INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

ProQuest Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

UMI[®]

**SUBTERRANEAN SUSTENANCE:
Architectural Cutting and Newfoundland Leftovers**

By

Renée Kelly Hynes B.A.S.

A thesis submitted to
The Faculty of Graduate Studies in partial
fulfillment of the requirements
for the degree of

**MASTER OF ARCHITECTURE
M.ARCH. (Professional)**

Carleton University, School of Architecture
Ottawa, Ontario, Canada
August 22, 2008

© copyright 2008, Renee Kelly Hynes

Library and
Archives Canada

Bibliothèque et
Archives Canada

Published Heritage
Branch

Direction du
Patrimoine de l'édition

978-0-494-44102-2

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file *Votre référence*

ISBN:

Our file *Notre référence*

ISBN:

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

Canada

ABSTRACT

In 1966, Stephenville, Newfoundland inherited a decommissioned United States air force base and as a result gained an extensive collection of commercial, recreational and residential buildings. However, military specific structures such as airplane hangers and subterranean shelters were underutilized and are currently in a state of disrepair. This thesis explores the potential for these idle buildings to become useful spaces, fully engaged with the community.

Several scholars have compared food preparation and architectural procedures; this thesis will focus on a theoretical comparison between leftover food and recycled architecture, in particular the vernacular food and building methodologies found in Newfoundland. Similar to salvageable food, ruins of the former base will be a rich resource to be cut and recycled. The transformation of a military bunker into a restaurant specializing in local cuisine has the potential to act as a catalyst for building adaptation in Stephenville. This restaurant can also bridge the gap between the local military history and Newfoundland tradition, resulting in a culturally significant design resolution.

‘Pataphysics, the science of imaginary solutions that was invented by Alfred Jarry (1873-1907), will be a useful guide in the transformations of this site. ‘Pataphysics is a process that puts the past beyond the future. Coupling architectural anatomy of existing local structures, with proposed ‘pataphysical design technologies’ will generate architectural expressions that can help to rectify Stephenville’s neglected sites, animating their hidden beauty and historical importance, to create a distinct solution reflective of the unique culture.

TABLE OF CONTENTS

ABSTRACT		iii
ACKNOWLEDGMENTS		v
LIST OF ILLUSTRATIONS		vi
INTRODUCTION		1
	THE TAROT CARDS	
1.0 IMAGINATION AND TECHNOLOGY		
1.1 'Pataphysics	COSMOS	6
1.2 Imagination in Architectural Technology	SPRING	10
1.3 House Launching	WATER	12
2.0 CUTTING AND FORGETTING		
2.1 Potentialities in Leftovers	FIRE	
2.1.1 Leftover Food		15
2.1.1 Architectural Leftovers		17
2.2 Memory and the Need to Forget	AIR	18
2.3 Cutting in Architecture	EARTH	22
3.0 TRANSFORMATIONS		
3.1 Gordon Matta-Clark	WINTER	27
3.2 Pierre Chareau	SUMMER	30
3.3 Imaginative Reuse in Newfoundland	FALL	36
4.0 SITE		
4.1 Metal and Air: a History	METAL	40
4.2 Wood and Water: a Location	WOOD	43
	THE READING OF THE CARDS	
5.0 DESIGN		
5.1 Methodologies		47
5.2 Subterranean Sustenance		52
CONCLUSION		64
BIBLIOGRAPHY		67

ACKNOWLEDGMENTS

I wish to take this opportunity to thank my thesis adviser Dr. Marco Frascari for his insights, guidance and endless inspiration.

I would also like to thank my friends and professors for their assistance and wisdom. Especially Chloe Allin, Jessie Smith, Justin LaVallee, Selina Leung and Sheryl Boyle.

I wish to thank my family for believing in me.

And finally, to my most trusted critic.

Thank you Nicolas for your unconditional support and encouragement.

LIST OF ILLUSTRATIONS

All images by the author unless otherwise stated.

Fig. 1 Frontispiece - Graphite on paper. This image is composed of eleven tarot cards. _____	ii
Fig. 2 The Cosmos tarot card. _____	6
Fig. 3 The Spring tarot card. _____	10
Fig. 4 The Water tarot card. _____	12
Fig. 5 A typical wood foundation detail, and house launching with a sled. Mellin, Robert. <u>Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village.</u> New York: Princeton Architectural Press, 2003. p.113 _____	14
Fig. 6 The Fire tarot card. _____	15
Fig. 7 The Air tarot card. _____	18
Fig. 8 The Earth tarot card. _____	22
Fig. 9 The Winter tarot card. _____	27
Fig. 10 Gordon Matta-Clark's "Office Baroque" project, 1977, interior looking down from roof. Lee, Pamela M. <u>Object to be Destroyed: The Work of Gordon Matta-Clark</u> Massachusetts Institute of Technology, 2000, p. 229 _____	28
Fig. 11 Matta-Clark's "Office Baroque" project, interior view. (Lee 225) _____	28
Fig. 12 Matta-Clark's "Office Baroque" project, roof top view. (Lee 221) _____	28
Fig. 13 The Summer tarot card. _____	30
Fig. 14 Front garden of 31 Rue Saint-Guillaume early in 1928. Vellay, Marc. <u>Pierre Chareau: Architect and Craftsman, 1883-1950.</u> New York: Rizzoli International Publications, Inc. 1985. p.259 _____	32
Fig. 15 non load-bearing interior is removed, Spring 1928. (Vellay 266) _____	32
Fig. 16 The new steel structure in place for the Maison de Verre, July 1928. (Vellay 264) _____	32
Fig. 17 Evening view of La Maison de Verre from the front garden. Futagawa, Yukio. Ed. <u>La Maison de Verre.</u> Tokyo: A.D.A EDITA Co. 1988. p.31 _____	32

Fig. 18 T-Rib Quonset Hut circa 1941 Quonset, Metal Living for the Modern Age. <u>The Huts</u> < http://www.quonsethuts.org/huts/index.htm > _____	34
Fig. 19 Pierre Chareau's Robert Motherwell House, constructed with sections of an American Quonset hut and greenhouse windows. Vellay, Marc. <u>Pierre Chareau: Architect and Craftsman, 1883-1950</u> . New York: Rizzoli International Publications, Inc. 1985. p. 253 _____	34
Fig. 20 Interior view of the Motherwell house, 1948. (Vellay 254) _____	34
Fig. 21 Architectural Cutting. Graphite and paint on salvaged MDF board. Drawing includes a time line of elevations and a section of La Mason de Verre, elevations and sections of the Motherwell house, a detail of Gordon Matta-Clark's "Office Baroque" project and elevation of a concrete drilling tool. _____	34
Fig. 22 The Fall tarot card. _____	36
Fig. 23 (Left) Harold Dwyer's upper staircase constructed from packing crates. Mellin, Robert. <u>Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village</u> . New York: Princeton Architectural Press, 2003. p. 89 _____	39
Fig. 24 (centre) Harold McGrath's fishing shed, made from a salvaged structure. (Mellin 146) ____	39
Fig. 25 Mellin's drawing of a flour-barrel rocking chair. (Mellin 129) _____	39
Fig. 26 Robert Mellin's drawing of a cabbage house made from an old boat, turned upside down. Mellin, Robert. <u>Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village</u> . New York: Princeton Architectural Press, 2003. p.200 _____	39
Fig. 27 The Metal tarot card _____	40
Fig. 28 The Wood tarot card _____	43
Fig. 29, 30 & 31 Underutilized buildings of the former Harmon Field Air Force Base, Stephenville NL. Photos by Nicolas Valenzuela (circa 2004). _____	45
Fig. 32 Aerial photos of Stephenville, NL & close-up of the five bunkers. Photos provide by: Newfoundland & Labrador Department of Natural Resources, Surveys Mapping Division, Howley Building, Higgins Lane, St. John's NL A1B 4J6. Date: 08-08-97 Call numbers: 97013 - 89 and 97014 - 5,7,8,19 & 21 _____	45
Fig. 33 Graphite on paper. Existing Bunker: front elevation and cross section, side elevation and section and plan. _____	46
Fig. 34 Photomontage of Harmon field airplane hanger interior. _____	48

Fig. 35 Found object. Graphite and paint on salvaged MDF board. Drawing includes a section and interior elevation of the abandoned airplane hanger. _____ Drawing by author.	48
Fig. 36 & 37 Valeriano Pastor, sketches of the District School Center near Dolo, Showing figures of nude mimes, dancers in leotards and everyday people. George and Robert Tavernor eds. <u>Body and building: Essays on the Changing Relation of Body and Architecture</u> Cambridge, Mass: MIT Press, 2002. p.265 &266 respectively. _____	50
Fig. 38 The Reading of the Cards: Arrangement of the eleven tarot cards. _____	52
Fig. 39 Subterranean Sustenance. Graphite and paint on salvaged MDF board. Left: Ground floor plan & sections at 1:50, Centre: Site plan at 1:500. Right: Roof plan & elevations at 1:50 _____	58
Fig. 40 Detail of Subterranean Sustenance drawing. Ground floor at 1:50 _____	59
Fig. 41 Detail of Subterranean Sustenance drawing. Sections at 1:50 _____	60
Fig. 42 Detail of Subterranean Sustenance drawing. Elevations at 1:50 _____	61
Fig. 43 Detail of Subterranean Sustenance drawing. Site plan at 1:500 _____	62
Fig. 44 Model at 1:50. Time lapse photography _____	63

INTRODUCTION

Former industrial landscapes often lack consideration towards the cultural and ecological value of their surroundings. In the latter part of the 20th century many industries became decommissioned due to low demand, new technologies or centralization. Following this, the infrastructure associated with these sites was abandoned in a similar manner to which it arrived; absent of responsibility towards a place or its future.

These buildings that were once foreign objects in the landscape, have become a familiar part of their community. Recycling these vacant buildings gives new life to otherwise outdated space and also provides many obvious environmental benefits. Properly confronting discarded sites reduces the massive amount of waste that would otherwise be created upon demolition. It also decreases the demand for energy, virgin materials, Greenfield sites and conserves embodied energy. Recycling buildings also preserves historical artifacts for future generations and connects the present with the past. However, it is important for these projects to address what was previously ignored, in order to create a correlation with local culture. It is not enough to simply change a space to accommodate new program. It is imperative to transform existing buildings into locally significant, imaginative architecture.

Architectural scholar Ferruccio Trabalzi points to out a cognitive analogy between food production (from growing to eating) and local architectural procedures.¹ This thesis contends that a building's re-design can take inspiration from many cherished traditional dishes that have been invented from the

¹ Horwitz, Jamie and Paulette Singley. Eds. Eating Architecture. (Cambridge: The MIT Press, 2004.) 71

reuse of leftovers. This notion allows unsalvageable buildings to be reclaimed for new forms, and outdated building programs to be cut and transformed for today's palate. Architectural preservation maintains material artifacts from the past. In addition, it is important to incorporate the often less evident notions of local building tradition and know-how. Re-developing old structures into useful architecture, which is synchronized with local ecology requires an understanding of regional aspects that range from local mythologies to handiwork and weather patterns. These important aspects of design can be guided by a 'pataphysical approach.

'Pataphysics, a term invented by French writer Alfred Jarry of the 1920s and 1930s², is described as the science of imaginary solutions. A 'pataphysical approach can therefore direct a design process that will provide innovative architectural solutions that also incorporate distinctive local qualities. In its structure 'pataphysics is similar to the notion of re-inventing leftovers, since it locates the past beyond the future. From this, renewed buildings can be as unique as the culture in which they are a part, by responding to local ecological conditions. It is also important for this 'pataphysical approach to be in unison with an appropriate level of architectural transformation, balancing memory and the need to forget.

The reuse of existing buildings often demands that spaces be updated and infrastructure be revised to accommodate new program requirements. In addition to these physical changes it may also be pertinent to transform a building for less psychological reasons. For historically significant buildings may have stigma or negative memories associated with their former uses. To truly renew existing spaces there is often a need for tectonically surgical procedures that cut and forget, creating the adequate level of amnesia necessary to accept the building's new uses.

² Alfred Jarry pioneered absurdist literature through criticisms, essays, novels, plays and poetry. He is best known for his play "Ubu Roi", cited as the influence for surrealist theatre of the 1920s and 1930s. In 1948 the "College de 'Pataphysique" was founded to carry on his legacy.

Architectural cutting of existing buildings discloses their structural makeup, providing insight for the designers to correctly deconstruct the space. Through this newly gained understanding, the building can then be reconstructed, fully responding to and playing off of its existing architectural makeup. This type of architectural dissection is investigated in its purest form through the work of American artist Gordon Matta-Clark (1943-1978). The artist's work offers brilliant examples of anatomical cuts through the walls, floors and ceilings of abandoned buildings, revealing the immense potential locked within. Successful architectural cutting is achieved by informed decisions; Matta-Clark's knowledge of a building's structure, materials and composition allow him to expose the spaces to natural light, fresh air and its own compositional beauty and truth. The rich insight of Matta-Clark's art proves that the anatomical deconstruction of idle buildings is an important step towards discovering a range of transformational possibilities.

Similarly to Matta-Clark, French architect Pierre Chareau (1883-1950) employed anatomical and surgical intervention in his work. Chareau's Motherwell house, formally located in Long Island, New York, was designed for painter Robert Motherwell and his wife. The project used reclaimed windows from a greenhouse and the structure of a Quonset hut³, which provided a space with plenty of natural light and open spaces, well suited for both a painting studio and entertaining fellow artist friends. The Maison de Verre, located in Paris, is also an example of the inventive transformation of preexisting structures. Chareau altered the first two load-bearing stories of a three-story house into a modern steel column structure, leaving the third storey fully intact throughout the course of construction. This

³ The Quonset hut is a portable structure first produced by the United States military at Quonset Point, Davisville, Rhode Island. The hut is a lightweight structure with corrugated metal cladding. Made in various widths and lengths is most easily identified by its semicircular cross section. Decker, Julie and Chie, Chris eds. Quonset Hut: Metal Living for a Modern Age (New York: Princeton Architectural Press, 2005)

design provides a notable example of the importance of understanding given site conditions in the determination of how to cut an existing assembly of materials and structure.

This thesis will also examine a microcosm of vernacular architectural reuse through the community of Tilting, located on Fogo Island, Newfoundland. The small community of Tilting has many examples of the recycling and reinvention use of discarded materials. These examples pertain to the long established sense of human scale and local know-how in construction that is reflected across the island in many of its isolated towns and outposts.

Insight obtained from the exploration of imaginative processes guiding the anatomical cutting of the existing building combined with traditional building methods will motivate the transformation of an abandoned military bunker in Stephenville, Newfoundland. The selected site for this thesis is located in an area with five bunkers distributed within a half-kilometer radius that have been abandoned for over 40 years. The five bunkers are just a sample of the many empty buildings in the area, a collection that includes airplane hangars, storage houses and other subterranean buildings. The end of the site description will conclude the first section of this thesis, entitled *The Tarot Cards*, which begins the section called *The Reading of the Cards*.

Throughout this thesis, the Tarot cards are used as a device to illustrate the design story. This set of Tarots, made of graphite on paper, is composed of eleven cards, each of which is presented at the beginning of the eleven research topics. The individual cards convey ideas or observations regarding the history, culture and ecology of the site. These cards can also be arranged as a complete image to indicate the relationships that are present between them, formally connecting the otherwise fragmented

ideas. The novel entitled *The Castle of Crossed Destinies*⁴, by Italian writer Italo Calvino, depicts an Inn located in a dark forest where visitors become struck with a bizarre predicament. “It had become clear that crossing the forest had cost each of us the power of speech”⁵. After some time the visitors spread out a deck of Tarot cards and one by one, arrange them in a row to depict their journey through the forest. With a similar approach, Tarot cards will be used to guide one through the design description.

The proposed demonstration of this thesis is the intervention of five bunkers; one redesigned as a restaurant specializing in local cuisine and preserves, and the four remaining as decentralized support for the restaurant program requirements. This study will apply knowledge of the areas vernacular architecture and military history in a ‘pataphysical approach that will resolve these contracting conditions, generating meaningful space that is rich with meaning and narrative.

⁴ Calvino, Italo. *The Castle of Crossed Destinies* William Weaver. Trans. (London: Harcourt Brace Jovanovich, 1976)

⁵ Calvino, 5

THE TAROT CARDS

“...bearing in mind that the same cards, presented in a different order, often change their meaning...”⁶

1.0 IMAGINATION AND TECHNOLOGY

Fig. 2

1.1 'Pataphysics

The redefinition of existing architecture requires design details and building technologies that resolve the contrast between existing structures and new interventions. Projects relying purely on the application of common technical details may result in a generic architecture that fails to articulate a response to particular site conditions. Such projects also fail to create a connection with an area's cultural richness and local know-how where its inhabitants have been engaged with local materials and weather conditions for centuries. The study of a people's traditional building methods is sure to provide a rich source of architectural insight.

⁶ Calvino (*The Castle of Crossed Destinies*) 41

Culture specific architecture must attempt to develop design strategies that ensure a solution distinct to each situation. Designing a building in a remote place such as Newfoundland calls for a close look at the area's vernacular architecture, history and local folklore. The use of these sources as a driving force in design will inspire imaginative solutions for both reused and new edifices. Approaching these technical and social issues in an inventive way can be achieved through the use of 'pataphysics', invented by the French writer Alfred Jarry (1873-1907). Jarry pioneered an absurdist style of literature through his writing including criticisms, essays, novels, plays and poetry. He fabricated the world of 'Pataphysics, the philosophy that attempts to find imaginary solutions for technical problems.'⁷ Dedicated to a satire of modern science, Pataphysics composes "a supplement to metaphysics, accenting it, then replacing it, in order to create a philosophic alternative to rationalism."⁸

Jarry's 'Pataphysical' writing method "maintains scientific and engendering accuracy so meticulously that it is very difficult to detect just where his instructions modulate into fantasy."⁹ His writing often contains absurd situations and fantastical outcomes supported by bold scientific calculations in a play on the extremes of story telling. The theme of extremes is also seen in the specifics of Jarry's writing, from topics to characters and situations. The piece of fiction entitled *Exploits and Opinions of Doctor Faustroll Pataphysician* provides a brilliant instance of Alfred Jarry's imaginative theories.

The narrative revolves around the bizarre character of Doctor Faustroll, who is being sought after by authorities for long overdue rent money. Faustroll escapes the law by way of a boat that is made out of a sieve. Counter intuitive and even absurd, this boat opposes traditional naval design to the

⁷ Bok, Christian. "Pataphysics: The Poetics of an Imaginary Science" (Evanston, Illinois: Northwestern University Press. 2002) 8

⁸ Bok, 8

⁹ Shattuck, Roger and Taylor, Simon Watson, Eds. "Selected Works of Alfred Jarry" (New York: Grove Press 1965) 11

extreme. But as it is explained with complex scientific data and then in rational terms it becomes nearly believable. Due to its basis in real life, it is theoretically possible for this boat to not only float, but to also have some advantages. Faustroll explains how the vessel is superior to most.

“ ‘My sieve, then, floats like a boat, and can be laden without sinking to the bottom. Not only that, it possesses this advantage over ordinary boats...that one can allow a thin jet of water to fall on it without submerging it.’ ”¹⁰

Though not able to float in reality, Faustroll's boat offers an innovative design approach that may indeed lead to superior results.

‘Paraphysics is also used to create fantastical explanations of scientific theories or concepts by bringing related psychology, statistics and linguistics to their imaginary extremes.’¹¹ This approach goes beyond the precise nature of metaphysics - a philosophy pertaining to ideas on cosmology and ontology - in order to explore an idea in an unrestricted way, encompassing a full range of imaginative possibilities. An example of these imaginative possibilities can be found in a collection of stories entitled *Cosmicomics* where Italian writer Italo Calvino (1923-1985) states scientific theories in quotation at the beginning of a series of fictional stories. These stories create elaborate worlds with unique characters that interact with strange places, all intimately connected within a given scientific theory. Calvino uses obscure scientific concepts about the universe, as a springboard for fictional narratives.

Although fantastical, exaggerated and make-believe these stories give a personal touch to otherwise possibly overwhelming theories. For example, the short story from *Cosmicomics* entitled *The Light Years*

¹⁰ Shattuck 189

¹¹ Shattuck 11

revolves around the speed of light within the universe. The night sky is made of many brilliant stars, some of which burned out millions of years ago and only exist as projections of light seen by stargazers. This notion of looking back through time is a concept that requires abstract thinking, not necessarily understood by the stargazer. Playing with two extremes, Calvino combines this cosmological concept with a mundane social interaction two characters. These characters, separated by vast distances in space, use signs to correspond over millions of light years.¹² Calvino collapses a vast quantity of distance and time, allowing the reader to perceive the nearly inconceivable theories relating to the speed of light.

“One night I was, as usual, observing the sky with my telescope. I noticed that a sign was hanging from a galaxy a hundred million light-years away. On it was written: I SAW YOU. I made a quick calculation: the galaxy’s light had taken one hundred million years to reach me, and since they saw up there what was taking place here a hundred million years later, the moment they had seen me must date back two hundred million years.”

As seen in the short story, *The Light Years*, the juxtaposition of two extreme ideas is absurd, yet it results in a wonderfully inventive story. In response to the vernacular conditions with the nearly inverse edifice of the former military presence in Stephenville, this juxtaposition will attempt to be resolved through the story telling designs of this thesis. ‘Pataphysics will therefore act as an inspiration for problem solving, creating reused buildings that are as unique as the diverse culture that they are a part of.

¹² Calvino, Italo. *Cosmicomics* (Orlando: Harcourt Brace & company and Jonathan Cape Limited, 1968) 127

Fig. 3

1.2 Imagination in Architectural Technology

Hephaestus is the Greek god of fire, forging and technology. Well respected by the other gods, he creates their armour and weapons, allowing them to be successful in many historic battles. He is also the creator of the Aegis, the breastplate emblazoned with the head of the Medusa, who was slain by Perseus.¹³

During the forging of the Aegis, Hephaestus has the challenge of creating a piece of armour that tells the story of the defeat of the Medusa. He chooses to use the head of the Medusa to make the piece psychologically potent. This combination of both the material and immaterial makes the Aegis powerful and terrifying, an immense testimony to Hephaestus skill. It is this idea of technology and functionality combined with meaning and narrative that can be seen in a door detail by Italian architect Carlo Scarpa (1906 – 1978).

In Palazzo Abatellis, Galleria Regionale della Sicilia (Regional Gallery of Sicily), the design of an entry exemplifies the contrast of two elements. A glass door is juxtaposed with a leather door handle

¹³ Wilson, Lillian M. "Contributions of Greek Art to the Medusa Myth" (*American Journal of Archaeology* Vol. 24, No. 3 (Jul. - Sep., 1920), pp. 232-240) 39

bridged by a metal component.¹⁴ To mediate the inhuman material characteristics of a glass door, the leather handle, an element that is closely related to the human hand, provides comfort to the user. Similar to the design method of Hephaestus, Scarpa designs with opposing elements allowing both functionality and meaning resulting in an imaginative detail.

¹⁴ http://fototeca.cisapalladio.org/web/foto_scheda.php?valo=e_6_905

Fig. 4

1.3 House Launching

Remote or desolate areas often produce imaginative design solutions. With little outside materials or influence, isolated places have developed building techniques that overcome challenging circumstances. These solutions are usually unique since they are created in response to local building materials, craftspeople and weather patterns. Typical North American building methods are the product of heavy-duty equipment powered by the brute force of fossil fuels¹⁵ whereas vernacular architecture is often constructed using human labour alone, resulting in structures that maintain a more direct relation to the human scale.

For a microcosmic investigation of such innovations one can turn to the small town of Tilting, Newfoundland. This Fogo Island village was, and in many aspects still is, isolated from North American influences and resources. This condition creates a situation where many building methods are an immediate result of the town's natural landscapes and the peoples' livelihoods.

¹⁵McDonough, William & Braungart, Michael. Cradle to Cradle: remaking the way we make things (New York: North Point Press, 2002)

Tilting is connected to a long established way of life on the water, which includes fishing and traveling by sea. Fishing flakes and stages¹⁶ were constructed of wood frames on wooden posts, made from small to medium sized coniferous trees found in the local landscape and were erected on sturdy rock overlooking the ocean. Traditional houses used a similar the construction of wood frames on wooden posts, again in direct relationship to the locally available resources and building technologies.

Houses were built on exposed portions of bedrock throughout the village and it is interesting to note that the practice of building on sections of rock was mainly due to the low availability of tillable soil on Newfoundland's rocky coasts. The best land was used for vegetable gardens and root sellers. As a result the houses footings were above ground and not a permanent part of the landscape.¹⁷ This method of construction made possible the local tradition of selling or offering an old house to others in the community. For one could simply move the house to a new location, while ensuring land ownership would remain with the original owner.

The method of placing a boat into water was what inspired the local technique of moving a house. Referred to as "house launching", Newfoundlanders relocated homes as they would launch a boat, by placing them on heavy wooden beams, called "skids". Houses were usually relocated during the winter, when the men of the town could slide a home across the frozen landscape and bodies of water.

"The best time for launching a house was in the latter part of March. The men would stop for a spell halfway across the ice... before people started using horses in Tilting, manpower was used. Every man in the harbor was invited to a house launching."¹⁸

¹⁶"flakes" and "stages" are local terms for fishing wharfs and sheds (respectively).

¹⁷ Mellin, Robert. *Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village*. (New York: Princeton Architectural Press, 2003) 112

¹⁸ Mellin. 115

Unfortunately, beginning in the 1960's, new houses were grounded by way of heavy excavating equipment. "New houses are not launched when they are sold. They are usually committed to their sites by concrete foundations and landscaping..."¹⁹ And so the tradition of launching a house died with the introduction of mainland building practices.

The connecting thread between boat launching and house construction is an exquisite example of locally inspired design solutions. House launching created a strong sense of community among residents and narrated a history of local insight. New design should be inspired by local building methods to ensure long learned building techniques are not lost. It is also important to create designs that use new technology in a sensitive and imaginative manner to continue to evolve the thread of vernacular building evolution, while maintaining the unique characteristics of a place.

Fig. 5 A typical wood foundation detail, and house launching with a sled.
Mellin, Robert. Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village. New York: Princeton Architectural Press, 2003. p.113

¹⁹ Mellin. 87

2.0 CUTTING AND FORGETTING

Fig. 6

2.1 Potentialities in Leftovers

2.1.1 Leftover Food

In nearly every culture, the use of leftovers has long been a part of many cooking traditions. A good chef will cut and combine leftover food to create new meals and even celebrated dishes. Uneaten food is reused for many practical reasons including the reduction of both financial loss and kitchen waste. Yet there is something more to this cooking practice, for leftover dishes have often become more desired than the initial meal or origin of the excess food. These new food combinations evolve to become customary parts of the diet, transforming themselves from after thoughts to culturally significant dishes. Comfort foods such as soups, casseroles, and many desserts result from the surplus food at previous meals that is then redesigned and re-structured to make old ingredients new again.

In Newfoundland tradition, a typical family will eat a large meal after Sunday morning Mass. The noon meal is referred to as 'Sunday dinner', 'jigs dinner' or 'boiled dinner'; these names respectively describe the time, music and cooking method of the meal. This meal's dish revolves around the

preparation of salt-beef, which is removed from its brine water and boiled in a large pot until tender. The resulting salty water is used to cook split yellow peas in a cotton pudding bag. When soft, the peas are removed from the bag and mashed into peas pudding. Local root vegetables including turnips, parsnips or carrots and potatoes are cut into large pieces and are also cooked in the beef water. Finally, the beef, peas pudding and vegetables are placed in separate dishes for the center of the table, served hot. Because this meal is the largest and most social of the week, there is usually plenty for family and guests and as a result, there are often leftovers.

The leftovers are reused mainly in two traditional ways: pea soup and beef hash. Traditional Newfoundland pea soup is made of the same yellow split peas, salt beef and root vegetables, with only one additional item: plump dumplings. To begin, leftover water from the jigs dinner is re-boiled, adding some new split peas if needed. When tender the leftover meat and vegetables are chopped and added with any remaining peas pudding. Last, dumpling dough is added on top of the soup and boiled until dumplings are firm. Beef hash is even simpler to create; any leftovers from the dinner are chopped up and fried with butter, excluding only the peas pudding, which is served on the side.

The waste from the most important dish of the week inspired both of these meals and in turn they have also become important traditional parts of the culinary culture in Newfoundland. This transformation can also be seen with many deserts of the area. Bread pudding, for example, is made with, eggs, milk, sugar, butter, vanilla, raisins and of course, the main ingredient; stale bread.

The culinary use of leftovers requires cutting and a cooking process to allow the ingredients' transformation into new tastes and textures. Eventually these new combinations become regular meals and an expected part of the local cuisine, rendering the derivative meal as culturally significant as the original. The result has even created a cooking paradox where chefs start these "leftover" dishes from

scratch, making preparation time quite lengthy and difficult. For the most part however, Newfoundlanders still make these dishes in the traditional sense, taking advantage of both the convenience in reuse and conservation of resources. This cooking mentality is also reflected in the local building strategies found in the small villages and outports of Newfoundland.

2.1.1 Architectural Leftovers

Architectural leftovers are buildings, infrastructures and building fragments that are no longer a functioning part of society, and are often abandoned or under utilized. Most architectural ruins found in European cities have been used and reused over centuries. These transformed pieces are valuable remnants telling fascinating stories of past societies. In North America industrial ruins are important pieces of our collective history; however more difficult to establish as meaningful pieces of heritage. Because of this, the potential to transform these architectural leftovers is challenging. Due to the lack of interest in their up-keep, industrial ruins are often demolished in the name of progress.

“Ancient ruins vividly depict the passage of time, but it is now almost frozen. By noticing them we remove them from the buffeting stream. Industrial ruins are most special in this: though large and powerful they feel extremely vulnerable.”²⁰

Despite their lack of economic value in today’s society, industrial ruins inherently hold a link to the culture and history of an area and for practical reasons of reducing waste and saving spent embodied energy, local people would greatly benefit from reclaiming these leftovers. Hence abandoned industrial architecture needs to be re-imagined and when industrial buildings become unstable or unsalvageable, they should at the very least be “chopped”, “cooked” and reused in the area.

²⁰ Harbison, Robert. The Built, the Unbuilt and the Unbuildable: in pursuit of architectural meaning (Cambridge, Massachusetts: MIT Press, 1991) 121

Fig. 7

2.2 Memory and the Need to Forget

Reclaimed or reused building sites connect the past with the present by preserving historically significant architecture for future generations. Conservation sustains the memories belonging to a particular building and leaves evidence of the traditional construction methods. Attempting to preserve a building in its original state, however, can be detrimental, particularly when there is no longer a need for that specific program type. To avoid freezing a building in time, as some sort of empty museum, it is important to carefully consider the meaning and outcome of preservation. Furthermore, there may be negative memories associated with a building's former use. These stigmas must be overcome in order to successfully regenerate the edifying nature of a given space.

In order to defeat these negative aspects of memory, it is crucial for a re-design to attain a particular level of amnesia. The act of forgetting is achieved through the procedure of architectural sublimation. Cutting and fragmentation will generate a much-needed re-interpretation of an emotionally agitating space.

Memory is the accumulation of thoughts and sensations ranging from commonplace moments to significant events. These “recordings” give meanings to and create connections throughout one’s life. Physical reminders often aid memory; smells, sights, and tastes can bring back a flood of images from earlier times. Such a scenario is described in Marcel Proust’s book *Remembrance of things past*, when his character bites into a tea soaked Madeleine. At the very taste of the cake, intense memories emerge from the mind’s abyss. He explains that “the past is hidden somewhere...in some material object, in the sensation which that material object will give us,” and only when one happens upon these objects the past is revealed to the unsuspected mind.²¹

Like Proust’s cake, architecture can flood one’s memory with that which was once lost. Evidence of an area’s former desires and needs, construction methods and techniques are imbedded in architecture. Conservation maintains this heritage. The protection of socially significant buildings also has obvious benefits toward environmental conditions concerning issues of embodied energy and resource consumption. However, people’s perception of used sites may prove problematic.

Contaminated sites contain toxins and wastes that must be safely disposed of or neutralized. Sites may also possess intangible contamination in the form of negative psychological associations. Formerly inhabited sites must be rectified in the public psyche by way of intelligent design that erases stigmas and forgets the past. The process of forgetting is a necessary part of a healthy existence; the loss of irrelevant memories makes way for new ones. Forgetting is also required in order to move past traumatic events or distressing information, a form of healing that can transpire as trauma induced amnesia or a slow fading of details.

²¹ Proust, Marcell. Remembrance of things past. V-1 (New York: Randon House, 1951) 34

As seen in cases of extreme memory retention, not being able to forget can be torturous. In an article entitled *Memory; Why We Remember, Why We Forget* a woman referred to as AJ, is observed for her incredible ability to remember nearly every detail of her life²². When referring to the normal human mind, which is commonly forgetful, AJ states “Your memory is the way it is to protect you” and goes on to say “most people have called what I have a gift... but I call it a burden”²³. Everyday AJ bears fresh guilt for every bad decision she has made in the last 30 years, it is easy to sympathize with her wish to “just have five minutes to be a simple person and not have all of this stuff in my head.”²⁴

Furthermore, if forgetting does not take place, abstract ideas cannot be formed, causing an object or word to be paralyzed in one state, thus preventing the imagination and creative process from forming new or multiple meanings. In a world where the first concept of something is also the final one, initial perspectives will continuously become reality, prohibiting the abstract thinking necessary to the understanding of poetry, analogies and even creative design. The inventive device of ‘Pataphysics’ goes beyond reality, using literal meanings and facts as a springboard into the imaginary. The inability to forget would make such a process nearly impossible.

The Russian mnemonist²⁵ referred to as S was studied for over 30 years by neuropsychologist Alexander Luria. Luria’s survey demonstrated that S remembered unbelievably long lists of words, numbers and symbols decades after he first heard them. His incredible memory seemed to be possible due to powerful visual imagery and sensual reaction to everyday things. When hearing a note or word all of S’s senses, including taste, smell and sound, seemed to conjure up one very real interpretation, to

²² Johns, Chris. Ed. *Memory* “National geographic”. (Nov. 2007) 51

²³ Johns. 51

²⁴ Johns. 51

²⁵ Mnemonist refers to an individual how as the ability to remember extraordinarily long lists of data, numbers, nonsensical words, ect. In this case, “S” was a profession mnemonist who regularly showcased his unbelievable ability in front of an audience.

which he was forever bound. A voice, for instance, could feel rough, smell sweet, and look bright blue in S's mind's eye. Upon hearing any set of words or information this sort of imagery would come together in stories, giving S the ability to recall almost anything.²⁶ This extraordinary memory, however, did not exist without great thought limitations.

These setbacks were clearly seen when S attempted to interpret a sentence containing figurative language. The piece, pertaining to art in comparison to the development of society, used double meaning and non-literal words, which proved to be quite problematic for the mnemonist. When asked to comment on a sentence, S described it in the most literal form. Commenting on one of the sentences, S stated: "As for framework, that must mean the carcass of something"²⁷. This is because "framework", in Russian, literally means skeleton. It is clear that S's first understanding of a given object or idea was the one that remained and could be reinterpreted. All figurative words were lost to him, due to his incredible memory that would not allow him to forget. He went on to say "the material base of society is abstract to me. It's a cloud."²⁸ This demonstrates how S converted almost every one of his thoughts into an image, and when it was too difficult he saw only a "puff" or "cloud", leaving him unable to interpret abstract thought.

In architecture anatomical and surgical cuttings are important means to help reveal a new way of imagining old spaces. In order to maintain the value of existing architecture and transform it for new use, it is essential to establish the role of memory in balance with the need to forget.

²⁶ Luria, A.R. The Mind of a Mnemonist Solotaroff, Lynn. Trans. London: Basic Books, 1968.

²⁷ Luria 136

²⁸ Luria 136

Fig. 8

2.3 Cutting: puzzles, the body and prior architecture.

The need to forget and the act of cutting are explored in Georges Perec's work entitled *La Vie mode d'emploi* (*Life a user's manual*). This novel creates a world filled with multiple layers, detailed stories and countless components in which the main character, Bartlebooth, attempts to construct a system that will occupy his time but leave not a trace.²⁹ This protagonist is a wealthy man who spends many years traveling and creating mementos of his journey, then, as planned, he meticulously erases these mementos. Through this, the novel engages the relationship of memory and forgetting as two extremes, a conflict that Bartlebooth attempts to control.

In his youth, Bartlebooth, a very wealthy man, etched out his plan to fully occupy his otherwise idle life. This plan was simple and systematic. First he would take ten years to learn the art of watercolour and follow this with twenty years employing his skill while traveling the world. He would go to a new port every two weeks and paint a 65cm x 50cm picture, send it back to his puzzle maker in Paris who

²⁹ Perec, Georges. *Life a user's manual*. David Bellos. Tras. David Bellos. (Boston: David R Godine Publisher Inc., 1978) 118, 119

would cut the work into 750 pieces, making a total of 500 watercolour puzzles over the course of his journey. At the end of his travels he would return to his apartment building and spend the next twenty years putting together one puzzle every two weeks. He would have it glued to recreate its original seamless image, then separated the puzzle from its backing and have the painting dissolved.³⁰

The life described in this story is composed of many constraints that leave little room for interpretation and it is precisely these limitations that hold Perec's work within the Oulipo dominion of writing. Oulipo is an acronym for *Ouvroir de littérature potentielle* (workshop of potential literature), which was founded in the 1960's. The group consisted of mainly French-speaking writers who persistently used constraint in their writing as a creative tool source. Similar to the work of Italo Calvino's *Cosmicomics*, Perec appoints guidelines, or formats the purview of his writing.

Dealing with constraints of a given situation often inspires unique consequences that would not otherwise be realized. A set of rules allows an artist to explore a vast amount of details, and a designer who fully understands given conventions can begin to push the limits of a project.

Architecture with a previous life holds a set of rules that are governed by the materials and construction methods with which it was originally built. Similar to the Oulipo writer who creates a set of constraints, the re-design of an existing structure has irreversible limitations that, if mastered, can lead to the design of spaces with a distinctive outcome. Architectural cutting requires knowledge and familiarity with the inherent properties of the building. A and failure to understand these restraints would be quite evident in the outcome of the project. Furthermore, another valuable consideration inspired by Perec's work is in regards to the notion of traces found within a precise cut.

³⁰ Schwartz, Paul. Georges Perec, Traces of His Passage. (Birmingham, Alabama: Summa Publications, 1988) 87

For many years Bartlebooth patiently completed his puzzles in solitude, yet a reciprocal dynamic was created between the puzzle maker and enthusiast. Winckler, the maker, had become incessantly proficient at creating tricks and deceptions in the puzzles, therefore Bartlebooth had to become more and more skilled at assembling the pieces. Bartlebooth's puzzle solving techniques consisted of common visual aids such as following colour patterns, lines and shapes. However where the picture lacked foresaid clues, it was the particular shape and feel of the wooden parts that allowed consolidation with the whole. He began to use the imperfections of the cuts in the wood grain as clues in the otherwise nondescript pieces.

After many years of completing his puzzles, Bartlebooth suffered the fate of becoming blind. Despite this, the elderly protagonist continued to pursue his life goal to which he was quite capable, for he "...had been handling the little puzzle pieces for eighteen years, and the sense of touch played almost as great a role for him as sight."³¹ The fact that the puzzles were cut by hand certainly made each puzzle a challenge to the last, yet it subsequently offered those small imperfections between matching pieces, which aided Bartlebooth even when he lost his sight.

This poetic notion of hand cut objects can also be related to the act of cutting in existing architectural structures and materials. Perec inspires the idea of a cut that holds traces of its origins, which in this case gives evidence to the makeup of the existing and creates clues to the method of architectural cutting, awarding unique qualities to the new spaces.

Furthermore, and again relating to the notion of forgetting as a catalyst for change, cutting in existing structures is a basic method used to transform. Architectural design also uses the idea of a cut even before the first evidence of construction begins.

³¹ Georges 392

Cutting is practiced in the representation of a building, in the form of plans and sections, sliced with the pen.³² As Marco Frascari states in his essay “The Drafting Knife and Pen”, the architects’ pen writes the description of the architectural narrative through drawing. The knife also cuts through the design, revealing the entire composition. Drafting a project makes even unseen things such as the inside of columns understood, making the invisible visible. To cut is to know, “dissection is the task of knowledge.”³³

Frascari states that this notion is clearly recognized in anatomical research. “The process of cutting is at the basis of our understanding of representation as an anatomical demonstration.”³⁴ Research procedures of the body use the knife to gain insight of its composition. This knowledge is recorded with the pen, which also cuts when generating illustrative diagrams. Therefore, the pen and knife are interchangeable, they are tools used to both attain and demonstrate knowledge.

Research in anatomy is comparable to the act of cutting in architectural drawing. The cut allows the architect to resolve relations between the materials and spaces intended for the project, and it is through the drawing of plans and sections that one can clearly comprehend the architect’s design. The architectural cut is practiced to both develop knowledge of the architectural composition and to demonstrate the final design.

Architects cut sectional drawings of projects that exist only in their minds. Therefore, the architect must have resolved the design to a point where the intentions of the project can clearly be

³² Miller, Rob. Ed. “Implementing Architecture.” Marco Frascari. The Drafting Knife and Pen (Atlanta: Nexus Press, 1988)

³³ Miller

³⁴ Miller

demonstrated. As the knife and pen render knowledge in architectural drawing, so to do the cuts that are physically made in the existing built environment. The architect who makes these physical cuts must have precise knowledge of the buildings composition before executing the incision. Furthermore, these cuts will in turn provide the dwellers and visitors with a greater understanding of the project. To cut is to know, whether it is a sectional drawing, an incision in the human body or a cut in existing architecture.

Once knowledge of the existing building's makeup is gained and the architect has prepared drawings to demonstrate the design of any interjected structures, the physical transformation of the building can begin. At this point cutting is used to manipulate and alter. Physically exposing the construction methods of the old architecture can become an integral part of the finished design, for this reveals a truth of the building and creates new meaning and insight towards the architecture. Deconstruction often leads to discoveries of surprising views, plays of light and relations that were never before defined. The work of artists such as Gordon Matta-Clark gives architects evidence of great hidden potential. Architecture, it seems, can be freed from previous boundaries.

Successful renewal of space by process of cutting is achieved by informed design decisions that are guided by knowledge of the structure, materials and composition of the existing building. Drawing from this rich insight, idle buildings can be transformed to construct spaces imbedded with renewed meaning and to redefine their unique essence.

3.0 TRANSFORMATIONS

Fig.9

3.1 Study: Gordon Matta-Clark

Artist Gordon Matta-Clark (1943-78) provides raw, yet exceptionally brilliant examples of architectural cutting in existing buildings. The artist, who produced the bulk of his work in the 1970's, performed calculated incisions in the walls, floors and ceilings of buildings that were scheduled to be demolished. Through his artistic manipulation of fatigued spaces, Matta-Clark revealed structural knowledge, beauty and potential in otherwise seemingly exhausted, everyday architecture.

Armed with a chainsaw, utility knives and crowbar, Matta-Clark used these crude tools to craft surprising views, brilliant shafts of light and inspiring spaces. Although he was often referred to as a deconstructionist, he used words such as 'renewal', 'innovate' and 'restructure'³⁵ to describe his art. In a letter contacting a New York designer for a possible collaboration, Matta-Clark states, "My idea is to

³⁵ Lee, Pamela M. Object to be Destroyed: The Work of Gordon Matta-Clark (Massachusetts Institute of Technology. 2000) 115

secure a building awaiting demolition, and restructure it... it may be of interest to you to be involved with an adventurous 'un-building' design statement".³⁶

Usually beginning a project by sketching pre-planned forms on the walls, floors and ceilings of a building, the artist slowly initiates the deconstruction of layered materials in a rough but selective manner. Bold slices throughout a building, which carefully avoid necessary structure, open and liberate the previously closed forms. Subsequently, Matta-Clark's work offers architects new ways of seeing space by illuminating the hidden potential in unwanted buildings.

Fig. 10 (left) Gordon Matta-Clark's "Office Baroque" project, 1977, interior looking down from roof.

Fig. 11 (center) Interior view. Fig. 12 (right) Roof top view.

Lee, Pamela M. Object to be Destroyed: The Work of Gordon Matta-Clark Massachusetts Institute of Technology, 2000, p. 229, 225 and 221 respectively.

Beginning in June of 1977 and ending with the building's demolition in 1980, the "Office Baroque" project is a fine example of Matta-Clark's alterations. The project was located in the city of Antwerp near the waterfront, a site that was formerly filled with shipping activities. These programs were diminished after the Second World War; following this, a military museum was housed in a tenth-century castle, just across the street from the office. By the time of the "Office Baroque" project, the

³⁶ Lee 115

neighborhood was somewhat dilapidated, which is common in former industrial zones. However with the arrival of the museum, the area began to experience gentrification and to become known as a tourist destination.³⁷

“Inspired by two interlocking rings left by the wet imprints of a teacup,”³⁸ Matta-Clark sawed his design out of the floor plates, playing with two semi-circles of slightly different diameters. The formation of the rings altered from floor to floor, composing a dance between the two that resulted in arched openings, flat iron holes and teardrop shaped cuts. This composition created a bizarre impression of a traditional atrium, with very different spatial experiences on each level. This artistic work also brought new dimensions to the building, “its internalization of wind, weather, and light, and the dynamic shifts in scale and movement were also enacted by the cuts and the exposed features of the building.”³⁹ The project also revealed the structural makeup of the building, which verifies that the construction story can clearly be told through the performance of deconstructive design.

The work of Gordon Matta-Clark is an inspiration to the design of any existing site. The architectural narratives that are discovered in his work further support the importance of celebrating past methods of construction. Similar to the work of artist Matta-Clark, modern Architect Pierre Chareau also employs the cut to generate innovative design remediation.

³⁷ Lee 220

³⁸ Lee 223

³⁹ Lee 226

Fig. 13

3.2 Case Study: Pierre Chareau

The French Architect Pierre Chareau (1883-1950) designed two houses that speak to the idea of cutting in architecture, La Mason de Verre and the Robert Motherwell house. La Mason de Verre was designed and built between 1928 and 1932, slowly constructed out of the deconstruction of the first two floors of a three story row house. The Robert Motherwell house was made primarily out of used materials from former buildings.

La Mason de Verre is a clear example of the knowledge and insight that is essential to transforming existing architecture. The house was constructed in stages due to the sensitive nature of its load-bearing masonry walls.

In 1927 Mr. and Mrs. Dalsace became the owners of an 18th Century house located at 31 Rue Saint Guillaume, in Paris. The house, which is flanked by two larger residential buildings, opens onto a courtyard at its front and a garden in the rear. Chareau and his clients decided that the existing house would be demolished and a new building of a similar height would take its place. However, an elderly woman who lived on the third floor of the building refused to desert her home. This problem was

overcome by the ingenious solution of designing the new house to be inserted directly below the settled resident.⁴⁰

Innovative as it was, this project was a complicated undertaking due to the requirement of the new construction to carry the load of the third floor, not only when completed but also during most of the deconstruction process.⁴¹ The accurate placement of structure and the precise cutting of existing material in a careful exchange of construction and deconstruction slowly materialized Chareau's architecture of the international design style composing of steel structure and concrete floor slabs. The composition of the façade is of glass block, which was selected by Chareau to overcome the shadows created by the buildings directly adjacent to the northeast and southwest.

The first phase of the project involved the removal of most interior walls and floors, leaving intact the exterior load-bearing masonry walls. The next phase called for the placement of a steel structure that at this point was only supporting the interior walls but subsequently allowed for the removal of the majority of the load-bearing exterior walls in the third phase. At this point in the construction, the entire weight of the third floor was then transferred to the steel members. During the final phase the concrete floors were set in place and the exterior cladding and interior designs and finishes were installed.⁴²

The new steel structure gave Chareau the freedom to employ wide sections of translucent cladding in the form of glass block, which allowed generous amounts of natural light to enter the house. Also,

⁴⁰Futagawa, Yukio. Ed. "La Maison de Verre". Tokyo: A.D.A EDITA Co. 1988. (p.7)

⁴¹This design strategy was uncommon for architectural endeavors at the time, however the technology was often used in construction projects such as subterranean rail lines.

⁴² Futagawa 9

Fig.14 (Left) Front garden of 31 Rue Saint-Guillaume early in 1928. Fig.15 (Centre) Non load-bearing interior is removed, Spring 1928. Fig.16 (right) The new steel structure in place for the future Maison de Verre, July 1928. Vellay, Marc. *Pierre Chareau: Architect and Craftsman, 1883-1950*. New York: Rizzoli International Publications, Inc. 1985. p.259, 266, 264 respectively.

Fig . Evening view of La Maison de Verre from the front garden.
Futagawa, Yukio. Ed. *La Maison de Verre*. Tokyo: A.D.A EDITA Co. 1988. P.31

where formerly there existed only two levels, La Maison de Verre consists of three levels with large openings connecting each. The design of La Maison de Verre illustrates the importance of fully understanding the existing conditions in order to predict the extent of possible alterations.

In 1945 Chareau designed a second house that used anatomical processes as a means to transform architectural ruins. The Motherwell house, located in Long Island, New York, doubled as a studio for the Abstract Expressionist painter Robert Motherwell and his wife. The house was primarily made out of a Quonset hut, which was formerly used by the United States military, and recycled greenhouse windows. Chareau's design transformed the hut by cutting out sections of the prefabricated steel and replacing them with the reused windows. This allowed plenty of natural light to enter and provided a second level for the home.

Robert Motherwell wanted a house/painting studio in a remote setting close to New York City, where he could entertain guests and other painters. He chose to build this house in the Hamptons and asked Chareau to create for him a cheap but revolutionary design. With these clear project restraints, the architect set out to find cheap, used parts to construct the majority of the house. The Quonset hut was chosen, based on its low price and ease of modification.

The Quonset hut was originally designed by the United States military for widespread use during the Second World War. After the war, the remaining huts were sold to the public for various uses. The prefabricated kit of parts provided a semicircular steel structure measuring about 20 by 48 feet. Chareau purchased two huts for about \$3000, one of which was used for the house and the other for storage.⁴³

⁴³ Cummings, Mary. "Robert Motherwell's Life in the Hamptons" 18 June. 2004. Hamptons. 2007. <http://hamptonstyle.com/sm_files/hamptons_article_long_island_369>.

Fig. 18 (left) T-Rib Quonset Hut circa 1941

Quonset, metal living for the modern age. The Huts <<http://www.quonsethuts.org/huts/index.htm>>

Fig. 19 (centre) Pierre Chareau's Robert Motherwell house, constructed with sections of an American Quonset Hut and greenhouse windows. Fig. 20 (right) Interior view of the Motherwell house, 1948.

Vellay, Marc. Pierre Chareau: Architect and Craftsman, 1883-1950. New York: Rizzoli International Publications, Inc. 1985. p. 253 & 254 respectively.

Fig. 21 Architectural Cutting. Graphite and paint on salvaged MDF board. Drawing includes a time line of elevations and a section of La Mason de Verre, elevations and sections of the Motherwell house, a detail of Gordon Matta-Clark "Office Baroque" project and elevation of concrete drilling tool. Drawing by author.

The footprint of the Quonset hut was excavated to a depth of several feet in order to create a double level house. Concrete blocks formed the exterior walls of the lower level and in turn provided the support for the hut, which was raised to about 4 feet above grade. The interior consisted of an open plan with only a few plywood partitions separating spaces. Much of the structural steel elements were left exposed to clearly and honestly expressed the composition of the building materials. The lower level living area capitalized on natural light and passive solar heating from “a 36-foot-long window that Motherwell and Chareau had salvaged from an old commercial greenhouse, and which helped to keep heating bills down to about 14.00 US\$ a month.”⁴⁴ The second floor plan consisted of a landing that provided access to the bedrooms. As this floor plate approached the exterior walls, they were cut open to provide double height spaces and halls from the lower level.

Although the final product proved to be revolutionary, the modest budget of \$10,000.00 grew to \$27,000.00 US. This elevated cost was due to the fact that “just about everything that was not prefabricated would have to be custom-made”⁴⁵, creating a bizarre contradiction in the design. Nevertheless, the finished product was treasured by Motherwell and greatly appreciated by his fellow painters for being quite innovative and unique. The house was unfortunately bulldozed in 1985. The Motherwell house and La Mason de Verre, to this day are still exceptional examples of architectural cutting used to achieve a successfully adapted and recycled building.

⁴⁴ Cummings

⁴⁵ Cummings

Fig. 22

3.3 Imaginative Reuse in Newfoundland

The reuse of building materials has long been a part of the vernacular architecture of Newfoundland. The isolation of most of the island's communities made the importing of new building materials difficult and costly, if not impossible. Native tree types such as fir, larch, pine and spruce were some of the only available construction resources and for these communities, and harvesting lumber was both labour intensive and time consuming. Thus the people of Newfoundland reused pieces of old buildings whenever they could, leaving little waste.

This practice of recycling structures was commonplace between the towns of Fogo Island. This isolated landscape, located off the northwest shore of Newfoundland, has a long tradition of reclaiming built components to construct new spaces. During World War One, Sandy Cove was the home of the 185th United States Army Base, which was composed of bunkhouses, a cookhouse, a hospital, a movie theater, and warehouses, as well as a radar building.⁴⁶ After the military unit departed from Sandy Cove, the town of Tilting reclaimed much of what was left behind.

⁴⁶ Mellin, Robert. *Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village* (New York: Princeton Architectural Press, 2003) 9

“After the base was dismantled, a few buildings were relocated to Tilting. Some of the base’s furniture and building components, like lumber and windows, were eventually recycled in many of Tilting’s houses and outbuildings.”⁴⁷

Newfoundland “outbuildings” include storage sheds, fish cleaning structures, and of course outhouses. These buildings were often composed of dismantled parts from houses that were moved where needed and modified to facilitate new uses. Also, it was common for old building fragments to be moved to another community member’s land to be utilized in whatever way they saw fit:

“...When Ed McGrath’s house was demolished a few years ago, the back kitchen was moved to Len McGrath’s premises, where he presently uses it as a store (shed).”⁴⁸

Old boats, fish cooling tubs, floor barrels, fish crates, and houses, were also put to new use in dwellings, stores and even for furniture in Tilting. These items that would otherwise be discarded were sawed by hand and adapted for use as any needed furniture or building parts. Making use of these found objects, not unlike the act of house launching, took imagination and ingenuity. Old punt boats were made into cabbage houses for winter storage, and in a pinch, a temporary cabbage house could be made by digging a hole, placing an upside-down fish tub over it and covering it with snow. House renovation utilized old parts in the same way. For instance, on the second floor of Harold Dwyer’s house the stairwell was built of old packing crates formerly used for salted fish. And “like house construction, furniture construction often used recycled materials, such as packing crates,”⁴⁹ Furthermore, floor barrels were often carved out and fashioned with a seat to create a rocking chair. These are just a few of the examples of the modifications that Mellin describes in “Tilting”.⁵⁰ In

⁴⁷ Mellin 10

⁴⁸ Mellin 66

⁴⁹ Mellin 126

⁵⁰ Mellin’s descriptions the makes cabbage houses and a stairwell respectfully found on pages 200 and 88

addition, Mellin describes how salvaged construction materials were not limited to the discarded objects found in and around the Fogo Island towns. When Harold McGrath was fishing he found a small structure, partly submerged in water out at sea,

“He towed it into the harbor and set it on the land as a small general store (storage shed)... it had a slightly curved roof, built-in shelves, and a cabinet. He thought it was originally a ship’s cabin from a costal boat that had sunk”⁵¹

The tradition of reclaiming materials was common practice in many areas of Newfoundland in addition to Tilting. In the farming landscapes of Codroy Valley, on the southwest coast of the island, farmers converted numerous old structures including houses, reused for new additions, storage sheds and barns into new and useful things.

The people of Newfoundland did not restrict their reuse of architectural fragments to small geographic areas; building components were relocated great distances across the island when needed. The town of Searton, located in Codroy Valley, built St. Anne’s church in 1931, and it was eventually torn down 1982. After this, the church’s “...salvageable parts were re-used in the construction of a new church in the northern peninsula of Newfoundland”,⁵² an area that is nearly 400 Kilometers from the Valley.

⁵¹Mellin 146

⁵² MacKinnon, Richard. *Vernacular Architecture in the Codroy Valley* (Hull: Canadian Museum of Civilization, 2002) 113

Fig.23 (Left) Harold Dwyer's upper staircase constructed from packing crates. Fig. 24 (centre) Harold McGrath's fishing shed, made from a salvaged structure. Fig. 25 (right) Mellin's drawing of a flour-barrel rocking chair. Mellin, Robert. Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village. New York: Princeton Architectural Press, 2003. p. 89, 146 & 129. respectively

Fig. 26 Robert Mellin's drawing of a cabbage house made from an old boat turned upside down. Mellin, Robert. Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village. New York: Princeton Architectural Press, 2003. p.200

Fig. 27

4.1 Metal and Air: a History

When the Harmon Field United States Air Force base closed in 1966, the town of Stephenville doubled in area to include a vast array of military buildings. This acquisition included the former base's extensive collection of commercial, recreational and residential buildings. However, reminders of conflict reside in the hidden terminal waste and underground ammunition depots that still exist in the area. Also, the military airplane hangers and numerous bomb shelters have little use in the small town, leaving many structures underutilized. The tension between these benefits and burdens, now associated with the town's history, conveys the reality that forthcoming generations bear all products of previous societies.

Stephenville is located in the Bay of St. George's, on the West coast shores of Newfoundland Island. In the early 1900's, it was a small village of merely 500 residents who made a modest living farming and fishing. Lumbering also became a source of employment, when in 1925, a paper mill opened in the neighboring city of Corner Brook. No significant change arrived in the village however until the early 1940s.

In 1941 the United States Air Force chose Stephenville to be the location of a vital refueling stop for military aircraft en route to Europe. This project “became the largest U.S. air force base outside the continental U.S.”⁵³ In 1942 Stephenville saw immense growth with the employment of over 7,000 people for the construction phase. When completed the “Harmon Field Air Force Base” covered more than 8,000 acres of land, over 4,000 soldiers were stationed long-term and approximately 132,000 military personnel passed through the base each year.⁵⁴

With the end of the supersonic bomber in the 1960’s, Harmon Field was also terminated. The base officially closed in 1966, leaving the town to deal with all that was left behind by the Americans.

“Stephenville's past American influence is still very evident in the town. There are still remains of underground ammunition depots, large airstrips (and) aircraft hangars... Few reminders exist of our past prior to the Americans.”⁵⁵

The town of Stephenville gained over 150 million dollars worth of buildings and infrastructure, yet in recent years negative aspects of the American military’s former presence are being raised in the form of environmental concerns. The Americans constructed underground fuel storage tanks and pipelines. Several buildings were constructed for the storage and handling of chemicals and hazardous products. The natural flow of streams was diverted to allow for the construction of lengthy runways. Numerous landfill sites were established where all sorts of environmentally disastrous wastes were casually dumped and buried.⁵⁶

⁵³ Newfoundland and Labrador Heritage. 1997-2003. Memorial University of Newfoundland. 3 Nov. 2006 <<http://heritage.nf.ca/society/stephenville>>.

⁵⁴ <<http://heritage.nf.ca/society/stephenville>>.

⁵⁵ Town of Stephenville "The Acadian Village" <<http://www.town.stephenville.nf.ca/index.html>>

⁵⁶ <<http://heritage.nf.ca/society/stephenville>>.

Although recent studies have looked into the solution of these problems, the full extent of environmental damage is still largely unknown. Moreover, there is a disagreement concerning who is financially responsible for reversing the environmental damage of the area. The responsibility, it seems, was left with the community of Stephenville along with the military infrastructure. Unfortunately, the small town of eight thousand has inadequate funds to combat the damages created by 25 years of American presence. Further studies and eventually the cleaning of these sites will take an immense amount of resources. Increased community awareness and public pride would help create momentum for this huge undertaking.

The town of Stephenville possesses literally dozens of buildings holding great potential; the redesign of one of these sites would make an incredible starting point for the transformation of the area. Vacant buildings left on the former base include large airplane hangars, subterranean ammunition storehouses, chemical handling buildings, radio towers and empty fuel storage tanks. Any one of the wide varieties of buildings, or eventually all of them, can be transformed into inventive examples of reuse, converting abandoned shells into revitalized architecture.

To adapt is to change into something different for new conditions or purposes.⁵⁷ It is important to reflect this theory in all aspects of the design by imbedding the idea of transformations and anatomical cutting throughout the project. Applying reuse design methods to Stephenville's array of underutilized buildings will unlock the immense potential of the creation of unique yet responsible architecture and reusing these military buildings will provide a link to the past that also respects the needs of future generations producing creative solutions from complex pieces of history.

⁵⁷ Austin (60)

Fig. 28

4.2 Wood and Water: a location

The site of this thesis project is located on a narrow piece of land just southwest of Stephenville. This narrow land formation is located between the ocean shoreline of St. George's Bay to the West and an inlet of water to the East. The land was formerly part of the American base, and is the location of five ammunition bunkers.

The location was selected for the reuse of the abandoned bunkers and because of its proximity to the waterways. Water is an integral part of Newfoundland history, traveling, transporting goods and of course fishing, all took place by way of the sea. As well, the bunkers of this site are constructed of poured in place concrete, as opposed to the typical steel building of the base. The concrete possesses the imprint of wood grain from its formwork, the 4" wide by 6' long board-prints give clues to the role of local resources and the prints also display a scene of human scale to the heavy concrete object. For these reasons, this site is a middle ground of sorts for the design of this architectural reuse project. This building will then act as a bridge between the former military presence and vernacular Newfoundland.

Today the bunkers are empty and in very good condition, considering their age of over 60 years. They are scattered over a landscape that is approximately 150 000 square meters, and each bunker has its own unique orientation. Sections of the landscape surrounding the bunkers are currently part of a golf course that runs through the area. Between the structures and towards the West, there are also sections of wild grasses and wooded areas.

Three sides of each bunker are covered with earth and shrubs or trees that have managed to root themselves there. The front of each one however, plainly reveals a thick concrete wall with a massive steel and concrete door. (See Fig.14) There is only one other opening, an air duct located towards the back, on the roof of the bunker. The inside of the structure consists of a concrete floor and a semicircular concrete vault, reaching a height of 4 meters at its centre. The interior floor width, or the diameter of the arch, measures 8 meters and the length of the floor is 18 meters from the door to the rear wall. (See Fig.15 & 16) Besides the door and the air vent on the far wall there is only one notable feature: an eyehole metal screw attached above the door. The interiors of the bunkers are cool, damp, dark and empty, and have served little purpose in the last 40 plus years.

Fig. 29, 30 & 31 Underutilized buildings of the former Harmon Field Air Force Base in Stephenville NL.
Photos by Nicolas Valenzuela (circa 2004).

Aerial photos of Stephenville, NL & close-up of the five bunkers.
Photos provide by: Newfoundland & Labrador Department of Natural Resources, Surveys Mapping Division, Howley Building, Higgins Lane, St. John's NL A1B 4J6. Date: 08-08-97 Call numbers: 97013 - 89 and 97014 - 5,7,8,19 & 21

Fig. 33 Graphite on paper. Existing Bunker: front elevation and cross section, side elevation and section and plan.
Drawings by author.

5.0 THE DESIGN

5.1 Methodologies

The following is an outline of the methodologies used in the development and design of this thesis project, beginning with the evolution of media and techniques used in drawing.

Drawing has played a major role in the progression of this thesis, in that the choice of drawing materials has changed to be in relation with the subject of reuse. There are three distinct types of drawing; as found renderings, architectural studies and design transformations. As the drawing types moved from as found through to design, there was a change of both technique and choice of medium, progressing from straightforward renderings to a more analytical method of drawing where multiple scales explore overall layouts and design details within one composition.

To start, the drawings of the existing site were produced with graphite on white paper. This choice of medium documents the current state of the five abandoned bunkers and their relation to each other.

A second set of images, entitled “Architectural Cutting” (Fig.21) and “Found Object” (Fig.35), are graphite and acrylic gesso on recycled medium-density fiberboard. The discarded fiberboard required minor adjustments; the edges were straightened and then lightly painted with acrylic gesso. The thickness and durability of the board allowed me to cut and scrape into the drawing, resulting in a high level of contrast between the scraped areas and the rendered surface, clearly showing the building sections and cuts. This technique was discovered through the development of the “architectural cutting” drawing which explores architectural recycling in the work of artist Gordon Matta-Clark and architect Pierre Chareau.

The same technique of paint and graphite on MDF, is used in the drawing called "Found Object". This drawing is a study of an abandoned airplane hanger in Stephenville, Newfoundland, to be used as a material resource for the design of this project.

Fig. 34 Photomontage of Harmon Field airplane hanger interior. By author.

Fig. 35 Found Object. Graphite and paint on salvaged MDF board. Drawing includes a section and interior elevation of the abandoned airplane hanger. Drawing by author.

“Subterranean Sustenance” (Fig.39) contains the plans, sections and elevations of the restaurant at 1:50 and the site plan at 1:500. The drawings of the restaurant are rendered in red where there is reuse, green where new materials are used and brown, which represents the existing building. The site plan shows all five of the bunkers and their surrounding landscaping and gardens. This drawing also shows the path of the buildings that launch into the landscape.

To help describe the makeup of the space and the relationships between new and old material, three human figures are used in the architectural drawings of this thesis project.

“...(C)onstruing architecture through body-image ensures that the imaginal force of human bodies is impressed, received, and vividly transmitted into the built environment...images evoked by mimes and dancers, especially when counterpoised to culturally specific images of everyday people.”⁵⁸

In the work entitled *A Tradition of Architectural Figures: A Search for Vita Beata* author Marco Frascari examines the architectural imaging of Carlo Scarpa through his pupil, Valeriano Pastor. Pastor uses three Scarpa inspired figures of nude mimes, dancers in leotards and everyday people respectively as bodies that interact with the construction, program, and everyday use.

⁵⁸ Dodds, George and Robert Tavernor eds. Body and Building: Essays on the Changing Relation of Body and Architecture (Cambridge, Mass: MIT Press, 2002)

Fig. 36 &37 Valeriano Pastor, sketches of the District School Center near Dolo, Showing figures of nude mimes, dancers in leotards and everyday people.

George and Robert Tavernor eds. *Body and Building: Essays on the Changing Relation of Body and Architecture* Cambridge, Mass: MIT Press, 2002. p.265 &266 respectively.

In the tradition of Pastor's work this thesis uses a similar trinity to indicate three individual design intentions, through the use of the white, green and red figures. The white figures are demonstrating the deconstructive cuts into the existing concrete bunkers in order to transform the space. The Green figures are bodies that related the new or resolving materials that connect the existing with the reused structure from a deconstructed airplane hanger, they reflect the imaginative solutions in this design. And finally the red figures are everyday people interacting with the space.

Similar to the drawings where colours are employed to denote existing material, new and reused the model is made out of three different materials respectively, plaster, basswood and an array of dark coloured woods. The method of construction is an important part of the development in design. Therefore, a video of the construction is created from a series of stills taken of the model as it is being

built. Capturing the construction of the model reflects the same attention to construction that is made throughout the design. (See fig.44) For example, the design of the restaurant pays attention to how the bunker will be cut and how those pieces will be moved to their new locations.

The design focuses on a space of 420 square meters (4575 square feet), which houses a restaurant. This relatively small space allowed for a high level of detail in the design and presents a feast of ideas from lighting fixtures, floor patterns, door designs and acoustic treatments. To resolve and clearly show these elements, the drawing and model are scaled at 1:50.

Finally, the description of this design is a story told through the use of Tarot cards. There are many different ways of reading Tarot cards, which can speak to a range of subjects. This reading begins with a single card that gives an understanding of the overall topic at hand, followed by ten cards that tell the story of this architectural design.

5.2 Subterranean Sustenance

THE READING OF THE CARDS

"...and each time, before putting down the card, he studies it as if absorbed in an operation whose successful outcome is not certain, a combination of trivial elements from which, however, a surprising result may emerge"⁵⁹

Fig. 28 The reading of the cards: The arrangement of the eleven tarot cards. By author.

⁵⁹ Calvino, Italo. The Castle of Crossed Destinies William Weaver. Transn. (London: Harourt Brace Jovanovich, 1976) 89

COSMOS

This card conveys notions of time, the changing seasons and is the center of all the other cards. The other cards (the four seasons, four elements and two sub-elements) revolve around the all-controlling cosmos. Founded around the notion of a 'Pataphysical approach, the cosmos card illustrates this central concept. It illustrates a system of spotlights arranged throughout the landscape. These lights are for navigational purposes, for in cloudy conditions they temporarily replace the stars. This example illuminates the imaginative nature of 'Pataphysics.

The design of the landscape is meant to order and give meaning to the site much the same way as the Cosmos card gives order and meaning to the eleven Tarot cards. The site is composed of gardens, walkways, building fragments and wooded spaces that intercept and weave their way through the area. This design takes inspiration from the landscape of Tilting, Newfoundland, locally referred to as "the tangle".⁶⁰

This sculpting contains many different elements that bend and fold into one another in a dance. The paths, sculptures, walls and gardens play together and almost embrace as they allow each other to pass, overlap, and connect. These interlocking designs are also used in the bunkers in both the small details and in the larger moves between new and old spaces, giving them unique character, clearly distinguishing, yet smoothly connecting each. The site also contains pieces of abandoned material which is reused to create works that act as canvases for important dates or historical information, similar to the Tilting practice of writing timelines or guest books directly on their architecture.⁶¹

⁶⁰ In the town of Tilting the best land was used for gardens while the poor land, with bedrock and little soil, was used for building houses. Over time neighborhoods changed, families moved, houses moved and out buildings changed location. Due to these reasons a mixed configuration of homes, gardens and pathways inspired the local people to call this "the tangle". Mellin. 50

⁶¹ Mellin. 179

WINTER & AIR

The first cards chosen to describe the details of the site is the Winter and Air cards. The Winter card best describes the current condition of the site, which is at a pause or in a down trough. Like winter, the site has seen the end of one era, in that the remaining abounded buildings are waiting for a new beginning. The air card speaks to the history of this site, in that it was an Air Force Base. This is in contrast to the importance of waterways as a means of travel and transport in Newfoundland.

Each pair of cards corresponds to one of the five bunkers, Winter and Air corresponds to the bunker that is farthest north on the site. This structure is designed to house a seed bank that dries and stores the seeds from the fall harvest, where they are protected until spring. The air must be dry and cool, with no direct light; therefore the only windows for the bank are small slits on the north side. The building is inward looking and closed to the public. Directly above this space is a climbing tower constructed of salvaged components from a former airplane hanger. The tower acts as a lookout from which the surrounding landscape of woods, mountains and ocean can be viewed.

SPRING & EARTH

The spring card is associated with rebirth or new beginnings. The element of Earth speaks to cutting, manipulation and control of the landscape. The Spring & Earth cards tell the story of the bunker that is located furthest South. The program of this bunker is a mulch garden, which processes the restaurant's food waste to create rich soil. The building also houses the tools necessary for churning the earth. The landscape adjacent to this bunker is sculpted to emphasize the buildings role and is inspired by earthwork projects.

SUMMER & WATER

The summer card is associated with life and growth while the water card refers to the traditional Newfoundland method of travel by boat. These cards pertain to the bunker that is located farthest West on the site. This bunker is pragmatically linked to the growing season and involves caring for berry and vegetable gardens. The bunker contains the tools necessary to tend the landscape and also contains two reflecting pools to bring natural light into the otherwise dark space.

The first pool is located between the existing wall and a newly constructed front facade; a space created by moving the existing concrete wall two meters north into the landscape. As a visitor passes through the concrete wall they will enter the water garden and then pass through the new front facade of the space. The new threshold from the garden space to the interior of the bunker replaces the former with an elegant wall of glass and steel. Once inside a second pool is found at the rear of the space. A window above the pool brings natural light into the space, which is then reflected towards the arched ceiling.

FALL & FIRE

The fall card references harvest season while fire references the kitchen as the center of the house and therefore involves cooking but also resting, socializing and entertaining. Traditionally in Newfoundland, the kitchen is a semipublic space in the house where visitors are welcome to make themselves at home.

These cards are focused around the bunker that is designed to store empty glass preserve bottles and house the tools necessary for harvesting. This building is also the space that holds the out-kitchen, which in Newfoundland tradition is located in a small building outside the main kitchen containing

cooking stoves and food preparation areas. Similar to the other three bunkers that support the restaurant, it has a dining space that can house a reception or host a feast to celebrate its season.

WOOD & METAL

Wood is representative of traditional Newfoundland building, which has a sense of human scale and is often handmade. Metal is the material commonly used in the construction of the American Air Force Base. Together they describe the design of the main building located on this site, the restaurant. The focus of the architectural intervention on the site is the transformation of a former ammunition bunker into a restaurant. This bunker located farthest East, is closest to the ocean shoreline and adjacent road and is pragmatically supported by the four remaining bunkers needed for storing, mulching, growing and cooking. All five bunkers are connected with a series of paths, gardens and building fragments in the landscape.

The Harmon field base is riddled with the remains of unused structures. An airplane hangar, that is one of four in the area and is for the purpose of this thesis assumed to be waiting for demolition, is reused as a found object in the design of all of the five bunkers. The hangar is documented through a series of cuts in section, interior elevations and as a peeled back interior elevation and ceiling plan for one of the building bays. (See fig.35) This drawing creates an understanding of the building's complex structural make up and how it can be cut. With this knowledge, pieces of the building can be deconstructed and adaptively reconstructed. The reuse of these pieces is shown by figures interacting with the space and structure. These figures are red in colour and demonstrate the use of the spaces that are created, showing how it will be used for everyday events.

The restaurant consists of a dining space and bar located in the former bunker. Services for the main space are located in a new area created by sections of structure harvested from the airplane

hangar. This includes bathrooms, the kitchen, and the mechanical room. This bunker is cut and transformed to expand the interior space of the structure and to allow light, air and heat to flow through the spaces. (See Fig.40 &41) Cutting to transform the existing is demonstrated by the uncoloured figures interacting with the design. The design uses careful details that reflect the building techniques of Newfoundland's isolated communities, and accomplishes this with the reuse of the American leftovers. The redesign of the space is inspired by hand made methods, low-tech techniques and is detail oriented. The earth that once covered the bunker is peeled back to reveal the concrete, allowing for solar heat gain.

Traditional Newfoundland building method and knowledge, including long practiced techniques of reuse, is the inspiration of many details and design strategies of this thesis. Denoted by the bright green figures in the drawings, the construction details are reflective of Newfoundland problem solving methods and the elements of story telling in the design. (See. Fig 40, 41 &42) This relates to the imaginary realm of 'pataphysics because of the use of extremes in the details.

The main entry has a heavy door that is made of new and reused layers of material and moves up and down on a track. (See Fig. 42) The door doubles as a sign for the restaurant, making it more than just a static element fixed to the building. When the restaurant is open, the door is pushed upward along a track set into the concrete of the bunkers front façade. When closed the door and sign are lowered and become less prominent in the landscape. Although the door can be considered absurd, it is superior to most doors in that it clearly denotes when the restaurant is open or closed and is quite easy to lift due to its sophisticated system of counterweights. Additionally, the door has the advantage of being completely out of the way when opened. A 'pataphysical approach in design creates a unique response to the inherent problems of using a bunker for a restaurant.

Fig.39 Subterranean Sustenance. Graphite & paint on salvaged MDF board. Left: Ground floor plan

nd floor plan & sections at 1:50, Centre: Site plan at 1:500. Right: Roof plan & elevations at 1:50

Fig. 40 Detail of Subterranean Sustenance Drawing. Ground floor at 1:50

Fig. 41 Detail of Subterranean Sustenance Drawing. Sections at 1:50

Fig. 42 Detail of Subterranean Sustenance Drawing. Elevations at 1:50

Fig. 43 Detail of Subterranean Sustenance Drawing. Site plan 1:500

Fig. 44 Model at 1:50. Time lapse photography.

CONCLUSION

Applying reuse design methods to underutilized buildings unlocks an immense potential to create unique and responsible architecture in Stephenville. Military buildings that were once foreign objects in the landscape are now deeply rooted relics of the past and the proposed project of this thesis is the reuse of a group of abandoned structures.

This thesis explores architectural transformations through the use of the imaginative approach inspired by the concepts of 'pataphysics. This scientifically based philosophy creates imaginative solutions that are often inspired by contrasting or extreme notions that transcend metaphysics. Architectural design methods inspired by this realm of contrasting concepts will embody creative responses and produce unique and imaginative solutions.

Similar to the 'pataphysical approach, which puts the past beyond the future, food can also exceed the typical structure or given expectations. This is seen through many cherished dishes that have their foundation in re-invented leftovers. Comparable notions of importance of reuse are inherent in recycled architecture. Re-inventing the discarded infrastructure of past generations is vital to reduce waste and save embodied energy, and is central in maintaining a type of cultural narrative in the evolution of a place.

Re-designing an abandoned space may require an act of forgetting, especially when strong memories or stigma are associated with that space. Therefore physical transformations must be rendered throughout the existing structure, in order to create an adequate level of amnesia necessary for transformation and sublimation through the new design intentions. Reused architecture must establish the role of memory in balance with the need to forget.

This adaptive redesign requires architectural transformation that is developed through the knowledge of the architectural cut. This will disclose the building's structural make up and allow the designer to begin the deconstruction that is necessary for any modification.

Gordon Matta-Clark and Pierre Chareau offer insight regarding the method of architectural anatomy. Matta-Clark's works of deconstruction expose not only the structural makeup of existing buildings; he also exposes unseen potential hidden in discarded sites. Chareau's *Maison de Verre* demonstrates the importance of careful anatomical incisions to reshape architecture and his *Robert Motherwell House* proves the value of reuse of the found object in design.

As seen in the town of Tilting, Newfoundland, reuse in design is an effective way to invent design solutions that work for the local ecology. This microcosm case study revealed the long tradition of utilizing leftovers, and the focus on handcrafted, human scaled architecture.

Newfoundland culture and the former American air force base form two opposing worlds composed of water and wood in contrast with air and metal. The dichotomical nature of this thesis' site creates a 'pataphysical relationship. This design hosts these opposing relationships in an attempt to embrace the resulting extreme realm and resolve design issues by drawing inspiration from the two. This thesis project develops a restaurant design that puts the future beyond the past by firmly noting the anatomical and cultural origins of the found objects and found methods, and by creating architecture that will resolve the design through the imaginative realm that exists between the two connecting cultures. The dynamic between the existing, the found object and the new materials, is denoted by the use of three types of figures. The first are brown in colour and reflect the transformed existing structure. The red figures interact with the new program created by the found object and correspond with everyday use of the space. Finally the last type of figures are green and illuminate the

resolution created between the existing and found, which pertain to the notion of traditional Newfoundland creative solutions and story telling.

The proposal for this site is composed of trails, gardens and wooded areas that interweave and tangle throughout the landscape. Bridges and landmarks are designed with pieces of the deconstructed airplane hanger. This creates a multifunctional landscape that is highly functional and at the same time uninhibited in its arrangement. The four remaining bunkers located in the area provide an important part of the tangle in that they programmatically support the main restaurant. Additionally they act as destinations along the path through the site.

The restaurant itself uses sections of the demonstrated airplane hanger to extend the existing space of the bunker, and incorporate building details and materials from vernacular Newfoundland architecture in order to resolve a connection between the two. The new design also uses the act of cutting to transform the bunker, opening it to natural light and new paths of circulation. This cutting transforms the memories of its former use into a new setting of eating and entertaining.

By using a 'pataphysical approach, combining the use of architectural leftovers and a proper use of architectural cutting, this project has drawn imaginative design solutions out of complex pieces of the Stephenville's military history and vernacular architecture, providing a link to the past while respecting future generations.

BIBLIOGRAPHY

Austin, Richard L. Adaptive Reuse: Issues and Case Studies in Building Preservation David G. Woodcock, W. Cecil Steward, R. Alan Forrester, eds. New York: Van Nostrand Reinhold, 1988.

Bergeron, Louis and Maria Teresa Maiullari-Pontois, Industry, Architecture, and Engineering Jane Marie Todd trans. New York: Harry N. Abrams, 2000.

Blake, Peter. Chateau Chateau "Interior Design". May 1994: 49-50.

Bok, Christian. 'Pataphysics: The Poetics of an Imaginary Science Evanston, Illinois: Northwestern University Press. 2002.

Borges, Jorge Luis. Ficciones "Funes, the Memorious" Anthony Kerrigan. Ed. Anthony Kerrigan. Trans. Grove Press, 1962.

Brooke, James. Trend-setting Quonset Hut is Demolished "The New York Times" Aug. 3, 1985.

Brookes, Chris. The Promised Land of The Saints Hvar, Croatia, 2005.

Calvino, Italo. Cosmicomics Orlando: Harcourt Brace & company and Jonathan Cape Limited, 1968.

---. The Castle of Crossed Destinies William Weaver. Trans. London: Harcourt Brace Jovanovich, 1976.

Cummings, Mary. Robert Motherwell's Life in the Hamptons 18 June. 2004. "Hamptons" 2007. <http://hamptonstyle.com/sm_files/hamptons_article_long_island_369>.

Davison, Aidan. Technology and the contested meanings of Sustainability New York: New York Press, 2001.

Decker, Julie and Chiei, Chris eds. Quonset Hut: Metal Living for a Modern Age New York: Princeton Architectural Press, 2005.

Dodds, George and Robert Tavernor eds. Body and building: essays on the changing relation of body and architecture Cambridge, Mass: MIT Press, 2002.

Futagawa, Yukio. Ed. La Maison de Verre. Tokyo: A.D.A EDITA Co. 1988.

Hammatt, Heather. Military makeovers: base closures create opportunities for designers to build anew on an infrastructure of past defense "Landscape architecture" Nov. 2001: 58, 60-61.

Harbison, Robert. The Built, the Unbuilt and the Unbuildable: in pursuit of architectural meaning Cambridge, Massachusetts: MIT Press, 1991.

Haskell, Barbara. Donald Judd. New York: Whitney Museum of American Art, 1988.

Hodgson, Petra Hagen and Toyka, Rolf Eds The Architect, the Cook and Good Taste Basel: Birkhauser, 2007.

Horwitz, Jamie and Paulette Singley. Eds. Eating Architecture. Cambridge: The MIT Press, 2004.

Johns, Chris. Ed. Memory "National geographic". Nov. 2007: 32-57

Kirkwood, Niall ed. Manufactured Sites; Rethinking the Post-Industrial Landscape. London: Spon Press, 2001.

Leccesse, Michael. Farewell to Arms "Landscape Architecture". May. 1996: 88-95, 105-106.

Lee, Pamela M. Object to be Destroyed: The Work of Gordon Matta-Clark Massachusetts Institute of Technology, 2000.

Luria, A.R. The Mind of a Mnemonist. Solotaroff, Lynn. Trans. London: Basic Books, 1968.

MacKinnon, Richard. Vernacular Architecture in the Codroy Valley. Hull: Canadian Museum of Civilization, 2002.

Marras, Amerigo. Ed. Eco-Tec: Architecture of the In-Between. New York: Princeton Architectural Press, 1999.

McDonough, William & Braungart, Michael. Cradle to Cradle: remaking the way we make things. New York: North Point Press, 2002.

Mellin, Robert. Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village. New York: Princeton Architectural Press, 2003.

Miller, Rob. Ed. Implementing Architecture. Marco Frascari. "The Drafting Knife and Pen". Atlanta: Nexus Press, 1988.

Newfoundland and Ladrador Heritage. 1997-2003. Memorial University of Newfoundland. 3 Nov. 2006 <<http://heritage.nf.ca/society/stephenville>>.

Pare, Jean. Recipes for Leftovers Edmonton: Company's Coming Publishing Limited, 2004.

Perec, Georges. Life a user's manual. David Bellos. Tras. David Bellos. Boston: David R Godine Publisher Inc., 1978

Porteous, Colin. The New Eco-Architecture: alternatives from the modern movement London: Spon Press, 2002.

Proust, Marcell. Remembrance of things past. V-1 New York: Randon House, 1951.

Schwartz, Paul. Georges Perec, Traces of His Passage. Birmingham, Alabama: Summa Publications, 1988.

Shattuck, Roger and Taylor, Simon Watson Editors. Selected Works of Alfred Jarry. New York: Grove Press, Inc. 1965.

Stephenville Library Board & The West Newfoundland Folk Arts Council. Stephenville History & Stephenville Harmon Air Force Base: Vol. I. Port au Port/Bay St. George Heritage Association, 1978.

Stephenville - Newfoundland's Acadian Village The Evening Telegram. 23 September 1968.

Town of Stephenville The Acadian Village<<http://www.town.stephenville.nf.ca/index.html>>

Vellay, Marc. Pierre Chareau: Architect and Craftsman, 1883-1950. New York: Rizzoli International Publications, Inc. 1985.

Vesely, Dalibor. Architecture in the age of divided representation: the question of creativity in the shadow of production. Cambridge: The MIT Press, 2004.

Wilson, Lillian M. Contributions of Greek Art to the Medusa Myth "American Journal of Archaeology" Vol. 24, No. 3 (Jul. - Sep., 1920), pp. 232-240