an institute for health, while the new urban park setting provided a new link between culture, leisure and nature..

Over the last 30 years in North America the desire for spas or a similar experience with water has grown enormously. It appears that today's renewed interest in natural phenomena for health, healing and prevention of disease has reignited a classical desire and passion for healing waters, luring us toward the notion of a classical Roman bathing experience due to the demand and popularity of spas. Many new approaches in health have inspired individuals to seek out a natural haven, an outdoor space where one can feel connected to nature and its elements. Current research into wellness tourism as outlined by Melanie Smith (2008) attributes this rise in spa popularity to: 1) the popularity of preventative rather than curative approaches in health, 2) those seeking non-traditional medical approaches, 3) influence of media and popular psychology, 4) interest in active lifestyles, and 5) desire for healthier nutrition. Visitors are also demanding 'sustainable management' or 'green' spas, which offer educational lifestyle programs (fitness regimes and healthy eating), where natural and indigenous local products and ingredients are used. The recent developments in the wellness industry provide numerous typologies of health and wellness, including: 1) Spa tourism (medical, resort, day spa, hotel), 2) Holistic (retreat, yoga centre), 3) Medical (spa visit, surgery), 4) Spiritual (meditation), and 5) Occupational Wellness (Smith, M., 2008). To meet these new demands for services, including enhancing the presence and awareness of 'nature', the best locations have turned their attention to gardens not only for harvesting herbs and flowers, but also for cultivating them into soothing retreats (Kunstel, Stacy, 2002, p.77). Although the term spa is traditionally synonymous with healing waters, the variety of today's spas provide escapes from everyday work and stress and serve as places of rest and recuperation. Promoting self-improvement, they also serve as a form of spirituality at a time when society has lost connection to traditional religion. By providing a location with like-minded people and a social support network that positively influences health, the spa can be psychological, if not spiritually enlightening. The following pages describe and illustrate contemporary wellness precedents, each offering a unique connection and experience with water and nature.

GLEN IVY SPA

Corona, California, USA

Celebrating 150 years, Glen Ivy Hot Springs is famous for its natural sulfurous mineral waters that promote relaxation and health. Designed as a day-spa, Glen Ivy offers a variety of pools including a Roman bath, saline and hot mineral baths, saunas, steam rooms, a red clay mud bath and outdoor rooms for exercise and treatment therapies. Situated on 11 acres and surrounded by mountains, the landscape design includes aromatic lawns and a variety of gardens (Glen Ivy, 2010).



Figure 2.2 - 2.5: The experience and landscape of Glen Ivy Spa

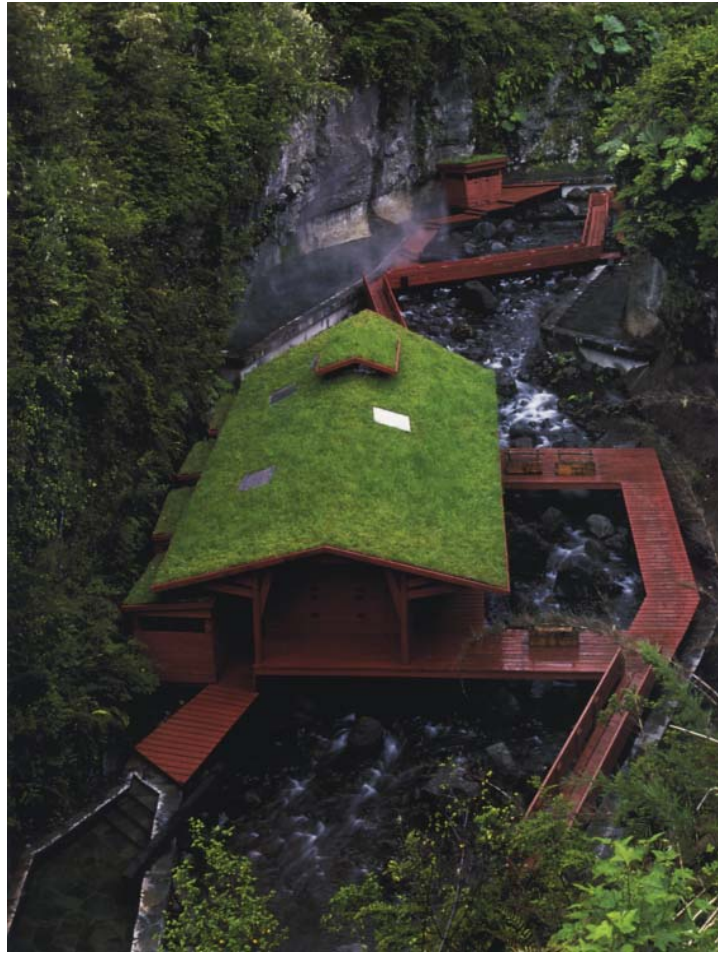


Fig. 2.6 (top): Birds eye view of main pavilion,
Fig. 2.7 (bottom): Water features and conduits

GEOMETRICAS THERMAL SPA

Villarrica National Park, Chile

Located 450 miles south of Santiago in the southern lake country of Chile, the rugged and remote thermal waters of Villarrica National Park provide a year round destination. Designed by architect Germain del Sol, it is, as its name suggests, built with strong but primitive geometry. Germain designed with two natural elements in mind, fire and water, believing the design is “the primitive seduction of being purified whilst immersing oneself in hot water, or lighting a fire, or just letting oneself drift away with the constant movement of water” (Quartino, D.S., 2007, p.196). The design includes 17 slate-covered natural hot pools along the mountain stream that vary in privacy (Quartino, D.S., 2007, p.196). Built with the use of local materials, the baths are connected by a red-stained wooden walkway that is heated by wooden conduits located beneath. The conduits distribute water throughout the site while also maintaining warm and dry boardwalks throughout the year. The large main pavilion (Figure 2.6 and 2.8) serves as a place to sit, socialize and rest around a fire, while small pavilions located near every other pool provide bathrooms, lockers and an outdoor deck for rest.



Fig. 2.8: Main pavilion

SAMAS SPA

Kenmare, Ireland

Located on the west coast of Ireland in the idyllic Ring of Kerry, the Samas Spa is considered a temple of nature, as its name suggests in Gaelic. The spa uses natural materials and emphasizes views out into the forest and over the Kenmare Bay to engage the senses and connect visitors to the surrounding landscape. Water is the main ingredient for healing. A cascading water wall marks the entrance to the spa and creates a calm and relaxed atmosphere and experience to arrive to. Therapy treatments include a mix of eastern and western traditions. The most popular experience among visitors are the private hot pools (Figure 2.9) which overlook the forest and Kenmare Bay (Samas Spa, 2010).



Fig. 2.9: Private hot pool



Fig. 2.10: Outdoor relaxation area

BOTTA'S BERGOASE

Arosa, Switzerland

Inspired by the mountain setting of Arosa, Architect Mario Botta designed the Tschuggen Grand Hotel and its world renowned spa. Referred to as 'a forest of light', the building dramatically rises up and out of the landscape like the surrounding mountains. Inside, the cave-like spa is designed as a procession of light. The visitor is led through a series of shallow pools, each a play of natural light and reflection, moving from the darker, interior cavities towards the bright outdoors. The exterior spa space offers a large outdoor swimming pool, sunbathing areas, decks and fitness equipment (Queertino, D.S., 2007, p.150). The interior sauna, steam bath and Jacuzzis are positioned under a massive skylight providing a quiet place to rest under the stars. Connecting to the majestic setting and landscape, natural materials including stone and glass are used throughout the design.

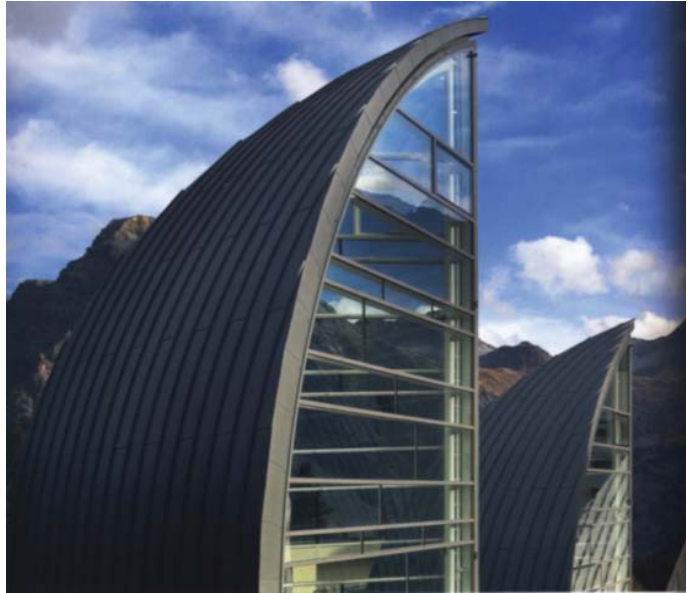


Fig. 2.11 (Top): Building and mountains,
Fig. 2.12 (bottom): Interior pool and skylights



Fig. 2.13 - 2.16: The grounds

BARNESLEY GARDENS

Adairsville, Georgia, USA

Located an hour northeast of Atlanta, the Barnesley Gardens are a 1,300 acre historic landscape and home built before the Civil War. The original manor known as Woodlands, was built by Godfrey Barnesley, with both the home and the garden inspired by the work of Andrew Jackson Downing. Purchased in 1988 by a German prince and princess, the property was recreated into an idyllic 19th century pedestrian village. Unique and historic, the 160 year old gardens have been restored with hundreds of varieties of heirloom roses and a great diversity of flowers and plants, including thousands of irises, daffodils, nicotianas, pomegranates, banana shrubs, azaleas and rhododendrons (Barnesley Gardens, 2010). Within the grounds, an apothecary garden provides therapists fresh herbs for use in spa treatments and interior décor.

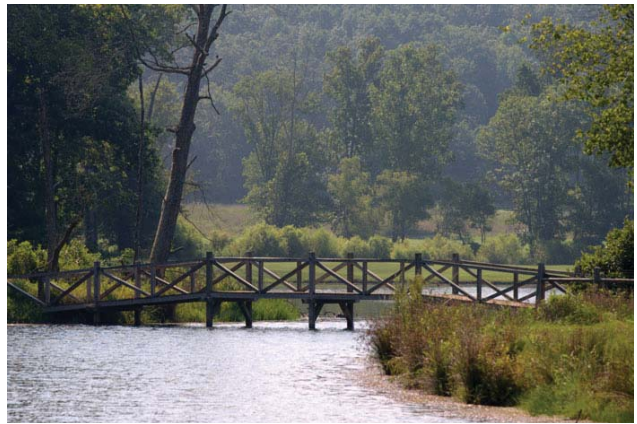


Fig. 2.17/ 2.18: The grounds

RANCHO LA PUERTO

Tecate, Baja California, Mexico

Founded in 1940 by Edmond and Deborah Szekeley, Rancho La Puerto is considered the original destination fitness resort and spa in North America.

The resort which started as a 'bring your own tent'

health farm grew into an extensive Spanish-style resort. Located on a 3,000 acre natural preserve of mountains and meadows, the spa is committed to promoting health and wellness through a program of fitness activities. The facility offers over 70 different indoor and outdoor classes and activities, healthy cuisine and spa amenities including: both a men's and woman's health centre, 11 gyms totaling 22, 742 sq. feet, four lit tennis courts, a volleyball and basketball court, three swimming pools, five hot tubs, a library, numerous lounges and a conference facility. Additionally,

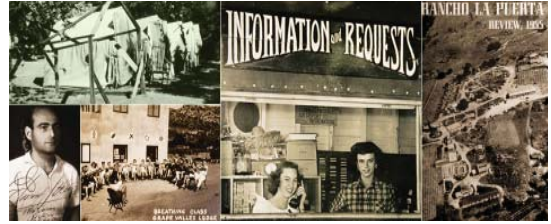


Fig. 2.19: Historical images



Fig. 2.20 - 2.24: The grounds

the property includes 32 acres of landscaped gardens, a six acre-organic farm and extensive terrain for hiking and walking experiences. Committed to ecological stewardship the entire facility and grounds practices water and energy management and sustainable constructions methods (Rancho La Puerto, 2010).



GOLDEN DOOR

Escondido, California

Opened in 1958, at the request from her clients for a higher level of luxury, the Golden Door was Deborah Szekely's second spa. Modeled after Japanese Architecture and gardens, the design was inspired by ancient Japanese Honjin Inns, where royal and affluent travelers could stop to rest and rejuvenate. The 377 acre property offers traditional Japanese gardens with koi ponds and 20 miles of hiking trails that wind through avocado groves. The fitness facility provides pool-side aerobic gyms, a hill-top gym, two swimming pools and kiatsu water therapy pool, tennis courts and a solarium (Golden Door, 2010).



Fig. 2.25: The 'Golden Door' entrance



Fig. 2.26 - 2.31: Landscape elements

NATURAL HEALING, THERAPY AND EXPERIENCE

Although the treatments, therapies and activities at a spa or wellness centre may change, moving in and out of vogue, the experience has and will always be about reconnecting to water and the natural world for health and well being. Design components common to these wellness landscapes include: herbal gardens, vegetable gardens, hot springs, hot pools, other water features, aromatic lawns, outdoor rooms for exercise and relaxation, and influences of Japanese garden design such as tea pavilions.

It is well understood among professionals that natural environments promote psychological restoration and reduce stress. In an urban space a 'natural' setting or views of the outdoor 'natural' environment can provide a blissful break. Proven therapeutic in 1984, Dr. Ulrich demonstrated that simply viewing nature can have positive psychological and physiological effects in:

- lowering blood pressure,
- increasing brain activity that elevates a person's mood,
- slowing pulse and breathing rates,
- reducing muscle tension and,
- expediting recovery from surgery.

In 1995, Stephen Kaplan outlined four components that help create a restorative environment. They include:

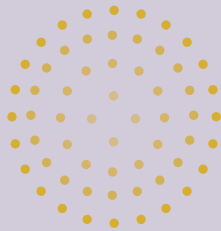
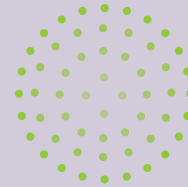
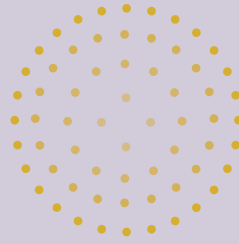
- *A sense of being away*: a space where one can free their mind, that is, removing oneself mentally rather than physically,
- *Fascination*: a space for 'soft' fascination of nature. This includes spaces where one can observe clouds, sunsets, snow patterns, the motion of shadows and the breeze,
- *Extent*: a space with a sense of scope. It must engage the mind by providing enough to see, to experience and to think about,

- *Compatibility*: a space that provides a purpose and inclination.

Reviewing these health resorts and spas has led me to question how urban areas would change if they were provided with environments with these sought after activities and qualities? Would these qualities not lead to a greater sense of place and create stronger social relationships within a community, while promoting individual well being? Wouldn't it be beneficial if wellness centres and spas regained their traditional philosophy, that is, to provide an urban centre that promoted self and community improvement? Today's wellness experiences would be much more beneficial if the design were to combine current knowledge of alternative medicine, with therapeutic gardens and landscapes, and the activities and qualities that are sought after in a spa experience.

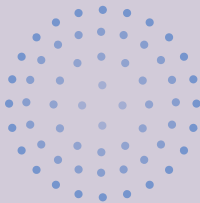
CHAPTER 3

LIGHT



Om bhur blavvah svah
tat savitur varenyam
bhargo derasya dhimati
dhiyo yo nah prachodayat

The eternal, earth, air, heaven
That glory, that resplendence of the sun
May we contemplate the brilliance of that light
May the sun inspire our minds



Gayatri Mantra, prayer to the divine light
An early *Vedic* text written between 1800 - 1500 BCE
Translation by Douglas Brooks, PhD (2010)
(McGonigal, K., 2010)

LIGHT

The Sun is the centre of our solar system, a fireball of energy and heat, it is our most important energy source. Since ancient times health practitioners have known about the healing benefits of the sun. The sun creates the condition for life on Earth and influences our moods and immune system. Sunlight is involved with the production of Vitamin D and regulates the body's circadian clock affecting our sleep patterns, appetite, temperature, sex drive, and the production of hormones, including serotonin - the "happy hormone". Our biological clock is designed to be in tune with natural rhythms of day, night, and seasonal change. Night work, long distance travel and extended time indoors plays havoc with body chemistry impairing healthy functioning and leading to immune system problems, depression and a variety of illnesses. Most severely, Seasonal Affective Disorder (SAD) which is often mistaken for depression, is thought to be related to a drop in hormone levels (melatonin) during the winter months. For those living in cloudy climates, or regions with reduced hours of sunlight, SAD is typically treated by light therapy. Considered a safe and effective treatment as a whole, light therapy shifts the circadian clock; however, a study by Anne Wirz Justice *et al/* (1996) found that patients with SAD benefited from daily one hour morning walks outdoors, providing evidence that winter natural light is an alternative to conventional light therapy. Fortunately for Winnipeg residents, our bright and sunny winters help diminish the blues and reduce the discomfort of windchill.

MODERN ARCHITECTURE AND LIGHT

The importance of light for health transformed architecture in the mid-twentieth century. Embracing landscape and the characteristics of a site, designs were informed by the orientation and quality of light, colour, texture and topography, giving architecture a stronger presence - an emotional connection that responded to nature. Architects such Mies van der Rohe, Louis Kahn, Frank Lloyd Wright, and Alvar Aalto were pioneers in architecture that capitalized on natural light, with designs that brought light and its energy into buildings and with it moods that shifted with the weather, the time of day and season. Designing with light created a new poetry within architecture, that naturally everyone within these buildings could appreciate and enjoy. Attracted to the connection between architecture, light and landscape, I was inspired by California Modernism of the 1940's and 50's, specifically residential designs by Richard Neutra.

Advocating open, bright space with access to fresh air and natural light, Neutra's works, especially the private residences, created close connections between indoors and outdoors. Characterized by the use of modern materials - glass, steel and reinforced concrete, these residences included: glass walls, flat roofs, smooth white wall surfaces, gardens and sunbathing terraces. Open floor plans connected the house and landscape and with a lack of ornamentation, skillfully manipulated views were revealed and emphasized. Functionally, the designs explored the relationship between architecture and landscape, emphasizing specific climatic and site conditions, ecological responsibility and health. In total, California Modernism became associated with a refreshing sense of ease, comfort and connection to the landscape.

LOVELL HEALTH HOUSE

Los Angeles, California
Richard Neutra, 1929



Fig. 3.1: Lovell Health House

Designed by Richard Neutra, this private residence was named after his client, Dr. Phillip Lovell, a naturopath and fitness expert who requested Neutra, 'build a house that represented human wellbeing' (Leet, S., 2004, p.39). Open, bright and oriented for optimal light and views, the design provided for ample outdoor living space to ensure contact with natural light and fresh air. Design elements included: open-air sleeping porches, terraces for nude sunbathing, a swimming pool, shower and sitz bath, an open-air theatre for children and recreational areas for tennis, handball, basketball and a gymnastics court with fitness equipment (Leet, S., 2004, p.39). Neutra also paid specific attention to materials to ensure that they would be easy to clean and dust free, so that the homes construction would further benefit the health and wellbeing of the homes inhabitants.

KAUFFMAN DESERT HOUSE

Palm Springs, California
Richard Neutra, 1946

Located in the California Desert, the home was built in 1946 for Edgar Kauffman. Expansive in size, the home's flat roof is a dramatic contrast to the mountainous backdrop. Its low-lying structure appears to wrap around the existing contours and elements of the site. Ensuring direct views to the surrounding landscape, the boundary between the interior is blurred by the use of floor to ceiling windows and continuation of flooring from inside to out. The open floor plan includes numerous outdoor living spaces, terraces for sun and shade, a swimming pool and wind screens to protect against desert sandstorms.



Fig. 3.2: A relaxed and serene outdoor living space

is blurred by the use of floor to ceiling windows and continuation of flooring from inside to out.

The open floor plan includes numerous outdoor living spaces, terraces for sun and shade, a swimming pool and wind screens to protect against desert sandstorms.



Fig. 3.3: The transparent boundary between interior and exterior



Fig. 3.4: The brise soleil system to provide shade on the terrace

GREENHOUSES, ATRIUMS AND CONSERVATORIES

With the intention of providing a facility for year-round urban agriculture, I looked at the architecture of greenhouses, atriums and conservatories for design inspiration. I began with the great glass structures of the 19th century, such as the Crystal Palace in South London and the Palm House at Kew. Designed for the botanist, they provided an indoor environment to cultivate exotic plant species and to impress. In hopes of providing for human interests rather than botanical, I turned my attention to glass architecture that took into greater consideration social activities and views of the surrounding landscape. With the evolving advances in glass and building techniques, the architecture of glass structures today has allowed for a multitude of purposes and experiences. Responding to the therapeutic benefits of being closer to nature, today's glass structures can cater to personal restorative interests including healing gardens, outdoor family rooms, fitness rooms including lap pool enclosures and are becoming increasingly popular as private outdoor offices. The following are a few examples of these impressive glass structures.

Classical Botanical Structures



Fig. 3.5: The Crystal Palace, South London (1851)



Fig. 3.6: The Palm House, Kew, Surrey (1848)

Functional Fantasy



Fig. 3.7 - 3.10: Contemporary glass structures

THE GREAT GLASSHOUSE

The National Botanical Garden of Wales, South Wales

Designed by Norman Foster and Partners, the Great Glasshouse is the largest spanning glasshouse in the world. Set in the rolling English countryside, the greenhouse mimics the form of the surrounding landscape. Protecting some of the most endangered plants in the world, the exterior glass panels are computer programmed to adjust, ensuring interior climatic conditions are just right (Sclater, A., 2000).



Fig. 3.11: The sweeping glass curve of the National Botanical Gardens

GLASS BUBBLE

Malmö, Sweden

Designed by landscape Architect Monica Gora, the 35 foot high glass greenhouse is situated in the courtyard of a retirement home along the coast of Malmö, Sweden. Cocoon-like, the bubble provides a warm escape, abundance of natural light and views out and into the Oresund Strait. Planted with heat-loving plants, the interior has a 'Mediterranean-like' atmosphere, a complete 180 from the vegetation that grows in the surrounding exterior courtyard (MIMOA, 2010). Built of glass and steel, the greenhouse rises up and out of the ground and is a magnificent beacon of light and warmth along the shoreline.



Fig. 3.12 - 3.14: The Glass Bubble

QUALITY OF LIGHT AND PLACE

Inspired by these works of architecture, I started to question how contemporary architects were manipulating and designing with natural light. Exploring the notion of place and light, I chose to look north to Scandinavia to study how a region that was dark throughout much of the year had such a strong connection between architecture, landscape and natural light. Through research, I aimed to learn how outdoor spaces could be designed to capture and manipulate light to provoke interest, intrigue and create specific moods much like interior spaces. Finding Inspiration from Henry Plummer's books, *Light in Japanese Architecture* and *Masters of Light: Twentieth Century Pioneers*, I hoped to gain a better understanding of how architects design with natural light. I reviewed the works of Alvar Aalto, Gunnar Asplund and Sigurd Lewerentz, Juha Leiviska, Erik Bryggman and Pekka Pitkanen along with new contemporary projects by Scandinavian design firms. The following chapter is review of these investigations.

CHAPTER 4

NORDIC LIGHT



North Cape, Norway

Fig. 4.1: The northern-most point in Norway

INTRODUCTION

There is something mesmerizing and dreamlike about Scandinavian architecture. A sense of seclusion and unspoiled nature seems to resonate from Nordic design. My interest in natural light and its healing properties led me to question how architects have designed with light. Specifically, how can the quality of light and atmosphere of a region can inform architecture? What I believed was a simple question led to the study of light in Scandinavia. How, I asked, can this remote northern region which remains dark and gloomy throughout winter and illuminated with light in the summer have such a strong and rich understanding of light and design? In my quest to understand what now appears to be a naive question regarding architecture, light and health, I was enlightened to learn of so much more! To my amazement, the rich cultural history and regional geographic relationships of the Nordic world have created a shared language through art, rooted in a appreciation for the landscape, in particular, its entrancing shades of blue. Evoking historical legends, sagas and myths, this cultural landscape has been brought alive from generation to generation and today can be seen and heard through music, poetry, literature and art. There has also emerged from this relationship to place, a regional, architectural vernacular that modern architects combined with a great sensitivity to the region's light.

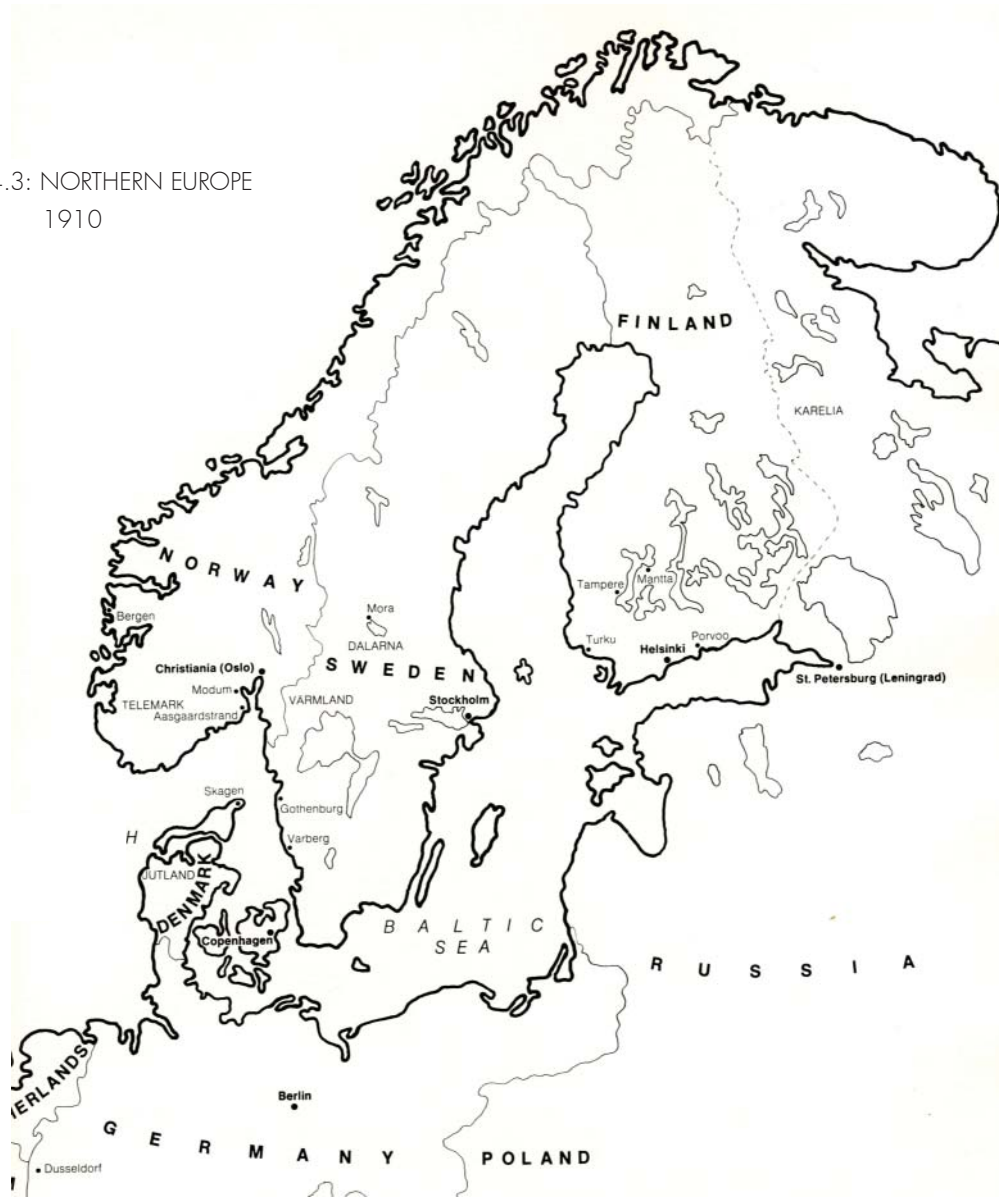


Fig. 4.2: The silvery strokes that dominate the painting are variations on the lake's surface caused by wind and subsurface currents; however, according to folklore they indicate the presence of the mythical hero Väinämöinen, as he passes in his boat.

One of Finland's greatest painters, Aksel Gallén-Kallela (1865-1931)

Titled: Lake Keitele, 1905

Fig. 4.3: NORTHERN EUROPE
1910



GEOGRAPHY



Fig. 4.4: Rapadalen Sarek, Swedish Lapland, Sweden

The barren and rugged northerness of Scandinavia is partly responsible for a culture strongly rooted to its landscape for livelihood and survival. Isolated from the rest of Europe and outside powers, politics within the five countries have had a unique interconnectedness. In short, Finland was ruled by Sweden from the 12th Century to 1809,

Denmark and Norway had a common common sovereign from the 14th Century until 1814, while Sweden and Norway shared a common sovereign between 1814 to 1905. Skane, the south part of Sweden, only passed from Danish to Swedish control in the 17th Century and Iceland was a possession of Denmark from the 14th Century to 1918, but remained under Danish sovereignty till 1944. It is therefore understandable that the languages of Denmark, Sweden, Finland and Norway have descended from the same tongue and are mutually intelligible.

To understand the significance of the landscape in the arts and architecture, you must first understand the landscape. Generally speaking, Sweden is a country of diverse landscapes. The northern part of the country is characterized by mountains and ice, scoured forest uplands, the south, by fertile land. Central Sweden is a mix of lakes and agriculture. As a whole, the country's landscape can be characterized by forests: coniferous forest in the north and deciduous in the south.

Norway can be described by two words - fjord and mountain. The Fennoscandian Shield, an ancient composition of hard rocks of gneiss and granite, spans south to north across the country creating a rugged landscape with extremely steep mountain uplands and deeply cut steep-sided valleys. Located near to the Arctic Circle, it is known worldwide for the midnight sun and the northern lights.

Finland, in terms of landscape, can be described as a mix of Sweden and Norway. Its subarctic terrain consists of rugged, glaciated wilderness with coniferous forests, ancient igneous, metamorphic rock and thousands upon thousands of lakes dotted in between.

Denmark is primarily a country of arable land for farming, which is fortunate, as the majority of the country is without other natural resources. Although these landscapes have served as muses for artists, the tie between art and landscape extends beyond physical connections, to political, social and cultural relationships to the land.



Fig. 4.5: The Geirangerfjord
Norway



Fig. 4.6: Isojarvi National Park
Finland



Fig. 4.7: Tibirke Bakker Conservation Preserve
Denmark



Fig. 4.8: The dark and haunting beauty of the Swedish forest
Swedish Prins Eugen (1865-1947)
The Forest, 1892, Skogen, Sweden

ART HISTORY AND ROMANTIC NATIONALISM

The idea of nationalism was triumphant throughout Europe in the last half of the nineteenth century. Countries and specific regions sought to establish a sense of security by creating a common identity involving religious ideology, economic doctrine, shared language and lifestyle, rituals and social conventions. This need to distinguish a common sense of fatherland or nationhood was an idea that could be conceived as a process of modernization. In fact, nationalism was invented at this time in Europe as a response to the rapidly changing social, economic, and political environment. Scandinavia, now experiencing the impact of industrialization and modernisation, although to a lesser extent than its southern counterparts, felt the need to distinguish a regional, if not national character. Separated from Europe by the Baltic and North Seas, Scandinavia's northern location allowed for the countries of the region to remain unharrassed by the 19th century industrial revolution and by war. Scandinavians were able to achieve a modest integration of modern technology, opting to maintain a closer connection to their landscape for livelihood and to take pride in the wild and pristine landscape (Varnedoe, K., 1982, p.18).

Part of the search for a national and regional identity was carried out through the arts. The atmosphere of the late 19th century was infused with National Romanticism. Many artists of this period presented a strong, nationalistic leaning. Artists were called upon, if not pressured, to capture a modern cultural identity that would reflect and embody both historical and present ideals and regional values (Varnedoe, L., 1982, p.18). Cultural sagas, myths and folklore were now celebrated throughout the region (Valmstad, L., 1990, p.72). Inspired by these celebrations, many artists promoted indigenous folk culture and ancient celebration in hopes of preserving the vanishing customs and values of their once agrarian society. Most notably, *The Kaveala*, which to many was Finland's greatest folk epic, was translated, published and emerged in school curriculums and as popular media (Kent, N., 1988). To a large extent, it was the sagas, folklore

and cultural customs that provided a common thread that tied people together and inspired the region's artists, poets and novelists.

Inspired by the National Romantic Movement, a group of artists emerged that not only chose to concentrate on identifiable customs and country scenes in the natural landscape, but also infused their work with a blue tonality of light unique to Scandinavia. Although the northern countries have varied terrain and climatic conditions, they share natural light and atmosphere, characteristic conditions also reflected in historic folklore and cultural customs. The mystical element of light within nature and its connections to cultural traditions drew artists to natural landscape features and phenomena, especially lakes, trees, rain, snow and mountains (Kent, N., 1987, p.121). The group of Nordic artists who first presented ideas on light had studied together abroad. They included Erik Werenskoid, Fritz Thaulow, Kitty Kielland, Eilif Petersson, Gerhard Munthe, and Christian Skredsvig (Kent, N., 1987, p.128). Their travels, which led them across Europe to Paris, Dusseldorf Academy, Dresden, Munich and Berlin, allowed them to study painting, portraiture and the most progressive styles of Naturalism and Impressionism (Kent, N., 1987, p.128). Influenced by these travels and studies, they returned home with a renewed understanding and appreciation for their native landscape, and the particular blue quality of the light (Valmstad, L., 1990, p.92).

Upon their return to Scandinavia, the artists established a summer colony at Fleskum, Norway, in the Baerum region, in the summer of 1885 (Kent, N., 1987, p.128). Together, they spent the summer evolving a romantic style of painting that portrayed the light of Nordic summer evenings. Their work can generally be characterized by a deepened subjectivity, unnatural colour and a formal patterning usually associated with the international movement of symbolism (Valmstad, L., 1990, p.4). In the same year, the group showed their works at the 5th Annual Autumn Exhibition in Kristiania, Sweden and received rave reviews. Most notably, Kitty Kielland, won acclaim with her 1885 painting, 'After Sunset', where she portrayed the



Fig. 4.9: Capturing the changing evening light on the landscape
Kitty Kielland (1843-1914)
Titled: After Sunset, 1886, Norway



Fig. 4.10: Richard Bergh (1858 -1919)
Titled: Nordic Summer Evening, 1900

tranquil atmosphere of a traditional country summer home overlooking a lake on a Nordic summer evening (Valmstad, L., 1990, p.61). The home, remote and idyllic, was the epitome of Nordic rootedness, being associated with the warmth of a glowing hearth and the sights and smells of the physical environment, including birch and fir trees, meadows, lakes, sea and the daily and seasonal changes of light.

In Richard Bergh's 'The Nordic Summer Evening', a longing for the last bit of light on a warm summer evening is conveyed. The long, glistening reflections of the night's sky on the lake speak of a windless evening, a day winding down to rest and solemn quietude. The painting's ease of style captivates, as if we the viewer, were standing alongside the two on the balcony and watching the soft colours of the horizon change. Anders Zorn captures the spirit of the 'Midsummer Dance' in Dalarna, Sweden with a boisterous sense of celebration. Marking the Summer Solstice, the Nordic Festival of Light celebrates summer and the blue hue of the sky with traditional costumes, food and drink till the early hours of the morning. It was these typical, pastoral qualities of everyday life and cultural events that artists were captivated to portray for every northern soul to relate to.

In conclusion, the national romanticism of the 19th century inspired artists to capture and represent a regional Scandinavian identity by depicting the unique northern light conditions and landscape scenes that resonated with historical and cultural significance.



Fig. 4.11: The ancient Festival of Light in honour of the return of summer. Traditionally, maypoles decorated with flowers and flags were setup for people to dance around
Anders Zorn (1860-1920)
Midsummer Dance, 1897, Dalarna, Sweden

ALVAR AALTO 1896-1976

The landscape moods initially captured by artists in the 1880's, infiltrated all the arts and captured the minds and imagination of many Nordic architects most notably, Alvar Aalto.

Alvar Aalto (Feb. 3, 1898 - May. 11, 1976) was a Finnish architect who advocated for the "humanization of architecture" (Schildt, G., 1984, p.202). He aimed to create buildings which expressed a balance between modern man, technology and the existing, natural environment (Schildt, G., 1984, p.195). His close connection to nature, as the son of a forester and surveyor, provided him with an appreciation and knowledge of the natural world. As an artist, he believed that among the modern arts - literature, music and architecture, artistic expression began with painting (Schildt, G., 1984, p.153). Aalto also believed in a dawning of a Nordic renaissance, a time when all arts throughout the region would unite (Schildt, G., 1984, p.152). Unlike other modernist architects of his time, Aalto was sensitive to human preference and comfort. He believed that the modernist homes of glass and aluminum, streamlined furniture and textiles in the most extravagant of colours caused an estrangement from the natural circumstances of human life (Schildt, G., 1984, p.202). They were consequences of the technological and commercial degeneration against which he fought. Aalto aimed to create functional spaces for human comfort and health.

Inspired by the ideas of National Romanticism, Aalto brought modern architecture to life with forms and materials inspired by Finland's rugged and wild natural landscape and its everchanging natural light conditions. Establishing an even closer connection between man and landscape than artists of 1880's, his architecture appeared to bring the surrounding landscape indoors. Using natural forms and an abundance of local materials, such as wood and stone, he manipulated space to induce a play of light and shadow connected to that of the outdoors. Each interior space exuded a mood and poetry that spoke of primitive and past Nordic worlds, and their relationship to the landscape and light.

The Paimio Sanitorium (1928-1933) stands out to me as a project in which Aalto showcased his modern design beliefs and interest in light. The design aimed to provide the sanitorium patients access to ample amounts of natural light for healing. Aalto's own bedridden experience as a tuberculosis patient gave him an understanding of the wants and needs of a patient in such a facility. He believed the building needed to act like an instrument of health. Therefore, its fan-shape form was orientated south to ensure that each interior room had access to natural light and fresh air. Building details were scrutinized to ensure they catered to human ease and comfort. For example, to ensure patients rest at night while also allowing for bathroom use, the bathroom sinks were designed to minimize the sound water makes when it hits them. To ensure warmth from head to toe for each patient, radiant heating panels were placed above each bed and windows were designed so that natural sunlight warmed the air before it entered the interior to minimize the possibility of cold drafts. Further, the colours within the interior were warm and cheery to create a uplifting, yet relaxed atmosphere.

In contrast to the use of bright, sunny light to promote health at the Paimio Sanitorium, Aalto manipulated a softer, muted tone of light within a forest to create a soothing and relaxing atmosphere at Villa Mairea. Situated atop a hill within a forest, Villa Mairea in Noormarkku, Finland (1944) provides another excellent example of how Aalto applied form and light in his designs. Inspired by the changing light conditions and rhythms of the surrounding forest, Aalto aimed to create a space that would represent the ideal Finnish way of country life. Although, the size of the villa appears expansive, its interior spaces feel intimate. Because it was used as a retreat in winter, when the sky is grey and the surrounding forest appears dark and misty, Aalto used natural, warm materials, colours and textures, including an abundance of wood to allow the interior spaces to feel warm and inviting. Like other modernist architects of his day, he was attracted to the colour white for its association to health. However, unlike other



Fig. 4.12 - 4.14: Engaging the light of the surrounding forest, the staircase brings its form inside Villa Mairea, 1944

modernist architects who applied white stucco onto monotone planes, Aalto's white walls appear like snow-drifts, with curves and hollows capturing and molding incoming natural light and directing it into the space (Plummer, H., 1999). Villa Mairea's central hearth becomes the focal point on the cold days of winter. Its sweeping white cavity directs incoming light to wrap around the hearth and engulf the room. Along the central staircase, the rhythm of the forest is captured with rustic vertical slats of wood that filter incoming natural light much like the pine trees surrounding the home. Beyond the interior's rhythmic forms and their lighting effects, the home opens up onto the landscape where a pool and sauna are located, suggestive of a forest unfolding onto a lake.

One of my favorite designs by Aalto is the Pension's Institute (1952). Alluding to the glow off a moonlit lake, a geometrical grid of black and white marble is applied along the ground plane. To create the shifting and undulating effects of waves and light, Aalto skews the perspective of the tiles by placing them on a slight diagonal to play with one's perspective while moving (Plummer, H., 1999). Further, the tile carries this offset angle and shifted perspective up on onto the walls. This fantastic play of light between vertical and horizontal planes encompasses the interior space with a temporal, as well as spatial rhythm and sparkle of light.



Fig. 4.15: Snow-drift like, the central hearth's sweeping white cavity
Villa Mairea, 1944

SIGURD LEWERENTZ 1885 - 1975

Known today as one of Sweden's greatest architects of the 20th Century, Sigurd Lewerentz created a world of moods through light. Three works of art Lewerentz left us to marvel at include: The Chapel of Resurrection at Woodland Cemetery (1914-1934); St. Peter's at Klippan (1963-1966); and St. Mark's at Bjorkhagen (1956-1960). Lewerentz's educational training in Nordic Classicism during the age of Romantic Nationalism seems to have directed his work. His designs integrated architecture with nature, blending classicism and early modernism using geometric and natural form. His work typically employed very few materials which allowed for an impressive mastery of light to be displayed.

St. PETER'S CHURCH

Klippan, Sweden (1963-1966)

Set in a birch woodland, St. Peter's is detached from the surrounding suburb and is very private. A dark timber portico marks the entrance into the Church. The building's interior is a progression from daylight at the entry to a gradation of shadows within the congregation space. Undulated, textured walls of rustic brickwork become engulfing. On all surfaces - roof, walls and ground plane - the brick encloses and darkens the space to only the faintest amount of light. The dark, crypt-like interior creates a faint light that does not reflect, but instead enters directly from four small windows and a series of slits in the roof. A small window on the south side allows for a shadow to be cast down onto the nave floor, most effective for a baptismal ceremony.



Fig. 4.16: The dark interior of St. Peter's Church

WOODLAND CEMETERY Stockholm, Sweden (1914-1934)

Designed as a progression of light and dark through the landscape, the journey at Woodland begins with a path leading one up towards the crematorium. A row of trees along the path creates a meditative repetition of shadow and light, drawing ones eye along the ground plane and allowing for a journey of quiet contemplation. Similar to a pilgrimage,



Fig. 4.17: Progression toward the 'grove of meditation'

the slow linear progression possibly symbolizes the spiritual path to righteousness and the heavens, from darkness to the divine light which Christianity has traditionally symbolized with God. Emerging at the top, one is enlightened by the open and bright expanse of the site. The brightness of the vista immediately evokes an overwhelming sensation of resurrection and the power of death. Impressive and encompassing, a 'grove of reflection' offers enclosure and a place of quiet solitude as if an opportunity to overlook and behold one's own journey in life and path to resurrection. Ahead, the crematorium overlooks a calm, reflective pool. Shifting from traditional geometric at the crematorium, a graveyard in a forest and woodland emerges. The final progression from light to darkness and life to death begins. A straight path guides one through a heavily planted pine forest to the intimate Woodland Chapel (1918-1920). Sheltered and hidden under the dark forest canopy, the sharply angled wood shake roof conceals its presence. The chapel's smooth pearly white exterior walls emphasize the forests flickering contrast of shadow and light while the pillared portico captures the repetitive rhythm of the surrounding tree trunks. Inside, a large domed glass roof allows light to shine upon the deceased's coffin before burial. In the midst of the sprinkling forest light, there is darkness, a sublime mysticism, where the sacredness of life and death is conveyed through light.



Fig. 4.18: Woodland Chapel tucked under the pine forest canopy

ARCHITECTURAL PROJECTS

The following section, arranged chronologically, examines eight contemporary, Scandinavian architectural projects that manage light to create form and space.

MYYRAMAKI CHURCH

Vantaa, Finland

Architect: Juha Leiviska, 1984

The Myyramaki Church appears hidden and concealed by the changing light of the surrounding birch forest. Its white exterior walls share the rhythm and movement of the forest, emphasized by receding and emerging vertical planes on the building's exterior that showcases the surrounding play of light and the changing angle of the sun. The interior feels expansive, open and bright. One is drawn to the altar wall, light's focal point. Light is directed onto the altar wall and into the congregation space by large windows and an expansive south facing skylight. The skylight creates a shifting pattern of light on the wall revealing the daily and seasonal change for each service. Suspended from the ceiling, softly coloured silk tapestries filter incoming light with their subtle and delicate changes in colour to create a calming and serene atmosphere. More light washes in from a concealed vertical window, further enhancing the brightness of the altar wall. The effect is radiant. Light is directed by a series of articulated vertical planes which emphasize both the height and length of shadow. The shifting pattern of light from dawn to dusk reveals the marvellous ethereal beauty of nature (Plummer, H., 2009, p.30).



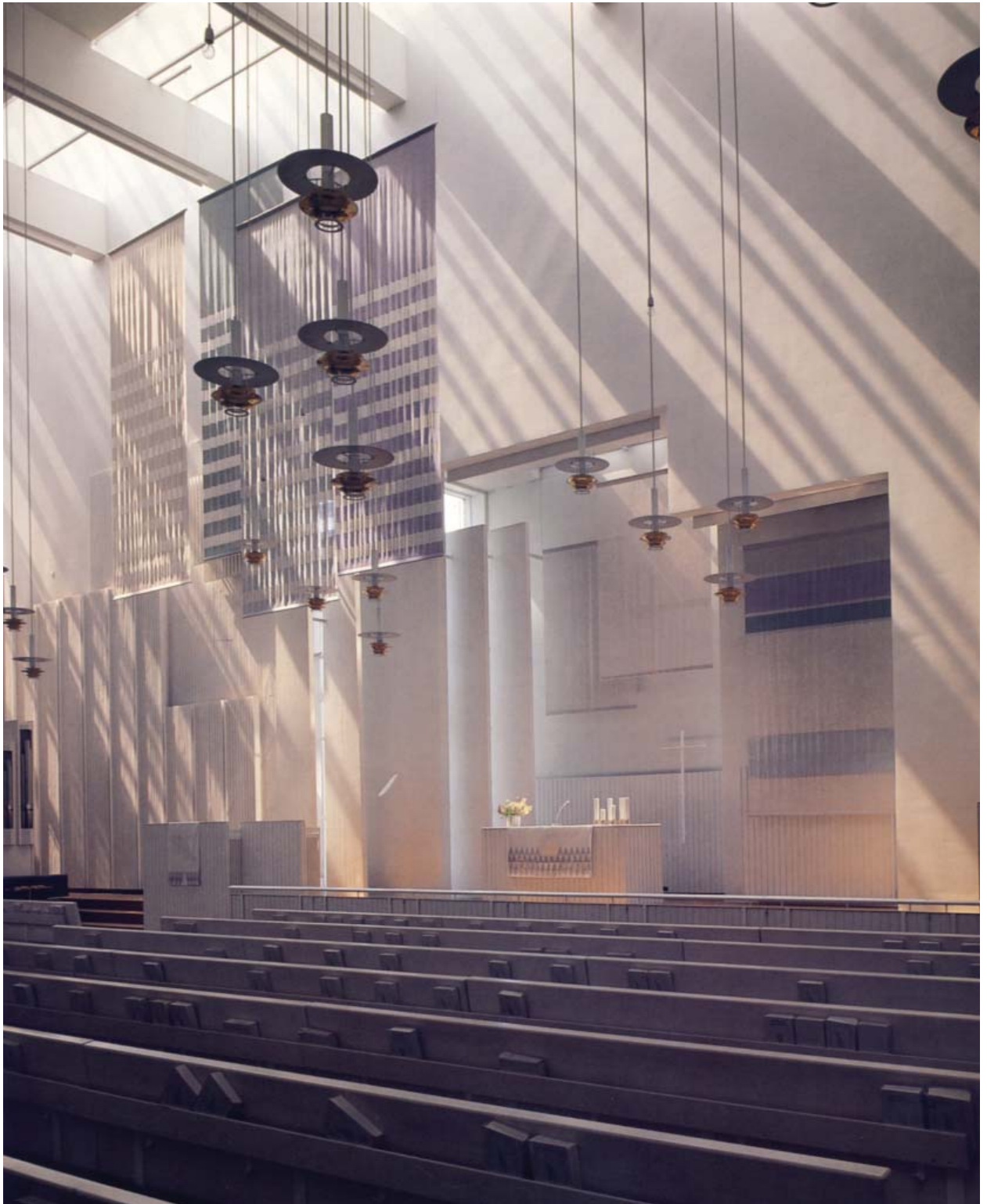
Fig. 4.19: Interior



Fig. 4:20 - 21: Exterior views



Fig. 4.22 (Above): The changes of light on the altar wall from top left: early morning, late morning, midday, late afternoon
Fig. 4.23 (Opposite): A play of light on the altar wall



FINNISH EMBASSY

Washington, D.C., USA

Architect: Heikkinen-Komonen, 1994

Adjusting to the surrounding light conditions, colour and reflectivity, Heikkinen Komonen use a simple palette including wood, granite, copper and glass to capture and evoke the lighting conditions and mood of a Finnish forest. The glass, copper and granite are each purposefully tinged a forest green so that the building blends into the wooded surroundings. Large glass walls allow for every flicker of surrounding light to enter the building. The green tinged granite and copper panels are illuminated and appear to glow with an uneven green light. In the centre of the building, a 60 foot high skylight known as the 'Grand Canyon' draws light down and into the multi-purpose Finland Hall (Heikkinen-Komonen, 2010). A curved, wood staircase following the natural contours of the land, leads the visitor into the hall where tiny, star-like lights are suspended from the ceiling above. Within the hall, white concrete columns stand like birch trees against a glass wall that provides an elevated view into the surrounding woods (Heikkinen-komonen, 2010).



Fig. 4.24/4.25: Exterior glass walls



Fig. 4.26/4.27: The curved staircase, copper panels and star-like lights in Finland Hall

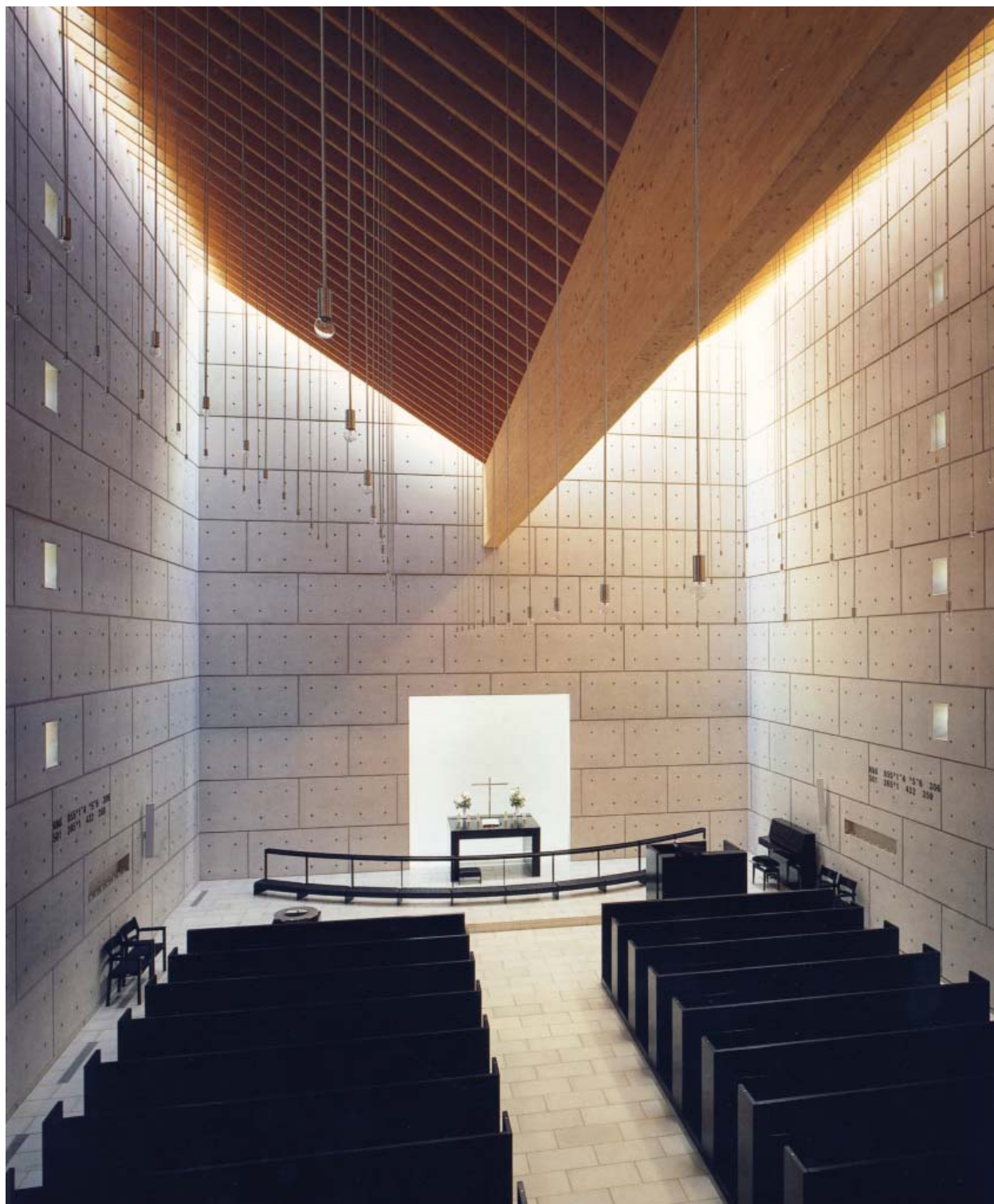


Fig. 4.28: Interior and altar

ENGHOJ CHURCH

Randers, Denmark

Architect: Henning Larsen, 1999

Evoking a ship's keel, the shape and structure of the church resonate with those that live in the Nordic world (Plummer, H., 2009, p.194). The intimate scale of the interior, the monotone colour palette, the sheer mass and weight of material used for both the horizontal and vertical planes and the soft, glow of indirect light create a sinking, tomb-like sensation. Above, the heavy timbers of the roof plane appear to float, as if suspended by an unknown source of light. Its mystery alludes either to the world outside, or that of eternity. Small, square openings of light along the side walls emit a soft glowing, vertical pattern drawing ones eye towards the roof. At the front of the church a small, bright white altar wall is almost eerily soothing, providing hope that if the dim glow of the room were to parish, it would remain powerfully illuminated. This lack of light and feeling of enclosure created by the use of material heightens our awareness of light and creates a sense of mystery in relation to the regional history and folklore.

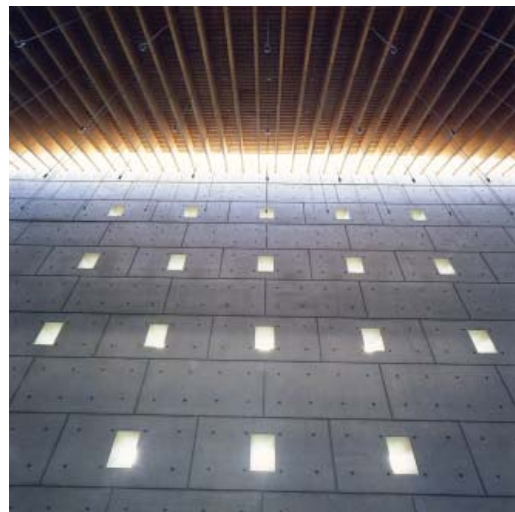


Fig. 4.29: View of interior wall and roof



Fig. 4.30: Natural stone outcropping in the interior

MORTENSRUD CHURCH

Oslo, Norway

Architect: Jensen & Skodvin, 2002

Like a secret garden, Mortensrud Church is a hidden sanctuary carved into the forest and out of the rock. Cave-like, its design emerged from the site by including the exciting vegetation, topography and a large rock formation. The use of primitive, natural materials creates an experience and mood linked to nature and the surrounding landscape. The vertical composition of the surrounding forest is recreated in the architecture. Nearer to the ground plane, where light is most abundant, large windows draw light in and provide views to outside for those seated. Walls of dry stacked, grey granite allow light to seep in through slits and cracks between joints. Similar to the flickering light within a forest canopy, the interior is softly illuminated with a shimmering silvery-grey. Above, a metallic corrugated roof, reminiscent of a starlike night sky, shimmers with scattered and reflected light from the walls and off the glossy ground plane. The use of natural materials and attention to texture and reflectivity allows for a soft and delicate illumination that creates a tranquil, meditative night mood (JSA, 2010).



Fig. 4.31 (top): The reflective corrugated metal roof

Fig. 4.32 (bottom): Courtyard

ROVANIEMI AIRPORT AND TERMINAL

Rovaniemi, Finland

Architects: Heikkinen-Komonen, 2002

The simple and reflective Rovaniemi Airport protrudes up and out of the sweeping forms of the surrounding landscape. The exterior facade of glass and metal captures and reflects each ray and flicker of light. Here where light is a luxury, the dark and misty moods of the winter months are emphasized inside as a sequence of movement for arrival and departure. Monotone grey vertical perforated metal screens, with contrasting thicknesses, are used to distill and scatter natural light with a mysterious grey tonality. The soft grey shimmering light resonates with the regional Nordic forest, creating an enchanting and sublime experience. Giving the structure further cosmic context two installations are incorporated into the design. The first, an oblique forty-meter long skylight runs parallel to the meridian of the Arctic Circle. The second, designed by artist Lauri Anttila is called 'Orbit of the Earth', where each day a spot of light is projected through the ceiling by the noon sun. The pattern formed by the sun's changing angle over the course of the year creates an elongated figure 8, the analemma of the sun (Heikkinen-Komonen, n.d.).



Fig. 4.33: Passage between terminal and airfield



Fig. 4.37: Exterior



Fig. 4.34: Arrival gate



Fig. 4.35: View to lobby from upper level



Fig. 4.36: View of airfield from lobby



Fig. 4.38/39: Canopy over walkway



Fig. 4.40: Part landscape, part building

NEW NORWEGIAN OPERA AND BALLET HOUSE

Oslo, Norway

Architects: Snohetta, 2009

Emerging up and out of the fjord, the Opera and Ballet House is a tale of land and water. Its facade and shape suggest an iceberg that has been pushed up against the land to become part landscape and part building. It is considered a threshold between Norway and the World, between art and everyday (E-architect, 2009).

Keeping with a simple, functional and modernist approach, a select number of materials were chosen for the design, including metal, glass, white concrete, white stone and wood. The expansive, white exterior of stone and concrete emphasizes shadow and light. The attention given to surface treatment illuminates seasonal change and reflects light from each passing cloud. The exterior's whiteness and buoyancy suggests health, clean air and fresh water. A fifteen meter high glass facade enhances contact with the surrounding landscape by allowing an abundance of natural light to flood the interior during the day and illuminate the surroundings at night. Within the main auditorium, a wooden wave wall, also an acoustic attenuator, comes to life with the natural light that reveals its complex and detailed organic geometry. Built by local shipbuilders, the wall showcases the craftsmanship of building with wood, and its versatility. Also, an interior panelled aluminum wall is based on old, hand-weaving techniques. Each of the eight, aluminum panels change depending on the angle, intensity and color of the exterior light (E-architect, 2009).

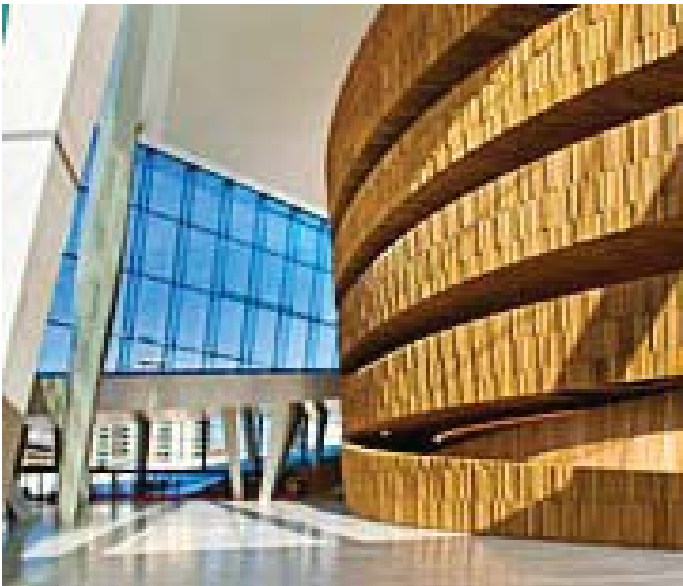
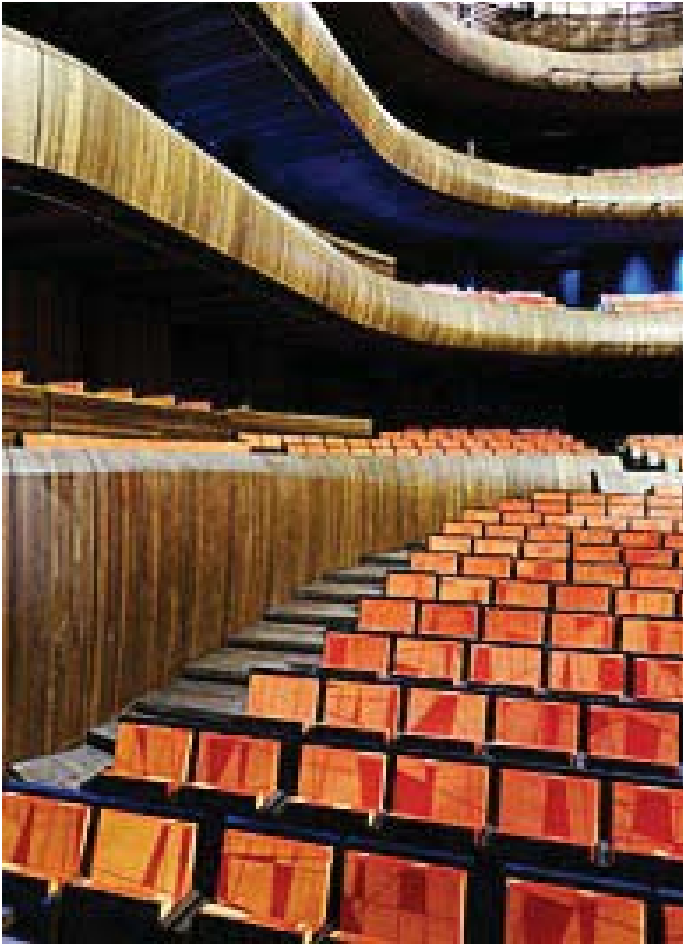


Fig. 4.41/42: View of auditorium wave wall and its intricate use of wood

URBAN MEDIASPACE

Arhus, Denmark

Architect: Schmidt Hammer Lassen

Landscape Architect: Kristine Jensens Tegnestue

Winning competition entry for 2008-2009, to be constructed 2011-2014

The architects of the largest public library in Scandinavia aimed to re-examine the traditional concept of a library. Designed as a hub for social interaction - studying, relaxing and socializing, its interior and exterior spaces seem to merge. The glass facade of the building makes it appear transparent, allowing optimal views of the water and the surrounding landscape. Although, there isn't a progression of light or soft glow captured on a specific focal point, the idea of a building merging with the landscape on such a large scale and allowing for an abundance of natural light makes this project worth mentioning.



Fig. 4.43: Concept collage of the interior space



Fig. 4.44: Computer rendering of proposal



Fig. 4.45: Model of proposal

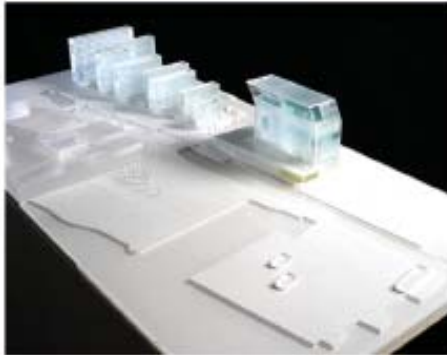


Fig. 4.46: Proposal drawings and model

MUNCH MUSEUM

Oslo, Norway

Architect: Herreros Arquitectos: project slated for completion by 2013

Located on the Pauselkia Peninsula, this building intensifies connections between the fjord and solid ground. Angled towards the river and the fjord, it provides views into the city and out to the sea. Most interesting is the facade system. The outer facade is to be translucent and will change as the exterior natural light shifts, highlighting or camouflaging the movement of people within the building. It will not be an enclosed concrete box, but instead will be open and vibrant nature (Herreros Arquitectos, 2010). This project is an excellent example of how current material innovations are changing and challenging our understanding of physical space in relation to light. Throughout man's history, material has influenced our perception of architecture and relationship with landscape. When this design is complete in 2013, it will be interesting to observe this new technology and its response to light.





Fig. 4.47/48: Computer rendering of proposal

CONCLUSION & IMPLICATIONS

Known as the land of the midnight sun, the shifting natural light of the north has provided inspiration for Nordic artists and architects. During the winter months, days are short and a twilight of darkness creates a landscape and region of soft, muted tones, watery reflections and a mysteriously eerie darkness. This dark wilderness and lack of any conceivable brightness has stimulated architects to create intimate cave-like cavities of soft and warming light for protection and warmth from the dreary cold, winter darkness. In summer, a bright light infuses the region with a 'blue hour', a time when the sun remains high in the sky throughout the night. This change of seasonal light has transcended through time and history empowering the arts with a common regional language related both to culture and landscape. Today, twenty-first century Scandinavian architecture provides us with a glimpse into the understanding of place and its relationship to Nordic light.

Inspired by Nordic seasonal light conditions, Scandinavian architects have creatively designed spaces to manipulate natural light. These case studies reveal how powerful form and light can be in altering psychological state or mood. Light 's effect on us can be invigoration, energizing, meditative or solemn. Light can be used to create a greater passion and awareness of site and the unsuspected delight of movement and the relationship to the Earth. Like many other architects before me, I find designing with natural light complex and intriguing; it is always moving in the sky, changing with the seasons and location on Earth. I have also found that to design an inspiring space that reveals changes in natural light requires creativity and an understanding of materials.

In Manitoba and across the prairie, I can not help but be inspired by the sun. Manitoba is a landscape with little topography or striking landforms. The vastness of the prairie creates a landscape of Earth and sky. The sun dominates. Its brightness becomes

blinding in winter against the endless white fields of snow, and in spring, summer and fall, light reveals the shimmering and luminous changing colours of vegetation. Open and exposed, light and sky on the prairie can feel engulfing and it's this distinguishing feeling that I believe represents and unifies our landscape.

As in Scandinavia, light defines our region. But, unlike the soft, muted tones of the Nordic world, Manitoba's light is intense, energizing, invigorating and dominating. It surrounds us, constantly revealing the changing atmospheric conditions - the movements of clouds in the sky, the force of the wind across a river or lake, and the subtle colours of vegetation throughout the year.

CHAPTER 5

SITE LOCATION, OPPORTUNITY AND ANALYSIS



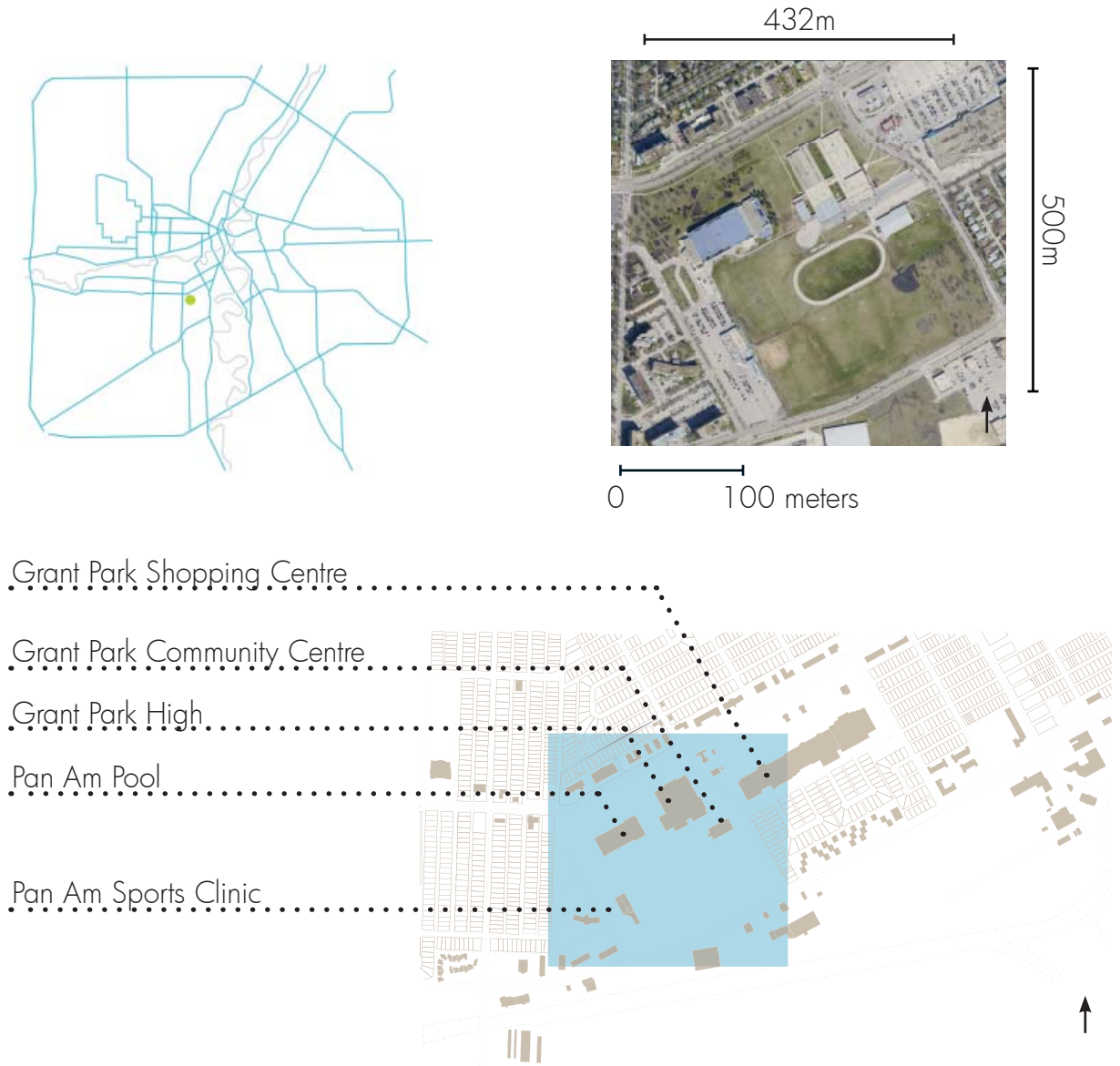
SITE LOCATION:

GRANT NATHANIEL ATHLETIC GROUNDS

Winnipeg, Manitoba

A top priority for site selection for this work was a community setting. Located south-west of downtown Winnipeg in the community of West River Heights the Grant/Nathaniel Athletic Fields offered an excellent opportunity. Bound by Grant Avenue to the north and Taylor Boulevard to the south, the site includes four existing buildings: Grant Park High School, Pan Am Pool, Pan Am Sports Clinic and Grant Park Community Centre. Currently, the site is an open green space used for recreational opportunities. Grant Nathaniel Athletic grounds was chosen to be the site of the new health and wellness park as it:

- 1) Is situated in a community that is diverse in age and income level,
- 2) Already promotes sport and recreation and has an incredible history of sport and civic pride,
- 3) Includes established facilities that promote sport, community and education, the building blocks for community health promotion,
- 4) Has an open south-west orientation that provides ample light for potential solar designs.



Grant Park Shopping Centre

Grant Park Community Centre

Grant Park High

Pan Am Pool

Pan Am Sports Clinic



Fig. 5.1 : Existing site condition
Looking north from Taylor Blvd.

COMMUNITY PROFILE
 West River Heights: Grant Park



- residential
- civic buildings
- public schools
- apartments
- retirement complexes
- businesses
- open public space

Situated in Grant Park, the community has a centralized urban structure with commercial social and civic buildings (high school, elementary school, community centre) located together and fringed by apartments and then private residences. Housing types include apartment blocks primarily of 5 or more storeys, single detached homes, retirement condominiums and one nursing home located adjacent to Pan Am Pool on Poseidon Bay. The majority of the homes were built in 1946-1966, and 72% of the population rents. The current population of the area is approximately 2,700. There is a fairly even distribution in age, although a larger percentage between 25-34 and 45-49. Seventy-five percent of the population has received a certificate, diploma, or degree, with the majority employed in retail or trade.

Opportunity:

- To provide additional recreation and wellness opportunities for all ages.

NAVIGATION & TRANSPORTATION



- bus stops
- ● ● ● ● +walks

Major roadways include Grant Avenue, Taylor Boulevard and Waverley Street. Connector routes include Cambridge Street, Poseidon Bay, Nathaniel Avenue, Wilton Street and Stafford Street. The main bus routes are Waverley Street, Taylor Boulevard and Grant Avenue, with direct access to Pam Am Pool via Poseidon Bay. To the south of the site is the CNR rail line and land.

Opportunities:

- To redesign the parking lot between Pan Am Pool and Pan Am Clinic which is presently open, disorganized and lacking pedestrian corridors.
- To provide access from Taylor Blvd. where existing snow fencing has created an accessibility barrier.
- To redesign functionally and aesthetically the high school bus loop which is open to the surrounding sport fields.



PAN AM FOREST

Established in 1996 by the Winnipeg Rotary Club. The existing forest is sparse and primarily coniferous.

Opportunities:

- The forest has the potential to act as a carbon sink if naturalized and properly maintained. This would help offset emissions along Grant Avenue. On average 110 trees will sequester 1 tonne of CO² per year.
- The forest can serve as a buffer against traffic noise in the park.



Fig. 5.2: Existing vegetation



ATHLETIC FIELD

The Grant Nathaniel Athletic Field currently provides a sport field for Grant Park High School and the surrounding community groups. Currently, the field space includes a track, a football field, two soccer fields, long jump pit and two baseball diamonds.

Opportunity:

- To provide outdoor activities for all ages that promote not only sport but also lifestyle activities: walking, running, biking, gardening, stretching and yoga.



PAN AM FOREST GARDENS

The community gardens were recently established by the Landless Farmers Collective, a group of young, organic farmers that aim to preserve vacant green space in the City of Winnipeg for growing food. The group received a City Grant in 2009 and has initiated a 'Farm to School Pilot Project' with Grant Park High School. Organic vegetables grown on site are sold at the Osborne Farmers Market. In 2009, the collective received Honourable Mention from Manitoba Excellence in Sustainability Awards.



Opportunity:

- To expand the existing community gardens and provide a water management system.



Fig. 5.3: Community gardens, Summer 2010

ARCHITECTURAL HISTORY



Fig. 5.4: Top: South elevation - view from sport field
Below: North elevation

PAN AM POOL was built for the 1967 Pan American Games by Smith Carter & Searle Architects and Engineers. The 2.7 million dollar structure was the best facility of its kind in Canada and North America at the time (Pan Am Games Society, 1967). The facility, which accommodates 2,400 spectators, includes a 75' x 220' long pool with three swimming areas - "learn to swim", eight lanes for competition, diving boards and platforms. Highlights of the design included: underwater lighting, a viewing window below the surface, perfected acoustics, absence of obstructive columns, concealed indoor lighting, and the design deliberately separated the pool deck from the spectators level. The building also houses a VIP receiving room, large press boxes, 1,200 lockers, two large training rooms, a board room and a secretarial/archivist space.



Fig. 5.5: Images of facility during the 1967 Pan-American Games



Fig. 5.6: North-west corner entrance



Fig. 5.7: North elevation

ARCHITECTURAL FORM

When I first started to design, I looked at the material and lines of the existing building for inspiration on how the landscape design would fit coherently with the architecture. The 1967 Pan Am Pool dominates the landscape with its concrete elevation. Enclosed and monolithic, the building is without windows on the south and north. On the west end of the building, large curved windows emphasize the height while allowing light to flood the main entrance (Fig. 5.8). I was inspired by the dramatic shape of the glass entrance, the stainless steel roof overhang, and the paving patterns which were an extension of the buildings lines. Extending this curve beyond the building and into the landscape seemed an appropriate way to connect the interior and exterior space, while also contradicting the orthogonal and rigid lines of the surrounding urban environment.



Fig. 5.8 - 5.11: Main entrance

paving patterns

CIRCULATION



The snow revealed how people used this space - their movement across the site and how they connected to the surrounding paths.

Opportunities:




- To create a pedestrian route which provides wind and sun protection between the Pan Am parking lot, Grant Park High School and relates to the above.

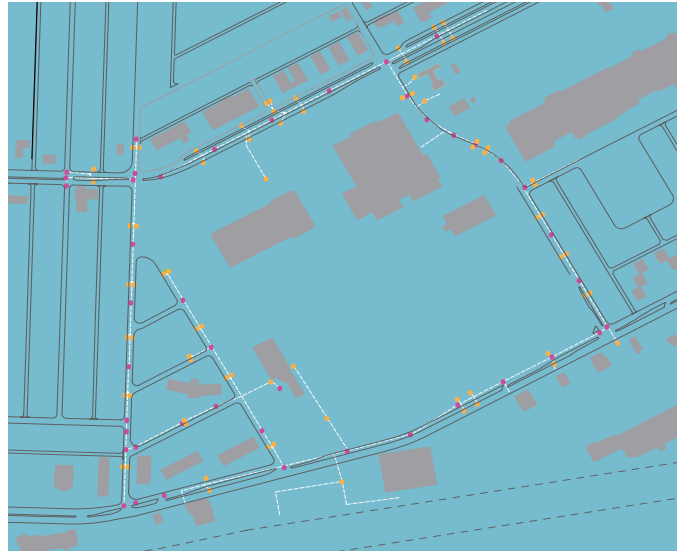





Fig. 5.12/15: Site observations, Winter 2010

HYDROLOGY/TOPOGRAPHY



-  snow fence
-  snow dump area
-  low spots



-  sewer main
-  sewer manhole
-  sewer catch basin

Site observations revealed how water moves on site - low spots, catchment/drainage areas and problem areas.

Opportunities:

- To design for parking lot runoff and to provide a planted catchment area for eavestrough water on the east side of Pan Am Clinic.



Fig. 5.16/18: Site observations, Spring 2010

RECOVERING THE RESTORATIVE QUALITIES OF THE NATURAL SETTING

Inspired to create a 'natural' urban destination that would be restorative and provide a fascinating year-round urban escape, I looked to the less developed surrounding area for inspiration. Luckily, a large, undeveloped parcel of land is located directly south of the site between Hurst Way and Planet St. off Parker Avenue. Known as Brenda Leipsic Park, the space has remained undeveloped as it is very low-lying and as such serves as a community off-leash dog park. A recent site inventory by the City of Winnipeg Naturalist Society revealed the park is predominately aspen parkland with a number of large, open wetlands (Fig. 5.18). Considered by the Naturalist Society as 'degraded', the analysis revealed the type of vegetation and landscape that would have once occupied Grant Nathaniel Athletic Grounds prior to development.

With the large prevalence of standing water on the athletic grounds in spring and throughout the summer, I knew proper water management would be needed. To my surprise, I located a newly constructed retention pond near the Winnipeg Humane Society, west of Brenda Leipsic Park. Designed by the Landscape Architecture firm, Hilderman Thomas Frank and Cram, the constructed pond promotes water conservation by minimizing the overflow of water to the combined city sewer system. The design also minimizes disturbances to the natural habitat and the perimeter tree buffer on site.



Fig 5.18: Brenda Leipsic Park



- aspen forest
- prairie
- wetland



Fig 5.19: Winnipeg Humane Society



- aspen forest
- prairie
- wetland



SNOW TEXTURE INSPIRATION

The forms and textures found in the snow were beautiful, but also revealed winter wind patterns and locations where winter protection was needed.



Fig. 5.20/25: Site observations winter, 2010

SIGHT LINE INSPIRATION

While capturing the changing quality of light on site, sight lines were revealed. They suggested which views to block and which to emphasize. The two images shown here reveal the best site locations for watching the sunset throughout the year.



Fig. 5.26/27: Site observations winter, 2010

SUMMARY OF ORIGINAL AND PROPOSED CONDITIONS

Built for 1967 Pan American Games
 Hosted both 1967 and 1999 Pan American Games
 3 swimming pools, 1 indoor track and 2 weight training rooms

1967

SOCCER AND BASEBALL

NO TOPOGRAPHY

NO FOCAL POINTS

NO DIRECTED VIEWS

VIEW OF SCHOOL BUS LOOP
 FROM KIDDIE POOL

ENCLOSED BUILDING

CEMENT

HORIZONTALITY

NO OUTDOOR AREA FOR SPORTS
 CLINIC

INDOOR CANTEEN

GOOD ACCESS TO BUSES

SMALL, SCATTERED COMMUNITY
 GARDEN PLOTS ON NORTH SIDE
 OF BUILDING

FRAGMENTED FOREST ON
 NORTH SIDE OF BUILDING

METAL BLEACHERS FOR SPORT
 VIEWING

WOOD SNOW FENCES ALONG
 TAYLOR BLVD.

TREELESS PARKING LOT

SCATTERED CIRCULATION

1960'S MODERN

DESIGNED FOR PAN AM GAMES

PROPOSED 2010

MORE SPORT OPPORTUNITIES

PLAYFUL TOPOGRAPHY

FOCAL POINTS

DIRECTED VIEWS

HIDE BUS LOOP AND PARKING

BLUR BOUNDARY BETWEEN INSIDE TO OUTSIDE

GLASS - AND SOFTEN CEMENT

ADD VERTICAL DIMENSION

CREATE REHABILITATION AREA

OUTDOOR PICNIC AREA

MAINTAIN BUS LOOP

LARGE PLOTS IN A SUNNY SPACE
 ON SOUTH SIDE OF BUILDING

INCREASE SIZE OF FOREST TO COMBAT
 NOISE AND CAR EXHAUST FROM GRANT

PLAY WITH TOPOGRAPHY FOR SEATING

PLAY WITH TOPOGRAPHY FOR WINTER PROTECTION

TREES IN PARKING LOT

DIRECTED CIRCULATION

2010 ECOLOGICALLY MODERN

DESIGN FOR A SENSE OF COMMUNITY WELLBEING!

CHAPTER 6

DESIGN ELEMENTS & PRINCIPLES



DESIGN ELEMENT 1: WATER

As a swimming facility, water was the primary consideration in the beginning phases of the design. Although the building was renowned for its architecture, the 1967 design gave little attention to the supply and management of water. Water quality and consumption is a huge concern today, thus it is only fitting that a wellness park design promote water conservation for health and integrate an ecological approach to water management. Presently, Pan-Am Pool and the other buildings on site have no water management system. Thus, it is important to introduce filtration and water reuse on site. To ensure water quality for reuse in the buildings and for irrigation, I researched natural water filtration based on natural pools and constructed wetlands.

DESIGN INSPIRATION

A natural swimming pond is a newer alternative for both residential and commercial swimming pools. Absent of chlorine, water is treated by plants and microscopic life; therefore, a healthier alternative to chlorine and chemically treated swimming pools. The pond system is composed of two separate yet connected zones - the regeneration zone composed of wetland plants to filter the water and the swimming zone. A water pump ensures the water is recirculated between the zones to maintain a balanced and healthy pond.

Example:
New designs in natural swimming pools



Fig. 6.1: Natural swimming pool system

EXISTING SITE HYDROLOGY
Underground infrastructure

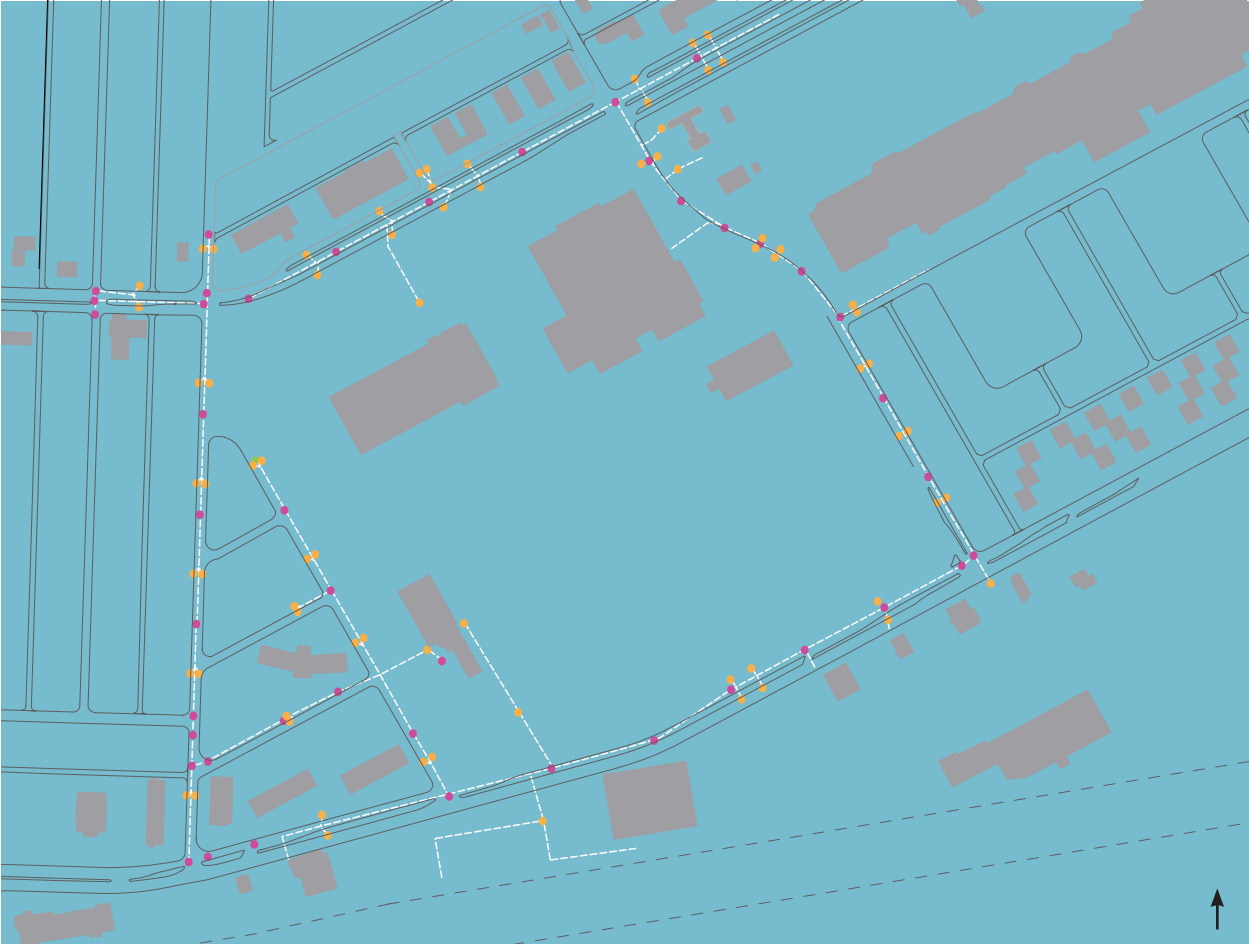
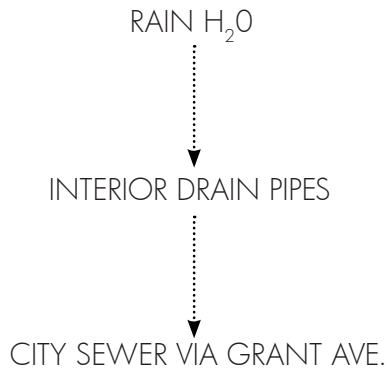


Fig. 6.2

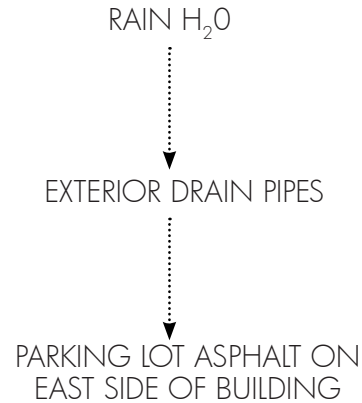
- - - sewer main
- sewer manhole
- sewer catch basin

CURRENT H₂O CASCADE:

Pan Am Pool:



Pan Am Sports Clinic:

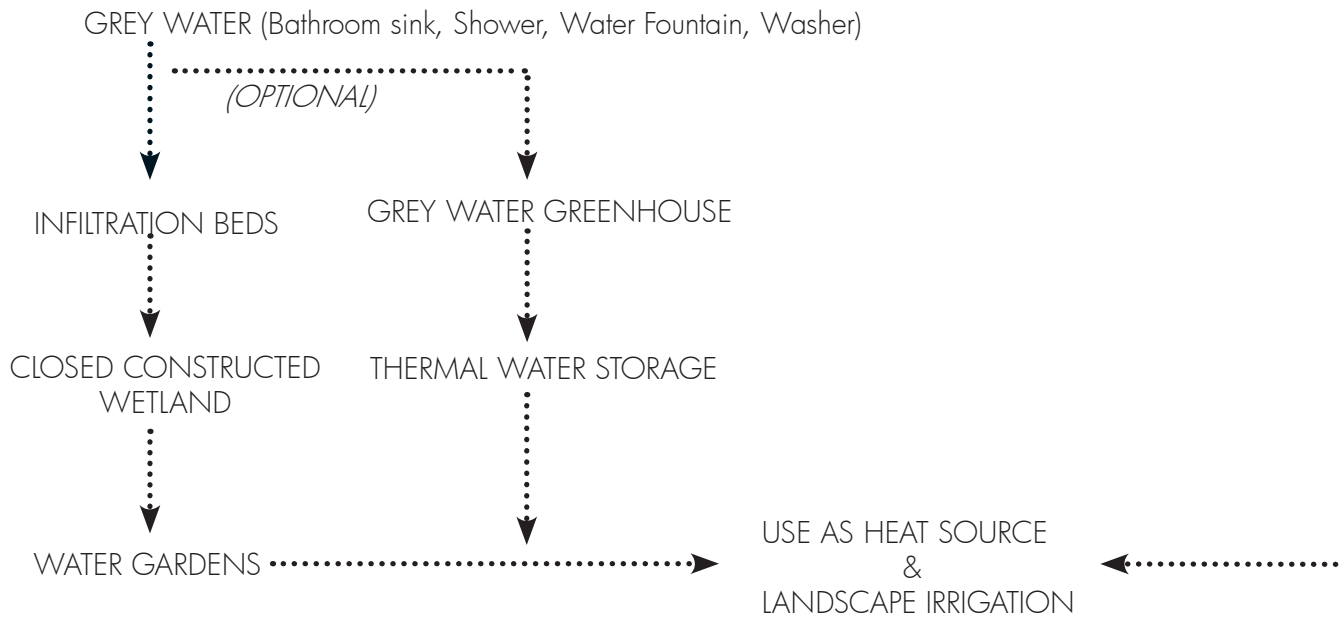


Observations and building plans reveal how water currently circulates on site. Simply, rain water either goes through interior drain pipes or exterior drain pipes. The underground infrastructure diagram (Fig. 6.2) reveals where water enters City of Winnipeg sewer system via catch basins and where manholes are located. Pan Am Pool's grey water currently is not filtered or recycled on site. Underground infrastructure directs the building's water directly into the city's sewer system via the line under Grant Park Forest towards Grant Avenue.

The latest Pan Am Pool records reveal that between May 2008 and April 2009, the facility used 37, 500, 000 liters of waters (note: this years data included draining the pools for cleaning). In regards to the water holding capacity of the swimming pools:

- The main tank holds 1, 000, 000 gallons, approximately 4 million liters
- Training tank holds 500, 000 gallons, approximately 2 million liters.
- And, both tanks are typically drained into the City of Winnipeg sewer system every two to three years.

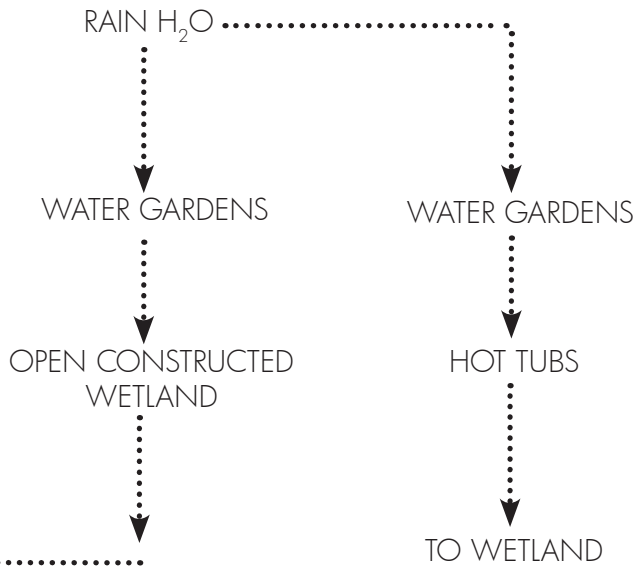
PROPOSED H₂O CASCADE
clean • safe • beneficial



SETTLING BED INFILTRATION BED CONSTRUCTED WETLAND WATER-GARDEN GREENHOUSE UNDERGROUND H

PROCESS

- IN • Inground settling tanks
- 1T • primary treatment • Infiltration bed
- 2T • secondary treatment • open or closed constructed wetland
- 3T • tertiary treatment • water gardens
- OUT • edible landscape irrigation, and/or reuse in buildings and water storage cistern



HOLDING TANKS IRRIGATION FOR GREENHOUSE AND LANDSCAPE HEAT SOURCE FOR SAUNA REUSE IN BUILDING

..... separate water from oils, soaps and sediment

..... filter/sediment removal

..... removal of contaminants by plant ecology

underground tank

gravel and sand beds

cattails, bulrushes,
common reeds

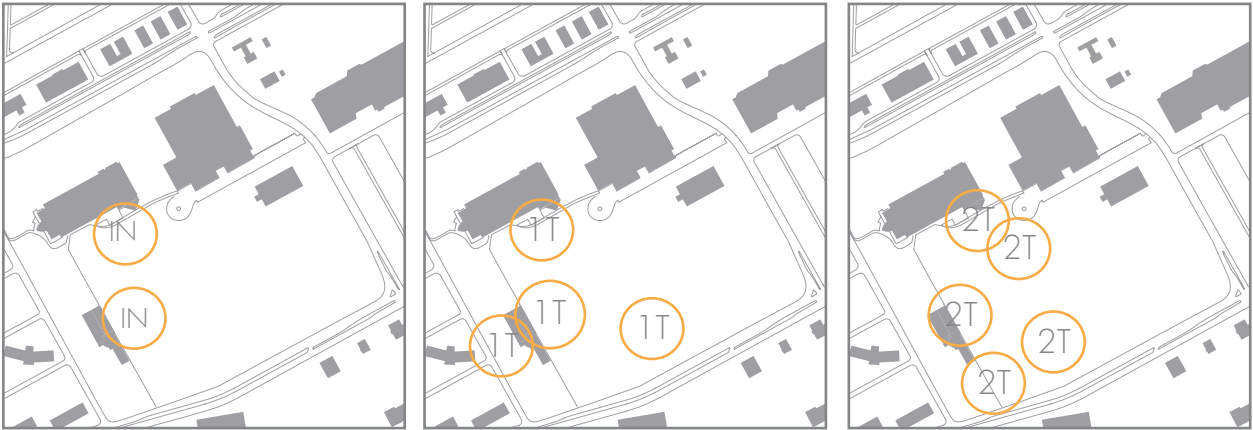


CIRCULATION PROCESS

As shown in the diagram on the previous page, the water filtration process includes 5 steps:

- IN - Infiltration Beds
- 1T - Primary Treatment
- 2T - Secondary Treatment
- 3T - Tertiary Treatment
- uS - Underground Storage Cistern

-  Inground Settling Tanks
-  Infiltration Beds/Swales
-  Constructed Wetland



-  Water Gardens
-  Underground Tanks
-  Out - Reuse



The current approach to wastewater and rainwater on site is outdated. Today, strategies and integrated approaches should be devised to prevent pollution, conserve water and recycle. Ecological water systems can offer solutions and provide welcome amenities to communities, such as park-like settings, wildlife refuges, and abundant agricultural landscapes. These systems also create opportunities for greenhouse and rainwater collections for gardens and urban greenhouse/agricultural production.

Natural or ecological treatments of water include those that mimic ways wastewater is removed in nature, through a sequence of terrestrial and aquatic ecosystems such as soils, rootzones, marshes and streams. The filtration stages include:

Inground Settling Tanks: Tanks that allow water to settle so debris can be removed.

Infiltration Beds/Swales: Similar to a constructed wetland, these plant beds filter and purify water they don't transpire. Water is delivered to the bed via subsurface infiltration pipes.

Constructed Wetland: Are planted beds or trenches filled with aquatic plants and substrate. There are two types of constructed wetlands: open (surface-flow water), or closed (subsurface-flow) where water is hidden under gravel, with plants coming up out of it. The closed system is typically used to treat grey water.

Water Gardens: A planted area that receives grey water for filtration. Compared to a wetland, it is shallower and has a greater variety of plants.

Underground Tanks: A tank that holds water for future use.

DESIGN ELEMENT 2: LIGHT

SUNshineSUPERprovince

The circadian cycle – all living things respond to it and whether we realize it or not our destinies are bound up with the rhythms of the seasons and the natural environment. Our health would benefit if we lived by the natural diurnal and seasonal rhythms rather than by a clock and appointment book. Time never stands still and it certainly never recedes. This linear view of time makes us harried and impatient and has increasingly become a destructive obstacle in our modern lives. Outside at the lake or in the garden we can go without watches and work to nature's rhythm. There we can follow the prompting of our biological clocks rather than respond to our Blackberry or appointment diary.

Winnipeg, Canada's city with the sunniest winters, receives 385 hours of sunshine between December, January and February. Annually, it is the third sunniest city in Canada. If it is sunlight we need for health, why not harness the sun's energy too! Designing for health and emphasizing natural phenomena for ecological and sustainable issues means that the site should promote the importance of both resource conservation and a sustainable environment.

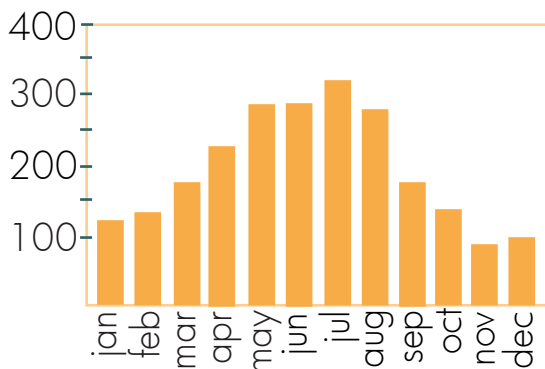


Fig. 6.3: Total hours of sunshine in Winnipeg

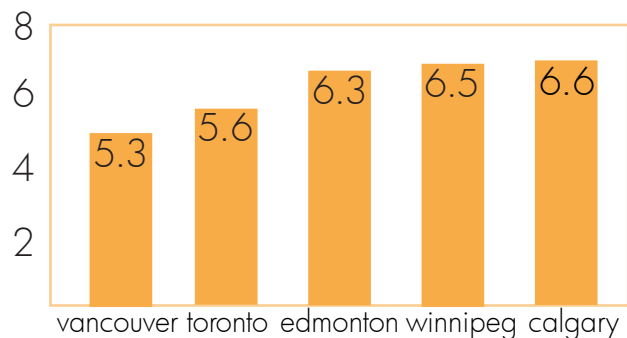


Fig. 6.4: Average hours of bright sunshine per day climate normals 1971-2000

If sun is therapeutic, how can we better design with natural light? In this design I aim to draw from modernist principals, ancient concepts of living, energy-saving concepts of greenhouse and green technology and current lifestyle trends. I am proposing a park that responds functionally to natural light. Solar energy will be used to bring the park alive throughout the day and at night, playfully and dynamically changing programmed spaces for different times of day and purpose. Form and space will be dictated by solar orientation and micro-climates. The park thus educates people about the natural world in relation to the light and helps them understand it much like people of ancient civilizations did; encouraging them to be in tune with the sun, the moon phases and the natural passage of time.

49°51'15.42"N, 97°10'14.70"W



JANUARY 7, 2010 - 10:00AM



JANUARY 6, 2010 - 2:45PM



JANUARY 5, 2010 - 4:45PM



JANUARY 4, 2010 - 5:50PM



JANUARY 2, 2010 - 5:38PM



JANUARY 2, 2010 - 12:00AM



DECEMBER 21, 2009 - 5:40PM



DECEMBER 21, 2009 - 2:45PM

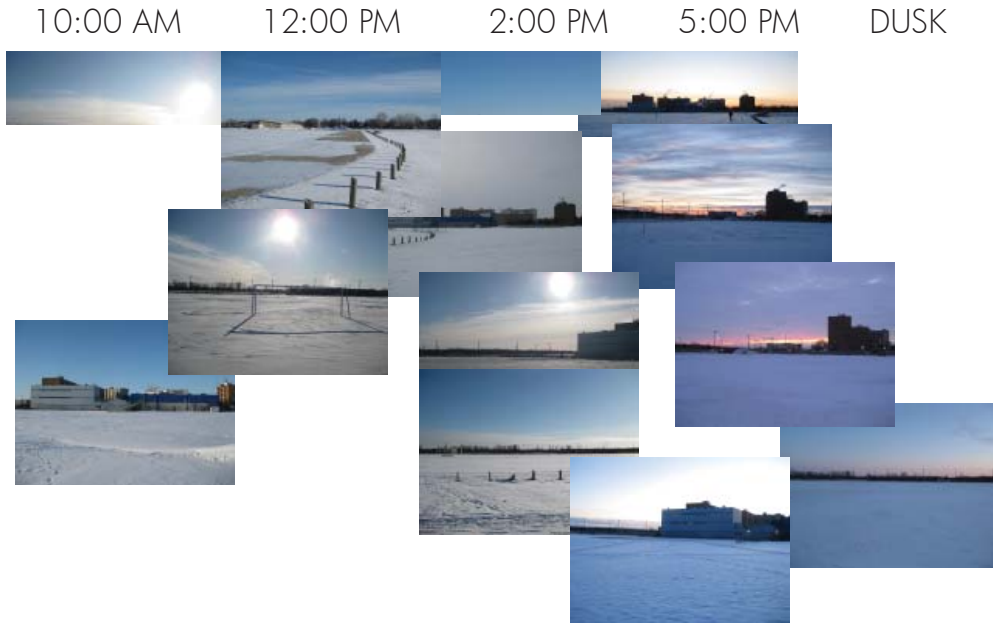


DECEMBER 20, 2009 - 11:30PM

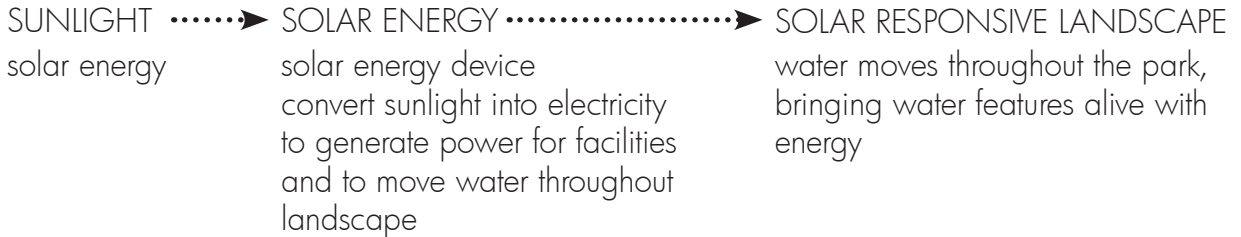


DECEMBER 15, 2009 - 2:45PM

SOLAR ORIENTATION AND ARCHITECTURE
re-energizing health with a solar responsive landscape



discover the **Colours** of nature december january 2010



- Options:
- solar glass
 - solar panelled facade



DAWN

MID-DAY

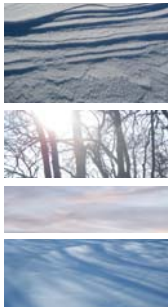
DUSK



QUALITY OF LIGHT

light inspiration

LANDSCAPE



WATER, CARDINAL DIRECTIONS AND SOLAR ORIENTATION provide the underlying structure for the landscape plan

MATERIALS



Inspired by natural light, the space comes alive during the daylight hours as solar energy controls the filtration and movement of water throughout the site. The movement of water and light is enlivened and emphasized through the use of topography and materials. Reflective stainless steel, stained aluminum and a delicately designed wind screen provide snow, wind and sun breaks, revealing a play of light and reflective water patterns. Together, solar energy and the proposed water cascade will clean storm and grey water and recycle it throughout the space generating energy, restoring the ecosystem, producing food, irrigating gardens and improving air quality.

SITE PROGRAMMING

WATER, CARDINAL DIRECTION AND SOLAR ORIENTATION provide the underlying structure for the landscape plan.



spa gardens & fitness



outdoor classrooms



forest



greenhouses



sport fields • soccer
• football



productive edible gardens



water • wetlands
• rain gardens



● Cardinal Points

 Water

CHAPTER 7

FINAL DESIGN



A NEW COMMUNITY PARK FOR WELLNESS: REVITALIZING AND HEALING THE MIND AND BODY

The final design includes eight different activity areas:

- 1) THE WATERS, YOGA RISE AND EXERCISE LAWNS
- 2) APOTHECARY GARDEN
- 3) GREENHOUSE
- 4) SPORT FIELDS - SOCCER AND FOOTBALL
- 5) COMMUNITY GARDENS AND FARMERS MARKET
- 6) PHYSIOTHERAPY GYM
- 7) OUTDOOR CLASSROOM
- 8) PAN AM FOREST

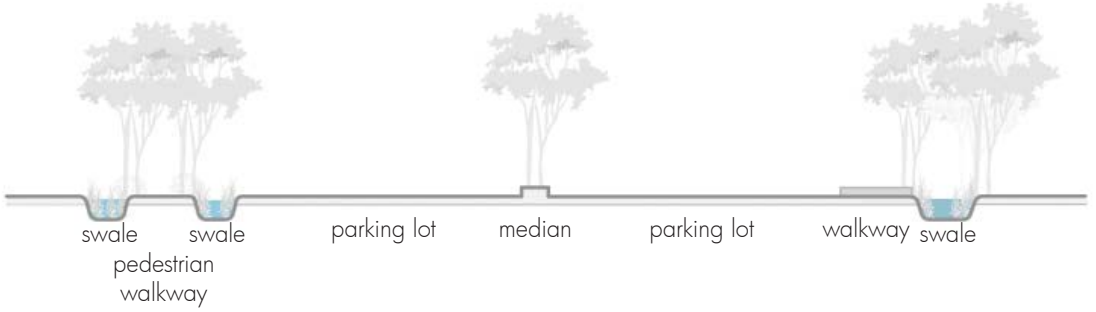
Each activity area is designed with a specific ambiance in mind, created by quality of light, selective use of materials, play of water, planting palette and topography. In general, the park can be separated into two areas, calm and animated.

The calm, quieter areas include: The Waters, Yoga Rise, Apothecary Garden and herbal exercise lawns. These areas are designed for relaxation and rest; light is made soft with lush water gardens, muted reflective materials and a gentle play of water. The animated, louder areas include: the Community Gardens, Farmers Market, Sport Fields and Physiotherapy Gym. These areas are south facing, their light is bright and energizing, with colour and water used to heighten the playfulness of their experience.

SECTION B: PARKING LOT
SCALE: 1:500



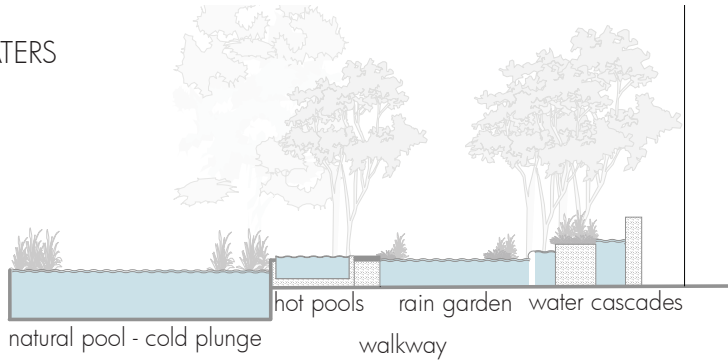
existing condition



SECTION C: THE WATERS
1:500



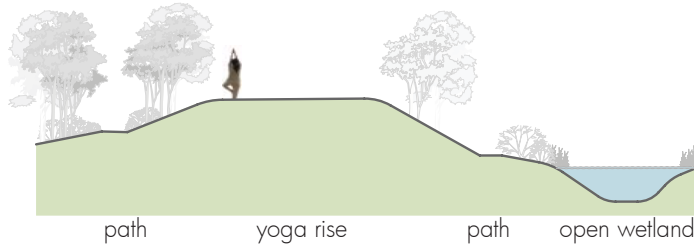
existing condition



SECTION D: YOGA RISE
1:500



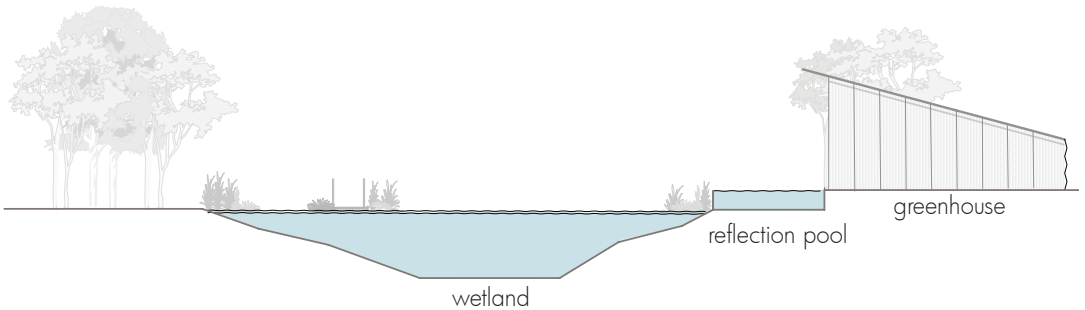
existing condition



SECTION E: GREENHOUSE
1:500



existing condition



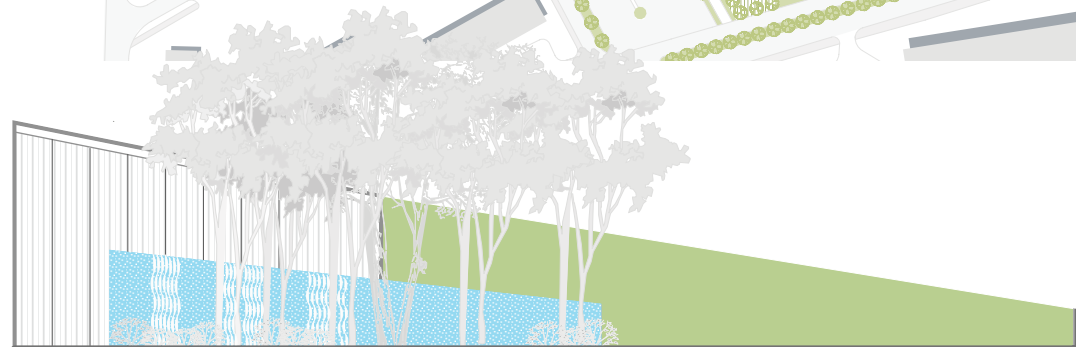
SECTIONS

sitePLAN

↑ scale 1:3200



- 1. pan am forest
- 2. the waters
- 3. exercise lawn
- 4. yoga rise
- 5. apothecary garden
- 6. physio-gym
- 7. community garden
- 8. greenhouse
- 9. tilted lawn
- 10. sport fields
- 11. outdoor classroom
- 12. parkade
- 13. farmers market area
- 14. pedestrian bridge



SECTION A: greenhouse, water wall, amphitheater lawn & soccer field

1:400

WINTER INTEREST

Topography, plants and materials create a winter park of texture, shadow and light. The design of the Greenhouse and The Waters emphasize wind and sun patterns, along with the winter texture of the wetlands, an allée of shadows in the apothecary garden and dynamic snow forms along Taylor boulevard. One or two wetlands can be used for skating, the natural pool as a place to take a cold winter plunge and the greenhouse as a warm and lush community winter retreat.



Fig. 7.1

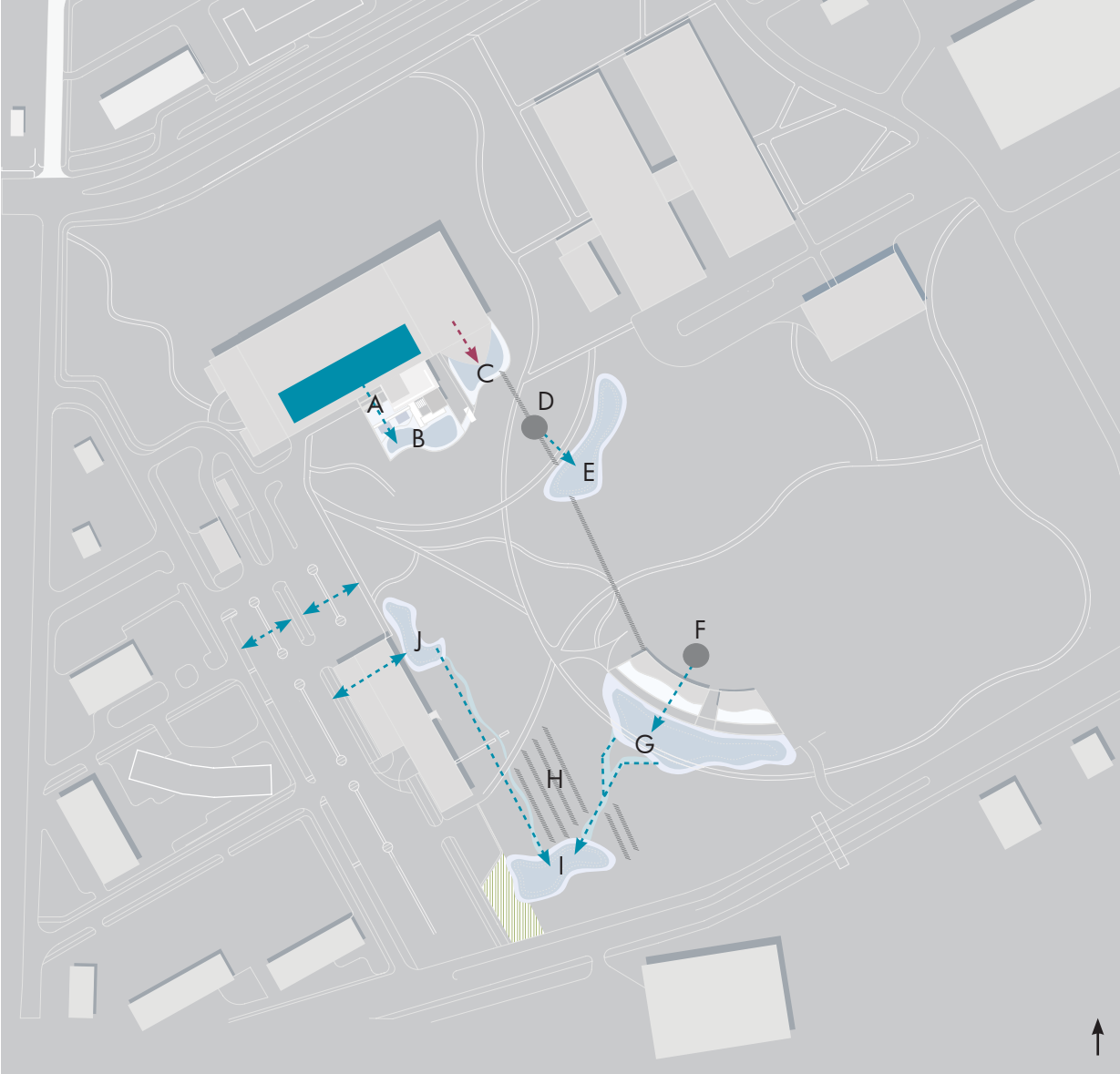
TOPOGRAPHY



The existing site is flat and open. Topography is used to provide a sound and visual barrier between the sport fields and rest of the park, to provide a wind and snow barrier on the south end of the site, and to conceal the views and sounds of traffic along Taylor boulevard. Most importantly, earthworks are used to direct views for specific times of day, i.e. sunrise and sunset. For example, the yoga rise is oriented southwest towards the sunrise and the tilted lawn is in the best location to watch the sunset.



WATER SYSTEM CONCEPT



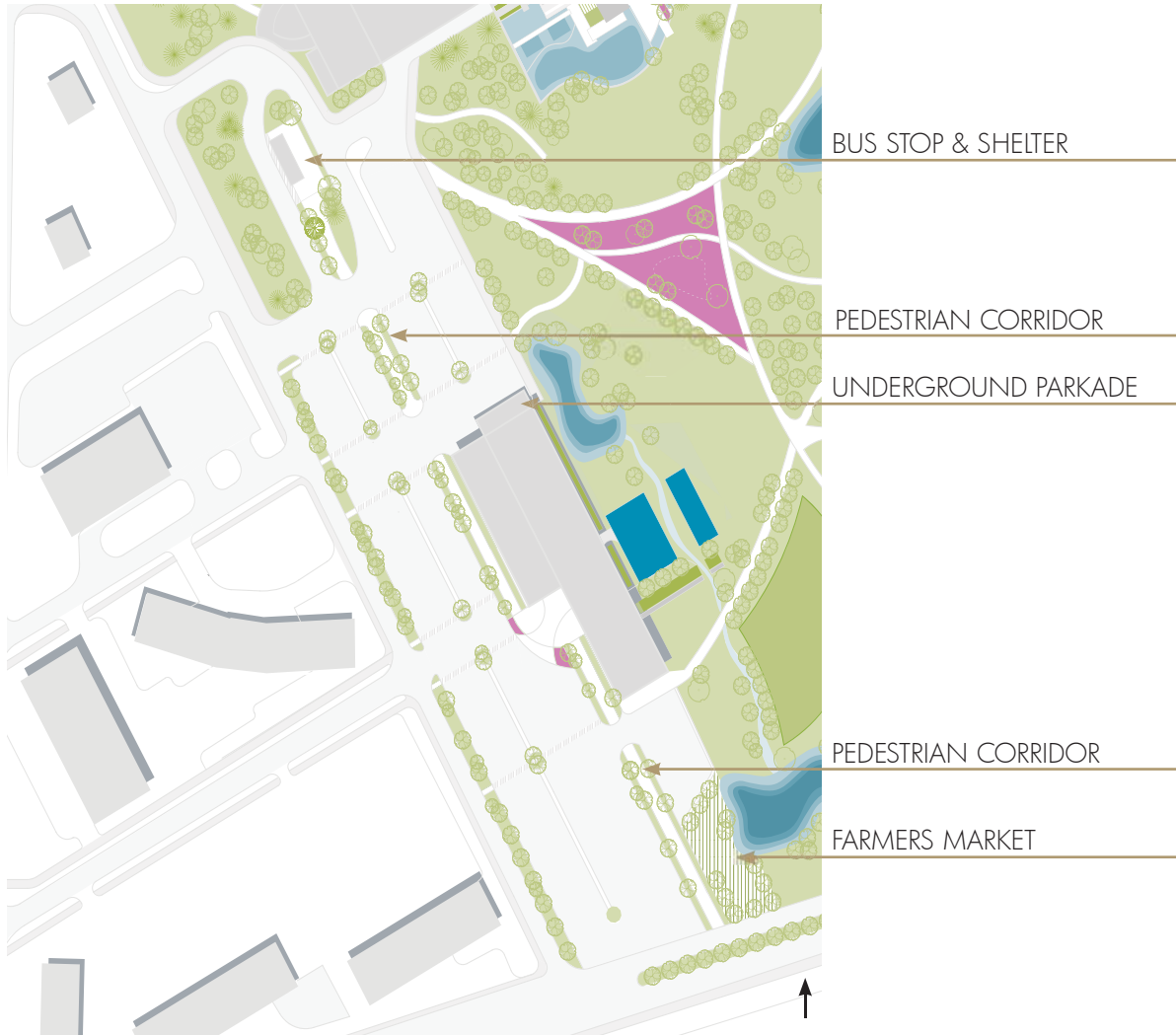
- ← Greywater
- ← Rainwater
- Irrigation
- Storage Cistern

The wetland, water gardens and streams filter the water while also serving as indicators of the passage of the seasons. The final design includes: 5 wetlands to filter and clean water, 2 water gardens to add texture, colour and seasonal interest, and 3 stream beds for community garden irrigation.

The diagram to the left shows the proposed location and direction water movement in the final design: Rain water captured on the roof of Pan Am Pool is directed down from the roof towards The Waters. Here, rain water moves down water walls into a rain garden (A), where it is filtered by an infiltration bed and water garden plants. It then flows around two large hot pools, down a waterwall and into a natural swimming pool (B). Water is then pumped into a small creek bed and moves towards a closed system wetland (C), where it connects with the facilities grey water and is filtered. Underground piping then carries the filtered water towards the Yoga Rise, where it is either stored in an underground cistern (D) for reuse at Pan Am Pool or the greenhouse, or it is delivered via underground pipes to an open wetland for further filtration and to circulate (E). In the greenhouse, a second underground cistern is located under the tilted lawn (F). Water stored in the cistern is used for indoor irrigation in the greenhouse and as winter heat source. At the front of the greenhouse, a reflection pool and third wetland (open system) stores excess water (G). In summer, water from the greenhouse wetland is pumped into streams and is delivered to the Community Gardens for irrigation (H). At the Pan Am Clinic, rain water captured on the roof is filtered by a vertical forest system on the east side of the building and is directed into a small wetland where it is further filtered with grey water from the building (I). On the lowest spot on site, in the south-west corner the fifth wetland will serve as an overflow area as existing city infrastructure can be used to drain excess water into the city sewer system.

PARKING LOT

The existing parking lot is open and unsafe, without clear connections between buildings. The proposed parking lot includes pedestrian pathways planted for wind and sun protection and is flanked with swales that filter water runoff. The bus stop, Pan Am Clinic and the proposed farmer’s market are connected by a safe, linear pedestrian corridor. An underground parkade at the clinic has been added for practitioners and staff.

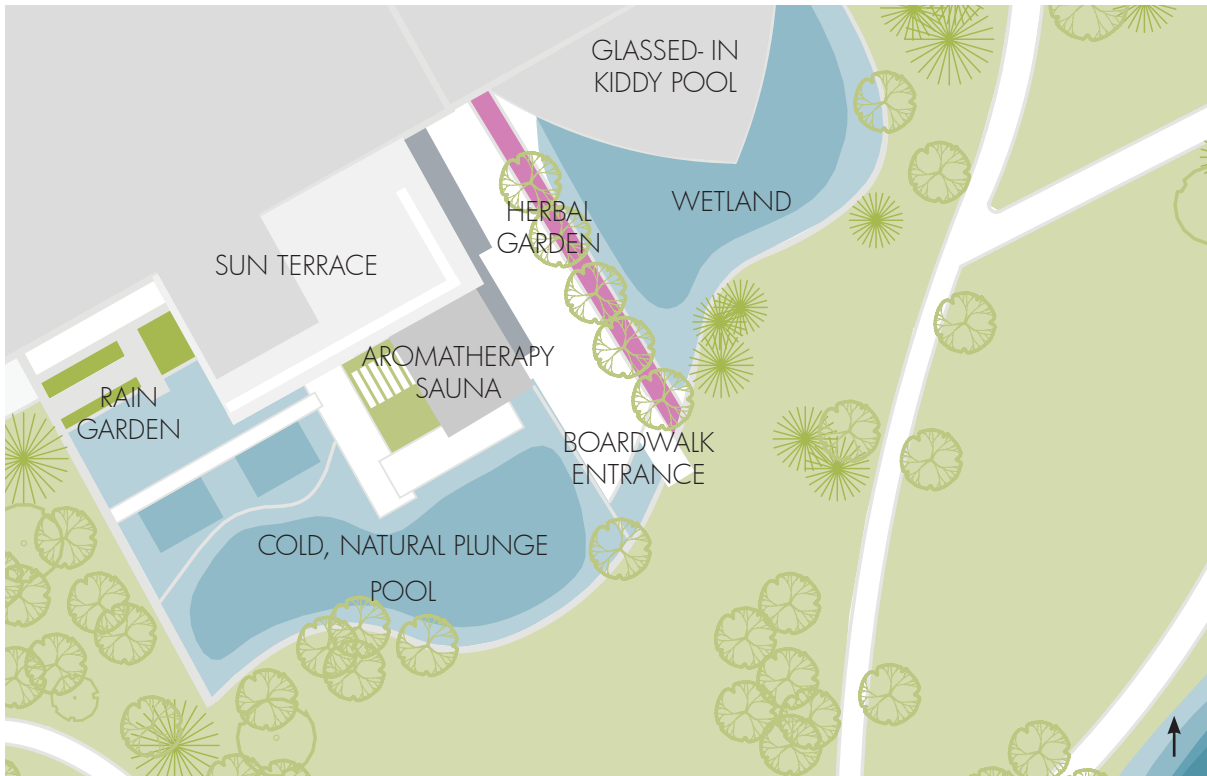


Detailed Plan NTS



THE WATERS

Much like a Roman *thermea*, the heart of the design is 'The Waters'. Accessed by two existing side entrances, the space includes: cascading water walls, a rain garden, a natural swimming pool for cold plunges, solar/geothermal hot pools, a herbal garden and a aromatherapy sauna, a wetland and stream. Lush and aromatic, the planting palette includes a variety of colourful water loving plants such as water lillies, iris's and hostas. Reflective materials such as stainless steel, glass and polished cement are used to enhance the play of water and light.



Detailed Plan NTS



Multifunction:

The movement and play minimizes noise from the surrounding park to create a calm and reflective place.

CALM REFLECTIVE LUSH

SUN TERRACE
HOT POOLS
AROMATHERAPY SAUNA
WATER GARDEN
NATURAL POOL AND WATER FEATURE
HEATED CEMENT



The Waters



Winter Wetland
View from existing indoor
kiddy pool

YOGA RISE

Located to the east of The Waters is the Yoga Rise. Orientated south-east, the Rise is a spot for morning exercises, with elevated views over a wetland and toward the sunrise. The surrounding paths provide a place to rest and relax along the wetland after stretches, or while watching a football game later in the day. The Yoga Rise is also multi-functional as it serves as a sound and visual barrier between the sport field (football field), outdoor classroom, exercise lawn and The Waters. It also conceals an underground water cistern.



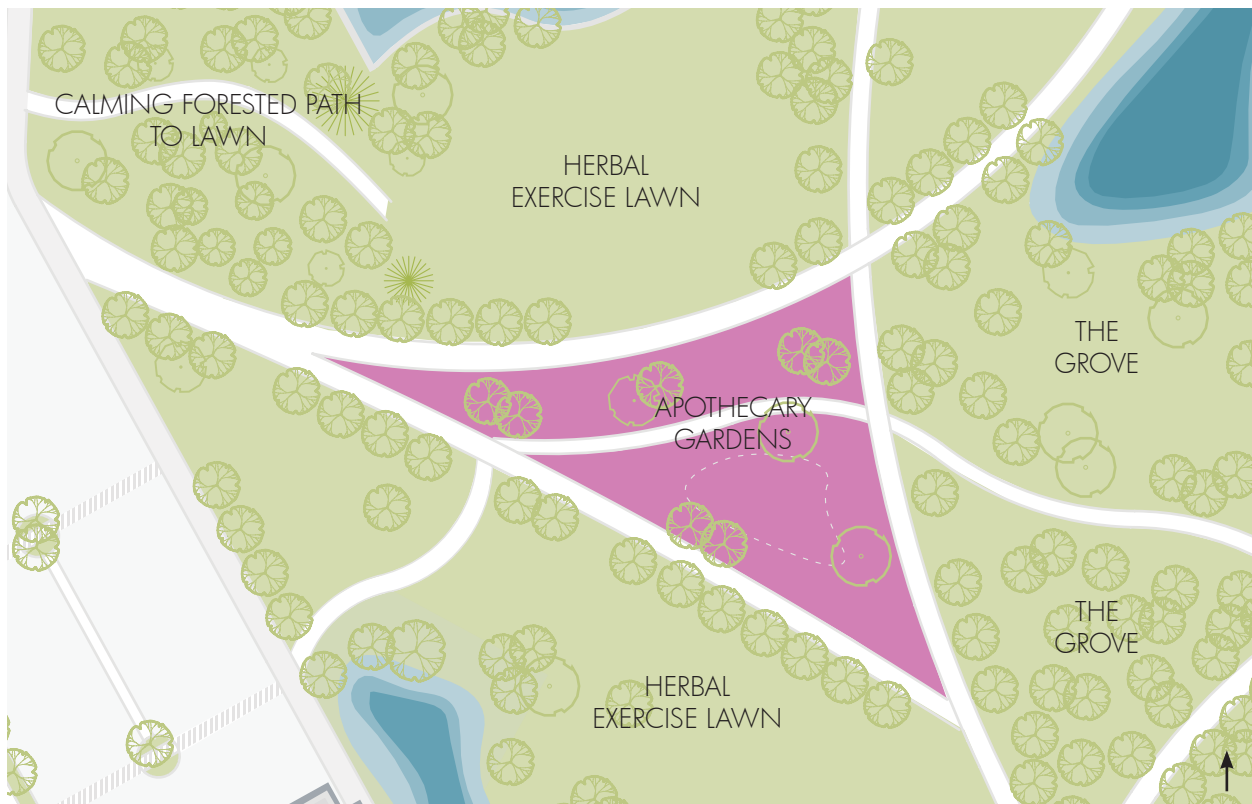
Morning Exercises



Detailed Plan NTS

APOTHECARY GARDEN

Just south of The Waters and exercise lawns is the Apothecary Garden. Centrally located near the entrance, the garden is intended to relax visitors as they enter into the park with its scents and colours. A refreshing and energizing space for visitors to view while in the exercise lawns, it also serves as an attractive median separating the calm and animated activity areas. Promoting herbal medicine, the garden offers hints on using plant material as natural health remedies.



Detailed Plan NTS



Multifunction:

The gardens location aims to calm the visitor as they enter into the park. It also provides a colourful and attractive median between the animated and calm areas.

SCENT & COLOUR TO EDUCATE AND INSPIRE

INDIGENOUS HERBS
INFORMATIVE TRAIL MARKERS
SHADED REST AREAS
SCENT AND COLOURS



fountains



coneflower



lavender



sweet grass



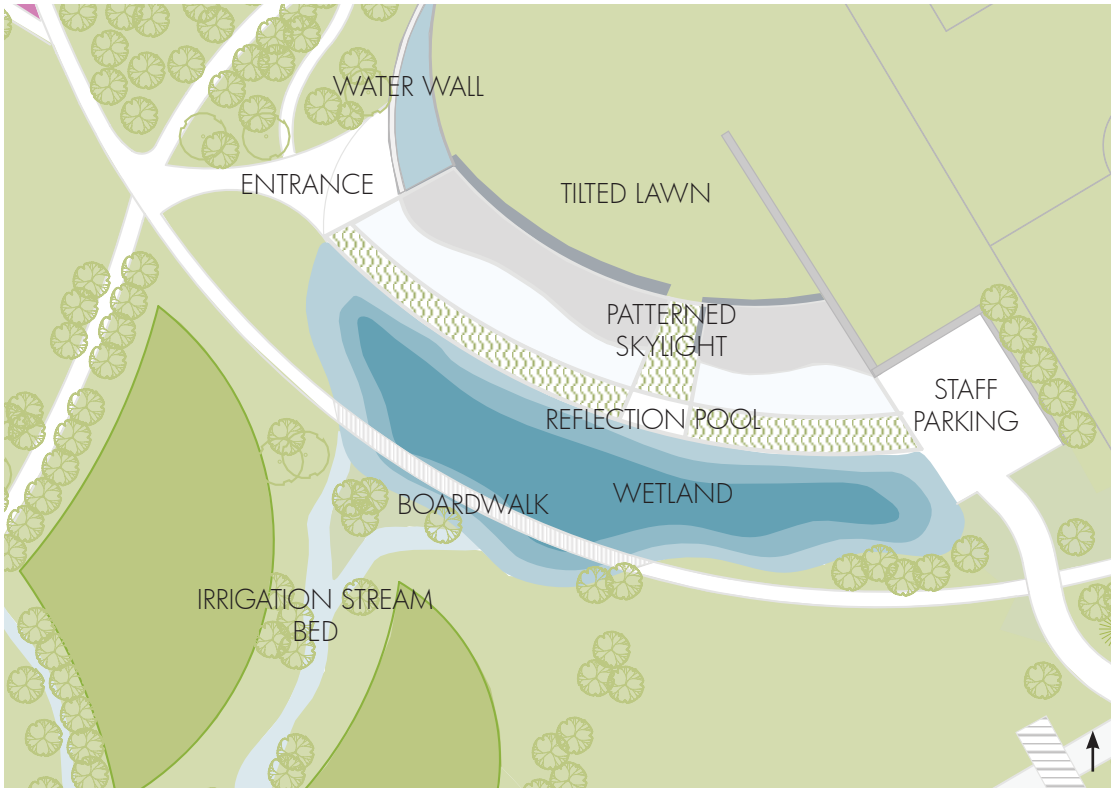
Exercise Lawn



Path along herbal garden
towards the greenhouse

GREENHOUSE

Situated in the south-west corner of the site, its orientation maximizes solar gain. Half building and half landscape, its design serves as a heat sink for solar energy. Views are directed across a reflection pool, wetland and toward the community gardens. A tilted lawn allows elevated views for sport fans and is the best spot on site to watch the sunset after a game!



Detailed Plan NTS



Multifunction:

A water wall and planted grove create a sound barrier to the sport fields. Small bubbling jets come alive in early evening to create a restful entry into the greenhouse. The tilted lawn is a perfect spot to watch the sunset.

WINTER RETREAT
WETLAND
REFLECTIVE LIGHT
VIEWS OF SUNSET
AMPHITHEATER LAWN



moving



bubbling



reflective



reflective skylight patterns



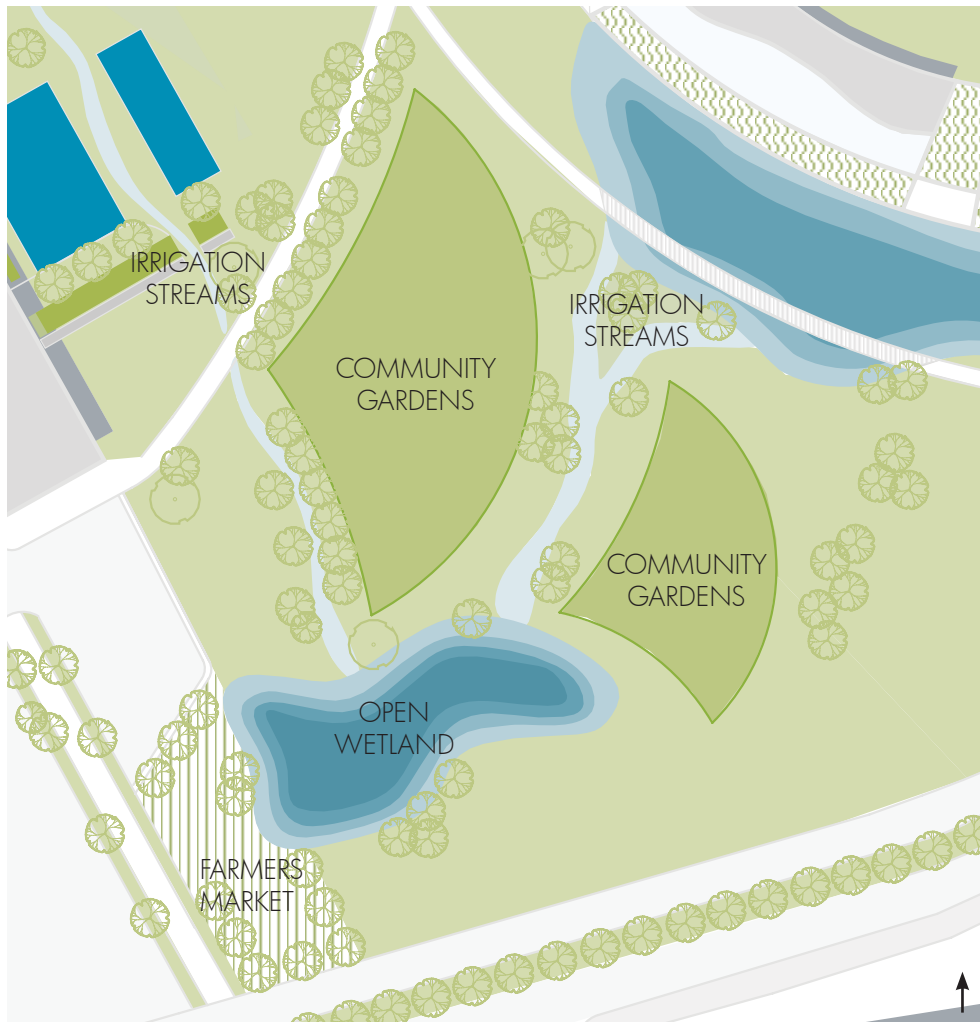
View of sunset from tilted lawn



Soccer field and view of tilted lawn on greenhouse

COMMUNITY GARDENS & FARMERS MARKET

Located in the south-west corner of the site along Taylor boulevard, the Community Gardens and Farmers Market provides a communal space to grow and sell local, fresh, fortifying food. Responding to solar energy, the stream beds in the gardens come alive with water when irrigation is needed. Encouraging all ages to participate in gardening for therapeutic benefits and for a sense self-reliance, the space is most importantly a place to connect with friends and community.



Detailed Plan NTS



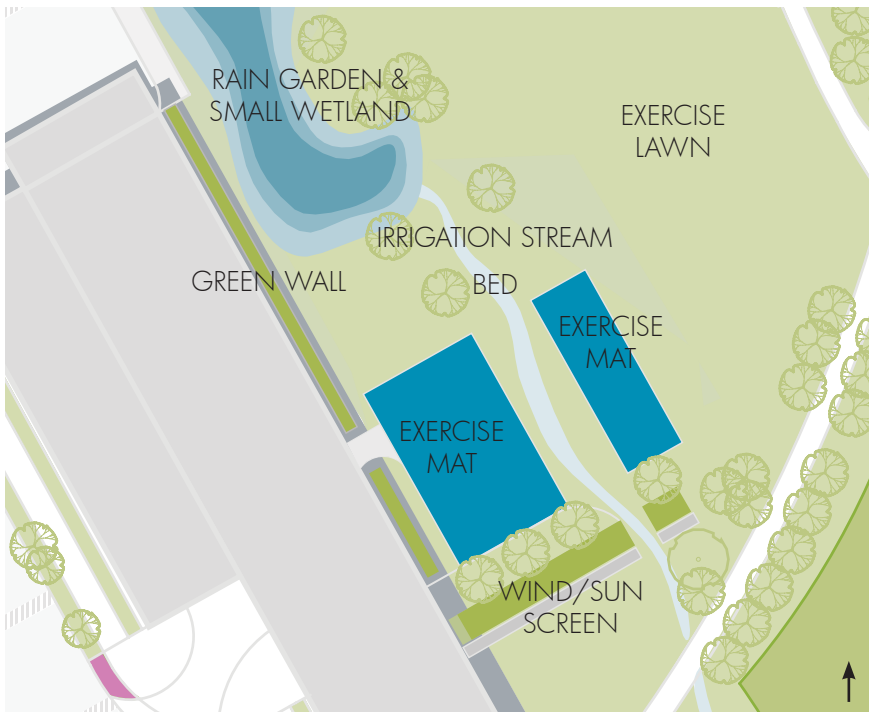
Irrigation stream



Community gardens and wetland

PHYSIO-GYM

A space for sport injury rehabilitation and strength training the physio-gym's functional design allows practitioners and staff the opportunity to work with their clients outside in fresh air. Separated by a soothing creek that comes alive when irrigation is needed, two large zones are marked for exercise, each with a recycled rubber surface to ensure safety while exercising. A green wall minimizes the height and reflection of the building, while also filtering water from the roof as it descends towards the rain garden. On the south end of the site, a reflective, patterned sun screen creates a changing play of light within the space while also serving as a wind screen, and a visual barrier from the busy community gardens and farmers market.



Detailed Plan NTS



Multifunction:

The stream cools the space and provides irrigation for the exercise lawn and community gardens.

FUNCTIONAL

ARCHITECTURAL MESH SHADING SYSTEM
BUILDING AFFORESTATION SYSTEM
RECYCLED RUBBER PAVING SURFACE
WETLAND AND WATER GARDEN



stream



forested wall system



Physiotherapy Gym

CHAPTER 8

BUILDING HEALTHY COMMUNITY PARKS FOR THE FUTURE



The future of public health has a lot to do with its delivery and promotion to the general public. As architects we are trained to research and question design so that we ultimately create and build better environments. As our lifestyle is rapidly changing with technology we have to make sure to respond to it. Why are we faced with an obesity epidemic? Why are we continually eating more and exercising less? These may be simple questions, but there are no simple answers. However, as architects, we can't just super-size our design to fit the next generation! Understanding the qualities of a therapeutic space, the desired therapies and treatments at contemporary wellness facilities, and the healing benefits of natural phenomenon provide inspiration and guidance for future designs. Health is no longer about disease or death, it is now about wellness, which includes getting outside for daily activity, having access to and eating fresh food and finding mental, physical and psychological balance.

A New Park for Community Wellness: Revitalizing and Healing the Mind and Body presents a new vision for parks - a community destination designed to emphasize natural phenomena as a way to reconnect to landscape, time and place. Drawing on contemporary wellness experiences, those paid experiences sought after at wellness centres, the community park promotes a healthy lifestyle. It provides indoor/outdoor fitness areas, community gardens, a four season greenhouse, a community farmers market, an educational apothecary garden and natural healing waters. The importance of landscape for human health and potential, for quality water, fresh nutritious foods, medicine, healing, preserving natural areas and the quality of place is realized.



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