

**A Place for Healing:  
Architecture as Intermediary Between  
Nature and the Healing Child**

by

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Submitted in partial fulfilment of the requirements  
for the degree of Master of Architecture

at

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**DALHOUSIE UNIVERSITY**  
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## ABSTRACT

This thesis investigates the difficult reality of children faced with illness, necessitating prolonged hospitalization. It takes a critical position with regard to the current approach to health care in Canada within the institution of the hospital.

Through an exploration of environmental and experiential factors of proven importance to the child's healing process, this thesis seeks to understand the role of architecture in healing. It does not presume that architecture alone has the power to heal, nor does it propose a *tabula rasa* approach; instead it seeks to explore the possibility of offering a complement to the current health care system, through the exploration of the potential positive physical and psychological impact of place in the healing process.

Using Halifax, Nova Scotia, Canada and the IWK Children's Hospital as a context for investigation, this thesis explores the design of a satellite healthcare building situated in Point Pleasant Park (Halifax), where uninterrupted medical treatment is to be offered, supported by a home-like setting and constant contact with nature.

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## CHAPTER 1: INTRODUCTION

### 1.1 THESIS QUESTION

How might architecture support a discourse between nature and the child to facilitate healing?

Those who have faced illness know just how difficult a long stay in the hospital can be. It is true that medical science is capable of amazing feats, and that the hospital does provide a functional environment equipped to assist in targeting and defeating illness. However, human beings are complex and highly responsive to their environments. This sensitivity is particularly acute in the mind and body of a child.

It is established that stress inhibits healing. It is also generally recognized that most modern hospital environments are stress-inducing. Hence we face a contradiction, embodied in the failure of health care institutions to recognize the potential positive impact of the built and natural environments in support to healing.

While appreciating the strengths of medical science, this thesis seeks a means by which architecture can integrate complementary environmental and experiential healing factors into the healthcare system. This thesis proposes a collaborative relationship between the IWK Children's Hospital in Halifax, Nova Scotia, and a satellite building located at the west end of Point Pleasant Park in the city's south end. This scheme would enable hospitalized children to spend intervals of time in a retreat from the hospital where they could continue their treatment while benefiting

from constant contact with nature. This new building would provide health care in a more home-like than institutional environment, and would be set in nature while remaining in close proximity to the IWK. The choice of the site, as well as the architecture of the place are meant to address the entirety of the being, providing a support for healing.

## 1.2 CRITICAL POSITION: PLACES OF HEALTH CARE

Hospitalization is problematic in the polar duality of its effects. The hospital is an engine for healing, structured to offer specialized care-giving, with the potential to save lives. Medical science continues to make extraordinary advances, surpassing expectations and defeating illness with increasing success. Interestingly, this is just the problem: the hospital targets illness; the human being is reduced to the role of patient and illness becomes the focus. As is suggested by John Knesl in *Architecture and Body*, "... medicine tends to reduce the body to mere practical functions..." (Marble 1988, 66). Despite the extraordinary efforts of some individual health care practitioners to exceed the status quo, the design and function of large institutional hospitals are such that they fail to successfully attend to the human needs of the patients beyond the aim to do away with the targeted illness. Indeed, our hospitals are in most cases organized with practical concerns in mind and are geared toward a goal-oriented idea of efficiency. Of course, considerations such as efficient circulation and ease of maintenance of sanitary premises are certainly of utmost importance in the functioning of the hospital. However, it is an error to consider these needs in isolation. The result is an environment which is undeniably cold, unwel-

coming and impersonal. "It is ironical that the very places where people could most do without stress seem to be calculated in their operational and sensory aspects to most induce it" (Prasad 2008, 5). People are complex, and respond to rigid institutional environments by exhibiting physical symptoms of stress. These symptoms are noticeable to the naked eye, but also at the microscopic scale. Stress, it is known, causes our bodies to produce endocrine and neural responses, which directly inhibit our immune system (Gerlach-Spriggs, Kauffman and Warner 1998, 38). There is physical and medical evidence to support the importance of the role the environment in the healing process. Indeed, this evidence suggests the great potential healing benefits of nature and architecture. This knowledge puts into question the currently accepted notion of the practical efficiency of our hospitals. Patients would be more likely to recover, and to do so more rapidly, in an adequate environment which would take into consideration the being as a whole. The adoption of this attitude in the design of the hospital would indeed render the hospital more efficient.

In removing the sick child from the home, displacement in itself, unavoidable though it may be, is a cause of stress. The uninviting environment of the hospital combines with fear to add further discomfort and anguish. Too often, the architecture of hospitals heightens the child's awareness of being unwell and gives a central position to the child's fear of pain and fear of death. As an aid to healing, the very opposite psychological impact is desirable. The focus should be on life. "For human life, even at its most precarious, seeks play and well-being, and never merely survival" (Pérez-Gómez 2006, 3).

In the healing process, the child needs to be enabled to engage fully in life as much as is physically possible. Despite the illness, the child continues to be a complete, complex being. To repress any part of the self in the name of illness would have a destructive effect on life, and would hinder healing. Engaging the curiosity and the imagination of the child is the key. A stimulated mind will strongly desire the healing of the body in order to participate more fully in the excitement and beauty of life.

### 1.3 CONTEXT FOR THE PROPOSED PROJECT (HALIFAX AND THE IWK)



Approach to the IWK Children's Hospital, Halifax, NS.



Entry to the IWK Children's Hospital, Halifax, NS.

Given its location on University Street, in downtown Halifax, the IWK is unable to provide its patients with much contact with nature, if any at all. Although an effort was made in the design to allow sunlight into the atrium, patients are unlikely to benefit from this maneuver, as they cannot regularly access or comfortably inhabit this space. Though there are windows in patient rooms, these do not open, and nature cannot be seen from them (with the exception of some trees on the side of the road seen from many stories above). Access to the outdoors is extremely rare: reliant on family visits or volunteers, and limited to small areas adjacent to busy roads and parking, with hardly any vegetation at all. There is one outdoor play space with a little cabin but the pipes are not insulated so it is not used at all in the winter. This space is tucked between the main entry and the emergency entry, and is immediately adjacent to a multi-level open parking garage and to the road. Given the location of the hospital, it is wonderful that this space exists at all. It demonstrates that there is a



Play Garden at the IWK Children's Hospital, Halifax, NS.



Play Garden at the IWK Children's Hospital, Halifax, NS.



Play room at the IWK Children's Hospital, Halifax, NS, from ChildLife.



Play room at the IWK Children's Hospital, Halifax, NS, from ChildLife.

newly introduced appreciation of the importance of nature in the healing process. As is often the case in these large institutional hospitals, the introduction of nature is difficult as it comes as an afterthought and space is limited.

Young patients who are admitted for prolonged stays at the IWK are typically on the 6th and 7th floors, and have either had major surgery or are in the oncology and hematology departments. These floors have playrooms for the children, with toys, games and art supplies, but no ready access to the outdoor environment.

I volunteer at the IWK Children's Hospital as an art instructor with Child Life. The children there benefit immensely from the Child Life program, which provides them with a space away from their hospital room where they can play and engage in some activities. An ideal context for healing would not only provide small samples of play and normalcy upon occasional short visits to the play room, but would introduce healing to an environment that promotes the natural, normal, playful life of a child.

There is a large window in each of these playrooms but the view is vertiginous. I believe that this atypical, and likely foreign, relation to the world from far above is discomforting to the ill child. Besides, in this urban setting, and from this viewpoint, hardly any relation to nature is possible.

Even if a playful observation of the scaled-down world out the window takes place, the situation is not ideal. Closeness to nature would prove far more advantageous as it would enable meditative observation (described in 4.1), but also pull the child in as a participant. An immediate visual



Patient room at the IWK Children's Hospital, Halifax, NS.



View from a patient room at the IWK Children's Hospital, Halifax, NS.



Patient room at the IWK Children's Hospital, Halifax, NS.

and physical connection to nature at a (1:1) personal scale, would offer optimal healing benefits.

Recent renovation efforts have been made at the IWK and result in a very clean, functional environment. Predictably, the materiality of the IWK Children's Hospital is cold, unfamiliar and uninviting. Rooms are private and rather spacious but impersonal, aligned along a corridor and supervised by a nursing station immersed in fluorescent light. The medical personnel may be lovely and the children may get used to the settings over time but the initial fear, anxiety and discomfort remain. In these surroundings, the child is perpetually reminded of his or her role as patient, and of the fearful presence of illness. The hindering effects of such stress to the healing process should not be underestimated.

Given the absence of nature at the site of the hospital, the IWK would greatly benefit from the addition of a satellite building located in a nearby natural setting. This would offer the possibility for young patients to take a retreat from the hospital, and to find themselves in a home-like setting. The building would function as a part of the hospital, offering an uninterrupted continuation of the healthcare treatment to children. The targeted group for the purpose of this thesis is that of children hospitalized for long periods of time. Many of the children hospitalized in oncology and hematology face hospital stays of many months. There are times when these children need the highly specialized equipment available at the hospital for their treatment, or must remain in the hospital because complications and emergencies could occur as a result of intensive treatment



Virtual doctor used for remote patient visits at the IWK Children's Hospital, Halifax, NS.

or unstable conditions; however, this may not be the case for the entirety of their hospital stay. Indeed, it is often the case that these children require medical supervision and care without necessarily needing to be in the hospital per se. A child may be deemed stable enough to continue treatment for an interval of time outside of the hospital. During more stable times and between periods of intensive treatment, these children may benefit greatly from a specialized assisted living situation available at a satellite site. This would enable the healing child to enjoy simply being a child, replacing fear with hope, and would by consequence increase the chance and speed of recovery.

By interrupting long hospital stays with these nature retreats, the necessary time spent in the hospital promises to be more bearable for the child. This potentially puts an end to long hospital stays; instead, children would receive health care at the satellite building and return periodically to the hospital for short stays. These returns to the hospital could be made easier by the knowledge that they would be followed shortly by a return to the satellite building, or better yet, eventually a return home.

#### 1.4 EVERGREEN HOME, KENTVILLE, NS

The Evergreen home in Kentville, NS is the nearest in terms of programmatic requirements to a precedent, in Nova Scotia. It is a residence for the long-term care of children suffering from chronic illness. These children need assisted living without needing to stay in the hospital. This establishment functions independently from the hospital. I was allowed to visit and my questions were answered but I was not allowed to take photographs. Upon visiting, I

found that in the model of the hospital, the physical needs of patients associated with their illness were attended to. However, much room for improvement remains in terms of caring for the entire being. Although an outdoor area is available to them, the children are very seldom taken outside. Only those who are well enough to be taken to school receive an education. Though the building is rather small, accommodating 20 children, materiality of the place is, again in the model of the hospital, cold, unfamiliar and institutional. Low ceilings and corridors give a sense of suffocating enclosure to the core of the building. Thankfully, windows in bedrooms and the dining room provide light and a bit of relief from this. The patients I met only talked about their strong desire to leave and visit their homes on the weekend.



## CHAPTER 2: LITERATURE REVIEW

### 2.1 HISTORICAL CONTEXT (NATURE AND THE HOSPITAL)

From the beginning of time, people have held places for the care of the sick and the dying. Approaches to healing have varied tremendously through time and from culture to culture. The following overview aims to denote the role of nature and architecture in places of healing through time. Over the course of history, the understanding and attitude toward the body, illness, and also nature have undergone numerous changes. These attitudes were manifest in the architecture of hospitals and reflected in the outcomes in terms of healing.

In the West, the intellectual school of Hippocrates revolutionized medicine in Ancient Greece. Hippocrates argued that the rationalist physician must possess a strong understanding of the influence of environmental determinants upon human health. He insisted upon the necessity for the physician to take into consideration the effects of the seasons, the effects of the warm and cold winds specific to each locality, the effects of water dependent on its source and properties, and the effects of the typology of the soil. Based on these criteria, he proposed that some places were most desirable as their components were favorable to promoting and sustaining health. Thus, a notion which had long been established in the East - that of a natural place of healing - emerged in the West. As exemplified in the Asclepia in Athena and at Pergamon, emphasis was placed on a connection with nature and the outdoors. Exercise, respite, water, vegetation, sunlight, improvements in

nutrition, and immersion in landscape were understood as necessary means by which to support healing. Asclepia (places of health-care named after Asclepius, God of Healing and son of Apollo) were built on the lower slope of Ancient Greek cities, nearest the water source. Fresh water was typically supplied by a natural spring and wastewater from the latrines was discarded off-site.



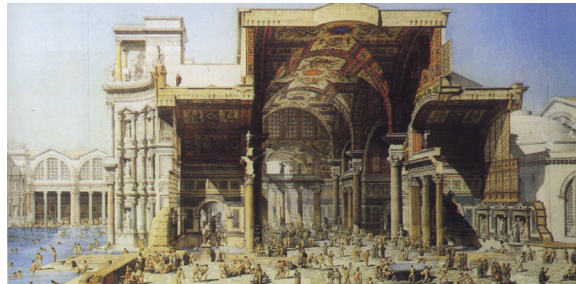
The Temple of Asclepius at Epidauros, 5th century BC, from Verderber, *Innovations in Hospital Architecture*

At Athens, patient beds were arranged along the inner wall of a long hall open on the south side to promote exposure to natural sunlight and to permit natural ventilation. The asclepieae at Pergamon were equipped with sophisticated bathing facilities, including large tubs, mud baths and a subflooring heating system. Here, a courtyard was featured around which treatment halls were arranged, as was a circular terrace taking full advantage of southern exposure. The natural environment became central to health care in Ancient Greece.

In the Roman Empire, a growing acceptance of surgery was grafted to the Greek model. In 162 AD the writing of Galen (influenced by Plato, Aristotle, the Stoics and Hippocrates) formed the foundation of contemporary medical philosophy. “The successful physician had to master the natural sciences in order to understand human physiology, anatomy, and pathology. He had to be versed in logic, able to analyze proofs, and to avoid fallacies, and be well trained in ethics” (Verderber 2010, 13).

Vitruvius, in his books on architecture, emphasized local climate and geographic position as determining factors in design, influencing building size, roof form, overall composition, choice of materials, and fenestration. In addition to this, Vitruvius addressed the notion of environmental influence on human health when he discussed the therapeutic benefits of favorable winds, and the threat of disease brought by unfavorable winds.

The Romans also instated the first military hospital - the *valetudinarium* - whose goal was to repair and return wounded soldiers to the battlefield as rapidly as possible. In these facilities, a clerestory ran the full length of a double-loaded corridor to provide ventilation to the in-patient rooms. In addition to this ventilation system, each room featured a window, providing patients with sunlight and fresh air.

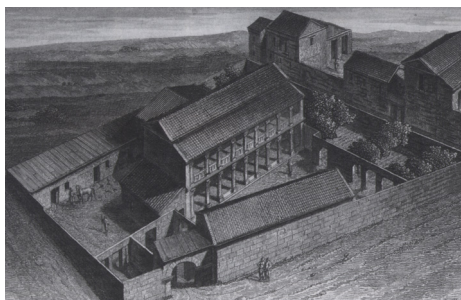


Baths of Diocletian, Rome, constructed AD 298-306, from Verderber, *Innovations in Hospital Architecture*

The construction of an elaborate aqueduct system and the invention of indoor plumbing attest to the advanced sanitary systems of the Roman Empire. The Roman Bath (*balnea* or *thermae*) represents an important innovation in architecture for public health. Intricate heat and ventilation systems were used in the baths, as well as water heating

and cooling systems combined with innovative plumbing systems. These large-scale complexes occupied a central role in Roman cities; all citizens used the baths as places of personal hygiene, spiritual worship, social interaction, health and wellness.

After the fall of the Roman Empire, the Catholic Church filled the void in European healthcare through the Medieval era. For nearly one thousand years, from the 3rd through the late 14th century, religious-based care dominated. The Seven Works of Mercy overtook any of the previously formulated healthcare knowledge, and bloodletting was relied upon for the treatment of nearly everything. During this time, the use of nature and the understanding of its benefits in health-care vanished in the West. Indeed, natural ventilation and daylight were of minimal importance in monastic wards.



Medieval monastic complex, from Verderber, *Innovations in Hospital Architecture*

In feudal European cities, social misfits, undesirables, the disfigured, the disabled, and the infirm were cast away into these wards along with the ill. Fortifications were built to isolate monastic medical centers. Emphasis was on faith as a means of salvation and redemption and it seems effective recovery was unlikely in such nightmarish places. In contrast to Medieval European facilities, hospitals of this

time in the Middle East and Asia appear to have been well advanced. In fact the earliest known formal hospital, which later had a profound impact on western hospitals, were in Iraq, Iran, Egypt and Turkey. In China, healing took place in the home, in a multigenerational context, and family members were the caregivers. In Islamic medieval hospitals, visual connection between the indoor and the outdoor realms was of high priority: wards opened onto a central courtyard featuring water, a comforting and precious therapeutic amenity in desert settings.



Filippo Brunelleschi's Foundling Hospital, 1419-45, from Prasad, *Changing Hospital Architecture*

In the Renaissance, humanism gave man and the human body a central position, allowing scientifically based medical education and practice to blossom. Hippocratic traditions were rediscovered and the therapeutic, healing role of nature was celebrated once again. Philanthropists attached increasing importance to the building of hospitals, which were made to resemble palaces of the period, with multiple large courtyards. Over time, however, the expanding footprints of urban hospitals reduced the possibility for nature to occupy its originally intended goal, and a decrease in sanitation ensued from the growing density of the urban settings.

In 1852, on February 14th, Dr Charles West, a physician at the Royal Universal Dispensary opened his hospital for children in an ordinary house stating that: "The hospitals in London are inadequate to afford accommodation for sick children." Until then, children were hospitalized in wards where female patients were expected to compensate for the insufficient number of nurses. Dr West's hospital grew from its beginnings with 10 beds to 30 beds in the first

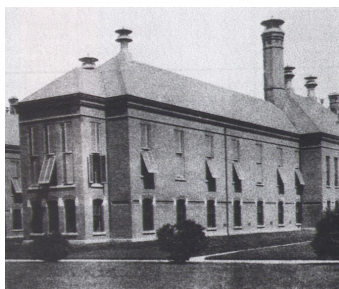
year. It set the precedent for increasingly specialized care for children over the course of the following century (Duncum 1963, 11).



Inpatient ward, St Thomas' Hospital, London, 1966, from Verderber, *Innovations in Hospital Architecture*

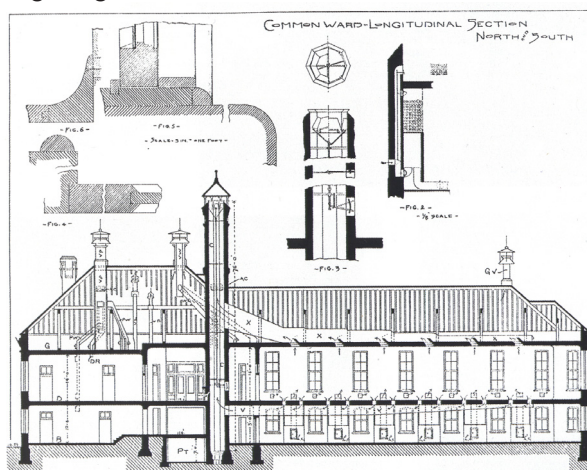


Patients convalescing outdoors, St Thomas' Hospital, London, from Verderber, *Innovations in Hospital Architecture*



John Hopkins Hospital, 1877-1885, Baltimore, from Verderber, *Innovations in Hospital Architecture*

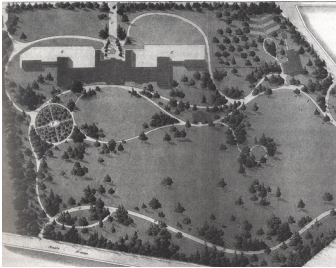
Florence Nightingale was an English nurse sent to the Crimean war in Turkey in 1855. She discovered and denounced unacceptable conditions in military medical installations and the resulting unacceptably high mortality rate. With a team of 38 nurses, she transformed a deplorable facility at Scutari and was praised for her achievements. Based on Florence Nightingale's recommendations, a new type of prefabricated military medical installation was established by engineer Isambard Kingdom Brunel and named the Nightingale Ward. In her writings, Florence Nightingale stated the 5 essential points in securing a sustainable, health-promoting environment: pure air, pure water, efficient drainage, cleanliness, and natural daylight. Fresh air circulating within a bright, cheerful open ward, which was not to be overpopulated, along with a terrace or screened porch providing an opportunity for patients to go outdoors, are among the key innovations brought by Nightingale.



Section showing ventilation, John Hopkins Hospital, 1877-1885, Baltimore, from Verderber, *Innovations in Hospital Architecture*

In addition to the influence upon military wards, Florence Nightingale's work highly influenced European hospital design from 1860 to WWII. St Thomas' hospital in London (built in 1868-1872) features ventilated wards, brightened with sunlight and offering an outdoor convalescing terrace along the Thames River. Germ theory and the importance of disinfection heightened the urgency of the need to eliminate stale air from the hospital environment. The design of a sophisticated ventilation system became central in the design of John Hopkins hospital in Baltimore (built in 1877-1885) (Verderber 2010, 20).

In the United States, the work of Dr. Kirkbride (1809-1885) widely influenced the design of asylum hospitals. Here again, the emphasis was on providing spaces with good ventilation, daylight, windows allowing a visual connection to nature and also the possibility for patients to spend time outdoors.



Landscape plan by Frederick Law Olmstead for the Hartford Retreat, Connecticut, 1860, from Verderber, *Innovations in Hospital Architecture*

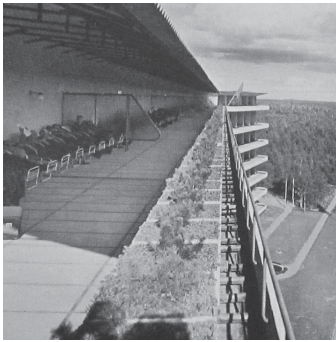


Sweet Springs, Missouri, modeled after *Aquae Sulis in Bath*, from Verderber, *Innovations in Hospital Architecture*

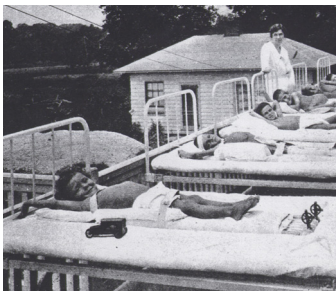
By the late 19th century, the therapeutic benefits of nature became widely understood and appreciated. In parallel, however, industrialized American cities grew and became increasingly polluted. This gave rise to the American spa movement, based on the European precedents of mineral spring spa retreats, which had begun in the late 16th and early 17th centuries. Spa retreats, both European and American, were based on the therapeutic use of mineral spring water for drinking and bathing and the healing attributes of immersion in natural surroundings. Stays were, on average, 3 weeks, and the spa regimen consisted of a relaxing environment, exposure to nature and fresh air, daily exercise, and healthful nutrition. In the American west

(in accordance with the European model), spas in the late 1800's became more medically based. Doctors prescribed stays at specific health retreats to patients.

In 1885-1945, as bacteriology and epidemiology gained more understanding, American sanitariums for the treatment of tuberculosis boasted a progressive approach. Nature was integrated into the design of the treatment setting, and great attention was given to the choice of site and building orientation. Patients were encouraged to enjoy the open air and designs indicate that the healing benefits of a contact with nature were understood. "Buildings were sited to maximize the views of dramatic landforms and spectacular scenery... This created a passive, reflective relationship to nature, and it reveals the contemporary understanding of humans' reactive, contemplative relationship to the healing process" (Verderber 2010, 30). Some of the important design components of the tuberculosis sanitarium included "naturally ventilated respite porches, grounds that promote paths of greater cardiovascular stimulation, and gardens to simulate a home-like ambiance" (Verderber 2010, 30).



Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



King's Daughter's Home heliotherapy veranda, 1918-20, Memphis, from Verderber, *Innovations in Hospital Architecture*



Hospital Beaujon, Clichy, from Verderber, *Innovations in Hospital Architecture*

Upon the invention of the steel frame in the 1870's and its application allowing buildings of great height to emerge in Chicago, Dr. Ochsner presented a radical proposal. In 1905, the Chicago surgeon suggested that a new urban skyscraper hospital promised to yield great economy in terms of space, heating, supervision, housekeeping, materials, management and staff travel distances. With the parallel emergence of specialized departments such as radiology, combined to the continued densification of cit-



ies, skyscraper hospitals rapidly became highly functional building types that increasingly failed to provide patients with contact to the outdoors and nature, or to recognize human needs.



IWK Children's Hospital, Halifax, NS, Corridor and Nursing Station

Since the mid-20th century, the functionalist strand of the modern movement has dominated hospital architecture. Medical architecture has escaped the critique of functionalism because human lives are dependant upon efficiency of function within the hospital. As a result, our hospitals are designed to accommodate processes without concern toward place-making (Prasad 2008, 3). There is growing recognition that the functionalism and process-dominated approach to hospital design “failed to see the patient as a whole person, whose emotions and intellect, as well as body, had needs; and indeed that all these aspects were inextricably, intricately and variably linked” (Prasad 2008, 5).

Throughout the history of health-care architecture, nature has held a recurring, if variable role. Where nature was neglected, as it was the case in medieval Europe, it is undeniable that the understanding of medicine and its supporting network, including architecture, failed dramatically. Considering the density of our Canadian city centres, nature is often inaccessible from the immediate location of the hospital. In addition to this, a desire to produce functional large buildings in which to house increasingly specialized medical equipment renders the hospitals more suited to mechanical and procedural accommodation than to human inhabitation. We are in dire need of finding a balance.

Thankfully, in Canada, nature is plentiful and typically accessible within a short distance from city centres. This opens the possibility of introducing a hospital support system in the form of a network of satellite buildings. This thesis explores the possibility of developing such a relationship between the IWK Children's Hospital in Halifax and a supportive health care building in nearby Point Pleasant Park.

## CHAPTER 3: REVIEW OF PRECEDENTS

### 3.1 ALVAR AALTO: PAIMIO SANATORIUM, PAIMIO, FINLAND

“Alvar Aalto’s Paimio Sanatorium is not a metaphor for healing; even today it offers the promise of a better future—it heals” (Pallasmaa 2005b, 133). Aalto conceived of Paimio Sanatorium as an instrument for healing, ingeniously offering tuberculosis patients the greatest benefits from dry fresh air and sunlight.

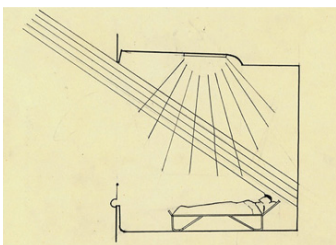
Paimio defied the norms at the time of its conception (1920’s) when the urban skyscraper model dominated hospital design. It consists of a series of pavilions connected to a main administration building. Patient rooms and respite terraces are arranged in a linear fashion in a single-loaded 6-story building.



Paimio Sanatorium by Alvar Aalto showing the surrounding forest, from Nakamura, *Alvar Aalto*



Paimio Sanatorium by Alvar Aalto sunning terrace, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



Paimio Sanatorium by Alvar Aalto, sunning terrace, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



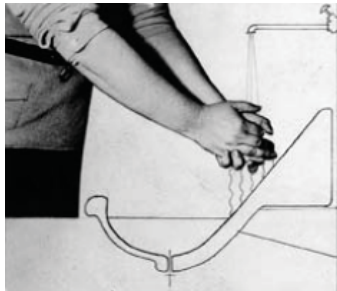
Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



Paimio Sanatorium by Alvar Aalto, bedroom, from Nakamura, *Alvar Aalto*



Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*

Aalto was very caring in his design of Paimio. Rooms were equipped with individual wall-mounted cupboards and non-splash washbasin. Given that patients were likely to spend quite some time laying down, Aalto took care to place lamps away from the patients line of vision and selected a relaxing green for the ceiling to avoid glare.

Each floor boasts a sunning terrace, with radiant heat ceiling panels, where patients could spend hours even in the winter. Outdoor spaces, including a rooftop terrace and garden, are available for both staff and patients and contribute to a design meant to foster a communal atmosphere important to tuberculosis patients whose stays there would last several months. Aalto conceived Paimio with a distinct community atmosphere in mind. He provided communal facilities, a chapel, as well as staff housing, and promenade routes through the surrounding forest landscape.



Paimio Sanatorium by Alvar Aalto, from Nakamura, *Alvar Aalto*



Paimio Sanatorium by Alvar Aalto, from Nakamura, *Alvar Aalto*



Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



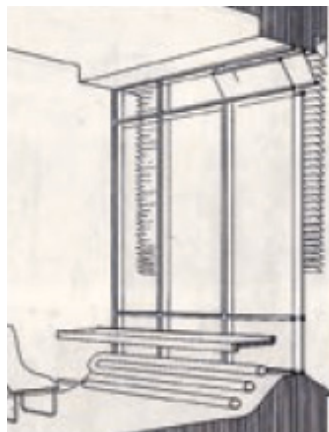
Paimio Sanatorium by Alvar Aalto, from Nakamura, *Alvar Aalto*.



Paimio Sanatorium by Alvar Aalto, from Nakamura, *Alvar Aalto*.

Paimio Sanatorium is set within a forest, providing views of nature from within. Aalto paid a great deal of attention to harnessing and directing natural light, a necessary effort to benefit from heliotherapy in such a northern place. Extraordinary care was given to window design, view orientation, aperture size and placement, operability, and amount of sunlight reaching into the patient's rooms. The windows are double paned and include an incorporated heating element which warms and dries the fresh outdoor air as it enters.

Aalto's Paimio Sanatorium serves as a hospital today. Its setting among the forest has been recognized as extremely beneficial to healing and has been preciously preserved to this day. With his profound understanding of the potential for the built and natural environments to assist in healing, Alvar Aalto with his Paimio Sanatorium has offered us a model that is timelessly relevant to healthcare architecture.



Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



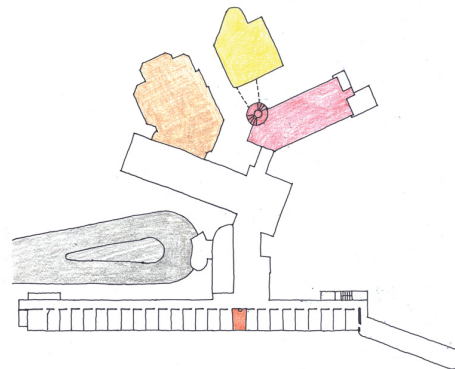
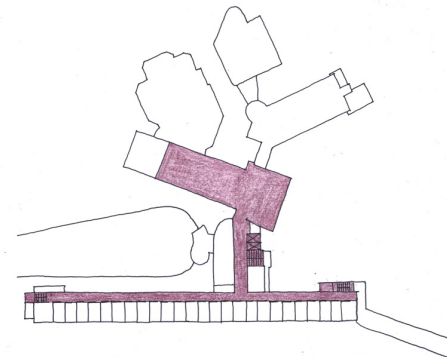
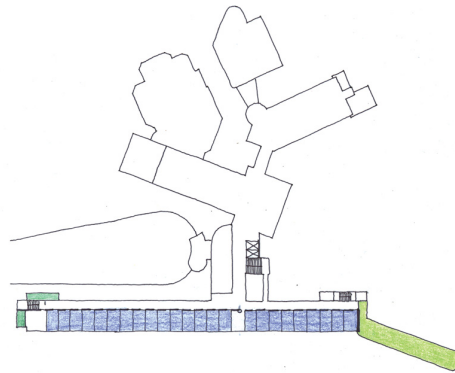
Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*



Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*

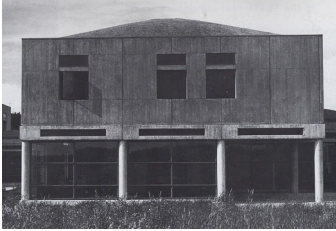


Paimio Sanatorium by Alvar Aalto, from Ehrström, *Nomination of Paimio Hospital for Inclusion in the World Heritage List*

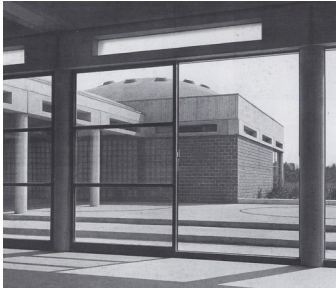


- PATIENT ROOMS
- OUTDOOR PATIO
- CIRCULATION AND COMMUNAL SPACE
- KITCHEN AND MAINTENANCE WING
- ADDITION BY AALTO FOR SURGERY
- NURSING STATION
- FORMERLY HEATING PLANT
- DRIVE

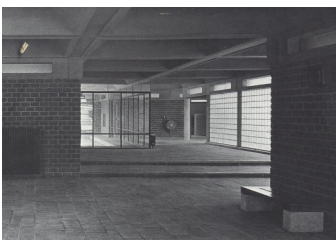
Paimio by Alvar Aalto, program diagrams



Orphanage by Aldo van Eyck, from *Ligtelijn*, Aldo van Eyck



Orphanage by Aldo van Eyck, from *Ligtelijn*, Aldo van Eyck



Orphanage by Aldo van Eyck, from *Ligtelijn*, Aldo van Eyck



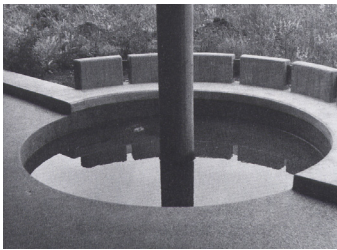
Orphanage by Aldo van Eyck, from *Strauven*, Aldo van Eyck

### 3.2 ALDO VAN EYCK: ORPHANAGE NEAR AMSTERDAM, NETHERLANDS

The orphanage director Frans van Meurs was very passionate in his description of the requirement to the architect. He expressed the desire to move the orphans away from the bustle of the inner city to a small, ideal world bathed in healthy air, sunshine and greenery. And offered a detailed description of the pattern of life to be housed. “Our house must be a friendly house in every respect, both inside and outside. It must be a home, a home for children who for a shorter or longer time will not be living with their parents, who will miss their own home. It’s up to us to make up for this deficiency. On approaching our house, the child must enter it gladly; its outward appearance should ooze friendliness, beckoning the child, as it were, to enter” (Strauven 1996, 5). Aldo van Eyck, having grown up as an orphan himself, took the task to heart. He devised a place for the children to live in community. Living and sleeping quarters were assigned by age group, and connected by interior streets. The orphanage is akin to a city in the flow of spaces into each other, in the potential for discovery and in the treatment of thresholds. This results in the elimination of the narrow institutional corridor and beneficially provides an invitation to linger between places. Several affordances punctuate and propose to enliven the space. Play houses, puppet theater, sitting nook, reading niche, sand box, toddlers paddling pool, are found throughout the orphanage and are among the affordances that offer themselves to the children. These elements are organized in a polycentric manner: shifting areas of interest off the expected axis results in more dynamic spatial relationships, and thus implies and stimulates movement through



Orphanage by Aldo van Eyck, from Strauven, *Aldo van Eyck*



Orphanage by Aldo van Eyck, from Strauven, *Aldo van Eyck*



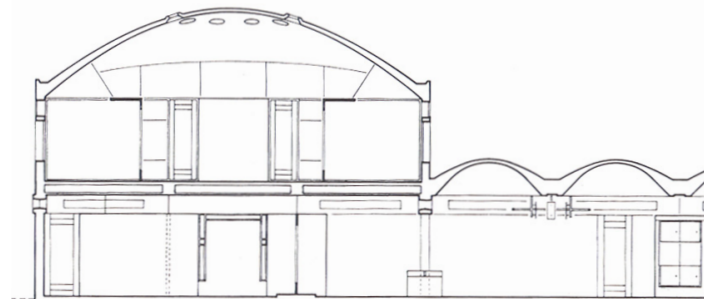
Orphanage by Aldo van Eyck, from Ligtelijn, *Aldo van Eyck*



Orphanage by Aldo van Eyck, from Strauven, *Aldo van Eyck*

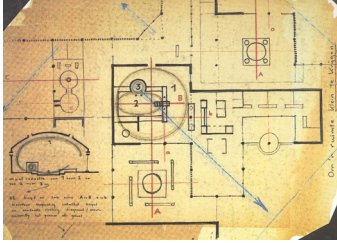
the space. Thresholds mark the relationship between the interior and the exterior; but the visual flow between the two realms unites them in several instances. There, natural light flows into the spaces, and it is also admitted through a number of light wells puncturing the dome roofs throughout the orphanage. Nature plays an important role at the orphanage, providing the children with free and peaceful playgrounds. Aldo van Eyck also used nature to transform the space as though magically. For instance, circles impressed in each corner of a cast sandbox collect rainwater, reflective pools appear add a new element to play. Also, the 12 small roof lights that puncture some domes send circles of light dancing through indoor play spaces.

Aldo van Eyck demonstrated a deep understanding of the world as perceived by a child. His devoted attention to the needs of children enabled him to produce a building that is more than an orphanage: it is a scaled down city, a place of community living at the scale of the child. It offers affordances, triggering the child's imagination while allowing the space to let it take free course, and offers the potential for discoveries. Aldo van Eyck's orphanage is more than a home; it sets the stage for the joyful experiences necessary for a healthy childhood.



Orphanage by Aldo van Eyck, from Ligtelijn, *Aldo van Eyck*





Orphanage by Aldo van Eyck, from *Ligtelij, Aldo van Eyck*



Orphanage by Aldo van Eyck, from *Ligtelij, Aldo van Eyck*



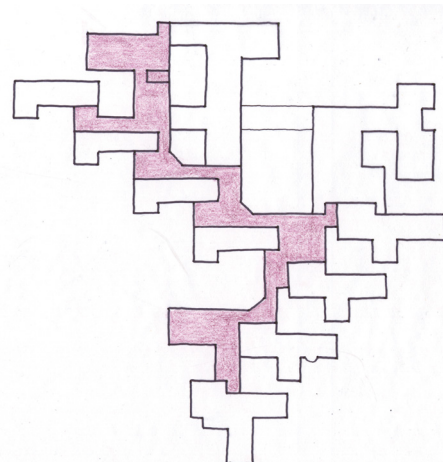
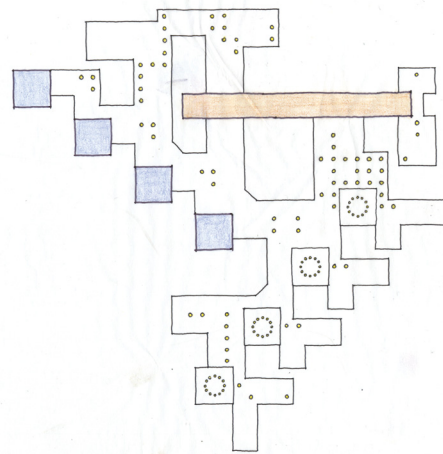
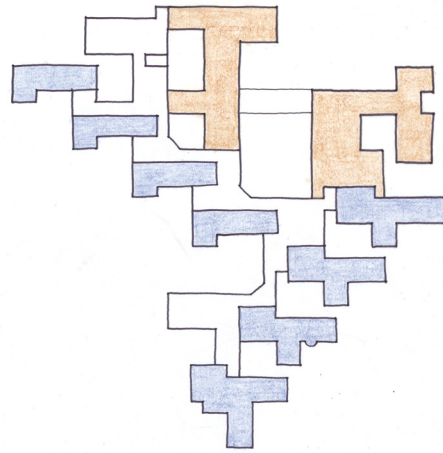
Orphanage by Aldo van Eyck, from *Ligtelij, Aldo van Eyck*



Orphanage by Aldo van Eyck, from *Strauven, Aldo van Eyck*



Orphanage by Aldo van Eyck, from *Ligtelij, Aldo Van Eyck*

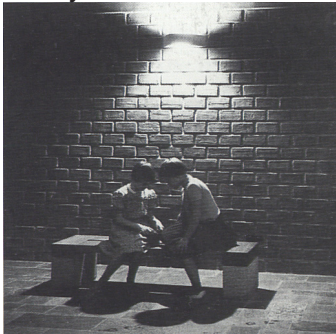


- CHILDREN'S LIVING QUARTERS / "HOUSES" (ASSIGNED BY AGE)
- CIRCULATION / "INTERIOR STREETS" (INTERACT)
- STAFF LIVING QUARTERS + ADMINISTRATION

Orphanage by Aldo van Eyck, program diagrams



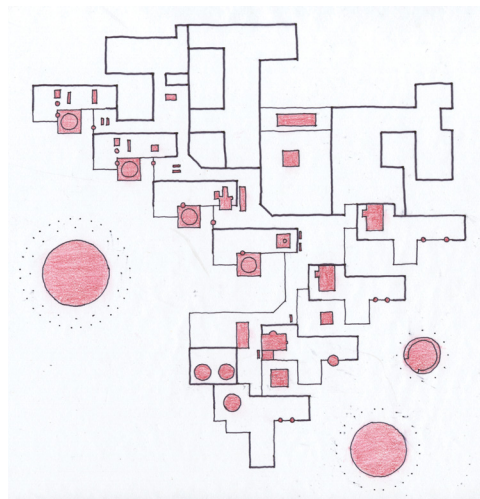
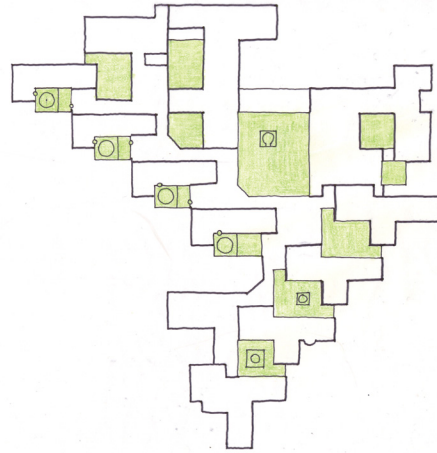
Orphanage by Aldo van Eyck, from *Ligtelij, Aldo van Eyck*



Orphanage by Aldo van Eyck, from *Ligtelij, Aldo van Eyck*

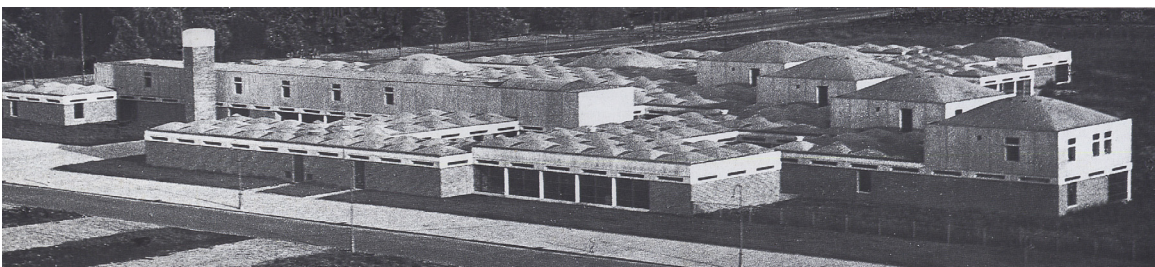


Orphanage by Aldo van Eyck, from *Ligtelij, Aldo van Eyck*



- "AFFORDANCES" / PLAY SPACES (PUNCTUATING).
- SKYLIGHTS.
- COURTYARDS.

Orphanage by Aldo van Eyck, program diagrams



Orphanage by Aldo van Eyck, from *Ligtelij, Aldo van Eyck*

## CHAPTER 4: THEORETICAL FRAMEWORK

### 4.1 NATURE + HEALING

In the 1970's in the US, the work of Peter Senior, as well as the work of Claire Cooper Marcus, sprung a movement toward the rediscovery of the power of the environment to help or hinder healing. Their work particularly drew attention to the therapeutic effects of art and gardens. Subsequently, a number of studies, including important contributions by Rachel and Stephen Kaplan as well as Dr. Roger S. Ulrich, have shown a correlation between desirable patient outcomes and the presence of nature (Prasad 2008, 6). In their books, Rachel and Stephen Kaplan often return to the theory of fascination to explain some of the beneficial effects of the natural environment on human beings. They use the term "fascination" or "soft fascination" to speak of a sort of calm, meditative state induced by the observation of gentle movements in nature such as the play of light on leaves and the movement of clouds across the sky. The results of their studies demonstrate that a relationship with nature offers humans a wide range of both psychological and physical benefits. Their research finds that the immediate and long-term outcomes of contact with nature include enjoyment, relaxation, lowered stress levels, increased physical well-being, better overall health, and greater satisfaction with life in general (Kaplan and Kaplan 1989, 179). In their work, they also address a sense of wholeness and oneness often reported by research subjects. They briefly touch upon the spiritual aspect of this sense of being "at one" and note that immersion in nature provides a feeling of inner-peace and tranquility favorable to self-discovery and improved self-image. "Viewed as an

essential bond between humans and other living things, the natural environment has no substitute” (Kaplan and Kaplan 1989, 204).

Rachel and Stephen Kaplan note the importance of a sense of ‘being away’ to the restorative experience. The opportunity for the individual to be removed ever so slightly from everyday activities permits a fuller enjoyment of the beneficial effects of nature. This undoubtedly explains the need of so many people to have a country place, allowing them to escape the city and the stresses of city life. Alvar Aalto believed that immediate contact with nature enriches life, and built a modest summer home for himself at Muuratsalo. This refuge in nature was for him a place of healing, an experimental project he took on as he rebuilt his life after the sudden illness and death of his beloved wife Aino. Similarly, Le Corbusier built a country home, his Cabanon at Cap Martin as a place for his dying wife. He felt that in this place, her pain would be reduced, and she would get the most possible enjoyment at the end of her life. He foresaw that he would eventually, peacefully, end his days there himself, becoming completely and ultimately immersed in nature: and he did (Menin and Samuel 2003, 99).

In 1984, in a study entitled “View Through a Window May Influence Recovery from Surgery”, Dr. Roger Ulrich demonstrated that patients with a view of the natural environment and vegetation out their hospital window need less pain medication, and are likely to recover more rapidly (Krinke 2005, 132). These findings were affirmed in his subsequent studies.

In his research, Ulrich found that viewing nature is relaxing and assists one in recovering from stress. He recorded a raise in alpha-wave activity in subjects exposed to nature. These neural oscillations originate from the brain and indicate a state of wakeful relaxation and calm alertness. This physiological evidence suggests that nature is effective in creating a calm yet alert condition. He also demonstrated the effectiveness of nature in stress reduction, marked in subjects by lowered blood pressure and decreased muscle tension. Ulrich notes: "The rapidity of the response to nature and its mobilization of so many psychological responses suggests that the parasympathetic nervous system – that is, the component of the nervous system thought not to be under conscious control – must also be involved in the calming effects experienced in response to nature" (Krinke 2005, 135). These findings have been confirmed in research studies by biologists, including Jay Appleton and E.O.Wilson who explain this phenomenon through evolutionary theories. For the survival of the species, the recognition and positive response to aspects of the environment that favour and support life, such as vegetation and water, makes perfect sense. In this line of thought, the forest edge, offering greatest biodiversity and visual control, would be the preferred natural setting for humans (Krinke 2005, 135).

## 4.2 DISCOURSE

Art is an instrument of communication. Contemporary philosopher Ken Wilber's theory states that all artwork is consciously or unconsciously aiming for connection with its viewer, and that each viewer has a singular ability to engage in this connection (Krinke 2005, 109).

Similarly, architecture as an art form is in a position to open a connection or dialogue with the user as the space is experienced. The landscape at the site will greatly inform the architecture. The architecture, by drawing from nature, proposes an interpretation, or a response to the healing environment. A dialogue will invariably exist between nature and the built form, to be enjoyed by the user. "Architecture is essentially an extension of nature into the man-made realm, providing the ground for perception and the horizon for experiencing and understanding the world. It is not an isolated and self-sufficient artifact; it directs our attention and existential experience to wider horizons" (Pallasmaa 2005b, 41).



Photo. Tracks in the snow.

Architecture can be thought of as a lens through which nature is to be explored, discovered, understood and imagined. This is not a neutral viewpoint; through the architecture, the imagination of the architect is received by the imagination of the user and communication is thus established. Through architecture, a healing discourse may be facilitated and encouraged between the child and nature. "To at least some extent, every real place can be remembered, partly because it is unique, but partly because it has affected our bodies and generated enough associations to hold it in our personal worlds" (Bloomer and Moore 1977, 107). There exists a particular logic in architecture that produces associations with the surrounding world. The playful discovery of these connections will cause the child to become actively engaged with the environment. Curiosity and imagination are central to a child's existence. By triggering playful intelligence, architecture empowers the

healing child. "Move, not with images but with relations of images which render them at once alive and affecting" (Bresson 1975, 89). In discovering the connections that exist between the architecture and the surrounding nature, the child will gain clarity in the understanding of the place and also of his/her role and sense of belonging in that place. Curiosity and imagination lead to knowledge, which is empowering. Knowing how something works, or what it relates to produces in the child a sense of intimacy with the object, a sense of ownership. The child can then turn to a friend and say 'let me show you something'. In that gesture, the intimacy is shared and the profound bond that emerged between individual and place is created between place and community.

Architecture plays a mediating role between the world and us. Provided that the architectural expression is sensible, calm and respectful, it will engage the child in a meaningful intimate connection with the built form, and encourage a desired healing and meditative relationship between the child and nature. "For both Aalto and Le Corbusier, it seems there was a feeling that nature needed to be mediated by the architect in order to attain its full potential" (Menin and Samuel 2003, 99). Key information about the site and the project is distilled in the design process and communicated through the architecture. The conception and the experience of architecture can be considered, and have been described, as activities involving body, mind and soul.

...during the design process, the architect gradually internalizes the landscape, the entire context, and the functional requirements as well as his/her conceived building: movement, balance and scale are felt unconsciously

through the body as tensions in the muscular system and in the positions of the skeleton and inner organs. As the work interacts with the body of the observer, the experience mirrors the bodily sensations of the maker. Consequently, architecture is communication from the body of the architect directly to the body of the person who encounters the work. (Pallasmaa 2005b, 65)

This idea of the involvement of the whole being in the making and perceiving of architecture "...leads to a recognition, through personal experience, of the body as the site of meaning, a body always engaged with a given world in a pre-reflective transaction upon which other meanings are constructed" (Pérez-Gómez 2006, 6-7).

#### 4.2.1 PERCEPTION

We discover the world through the senses, and the body is the mechanism by which we understand the world. One's understanding is only achievable through the self: through experience, memory and association and for this reason, childhood is a tremendously important time. First encounters take place, memories are made and patterns take shape.

The child is building a haptic dictionary, a reference manual to serve for the rest of his or her life. For this reason, it is of utmost importance to strive to offer a maximum of positive experiences in childhood. Relationships with the world later in life will be made through associations imbued with the aura of childhood.

Peter Zumthor speaks of the importance of sensorial memories from his childhood in his life and practice: "When I think about architecture, images come to my mind... Some images have to do with my childhood. There was a time



when I experienced architecture without thinking about it. Sometimes I can almost feel a particular door handle in my hand, a piece of metal shaped like the back of a spoon. I used to take hold of it when I went into my aunt's garden. That door handle still seems to me like a special sign of entry into a world of different moods and smells... Memories like these contain the deepest architectural experience that I know" (Zumthor 2006, 7).

The choice for this thesis of a building destined specifically for the health care of children stems from a belief in the potential for architecture to transform a child's experience of hospitalization into the most positive experience possible. The aim is to devise a built environment which could have an immediate influence on the healing of the child, and bring long-term existential benefits through life. "We cover the universe with drawings we have lived" (Bachelard 1957, 12).

#### 4.2.2 MIMESIS

Naturally, an understanding of others and of the world through the self brings about a sort of mirroring phenomenon; the occurrence of an understanding through identification referred to as mimesis. Mimesis is not simply imitation, it is a psychoanalytical term borrowed from Freud by Theodor Adorno and Walter Benjamin to refer to a creative engagement with an object (Leach 2002, 219).

In effect, mimesis is an unconscious identification with the object. It necessarily involves a creative moment on the part of the subject. The subject creatively identifies with the object, so that the object, even if it is a technical object – a piece of machinery, a car, a plane, a bridge – becomes invested with some symbolic significance and is appropriated as part of the symbolic background through which individuals constitute their identity. (Leach 2002, 220)

The mimetic impulse is pertinent to the child's relationship with architecture and is important to take into consideration as identity is being formed, particularly at a time when self-image may otherwise be challenged by illness.

Children learn through observation and imitation; their imagination is free, and mimesis occurs naturally. This can be observed in children at play. It is not uncommon for the child, through imagination to become the doll, the fire truck, or any of a number of animate or inanimate objects of play.

In essence it (mimesis) refers to an interpretative process that relates not just to the creation of a model but also to the engagement with that model. Mimesis may operate both transitively and reflexively. It comes into operation in both the making of an object and making oneself like an object... In mimesis, imagination is at work and serves to reconcile the subject with the object. This imagination operates at the level of fantasy, which mediates between the unconscious and the conscious, dream and reality. Here fantasy is used as a positive term. Fantasy creates its own fictions not as a way of escaping reality but as a way of accessing reality, a reality that is ontologically charged, and not constrained by an instrumentalized view of the world. In effect, mimesis is an unconscious identification with the object. (Leach 2002, 219-220)

The potential for mimesis to render art-making a healing activity is of interest here. The choice of an appropriate subject is important: that is, a subject psychologically connected to joy and healthy life. Through mimesis, a sense of joy and health could enter the child's identity and self-image. In this way, art making can be used as a powerful tool in visualization (discussed further in 4.4). If, for instance, the child is encouraged to produce a work of art based on the observation of nature, the meditative effect of the subject will be enhanced by the child's focused mimetic relationship to the subject. (An art room with views to the outdoors is included in the program for this purpose.)

### 4.3 BODY MIND SOUL

“Architectural experience brings the world into a most intimate contact with the body” (Pallasmaa 2005b, 60). The senses allow a permeable relationship to the world. This permeability is increased or decreased under certain conditions. The senses and the imagination of the senses free us from the boundary of the body and, by way of the skin, place our soul in contact with the world. In other words, it is through the senses that the essence of our self comes into contact with the essence of architecture and of the environment.



Photo. Fog on the water.

The boundary of the body, set though it may physically be, is in experiential terms a shifting line. The senses expand beyond the surface of the skin, through memory and imagination. In my experience, when the body suffers trauma, the senses are affected and the experiential boundary of the self becomes blurred; the shifting line moves differently, calmly yet uncontrollably, and beyond its usual field. Permeability to the world is increased. This heightens the being’s feeling of fragility and transforms the experiential level of engagement with the world. In addition to this, the body is forced to slow down. This slowness combines to altered perception to allow healing.

The role of architecture in the context of healing is vital. The healing individual’s need for shelter, comfort and security is heightened. Architecture acts as a doubling of the membrane, as a known boundary. It assists the body in gently but steadily holding the soul. “And this is a universal law: a living thing can be healthy, strong and fruitful only

when bounded by a horizon” (Friedrich Nietzsche, quoted in Pérez-Gómez 2006, 31). Given this, scale must be taken into consideration. The child must be able to grasp this aiding boundary in order for the architecture to efficiently provide a healing context. The way in which the building opens onto the exterior warrants particular attention. Openings in the built form and even outdoor built areas must provide a stabilizing ground for the shaken experiential boundary of the self. The spaces should offer clarity and be easy to read, particularly the intermediate zones where a transition between inside and outside occurs. That is, this transition should be articulated and should occur in a way that is not too harsh. In those moments, the architecture must be particularly caring in the way it holds the healing child and provides comfort. Materiality must be thought of in those terms as well, and a prevalence of warm, natural materials is proposed.

#### 4.4 HOME

Our domicile is the refuge of our body, memory and identity (Pallasmaa 2005a, 65). The model of the home in the context of health care holds the potential to introduce elements that will facilitate healing. The home is a haven, a place where one feels safest and most comfortable. Incorporating elements of the home in the design of a place of health-care will enrich the experience of the inhabitants by providing a sense of normality: That is, a sense of maintaining a life beyond what is dictated by the illness and its treatment. The home is a source of important information in the design of a place of health care, particularly one for children.

Life, and the body, are sustained by rhythms: We are aware of our breathing and heartbeat, and these rhythms are in harmony somehow with the cycles we observe in nature. From early childhood, we find comfort in ritual, rhythm, repetition and routine. Walter Benjamin suggests that repetition presides over the rules and rhythms of play and that “these are the rhythms in which we first gain possession of ourselves” (Benjamin 1999a, 117-121). Home is the first model for these behaviors, as it is where the rhythms of everyday life structure the child’s existence. Providing the child with a home-like environment for the purpose of healing would offer stability through the contentment and reassurance found in these rhythms. “A house constitutes a body of images that give mankind proofs or illusions of stability. It is an instrument with which to confront the cosmos” (Bachelard 1957, 4-36).

Ideally, in the home, one can safely dream. The comfort of the home gives absolute freedom to the imagination. In the home, particularly in childhood, reality and dreams become entangled. “Our common sense tells us that the things of this earth barely exist, that actual reality is only in our dreams” (Charles Baudelaire, quoted in Pérez-Gómez 1992, 6). The mind, it has been demonstrated, is extremely powerful. Visualization used in healing, particularly in children, has been known to show extraordinary results. Studies conducted by Dr Walker in the 1990’s and Dr Simontron in the 1980’s demonstrated that visualization could have a positive impact on the healing process. One particular research project conducted by Dr Walker in 1999 showed that patients (in this case, women undergoing treatment for breast cancer) who engage in relaxation

and visualization exercises during treatment reported more positive mood, better quality of life, and improved coping. Analysis of blood samples on 11 occasions over a 37 week period showed “more mature T-cells, more activated T-cells, and a higher number of a subset of natural killer cells thought to have anti-tumor activity”, all of which indicate physiological activity toward healing. Interestingly, the patient’s reported vividness of the visualization imagery seemed to correlate with the intensity of the cellular activity (Barraclough 2007, 249). Being of the realm of dreams and recruiting the imagination, visualization would be supported by a home-like environment. In fact, it is likely that the place and the visualization exercise would become entangled, through associations. For instance, if a child were to focus on the way the light interacts with stained glass in a window during a visualization session, this vista could form the touchstone of positive memories and thoughts. This would enable the child to benefit from visualization as this vista is encountered, in play and other activities, throughout the course of the day: “...spacial appropriation, a visceral process of identification which depends on body memory. Through the repetition of those rituals, these spaces are “re-membered” such that those participating re-inscribe themselves into the space, re-evoking corporeal memories of previous enactments. The space becomes a space of projection, as memories of previous experiences are “projected” onto its material form” (Leach 2006, 183).

#### 4.5 APPROPRIATION, BELONGING AND IDENTITY

It is a basic and natural human response to appropriate a place by marking it. Even in play, a child will establish



Imagination and place in children's play collage by Superstudio from *Retro-spectively Building a Landscape*.

and delineate an imagined space within which the game is to take place. Similarly, when assigned a room, a child establishes ownership and enables a sense of belonging (appartenance) by moving things, and introducing and placing objects such as his or her toys or drawings in the room. These reactions are the manifestation of the child's simple need for comfort and desire for a sense of control over the environment (Komiske 2005, 99). "We are in constant dialogue and interaction with the environment, to the degree that it is impossible to detach the image of the self from its spatial and situational existence" (Pallasmaa 2005a, 65). As mentioned earlier (4.2) an understanding of the place is established as associations are revealed to the child. In discovering the connections that exist between the architecture and the surrounding nature, the child will gain clarity of understanding of the place and also of his role and sense of belonging in that place. As communication through associations is established, the child gets to know the secrets of the place and this results in a deep connection. For the child, a sense of satisfaction beneficial to identity comes from these discoveries and from this participation in a communication that seems to emerge from the realm of dreams, stories and the imagination. The participation in this stimulating dialogue and the resulting knowledge are empowering to the child and produce a sense of ownership and belonging (in the way that a lake is yours if you are a good swimmer and understand water and your relation to it). The child becomes an actively involved part of the environment through this dialogue with architecture and nature. "The interdependence of identity and context is so strong that psychologists speak of a 'situational personality'. The concept is based on the observation that the

behaviour of a single individual varies more under different conditions than the behaviour of different individuals under the same conditions” (Pallasmaa 2005a, 118). Observation of human behaviour further goes to show the importance of role of the built and natural environments as they affect human beings at the core and have a transforming effect on them. In a context of healing, such observations are indicative of the great potential benefits offered by architecture and the natural environment.

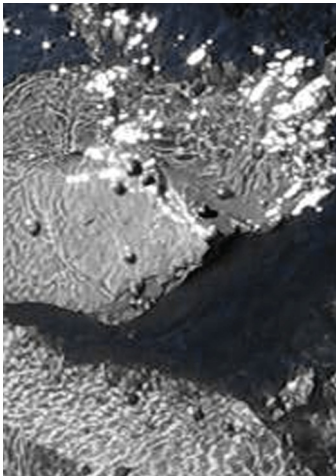


Photo. Light, water and movement at the site.



Photo. Play of light at the site.



Photo. Play of light at the site.

#### 4.6 MOVEMENT

“The sight of movement brings joy: horse, athlete, bird” (Bresson 1975, 74). The rhythm of the waves, the wind in the leaves, the sunshine on the mossy forest floor, the flutter of shadows upon the face of a stone; all of these images evoke the 5 senses. The presence at the site of movement associated with nature has a stimulating effect. The child will be energized by the mimetic association with living creatures moving through the forest and will benefit from the observation of the slow transformation of plants growing, their flowers blooming, filling with busy insects and transforming into fruits.

The waters of the Northwest Arm and of the Atlantic Ocean beyond are visible from the site. The presence of the water has a great perceptual impact on the site. The rhythm of the waves as they dance in the distance; their sound as they crash on the shore; the smell of salt water in the air; the taste of salt water on the fingers of a curious child; the smell as the tide recedes and leaves treasures from a mysterious world to be discovered along the shore; the big blue sky reflecting in tiny pools abandoned by the reced-





Photo. Play of light at the site.



Photo. Play of light at the site.

ing sea; the light as it flickers on the oscillations of the great mass of moving liquid; and how this very light is then filtered through the adjacent forest. Bachelard speaks of “the ever changing life of light”. As light is reflected on the surface, the color of the sky mixes with the colors revealed by the light that enters the water. The sea itself transforms under different weather conditions, to this we attribute psychological qualities, we speak of the changing moods of water, and note in amazement that they seem to affect our own disposition. There’s more: the way small creeks carve the soft earth, trickling to the sea; the memory of the joy of swimming, of bathing, of floating, of being immersed; the immeasurable strength of the ocean as it carries big ships and the delicate way in which it rocks small boats, holds small birds afloat; the gravitational pull of the moon.

A strong psychological sense of connection exists with water as with nothing else. The ocean reminds us of distant places and people; water carries an imaginary extension of the sense of touch. All of these things have an effect on the site. The presence of water opens up a world of imagination and dreams. It is at once stimulating and comforting.

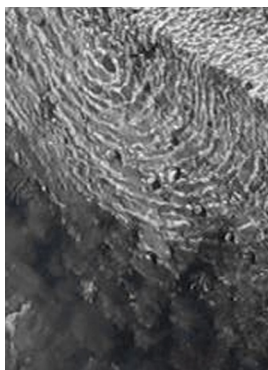


Photo. Light, water and movement at the site.



Photo. Play of light at the site.



Charcoal drawing. Study of light, shadow and movement at the site



Charcoal drawing. Study of light, shadow and movement at the site



Charcoal drawing. Study of light, shadow and movement at the site

## 4.7 INTERACTION

Pavilions for outdoor play will be situated on the site, punctuating an accessible path. This will make it possible for weakened children or children whose mobility is otherwise reduced to enter the forest and enjoy playing in the pavilions. The pavilions mark special places along the path, where interesting natural things occur; a creek marking the forest floor, a clearing where the light comes in, or places where rocks and trees are arranged in such a way to be read as floor, wall, roof: that is, to delineate a place. The child will be able to playfully alter components of the pavilions, to reflect light or cast shadows for example. Sometimes, the child's actions will trigger a reaction, for instance in the form of gentle sound. Interactive components will exist in the house as well, to encourage a playful connection between the child, architecture and nature.

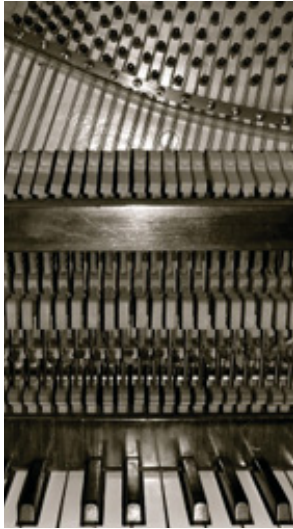
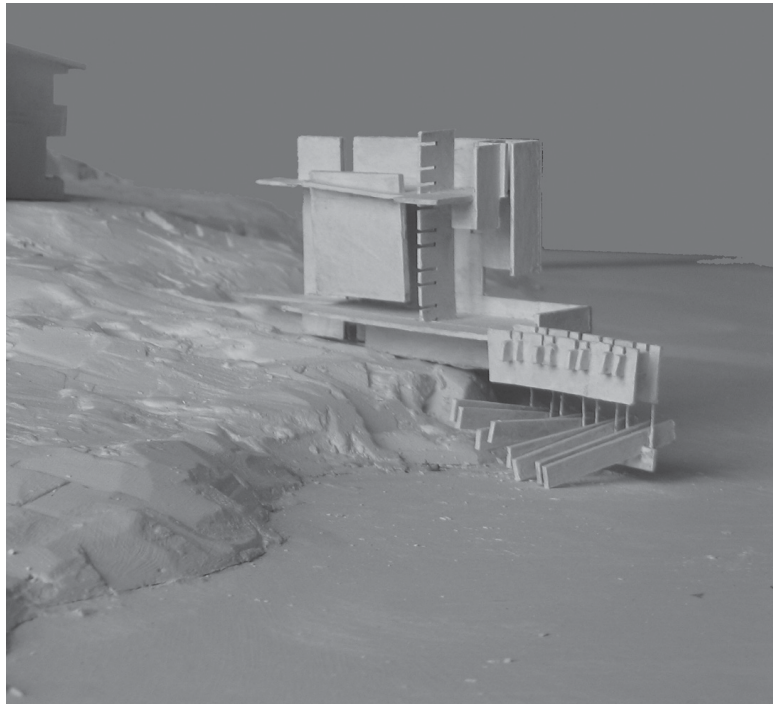
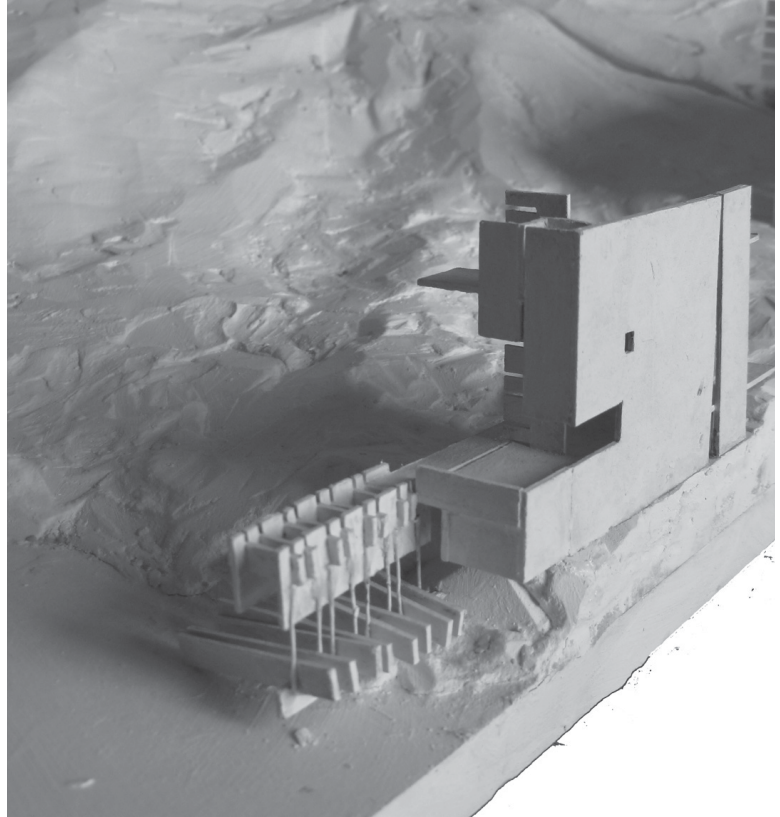


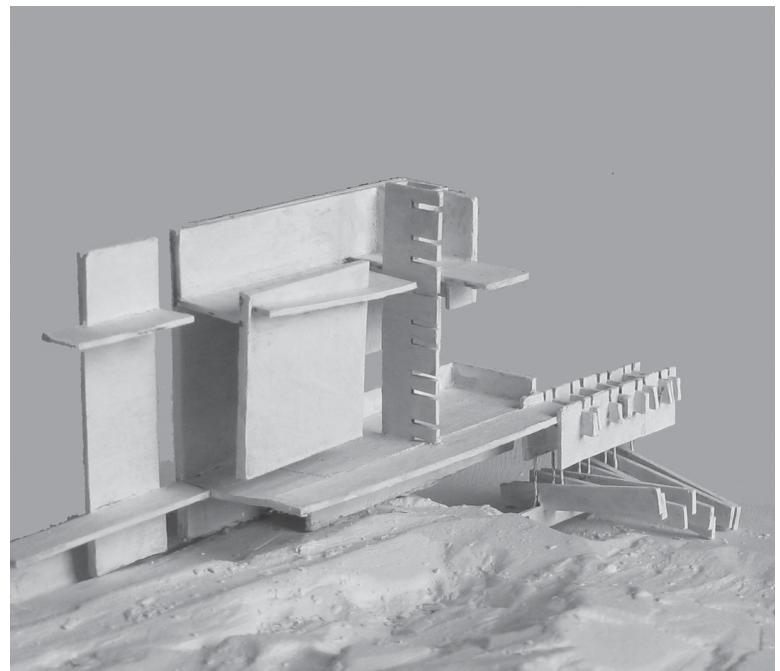
Photo. Piano mechanism from *National Geographic*



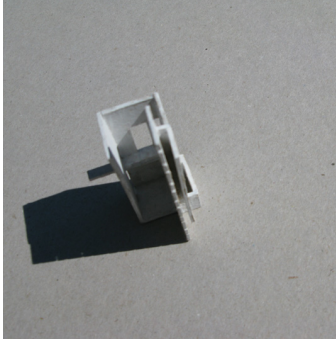
Model showing pavilion on water's edge.



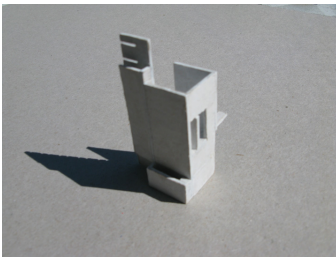
Model showing pavilion on water's edge.



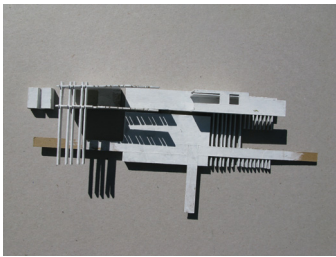
Model showing pavilion on water's edge.



Model showing pavilion in play area adjacent to home

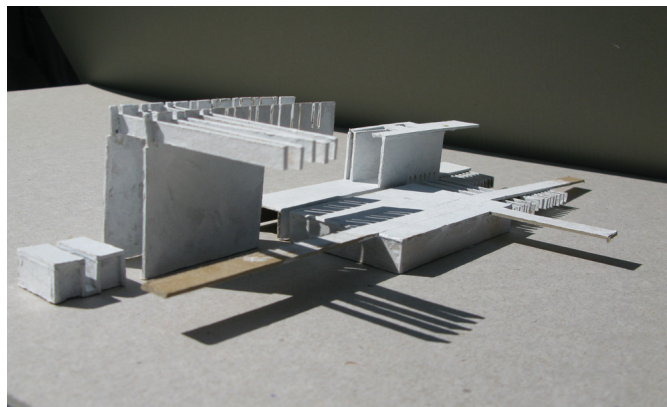


Model showing pavilion in play area adjacent to home



Model showing pavilion in play area adjacent to home

The pavilions should be open for any child who visits the park to play in. This will be beneficial to the healing children. Interaction with children who do not suffer from illness will help to psychologically pull the child further from the experience of hospitalization, by being an active part of normal life. This interaction may also help to enliven in the healing child a desire to be fully healthy again. The mind is powerful, and positive visualization has been proven to assist in healing. Interaction with healthy children will help remind the ill child that the idea of being healthy is very real rather than distant, vague and abstract. Another desirable psychological impact deriving from opening the pavilions for all children to play is that the healing child will know that once fully healed, he or she will always be welcomed here. Attachment to a place that offers positive psychological associations is normal and the knowledge that one can always return to enjoy the happiest experiences there renders departure from the place easier and more desirable. When the daylight falls, the pavilions will be lit, punctuating the site gently with pockets of warm, dim light. This will serve the purpose of marking the place and stating it as inhabited. The light will be seen from the house and will have the further psychological impact of giving a sense of comfort and safety to the children.



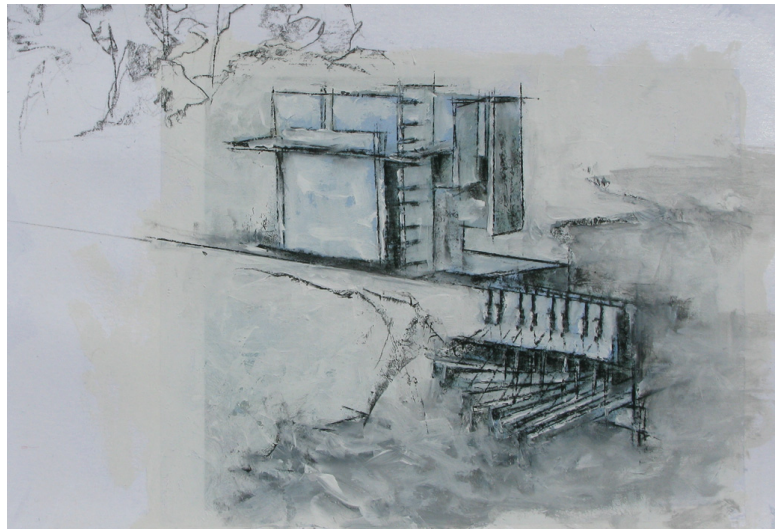
Model showing pavilion in play area adjacent to home



Drawing of pavilion in play area adjacent to home

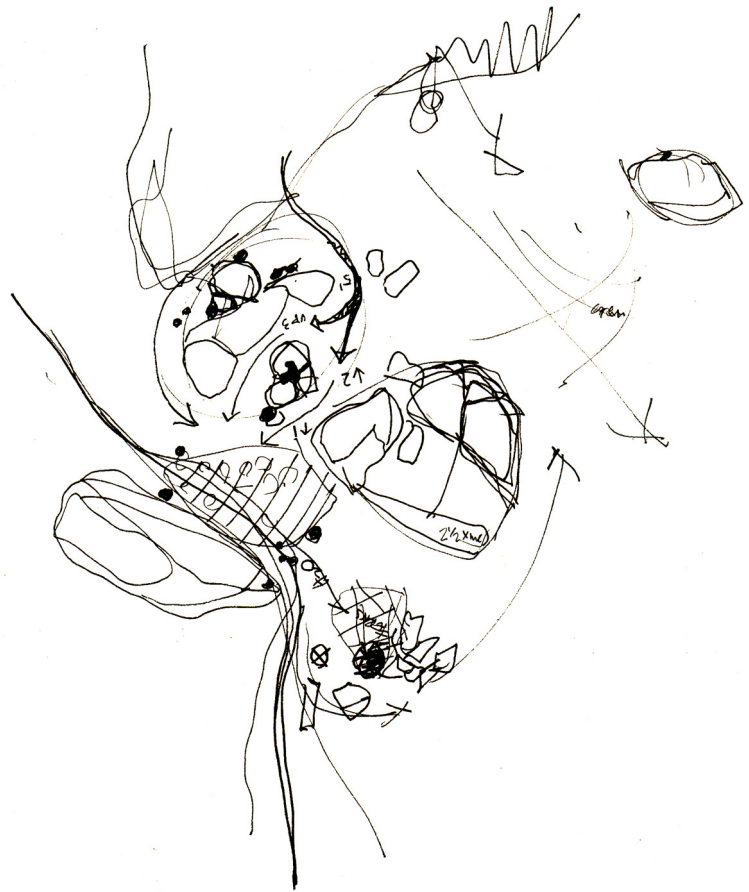


Drawing of pavilion in play area adjacent to home

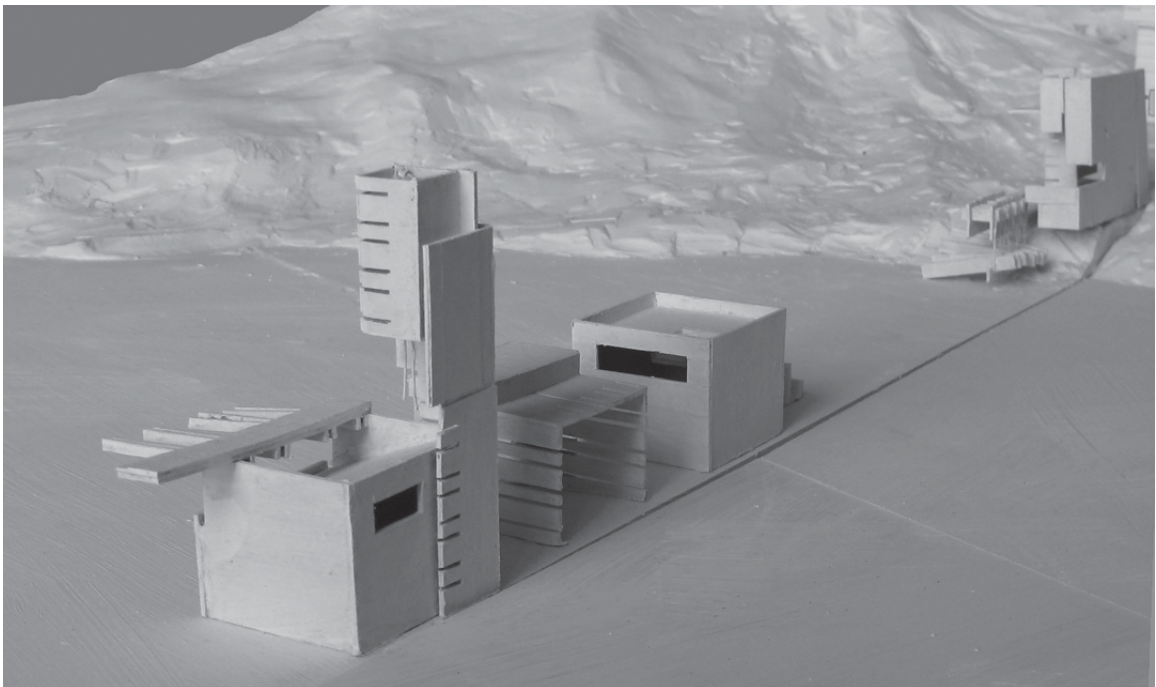


Drawing of pavilion at water's edge

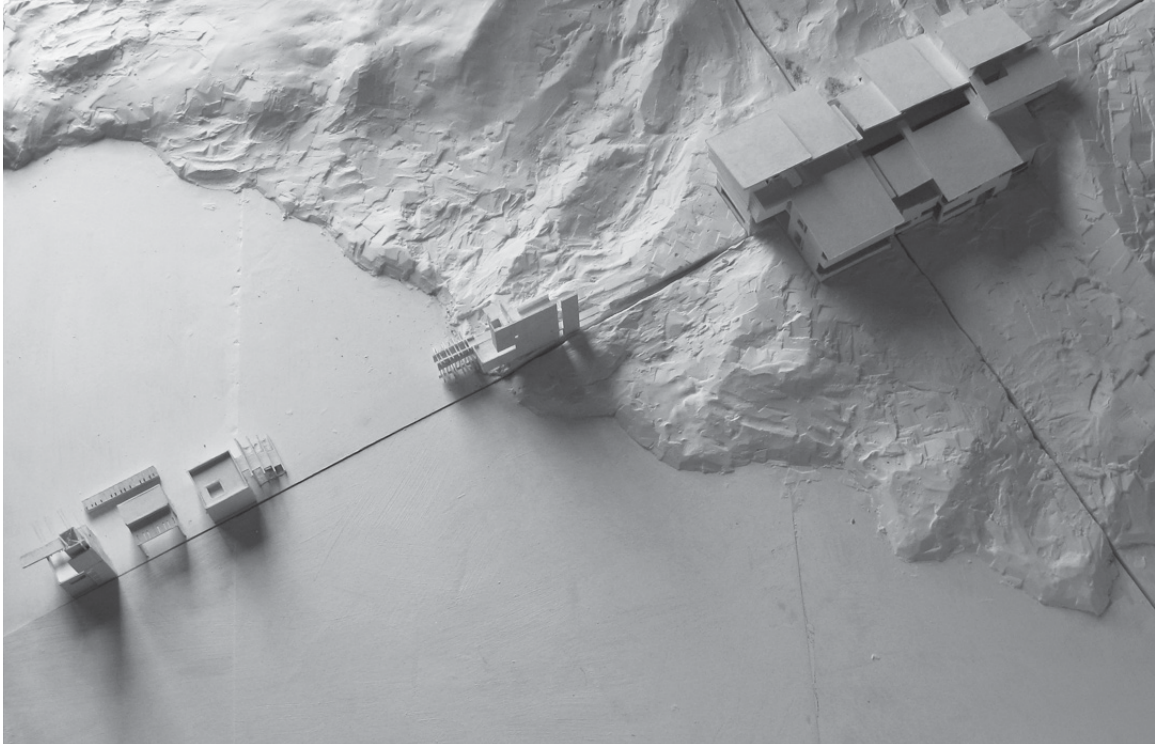




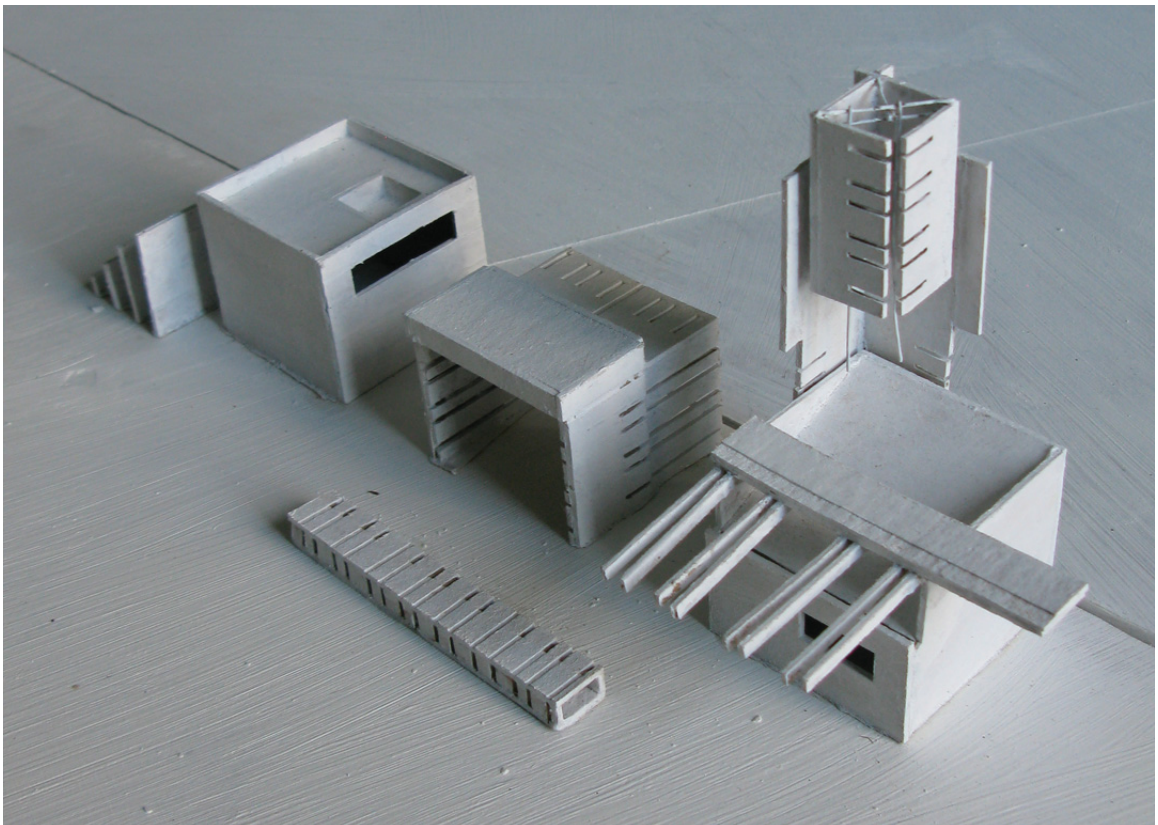
Mapping of the landscape as I walked and explored the site



Model showing pavilions



Model showing pavilions in relation to the house



Model showing water pavilions

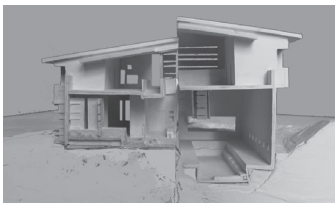
## 4.8 EARTH SKY SEA



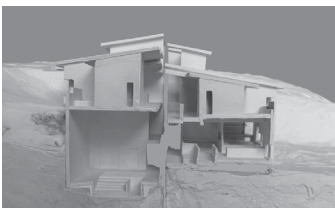
Photo taken at the site showing earth, sky, sea

“There is a kind of spatial appreciation that makes us envy birds in flight; there is also a kind which makes us recall the sheltered enclosure of our origin. Architecture will fail if it neglects either one or the other” (Aldo van Eyck, quoted in Ligtelijn 1999, 89). The presence of ocean water and the forest, as well as their interaction with light are influential in the atmosphere of the site (4.6). A dramatic difference in height exists between the level of the road and the level of the sea at the site. The building is set into the site in such a way to bridge this vertical distance. The entry, at the level of the road, gives access to an internal tower in which is set a light filled stairway. The building is anchored into the slope of the site. It is nestled between a great stone face and a forested slope, yet is open onto the ocean water. The entry projects into the sky; it offers a view onto the rooftop below and following the rhythm of its planes, one’s eye dances through the forest toward the waters of the Northwest Arm. The bedrooms are set at the level of the tree canopy. Here, they are lifted from the ground and sheltered by the forest. Hovering between earth and sky, the play spaces on this level offer a relationship to nature that is similar to that from a tree house. From this level, the children can observe the life of birds and squirrels in the trees and the travels of boats heading for the horizon on the water. Slight changes of height are negotiated by ramps on this level, and the ceiling planes follow the slopes and height variations of the roof. These level changes speak to the flow of life, light and air through the tree canopy, as well as to the tides and the oscillations of the water surface. Below, set on the level of an expanse of flat ground at the base of the site, are the living spaces. Here,

a direct relationship exists to the forest ground and to outdoor play areas adjacent to the building. These spaces are anchoring, in the rhythms of daily life with the kitchen having a central role, but also in the connection to the earth. A reading room is set by the great stone face, with a view through the trees, and onto the water, and an art room opens onto the outdoors. Following the slope of the site, another, lower level exists to the side opposite to the living spaces in which a swimming pool is set. This level is similarly set in the forest, with low views close to the forest floor. The pool reaches out toward the ocean water, giving it a sense of connection, as if it were a small sample of this great big sea. These levels that touch the ground have a visual vertical connections with the level above through openings in their ceilings. Through these openings, light is made to interact with objects, casting colours, shadows and reflections. “A house is imagined as a vertical being. It rises upward” (Bachelard 1957, 16). Bachelard speaks of the psychological importance of going upward to a place of dreams. It was important for the bedrooms to be upstairs from the living spaces so that vertical ascension would be part of the bedtime ritual. In addition to this, a constant visual connection upward through the openings in the ceiling will have a positive impact on the imagination of the child throughout the day. After all, an important part of the experience of walking through the forest is the visual permeability to the sky, and the cascading of light through the branches of the trees above.



Model. Cross section showing the levels in the building



Model. Cross section showing the levels in the building

## CHAPTER 5: PROPOSAL

### 5.1 SITE HISTORICAL OVERVIEW

Situated in the southernmost tip of the peninsula of Halifax, Point Pleasant Park is a forest within the city: 77 hectares of wooded park etched with 39 km of winding trails and wide paths.



Mi'kmaq canoe from *Nova Scotia Archives*

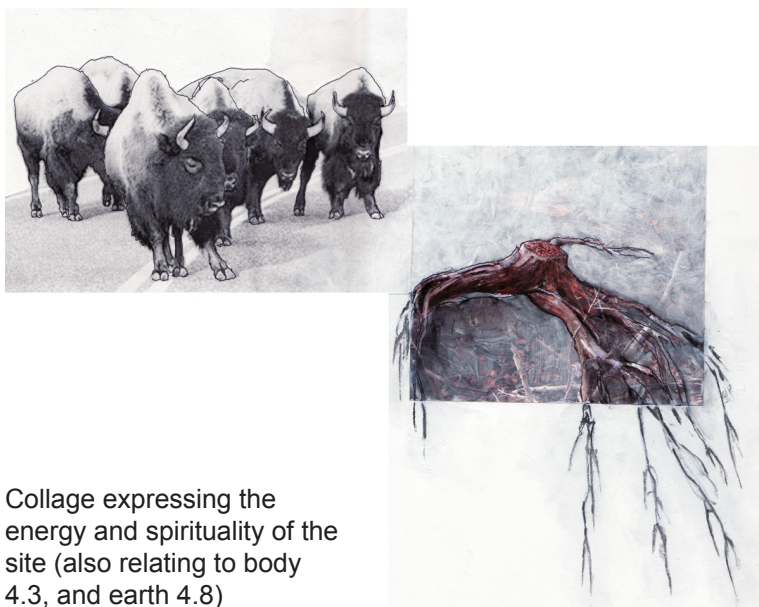


Collage. Imagining the Mi'kmaq celebration rituals and expressing the energy and spirituality of the site (also relating to mind 4.3, and sky 4.8)

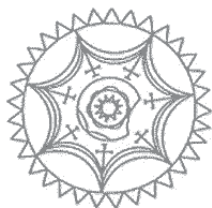
Over the course of its history, Point Pleasant Park was inhabited in a transient way. The Mi'kmaq reunited there every year, seven days after the first new moon in May, for a celebration of spring. They would travel great distances from the edges of their territories (far into New Brunswick, Maine and Quebec) to meet there for festivities that would last 2 weeks or so. Hundreds of canoes would cover the banks of the northwest arm and camp would be set. Fishing, hunting and gathering would take place during the day; medicinal plants were retrieved from the site; many rituals and ceremonies were held; trading would take place; marriages were arranged. There was dancing, music and chanting. Feasts were central to the festivities, and abundance was shared. It was a joyful time, a celebration of the renewal of life. The Mi'kmaq considered it a healing place, and a location suited for the celebration of their sacred connection to the spiritual.

Perennial philosophy states that there are core ideas and values which are held in common by spiritual traditions worldwide (Krinke 2005, 109). According to perennial philosophy, humans have 3 different modes of knowing, or 3 levels of connection to the world: “the eye of flesh, which discloses the material, concrete and sensual world;

the eye of mind, which discloses the symbolic, conceptual and linguistic world; and the eye of contemplation, which discloses the spiritual, transcendental and transpersonal world.” These ways of knowing develop sequentially, with the highest level of learning as the contemplative experience (Krinke 2005, 109). Each level of knowledge relates in turn to body, mind and soul. Is it possible that this peaceful place somehow communicates its story and healing disposition? I mention this here because it is relevant to my imagination of the site.



Collage expressing the energy and spirituality of the site (also relating to body 4.3, and earth 4.8)



Mi'kmaq 7 worlds, from *Nova Scotia Archives*

The Mi'kmaq operate in an understanding of physical and spiritual life based on a complex framework that includes 7 worlds, which exist simultaneously and are interconnected. They also count 7 directions: forward, backward, left, right, down, up, and the seventh direction is toward the self. This is of interest here as it denotes the value placed by the Mi'kmaq people on the relationship of the self to the surroundings. The Mi'kmaq way of thinking seems to remain deeply rooted in a heritage beautifully attuned with nature. Dreaming of the long canoe trip to the site for the



Marcus Gosse, *Seeking Mi'kmaq enlightenment*, 2008). Art Gallery of Nova Scotia, Halifax, NS

celebration of spring, one can imagine the sound of the calm repetitive rhythm of the paddle pushing the water, the slowness of the movement of canoe, and the direct physical contact with nature. The Mi'kmaq lived in such harmony with nature that it had a formative impact on the individuals of their culture. The Mi'kmaq I have the pleasure to know hold, to this day, an acute understanding of the ways of nature and of the place of the spiritual self within nature.



Collage expressing the energy and spirituality of the site (also relating to soul 4.3, and sea 4.8)

The park itself manifests its own cycles of injury and healing. Its present condition is one of gradual recovery from the devastation of Hurricane Juan (2003), which toppled more than 70% of the 156 acres of forested area.

Early European settlements were established in the area that is now Point Pleasant Park but were soon moved

farther north, into the eastern side of the peninsula, where they would benefit from greater protection from the ocean while maintaining access to it by way of the harbour.

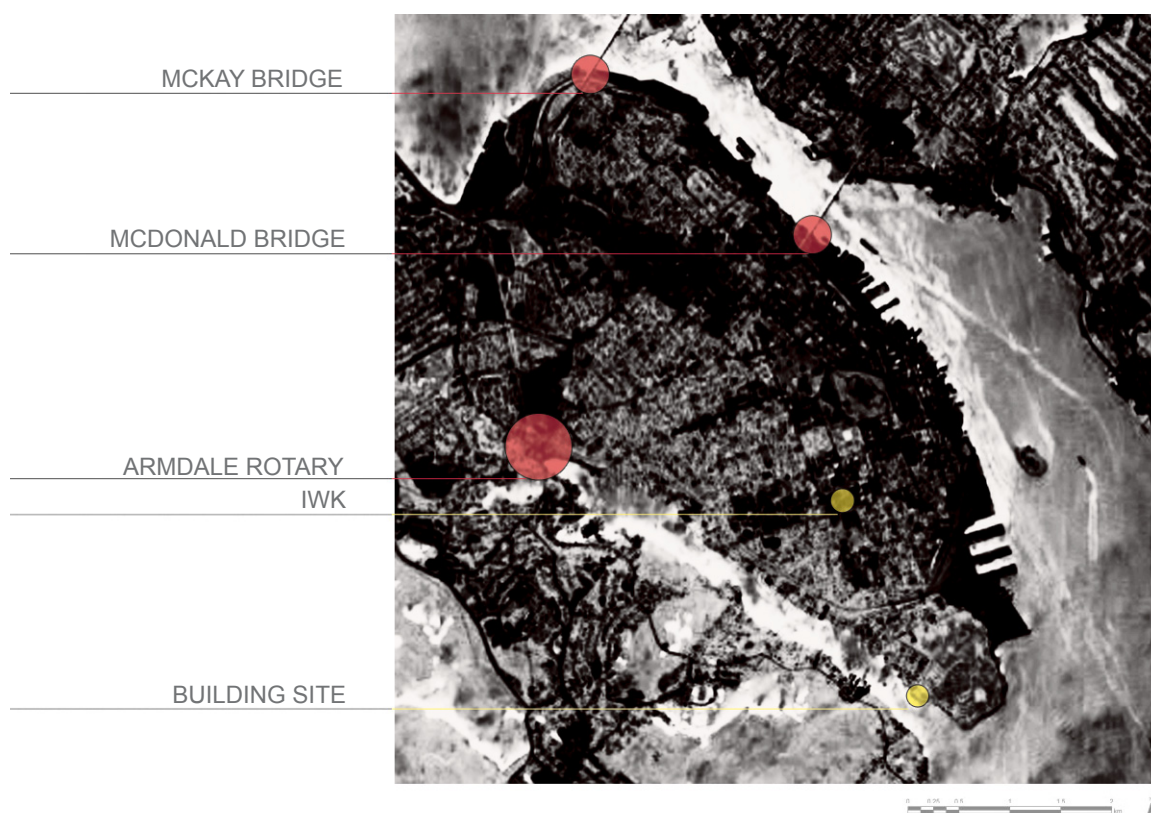
Some 10 years after Halifax was founded in 1749, 7 fortifications were erected in Point Pleasant Park with the intention to protect the Halifax harbor: Chain Rock, Chain Battery, Point Pleasant Battery, Northwest Arm Battery, Fort Ogilvy, Prince of Wales Tower and Cambridge Battery. These fortifications were inhabited as a preventive measure, to keep watch during the world wars. During periods of peace, they were abandoned completely but when the need reappeared, they were constructed anew and inhabited by the military again. Today, the Prince of Wales Tower still stands but all of the other strategically situated structures from which watch was kept have become ruins that punctuate the park. In the summer months, the battery sites are occasionally enlivened by theater performances.

Accounts of people enjoying strolls in the park exist from the very beginnings of Halifax. Point Pleasant provides a safe sample of forest, away from the dangers of wilderness. Its proximity to residential areas makes it conveniently accessible to residents of Halifax and its privileged situation at the tip of the peninsula enlivens the landscape further with views of the ocean in all directions. Given this, it is no surprise that citizens always thought it a first choice destination for a leisurely promenade by horse drawn carriage, by bicycle or by foot. Today, the park continues to be a place of recreation. It provides nature lovers with a haven within the city.



## 5.2 BUILDING SITE

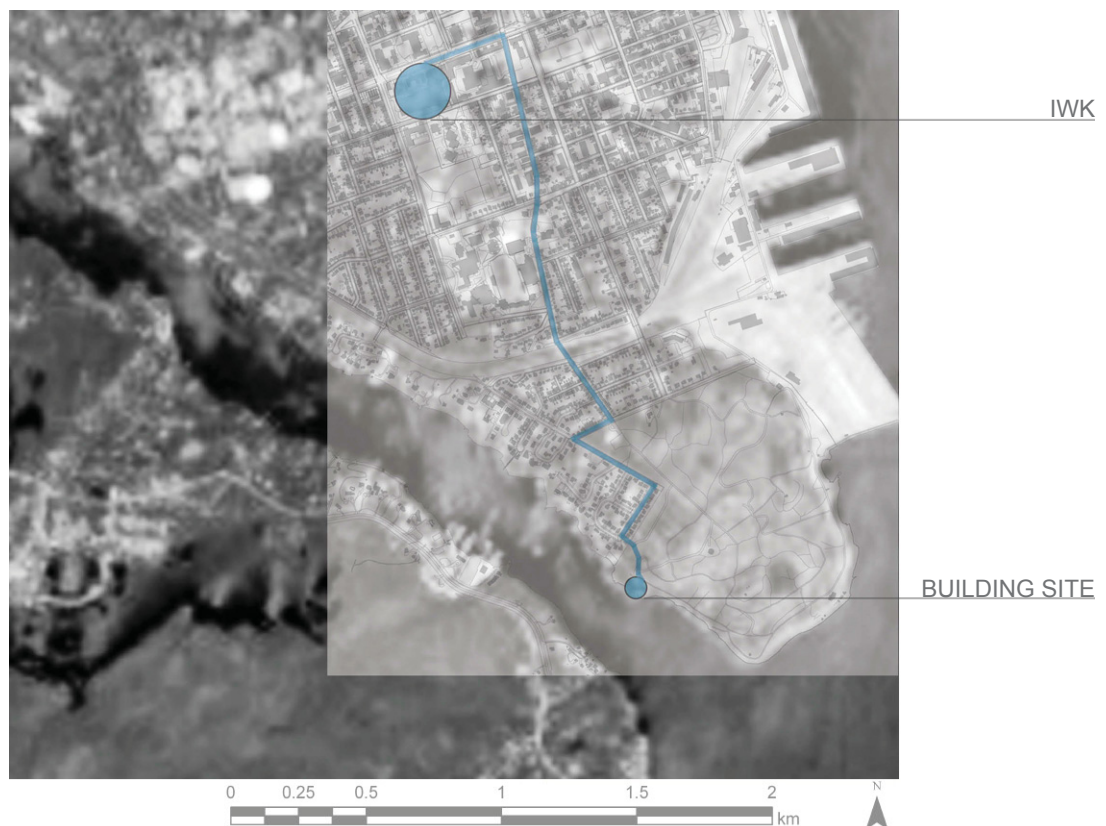
The specific site selected for this project is situated near Chain Rock, on the Northwest Arm (an inlet of the Atlantic ocean, delimiting the Halifax peninsula to the South West). It is in the westernmost area of the park, and is immediately adjacent to a residential area. Thus a vehicle could easily enter the park where an access route exists from Chain Rock Drive (a residential road) and take Cable/Arm Road (a park service track) to the proposed house. This question of proximity to the urban infrastructure is essential for transportation to and from the hospital, particularly in the event of an emergency.



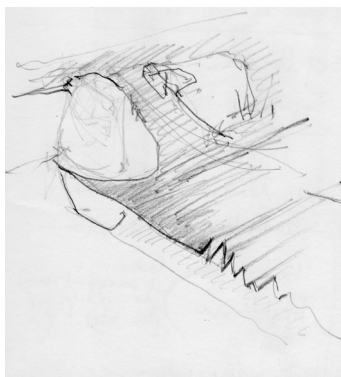
Map of Halifax, NS, showing 3 points of exits from the peninsula: the rotary and the bridges. These are highly susceptible to traffic congestion and find themselves on the way to any other comparable, though more distant, expanse of forested land. Map composed from Google Earth and Dalhousie GIS.

The site is approximately 2.5 km from the IWK Children's Hospital, a distance that can be traveled by car in 5 minutes and even faster by emergency vehicle. It is important to note that the choice of the site takes into consideration that the roads to be employed for access are not subject to city traffic congestion. The close proximity to residential areas will likely facilitate the connection of the house to the city grid, for power, water, sewage and so on.

Chain Battery and Chain Rock are nearest to the selected building site. These fortifications were minimal and built on the natural terrain to protect the Northwest Arm. Unlike the



Map of Halifax, NS, showing the 2.5 km trip from the site of the satellite building to the IWK. Map composed from *Google Earth and Dalhousie GIS*.



Sketch showing imposing masses of stone on the site, the rhythm of the waves and its effect on the shoreline

other fortifications, these were not rebuilt or altered; only a submarine net anchored at Chain Rock and stretched across the Northwest arm was introduced during the First World War. The site is thus fully forested and only traces of the 1462 fortifications remain nearby.

Adjacent to the waters of the Northwest Arm and sheltered by a great natural stone face, the site served as an important place of congregation during the Mi'kmaq celebration of spring.



Map of Point Pleasant Park, locating the building site and showing the road leading out of the park and toward the IWK. Map from *Point Pleasant Park, Halifax, Nova Scotia*

Set in nature, by the ocean side and yet so close to the hospital, the site is ideal for a place of healing. It is sheltered from the ocean, on the Northwest Arm, and benefits from optimal exposure to sunlight, as it is oriented to the southwest. It is adjacent to a road, which is ideal for access. This access would be of minimal disturbance to the park, given the proximity of the point of connection to city streets. These city streets leading from the tip of the peninsula to downtown are not at all subject to traffic congestion. Despite the proximity of the road to the site, the topography of the land is such that the site remains quite private. The slope of a portion of the site combined with the large rock face at the northeast shelter the site from the cold winter winds.

### 5.3 PROGRAM

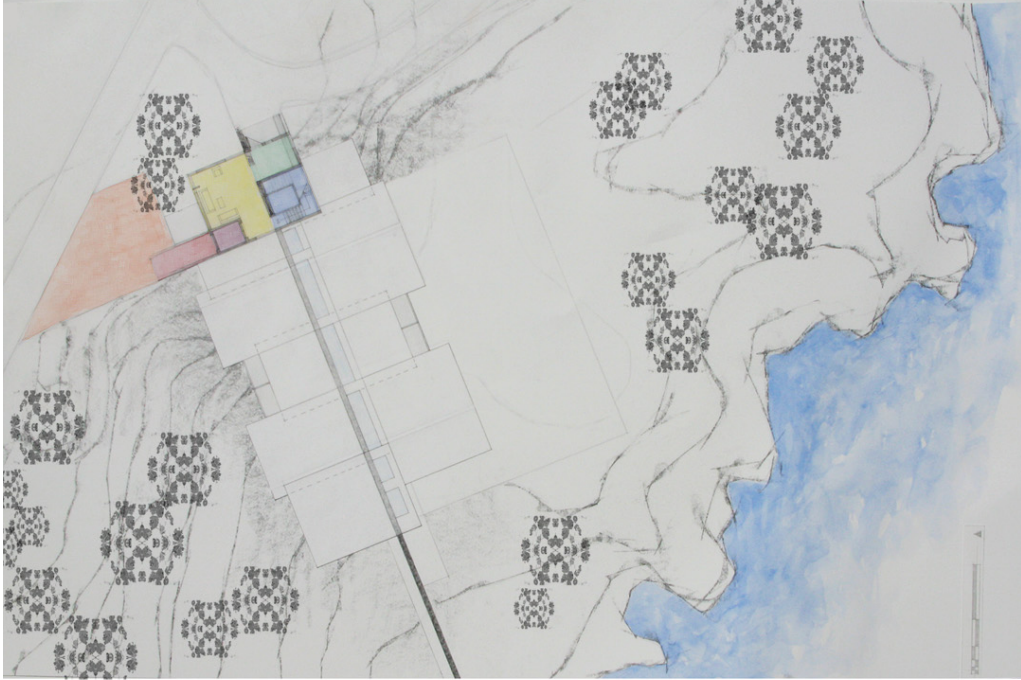
In order to circumscribe the programmatic requirements for the satellite building, an overview of child healthcare literature was conducted and complemented by discussions with health professionals, as well as informal guided hospital visits and volunteer work with children in the hospital.

To feel comfortable in the building, the child will need a balance between independent, shared and public spaces. The environment should be stimulating and provide the child with the ability to actively participate in an architecture that engages the senses, that is visually inviting, and appropriately scaled. The image of the place should be positive to the child, its materiality warm and its objects scaled down to facilitate interaction. The place should be associated

with pleasurable activity in order to hold a psychologically positive image in the mind of the child. Play and education must be encouraged. Art-making, particularly the representation of the natural surroundings, is an activity from which the healing child would benefit. The young artist's relationship to his subject and his work is likely to induce a meditative state. Fully immersed in his work and fascinated by his subject, the healing child embraces positive energy as the illness is temporarily forgotten.

Keeping a garden is another beneficial activity to the healing child. The gardener gets very close to nature, touching it and observing its intricate inner-workings. Again, soft fascination is at play. An intimate relationship with growing, living things is established and watching the garden over time, even through its dormancy, is said to be healing. The possibility of playing music could be beneficial, adding stimulation to the environment by the introduction of yet another rhythm. The child could engage in the music by singing along, moving and dancing. Meditation and visualization are beneficial to healing and should be encouraged. The interior and exterior spaces should be made in such a way as to make mobility appealing and encourage independence and rehabilitation when applicable. Bathing and water play should be made possible, as water has the unique ability to envelop and enable the body to defy gravity, often reducing pain. Parents should be welcomed to visit, to occasionally participate in their child's activities, and when the need presents itself, to spend the night by the side of their child. The environment should be home-like.

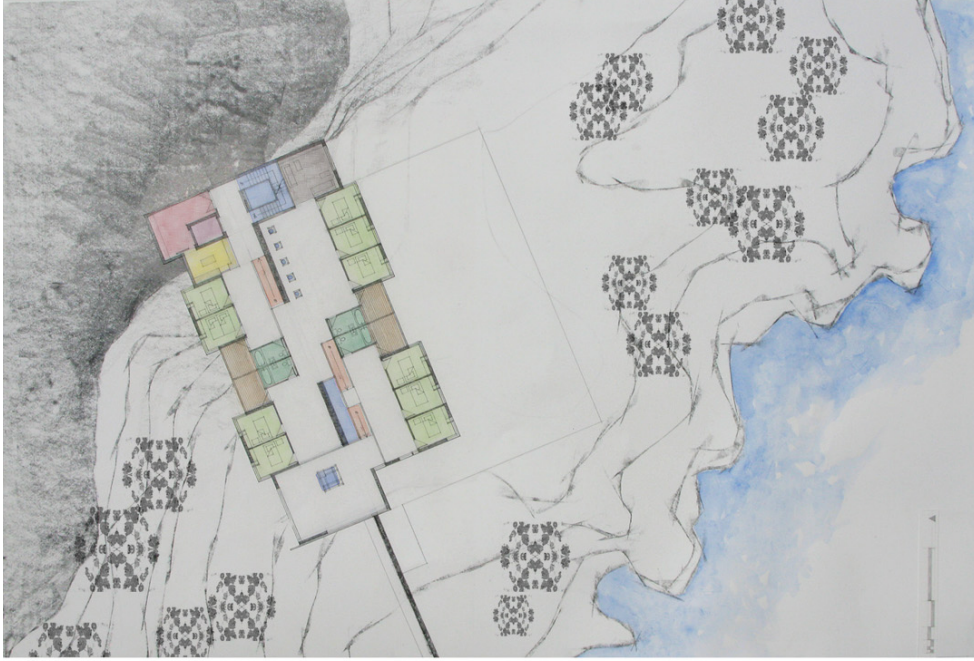
In addition to this, a separate space should exist for the parents and staff to take a moment away if needed and when appropriate. Teenagers also should be offered the possibility to retire for individual time when the need arises.












- EMERGENCY DRIVE
- ELEVATOR
- EMERGENCY EXIT
- STAIR
- ENTRY
- MUDROOM



Program diagram, entry level.



-  BEDROOMS
-  NURSING STATION
-  STAIR
-  ELEVATOR
-  EMERGENCY ROOM
-  BATHROOMS
-  RAMPS (ARROWS UP)
-  PARENTS + STAFF BREAK ROOM
-  OUTDOOR DECK

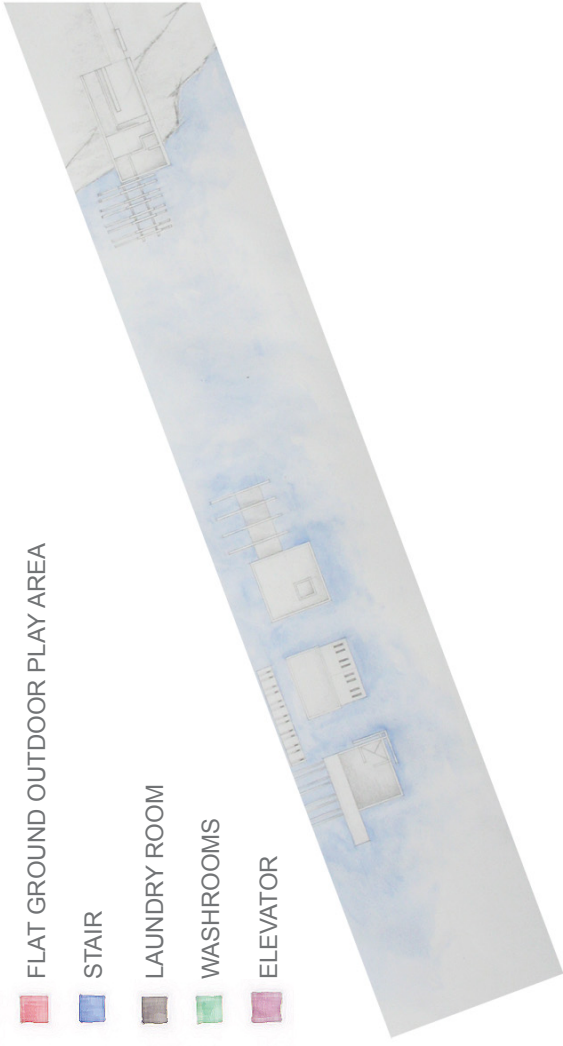


Program diagram, bedroom level.

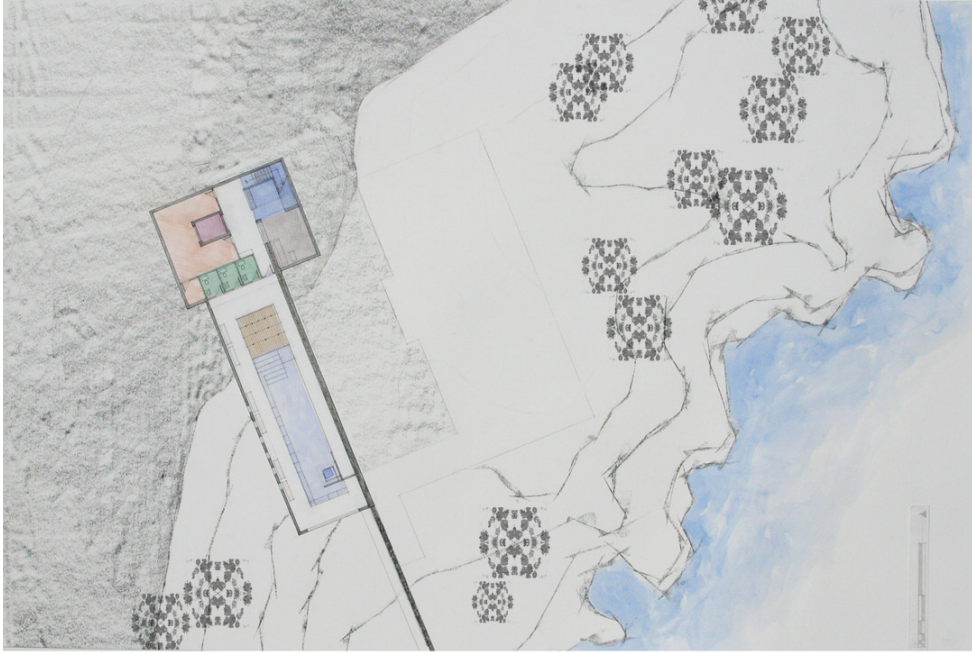




- ART ROOM
- HELPER'S KITCHEN AND PLAY HOUSE
- KITCHEN
- DINING ROOM
- READING ROOM
- FLAT GROUND OUTDOOR PLAY AREA
- STAIR
- LAUNDRY ROOM
- WASHROOMS
- ELEVATOR



Program diagram, living level



- POOL
- FOUNTAIN
- MECHANICAL ROOM
- STAIR
- LOUNGE AREA
- WASHROOM / CHANGE ROOMS
- ELEVATOR



Program diagram, swimming level.

## 5.4 DESIGN

The guiding principles that inform the design are the following: The building should be inviting, provide a home-like environment and encourage contact and discourse with nature. More concretely, I intend to reach these goals by:

- offering a multitude of instances which may open a dialogue between the child, architecture and nature, that is, encouraging rich experiences by triggering the curiosity and imagination of the child;
- encouraging a close relationship to the surrounding nature by providing openings for visual and physical access to the outdoors while maintaining a sense of protection;
- allowing natural light to play an important role in the building;
- paying attention to the choice of an appropriate scale for children;
- providing opportunity for play;
- choosing familiar, warm, natural materials;
- doing away with the negative, stress-inducing aspects of the institution of the hospital;
- juxtaposing spaces in such a way to encourage participation in activities of normal daily life;
- offering spaces that generate opportunities for interaction between the children;
- ensuring accessibility to all interior spaces and to as many outdoor areas as possible, for children in wheelchairs or with an intravenous drip;
- introducing elements to incite the child to gradually return to movement and activity when possible.

Through these strategies, architecture offers a safe place for the child. The comfort provided by the building enables the child to return to a more normal existence. In childhood, imagination holds a central role. “Childhood is certainly greater than reality” (Bachelard 1957, 16). The comfort and stability offered by the architecture will free the imagination of the child, ridding it of constant fear. The playful elements punctuating the space help to trigger the child’s imagination: the presence of interactive objects, and the plays of filtered, coloured, and reflected light, combined to a constant contact with nature immerse the child in a context where play and dreams prevail. Under these conditions, healing is facilitated.

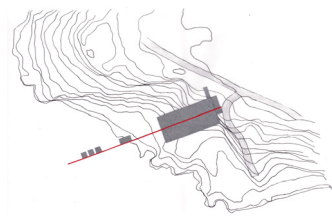
#### 5.4.1 PARTI



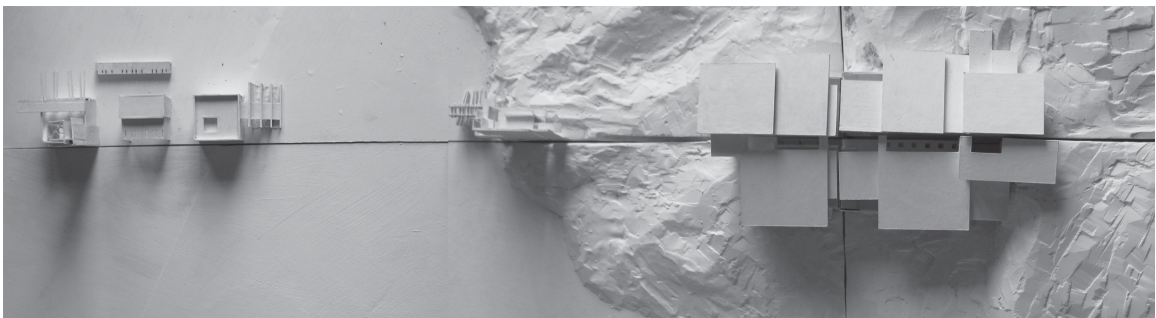
Photo of fractured stone on the site

A remarkable feature at the site is the evidence of the force of the ocean on stone. Along the water’s edge, the slate has been split and over time, the thrust of the waves caused the pieces of stones to slide on the axis of their fractures. In response to this as well as to the experience of walking on the complex slopes of the site, my parti emerged. Spaces would be arranged along a central axis. On this axis would stand a wall along which level changes would occur in response to the level changes in the site. This wall would support a fragmented roof with slits open along the wall on one side to allow sunlight in through the core of the building. It would extend outside toward the waters of the northwest arm, leading to a series of pavilions. The wall both divides and provides thresholds in the connection of spaces. It is increasingly open as one moves upward through the building and it allows light into the depth of the building. Metaphorically, it can be thought

of as permeability through the divide between body and mind or rather, body and soul. With its gesture toward the ocean waters and the pavilions, it further opens a world of dreams.



Parti drawing



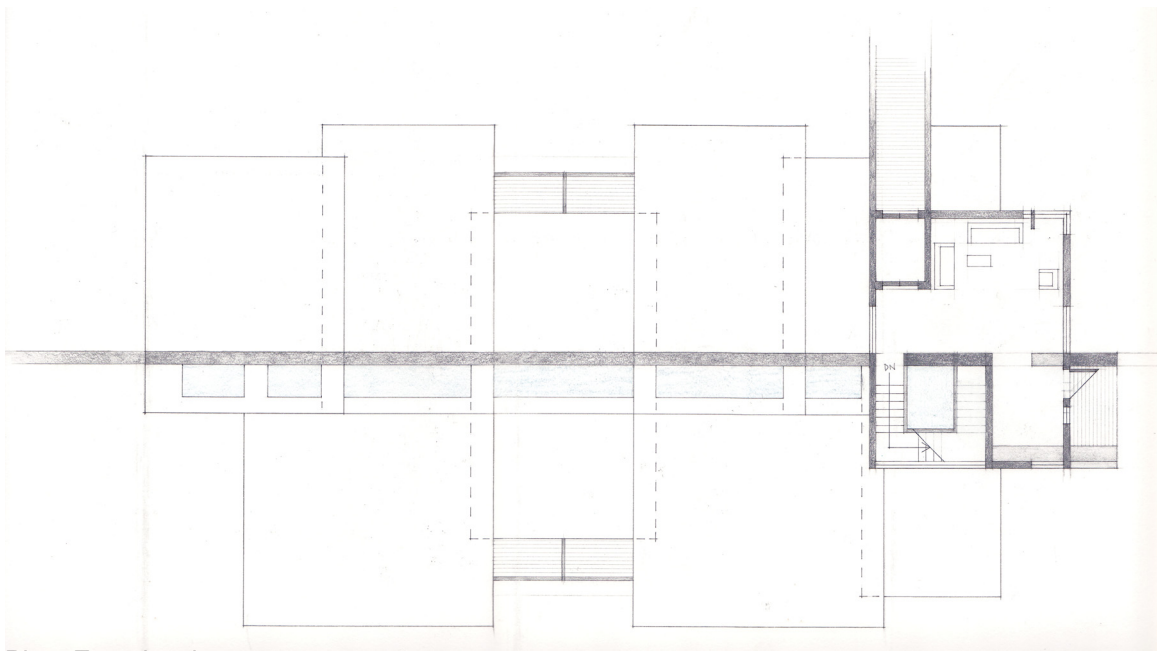
Parti, still evident in the model



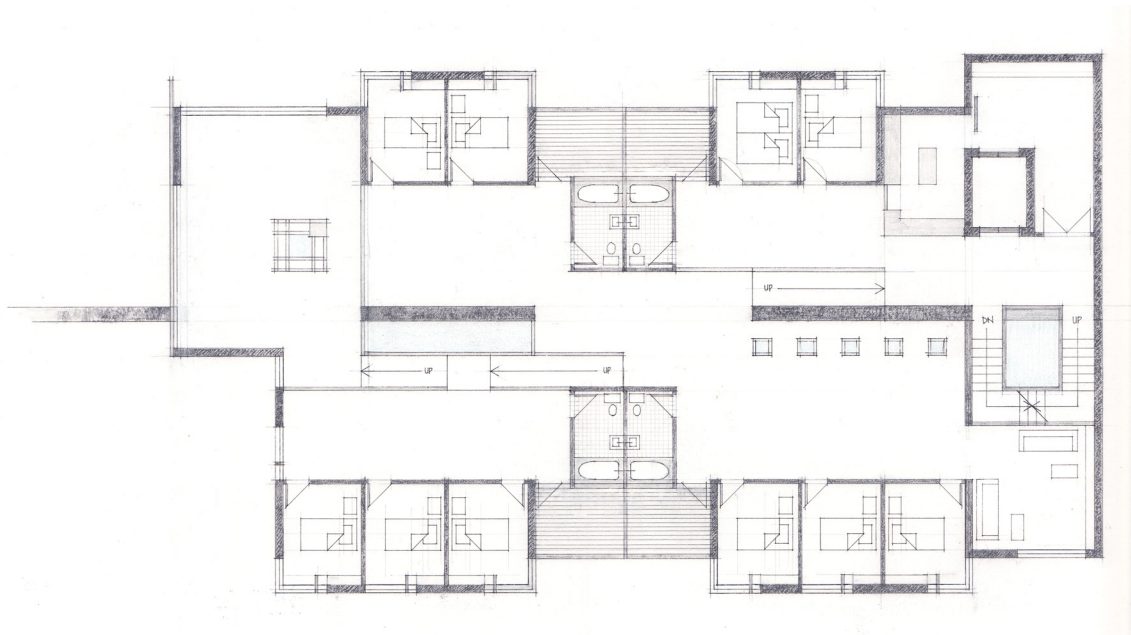
Drawing of the site, showing the split stone along the shore



Plan. Entry level, showing rooftop and pavilions..

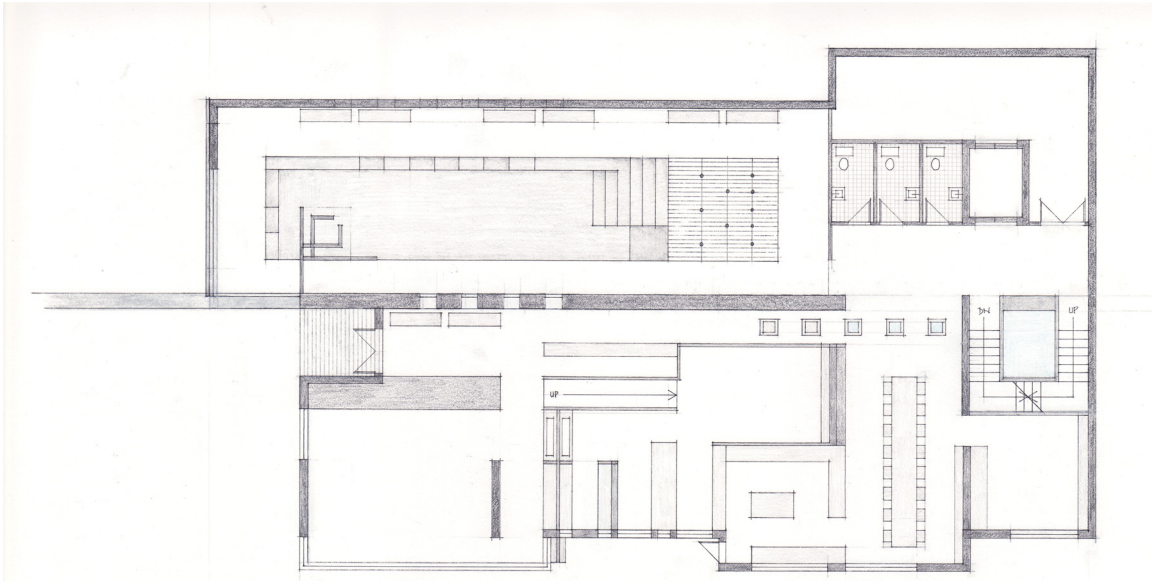


Plan. Entry level.

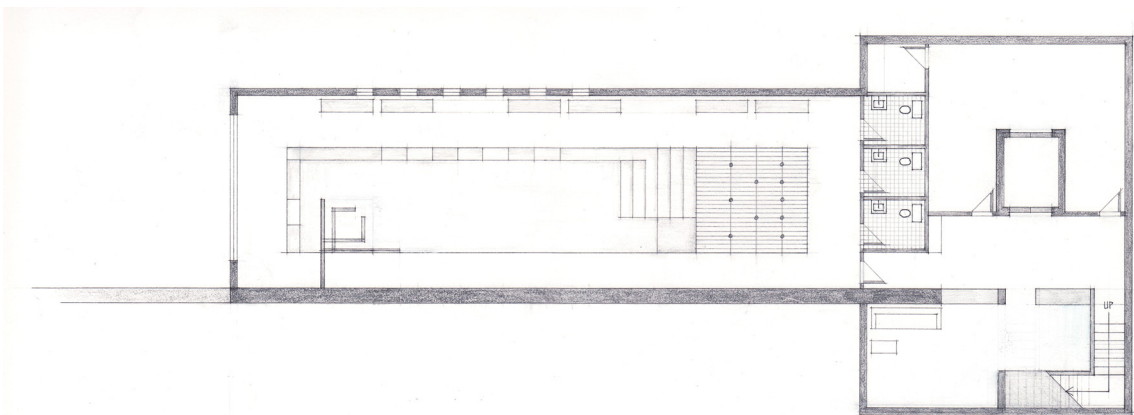


Plan. Bedroom level.

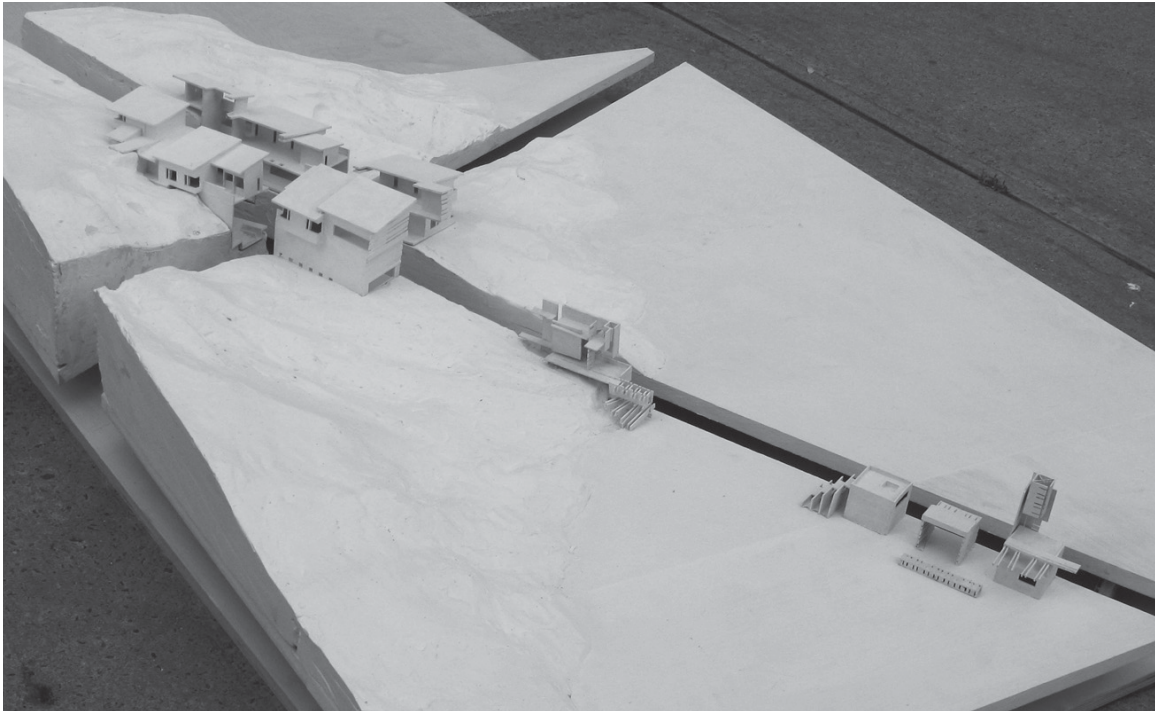




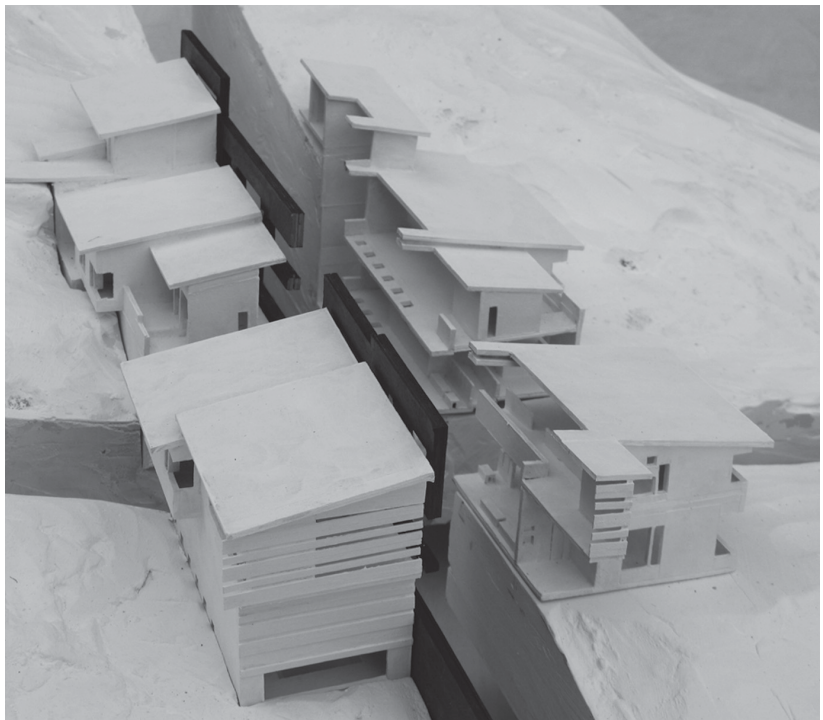
Plan. Living level.



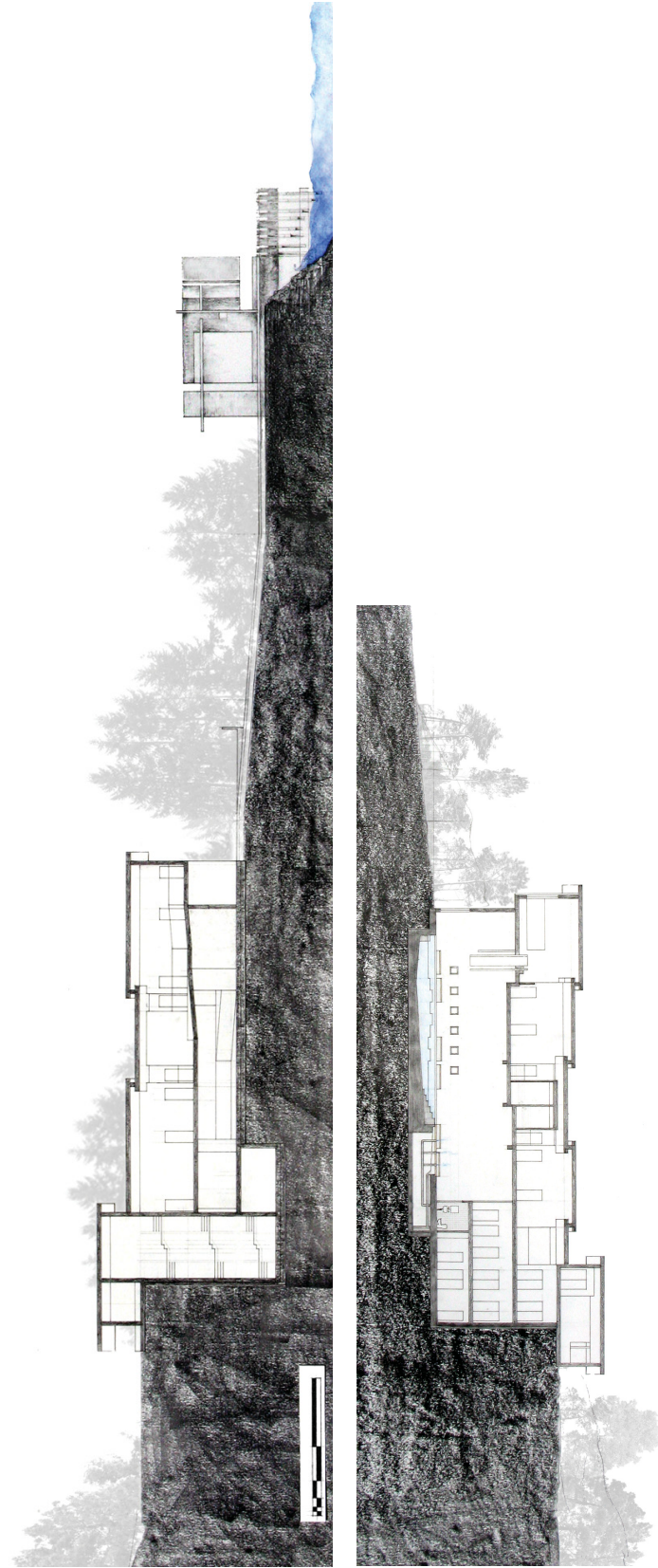
Plan. Swimming level.



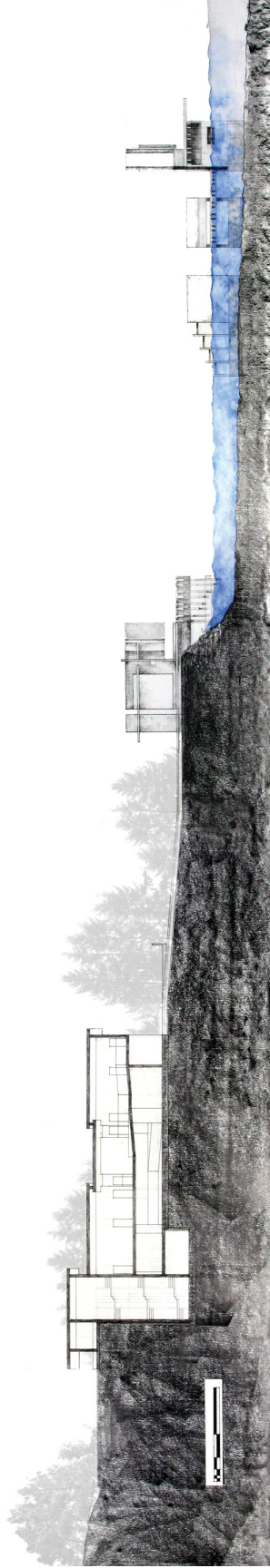
Model, showing sections



Model, showing sections



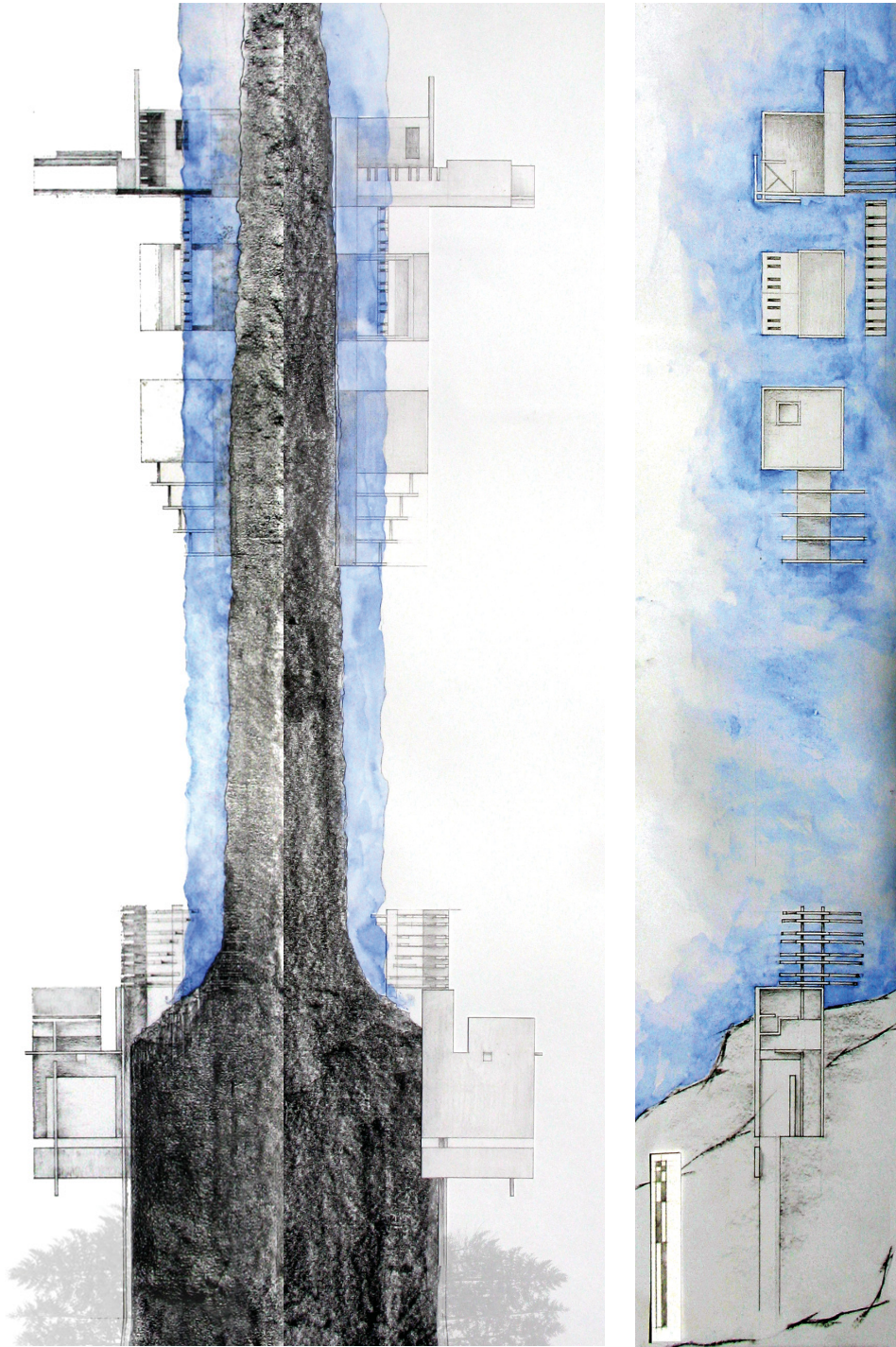
Longitudinal sections.



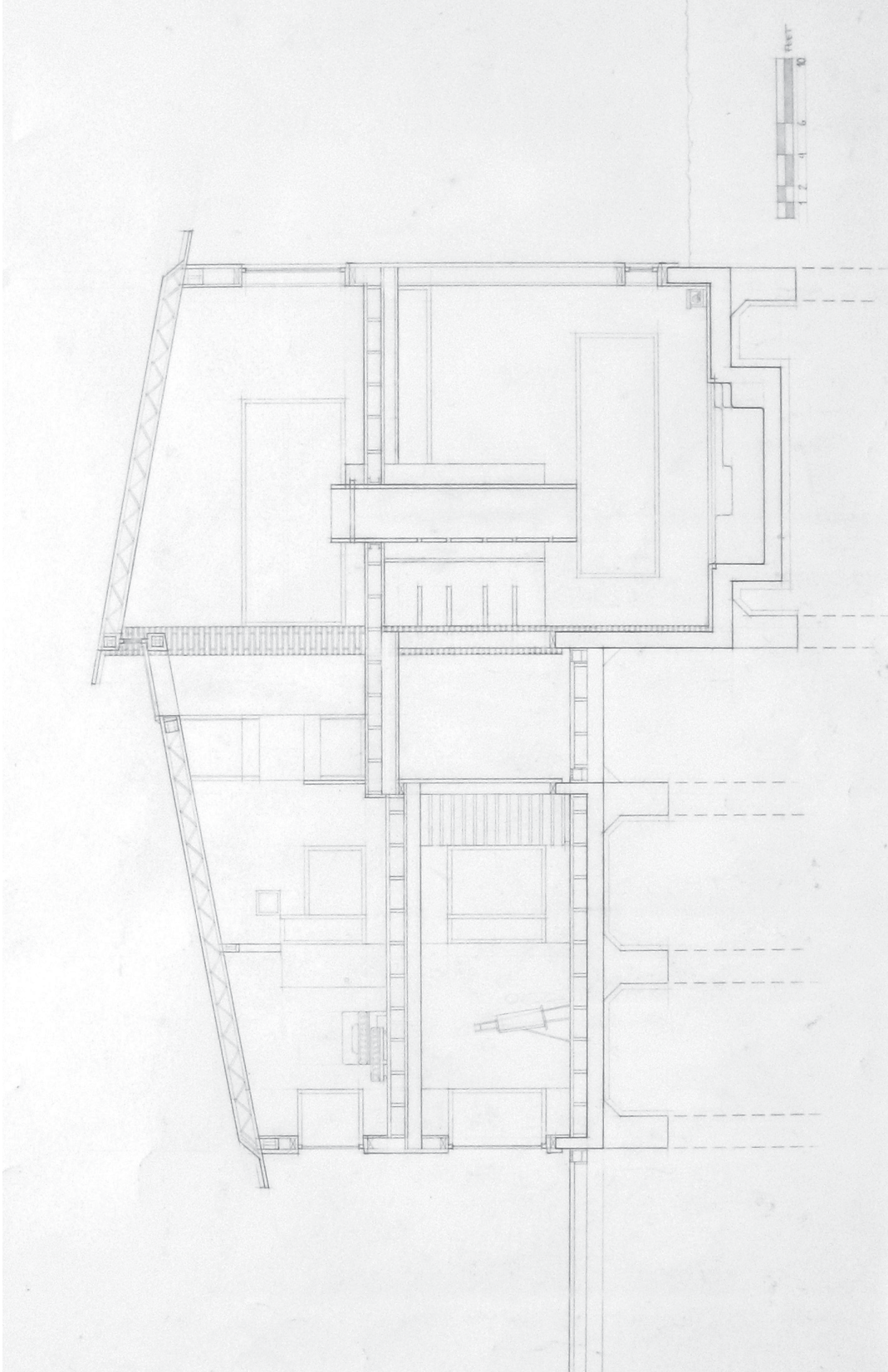
Drawing showing the relationship between the longitudinal section and the pavilions in elevation, looking southward.



Model. Longitudinal sections



Pavilions in elevation and plan.

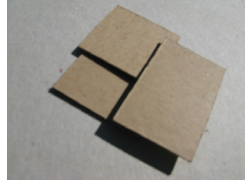


Cross Section

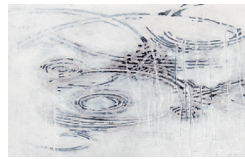


Longitudinal section, showing openings admitting light in and creating vertical connections

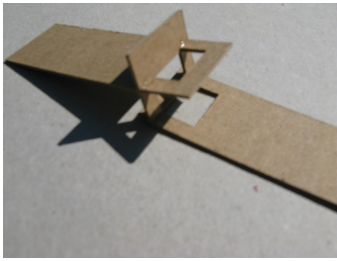




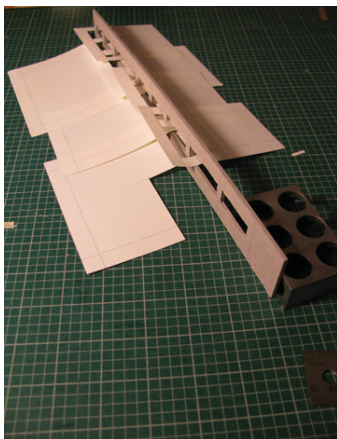
Early sketch model for overlapping roof.



Ripples overlapping on the water surface.



Sketch model resolving overlaps and openings in the roof.



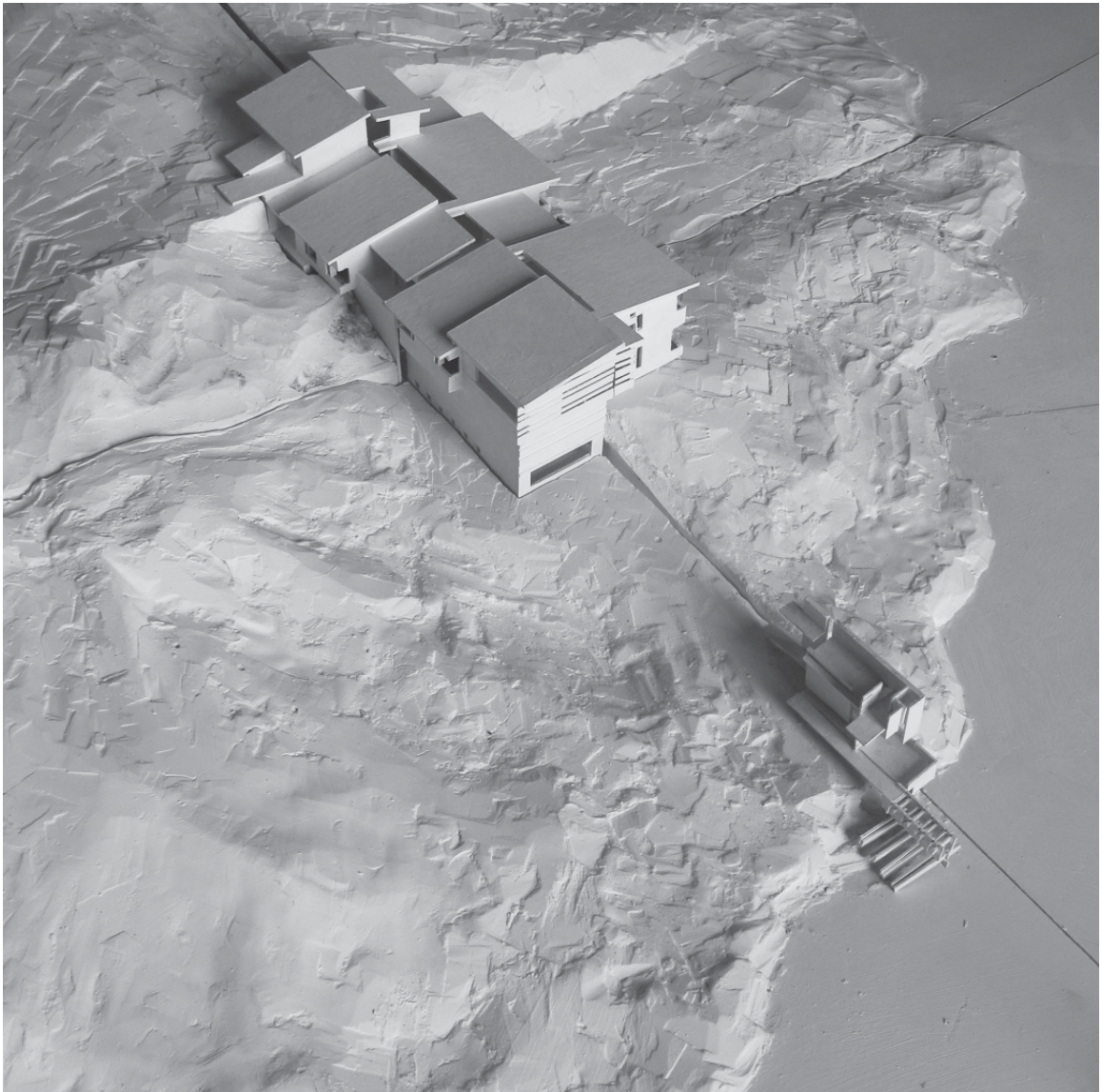
Sketch model resolving overlaps and openings in the roof.

## 5.4.2 ROOF + STRUCTURE

The building is set into the slope of the site. Piles are drilled and anchor the building into the bedrock. The retaining wall is further anchored laterally. A steel structure is used as it allows for great spans. In the overlaps of the roof are approx. 1' deep steel trusses. Such trusses are also used above the pool area. It was important that the roof should be articulated. A flat roof is of the realm of the institutional whereas a sloped, articulated roof is associated to the home. Indeed, most children will draw the home, or the idea of home, as having a sloping, articulated roof.



Model, showing the roof.



Model, showing the roof.

### 5.4.3 EXPERIENCE

The short trip from the IWK to the site is a pleasant one. Children would be taken out of the hospital and out of the busy downtown area of the IWK through a quiet residential area and then into the forested park. As a key component of this sequence, the approach to the building must offer a gentle transition into a new place for the child. Using the slope of the site, I have positioned the entrance on the top level in such a way that the building will not appear overwhelmingly large. Upon approaching the site, the fragmented roof of the building will be seen through some trees. Coming around the trees, the faceted roof leads our eyes to the flickering surface of the waters of the northwest arm. Above this roof, only the small room of the entry is at the level of the road.

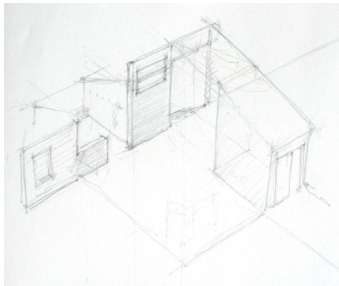


Image showing the approach coming from the water

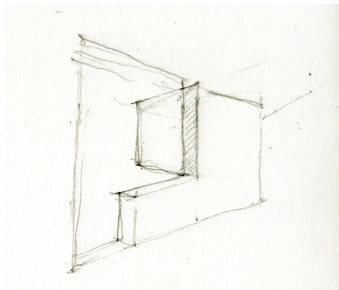


Image showing the approach: rooftop and entry through the trees from the road

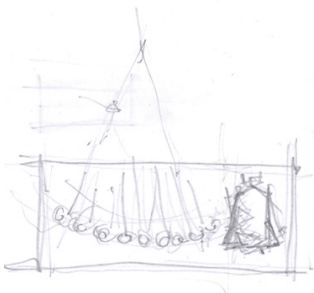
With a covered outdoor area and a bench extending outside, the entry is welcoming. Views are allowed into the day lit entry through windows on the way to the wooden door. This openness is important for the child to be able to rapidly gain an understanding of the space before even entering it, thus eliminating any mystery or threat. Let us remember that these children have been faced with difficult unknowns due to their illness, and stress levels must be reduced as much as possible. The door is wooden as this is in the realm of the familiar and warm. In fact, this sets the tone for materiality throughout. Natural materials and finishes are preferable as they offer a desirable distance from the material palette of the hospital and are more akin to the home. Also, natural materials used in what could be described as an honest way offer to the child a deeper connection to the built form through the child's ability to understand them. As the composition of the parts that form the space is demystified, as construction and the provenance of materials is understood, appropriation can take place. Opportunities to provide this kind of understanding must be welcomed as gifts. In the words of Sverre Fehn: "If you hide the concrete column, you rob the child's possibility of having a conversation with architecture" (Marble 1988,112). Through knowledge and imagination, a communication is opened between the child and architecture.



Sketch, showing the entry level



Sketch, showing entry threshold



Sketch showing doorbell

A doorbell mechanism is set at a low point, inviting the child to engage by activating it. From outside by the doorway, one can see the chimes as they are struck. This is meant to make a positive event of this initial direct contact with the building. Someone opens the door and the arriving guests are welcomed; this is a home. Upon entering there

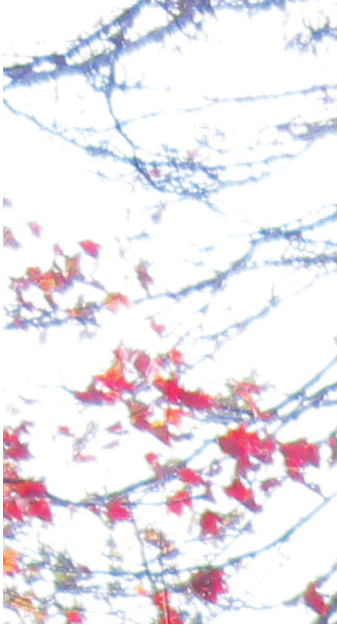
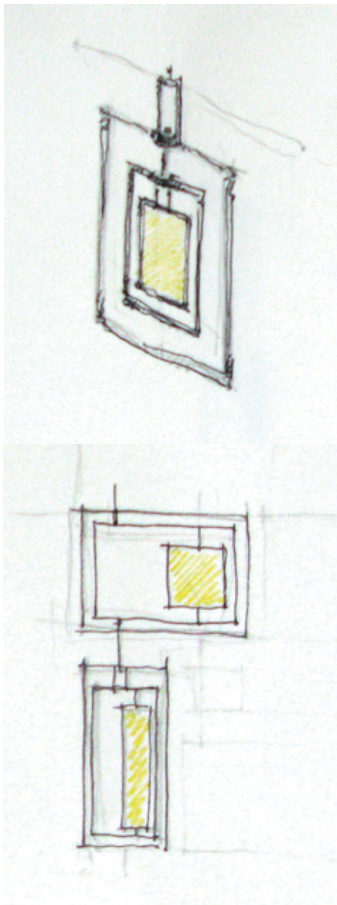
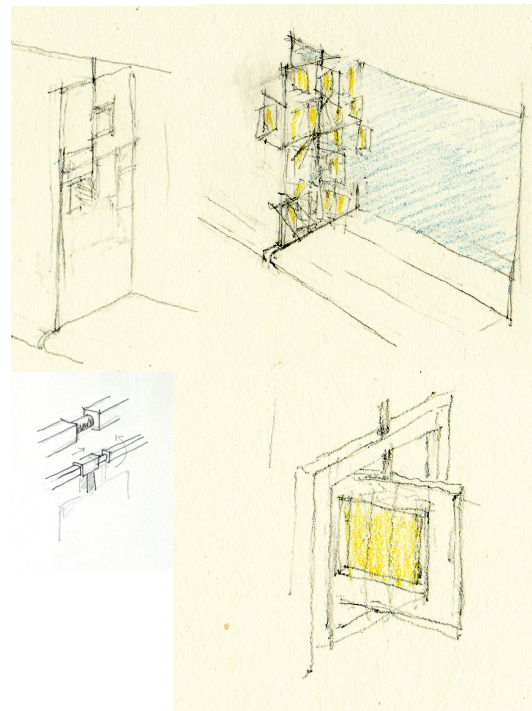


Photo of branches and colourful leaves at the site.



Sketches showing idea for window mobile

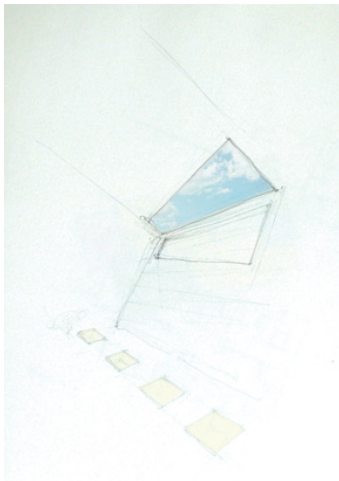
is first a mudroom with a bench visually extending from the bench outside. The threshold between the mudroom and the entry room is marked by a passage through an opening in a wall that is central to the design of this building. This is the above-mentioned anchoring wall, which stretches out to support the roof above the entrance way but also extends the entire length of the building and beyond. In the entry is a seating area where staff and parents can sit comfortably and discuss any questions or concerns. An object is set into the windowsill for children to play with. It is a sort of cross between a mobile and a 3-dimensional puzzle that interacts with light and casts shadows in changing ways as it is reconfigured. These also exist in each of the bedroom windows where they have a role in individualizing the rooms; the range of colours and forms may differ slightly, but most importantly, each individual child chooses



Sketches showing idea for window mobile

their configuration.

From the entry room seating area, a view is opened onto the rooftops and the forest and water beyond. Openings to the south as well as an opening in the south facing slopes of the roof let natural light pour in above the stairs. The opening of the stairs can be thought of as an inverted tower, enabling daylight to reach the deepest point in the building. Of course, an elevator is also available. The point of access to the stair and the elevator are adjacent so that the two experiences of arriving to a floor will be as similar as possible. The two are also facing each other, facilitating meeting again, when for instance 2 children choose to take different paths to meet at another level. Going downstairs, the next floor is the bedroom floor, nestled in the tree canopy. Upon arriving on the floor, one first encounters the nursing station. The nursing station guards the threshold to the bedroom areas and can thus monitor circulation. Adjacent to it, and out of view behind the elevator, is an emergency room equipped to address and stabilize any emergency that might occur. From this room, direct access to the secondary door of the elevator is possible. Upstairs, directly above, is an emergency exit. The secondary doors of the elevator enable an exit without disruption in a calm and efficient manner. The emergency exit gives onto a flat parking area adjacent to the road for an emergency vehicle. Both the nursing station and the emergency room are equipped with a medical cabinet.



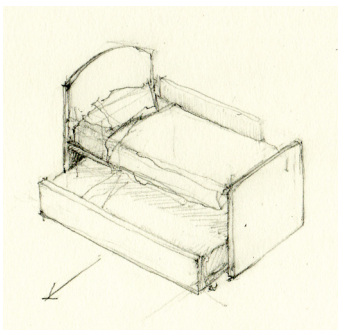
Sketch showing openings in the roof and floor

The bedrooms are arranged in small clusters of 2 or 3, each cluster having a play area, a bathroom and access to a balcony. After passing the nursing station, one enters

the play area of a first such cluster. From here, a ramp leads down to give access to two more bedroom clusters, on either side of the wall which is quite open at this point, providing a larger, central play area. On this level is also a room for parents and staff to rest, have a break and build their energy anew when needed. In each bedroom, an additional bed can be pulled out from beneath the bed of the child to accommodate parents who wish to stay overnight.



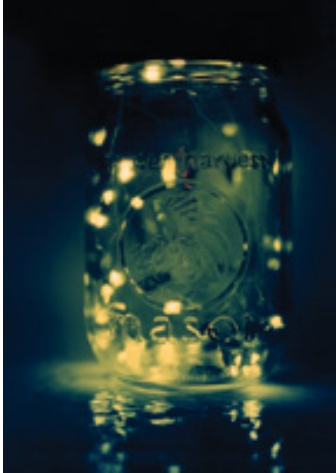
Sketch showing the site at night



Sketch of bed, showing the parent bed below

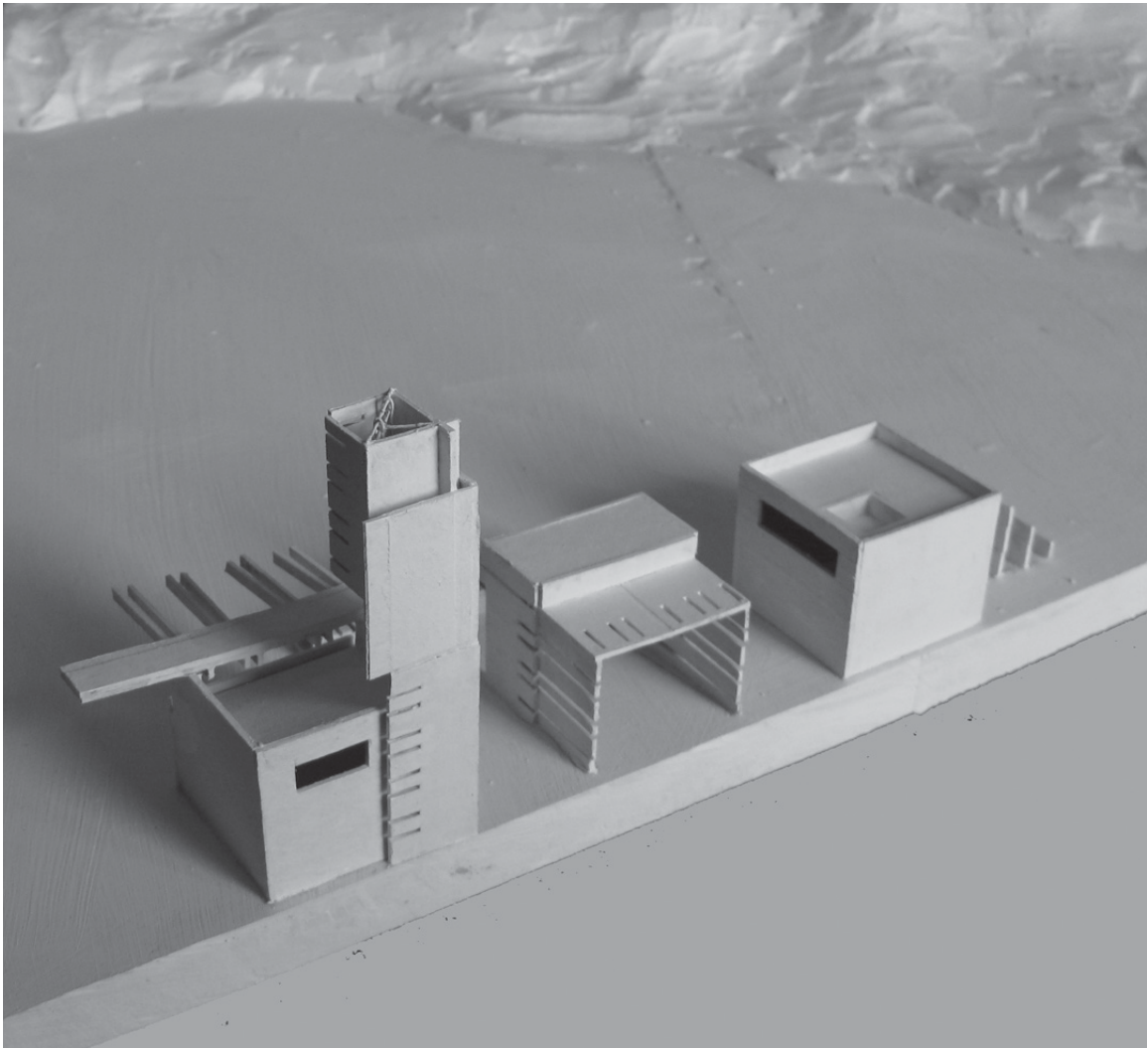
Openings in the roof span the length of the south side of the wall and beneath them openings in the wall allow light to reach the other side. In addition to allowing light in, these openings in the roof above play areas provide an opportunity for the child to observe clouds in the daytime and stars at night. Small glazed square openings in the floor allow a visual connection to the floor below. Translucent coloured screens can be set onto these, tinting the view from above and sending small patches of coloured light to the floor below.

Another ramp leads up to a last cluster of bedrooms. From this level one can continue up another ramp into a room meant for bedtime stories. Upon arriving at the top of the ramp, one moves through an opening in the wall to enter this room. As this threshold is crossed, one arrives at a window from which the extension of the wall reaching out to the pavilions and the water becomes evident. This extension of the built form into the landscape is of importance as it tames the surrounding landscape and increases the area to which the child associates a sense of belonging and ownership. It incites the exploration of the outside world, beyond the building while offering bounding land-



Jar of fireflies from *National Geographic*

marks. The wall and pavilions provide a sense of place and security. As they reach out and into the water, their effect goes beyond the immediate. Water, as discussed earlier has a powerful presence charged with meaning. The water pavilions are about dreams, the future, and reaching out into the world. They stand for what lies ahead; they stand for hope. At night, the pavilions are gently lit become lanterns. Again, this provides bearings in the dimly lit landscape. Visible from the bedtime story room, the gently lit pavilions accompany the child in a world of fantasy and dreams.

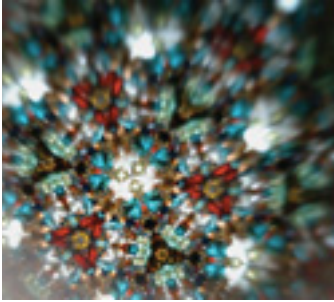


Model. Water pavilions.





Pavilions as lanterns at night

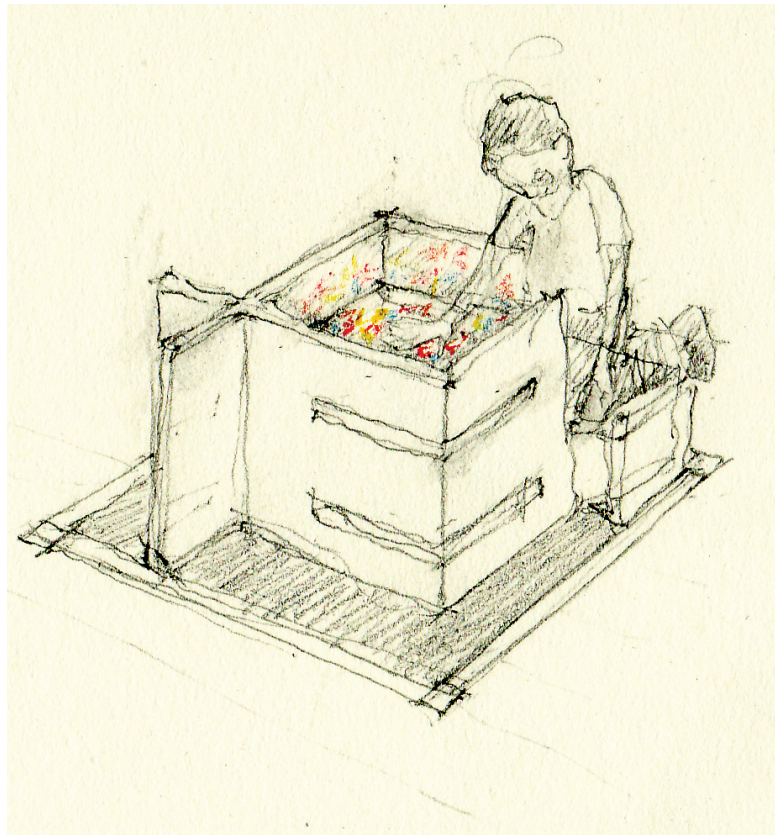


Kaleidoscope from *National Geographic*



Sketch showing kaleidoscope from below

This room is also a play space and in it is set an object, which protrudes through the floor and offers a connection to the space below where there is a swimming pool. The object has 4 walls with reflective metallic inner surfaces. From above, translucent coloured pieces can be mechanically rearranged on a glazed surface. From below, in the water, the child can enjoy the bright flickers of colour echoed again and again in this hovering kaleidoscope. A mobile is set within the kaleidoscope to offer additional layers of colour and reflection.

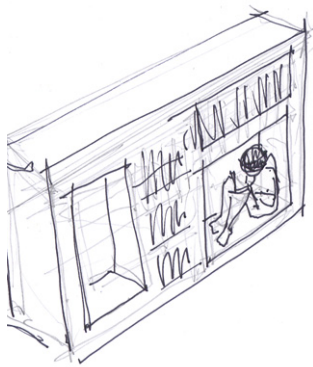


Sketch showing kaleidoscope from above



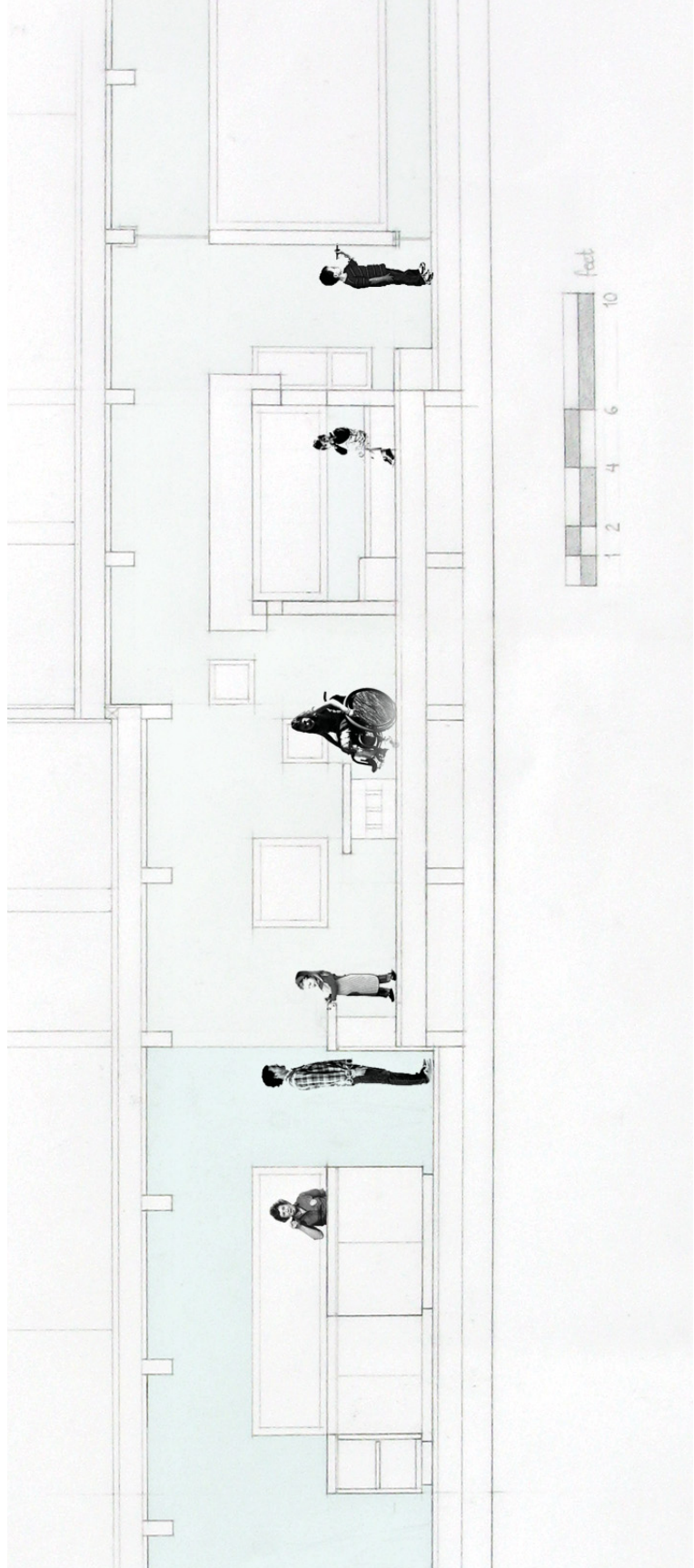
Cross section showing the kaleidoscope in relation to the pool below and the story room above.

The slight level changes on this floor are reminiscent of the nearby landscape but also have the effect of making places within the space. The ceilings following the roof planes further articulate these spaces. The arrangement of bedrooms in clusters, connected by ramps and open play spaces makes it possible to do away with any corridor. Clusters are separate but visually connected and easily accessible from one to another.



Sketch showing inhabitable bookcase

Arriving to the story below the bedroom floor, one passes a window looking onto the swimming pool, still a level lower. One also localises the washrooms, which are adjacent to the elevator. On this floor is a reading room with an inhabitable bookshelf. Children or toys can occupy openings in this bookshelf. A dining room with a large retractable table makes it possible for children and staff to enjoy meals together, and for parents to join. It is also possible to extend the table outward in the summer months, onto an adjacent outdoor deck. The kitchen and cooking are central in the home and the rituals surrounding the preparation and the delight in sharing and tasting food are key components of a normal life. Thus, infusing life in this home with these rituals promises to have a positive effect. Adjacent to the kitchen is a little helper's kitchen. It is accessible by going up a ramp. By raising this area slightly, the countertop of the children's kitchen can meet the height of the neighbouring kitchen. The two spaces are open to each other completely, separated by a shared countertop. There is a table in this area as well as a sink.



Longitudinal Section showing the kitchen and helper's kitchen

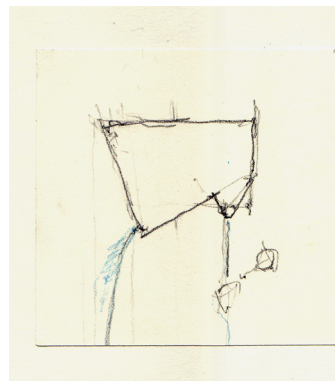


Water moving through the terrain near the site

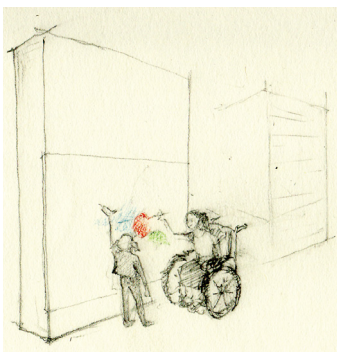
Adjacent to the children's kitchen is a partially enclosed seating area. From this area, a fountain can be seen out the window. This object renders rain a joyful event by cascading its water through a series of moving parts, splitting it into small streams that join again at the bottom. The children's kitchen is a place meant for the kids to participate in the making of food and is also a good place for snacks to be enjoyed through the day. A playhouse is also set on this raised platform, with a view onto the activities of the kitchen. Beyond this raised platform is a large art room. At its entry there is a sink, next to it is a bench and a window looking onto the rain fountain.



Sketch for the rain fountain

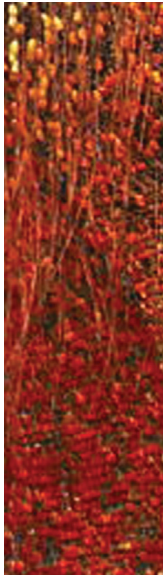


Sketch for the rain fountain

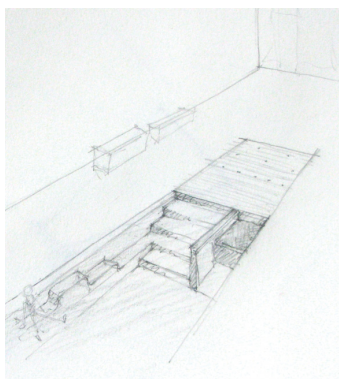


Sketch for the art wall

The art room is visually open onto the exterior. An art wall marks the entry into this room. This is a wall on which canvas or paper can be stretched. The children can draw and paint directly on the wall, so that much like nature outside, it is exciting and constantly changing. A large piece of millwork separates the art room from an adjacent mudroom. This is used for storage of art supplies to one side and for storage of coats, shoes and other outdoor things on the other side. Access to the exterior near the art room is important as children are to be encouraged to observe nature and may be inclined to gather found items from the sea and the forest to observe and draw, and so



Sketch for the butterfly curtain



Sketch for the pool, showing stair, lift, benches and fountain

on. Above the mudroom and the area from which one accesses the art room and the raised kid-kitchen and playhouse, is an opening in the ceiling in which a mobile-like curtain is hung. Its movable pieces carry light down into the living quarters. There are benches in this area, encouraging spontaneous gatherings as children move through the spaces. Windows punctuate the central wall, offering views onto the pool.

The pool is situated on the level below. Water therapy can be very beneficial in healing. Neutralizing gravity, water can allow greater freedom of movement and alleviate pain. Upon arriving on this level, one first encounters a lounge area. Going through a door, one enters the pool area. Washrooms are available near the entrance and children can choose to change there. In lieu of showers is a fountain, immediately by the pool. Its gentle jets spring up when it is activated and the children can play there. To one side, steps lead the young swimmers into the water, and to the other side a lift takes those who cannot use the stairs. Lining one side of the interior of the pool and its end wall are benches of varying heights. These allow weaker kids to get a rest and pause to play. They can enjoy being in the water without having to move very much if they are tired. There are also benches of varied heights on the deck. A series of windows offer views onto the forest to the side and to the front, a large window opens onto the ocean waters and the pavilions. The kaleidoscope hovers above the pool, playfully enhancing the experience with coloured light.

## CHAPTER 6: CONCLUSION

Our surroundings have a profound influence on us. By studying and understanding the means through which a dialogue takes place between the individual and architecture, we can have a positive impact as architects. Interdisciplinary collaboration should be embraced as it offers the key to a deeper understanding of any given problem and thus to finding the best possible solutions. In the context of healing, and particularly of the healing child, architecture has the potential to be a tremendously powerful thing.



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