

Housing Memory

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Abstract Page

This thesis examines the relationship between memory and architecture as applied to the architecture of everyday life. A home can be associated with a physical structure and analysed as a comprehensive system of components: materials, structure, and program. The individuals who dwell in that home exist as components within a family lineage: a daughter, a sister, a grandmother, which constitute a complex memory system. This thesis questions the possibility of using a memory system and an architectural system in tandem to create a new home that invokes memories in its inhabitants?

Through the exploration of the way the brain processes information and creates “symbol structures” that form memories, I examine methods to extrapolate memories. Memory was not just examined abstractly; I utilized my own personal memories and those of my family as an exercise in exploring memory in an architectural sense. The architectural type explored in my study was that of the “cottage” type. The clients are my identical twin sisters and their memories of summertime spent on ancestral land are the memory sources. The lands on which the cottages are situated were chosen because they are rich with my family’s own history and memories.

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Introduction

1.0. Forward

A home can be associated with a physical structure and analysed as a comprehensive system of parts. The individuals who dwell in that home exist as elements within a family lineage and are parts within complex memory systems. In architecture, “systems” refer to the different structural and mechanical elements that when assembled, create a building. In psychological theory, a “memory system” refers to the different components and types of memories within the human brain that encompass an individual’s consciousness.

A commonality within all systems is that they are comprised of a series of components organized hierarchically, with each component being both a clearly defined element in its own right and a part of a more comprehensive entity. A system is a model of order and integration, based upon a clear organizing principle.¹ In this way, architectural systems may be viewed in a similar manner to memory in the sense that they both organize and anticipate circumstances. With this knowledge my thesis questions the possibility of using a memory system and an architectural system in tandem to create a new home that invokes memories in its inhabitants.

The use of memory to create architecture is a long established tradition. Memories have been embodied in architecture to commemorate events in history in the form of

¹ Schacter, 1994

monuments and memorials all through time. In Europe during the 16th and 17th century to commemorate the a battle victory, a triumphal arch would be erected to remind people of their conquest. Memories in this manner are being translated directly into built form to remain as symbols of the past. When historical events are not the implicit source for creating architecture, architects have still utilised memory to build, by using layout and construction techniques from antiquity; the basilica church plan is an example of this. The basilica church plan was developed centuries ago in response to function and orientation of site, this church plan is still in use today not because of its response to function but because of its associated history to the church. My thesis follows the tradition of using memory to create architecture but brings it into the realm of the personal by using an individual's memory, not those of a civilisation, to create a private dwelling.

Using the architectural "type" of a cottage will serve this examination of linking an architectural system with memory systems to "house memory". The cottage environment, which is situated in "nature", isolated from the city noise and distraction, forces individuals to partake in activities, which reflect upon their relationships with their surroundings. Individuals' awareness of their bodies, via their senses, is heightened because the elements of nature have a greater presence upon them. Senses are a direct link to memory in that they allow us to function in our world and recollect past events; this concept will be explored further in the following chapters.

To conduct this study of “housing memory” I utilized the memories of my identical twin sisters Karlene McDonald and Marlene Perry. Twins provide the unique opportunity for exploring memories of similar childhoods that are remembered in dissimilar ways. These varying views demonstrate that events can be interpreted differently and therefore represented in diverse ways.

Theoretical

2.0. The Presence of Cottages in History

The cottage, chalet, villa, country retreat, country home, summer house, lodge, cabin, or camp all mean the same thing, and ultimately the name is less important than the place it holds in a family’s imagination. The cottage has been present throughout history. The activities and design of cottages have been discussed by poets and questioned by philosophers in the west, from the Greek civilization. But more importantly, the cottage has always played the role of providing an escape from the congested city.

The ancient Romans partook in cottaging. They used the Latin word “Villa” to describe their country estates that they maintained on the outskirts of their cities. There they would summer to enjoy the cooler weather, and at other times of the year to savour the tranquil, idyllic atmosphere.²

² Witold Rybczynski, Waiting for the Weekend. (New York: Viking, 1991)166.

During the Victorian ages those who had the means to retreat to the country wished to experience the beauties of nature. The Victorian philosopher John Ruskin noted that this appreciation for the wilderness was a new affair of the Victorians. In 1833 at the age of fourteen, Ruskin visited the Alps, where he later wrote of his emotions and how and what he experienced while there, explaining that his emotions “belonged to the age: a very few years- within the hundred- before that, no child could have been born to care for the mountains.”³ Ruskin’s insight illuminates the creation of the Romantic Movement. The Romantic Movement altered not only artistic principles but also peoples’ sensibilities, mountain vistas and seashore views, which had previously been ignored; were now sought out as rewarding aesthetic experiences.⁴ The emergence of the Romantic Movement illuminated the change in city life; the congestion of the city was to be escaped only by visiting “nature” and therefore an appreciation for “nature” grew.

The fifteenth-century architect Leon Battista Alberti identified the significance of the cottage and devoted two chapters of his ten books on architecture to the subject of country houses. In those two chapters Alberti differentiated between “rural” houses that were intended for farmers and “villas” for gentlemen; farmers, he suggested, required homes designed for utility, gentlemen for pleasure.⁵ Alberti was distinguishing the different characteristics and values that a villa had in relation to a home in the country. The villa is a place of leisure to be enjoyed while the country home was a place of utility.

³ Ibid pg.179

⁴ Rybczynski, 1991

⁵ Rybczynski, 1991

The aforementioned John Ruskin in the 19th century and the architectural critic Witold Rybczynski in the 20th century, are examples of writers who speak of the villa/cottage structure. They both observe a lack of control over the built form of the villa/cottage. Ruskin in his 1837-8 book *The Poetics of Architecture: Cottage, Villa, Ect*, speaks of the lack of unity in the architecture of cottages and villas which he equates to the fact that cottage forms arose out of the different values and taste of the country residence as a result of the scenery that surrounds them. Ruskin reasons that the practicality of placing elements of the house are held in relation to the functional needs of the farm and animals and the far proximity between neighbours, allowing a unique atmosphere to emerge.⁶ Rybczynski in his 1991 book *Waiting for the Weekend* has the more contemporary insight of cottage settlements. He explains that the cottage structures arise in their unique forms because of the lack of zoning and bylaws, as well as a lack of concern for neighbours.⁷ Both Ruskin and Rybczynski notice that the environment affects the design of the cottage. It is indicated in their writing that the home owner is able to be more responsive to their needs in built form because there is a lack of restrictions in space and authority creating unique forms for each individual cottage.

Many writers have reflected upon what cottage life has meant or embodied for them. In his book 1998, *Cottage Country in Transition: A Social Geography of Change and Contention in the Rural-Recreational Countryside*, the economist and social

⁶ Ruskin, 1999

⁷ Rybczynski, 1991

geographer Greg Halseth explains that the cottage and the act of cottaging have come to assume a place in Canadian folklore. “Cottage Country” assumes the identity of a special territory within the rural landscape which inspires sentiments that go well beyond structural or architectural definitions that have become a representation of a state of mind.⁸ This notation of “cottage country as a state of mind” brings forth the idea that a cottage provides a wealth of memories that are identifiably unique from daily life.

In *Waiting for the Weekend* Witold Rybczynski explains that his awareness of the environment is more acute when at his cottage than when he is in the city.

A patch of gray cloud, glimpsed between tall buildings as one hurried down the street, could be ignored; in the open country, a looming gray sky can affect the course of my entire day. A storm in town always seemed to be taking place somewhere else; here, thunderclaps batter my house unrelentingly, and the lightning is sometimes so close it smells.⁹

Rybczynski’s identification of “nature’s” greater presence at the cottage speaks to one’s heightened senses in the country where distractions are minimised and one is aware of oneself and one’s surroundings to a greater extent than in the city.

In her 1992 book *The Summer House: A Tradition of Leisure*, the cultural sociologist Amy Cross explores the origins of the summer house and the intriguing aspects of its cultural significance as a summer “retreat.” Cross argues that the summer

⁸ Halseth, 1998

⁹ Witold Rybczynski, *Waiting for the Weekend*. (New York: Viking, 1991)4.

house being in isolation and part of nature, creates a haven for personal renewal and as such, the experience of the summer house is very much a personal experience. Cross presents the summer home as an “escape,” She explains that this idea of escape has evolved into a form of “cottage culture,” a culture that is intimately bound up with a tradition of leisure; being at the summer house grants licence for a different lifestyle, a lifestyle of relaxation, of play, of freedom from routine and schedules.¹⁰

Cross continues to explore the social milieu of the cottage as one being family-centric in orientation. She explains that at the cottage, doing without television or telephone, “the family coddled inside this shell closing in on itself, indulging in ‘lots of family storytelling at night that you don’t have time for at home.’”¹¹ Cross further explains that the cottage can come to represent the family itself when a cottage is possessed for a considerable period of time, because it has become “the home, the gathering place, to which the far-flung family returns each year, to renew contacts and once again experience the fundamental satisfactions of being part of a family.”¹² Cross’ work illuminates the idea that the cottage is a place for not only self reflection but also a place for reflecting upon one’s place within a family, because it is an environment conducive to the gathering of the family and friends.

As the above examples of writing have indicated cottages have unique atmospheres about them; they allow individuals to become aware of themselves and

¹⁰ Halseth, 1998

¹¹ Greg Halseth, Cottage country in Transition: A Social Geography of Change and Contention in the Rural-Recreational Countryside. (Montreal: McGill-Queen’s University Press, 1998) 18.

¹² Ibid pg. 18

their surroundings. The removal of the cottage from the everyday stimulates the creation of memories which are recalled and shared amongst family and friends. To understand what triggers this creation and the recollection of memories, the following theories will explore the facets of how humans process information and the different aspects of memory systems.

3.0. Theory of Information Processing

In order to understand what function memories play in our everyday lives, I began to investigate the way humans process information. Allen Newel (developer in the discipline of “heuristics”) and Herbert A. Simon (a pioneering scholar in the area of decision making) in their 1972 book *Human Problem Solving*, postulate that humans operate as information processing systems. They define humans as a system, consisting of a memory containing “symbol structures”, a processor, effectors, and receptors. Receptors gather information from the environment and effectors manipulate the environment through motor behaviour [Table 1]. Memory contains individual symbols, or tokens, that stand for objects and other symbols and their relations. The processor is a symbol manipulator that:

- a) converts the information provided by receptors into a code that is internally consistent with the symbol structures of the system,
- b) transforms internal symbols and their relations, and
- c) converts internal symbols into code that can be transformed to the external world or the environment by effectors.

Newell and Simon propose that the processor consists of atomic processes that determine the sequence in which the processes are performed as a function of the “symbol structures” present in the working memory.¹³

Environment	→	Receptors	→	Processor	→	Memory
	←	Effectors	←		←	

Table 1 Information Processing System diagrammed by A. McDonald

Newel and Simon describe the information processing system from the position of the architect and how it is a system of references for representing the problem and its variables: a body of knowledge that facilitates the transformation of problem states, and search techniques that enable the matching of problem-solvers’ resources with the task at hand. However, Newel and Simon fail to present the client’s role in the process of design, and how each client will provide a unique body of knowledge that will ultimately affect how they interact with the final building that the architect has design for them. In addition, they fail to explore the “symbol structures” that they explain exist within the memory element of the system structures, which the architect relies upon for the design of the building.

The information processing system developed by Newel and Simon, however, is useful for comprehensive purposes. It has created a linear path with defined components allowing us to dissect each in a methodical way, permitting us to examine irrational

¹³ Akin, 1986

component/behaviour such as human thought, in a rational manner, as will be explored throughout this paper.

To further Newel's and Simon's investigation of the information processing system, the following will explore the facets of "memory" which contain all our "symbol structures". Memory is comprised of "five major systems...they are procedural memory, perceptual representation memory, semantic memory, working memory [primary memory], and episodic memory."¹⁴ Each memory system is responsible for recording and producing different elements of our "symbol structures"; all of which can be integrated into the design process and the building of a home once understood by the architect.

4.0. Memory System

Memory systems are not forms of memory or memory processes or memory tasks or expressions of memory. "A memory system is defined as a brain mechanism, the kind of information it processes, and the principles of the operations."¹⁵ A memory system is a sort of "inner writing", like marking inscriptions in one's head, comprised of images and letters.¹⁶ Like an architectural system a memory system is composed of many elements that work together to achieve a task or effort; in the case of a memory

¹⁴ Daniel L.Schacter and Endel Tulving, eds. Memory Systems 1994. (Cambridge; the MIT Press, 1994) 26.

¹⁵ (Daniel L.Schacter and Endel Tulving, eds. Memory Systems 1994. (Cambridge; the MIT Press, 1994) 13.

¹⁶ Schacter, 1994

system the tasks to be achieved vary from the recollection of events to navigation through the environment based on the collected information.

We assume that memory is not a unitary entity and that what we label as “memory” in fact represents a number of separate but interacting systems. There are five major systems of human learning and memory, namely: procedural, perceptual representation, semantic, primary (working), and episodic. All these systems have a common function: they make possible the utilization of acquired and retained knowledge.¹⁷

After defining each element of a memory system and its information processing capabilities, I will be able to speculate as to how each system may be integrated/implemented into the architectural system/expression of the building design such that the inhabitants’ memories are triggered.

4.1. Procedural

The first major memory system, defined by the professional physiology experts is procedural memory. Procedural memory can be thought of as a “performance-line” system. We use procedural memory when learning various kinds of behavioural and cognitive skills, such as motor skills, simple conditioning, and simple associative learning. Procedural memory does not store representations of external states of the world, but instead it operates at an automatic, unconscious rather than a consciously controlled level. Procedural memory is characterized by gradual, incremental learning

¹⁷ Schacter, 1994

and appears to be especially well suited for picking up and dealing with invariance in the environment over time.¹⁸

Variances in the environment are discovered by procedural memory. For example, one may notice how a material has aged or worn overtime. The other form of procedural memory involves incremental learning. We associate incremental learning with the built environment when we think of things such as the steps; from repetitive use of them one no longer has to view one's feet in order to judge how high to raise one's foot to climb the stairs. In other words, we become conditioned.

Procedural memory is involved in behavioural conditioning, automatic, and unconscious operations. With this knowledge we can create elements within the home which develop behaviours in the occupants. It is known that humans will tend to inhabit brightly lit spaces; to take advantage of this fact one may orient a living room towards the west so in evening the residents will be compelled to occupy this portion of the house allowing them to gather and discuss the day's events.

4.2. Perceptual Representation

The second memory system to be defined is perceptual representation memory. Perceptual representation is a cognitive-memory system that can hold stored information over longer periods of time in the presence of other interpolated cognitive processes. The Perceptual-Representation System, or PRS and its subsystems play an important role in the identifying of words and objects, and it is typically involved in

¹⁸ Schacter, 1994

non-conscious or implicit expressions of memory. The subsystems include the visual-world-form, auditory-word-form, and structural-description subsystems.¹⁹ When associations are made between an object and a word, perceptual representation is in use.²⁰

For every individual, associative sign systems are culturally based. In order for another individual to interpret his/her sign system, he/she must first know the textural basis of the individual to understand how their signs were formed. Therefore in the process of extracting the memories of a client, the architect must deconstruct the client as an entity of cultural ideologies. In this case study (the design of two cottages for my twin sisters) the location of the site illuminates many of these details. When we begin to explore the history of the region, the clients' oral, family and personal history will bring an understanding to them as individuals.

¹⁹ Schacter, 1994

²⁰This concept has been explored by the philosopher Ferdinand de Saussure with his investigation into the culturally established relationship of signifier (a word) and signified (the object) and how their relationships make up a sign.

Ferdinand de Saussure in his research explores "symbol structures" that he refers to as signs in language, which are the interaction between words and objects;

"Saussure divides language into two component parts. When I write the word 'dog' it produces the inscription 'dog', but also the concept or mental image of a dog: a four-legged canine creature. He calls the first the 'signifier', and the second the 'signified'. Together (like two sides of a coin or a sheet of paper) they make up the 'sign'. He then goes on to argue that the relationship between signifier and signified is completely arbitrary. The word 'dog', for example, has no dog-like qualities, there is no reason why the signifier 'dog' should produce the signified 'dog'; four-legged canine creature (other languages have different signifiers to produce the same signified). The relationship between the two is simply the result of convention – of cultural agreement. The signifier 'dog' could just as easily produce the signified 'cat': four-legged feline creature. On the basis of this claim, he suggests that meaning is not the result of essential correspondence signifiers and signified, it is rather the result of difference and relationship."ⁱⁱ

i Graham Good, Humanism Betrayed: Theory, Ideology, and Culture in the Contemporary University. (Montreal: McGill-Queen's University Press, 2001) 51.

ii John Storey, Cultural Theory and Popular Culture: An Introduction. 3rd ed. (Harlow: Pearson Education Limited, 2001)58.

We can take advantage of perceptual representational memory in our designs by applying different textures and shapes in the home that the residents have previously encountered.

4.3. Semantic

The third element of memory systems is semantic memory. Like perceptual representation, it too, is a cognitive-memory system that can hold stored information over longer periods of time in the presence of other interpolated cognitive processes. Semantic memory makes possible the acquisition and retention of factual information about the world that people gain, possess, and use (whether general or specific, concrete or abstract) and is critically dependent upon semantic systems. Semantic memory also records spatial information and the associative memories to the environment.²¹

We are using our semantic memory when we navigate through a space in the dark without bumping into objects because of our prior repetitive use of the space in light. Semantic memory is also responsible for the memories we have created based upon environmental references. For example, when we look at an icy path we have the inner knowledge to compensate for the slick surface when walking, knowledge of facts normally said to be known rather than remembered.

Knowing these facts about semantic memory would allow the designer to bring attention to elements within the home by changing building standards that are

²¹ Schacter, 1994

considered “norms”. The raising of a railing height, which is assumed to be constant, at a particular moment will bring attention to that spot along a stairway. Or, varying the sounds of floorboards at certain junctures can make the ordinary, extraordinary.

4.4. Episodic

The fourth memory system is episodic memory. Episodic memory, like the three previously mentioned systems, is a cognitive-memory system that can hold stored information over longer periods of time in the presence of other interpolated cognitive processes. The episodic memory system enables individuals to remember happenings they have witnessed in their own personal past, that is, to consciously recollect experienced events as embedded in a matrix of other happenings in subjective time. Episodic memory is assumed to be the most recently evolved system that has grown out of semantic memory through primary memory. It shares many properties and capabilities with the semantic system, but as with primary memory, it transcends semantic memory in its ability to record, and subsequently to enable conscious recollection of personal experiences and their temporal relations to one another. Episodic recollections consist of multi-feature representations in which numerous kinds of information are bound together with the individual’s awareness of personal experiences in subjective time.²²

Episodic memory is what people are generally referring to when using the noun “memory”. When looking at an image, the associations brought to mind are results of

²² Schacter, 1994

episodic memory. Episodic memory can be utilised within architecture in the form of objects, textures and spatial qualities that are derived from the memories of the client.

4.5. Primary

The last memory system is primary memory. Primary memory is also referred to as short term or working memory. Primary memory differs from other memory systems in that it is concerned with the temporary holding and processing of information. Primary memory enables one to retain various kinds of information over short periods of time; it is critically involved in carrying out numerous kinds of cognitive tasks, and has complex relations with long-term memory systems. Primary memory can be converted into Episodic or long-term memory through a process of repetition. Components of primary memory are the auditory and visual systems that assist in recognition and recoding of memory.²³

Primary memory is in use when one is trying to understand a sentence, for example, a reader must maintain the first half of the sentence in working memory while reading the second half. Primary memory can take the form of repeating elements or slightly differing elements within the house, which as a whole could complete a picture for the occupants. The repetitive use of a wall surface or colour throughout a structure can create visual connections between spaces to indicate to the inhabitants that the spaces share the same program of function within the home.

²³ Schacter, 1994

System	Function
Procedural	Motor skills, Cognitive skills, Gradual incremental learning, Simple associative learning,
Perceptual Representation	Word to object association, implicit memory
Semantic	Spatial referencing, Retention and acquisition of factual information
Episodic	Event memory, Autobiographical memory,
Primary	Working memory, temporary memory, converts to Episodic memory

Table 2 Memory Systems and corresponding use outlined by A. McDonald

Memory systems are not all restricted to the recollection of childhood events; some are involved in our ability to navigate through the world based on predicting results from previous experiences [Table 2]. The architect can exploit these aspects of memory system by utilising the client’s “symbol structures” and interweave them throughout the home to allow them to associate times and places to their new home, thereby creating familiarity in the unfamiliar. Memory systems speak of the ways in which our brain processes information but they do not scrutinize the value of memories to the individual.

5.0. Proust and Memory

The French novelist Marcel Proust has examined memory in his writing in a poetic way; through a dialogue in the first person Proust searches for pure memories that encompass the whole body. Proust has explored the representation and recollection of memory in his writing to develop his theory of how true memories, involuntary memories are brought to mind.

In Proust's novel *Remembrance of Things Past* the reader follows the story of the unnamed man, speculated to be Proust, who, for the sake of the following, will be referred to as Marcel, from childhood to adulthood.

To develop a comprehensive theory of memory, Marcel in the novel does more than just recount his past, he also observes his memory in action, illustrating to the reader that sensations experienced at unintentional moments, clearly provide more vivid memories than voluntary recall. One such moment of observation takes place during the story when Marcel was trying to remember his trip to Venice but could not create a clear picture in his mind. Marcel was entering the courtyard of the Guermantes mansion, when a carriage crossed his path. While avoiding being run over Marcel trips over an uneven paving stone. After recovering his balance, he puts his foot on a stone that is slightly lower than its neighbour, and at that moment all his discouragement of trying to remember Venice, vanishes.

...almost at once I recognized the vision: it was Venice, of which my efforts to describe it and the supposed snapshots taken by my memory had never told me anything, but which the sensation which I had once experienced as I had stood upon two uneven stones in the baptistery of St. Mark's had, recurring a moment ago, restored to me complete with all the other sensations linked on that day to that particular sensation...²⁴

²⁴ Marcel Proust, *Remembrance of Things Past: vol 3: The Captive, The Fugitive, The Regained*. (London: Chatto and Windus Ltd, 1981)899.

From the moments of clarity of events from the past Marcel not only recovers perceptual and spatial information, but also the whole tangled web of sensory, emotional experiences that made up these earlier moments in time, as well as an appreciation for how all these experiences fit together into a coherent whole, which Marcel describes as *moments bienheureux*.

Proust suggests that involuntary memory operates under the same principle as a pair of binoculars: by superimposing a stimulus from the present with the memory of the same stimulus experienced in the past, the memory of the past gains three-dimensional “depth.” It is the mechanism of contrast that drives the *moments bienheureux*. Proust continues to describe in other works that *moments bienheureux* are particularly illuminating for understanding the structure of consciousness because they are rare moments where we become aware of the network of memories and goals that guides the stream of thought; a network that is usually only vaguely sensed in the “fringe” of consciousness.²⁵

These experiences described by Proust throughout the concluding portion of the novel contrast with the “snapshots” of voluntary memory, which represent individual sensory events that have been abstracted from their contexts and can be recalled at will. In contrast, the process of recollection for involuntary memories is guided by the relationships between previously-experienced events rather than by current goals. According to Proust, it is precisely this surrender to the seemingly illogical structure

²⁵ Shattuck, 2000

where one becomes aware of it. Each episode is a unique conjunction of sensations, goals, and desires which are related to each other largely by contingency.²⁶

5.1. Proust and Metaphor

Metaphor allows the writer to do more than just describe individual sensations. By comparing one experience to another, the entire network of thoughts, memories, and instances common to both can be evoked. One can then go beyond the sensations in the focus of consciousness towards awareness of the associative milieu that accompanies it. This process of elaboration by metaphor underlies almost all of thought. By stating that one thing is like another, the writer merely reconstructs the associative process that automatically occurs in our minds when we experience that thing.

For Proust, the term metaphor means any description of relationship between two sensations, objects, situations, or events. The tissue of metaphors that Proust creates, acts as a symbol for something that can not itself be directly represented, that is, the network of associations, expectations, and understandings that usually express themselves only as an emotional overtone in the fringe. For Proust the critical feature of metaphor is that it allows one to see the same features in two different events, thus permitting the features to become “liberated from the contingency of time.”²⁷ By placing the “essence” of experience outside of time, Proust emphasizes the fact that it can not usually be encountered or represented directly.

²⁶ Shattuck, 2000

²⁷ Marcel Proust, Remembrance of Things Past: vol 3: The Captive, The Fugitive, The Regained. (London: Chatto and Windus Ltd, 1981)924.

I chose to incorporate Proust's exploration of memory and metaphor in my thesis that architecturalizes memory, because Proust's metaphors are used to convey memories in a manner I will parallel in designing cottages that will become the metaphors of memory.

6.0. The Architect's Problem

With the above understanding of the information processing system, with its symbol structures that are culturally developed (to know the client is to begin to understand his/her symbols), I have an understanding of our memory system and its five memory subsystems. I now begin to explore the different elements associated with memory representation, so that I can begin to design cottages for my clients, my identical twin sisters Karlene and Marlene, with the use of their memories.

7.0. Facets of Memory Explored

Many of my childhood memories and those of my sisters revolve around our cottage location, which is the same area in which my mother was raised and where we summered. Through inheritance, we have each received a portion of this land on which to build our own cottages. This thesis takes as its case study the design proposals for my sisters' cottages.

When I began exploring my childhood memories I thought of ways that memories can be represented relative to the memory system I have outlined, recorded and finally evoked. The following will explain these processes and how they are manifested in my thesis.

7.1. Representations

The first exploration I attempted, related to the representation of memories. Representation of memory took the form of exploring my own personal memories. I tried to convey to others the memories I have of our family cottage, which is located in the same area as the proposed building sites. The representation was also meant to convey what the family cottage and family members have meant to me in my development as an individual whose ancestry is interwoven with the region.

Because the representations of objects or events linked to our memories are commonly in the form of images, I decided to represent myself with an object that can be manipulated, in order to display to the viewer who I was and who I am [Figure 1]. With the use of photographs, wood, and plastic, I constructed a layered box that was to represent the layers of “memories” that are equated with the individual. The images were not only of me but also of my family cottage, my sisters, parents and their families. This meant to convey that all of these individuals have contributed to my development. But this construction did not allow an uninformed viewer insight into my

life unless they question me about the relationships between images. These realisations lead me to create a new set of constructions.



Figure 1 Representation #1 self-portraits from youth and family photos mounted on plans of wood and Plexiglas hinged off a wooden frame.

The next group of constructions, which I termed “Memory Vessels”, were to focus on subject matter that could be “read” easier by the viewer without too much direction into the relationship between objects. The constructions were also an attempt at demonstrating Newel’s and Simon’s process of creating “symbol structures” by seeing and interacting with objects through the senses, as one forms memories in one’s mind which are stored in the brain for future references.

The first construction took the form of a plaster cast of a portion of my head with images of the site of our family cottage applied to the inside of the cast with a swinging plan from the inside that interacted and revealed elements and images, and as well had a tactile quality. [Figure 2]. This was an attempt at providing universal elements (a head and a site) which viewers could associate with their own meanings and

memories without relying heavily upon me for direction. But this construction did not provide a clear picture as to the relationship between me and the cottage; with this construction the materials did not portray the connection they shared.

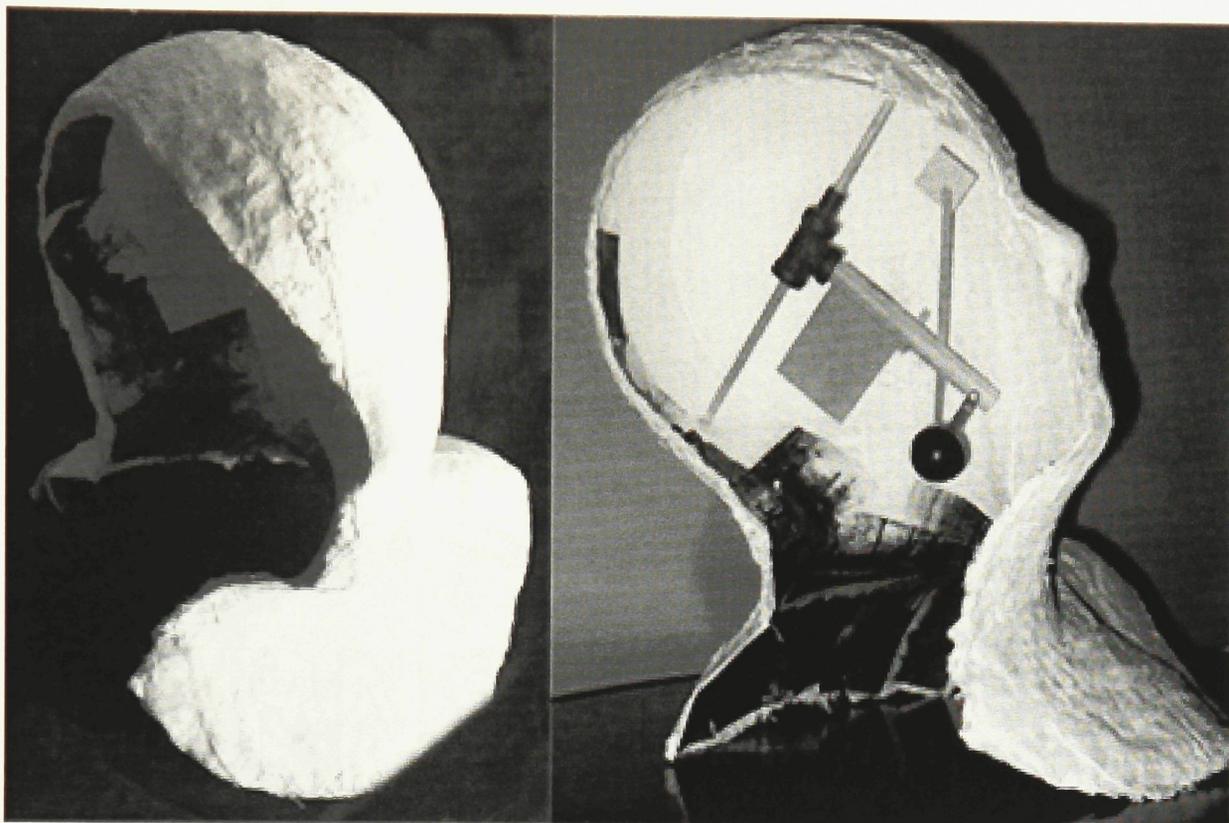


Figure 2 Representation #2 plaster cast of my head with photos of cottage collaged to the inner surface with additional wooden and metal object attached.

The second “Memory Vessel” construction was a plaster cast of my right hand which was turned into a container for displaying marbles, all of which are placed within a wooden box and covered in marbles [Figure 3]. This construction was an attempt at exploring the relationship between an action and the memory of the action.

In order for the viewer to reach the hand within the box he/she would have to remove or push the marbles aside and thus touch the marbles and feeling their round smooth surfaces against his/her hands, recording this sensation in his/her memory. Once the viewer has the plaster hand in his/her grips he/she explores the texture of the plaster

to make comparisons. Next, the viewer discovers that the cast is cut in half creating a container that is holding marbles suspended on wires; a demonstration of the sensation recorded of holding the marbles. This sequence of exploration of the object was an attempt at demonstrating how after feeling an object, a memory of that object is stored within one's memory as a "symbol structure" of that action, an action which one's internal processors may access later, as explained by Newel and Simon. This "Memory Vessel" represented a relationship between object and memory (the plaster hand and the marbles). However, the construction was non-specific to my memories, and failed to relate information about me and the cottage site.

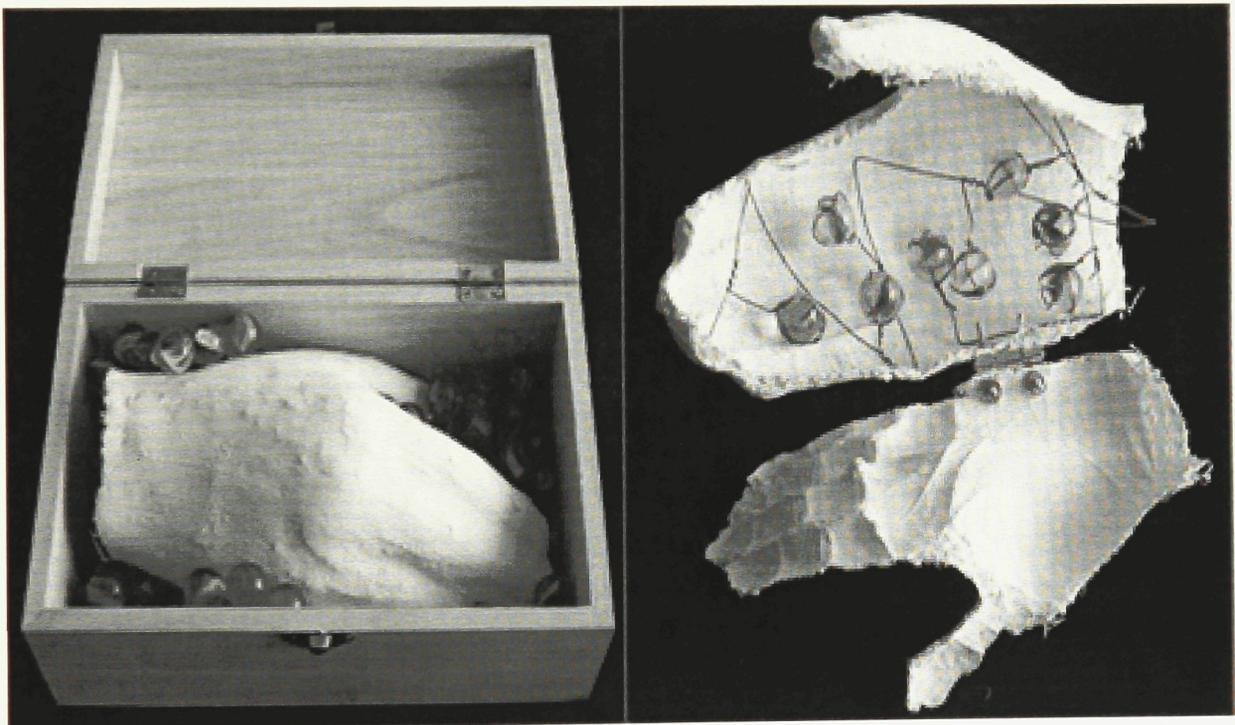


Figure 3 Representation #3 plaster cast of my right hand with marbles suspended on wire within the hand all contained within a wooden box and covered by marbles.

The previously mentioned constructions were examples of representing memories. The constructions failed to incorporate into their design specific memories of me and the cottage location. Although the constructions were cast from parts of my

body they did not capture any element of my personality which is partly resultant from spending time at our cottage. Although the constructions did not achieve all objectives they did allow the viewers to interact with an object using their five senses, without relying heavily upon me for explanation of objects.

7.2. Recording

The second form of exploration I attempted was that of capturing the elements of recording memories. When exploring memories and the representation of those memories I was able to demonstrate the resultant “symbol structures” but it came under consideration to study the different stages involved in the processing of information. As mentioned earlier in the paper, Newel and Simon have outlined six steps to the processing of information; the environment transfers information to “receptors”(the recording device within oneself) which is transferred to “processors”(the translator of information) onto “memory”(the library of “symbol structures”) and back to “processors” who transfer the information to the “effectors”(which is the resultant action). In the following sets of constructions I again attempted to show the interrelationship of me and the cottage location but in addition, I wanted to demonstrate how the environment/site interacts with the inhabitant and demonstrate the processing of information that takes place.

When I began to think of the relationship between an individual and a site I first thought of the way in which humans leave traces of their occupation behind on the land. These traces take the form of worn paths in the earth, structures built on the land,

scorched marks burned into the land, and litter thrown on the ground. As I began to question this relationship between an individual and site I discovered further that a site leaves traces on the visitor. A trace of a site on an individual can be in the form of a scar on one's knee, which might remind one of a fall upon rocks, a sunburn one received from lounging in the sun all afternoon, and a blister received on one's hand from tilling the garden in the summer or raking the leaves in the fall. These are the physical recordings of memory upon the land and the body that attribute to our collection of "symbol structures" being constantly added to our memory, recordings which will trigger memories of events.

The next set of constructions each began with a portrait of me with an object representing a site, incorporated into a frame that affects my image, each in different ways. The following ideas attempt to illustrate the interrelationship between a site and an individual and the "receptors" and "effectors" of events.

The first attempt at representing the interrelationship between a site and an individual was in the form of a framed portrait of me with a box, covered with an image of the shore line of our family cottage, suspended in the centre of my portrait, creating a pendulum [Figure 4]. As the pendulum swings from side to side it wears away a portion of my image. The worn away image illustrates how the continual movement within a confined path will leave traces of that movement behind, just like wearing a path in the forest, creating the physical representation of memory recording. Without seeing the pendulum one may not know what has created the markings on the images, but it is the

ability of the viewer to gather information from the scene to come to a conclusion that an object once occupied the frame. By having the pendulum within the frame, the viewer is able to conclude that they are able to swing the pendulum because there is a worn path from its repeated movement.



Figure 4 Recording #1, self-portrait mounted on Plexiglas housed in wooden frame with a pendulum created from image of cottage shoreline.

The second attempt at representing the interrelationship between site and an individual was again in the form of a portrait of me with a frame; the frame created a confined path for a rolling rusted ball bearing [Figure 5]. The ball bearing leaves traces of rust each time it passes over my photo, illustrating how an object or site will leave behind remnants of itself on an individual because the two components are interacting with each other. This construction was very similar to the previous example in which the viewer is able to conclude that an object has once occupied the space because it has

left remnants of itself behind on the photo. The viewer can also process the information to create new “symbol structures” he/she can conclude that a rolling object will leave a path.



Figure 5 Recording #2 self-portrait mounted on Plexiglas housed in wooden frame with a rusted ball bearing resting between two wooden dowels.

The third attempt at representing the interrelationship between a site and an individual was again a framed portrait of me but this time the image was fragmented [Figure 6]. Behind the fragmented portrait there are additional wood planes, with my image applied to obscure portions of my portrait. The fragments of the portrait can be opened in order to “break up” my image but also to reveal images of my younger self. This third construction was an attempt at demonstrating how an obscured and disjointed object can still be recognisable as part of a complete entity; that is, my photo is still recognisable when viewing a portion or only seeing an image of my former self. This

exploration equates to being able to associate an element of a site, like a rock one collected, to the occupation of the site at a prior point in time. One element of a site can be associated to a memory, becoming a triggering device for one's memories of the total event.

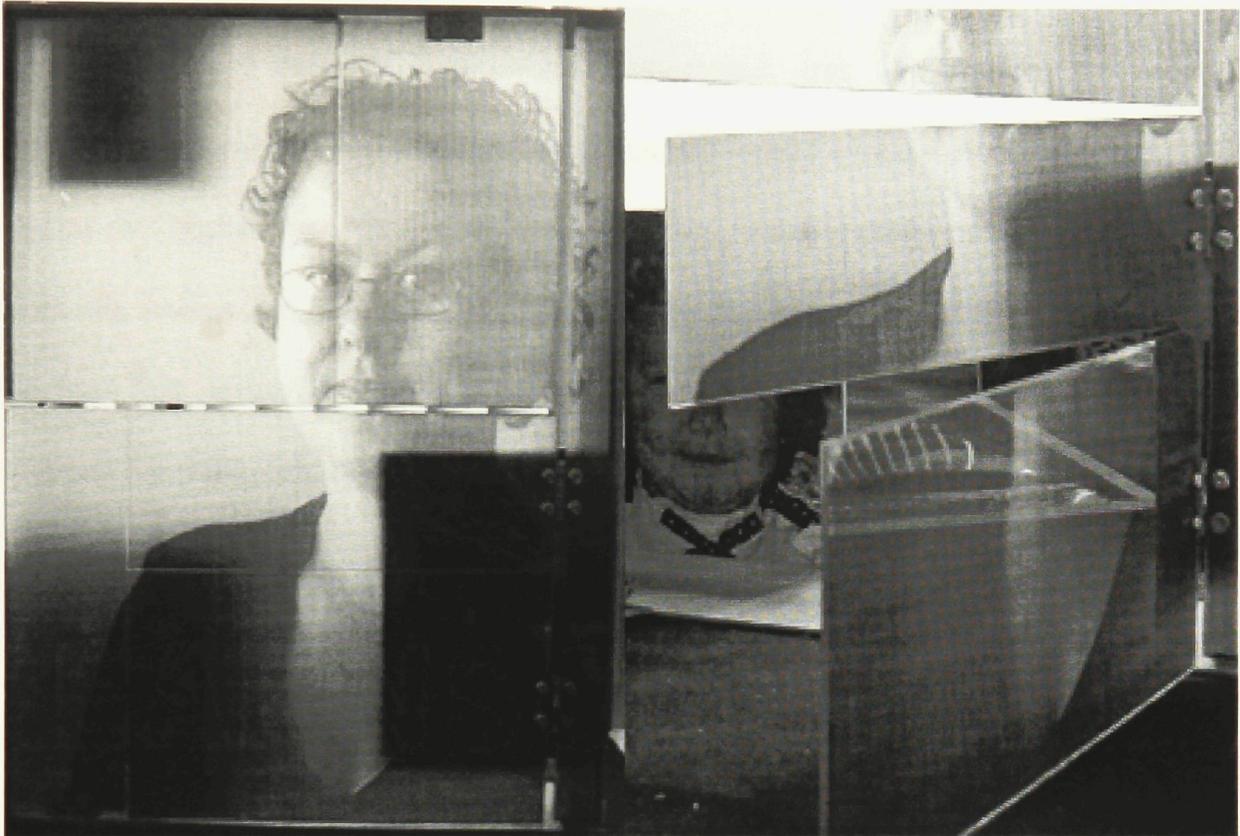


Figure 6 Recording #3 self-portrait mounted on Plexiglas that has been fragmented hinged off of a wooden frame with additional photo mounted wooden plans attached to the frame.

The previous “recording” constructions demonstrated how memories can be collected or leave traces upon a site or on an individual. They were also an attempt at demonstrating how one uses one’s “receptors” and “processors” to translate information to memory which allow us to make conclusions about events or create new “symbol structures”. The constructions could of course not demonstrate how each sense is used by the receptor to transfer information to the brain. For the most part the previous examples used sight to interact with the objects and semantic memory (retention and acquisition of factual information) was used to come to conclusions about the objects;

the constructions did not evoke any personal memories of the viewer. The following is an attempt at evoking memories in viewers by allowing them to explore their own relationship between viewers and the objects.

7.3. Evocation

The third form of exploration I attempted, was to question evocation of memories. When I was constructing elements that would evoke memories, I thought of this as the “architecturalisation” of the five senses, because memories are first recorded with the senses and they can be re-invoked by the senses. I therefore tried to build devices that appeared similar from a distance but when approached and explored, showed the utilization of the senses.

I constructed frames that incorporated four of the five senses: sight, touch, sound, and smell; I did not attempt to build an architectural element that incorporated taste because it is not a common practice to go around licking surfaces within a home, but the chances for incorporating taste may be explored in the kitchen of the home.

Each one of the constructions began with a wooden frame that had a beige spandex material stretched across it, making them all appear the same from a distance but when approached, one discovered each frame to be different [Figure 7].

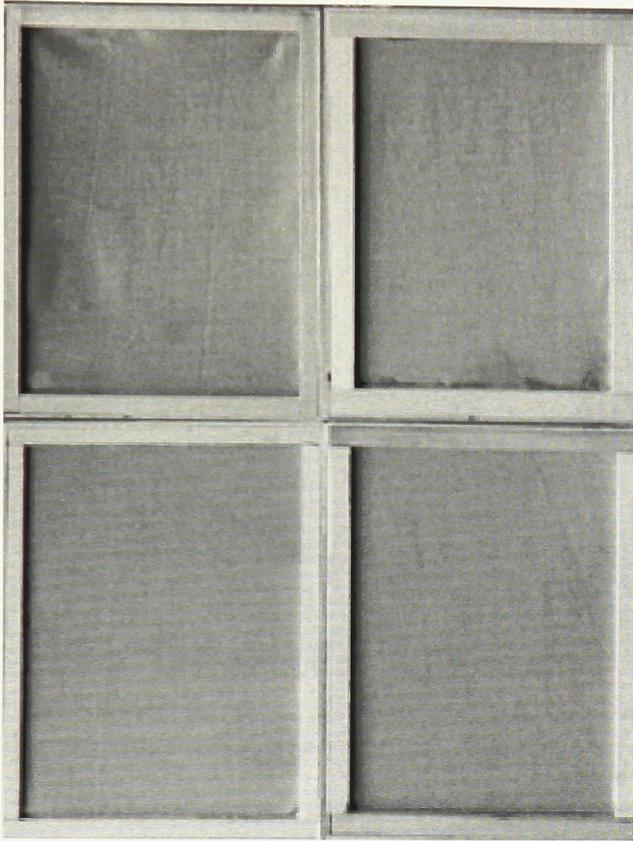


Figure 7 Panel Fronts, beige spandex stretched within wooden frames

Sight- all the panels to some degree utilize sight; when the panels are backlit, shapes and shadows begin to appear on the surface of the beige spandex material and the surrounding surfaces of the room. As the day progresses, the light pans across the surface of the frames making the shadows dance upon the surface, allowing one to bring forth from memory what objects may be causing these mysterious patterns. One construction I made to specifically utilize sight, was a frame that had a light bulb connected to a power source within the frame. When the surface of the beige material is

pushed it would cause the two wires behind the fabric to touch, completing the electrical circuit making and illuminating the light bulb [Figure 8].

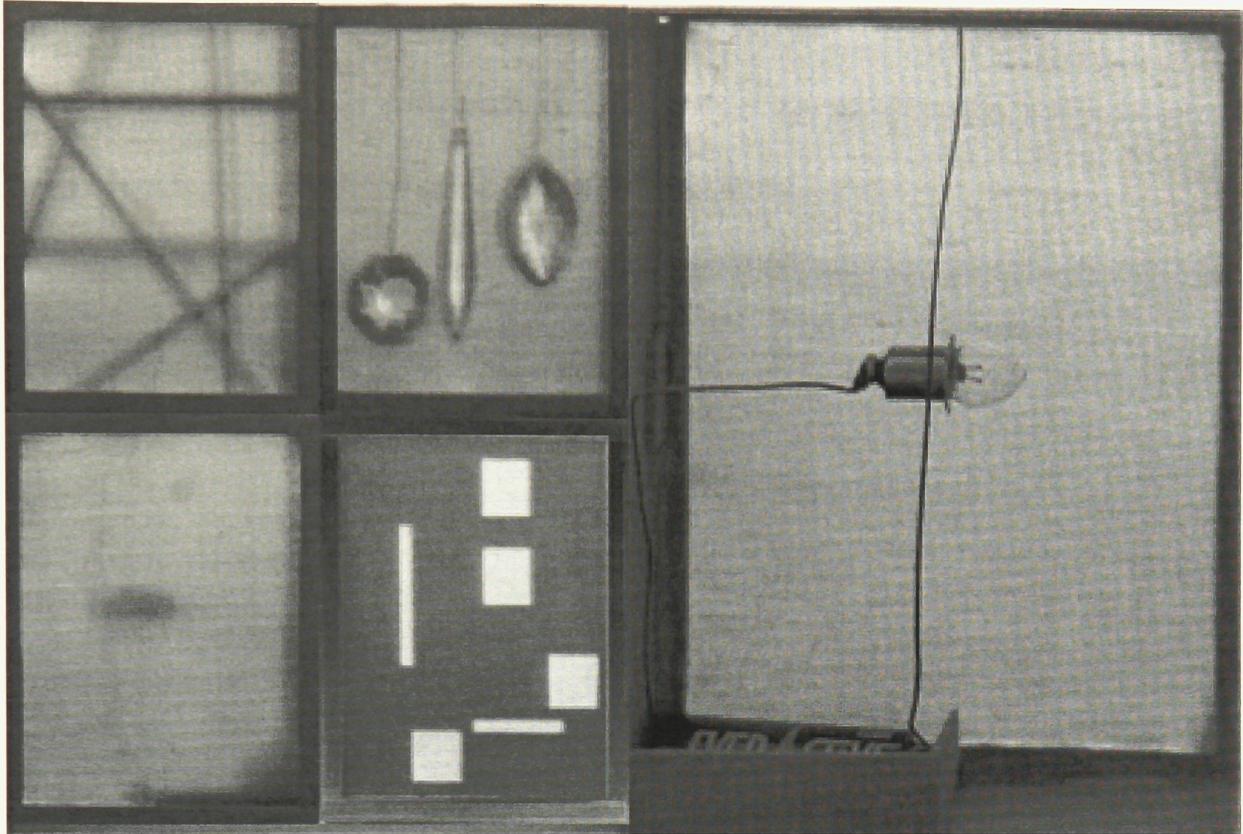


Figure 8 Sight Panels, sense panels that have been backlit to employ sight. Second panel is electrified to illuminate light when contact is made between wired.

Sight is one of our “receptors” that helps us to collect information; that information is translated to our memory through processors. Sight is often the first sense we use for investigation purposes and is the largest stored library of “symbol structures” we have. Often an image that is not associated to an event can trigger the memory of a person or a day. The more illusive an image, the more we rely upon our memory to complete and make comparisons to prod knowledge.

Touch- all the panels explore touch because when not backlit the uniform surface invites one to touch the surface in order to discover the differences behind the

skin. The panels designed to utilize touch, were the panels that had varying surfaces behind the spandex. One panel has wood doweling that varies in depths from the surfaces making you want to push and prod the surface. The other panel has a hard surface behind the fabric with minor holes punched out which makes you concentrate on the details to discover the variances in the surface [Figure 9].

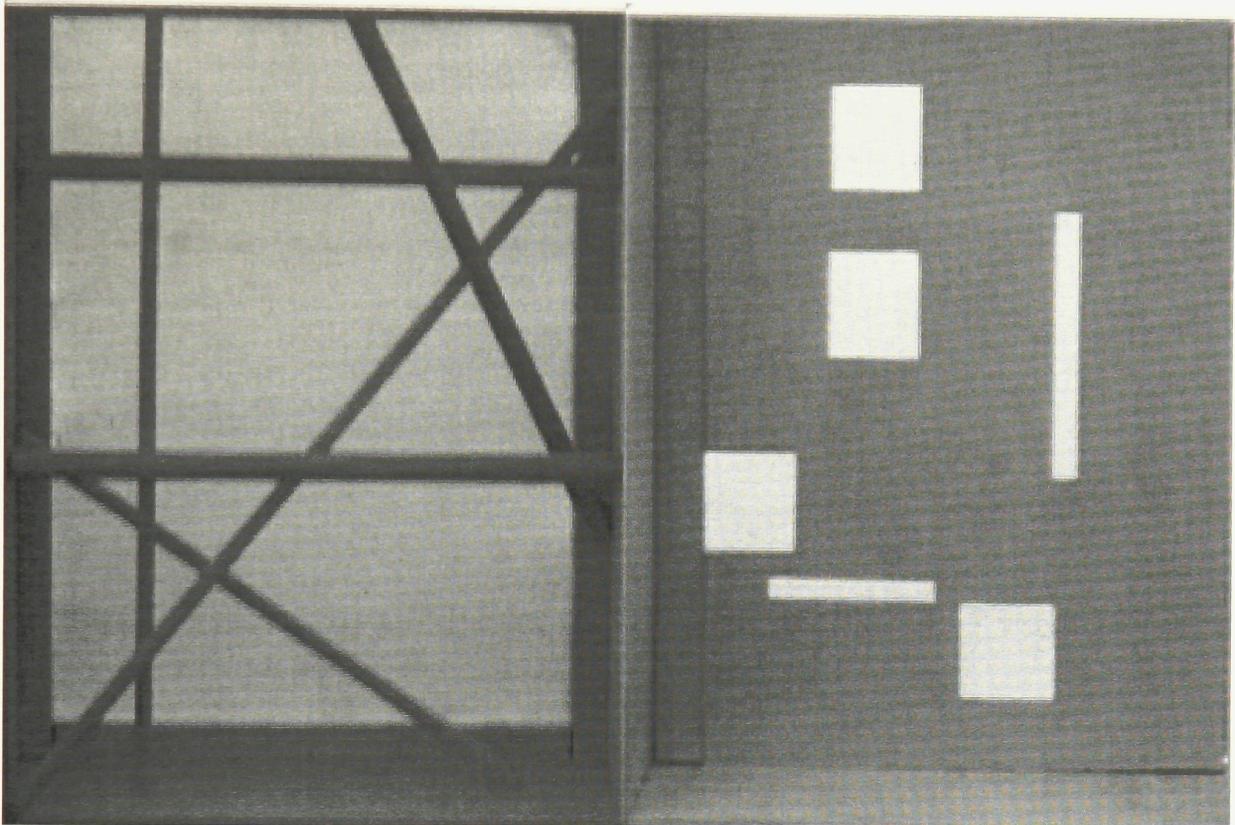


Figure 9 Touch Panels, varying surfaces behind the beige spandex implore one to touch.

Touch constitutes another form of our “receptors”. The tactile experience of surfaces becomes stored in our memory to help us navigate through the environment, for example, which will alert one to an uneven surface to stabilize one stance for uncertain movement. Or encountering a texture of a soft surface will remind one of a sweater one’s wore on a cool fall day causing a sequence of thoughts to race through one’s head.

Sound- sound is explored only in a select number of panels. These panels have items such as crystals hanging behind the fabric surface and when the fabric surface is pressed and unexpectedly poked by the individual, the crystals knock against each other making them resonant [Figure 10].

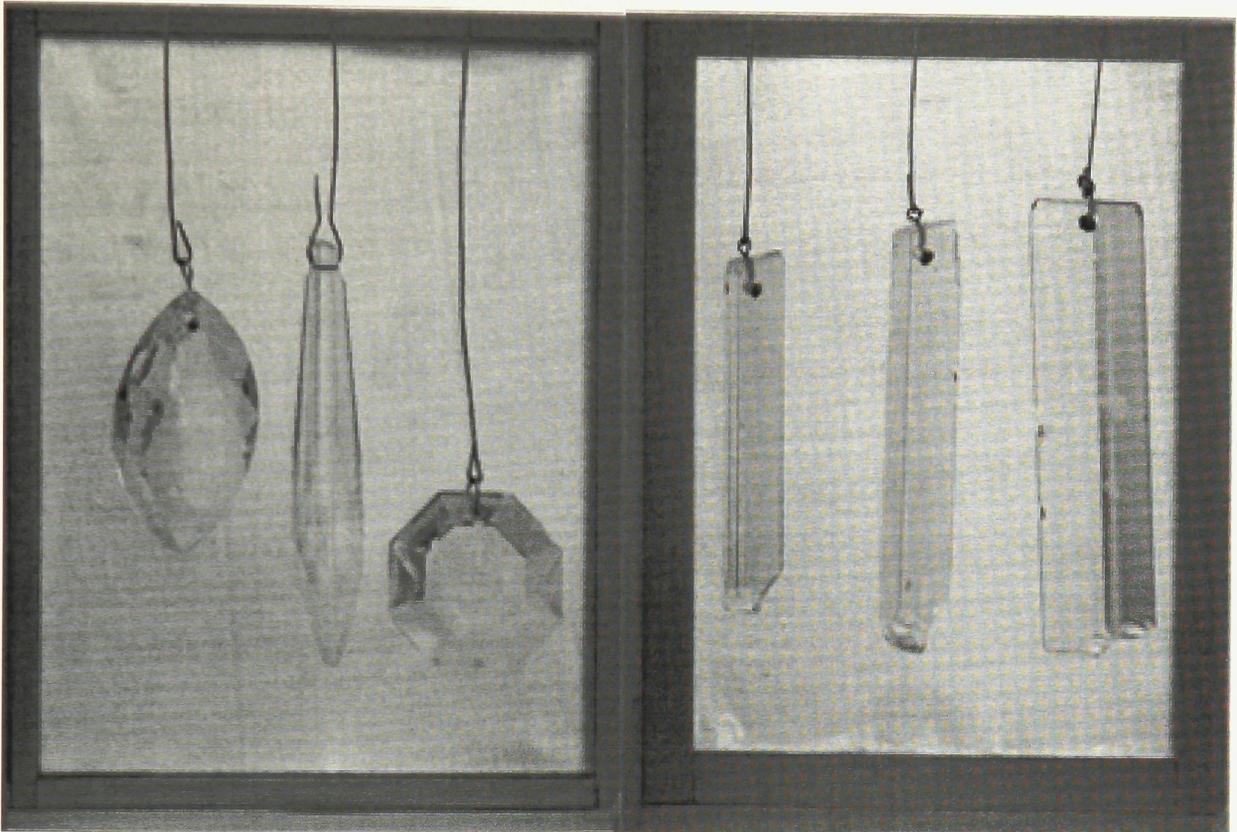


Figure 10 Sound Panels, glass crystals of varying sizes were suspended wire behind the beige spandex.

Sound is another recording device for our receptors. When sound is created by an obscured object, one hears a sound while at the same time searching one's memory for the source of the noise. A high pitched noise may evoke memories of dinner wear knocking together on a table while a deep tone may remind us of a pail being dropped on the soft grass all of which are "symbol structures" that the individuals have created for themselves.

Smell-smell is explored in one panel that was created. A pocket in the fabric was stuffed with cinnamon scented gravel. When the panel was compressed it released the scent of cinnamon into the air [Figure 11].

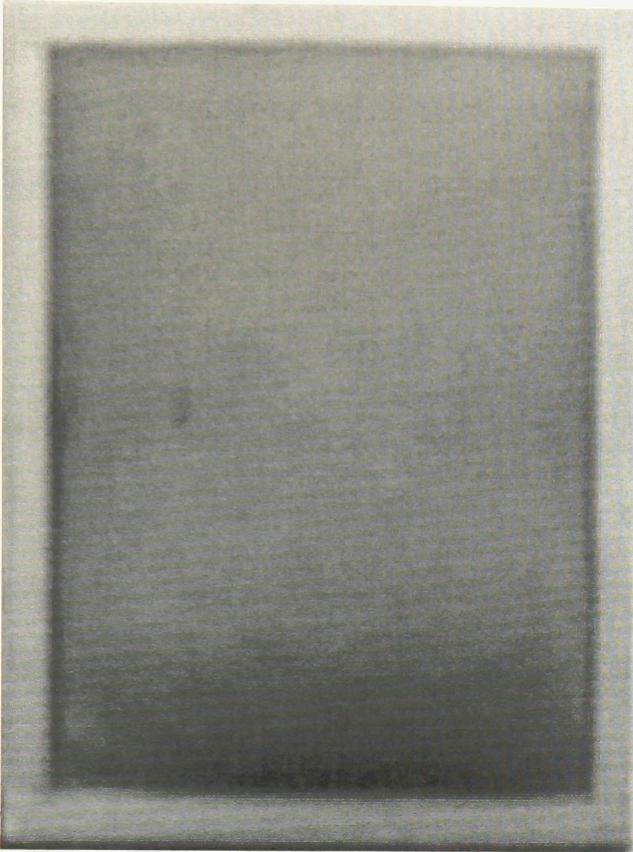


Figure 11 Smell Panels, a beige spandex pocket was filled with cinnamon scented gravel and attached to the wooden frame

Smell is the last form of “receptor” that I explored. A scent can transport one to a previously visited location or remind one of a particular time of year. The smell of wild cranberries always reminds me of our cottage where these berries grow wild in the swamps. This strong association immediately links me to memories of our cottage.

As you encounter each sensual panel, the information processing sequence would be taking place. The environment, the panel, would be explored with your “receptors”, the senses, in order to transform the information to the “processors” that make

comparisons or association in memory which is returned to the “processors” and produce a reaction by the “effectors”. Therefore for each panel, a memory of an object, event or time is produced with each exploration. If a selection of objects is carefully and strategically placed within panels to be used in a building design, the architect would be able to dictate what memories are evoked in the client as him/her move through their spaces.

In order for me to begin to incorporate memories into a built form using the techniques that I have explored including the representation of memory (displaying “symbol structures”), the recording of memory (the process of information), and the evocation of memory (the use of the viewer’s receptors), I must build a “data source” of my sisters’ memories and regional history by conducting interviews with Karlene and Marlene and incorporating research from other sources such as family members and regional history books.

Initial Design

8.0. Reasons for Exploring This Topic

My thesis began with the design of two separate cottages for my twin sisters Karlene McDonald and Marlene Perry. I wanted to construct more than a functioning design because the location of the cottages meant more to them than just a sunny location for summer enjoyment.

The proposed locations for Karlene and Marlene's cottages are in the Ottawa Valley in a little community called Latchford Bridge, adjacent to our family cottage. Each piece of property was formerly part of our grandparents' farm [Figure 12]. This region is an integral element of my family's associative history. Our relatives have occupied this farming land for over five generations.



Figure 12 Sullivan Farm

Recently the younger generations of our family are no longer continuing the tradition of farming; they have decided to move out of this area for employment in greater metropolitan areas. Parents have died or are too frail to continue working in the fields leaving the land behind untended. The region which had once been full of small farming developments with family names that can be traced back for more than six

generations is now losing its identity. Farmland is being sold to city dwellers who are converting the area into seasonal vacation sites.

My sisters and I have learned about the area and its history through visits during the summer seasons talking with our extended family and exploring the property in our youth. With the losses of individuals capable of keeping the oral tradition alive, we fear that we will begin to forget our roots.

By designing cottages for my sisters that will evoke their childhood memories as they inhabit the spaces, I attempt to preserve their memories by bringing them into daily use when they are at their respective cottages. Elements of the body which are not used go into atrophy; the same occurs with the mind. If one participates in the active use of one's memory one will tend to retain one's memories.

9.0. Historical Background

Although I have conducted interviews with my sisters to extrapolate their memories, I still felt that there were many aspects of our family's history and history of the region that my sisters did not mention or do not know but which still tell of the memory of the site and need to be incorporated into the design. The history and stories that I have collected and recorded into my thesis paper intended to help preserve our oral history, not only for my sisters but for me and other family members who have shown interest in my research. The following is made up of information I have collected

from other sources such as family members, books written about the region (*Renfrew County: People & Places* by Carol Bennett, *St. Francis de Sales Parish Latchford Bridge: 100th Anniversary 1903-2003* by Centennial Committee, *The Eganville Leader: Reflections of a Century, Stores and Photos from the Ottawa Valley* edited by Frank Cosentino, Lornie Foran, Ron Tracey and Gerald Tracey) and collected newspaper clippings.

7.0.1. Family History

The Sullivan family arrived in Canada from Ireland before the potato famine; they were cement workers and arrived in Ottawa to work on the Rideau Canal.

James Sullivan was born in Ireland about 1820 and emigrated to Mt. St. Patrick about 1845. He lived in Mt. St. Patrick until his death in 1909. He married Mary Moriarty who was born in Ireland in 1827 and died in Mt. St. Patrick in 1912. They had one son, John.

John (Jack) Sullivan was born in Mt. St. Patrick in 1852 and moved to Lyndock then to Raglan. He died in 1941. He married Ellen Kennelly who was born in Mt. St. Patrick in 1854. She died in 1931. They had seven children Mary, James, Michael, John, Beatrice, Margaret, and Nora Anne.

James (Jim) Francis Sullivan married Julia Helferty and moved to Raglan in 1915 to farm his wife's homestead at the bottom of Wingle Hill, a property she inherited when her brother William died at the age of 44. They had eleven children, Loretta, John Bernard, William, Michael, Lornie, Basil, Mary, Marcella, Gertrude, Angela, and Teresa.

All of the children left the area except for Michael Joseph (Mack) Sullivan, our grandfather (1915-2001). Mack farmed the original Helferty homestead. Michael inherited the family farm from Jim and Julia and was the first child born at the homestead. He married Isabel Teresa Hanniman of Dacre in 1951. She was the daughter of James Hanniman and Teresa Murphy of Mt. St. Patrick. She met Mack while boarding at the Sullivan's and teaching school at Latchford Bridge. She taught in area schools from 1951-1973. They had six children Loretta, James, Donna, Lorna, Bonita, and Joan.

Loretta Teresa McDonald attended nursing school in 1971 at Peterborough Ontario and went to Toronto for employment. In 1973 she married Ralph James McDonald. They had three children, twin girls Karlene and Marlene, and Amanda.

7.0.2. History of Region

Most of our history can be traced to the Renfrew County. The township of Raglan was named after James Henry Fitzroy Somerset, Lord Raglan (1788-1855) son

of the fifth Duke of Beauford. He was the first baron of the kind, and he took his title from a town in Wales. Raglan Township was added to Renfrew County in 1871. Communities in the Raglan Township, past and present, include Bruceton, Craigmont, Guiney, Hardwood Lake, Ireland, Jewelville, Latchford Bridge, Palmer Rapids, Schutt, and Wingle²⁸ [Figure 13].



Figure 13 Map of the Renfrew area sited from - MapQuest, Feb, 18, 2005.
<http://www.mapquest.com/maps/main.adp?countrycode=ca&cid=mqca>

Raglan has been described as a scenic township, often visited by photographers, artists and tourists. The artist A.J. Casson, a member of the Canadian artist “The Group of Seven” favoured this area. Casson spent a considerable time in Renfrew County in the 1950s and 1960s and during that time he would stay in different farmer’s homes²⁹. In fact Casson once stayed with our great uncle John Bernard Sullivan, J.B. as we

²⁸ Bennett, 1989

²⁹ Bennett, 1989

would call him. As payment for room and board he gave J.B. a painting of their farmhouse and until J.B.'s recent death the painting hung on the wall of their cottage.

Latchford Bridge was first known as Ryan's Settlement. The name was changed in 1901, when the first bridge was built across the Madawaska River. The bridge was named after Francis Latchford, the Liberal MP for Renfrew South. His term of office extended from 1899 to 1904³⁰.

The original Latchford Bridge construction was referred to as a Bailey's bridge; it was two webs of trusses laid across four large concrete piers in the water with wood planks spanning the two trusses for traffic to cross [Figure 14]. My mother recalls the queasy feeling she would get when crossing the bridge by foot; She explained that through the wood planks she could see the water rush under her feet. It was also a narrow bridge allowing only one direction of traffic at a time.



Figure 14 "Old Bridge"

³⁰ Bennett, 1989

The second Latchford Bridge was commissioned to be built in 1979. It was built across the Madawaska River, 1500 feet upstream from the previous location on highway 515 [Figure 15]. It was not only meant to replace the existing structure but was also a part of a relocation of this section of the highway intended to strengthen the road system that hugged the shoreline³¹. Both our original cottage property and Karlene's property gained their shorelines back, changing the shape of the properties considerably. The two properties were separated from each other, no longer sharing property lines. Karlene's property became an island, isolated from the original Sullivan land [Figure 16].



Figure 15 "New Bridge"

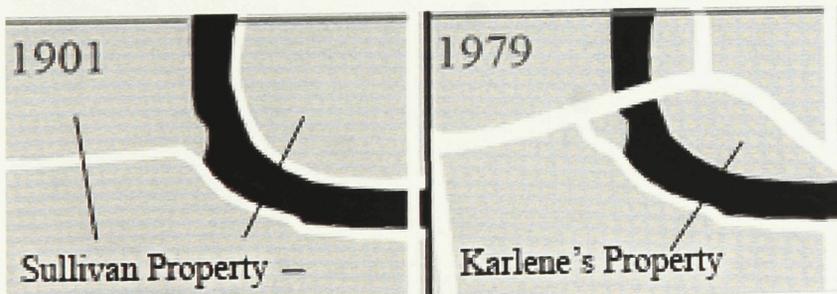


Figure 16 Representation of the changing shorelines which severed Karlene's property from the rest of the farm.

³¹ Cosentino, 2002

Because the Madawaska River connects to many waterways, which eventually lead out into the great lakes, many commercial activities took place on the Madawaska. Our portion of the river used to be part of the logging runs. Palmer Rapids was once a supply base for the McLachlin lumber company. Remnants of these logging activities can still be seen. Multiple times I have dived into the Madawaska River to see laying on the bottom of the riverbed the extremely large logs that were lost along the journey.

My mother remembers when she was very young, around the ages of 4 to 6, that in the winter she would go with her father into the bush to watch him log. Her job while out in the forest was to bring along a honey bucket and a tea bag to make her father his afternoon tea. In the morning grandpa would build a fire and then get to work leaving my mother to keep the fire going and to begin to make the tea. She would pack the honey bucket with as much snow as would fit, then she would suspend the bucket over the fire to make the hot water needed for making the tea.



Figure 17 Forested Logs

Other memories my mother associated with the winter logging months were that of trying to amuse herself while staying out of the way of falling trees [Figure 17]. She would play with the dog in the snow, snuggling up with him to keep warm or pet the large Clydesdale workhorses. When it was warm enough to start stripping the cedar logs my mother would play with slimy cedar bark that her father would be removing; weaving the strips into little baskets or just exploring the different textures of the strips as they were peeled off the logs. She said that the outside bark would be rough and dry but the inside portion would be wet and slimy with the wonderful cedar aroma that would remain on her hands all day. As well as stripping the logs in the spring they would tap the maple trees to make maple syrup. My mother would collect the little buckets of sap and add them to the large barrels on the sled being pulled by the team of horses. Later at home they would boil the sap down in a big pot on the back of the wood stove; this same operation was sometimes carried out in the forest in the big boiling pans that were made of black cast iron.

The main wood types that would be harvested in the area were maple, cedar, and beach wood, a unique type of wood found only on my grandfather's property [Figure 18]. The harder wood would be used as firewood for heating the house in the winter or sold to lumber yards to be used in construction. The softer wood like the cedar was used for making fences on the property, or sold for pulp and paper production. The cedar posts were often sold to The Department of Highways to be used as guard rails. During the

Christmas season my grandfather would receive another supplemental income from the bush. Ottawa Christmas tree suppliers would come to his property and harvest their trees to take back to the city.



Figure 18 Sullivan Forest

In 1987, because the land wasn't being used for farming anymore, my parents decided to put the land to other use by replanting some of the fields [Figure 19]. The government at this time was also giving incentive to farmers to do this; each tree was only 5 cents and for every 25 acres of land planted to the Ontario forestry standards of 10 foot square spacing, the land owner would receive a tax rebate. We planted red pine because they were the best-suited tree type for the area, made up of sandy soil, and also

because this type of tree is fast growing and used in construction lumber. Although it has only been 18 years, they appear to be almost fully grown already.



Figure 19 Planted Trees in a ten by ten foot grid

Other traces of activities that took place in this region reflect the Algonquin Natives' seasonal settlements along the Madawaska. My grandparents would periodically find evidence of these settlements in a field they owned along the river's edge. Each season when they would cultivate the field to plant their potato crops they would unearth arrow heads and pottery pieces which were left behind, reminding them that they were not the first settlers in this area.

People were not the only ones to leave traces of their occupancy behind. Glaciers crept through this land carving out the valley and rivers. Along the way, the glaciers deposited gravel and sand; such a deposit is located within my sister Marlene's property. The gravel from the deposit was bought by the truckload by the Department of Highways from my grandfather in order to build up and straighten out the road. As a result of the gravel being used, there remains a scar in the property where the gravel was removed. It was removed to such an extent that the trees and vegetation that used to hug the surface of the gravel are now toppled over, falling down the remaining hill [Figure 20].



Figure 20 Gravel deposit from glaciers located on Marlene's property

The glaciers also left behind the lake, which is part of Marlene's property next to highway 515 and the river. The lake has been called Sullivan Lake, named after my grandfather because he owned all the land around the body of water when the government was travelling through the region naming the roads and waterways. In the winter season the lake becomes our own personal skating rink. The pine trees that surround the one edge of the lake provide shelter from the cold winter winds.

Fire is associated with many stories in the area; fire could destroy a family home within minutes or clear a whole forest. Around the year 1920 at the age of five, my grandfather recalled a fire that swept across the shores of the Madawaska River. The fire razed the land to the ground. The flames he recalled, were so large that they were able to jump from the north shore to the south shore of the river.

Many of our family memories have taken place within the Sullivan farm [Figure 21]. The Sullivan farm house was not always situated at the foot of Wingle Hill. The original log portion of the house, which was the Helferty estate, was located halfway up the hill. In 1894 the house was moved closer to the creek, a water source for the house and the animals of the farm. My mother recalls her Grandmother, Julia Helferty, telling her a story of when she was about five years old walking behind her home and travelling down the hill with her dolly in hand, a treasure which was entrusted to her for safe keeping during the relocation. The year before my grandparents were married 1950 the house was expanded so that they could live in the home with a second portion of the home for his mother to reside in. When the new addition was added on to the log house the entire structure was covered with aluminium siding.



Figure 21 Sullivan Farmhouse

The Sullivan farm had barns for the animals [Figure 22], a granary, a garage and a machine shed. On the opposite side of the creek where the house and the barns for the animals are located there is another barn. This barn was used for keeping farm equipment needed for work in early spring. The creek would be swollen in spring and the only way to begin preparing the upper field without worrying about the machines getting stuck in the muddy creek shores, was to keep the tools there.



Figure 22 Sullivan Barns

The tools which the farmer would use, rotated seasonally. In the warmer weather my grandfather would use a tractor to do the farming. In the winter months when the crop season was over the logging season would begin. At this time of year the horse team would be used. The horses could travel more easily on the log trails and in the evening when it was time to return home there was no fear of them starting in the cold.

Every year in August the entire farming community would join together and travel from one farm to the next to thrash the grain. They would do this until all the local grain would be separated for grinding or cattle feed. The men and children of all ages in each household compound would be out in the fields working while back in the farmhouse the wives and younger children would be preparing a large lunch and supper for the workers. My mother recalls that another job of the younger children was to bring canteens of cold water out into the field for the workers until the end of the working day.

The farms within the Raglan Township were mainly self-sustaining developments, except for one that developed into one of Ontario's larger potato producers. But the majority of the farmers grew their crops and kept animals only for feeding their families. The farmers who kept cattle for meat had an extra income making it possible to sell their excess cream to the local dairy. My great grandfather and grandfather participated in both enterprises. As children we could see evidence of their cream production while walking through the stables, observing the separators and also see the stamped metal cream bucket with "James Sullivan" (great grandfather) name

imprinted on the cans [Figure 23]. During the 1950s and 1960s, Renfrew County was considered the largest producer of cream (to be converted into butter) in eastern Ontario. The Ontario Department of Agriculture noted that Renfrew County accounted for 25% of Ontario butter production.³²



Figure 23 James Sullivan's Cream Can

When my mother and her sisters were growing up they were told that they would each be able to choose a portion of the farmland to dispose of as they wish. For a while it appeared that each selected a portion of farmland that would be left vacant, because my mother and her sisters moved to Toronto for employment. In 1980 this changed when my parents built our family cottage on her portion of land.

³² Cosentino, 2002

As my grandparents grew older and were no longer able to run the farm in the harsher weather they decided to move out of the farm house and into a local apartment complex in Palmer Rapids. Officially my grandparents moved out of the farm in 1986 the year of their 35th anniversary. The extended family held a combined anniversary and farewell party at our cottage. The farm was not to be left unoccupied though, because the third daughter, Lorna, had moved into the house in 1985 and remained there until 2003.

In February 2002 Grandpa Sullivan died. During the settlement of Grandpa's assets, each daughter was given portions of the property. In 2003 the following year the farm house and 280 acres of the property were sold.

Although well-maintained highways pass through the Ragland Township today, the area has never become highly developed, possibly because no railway went through it in the second half of the nineteenth century. The economy has always been mainly rural and much of the township is still Crown land.³³ The population swells seasonally with an influx of cottagers, canoeists and hunters, but as the children of the original settlers are growing up most are moving away from the region to find employment.

³³ Lee-Whiting, 1985

10.0. Extrapolating Client's Memory

With the understanding of information processing systems, memory systems and symbol structures and forms which they may take, I begin the process of extrapolating elements of my clients' memory in order to design cottages that incorporate their memories into a built form. To do this I want to use selective memories, that is, memories that concentrate on the times my sisters and I spent at our family cottage, including memories of our family history, and memories of the region and its development. This process informs the type of structure that I'm designing, for each sister and their locations.

10.1. Structured Interview

To gain an understanding of the clients' associations and memories to the site I conducted an interview with each twin. The interviews were structured to find out what memories they have of our family cottage and the proposed sites for each cottage and how these memories have translated to their understanding of a cottage and the extrapolation of memories that will be incorporated into the dwellings.

8.1.1. Questionnaire

1. Why do you want a cottage?
2. In your opinion what constitutes a cottage and what are these notions based upon?
3. Why do you want to locate your cottage in this area?
4. What memories connect you to this property and why?
5. Describe the physical properties/features of your cottage site.
6. From the relevant physical properties/features you listed above describe memories you associated with them.
7. What events can you recollect that made you look forward to going to the cottage at the age of:
 - 6
 - 12
 - 18
 - Present

8.1.2. Answers: Karlene McDonald

1. Now that I live in a condominium in Toronto it's become more important to me to have a cottage, as I have no real connection with nature living in the concrete city. A cottage would provide me with a great place to relax and have fun; a quiet place to go to on the weekends where there are lots of trees around for privacy, a river for swimming and a dock to sunbathe on. On the other hand, the cottage is a great location for inviting friends up to play games and have Barbeques.
2. For me a cottage is supposed to be in a quiet location. I always pictured cottages in very desolate locations and in faraway places which would be reached with great anticipation for your arrival. Once there you would have to "open" the cottage up for the year. The cottage is to be smothered in trees, have clean water to swim in and have neighbours that you can hear on occasion but never see. If you like the noise and having neighbours you can stay in the city.
3. I want to locate my cottage in this area because I have many relatives located in this area and it would keep me physically close to my family when on vacation; during the year we all live in different areas.
4. Memories that connect me to this property would have to be based upon the stories that I heard from my mother about the lineage of the land. I was told that the property has been in the family for a number of years. It was once my grandpa's land that he received from his dad; he gave the land to my mum who in turn gave it to me.

5. I would describe the outline of the plot of land as being shaped like a giant fat “C” [Figure 24]. The waterfront has some nice beach sand. It’s a bit mushy or swampy towards the highway. The middle of the “C” is dry and already clear of trees, as a result of the old road. One end of the “C” had the “old bridge” but it now has only the remnants of the stones that were piled around the shoreline at the bottom portion of the piers in the water. The other end of the “C” has the “new bridge”.



Figure 24 Karlene's site

6. At the portion of the property that used to touch the “old bridge”, I have memories of us diving into the water to see the remnants of the piers from the bridge and collecting the fishing lures that would be caught by fishermen trolling along the shores. At the opposite end of the property that touches the “new bridge” I have memories of jumping from the lower girder with my friends into the water below. I remember that the old road provided a safe means for our exploration. Rather than whacking our way through brush which is very thick elsewhere, the road allowed us to explore deep into the property where we found remnants of an old dump. There we collected old bottles that were tossed away by our family giving us a glimpse into the past. Near the end of the summer we would also walk along the water’s edge in a search for blueberries.
7. Memories of cottage at:

- **Age 6:** At this age the memories are unclear but I believe this was a time when my mom's sisters used to bring their boyfriends to the family farm for the weekends; we always had fun with them. Wayne would take us swimming and fishing, and Mike would teach us how to play tennis. The whole gang would invite us every time they went to the beach; it was lots of fun being included in their activities.
- **Age 12:** At this age I remember that my twin sister and I were in synchronized swimming and on our time off we would invite some of our team mates up to the cottage. Oddly enough our main activity at the cottage was swimming.
- **Age 18:** At this age I remember inviting friends to visit and recall going to the music/camping festivals around our cottage; The Bluegrass, The Killaloe Craft Fair (Freak Fair) and Porkstock. Our friends would be scattered around our cottage property in their pop up tents, just like our own tent city.
- **Present Age:** I think I have even fonder memories of the cottage now because I live in a condominium in Toronto and I long for the day at the cottage with its clear waters and sheltered trees where I can invite my friends from the city to experience a little bit of the great outdoors.

8.1.3. Answers: Marlene Perry

1. Michael, my husband, and I would like a place that is a close vacation spot in the country. I have so many wonderful memories from up north and I want my children to have them too. I also enjoy visiting all my family and would like my children and Michael to understand and love where we are from.
2. A cottage for me is a second home without all the amenities. A cottage is a chance to “get away from it all”. We didn’t always have running drinking water and indoor plumbing at our cottage. Every friend’s cottage I’ve been to has elements that make you feel like you are ruffin’ it, be it the used furniture and unmatched dishes or the fact that the cottages are often made by the owners.
3. I want to locate my cottage in the Ottawa Valley because it is very important to my family, in that my parents originated there. To me a cottage should be surrounded by childhood and family memories because that is what I have known. Latchford Bridge with the church and crazy old farmers is what I consider a cottage. To have one in a place where I know no one, would seem weird.
4. This piece of land located between our family cottage and our grandparent’s farm invokes memories of summers spent with our family. Another connection that the land provides for me is that it has been passed down to me from previous generations. My fondest memories are from this area, which involve trips with Karlene on foot where we would hike through the paths and hills and find old forts made by mom and her sisters. I also remember working the land by bringing in the hay with grandpa.

5. The most prominent feature of this site for me, is the gravel pit and lake at one end, and the river on the other, with thick bush in between. [Figure 25].

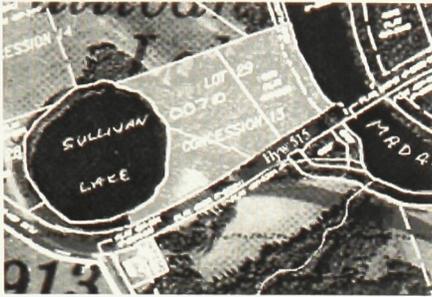


Figure 25 Marlene's site

6. Memories I have from the above described features are things such as swimming to the river's edge that is directly across from our family cottage. My sisters and I would race each other from our dock to its shore. I remember swimming even faster back to the dock because our father used to tell us that turtles lived on that side of the river. I also remember that we collected sand from the gravel pit to fill our sand box at our cottage as well as the horseshoe pit that we would play in all summer. In the wintertime when we would visit the farm for Christmas I remember going skating on the lake. All our aunts and uncles would get together to build a big bonfire and spend the day skating.
7. Memories of cottage at:
- **Age 6:** At this age I recall a Christmas spent opening gifts by our cottage's stone fireplace. I also recall how far the drive was when we went up every weekend and often puking in the car. I barely remember clearing the land and the construction of the cottage, although some of these images are still with me. I especially remember the scary out

house! I also remember the traffic on the road by the river and Elard's potato trucks.

- **Age 12:** At this age I remember spending entire summers at the cottage. We often picked berries, laid on air mattresses in the river and hung out with all of our aunts and grandparents. I remember planting the pine trees by the old road on our cottage property. I also recall tons of rabbits at the cottage before we got Teddy, our dog. I remember our amazing tree house, playing basketball often and meeting tons of cousins and kids our age. When the side porch was built it became our hangout spot with our friends, especially the Carter's and Kizer's.
- **Age 18:** At this age I remember finally bringing friends up north from Toronto. Most of my memories involve introducing them to the area by visiting beaches and Barry's Bay, and special attractions; The Blue Grass and Pork Stock were special attractions.
- **Present:** Now when I go up north with my husband and sisters I am interested in learning more about my family history and the area history. Family visits have become more important and the cottage as a vacation and relaxation spot provides treasured moments. Michael and I now often dream of having our own cottage.

From the above questions posed to my clients I gained an insight into their association with the family cottage. From the answers of each sister I was able to notice the contrasting focus for having a cottage.

Karlene's concept of a cottage appeared to revolve around having a place to leave the city where she could spend time in seclusion and where she could tan and lounge in the sun. When I continued to question her about her memories of a cottage they revolved around having people with her at our family cottage starting from a young age having our aunts and their boyfriends around to a time where she was able to bring her own friend to the cottage. By delving into her memories of a cottage I was able to find criteria for her cottage that she may not have indicated to me otherwise. For her such a place needs to appear and feel secluded but able to accommodate having a large group of friends.

Marlene's concept of a cottage appears to revolve around having a physical connection to the site that would allow her to share her childhood experiences with her husband and future children. Marlene describes a stronger physical connection to the area by describing activities she used to partake in on the land and time spent with the local residents. Her notion of a cottage structure is interesting because it talks about an aura of a cottage being a hodgepodge of materials which she equates to the cottage being made by its owners. But maybe this speaks more about the elements which can be connected to a story about the structure's development or its previous occupation.

The above questionnaires have produced answers that gave me some insight into their understanding and memories of our family cottage, but I discovered that by providing structured questions to my clients they were compelled to give short answers

that they believed got to the point. I found that this was not conducive to their deeper memories. To receive more exploratory answers from my clients I decided to ask a broader question that would provide me with more of their personal memories.

10.2. Questioning Memory

To select a question that provided me with more of my client's long-term memories, I had to think of a broad enough frame that would encapsulate memories of our family cottage and its location. I began by thinking of what I remember about our cottage, and the "frame" that I came upon revolves around the season that we spent most of our time at the cottage, summer time.

In our family summer always meant spending time at the cottage. Our parents would alternate summer holidays so that one of them would always be with us at the cottage. We would be there almost every day of the summer. Our cottage was built the year I was born but even before that my parents would take my sisters to stay at the farmhouse with Grandma and Grandpa Sullivan. Because of our presence in the area during the summertime I have asked each of my sisters to describe at length what they remember of the area during the summertime, incorporating into their answer as many sensual experiences as they could.

8.2.1. Karlene McDonald

For me Summer time has always been synonymous with water, be it in the form of the creek, the lake or the river.

In the summer when grandpa was working in the hay fields he would ask us to go fetch him a canteen of creek water. We would hike through the forest, listening for the babbling water until we would find the creek. The creek water was always freezing cold even on the hottest days of the summer. I guess this was because the water spent most of its time under the ground beneath the limestone rocks. Before returning to our grandpa we would take off our shoes and play in the water for a while making boats out of bits of wood and leaves. When our toes were completely frozen we would know it was time to go, following the sound of the tractor back out to the fields.

As I got older, I remember going with our aunts to many of the local swimming holes in the creeks and river. They were never nice sandy beaches; they were usually cold and muddy or sharp gravel shorelines. We wouldn't swim much at these swimming holes; we would instead look for frogs, small fish, minnows, turtles and lots of other slimy things that we would chase our aunts with.

When we got older our summers were enjoyed at our own cottage on the river. We still were close to the farm and our day usually meant a walk over there. At our cottage we swam in the deep, fast river all day long, diving off our huge dock, swinging off the tree rope into the water below, and jumping off the bridge into the river. Our huge wooden dock was a place of high activity. Boaters would always stop to chat, canoeists stopped for directions, and friends gathered there to swim and visit.

A new dimension of summer came when we got a canoe. We started exploring up and down the river. Many of our cousins had cottages along the river so we spent lots of time paddling to their places. Our favourite challenge was to paddle downstream to the rapids and spend the afternoon body surfing in them.

In 1986, when I was ten our father built us a tree house. The tree house was a special place to play on a rainy day. No one else on the river had such an attraction so we always had friends come to spend rainy days with us in the tree house. It had a slide made from metal siding left over from the construction of the boathouse, a set of stairs that lead to a wooden platform leading to a rope bridge that many were afraid to cross. The main body of the structure was a little house. It wasn't really a tree house because it was built on stilts, which made it feel like we were in the trees because it was so far off the ground, and hidden amongst the branches. The tree house was always a great place to go off and read a book or play with the toy piano.

8.2.2. Marlene Perry

Over the many summers spent at our cottage I became acquainted with the area where my mother was born. When I visited our Grandma and Grandpa Sullivan's farm I explored the fields, forest, the creek, the lake, the gravel pit and the river.

Summer time visits were opportunities to play in the haymows in the barn with my sisters or get a ride on the tractor and wagon. When we were little, grandpa gave us turns sitting on his knee and steering the big steering wheel of the tractor with the large

red button in the center. I remember the hay being dry and prickly with wild flowers, such as black-eyed susies, daisies and buttercups being mixed in with the grasses. The hay was fresh and warm when in the fields but cold and musty when stored in the mows in the winter. When the hay bails were propped up against each other in the fields for drying purposes we would make forts with them and pick out the dried flowers to make bouquets.

Lunch time in the summer was often a wonderful picnic out in the fields with grandpa; I remember him using hay like a blanket. He would spread the loose hay on the ground so we would have a soft surface to enjoy our lunch on.

While grandpa worked in the hayfield, we would climb over the long stone fences, examining the different stones that sparkled in the light and watching out for snakes that lived in the stone piles. Grandpa told us how the stones ended up there: he and his father used a stone boat and the horses to pick all the stones off the fields each spring and piled them along the edge of the property to keep the animals in or out of the fields as well as preparing the land for planting. As we climbed along the fences we found delicious raspberries, the raspberries that we could refrain from eating we would bring home to grandma and as a reward for a long day's work she would turn the raspberries into a pie, with a rich red colour and sweet taste. Along with the pie grandma would make a rich, fluffy cream from the cow's milk to put on top of the pie.

When dad built our cottage on the river I was about 5 years old. The cottage created a new area to explore. I remember a huge big black tree stump that was tipped over. It stood almost as high as the walls of the cottage. Grandpa explained to us that it was a white pine that had been burnt down during a forest fire. Many years ago when he was a boy, this fire had destroyed many trees and several farms. He showed me singed logs that had been salvaged to rebuild barns on some of the neighbouring farms. As a child I remember thinking about that blackened tree stump when looking at a fire in our fireplace. It made me wonder how large the flames would have been to clear an entire bush.

From the above descriptions of Karlene and Marlene's memories of summertime I was able to gain a better sense of the cherished memories they have of the area in which their cottages are to be placed. These descriptions of summertime also provided me with more of the textural and sensual triggers for their memories which I will incorporate into the designs of their cottages.

11.0. Project Description

The design portion of my thesis is to design two separate cottages for my identical twins sisters, Karlene McDonald and Marlene Perry, which emerge from their personal memories and memories of the region.

The selected valley locations for my identical twin sisters' cottages hold many key elements to our family history. My mother's extended family have occupied

farmland in this area for over four generations. Although my father was raised in Kingston Ontario, his mother was born in the neighbouring town of Quadeville. It's a common saying in our family that between our mother and father's relatives my sisters and I are related to almost everyone in the region.

Returning to the region each summer is in a way a returning to family history. Every area within a traveling distance possesses a familiar tale, accounts of the past told to us by our family members or a recollection of events that we participated in, but as time is passing these memories are fading away. Incorporating Karlene and Marlene's memories and the history of the region is an attempt at preserving our family history for them.

To incorporate these memories I intend to use what I have learned about the different forms of memory systems; procedural, perceptual representation, semantic, episodic, and primary memory. I will incorporate what I have learned about representing, recording and evoking memories with the senses all in an attempt to create cottages for my sisters which will "house memory".

11.1. Program

The following are "wish lists" that I asked each client to provide me with for their cottages.

9.1.1. Karlene McDonald

2 Bedrooms – one being the master bedroom with a large closet

1 Bathroom

Kitchen

Dining table can blend in with the family room

A living room with a fireplace

A big deck around the outside of the cottage for tanning and therefore facing the sun

A boathouse to store canoe or paddle-boat

Wishes-A wet bar with seating in a screened in porch, and a fire pit would be nice

Location- I want the cottage to face Great Uncle JB's but the sun and water is better facing Joan's and the old bridge. I definitely need to leave many trees around the area.

I hate it when people in canoes can see into your cottage when they paddle by.

9.1.2. Marlene Perry

3 Bedrooms- Master bedroom, a Kids' bedroom, and a guest room

1 Bathroom

A big kitchen with eating area

A large family room

A fireplace

A big deck with swing seat and area for outdoor cooking and dining

Wishes- A gazebo by the water, and a laundry room

Location-I am not sure where the cottage should be located on the site because it is a large area and it has many different types of environments.

For the provided programs given to me by my clients I will interpret each in a different manner when designing the cottages which will provide different understandings of the norms.

12.0. Site Description

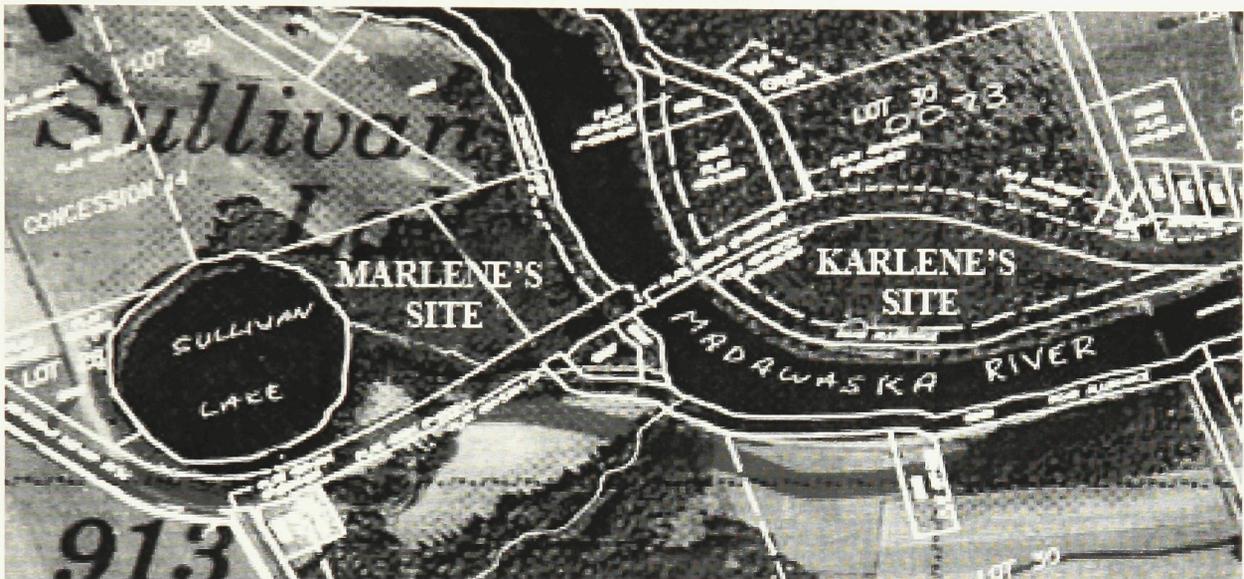


Figure 26 Site

The first piece of property to be built upon belongs to my sister Karlene McDonald.

Raglan Township (Ottawa Valley)

RR 1 Palmer Rapids

Concession 13

Part Lot 30, 31

Approximately 10 acres

Legal description – Ten-acre parcel on lot 30 bounded by highway 515 on the north and bounded by the Madawaska River on the south [Figure 27].

This property was once part of my grandfather's farm estate, which has recently been severed. This particular site is located adjacent to my family's existing cottage. It

is a wedge-shaped site that is bounded by a highway, water frontage onto the Madawaska River, the foundational remains of the old bridge, and the subsequent bridge that replaced it. This site also has the remains of the road that served the old bridge before it was replaced by the new highway.



Figure 27 Karlene's Site

The second site to be built upon will be the property that belongs to Marlene Perry my second sister.

Raglan Township (Ottawa Valley)
 RR 1 Palmer Rapids
 Concession 13
 Part Lot 29

Approximately 10 acres

Legal description – Ten-acre parcel on lot 29 bounded by highway 515 on the south and bounded by the Madawaska River east, concession 13 bounds the north, and lot line 28 on the west [Figure 28].

This property was also once part of my grandfather's farm estate. This site is located across the river from my family's existing cottage. The site is located next to highway 515 but on the opposite side of the river. It is connected to the opposite side of the bridge and has water frontage onto the Madawaska River. Along the highway edge

the property contains a gravel pit with an adjacent lake that bears the name of Sullivan Lake.

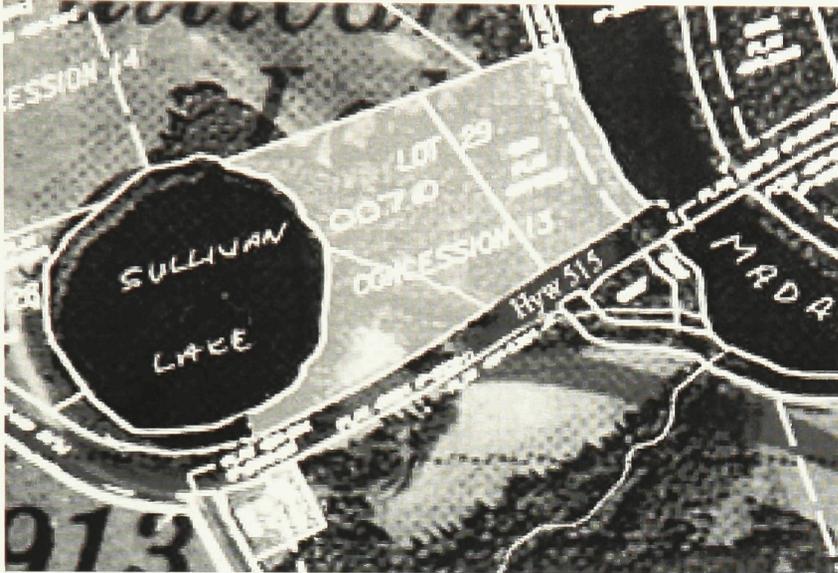


Figure 28 Marlene's Site

13.0. Design Process

“According to Saussure, meaning is also the result of a process of combination and selection.”³⁴ I therefore must select items and make associations from the family history and regional history that I collected in order to construct a cottage for each twin. I begin this process by creating a table that organizes the information into five categories [Table 3] that distinguished between different forms of memories which I classified as; Public memory, Grandfather’s memory, Mother’s memory, Karlene’s memory and Marlene’s memory. Public memory refers to memories that are of common knowledge amongst the members the larger community. Grandfather’s memory refers to the stories and knowledge about his life and the region that he conveyed to us. Mother’s memory refers

³⁴ John Storey, *Cultural Theory and Popular Culture: An Introduction*, 3rd ed. (Harlow: Pearson Education Limited, 2001) 59.

to the stories that she told to us about her childhood in the region. Finally Karlene's and Marlene's memory category refers to their memories that were obtained through the interviews.

To organise how each of these memory categories were to be integrated into the designs of the cottages I devised some rule and justification for utilising memories in distinct areas of the cottages. They are as follows; Public memory is assigned to communal spaces within the cottages because they are memories which are shared amongst individuals within community, memories that create a common folklore. Grandfather's memory pertains to the exterior grounds of the cottage, i.e. the landscape, because he conveyed his knowledge about the history of the surrounding region and farming to us through stories. Mother's memory pertains to the exterior envelope of the cottages because her knowledge was conveyed to us in a more tactile approach by pointing out different elements of our surroundings which reminded her of growing up on the farm. Karlene's and Marlene's memories pertain to each of the individual's cottage in the form of the details and private spaces within the design because they are experiences made in the first person.

Memory Categories	Architecture	Memory Item
Public memory-shared knowledge and experiences of the	These items weave together the individuals of the region by creating a common folklore therefore the design element will pertain to the communal spaces of the cottages because they weave together the varying programs of the cottage.	<ul style="list-style-type: none"> • Glacier activity carving out rivers and lakes as well as depositing gravel and rocks in the region. • Thrashers' gangs rotating to each farm in August to separate the wheat. • Logging activity in region

community.		<ul style="list-style-type: none"> • Relocation of road and bridge system. • The river's height changes daily, monthly, and seasonally because of the dams placed at either end of the river.
Grandfather's memory	<p>This information was told to us by our Grandfather. The stories relate to his memories of working the land as a child and as an adult. Grandfather's memories are therefore exterior items (i.e. landscape) because they are general oral history about the land and its use but not about family accounts.</p>	<ul style="list-style-type: none"> • Fire in region burning down forest on his property when a little boy. • The use of the Sullivan gravel pit for the construction of the old road. • Working in the bush in the winter months to sell the lumber to local saw mill or keep for firewood. • Working the fields; bringing in the hay and planting crops. • The moving of the farm house from the top of the hill to the bottom of the hill. • Selling the cream from the cows to the local creamery.
Mother's memory	<p>This information was conveyed to us in a more tactile approach; by pointing out different elements of our surroundings she would tell us stories about her childhood experiences growing up on a farm. Mother's memory therefore pertains to the exterior envelope of the cottages because although we did not partake in the events we were able to gain a sense of textures and smells from her anecdotes.</p>	<ul style="list-style-type: none"> • Making tea in a honey bucket for her father in forest during the winter. • Stripping cedar logs in the spring and weaving bark into little baskets. • Tapping the maple trees in spring and boiling the sap in a cast iron pot to make maple syrup. • Walking on the wooden planks of the old bridge.
Karlene's memory	<p>This information was gathered from Karlene through the previous interviews conducted. The memories are personal and are direct recollection of events by the client, therefore the memories will be represented in the interior details and private domain of the cottages.</p>	<ul style="list-style-type: none"> • Swimming off the dock at the cottage. • Logs found on the bottom of the river when swimming; remnants of the old logging industry. • Piers from old bridge seen at the bottom of the river when swimming. • Playing in rapids.

		<ul style="list-style-type: none"> • Finding old bottles and cans at the edge of the old road. • Tents scattering the cottage property full of friends. • Playing in the creek next to the hayfields. • Playing in the tree-house on rainy days. • Planting trees in the fields in a ten foot grid.
Marlene's memory	This information was gathered from Marlene through the previous interviews conducted. The memories are personal and are direct recollections of events by the client, therefore the memories will be represented in the interior details and private domain of the cottages.	<ul style="list-style-type: none"> • Standing around talking with the "locals" in church yard. • Having friends and cousins over to play at the cottage. • Playing in the creek. • Finding old forts by the creek in the forest made by our mother and aunts as children. • Picking the different berries throughout the summer. • Playing in the hay in the fields and in the barn lofts. • Climbing on rock fences at the edge of the fields. • Planting trees in the fields in a ten foot grid.

Table 3 Memory classifications for design elements.

13.1. Design References and Association

As Saussure had once said, "If representations construct reality, it follows that if you want to change reality, all you need do is change the way it is represented."³⁵ To apply this concept to my thesis of housing memory I explored the possible ways the elements in nature that are described in the above memory categories could be reinterpreted into the design of their cottages. To do this I began to collect images and

³⁵ Graham Good, Humanism Betrayed: Theory, Ideology, and Culture in the Contemporary University. (Montreal: McGill-Queen's University Press, 2001)52.

make association to the five senses of the mentioned items. The following are my findings which will help to develop material and spatial references that I can utilise in my designs.

The old bridge and the new bridge that are mentioned in the writing I associate with the materials they are made of; the old bridge being made of steel and wood and the new bridge being made of steel and concrete [Figure 29]. The old bridge was described by our mother as having wooden planks as the decking and as you traveled across you would be able to see the rushing water below. We can see the remaining piers from the old bridge if we go diving where the bridge once stood.

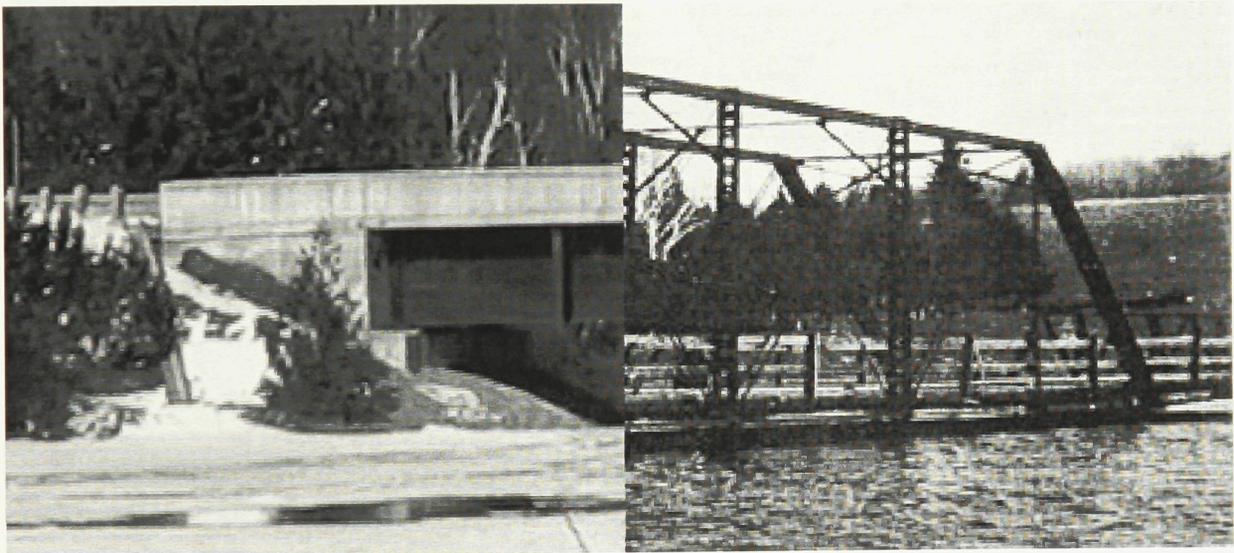


Figure 29 Elements of 'New' and 'Old' Bridge

It is also mentioned in the writing that we would jump off the lower girder of the bridge into the water below; to do this you had to make sure you passed over a riveted joint to make sure you were in deep enough water to jump. [figure 30] As you were shimmying across the bridge if a car drove by above, the bridge would vibrate making different tones of sound depending on the size of vehicle.



Figure 30 Lower girders of the bridge that we would jump from into the water below.

The building of the new bridges has also made associations with the changing of the property lines and relocation of the road system which changed from a gravel road to a surface treated road. The gravel road makes a connection between the two properties because the construction of the gravel road located on Karlene's property was removed from the gravel deposit located on Marlene's property [Figure 31].



Figure 31 Gravel pit located on Marlene's property

The planting of the red pine trees on our property that is mentioned in the writing I associate this with the ten by ten foot spacing that they are plant in. I also make an association to the tall slender trees which have created endless vanishing points [Figure 32]. By mentioning the planted trees I also make the association to the naturally seeded forest growth, which our grandfather used to forest, with its varying bark textures,

smells and colours. On sunny days the sun would shine through the leaves of the forest creating pattern on the forest floor [Figure 33].



Figure 32 Planted forest and natural growth forest

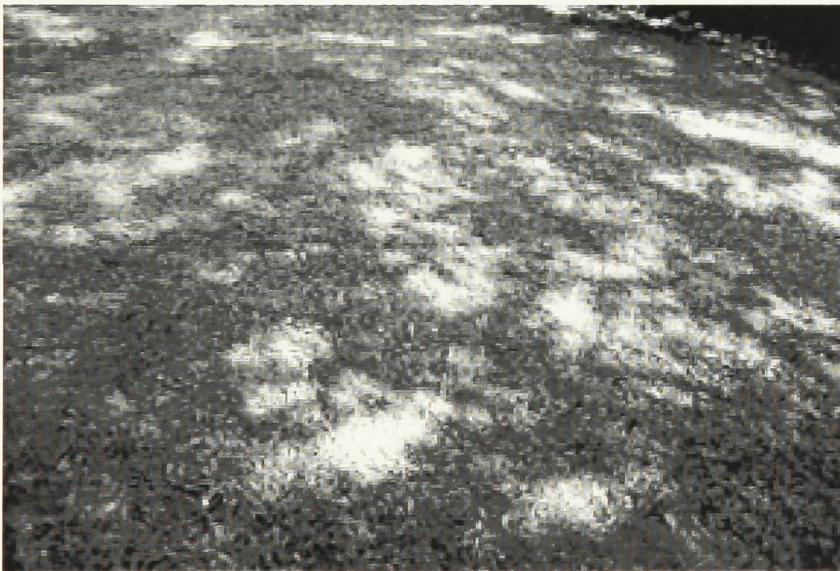


Figure 33 Light shining through leaves onto the forest floor.

In Karlene's interview our childhood treehouse is referenced to. I associate the treehouse with its unique design that is, it being on piers, having connecting bridges, steep stairs and a slide made from leftover metal siding [Figure 34].



Figure 34 McDonald's Tree House

In the writing, bringing in the hay is referenced as, I associate these events with the texture, colour and smell of hay, as well as the dull red metal of the tractors and the constant rumble of the machinery bringing in the hay [Figure 35]. The hay would then be stored in the barns in the lofts that were post and beam construction, sided in wood planks that had contracted and weathered over the years, allowing for the sun to filter through.



Figure 35 Sullivan barn haylofts and photo of hay growing in a field.

More associations are made to bringing in the hay and they include the surrounding geography, Fences including the rock fences, with sparkling surfaces that surround the fields, which had been made by our ancestors when clearing the fields for crops [Figure 36].



Figure 36 Rock fence surrounding the Sullivan fields

The geography also includes the hidden creek in the bush next to the field that Karlene and Marlene would find by following the sound of the babbling water and then playing on the smooth stone bed of the creek [Figure 37]. The water of the creek would vary in temperature along its path. This would depend on whether the water was sheltered in the shadows of the forest or exposed to the light of the sun where the rocks could absorb heat [Figure 38].



Figure 37 Karlene in the Woods, age 8, 1984



Figure 38 Creek found on the Sullivan land.

In the writing, reference is made to swimming and playing in the river to which I associate with dark green water, sandy and clay shorelines, sunken logs far below the water's surface and the continual motion of water moving in a southerly direction [Figure 39]. Along the shore lines there are also many old trees that have fallen in; two in particular are located on Karlene's property. They are an identifiable element along the rivers edge because they have been there for so long [Figure 40].



Figure 39 Rapids downstream from cottage property.



Figure 40 Fallen trees located off Karlene's shore.

Now that I have explored the varying images and association (such as materials, textures, sights, sounds, smells, and spatial references) to the collected memories, it is time for me to apply and reinterpret them into my cottage design which incorporates “housing memory”.

The Design

14.0. Karlene’s and Marlene’s Cottage Design



Figure 41 Sites

Since the clients are identical twin sisters, many of their experiences have been shared but they have not been remembered in the same way. Each client has created separate “symbol structures” for the same event, therefore the cottage designs are different but are comparable in the events incorporated into the designs.

The following are images of Karlene and Marlene’s cottages.

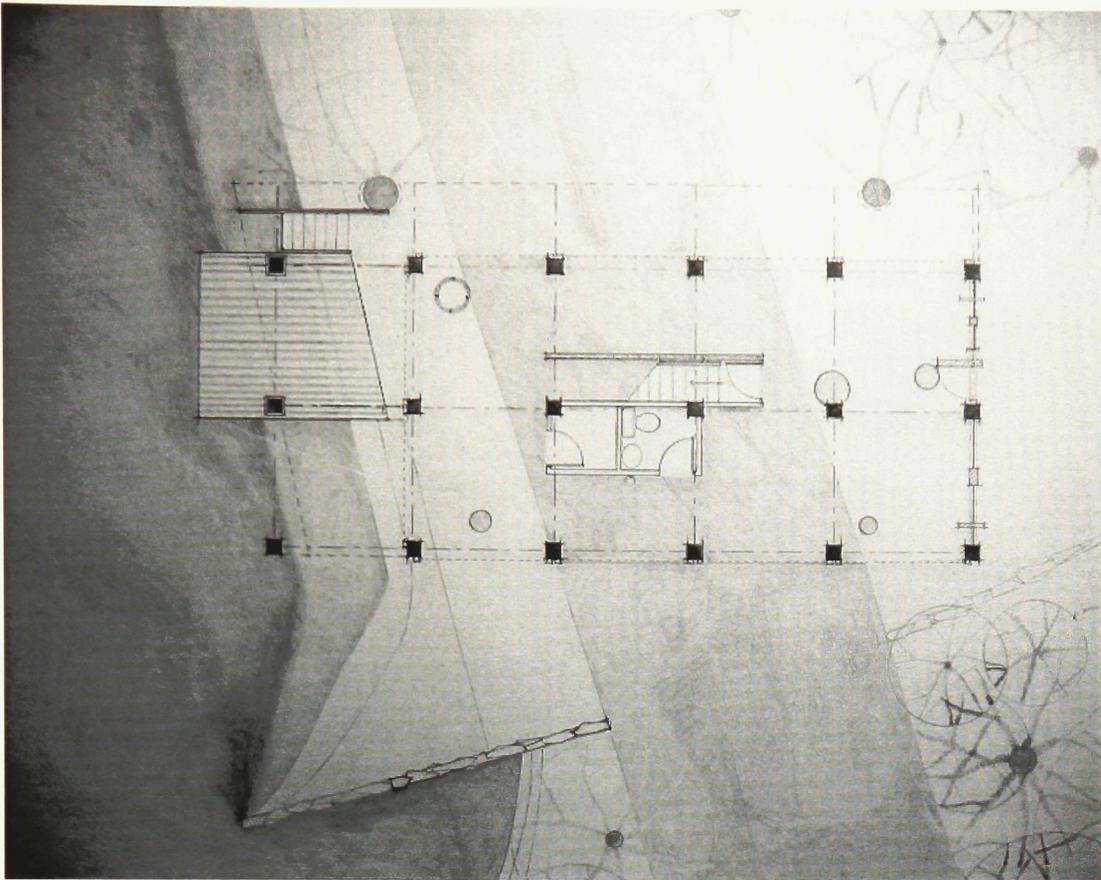


Figure 42 First floor plan of Karlene's cottage

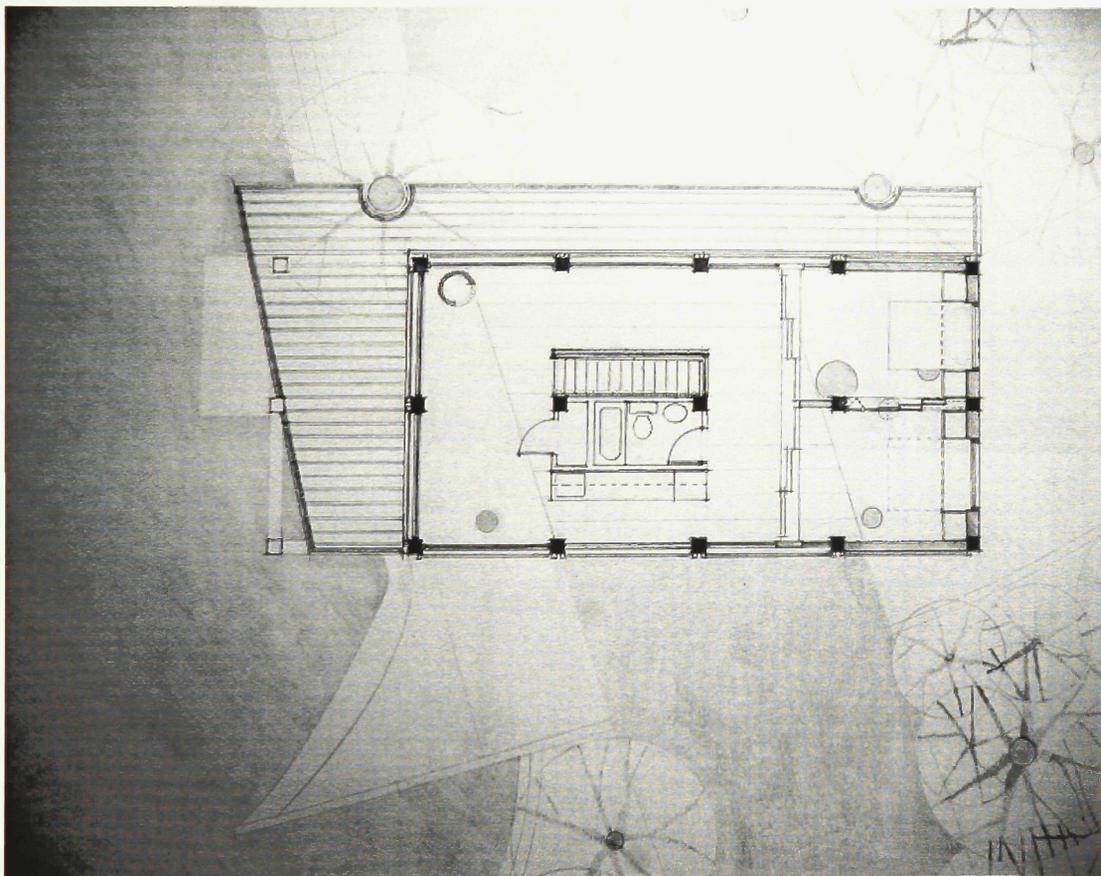


Figure 43 Second floor plan of Karlene's cottage

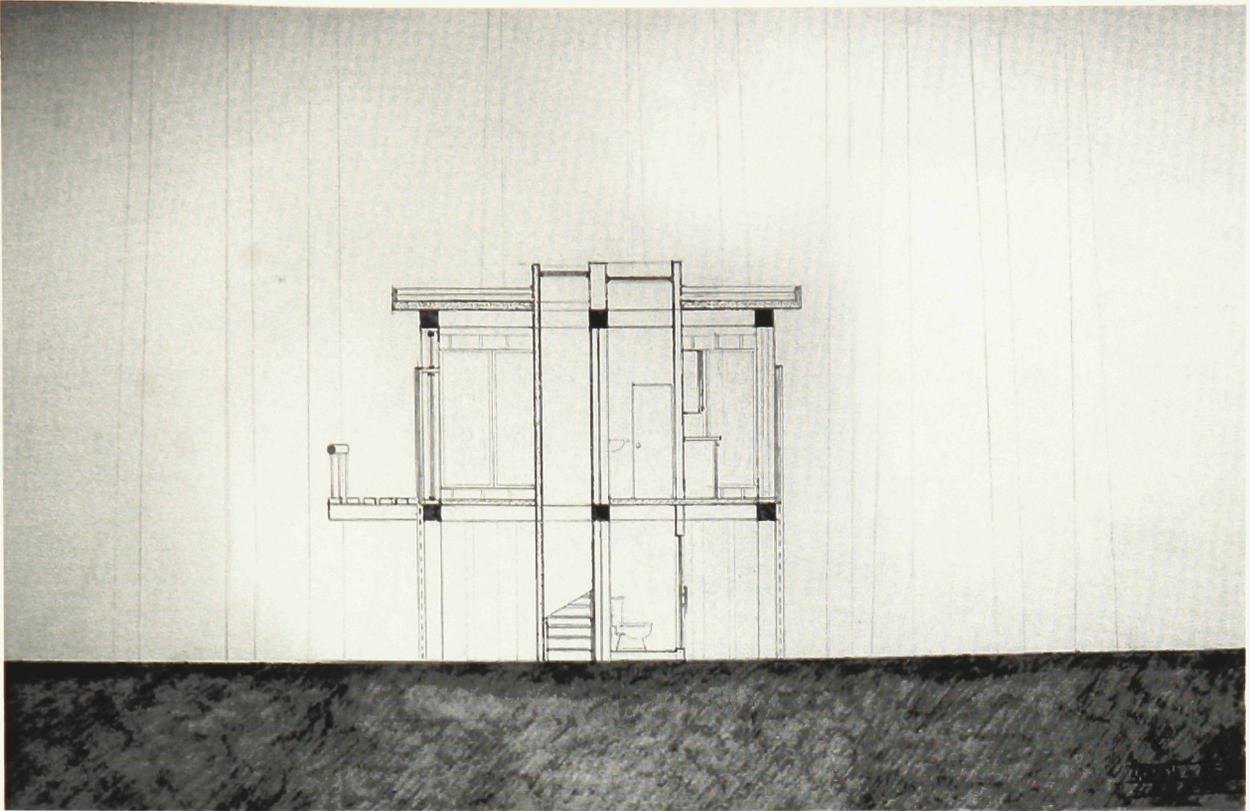


Figure 44 North section of Karlene's cottage

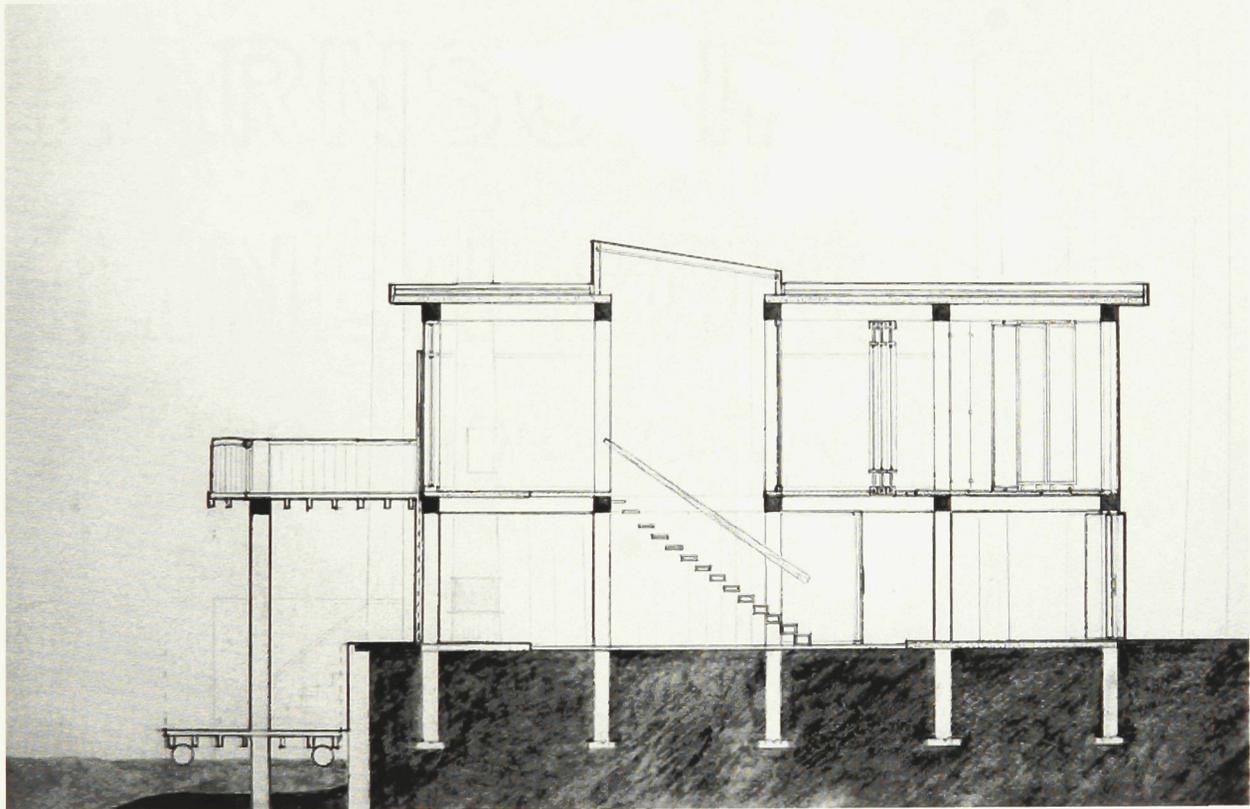


Figure 45 West section of Karlene's cottage

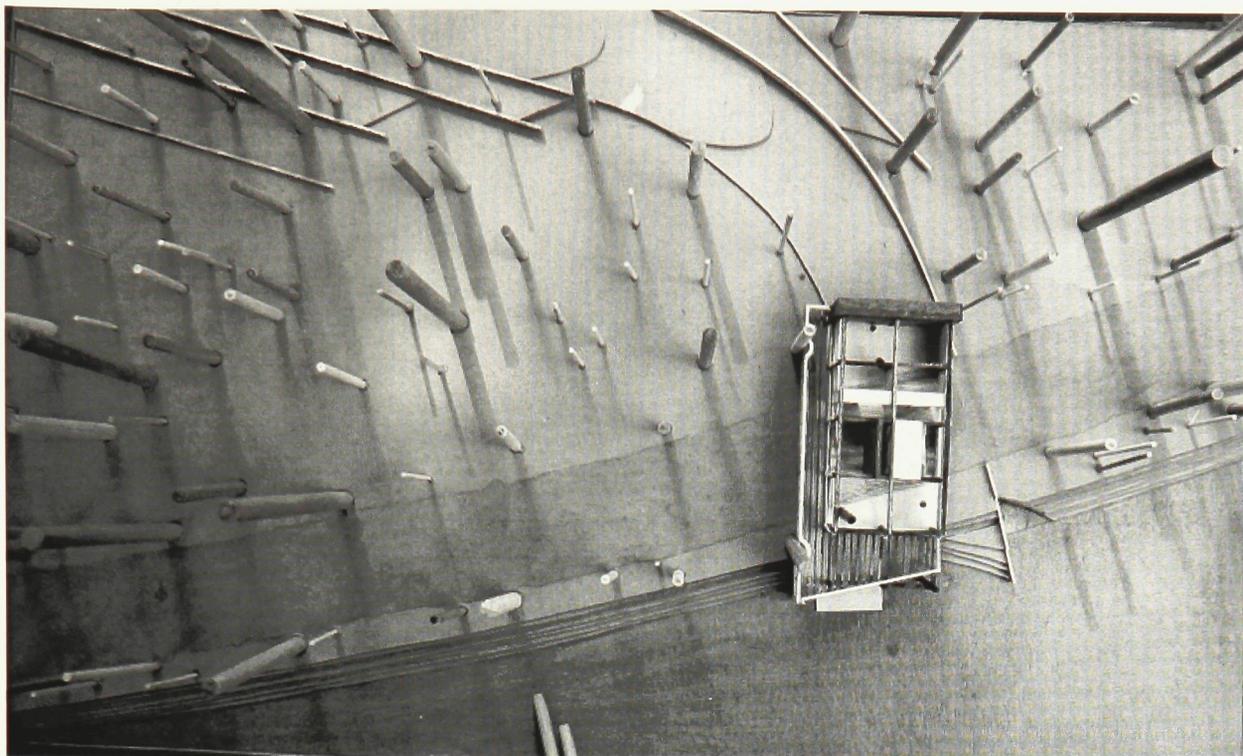


Figure 46 Ariel view of Karlene's cottage

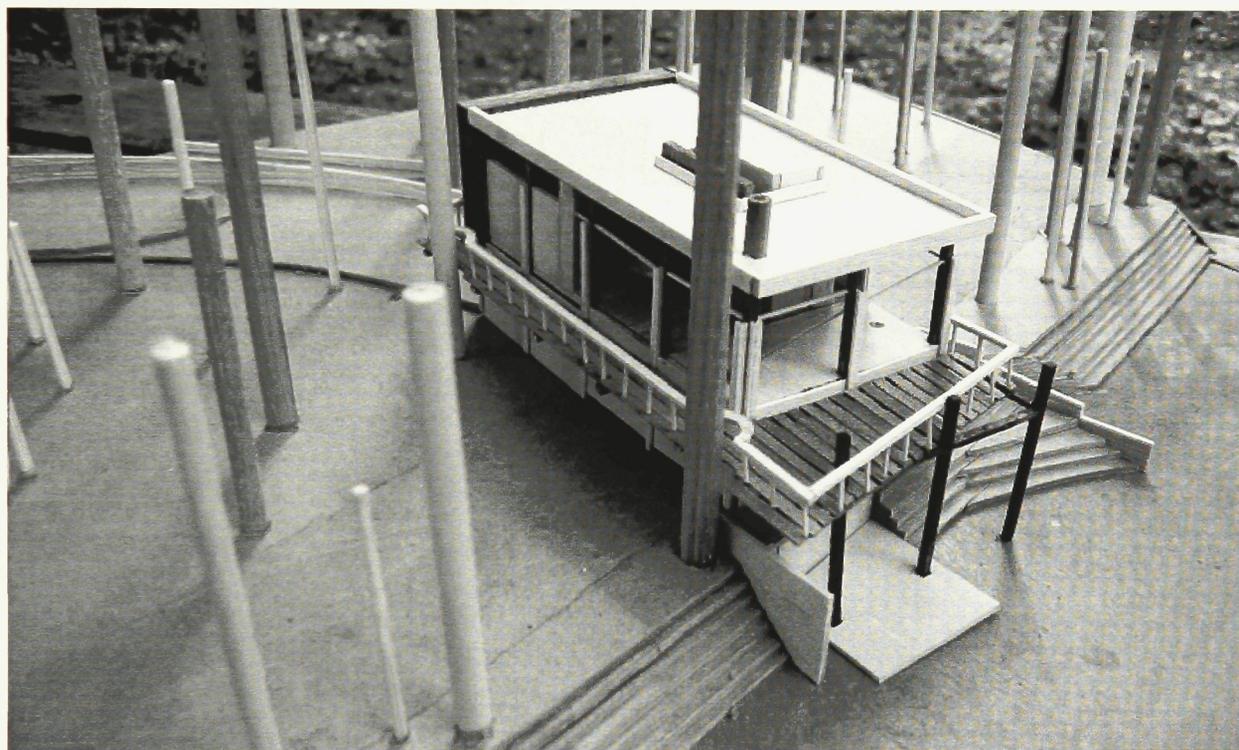


Figure 47 Exterior of Karlene's cottage



Figure 48 View from water's edge of Karlene's cottage



Figure 49 Image of 1:1 model of Karlene's cottage stairs

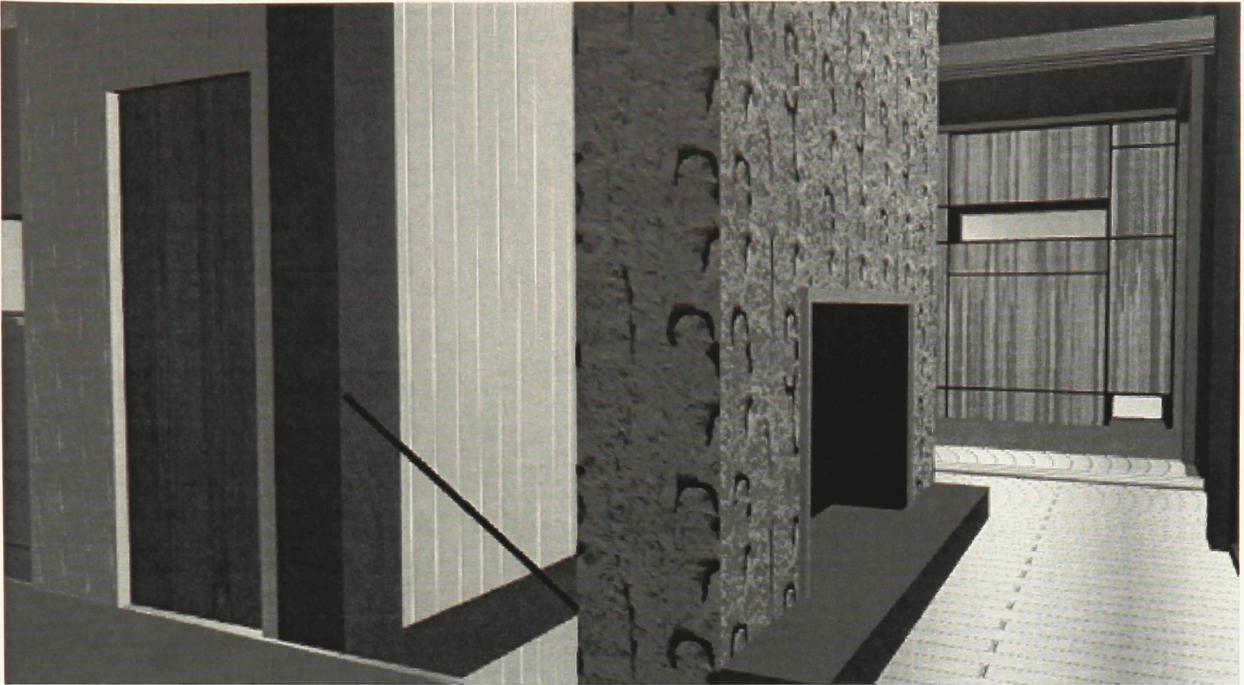


Figure 50 View of Karlene's living room.

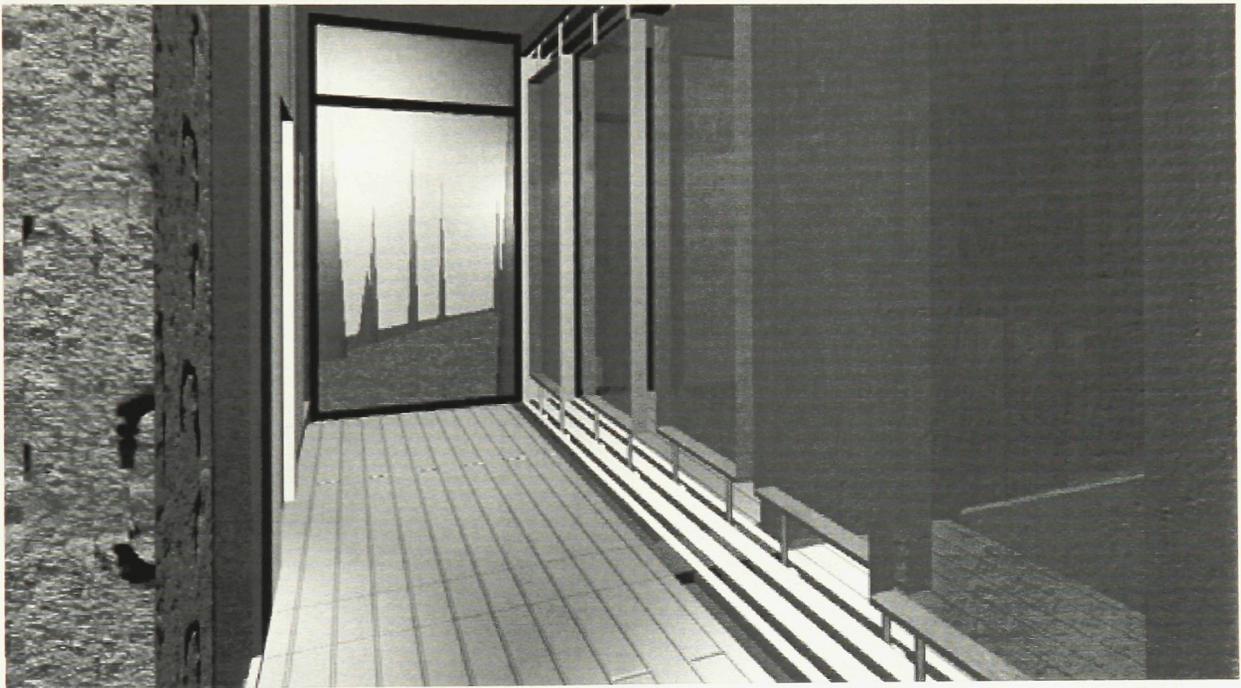


Figure 51 The dividing sliding bedroom panels in Karlene's cottage

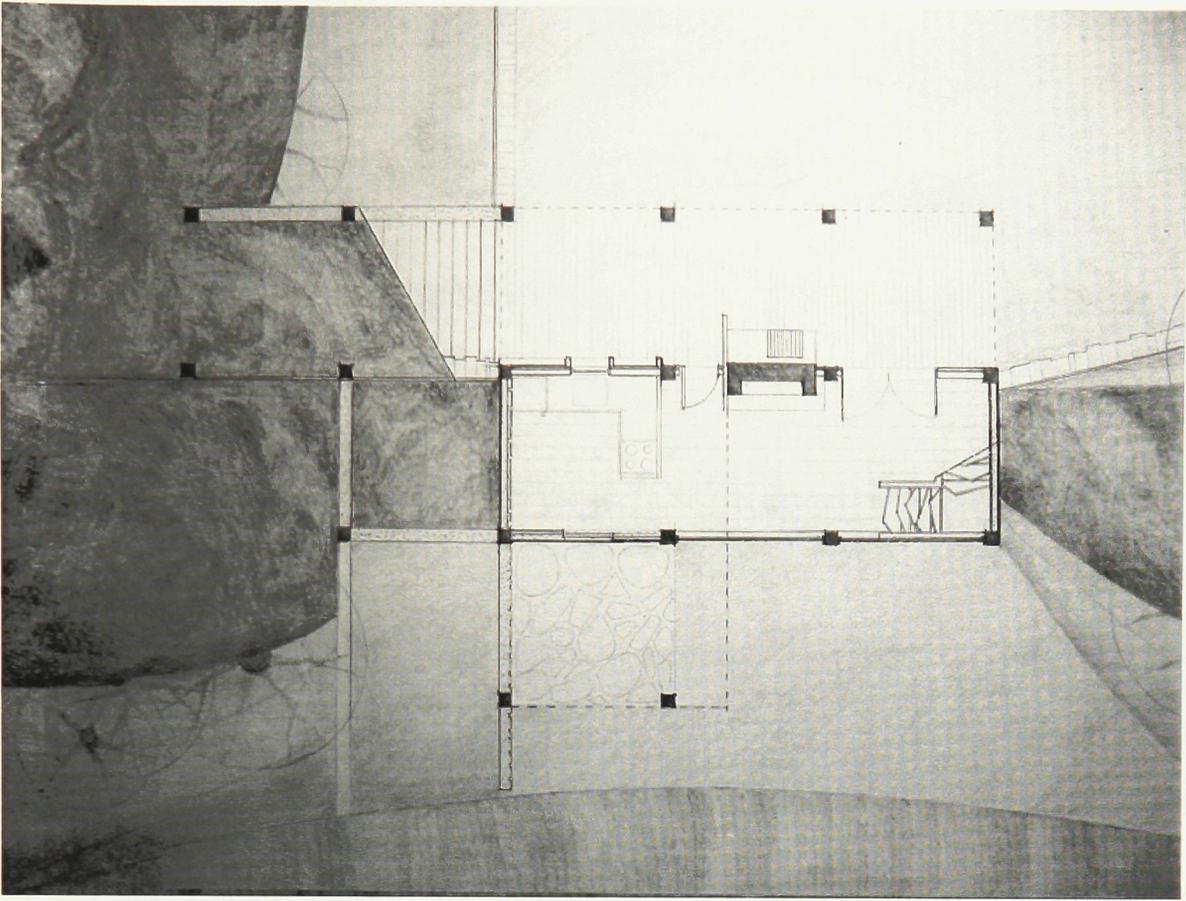


Figure 52 First floor plan of Marlene's cottage

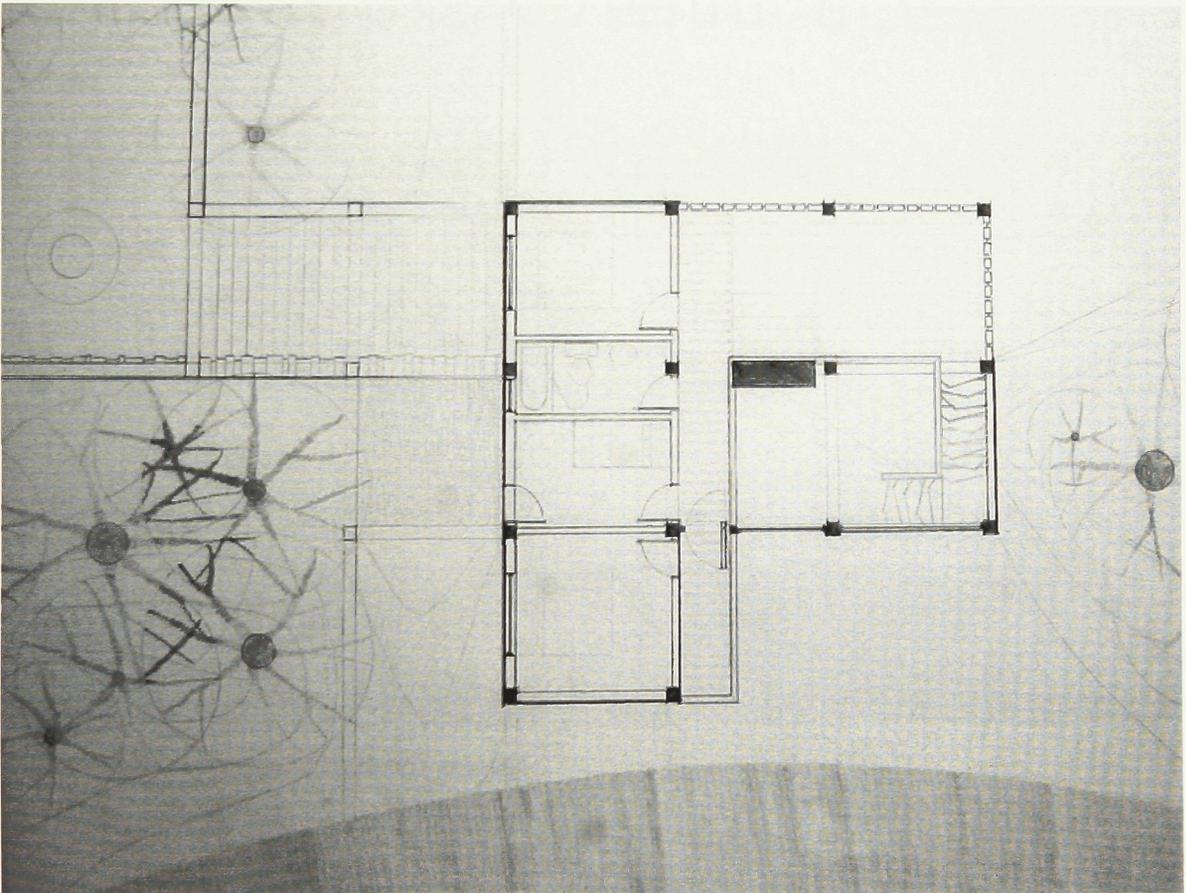


Figure 53 Second floor of Marlene's cottage

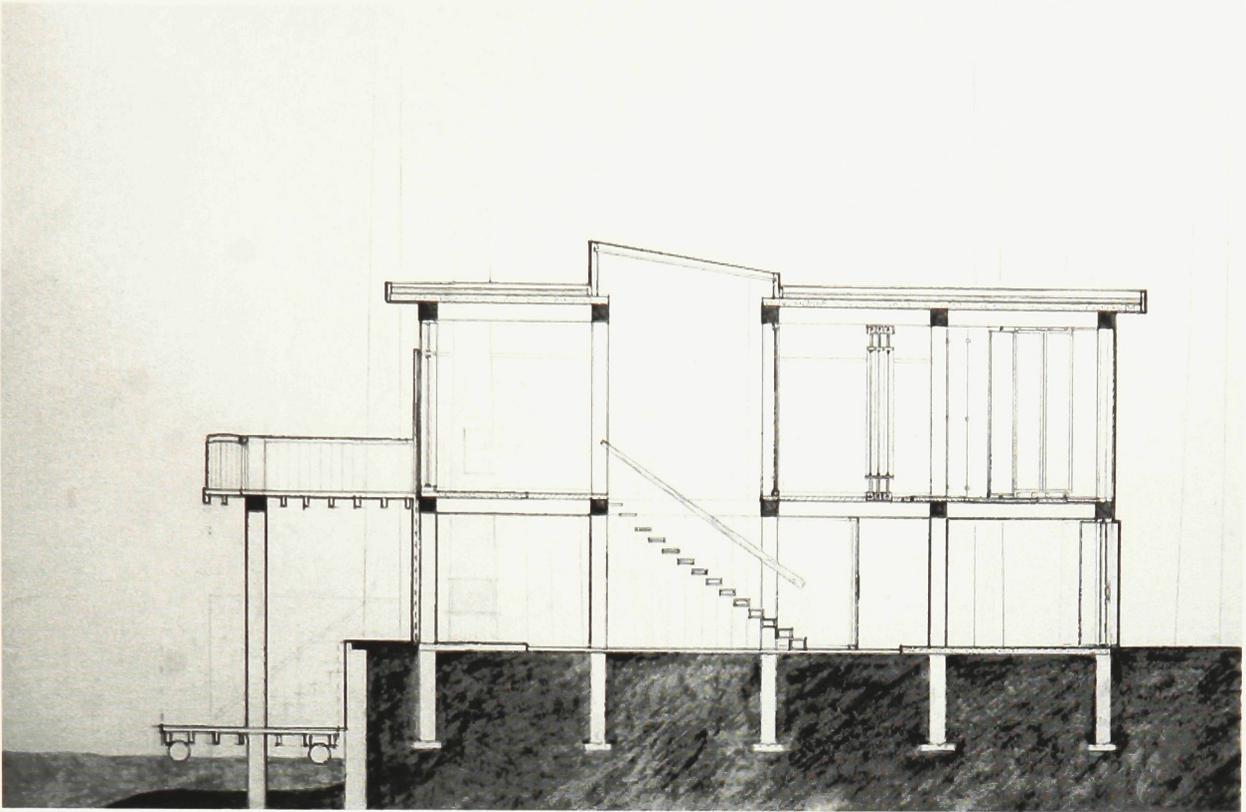


Figure 54 North section of Marlene's cottage

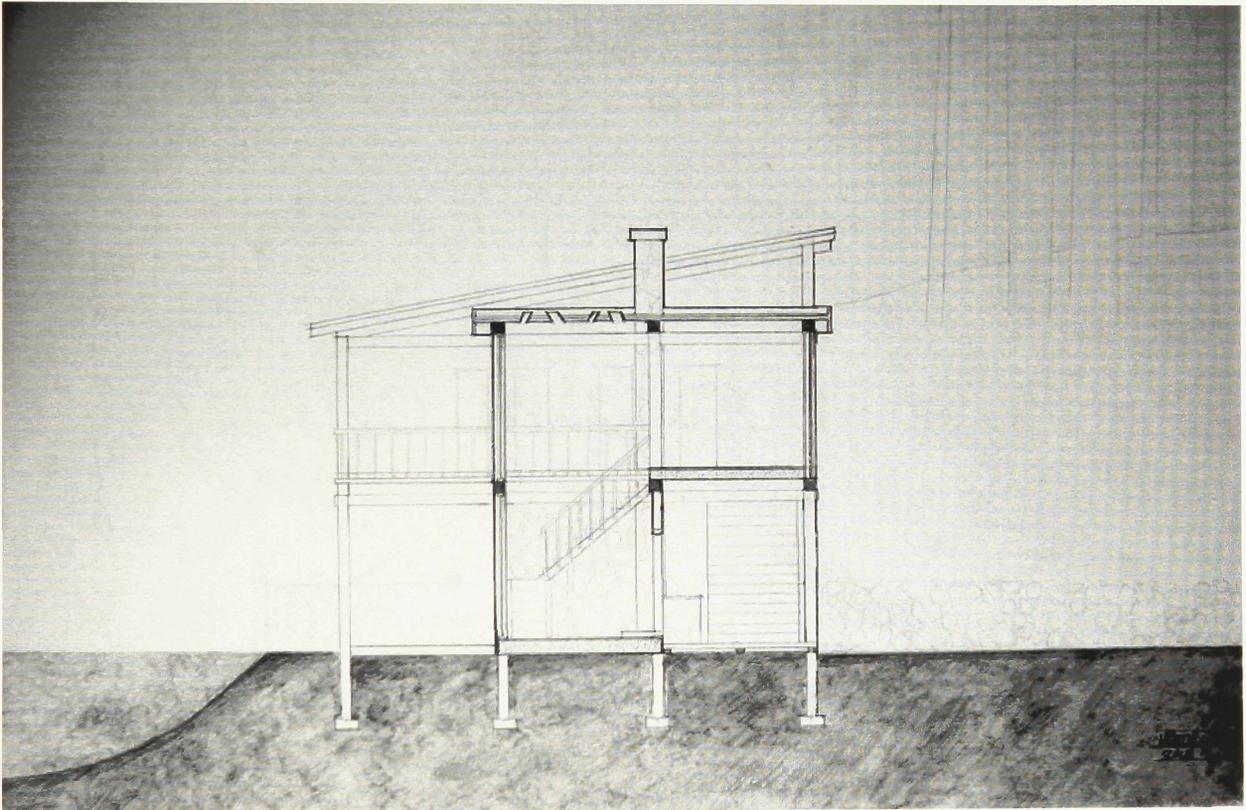


Figure 55 West section of Karlene's cottage

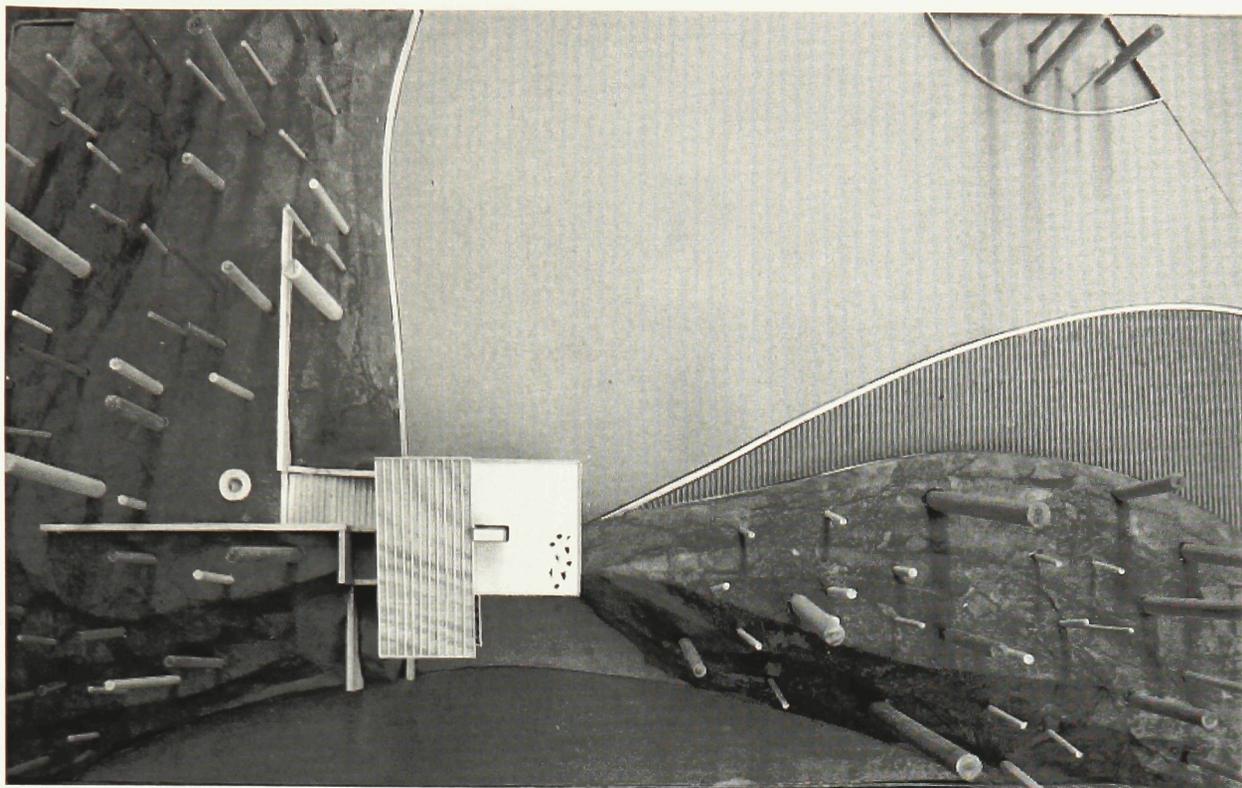


Figure 56 Ariel view of Marlene's cottage



Figure 57 Entrance view of Marlene's cottage

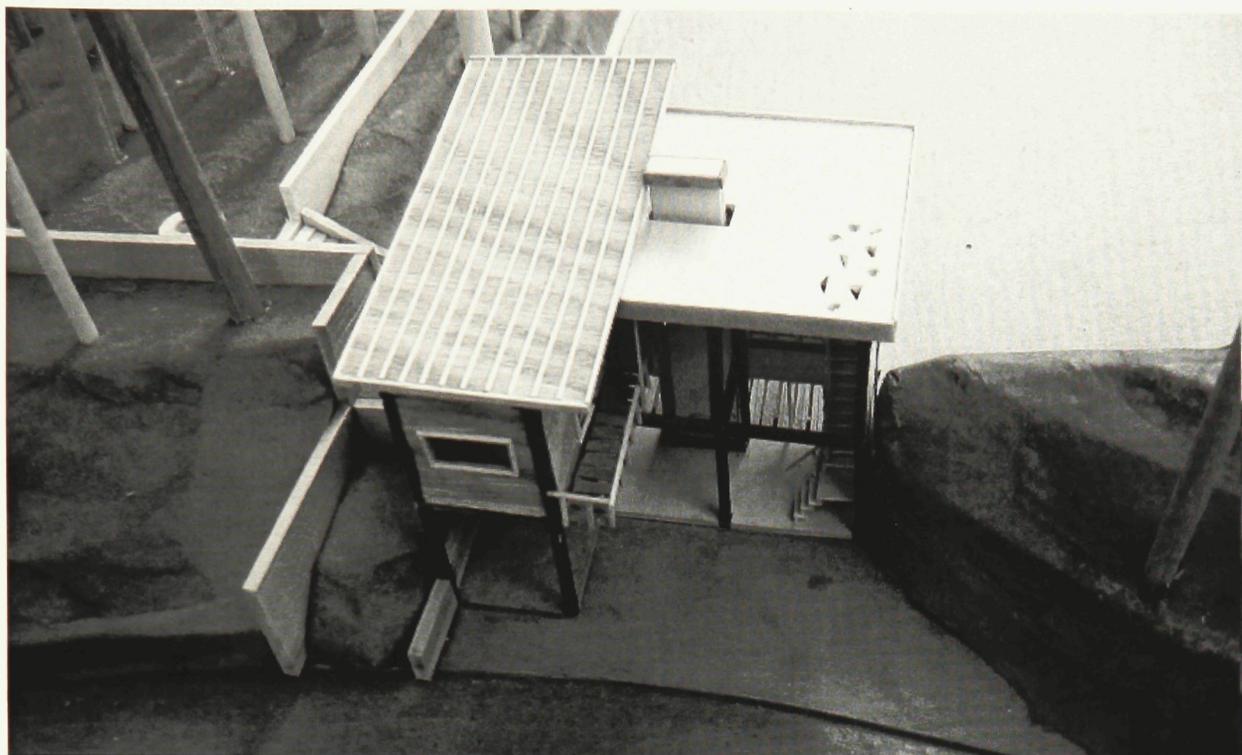


Figure 58 View from lake of Marlene's cottage



Figure 59 View of Marlene's family room

Figure 51 View of water

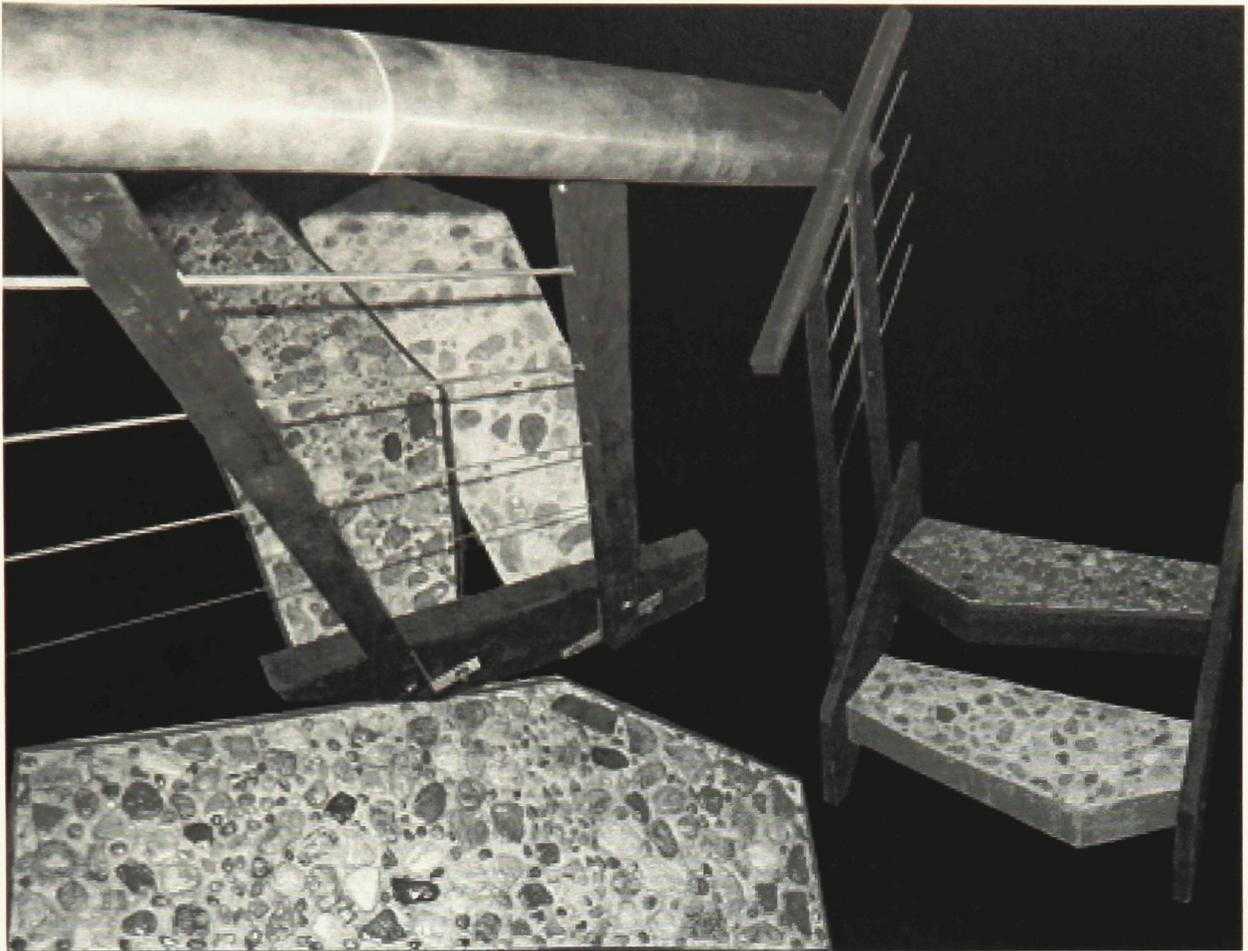


Figure 60 Image of 1:1 model of Marlene's cottage stairs



Figure 61 View of Marlene's fireplace and living room

The following are tables that organise the descriptions of Karlene's and Marlene's cottage designs based on the different memory systems and the different memory categories. Each table is dedicated to one of the five memory systems; **procedural, perceptual representation, semantic, episodic, and primary memory** which refer to type of memory that will respond to the design elements. Each chart is then subdivided into three columns; **Memory Categories, Karlene's Cottage, and Marlene's cottage**. Memory Categories is divided into five subcategories because as discussed earlier they refer to the memories belonging to the five defined groups; **Public memory, Grandfather's memory, Mother's memory, Karlene's memory, and Marlene's memory** and what aspects of the design they pertain to. Karlene's Cottage and Marlene's cottage column notate how each of the memories is translated into the design of the cottages. Events and memories may be utilised more than once because different elements of the events may be highlighted in reference to the memory systems.

Procedural Memory- gradual incremental learning, picking up invariance in the environment.		
Memory Category	Karlene's Cottage	Marlene's Cottage
Public Memory- shared knowledge dedicated to the communal spaces <ul style="list-style-type: none"> • The relocation of the bridge and road system. • The seasonal changes of water. 	<ul style="list-style-type: none"> • The relocation of the bridge meant that a portion of the highway was relocated as well. By doing this, the remains of the old gravel road was left behind on Karlene's property. As one walks through Karlene's cottage one would notice that the floor changes surfaces. The floor is a polished concrete, which reflects the sunlight that shines through 	<ul style="list-style-type: none"> • The type of surface used on the old bridge and new bridge differed. The old bridge had wooden decking while the new bridge is covered with pavement. As one walks to the bedrooms on the second floor of Marlene's cottage one notices that the floor changes from 6inch oak flooring running in a north south direction to two inch

	<p>the surrounding foliage, except for the outline of the old road that has been translated up onto the surface as wooden inlay making one aware of the prior activity on the site.[Figure43]</p> <ul style="list-style-type: none"> Seasonally the water changes height due to the existence of dam at either end of the river. One notices the changing water heights at Karlene’s cottage because the shoreline directly below the cottage has been reinforced by a concrete wall. The wall prevents erosion but also records the river heights by acquiring residue from the river water. The dock that is attached to the outer columns of the cottage is also allowed to slide freely up and down as the water changes daily to record the movement. [Figure48] 	<p>pine flooring spaced a ¼ inch apart running east to west as you reach the hallway in front of the bedrooms. The space between the boards allows you to see people moving below you just as you were to see water moving below the old bridge unlike the new bridge that has a solid surface. [Figure 53]</p> <ul style="list-style-type: none"> The seasonal changes in water at Marlene’s cottage are noticed in the changing water heights of the river but one does notice the changing seasonal water conditions of the adjacent lake. In the summer one can swim in the lake or watch the reflecting light dance on the surface of cottage ceiling. While in the winter it freezes over and becomes a skating rink unlike the river which never freezes over.[Figure58]
<p>Grandfather’s Memory- dedicated to exterior grounds</p> <ul style="list-style-type: none"> The moving of the farmhouse from the top of the hill to the bottom of the hill which speaks of the changes observed in the landscape. 	<ul style="list-style-type: none"> Changing landscape can be observed on Karlene’s property when looking at the shoreline. Sediment is naturally deposited on Karlene’s shoreline as the water rounds the bend in the river. By continuing one of the retaining walls in the landscape out into the water, sediment will begin to collect on the outer edge and as the water flows by, the sediment on the inner edge will erode over time creating a place for docking boats. [Figure46] 	<ul style="list-style-type: none"> Changing landscape can be observed on Marlene’s property in the piled wood retaining walls on the property. The piled fire wood will change in quantity and height as the wood is burned or new wood is added. The wood will also change in colour over the years as it will discolour and turn grey. [Figure56]
<p>Mother’s Memory-</p> <ul style="list-style-type: none"> The stripping 	<ul style="list-style-type: none"> The decking and guard rail of Karlene’s cottage is made 	<ul style="list-style-type: none"> The stripping of the cedar logs took place at the same

<p>of the cedar logs in the spring.</p>	<p>from cedar trees. The railing is made from small stripped cedar logs which have been varnished to retain a lustre reminiscent of a freshly stripped log. [Figure47]</p>	<p>time as the splitting of the firewood. A portion of the front wall is stacked with split firewood that continues out into the landscape leading to the forest in one direction but in the opposite direction the wall continues into the house and becomes an altered version of itself as a cast replica of stacked wood made from concrete. [Figure52+56]</p>
<p>Karlene's Memory – dedicated to details and private domain</p> <ul style="list-style-type: none"> • Jumping off the new bridge <p>Marlene's Memory- dedicated to details and private domain</p> <ul style="list-style-type: none"> • Playing in the creek 	<ul style="list-style-type: none"> • As one ascends the stairs into Karlene's cottage one will notice a gradual change in the sound each step makes because the steps are hollow and change in thickness. This design element reflects the feeling of preparing to jump off the lower girder of the bridge. When doing so one has to pass over a riveted section of the bridge before it is deep enough to jump. (These rivets have been incorporated into the design to hold the each step away from the wall to produce a louder sound) While making your way across, it is common for cars to drive by which vibrate the bridge producing varying sounds depending upon the size of the vehicle . [Figure49] 	<ul style="list-style-type: none"> • As one ascends the stairs to the second floor of Marlene's cottage one notices that the steps and the handrail change temperature. The handrail that leads you up the stairs and around the second floor is made of copper and the stairs are made of concrete with stone inlay. The roof above the stairs has different shaped and sized skylights that illuminate portions of the stairs and handrail during the day. As the sun shines on the stairs and handrail they absorb the heat of the sun. The varying temperatures of the stairs and handrail replicate how portions of the creek are warmer depending on how much light they are exposed to during the day. [Figure60+61]

Table 4 Procedural Memory design chart

All of the above mentioned design elements of Karlene and Marlene's cottages take into account the use of procedural memory that is the recognition of gradual incremental changes in one's surrounding.

Perceptual Representation Memory- word to object identification, implicit memory		
Memory Category	Karlene's Cottage	Marlene's Cottage
<p>Public Memory- shared knowledge dedicated to the communal spaces</p> <ul style="list-style-type: none"> The old bridge and the new bridge 	<ul style="list-style-type: none"> The old and new bridges had differing types of stones placed at the base of each; the old road had rounded rocks while the new bridge had crushed rock. By alternating the different stone types in the retaining walls surrounding the cottage one is able to create a dialogue between the old and the new bridge on the site. [Figure46] 	<ul style="list-style-type: none"> Marlene's property also utilises the two stone types by incorporating them into the patios at the front and rear of the cottage creating association between the old and new bridge. [Figure52]
<p>Grandfather's Memory- dedicated to exterior grounds</p>	<p>From the collected memories of our Grandfather there are no appropriate uses for perceptual representational memories because they are word to object association.</p>	
<p>Mother's Memory- dedicated to exterior envelope</p> <ul style="list-style-type: none"> Making tea in the forest for her father in a honey bucket. 	<ul style="list-style-type: none"> Karlene's cottage is designed as having sliding screens which cover and enclose the glass windows in the winter. These sliding screens are associated not to the forms of the event but to the symbolism of the event. The fire provides heat and light or protection from the cold while the tea provides inner warmth. The screens provide security in the winter when the cottage is unoccupied and in the summer at night they enclose the cottage to trap the warmth of the day during the cold night. [Figure42,42+51] 	<ul style="list-style-type: none"> Marlene's cottage has a galvanized metal roof over the sleeping quarters. The material of the honey bucket was galvanized metal but the roof speaks of the relationship to the canopy of the forest that sheltered my mother and grandfather from the winter wind and snow. Sound also is referenced with the use of the metal roof. In the woods sounds appear louder and clearer than in the city. The tin roof of the cottage amplifies the sound of rain when falling. [Figure56+58]
<p>Karlene's Memory- dedicated</p>	<ul style="list-style-type: none"> The initial design of Karlene's cottage structure 	<ul style="list-style-type: none"> The initial design of Marlene's cottage structure

<p>to details and private domain</p> <ul style="list-style-type: none"> • The childhood treehouse <p>Marlene's Memory- dedicated to details and private domain</p> <ul style="list-style-type: none"> • The Sullivan barns 	<p>was based upon the treehouse because it was placed on piers like the treehouse but because it was also placed amongst the tree canopy. [Figure45+47]</p>	<p>was based upon the Sullivan barns because it is a post and beam construction but also it is placed within viewing sight of the original Sullivan barns. [Figure54+58]</p>
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Table 5 Perceptual Representation Memory design chart

All of the above mentioned design elements of Karlene and Marlene's cottages take into account the use of perceptual representation memory; object to word associations as well as implied information.

Semantic Memory- factual information, spatial information		
Memory Category	Karlene's Cottage	Marlene's Cottage
<p>Public Memory- shared knowledge dedicated to the communal spaces</p> <ul style="list-style-type: none"> • Glacier activity in the area 	<ul style="list-style-type: none"> • The glacier activity is noted in Karlene's cottage because it is located on the edge of the river which was carved out by glacier movement forming the topography of the area. [Figure41+42] 	<ul style="list-style-type: none"> • Marlene's cottage notes the glacier activity by being placed on the edge of the lake and in the gravel pit which was deposited by the glacier. [Figure41+52]
<p>Grandfather's Memory- dedicated to exterior grounds</p> <ul style="list-style-type: none"> • The old road system • Grandfather's logging of the forest during the winter months 	<ul style="list-style-type: none"> • Karlene's cottage is located over the old road to create a relationship with Marlene's property where the gravel was taken from to create the roads. [Figure42] • Grandfather's logging is demonstrated on Karlene's property through the pathway that you travel on to arrive at the front door of the cottage. When approaching the cottage one's view is directed across 	<ul style="list-style-type: none"> • Marlene's cottage is located in the gravel pit to conversely relate to Karlene's cottage whose road was made from the gravel belonging to the gravel pit. [Figure52+53] • To demonstrate the logging history, Marlene's property uses woodpiles as retaining walls. One wall in particular leads one up to the cottage and continues past it to a set

	<p>the river to the trees that were planted to replace the forested fields. As you continue along the path you face the natural growth forest that is on the property as you gain site of the cottage. [Figure42+46]</p>	<p>of stairs made from split logs up into the forest where you arrive at a clearing. [Figure52+54]</p>
<p>Mother's Memory- dedicated to exterior envelope</p>	<p>From the collected memories of our Mother there are no appropriate uses for semantic memories because mother's memories were about personal experiences rather than factual information.</p>	
<p>Karlene's Memory- dedicated to details and private domain</p> <ul style="list-style-type: none"> • The process of planting the trees in the field. • Playing in creek next to hayfield. <p>Marlene's Memory- dedicated to details and private domain</p> <ul style="list-style-type: none"> • The process of planting the trees in the field. • Playing in the creek. 	<ul style="list-style-type: none"> • The trees that we planted in the fields were placed in a ten foot grid; this grid is translated into the structural grid of the house. In addition, Karlene's cottage grid aligns with the planted trees across the river from which the spacing was derived. To contrast the regimented grid that is planted by humans, any trees that are removed in the process of building the cottage are recorded on the floor of the cottage by placing a ring of wood cut from the tree into the concrete floor. [Figure42+43] • Within Karlene's cottage there are sliding walls which are used for dividing the master bedroom and guest bedroom off from the rest of the house. The sliding walls are made from latex that has been moulded from varying tree barks of the forest. As the semi-translucent panels are moved along their tracks, they have the chance to overlap and as they do so they change the quality of light filtering through the 	<ul style="list-style-type: none"> • Marlene's structural grid is also translated from the ten by ten foot spacing of the planted forest. Marlene's grid is kept pure because it is removed from any view of the planted forest. The rotation of the cottage is aligned with Karlene's cottage which in turn is aligned with the planted forest. [Figure52+53] • Within Marlene's cottage there is a set of stairs which lead you to the second floor. These have taken their form from the creek hidden within the forest. Each step is a concrete step inlaid with rounded rocks to replicate the creek bed. The ceiling above the stair is punctured by varying size and shaped skylights that replicate the patterns of sun passing through the forest canopy on a sunny day. [Figure60+61]

	space just like the leaves of the forest filter the light reaching the forest floor. [Figure51]	
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Table 6 Semantic Memory design chart

All of the above mentioned design elements of Karlene and Marlene's cottages take into account the use of semantic memory that is factual information and spatial information derived from the region.

Episodic Memory- event memory, autobiographical memory		
Memory Category	Karlene's Cottage	Marlene's Cottage
Public Memory- shared knowledge dedicated to the communal spaces <ul style="list-style-type: none"> Thrashers in August gathering wheat 	<ul style="list-style-type: none"> In Karlene's cottage design the events of the thrashers are noted in the outdoor sink located on the ground. It was recalled that the younger children had the duty of filling the canteens with water for the workers. The outside sink is made from stainless steel, like the canteens, and is shaped only large enough for a one litre jug to be placed inside. [Figure42] 	<ul style="list-style-type: none"> In Marlene's cottage there is a large area for cooking and dining with the possibility of opening up to the outside for larger crowds. This is reminiscent of the large meals that were held outside in the yards in order to feed the large number of farmers working in the wheat fields. [Figure52]
Grandfather's Memory- dedicated to exterior grounds <ul style="list-style-type: none"> fire that swept through the Sullivan farm and The bringing in the hay. 	<ul style="list-style-type: none"> Like the interior of the house any trees that are removed during construction are replaced by rings cut from the trees trunks and are placed into the patio paving. One of the tree trunks is treated differently; it is transformed into a cement fireplace for both floors by piercing the entire structure. [Figure42+43] In Karlene's cottage within the landscape there are retaining walls which follow the edge of the driveway in 	<ul style="list-style-type: none"> In Marlene's cottage design, a fire pit is integrated into the landscape to commemorate the fire that burnt down a portion of the Sullivan forest. When one arrives at the cottage one is led by the landscape past the cottage and up a set of split log stairs to the top of the gravel pit where a clearing is made in the trees for a campfire area. Retaining walls that are made from

	<p>parallel lines simulating the windrows that the hay would be raked into before being bailed. [Figure45]</p>	<p>latex moulds of red pine bark unfold to create seating around the fire pit. [Figure53+56]</p> <ul style="list-style-type: none"> • From the driveway, landscaping leads you to the front door of the cottage. One of the beds is planted with grasses to produce hay. [Figure57]
<p>Mother's Memory- dedicated to exterior envelope</p> <ul style="list-style-type: none"> • Tapping the maple trees 	<ul style="list-style-type: none"> • As you approach the entrance into the Karlene's cottage one may feel as though they are still within the forest because inter dispersed amongst the first row of columns are planes of wood of varying sizes and thicknesses which hold in place a metal mesh. When the cottage is opened up in the summer this metal mesh provides ventilation to the patio room but in the fall and winter when the cottage is closed for the season the metal mesh becomes a collecting device. In the fall it collects leaves that are blowing around and in winter it collects drifting snow. This collecting device speaks to the process of collecting sap for the making of the maple syrup. [Figure46+48] 	<p>To make maple syrup one would search through the forest looking for maple trees with a metal tap and a galvanised tin bucket to collect the sap in. The door leading into Marlene's kitchen from the outside speaks of the materiality of this experience. The exterior of the door is made from the bark of a maple tree while the interior is solid maple wood. The door is encased in a galvanised tin frame reminiscent of the sap buckets. [Figure52]</p>
<p>Karlene's Memory- dedicated to details and private domain</p> <ul style="list-style-type: none"> • camping with friends at the cottage • Finding bottles along the edge of the old road. 	<ul style="list-style-type: none"> • Karlene's house adapts to the arrival of company. When the metal screens are not covering the cottage windows they slide down to the main floor on tracks to create another enclosed patio space where large groups of friend can camp. When only one friend comes to visit at 	<ul style="list-style-type: none"> • As you walk up the stairs of Marlene's cottage there is a wall to the right of you that is a made from concrete that has had the texture of hay imprinted into the surface. Because the wall is made of concrete it remains cooler than the rest of the house

<p>Marlene's Memory- dedicated to details and private domain</p> <ul style="list-style-type: none"> • Playing in the hayfield and barn haylofts • Climbing on the rock fence at the edge of the field 	<p>the cottage, there are sliding walls (which simulate the different barks of the forest with latex) that divide the main bedroom into two and an extra bed unfolds from the wall. [Figure51]</p> <ul style="list-style-type: none"> • The fun of finding bottles by the side of the old road was not about the objects we found. It was about discovering remnants of the past history of the site to take back to our parents to find out if they remembered a tale from their childhood to tell us. To continue this tradition of discovery and explanation items are placed in and around the cottage which will weather and change with time or even erode so that reflections upon the past can be made when the objects are questioned by visitors. One such item is the handrail along the stairs. It is made from a split cedar log retrieved from one of the fences from the farm. Because the log has been outside for many of years it has weathered and grown moss. This handrail would provoke people to ask questions of its origins. The handrail also speaks about the logs that are found along the edge and at the bottom of the river which can be added to the explanation. [Figure49] 	<p>simulating the feel of the hay that has been stored in the haylofts. The location of the wall in relation to the steps that simulate the creek shows the relationship that the two share in a geographical sense. [Figure61]</p> <ul style="list-style-type: none"> • The second storey of Marlene's cottage is clad in cedar planks. From the exterior it appears to be simple weather wood surface but when you are in the upper storey of the cottage you are able to see light filtering through small thicknesses of glass that have been placed between the planks to replicate the same quality of light that filtered through the Sullivan barns. [Figure57+59] • On the Sullivan property stone fences are used as dividing barriers between one field and the next, to keep animals in or out. In Marlene's cottage there is a fireplace that is situated in the center of the building that divides the cottage as interior and exterior space because there is a surface to the outside which creates a barbecue. The entirety of the fireplace is clad in salvaged rock from the stone fences found on the Sullivan property. Because it is situated directly in front of the large window on sunny days the rocks
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		will shine and sparkle to remind Marlene of playing on the fences while Grandpa cut the hay. [Figure61]
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Table 7 Episodic Memory design chart

All of the above mentioned design elements of Karlene and Marlene's cottages take into account the use of episodic memory which recalls specific autobiographical event memory.

Primary Memory- working memory, temporary memory		
Memory Category	Karlene's Cottage	Marlene's Cottage
Public Memory- shared knowledge dedicated to the communal spaces	From the collected public memories there are no appropriate uses for primary memories because they are based upon long term knowledge of the area and not temporary readings.	
Grandfather's Memory- dedicated to exterior grounds	From the collected memories of our Grandfather there are no appropriate uses for primary memory because they are stories not experienced in the first person by Karlene and Marlene which would mean they are not processed by primary memory.	
Mother's Memory- dedicated to exterior envelope	Similarly to Grandfather's memory, Mother's memory has not been experienced in the first person therefore they would not be processed by primary memory.	
Karlene's Memory- dedicated to details and private domain <ul style="list-style-type: none"> • The treehouse • Submerged logs on the bottom of the river Marlene's Memory- dedicated to details and private domain <ul style="list-style-type: none"> • Bringing hay in the summer into the barn 	<ul style="list-style-type: none"> • The structural basis for Karlene's cottage was our childhood treehouse, this is only perceived when read as a whole. The cottage is placed on piers so that it is a storey off of the ground and the cottage is surrounded on two sides by cedar decking similar to the treehouse. [Figure48] • In Karlene's cottage the handrail that guides you up the stairs is a salvage split cedar rail from the fences around the property. The use 	<ul style="list-style-type: none"> • The structural basis for Marlene's cottage is the Sullivan barns. This is only perceived when read as a whole. The cottage is post and beam construction with a second floor reminiscent of lofts that the hay would be stored in. [Figure58] • In Marlene's cottage the steps that lead you to the second floor are each slightly skewed. When read as a whole, the steps replicate the path water

<p>and playing in the haylofts</p> <ul style="list-style-type: none"> • The creek bed 	<p>of the rail was to make a connection to the weathered wood of the half submerged trees that are directly in front of Karlene's cottage. By seeing the two at once one is able to read a connection between them. [Figure48+49]</p>	<p>would travel between the stones of the creek bed as it runs down the hill. [Figure60+61]</p>
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Table 8 Primary Memory design chart

All of the above mentioned design elements of Karlene and Marlene's cottages take into account the use of primary memory that is working memory which is temporary memory which allows you to read elements together as a whole.

15.0. Conclusion

The premise of this thesis was to examine the possibility of using a memory system and an architectural system in tandem to result in a new home that evoked memories in its inhabitants. Through my exploration of the way the brain processes information and creates "symbol structures" that form memories, I was able to extrapolate memories from my clients, my identical twin sisters, as well as collect historical and oral history of the region to design a cottage for each that "housed memory". Although there are endless possibilities for the selection and utilisation of the varying memories collected from my clients, my thesis explored one possibility for the design for each sisters' cottage.

The integration of memories into architecture is not an original idea that I have put forward. Architects have been integrating memories into their designs since they have desired to represent historical events in built form or made reference to work of their

ancestors. Memory sources for the architect have varied from the memories of an entire civilisation to the memories of the environment. It has been the practice of architects to interpret and discover new ways of integrating memories into their designs.

Architects have had many methods and reasons for integrating memory into their designs. The architect Aldo Rossi studied the history of the French civilization, in his 1982 book *The Architecture of the City*, to gain an understanding of the elemental types of the city and how historical relations and rituals are connected to the broad concepts of the structure of the city and region. Through the architecture of the city Rossi believed one could arrive at a comprehensive view of that city's shared memories and collective consciousness.³⁶

Reality, the world of all that has been created by those who preceded us, is a patrimony that we share with all those who have lived the same hours, the same shadows. Reality speaks to us then of the past, of other men coming to life in the image of memory that is the man-made environment- the city. It is the city that teaches us what a house is, how a temple should be, permanence of the memorable.³⁷

It is Rossi's understanding that analysis must precede design, in order to add to and create a comprehensive man-made city. This understanding inspired his designs for buildings within the cities that do not replicate the past but follow the practices and broader concepts of the city.

³⁶ Rossi, 1982

³⁷ Peter Arnell and Ted Brickford ed., *Aldo Rossi: Building and Projects*. (New York: Rizzoli International Publications Inc, 1985)313.

Rossi uses the history and memories of the city to create architecture that is relevant to the city. His study of the relationship of artefacts in a culture, which he equates to a city's consciousness, allows him to arrive at designs for the city. By studying the history and memories of clients my work intends to create homes for clients which are relevant to them. It is by studying the principles of systems in architecture and in memory which aligns my work with that of Rossi.

The recent work by the Australian architect Glenn Murcutt also follows the practice of integrating memory into his designs. Murcutt aligns his thoughts with that of the modernist movement but he also enriches his work with the social memories and environmental memories of Australia. His architecture is concerned with place; he does this by responding to the landscape and to the climate of Australia by studying the vernacular buildings of the outback and learning from their pragmatic responses. "Murcutt does not see vernacular architecture in terms of tradition to be copied, but as a manifestation of knowledge acquired through experience which is worth meditating upon, maintaining and renewing."³⁸ Murcutt not only responds to the Australian Aboriginal constructions, he also follows their belief in "touching the earth lightly,"³⁹ an ethic of disturbing nature no more than absolutely necessary, of understanding and working with the rhythms of nature rather than obliterating them.

Murcutt's use of memories is not in the direct copying of forms; instead, forms and the functioning of the environment become inspirations for his designs. Murcutt's

³⁸ Françoise Fromonot, Glenn Murcutt: building + projects 1962-2003. (London: Thames & Hudson Ltd, 2003)36.

³⁹ Ibid 39.

responses to vernacular architecture in this way are similar to my response to clients' memories. It is not the direct representation of the memories which is important to the design it is the details and understanding of the memories which can be integrated to maintain and renew the clients' experiences from childhood, or what ever the memory source may be. By incorporating the history of Renfrew County, where their memories and cottages are located, my cottages' designs reflect not only upon the clients' family memories but the long history and traditions of farming which is slowly fading from the region; eventually it will only be a memory or interpretation of its history that will remain.

It is the work of such as Rossi and Murcutt that illustrates the importance of memory and history in creating architecture. History can be used as a learning tool to understand the larger consciousness of a region or it can provide lessons learned by ancestors or the environment to create more symbiotic relationships with the world. It is from the above mentioned that I was able to understand the relationship of my work to the greater architectural traditions and learned of my placement within it. Memories as I have discovered play their role in creating architecture; it is just in what form that they take which is up to the architect.

As mentioned above architects have explored collective memories and historical events in the designing of buildings but in my research I did not find works that incorporated the personal or individual. The lack of architectural explorations of the concept of personal memory in built form lead to my reliance upon research from other

disciplines, such as that of A. Newel and H.A. Simon. Their research on human information processing help me to gain an understanding of personal memories and how they may be utilized and evoked in built form.

Through the research of A. Newel and H.A. Simon I learnt that we process information by transporting information from the receptors, our five senses, to the processors where information is decoded by our memory. A memory system contains individually developed “symbol structures” that our brain relies upon for recognition and translation purposes, i.e. remembering objects and events. Once our brain has reached a conclusion about the information it has received, it passes a motor response back through the processors to our effectors causing us to react. By understanding how the body relays information to the brain, the architect is able to incorporate elements into their design, which provoke the clients’ receptors to react, which in turn will evoke memories in them.

Some memory systems were more applicable than others to the development of a building that “housed memory” because the different memory systems reflect the ways we collect and apply memories. Some memory systems are responsible for our navigational skill and do not relate to long-term memories. Other elements of the memory system control our language skills and how we make object to word associations, which do not appear to relate to architecture directly. Although different memory systems appear to be better suited to the application of architecture, interesting results can occur when the architect abstracts the memories of the clients and applies

them to design with the help of the “memory systems”, allowing the client to interpret and understand elements of their memories which they did not see on their own.

When I began to approach the representation of memories I started by investigating how I could convey to others my memories of time spent at our family cottage. Through varying explorations with images and objects that attempted to represent, record and evoke memory I discovered that it is difficult to dictate how individuals will interact with or interpret my work. It became apparent to me through my experiments that in order for the architecturalisation of clients’ memories to be successful, an exhaustive but selective interview and research of the clients’ memories would have to occur. Because I do not have a background in Psychology it was difficult to elicit memories from my clients in a manner based directly upon Newel and Simons work. A further understanding of the human thought process would allow for the creation of more effective strategies.

At the end of this thesis exercise I see that an alternative approach to my project could have started by investigating individuals’ personal mementos that symbolize their memories instead of my attempt at creating these representations with images and objects. Consequentially by attempting to create these representations I discovered that the five senses play an important role in the recollection of events.

When “housing memory” the selection of memories becomes important to the architect’s final design. The selection of memories is dependant on the type of

architecture that will be designed and by the clients who are to provide the memories. Memories that are utilized within the design of a building do not have to be the memories of one particular ideology. In the case of my thesis memory plays a role in creating cottages for my twin sisters. The memories that they provided encompasses their childhoods spent at their family homestead which they wanted to preserve and transfer to their families and friends. The process of “housing memories” can even be used when there is no specific client to provide memories; the land can be used in such a case, as the memory source, as explored to some degree in Glenn Murcutt’s work. By using vernacular building forms and climate to inform design choices, one can add a richness that speaks of lands’ history and human connection to the environment.

Utilisation of memories in the design is dependant upon the architects understanding of the clients’ memories, the five elements of the memory system and the ways in which we collect information through our five senses. A architects with their insights have to select what elements of the clients’ memories will be integrated into the design to produce *moments bienheureux*, which Proust spoke of as moments when one is transported to the past by experiencing something in the present.⁴⁰

The values of preserving memories lay in the sharing of those memories with each other and within ones family. Preserving memories gives one the sense of one’s history and place within a family lineage. By having an environment where memories are in use one is more inclined to discuss the events of his/her past with others. By preserving memories of not only the individual but that of the landscape and the community one is

⁴⁰ Shattuck, 2000.

able to trace the development of the land and economics to its present status reflecting upon the pivotal moments in history. In Aldo Rossi studies the understanding of the collective memories of a city allows us to understand its structure permitting appropriate responses to be made when adding to the city. In the Renfrew country where the two cottages of my study are situated the use of the land is changing, what was once a farming community is slowly shifting to a cottaging retreat, and in the process loosing its history each time a farmland is being converted to cottage lots. By understanding this shift in land use and preserving elements of the land and community history in built form, the history of the land will not be forgotten.

By deciding to employ memory in the design of a building, the integration of architectural systems and memory systems will allow architects to gain an understanding of their clients by providing them the opportunity to articulate what it is that they cherish as thoughts, this will allow the architect to present them with a design that reflects them. There is an old architectural saying which states that “an architect’s job is to listen to his/her clients and then tell them what they want”. It is the purpose of integrating memory systems with architectural systems to change that statement to “an architect’s job is to listen to his/her clients and to interpret their thoughts to give them what they want”.

In the end, the limitation of trying to “house memory” is that architecture is a physical permanent artefact and memories are illusive and changing. Architecture cannot become a memory when we are in its physical, presence, and buildings do not

have conscious thought therefore have no memories. Architecture can only provide an environment for memories to be made or invoked; it is the job of its occupants to do the remembering.

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