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ARCHITECTURE AND BOAT BUILDING: CONNECTING WITH SPOLIA

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ARCHITECTURE AND BOAT BUILDING: CONNECTING WITH SPOLIA

RICHARD OLIVER SMITH
JUNE 2009



LIVES

From the Clock Tower
on our sentry. The whole
we find in them. And
I brought him in to. Can
the best of them in the
and on about 6 p.m.
the boat. The boat
out there.



*Many thanks to Dr. Marco Frascari for his committed guidance and infectious optimism throughout this project.
Thanks to the faculty who have shared their inspirational learning.*

Special thanks to my family for their love, support and care-packages.



Abstract

In the late nineteenth century, shipbuilding methods and reused fragments of ships were translated to the vernacular architecture of New Brunswick. This unique relationship stimulated high-quality construction that resonated with a sustainable eloquence of dwelling, but was eventually severed by the introduction of generic housing templates. By connecting the inhabitant through active sensorial engagement with reused boat spoils, this thesis explores the potential of strengthening a deeper connection between architecture and a *genius locus* that grows out of this rich history of shipbuilding.

To achieve its goal, this paper explores the theoretical writing of *amorous attraction* by Barbara Maria Stafford, coupled with the theory of “weak” architecture in the writings of Ignasi de Solà-Morales. Together, they make up essential qualities that emphasize making connections in an age of disconnections, learning through similarity—not difference, and connecting inhabitants through active participation with architecture rather than as spectator. Appropriating spoils from boats, the National Historic Site, Fort Beauséjour in Sackville, New Brunswick will become host to a boatbuilding and repair workshop that explores through its architectural details the potential value of connecting the inhabitants to a unique sense of place and history.

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Key Terms

“*Spolia*” is an archaic term that is characterized by an initial traumatic event that causes a previously integral entity to become fragmented. This newly created fragment is usually taken elsewhere and reused. Historically, these fragments often took the form of marble column capitals, shafts and bases. In this text, *spolia* and “spoils” will be used interchangeably, as “spoils” is a modernized word created by art historians, having the same essential meaning as *spolia*.

“Fragment”, *n.*: A part broken off or otherwise detached from a whole; a broken piece; a (comparatively) small detached portion of anything. This term is used as a more generic term in relation to *spolia*, to connote quite simply a small piece of something.

“Fragmentation” is characterized by a traumatic event that creates fragments. *Spolia* can be created from this event, but “fragmentation” also applies in a less formal sense to the creation of fragments.

“*Technemerophilia*” is the love to take a small part of *techne* or expertise to create composite solutions. It is a neologism introduced by the author, with help from Prof. Josh Beer of Carleton University. This term is intended as a parent theory that couples the main ideas of Barbara Maria Stafford’s *amorous attraction*, with the concept of “weak” architecture by Ignasi de Solà-Morales.



Introduction

"In civilizations without boats, dreams dry up, espionage takes the place of adventure, and the police take the place of pirates."

Along the Fundy coastline of New Brunswick the shipbuilding industry flourished for over a century, a time known as the "Golden Age of Sail." It is during this time that Sackville produced brilliant naval constructions: schooners, barques and brigantines—once called the "cathedrals of sail"—all sold to domestic and foreign proprietors. Each vessel carried with it tremendous local pride.

Family businesses grew to corporate dynasties, owing their success to the square-rigged vessel. Craftsmanship in shipbuilding was refined to a supreme level in Canadian naval history and these skills were imparted from one generation to the next over the medium of the ship's draught and in the countless workshops serving the shipyards. By the early twentieth century however, the industry began to recede and caused companies to reduce in size of staff to their immediate family members, passing on building methods for home- instead of corporate-use. Those unemployed shipbuilders turned their highly refined craft to the building of cities and towns in the surrounding communities²

This phenomenon generated an unusually high level of quality in wood carpentry throughout the Maritimes, resulting in unique building solutions that were translated from a rich shipbuilding background. Some of the shipbuilders constructing local buildings carried with them the valuable sensibility of reuse, or frugality; spoils of ships were incorporated into architecture and materials were treated conservatively. Ship's knees, commonly used as bracing in a boat's hull were applied to reinforcing beams, for example. Most buildings made by these shipbuilders however manifest great craftsmanship simply in the tacit application of their skills. The Saint John City Market for example

¹ Michel Foucault, "Of Other Spaces," *Diacritics*, vol 16 (Spring 1986) 27

² Brian MacKay Lyons, "The Village Architect Boat" *Design Quarterly* 165 (1995), 8

does not reuse actual boat spoils in its architecture but instead exhibits a remarkable roof structure that reflects those analogous skills of building a hull. Its designation as a National Historic Site (1986) is testament to the builders' skill.

This intimate connection between local craftsmanship and architecture was severed by the appearance of foreign building methods. The *Craftsman Style House* is a California-designed dwelling that imitates the past "look" of vernacular buildings around New Brunswick. The popularity of this type of house is attributed to its modest price and to it having a vague semblance of locally designed homes. These buildings depended on the importation of materials and tools for their fabrication and their mass-consumption fuelled the creation of generic suburban communities that lost their resonance with local aspirations and provision of local resources.

The small town of Sackville, New Brunswick is one of many communities in the Maritimes that experienced a similar disintegration of vernacular building methods. With such a rich history of building, it is a shame to see these traditions replaced by unsustainable consumer-based living. Sackville is unique from other communities in that the historic Fort Beauséjour situated nearby represents another major building endeavour in the colonial settlements. Treating Sackville as a testing-ground for a theoretical proposition will draw from this interesting intermingling of technologies (*techne*) as a way of connecting boat building and architecture.

Attempting to explicitly connect this relationship, the concept of *technemerophilia* is introduced as a theoretical strategy, which is a fusion of two conceptual ideas: Barbara Maria Stafford's theory of *amorous attraction* and the ideas of "weak" architecture by Ignasi de Solà-Morales. This neologism is defined as *the love to take a small part of techne or expertise to create composite solutions*. It refers to taking and reusing elements of one building culture and applying it to another. So, in this sense, just as the

shipbuilders translated their accumulated skill in ship carpentry to dissimilar work like roof making, spoils of boats will be reused in architecture

Amorous attraction contends that we are slowly forgetting how to think using analogy in our visual environments, that we should conduct the nobler task of connecting or “compounding” images using analogy rather than deconstructing ideas by *disanalogy* into fragments for its own sake. Stafford’s argument is enormous in breadth, as she tackles “fragmentation” in discursive fields biology, mathematics, cognitive science, theology, philosophy and the visual arts (her profession) In the interest of specificity, her arguments will be channeled into the fragmentation of boat building and architecture. This theory praises the act of compounding, as taking fragments from disparate sources and combining them into a new composite whole The limitation of Stafford’s theory is that it is mostly ocular-centric, emphasizing the aesthetic experience of making composites. This limitation will be probed from an architectural perspective to exercise fuller, crossmodal sensorial experiences that in turn heighten a consciousness of *genius loci*; this is fulfilled by merging *amorous attraction* with a sister concept, “weak” architecture

“Weak Ontology” or “Weak Thought” begins with philosopher and politician Gianni Vattimo’s writing, but it is the Spanish architect and theorist Ignasi de Solà-Morales who makes this thinking accessible to architectural theory. In Solà-Morales’ terms, “weak” architecture is an *approach* that in accordance with Vattimo’s notions, speaks of a ‘weak’ or ‘fragile’ understanding of architecture, or perhaps more precisely of an “architecture of weak structure and image”, as opposed to “an architecture of strong structure and image” The production of “weak” architecture grows and opens up from local materials, details or workmanship rather than conversely closing in from abstract concept down to the detail. It is contextual and responsive, whereas “strong” architecture seeks to impress an outstanding consistently articulated conceptual model The production of “weak” architecture is without the bias of ocular-centrism, allowing inhabitants to “understand architecture

through crossmodal sensorial experiences that are achieved when inhabitants cease to be mere spectators and begin to be participants in the art of living well by corporeal interaction”.³ The work of architect Kengo Kuma gives evidence of this great architectural potential.

So, bridging the concept of “weak” architecture to *amorous attraction* expands the function of the latter to include participatory and sensorial experiences as a way of connecting inhabitants to place; *amorous attraction* conversely gives “weak” architecture the tools to trigger multiple stimuli with these sensorial experiences. Though neither of these theories explicitly mentions *spolia*, the practice of using spoils is inherently an act of making compounds—architecture made of disparate parts that refer to modified narratives. *Technemerophilia* proposes to incorporate spoils as the primary medium to achieve its proposition of connecting an architecture compounded with boat spoils to heighten one’s consciousness of place.

The first chapter, “The Need for connecting” will lead off with a theoretical exploration of the contemporary ideas of compounding and the value of connecting community and skill by producing “weak” architecture. The fragmentation of vernacular architecture in New Brunswick outlines the need for introspection, to reconsider and reconnect architecture to its place, which has been forgotten for the past century-and-a-half. This first section proposes a theory of *technemerophilia* as a possible strategy of connecting in an age of disconnections.

The following chapter, “The Disposition of *Spolia*” will propose a flexible appropriation of contemporary *spolia* using the long-established tradition of reuse in Classical Rome as precedent to a contemporary conception of reuse. Here, reasons why a discussion of *spolia* is pertinent to architecture today will be explored and a framework for using spoils in the architectural project will be proposed. This section challenges the current day understanding of architectural reuse.

³ Marco Frascari, “The Virtue of Architecture”, *Scribd*, <http://www.scribd.com/doc/14617175/Marco-Frascari-Strenna-Horiz>, (accessed June 1, 2009)

Once this is established, various “Connective Strategies” are explored as possible methods to process spoils. Connective tools such as: translation and a discussion of *philia* and *agap!* will inform making analogical connections. This section includes a case study of Japanese architect Kengo Kuma, whose work employs a visually connective tactic of “particulation”, but mainly manifests the value of “weak” architecture as a useful tool that bonds the architecture to local building methods, materials, and the sensorial experiences of these things.

The fourth chapter historically and experientially inserts the reader onto the site of our architectural investigation, Fort Beauséjour outside of Sackville, New Brunswick. It will survey the intimate material consciousness present in the area, the Acadian culture and their building legacy, vernacular building technologies, and the ambitious but ultimately discharged Chignecto Ship Railway project. Sensorial experiences of the site such as lighting conditions, colours, temperature, smells and views will illuminate the richness of the site’s context and act as a threshold to the drawings that speak about the site.

Finally, a detailed account of the design process that responds to *technemero^{philia}* will demonstrate the steps taken to achieve the proposed boat-building workshop in Fort Beauséjour. The design portion is subdivided into the sections: program, ceremonial events, siting, translations of *spolia*, and sustainable systems. Here the architectural project is manifest as proof of the fore-stated theoretical framework. Following this, a discussion of the drawings will reinforce the execution of theory through the design process.



CHAPTER I

The Need for Connecting



The Fragmentation of Vernacular Architecture in New Brunswick

Vernacular architecture is a process that grows out of craftsmanship and from locally available resources and traditions that address local needs. It is a non-professional skill of designing and building. “Not only is the need for confining the growth of a community well understood by the anonymous builders, it is matched by their understanding of the *limits* of architecture itself. They rarely subordinate the general welfare to the pursuit of profit and progress.”⁴ For the architect, vernacular means a partial embrace or trust in convention that is forward-looking rather than sentimental.

In the seventeenth century, vernacular architecture around New Brunswick was defined by translations of French building methods that evolved over generations. The New Brunswick builders adopted various ancient building techniques from France that had originally evolved out of a scarcity of wood in the homeland. This first system used a *colombage pierroté* and *colombage bousillé*. The former is a mixture of heavy earth or clay, chopped straw or hay, and small stones; *colombage bousillé* is the same but without stones packed in to the clay. This method was used in northwestern France, where many of the settlers of New France originated. Although New Brunswick had abundant forests, the initial settlers used the traditional building techniques that were unsuitable for the Canadian climate.⁵

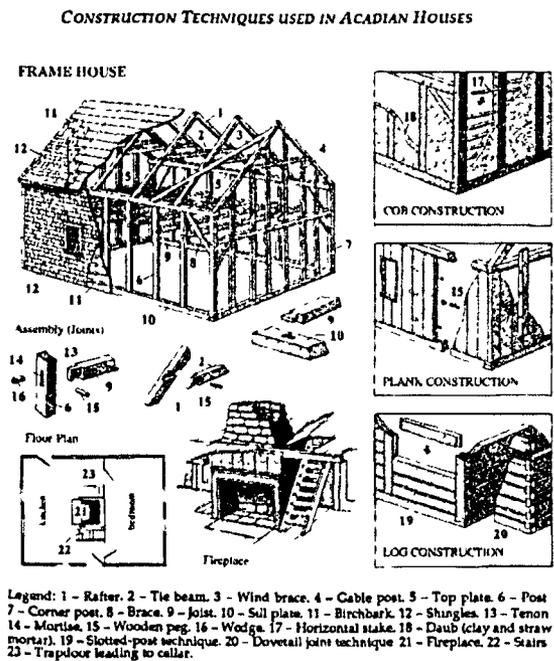
Over time, the settlers made modifications to this technique, transforming the purely French architectural tradition to one becoming uniquely Canadian. The reason for this shift is the maladaptive properties of the *bousillé* (mud and hay infill). The material fell apart after a couple of

⁴ Bernard Rudofsky, *Architecture Without Architects* (Albuquerque: University of New Mexico Press, 1964), preface

⁵ Peter N. Moogk, *Building a House in New France* (Toronto: The Canadian Publishers, 1977), 23-24

winters and spring thaws prompting continual mending. Eventually builders considered walls made entirely of wood as a more viable option.

The transition took place in two phases. The first began by replacing the stones and cob in the spaces between the vertical timbers with additional vertically oriented squared timbers to form a solid wall of wood. The markedly smaller spaces between the logs were chinked with moss, straw and clay. The new wall technique known as *madriers debouts* was an improvement to water runoff and insulation, but still, over time, the chinking would degrade and flake off of the wall. Interestingly this building technique was translated by the later displaced Cajuns, who disassembled the planks from flatboats that floated down the Mississippi River for reuse, which later rendered the name “barge board building”.⁶



I

2

Figure I represents some of the construction techniques used in Acadian Houses: *colombage bousillé* (cob construction), *madriers debouts* (plank construction) and *pièce-sur-pièce à poteaux coulisses* (log construction). Figure 2 is a photograph of the Dugas house, Upper Caraquet, which narrowly survived demolition.

⁶ Stephen J. Kelley, “New Orleans, Hurricane Katrina, and Global Climate Change”, *1st World Conference on Global Climate Change and its Impact on Structures of Cultural Heritage* (Macau SAR China, 6 – 8 May 2008), 53.

The final practical transition is represented by orienting the vertical timbers horizontally, while retaining some of the important characteristics from the two earlier methods. This technique known as *pièce-sur-pièce à poteaux coulisse* is considered a unique innovation to Canadian architecture. Though it still used chinking between the horizontal logs, the method did not degrade quite as quickly as the vertically oriented construction. The method appeared sometime in the seventeenth century and was the preferred method of construction up until the first half of the nineteenth century.

By the early twentieth century and with the “corrosive” appearance of professional architects, vernacular approaches declined in favour of applied academic theory, foreign architectural fads and mass-produced housing models that were look-alikes of existing vernacular buildings.⁷ Unique construction techniques were lost to the popularization of suburban homes, such as the *Craftsman Style House*.

This fragmentation of the local materials and workmanship from the dwelling resulted in generic, low-quality buildings that fail to resonate with people’s dreams and pragmatic use of their dwellings. These building models, dependent on consumption and importation disrupted a vernacular architecture that had evolved over time to fit perfectly into its landscape. Those original buildings are containers of virtue that inspire great craftsmanship.

Vernacular methods of building were phased out in Canada due to improvements in communication that disseminated trendy homebuyer advertisements in fashion magazines and newspapers to previously isolated communities. One of the most popular standardized designs was the *American Foursquare* house (fig. 3). This plain, boxy Victorian-style square plan included the essential living

⁷ John Leroux, *Building New Brunswick. An Architectural History* (Fredericton: Goose Lane Editions, 2008), 131

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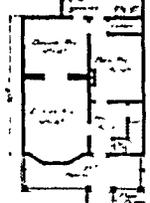
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3

spaces but was mainly tailored for narrow lots to maximize neighbourhood capacity. Some required cast rubble-faced concrete blocks that imitated local stone as an affordable alternative. These houses were “traditional looking” rather than authentic, with hollowed, stripped-down detailing. The *American Foursquare* offered a mail-order option, allowing cities along rail lines to purchase kits packed in to boxcars, numbered for self-assembly. Though highly efficient, this method of assembly insensitively disregards notions of place, spreading generic housing models based on foreign building techniques. Later on, the *American Craftsman*⁸ style caught on as a signature bungalow, which appealed to middle-class families for its modesty and appeal to the growing middle-class. However, this substitution of local living patterns for materialistic and technological alternatives is inadequate to satisfy the profound desires that characterize humanity. The popularization of these placeless housing

⁸ This house style takes its name from *The Craftsman*, a popular American magazine of the early twentieth century, by Gustav Stickley. The Craftsman bungalow actually finds its roots in India in the city of Bengal. The houses there were called *bangla*, and it was the British colonists who adapted these originally thatched-roof houses to summer homes.

styles signaled the beginning of a deteriorating housing tradition and the end of an era of a “rooted dignity”⁹ in good craftsmanship for New Brunswick.

The connection between architecture to local building methods and materials has been largely ignored for the past century and a half. Buildings in New Brunswick continue to import non-sustainable products for cookie-cutter homes, when a truly remarkable model of sustainable living existed before it. To achieve reconnecting place and architecture, it demands repossessing the relationships between hand and head, the process of making, people and their corporeal experience of things, and taking back control of transforming the earth’s materials. This can be achieved if an architectural strategy of *technemerophilia* is adopted.



Towards a Theory of *Technemerophilia*

Good craftsmanship and pride of work is rooted in the colonial village of the seventeenth century and its fragile social order. As covered in the previous section, inventive building solutions in these agrarian communities were conceived out of frugal means and as direct responses to locally available materials, workmanship and climate. Work in early settlements was accomplished by individuals whose skills were applied to a variety of jobs, (e.g. transferring farming skills to fishing or weaving nets to weaving gabions etc.).

An examination of perhaps the most intriguing and unique overlapping of building trade skills upon architecture—the shipbuilders of the nineteenth and twentieth centuries—will help provide a creative source for architectural insight. A theory of *technemerophilia* that bridges Visual Arts professor Barbara

⁹ The term “rooted dignity” is used in Lewis Mumford’s *Sticks and Stones* text, which is meant to represent the agrarian values of small communal life, such as the affection for place-making in the natural environment which derives its form and structure from its own frugal requirements. Good craftsmanship and pride of one’s work was inspired from this microcosm.

Maria Stafford's *amorous attraction* with the concept of "weak" architecture by Ignasi de Solà-Morales will be used to guide this theoretical process in the context of the Fort Beauséjour near Sackville, New Brunswick.

Stafford draws from an immense realm of sources to support her theory, including cognitive science, combinatorics, philosophy, theology, and biology. Linking these realms together, she argues that Western culture at large has succeeded in creatively articulating *differences*, leaving us in a tenuous situation in which our ability to recognize the existence of the degrees of *likeness* is diminished; "We possess no language for talking about resemblance, only an exaggerated awareness of difference."¹⁰ Stafford describes these "differences" as fragmented social discourse, the inability to reach important consensus, the avoidance of self-sameness, the erosion of communal living, and particularly the explosion of discontinuous happenings exhibited as if they have no "historical precedents."¹¹

Stafford uses the analogy of Mary Shelley's *Frankenstein* as a parable of our fragmented condition. *Frankenstein* represents an exaggerated singularity, a character completely autonomous and wholly unique and free. He is without precedent, doomed to loneliness, having no one or no-thing like him at all. The basic conflict for *Frankenstein* is his inability to relate to others, to find his match.

Being so intractably unique, without filiation, he is quite literally impossible to analogize or bring into familial relationship with the genealogical structure of the universe. This laboratory-induced grotesque lived in enforced juxtaposition with strangers. Such alienation proved prophetic. At the close of the twentieth century, the erosion of communal life and the multiplication of bizarre cults encouraging the simultaneous withdrawal into mindless acquiescence and embrace of dissident idiosyncrasy has left us equally incapable of speaking across differences.¹²

Responding to this trend of fragmentation, *amorous attraction* offers to bridge gaps of difference (from a visual arts perspective), by creating compound images from fragments, that in a single

¹⁰ Barbara Maria Stafford, *Visual Analogy* (Cambridge MIT Press, 2001), 10

¹¹ *Ibid*

¹² *Ibid*

representation characterizes the unity of the liminal: “that which is neither this nor that, and yet is both.”¹³ Frankenstein is neither human, for inspiring fear and disgust in humans, nor is he truly monstrous because of his desire for companionship and love; he is a liminal being.

Essentially, *amorous attraction* compresses multiple visual stimuli into a single representation. In concentrating a myriad of fragments plucked from other narratives into a new intensified medley, it renders cooperation between all stimuli in a new chimeric¹⁴ condition. “Because the extrapolated items appear so unnatural as to be shocking (i.e., non-mimetic, not imitating or resembling any one thing in the world) they stimulate our imaginative powers of inference.”¹⁵ Like making collage, isolating the minute components pried away from their original backgrounds serves to dissociate them from their previous context and highlight aspects of their meaning that would have otherwise gone unnoticed.

To further illustrate this condition using some examples, think of heraldic shields (fig. 4), which are compressed emblems that contain disparate symbols interwoven in one unified iconography. Or, as Stafford exemplifies, consider other commonplace rebuses: two eyes without a face set against a stormy background that serves to convey, “sight often gets human beings into trouble,” or an eye embedded in a god-like palm (e.g. *oculata fides*, fig. 5) to mean, “believing cautiously.”¹⁶ The interlocking of these cutout images or objects becomes “recontextualized” into grouped units that allow the viewer to compare different situations simultaneously.

¹³ Barbara Maria Stafford, *Echo Objects: The Cognitive Work of Images* (Chicago: The University of Chicago Press, 2007), 45

¹⁴ Here, it is important to distinguish a possible confusion between the terms chimeric (i.e. of the mythological Chimera) and hybrid. A hybrid is a mashing of two distinct entities into a third homogeneous form. In biological terms, hybrid can be illustrated by crossing a red tomato with a yellow tomato to create one that is pink-orange. Chimeric on the other hand retains traces of its former entity. Indian corn is one such example, having different coloured grains in combination.

¹⁵ Barbara Maria Stafford, *Echo Objects: The Cognitive Work of Images* (Chicago: The University of Chicago Press, 2007), 45

¹⁶ *Ibid.*, 46



4



5

These previously mentioned hybrid figures reveal that one's "parts" are equally not "firmly attached to an invariant identity but scattered and recollectable from our surroundings, and put into relationship to one another."¹⁷ This process is similar to the way the brain assembles fragments of thoughts from a massive archive of non-linear oscillating elements that get quickly tiled together into fleeting aggregates.

In alluding to this merging of science and art, Stafford refers to the manifest ideas of *amorous attraction* in engineer Eduardo Kac's *Genesis Project*, 1999 (Fig. 6).¹⁸ This "event" ties together genetics with computers and biology. The project begins with the artist's translation of a line of biblical text into Morse code. The code was then converted into encoded DNA and injected into bacteria. The result is an interlocked live¹⁹ mosaic of multiple components compressed into a projected microscope slide. Here, a synthesis of multiple contexts exists at the molecular level—one entity enters into another as a new organism.

¹⁷ Barbara Maria Stafford, *Echo Objects: The Cognitive Work of Images* (Chicago: The University of Chicago Press, 2007), 46.

¹⁸ *Ibid.*, 49.

¹⁹ The installation was equally accessible online, allowing users to interact by mutating the bacterial genomes, and by extension, the coded messages with ultraviolet light at the click of a mouse.



6

Leaving the realm of molecular art and returning to architecture, this thesis proposes extracting the scattered parts of boats and translating or converting them into useful elements to build with. The process of taking and compounding fragments that Stafford describes can be translated to architecture where spolia, can be recollected as pieces and put into new relationships with new or existing architecture. Boat spoils are not invariably fixed to boats, and so unlocking their potential for translation and conversion is an intriguing implication for architecture.

The difference is that Stafford's theory is mostly ocular-centric, emphasizing the aesthetic value of making composites. It does not explicitly respond to an engagement of the senses with *genius loci*, which is complemented by the production of "weak" architecture as a sister concept to *amorous attraction*.



In the past century, heroic urban models have obliterated fragile patterns of dwelling in rural communities. Myth, tradition, local materials etc. have been increasingly fragmented from their communities. There is a need for introspection, to look at the traditions and social connections of a place before imposing an aggressive idea that forces change onto a place. "Weak" architecture provides a possible tactic to complement existing social networks, repossess a relationship with the

landscape, and attempt to understand and improve unique conditions of a place rather than dominate it.

Spanish architect and theorist, Ignasi de Solà-Morales' is the first to translate Italian philosopher and politician, Gianni Vattimo's writing on "weak thought" and "weak ontology" into a language accessible to architecture. Producing "Weak" architecture is a constructive process derived from the concept of "weak thought". Solà-Morales proposes a new architectonic experience that is no longer founded on a closed system such as that of the classical age.

The concept of "Weak architecture" proposes a more adaptive approach to architecture than normative "strong" models. It provides a polycentric strategy for architectonic reality: a reading of overlapping different layers, interweaving languages and the outcome of superimposed systems that nowhere touch but move independently according to their own logic.²⁰ This concept is concerned with contextual responses, with real sensory interaction rather than conceptual models. This approach to architecture grows and opens up from the detail to the macro cosmopoesis, rather than closing in from concept down to the detail. "Strong architecture" is in contrast structured to manifest an outstanding singular image, as a consistent articulation of form.

Contemporary spoils are indicators of buildings that are "weak" in Solà-Morales' terms. This is because spoils are not part of a clearly integral whole, but rather as a moving unit loaded with independent meaning that gets transported and superimposed into new contexts. Unlike its contrasting "strong" architecture which might impose overarching "strong" conceptual models on regional building traditions, (e.g. *The Five Points of a New Architecture* or the suburban Craftsman-style

²⁰ Ignasi de Solà-Morales, "Weak Architecture," in *Architecture Theory Since 1968*, ed. K. Michael Hays (Cambridge: MIT Press, 1998), 620

house template), various “archaeological”²¹ languages can be unearthed and superimposed to produce “weak” architecture. Creating “weak” architecture is well suited for micro-utopian²² responses to social, historical or aesthetic conditions in architecture. By the act of pirating spoils, a destructive reuse takes the place of extant “strong” monuments.

A further understanding of the concept of “weak” architecture can be explored through Gustave Flaubert’s masterpiece, “The Temptation of Saint Anthony.” In this story, a Sphinx and a multi-headed Chimera confront one another in contentious dialogue through which each monster’s demeanor and literary symbolism is revealed. The sphinx is a paragon of constancy, monumentality and singular language, while the Chimera conversely represents inventive spontaneity and changeability.²³ The two creatures exchange spats of condemnation, with a truce seeming irreconcilable, but over time they reveal their secret longing to unite. This simultaneous attraction and repulsion between the two symbolic creatures spells out the fundamental opposition between order and disorder, wholeness and fragmentary, “strong” and “weak”—all crucial understandings of the “weak” concept of architecture.

Technemeroiphilia is an architectural strategy concerned with connecting and compounding fragments into synthesized wholes (such as the use of spoils). Taking lessons from “weak” architecture, the employment of spoils from boats in buildings creates an interweaving of two independent languages; *technemeroiphilia* creates a fragmentation of the “singular image” of the building. “Weak” architecture is a valuable tool especially where fragile²⁴ rural communities such as Sackville are concerned because it is “strong” architecture that eroded the relationship in this community between boat building and

²¹ Solà-Morales refers to “archaeological” as the experience of the fragmentary. The specific term derives directly from French post-structuralism, mainly the writing of Michel Foucault and extended by the work of Jacques Derrida in the analysis of literary communication as a process of deconstruction. Archaeology is meant to describe our reading of the past as an interpretation of the fragments one would unearth in an archaeological dig. We cannot read the past as one linear story that involves every fragment with the same voice, but as individual narratives in concert with each other.

²² Colin Rowe and Fred Koetter propose a shift away from the disinfected Ville Radieuse of the Modern Project, a disintegration of utopias towards a necessary understanding of cities as a multitude of micro-utopias, in their “Collage City”

²³ Mark Jarzombek, “Ready-Made Traces in the Sand: The Sphinx, the Chimera, and Other Discontents in the Practice of Theory,” *Assemblage*, No. 19 (Dec., 1992), 74-75

²⁴ In some texts, the term “weak” is substituted with “fragile” to avoid the negative connotation implied in the former

architecture in the first place. *Technemerophilia* is a way of protecting meaningful traditional building methods by unearthing valuable aspects in a contemporary community and reusing them; elements judged unworthy of reviving are left buried.

To help wrap the preceding notions into a unified concept, the neologism *technemerophilia* is used in this thesis as a specific term that bridges the theory of *amorous attraction* with “weak” architecture.

Deconstructing this new word, we come to three primary Greek roots: *techne*, *meros* and *philia*.

Technology, from its root meaning of *techne logos* can be taken to mean, “knowledge gained in the making,” through craft, creation or production²⁵. *Meros* originates from an obsolete but more primary form of *meiromai*, “to get as a section or allotment”. It can also mean to take a small part, an individual part or detail, or one of the constituent parts of a whole.²⁶ Together, this can come to mean, the love to take a small part of *techne* or expertise. Infusing Stafford’s theory of *amorous attraction*—generating composite images from visual fragments—*technemerophilia* is, *the love to take a small part of techne or expertise to create composite solutions*.²⁷

The theory of *Technemerophilia* will form the creative and theoretical basis for reconnecting the fragmented relationship between boat building and architecture. Implementing spoils from boats into buildings will create inventive and surprising building details and technologies that are drawn from unique precedents in the existing vernacular architecture of Sackville, New Brunswick.

²⁵ This is also the common definition of *tact knowledge*, that is, knowledge gained through tactile and empirical experience

²⁶ Thayer and Smith "Greek Lexicon entry for Meros," The NAS New Testament Greek Lexicon, <http://www.biblestudytools.net/Lexicons/Greek/grk.cgi?number=3313&version=nas> 1999

²⁷ Special thanks to Associate Professor of Greek and Roman studies D. G. 'Josh' Beer of Carleton University, who assisted the author in formulating the term *technemerophilia* for this thesis



CHAPTER 2

The Disposition of Spolia



Proposing Contemporary Spolia

Perhaps, today, we need to gather the fragments of our present and clumsily construct with them our 'new churches,' as was done in the fifth century, which used fragments of ancient architecture as a construction material that was partly gifted with a discourse.²⁸

The trouble with *spolia* is that it has a negative connotation. In pedagogical disciplines, *spolia* or *spoliation* connotes spoilage, pillaging or ruination. In medical terms in the eighteenth century, *spoliation* referred to robbing the blood of too much of its red globules;²⁹ in legal terms, specifically regarding seafaring matters, it meant the destruction of a ship's official papers, an act which inferred condemnation in every European maritime law court.³⁰ Today, we are most familiar with the art historical term³¹ *spolia*, which originates in the Italian *spoglie*. To art history Professor Dale Kinney it implies, "a violent removal from a violated source, a rape of the classical past."³² In academic discourse, *spolia* historically maintains very few positive attributes³³, despite holding a rather different status in Medieval building practices

As early as the 4th century, Rome had begun formally conserving and reusing pieces of its civic buildings and the spoils (of war) from conquered regions. Architecture was judged worthy of conservation because it was a repository for Roman triumphs, building traditions, and tributes to builders of the past. Buildings were always dismantled for reuse before ever being demolished. For the Romans, waste took on a whole different meaning; garbage represented the stuff in trash bins,

²⁸ Vittorio Gregotti, *Inside Architecture* (Cambridge MIT Press, 1996), 30

²⁹ Gooch, Benjamin, *A Practical Treatise on Wounds and Other Surgical Subjects 1767* (London Richard Taylor, 1831), 233

³⁰ William H Smyth, *Sailor's Word Book* (London Blackie and Son, 1632), 644

³¹ B Brenk, "Spolia Damnatio and Renovatio Memoriae," *Memoirs of the American Academy in Rome*, Vol 42 (1997), 120 Recent studies of spolia have emphasized the connotative traces of the word's original meaning, "spoils" or war booty, an extension from "hide," the skin that is stripped from an animal as armor is stripped from a defeated opponent In modern usage, its relation to art is metaphorical

³² Dale Kinney, "Roman Architectural Spolia " *American Philosophical Society* 145, no 2 (2001), 138

³³ Dale Kinney, "Spolia Damnatio and Renovatio Memoriae," *Memoirs of the American Academy in Rome*, Vol 42 (1997), 124 The term *redivivus saxus*, meaning "renovated stone", or "reborn stone" is mentioned in one of the fourth-century laws cited in Kinney's paper This is one of the few positive connotation of spoils in Roman documents

and waste was material awaiting reuse. Today, we struggle with this valuable distinction, when both waste and garbage often end up in the same trash bin.

In Medieval construction, Kinney further explains, *spolia* ‘just happened’ as an “*unconscious* imitation by medieval sons of the works of their normative fathers.”³⁴ The language of architecture had been spoken and so using spoils was a tributary nod to their predecessors in the form of verbatim quotation. Spoils were understood as the tried, tested and true building fragments of the past and so nothing was invented in this closed system³⁵, only repeated.

“Verbatim quotation” refers specifically to taking the entirety of marble column capitals, bases and shafts as found and reappropriating them into heterogeneous³⁶ surroundings. The practice of pirating spoils however highlights the ambiguous polycentric quality of spoils as the simultaneous understanding of its original and potential purpose and context.

Using spoils in the early Christian basilicas represented a break in coherence—an aesthetic of rupture—induced by the fragmentation of column orders. This break towards heterogeneity was named with the Latin rhetorical term of *varietas*, which was closely connected to the appreciation of beautiful materials: “In rhetoric *varietas* stands for qualities of variety and multiplicity in eloquence.”³⁷ Classical harmony was also a supreme state, but a shift towards diverse forms was being formulated, most explicitly perhaps in the writing of Augustine:

[. . .] beauty is composite. It is manifest when the “parts correspond and are so joined together as to form one harmonious whole.” This implied that it was not the parts taken in isolation,

³⁴ Dale Kinney, “Roman Architectural Spolia” *American Philosophical Society* 145, no. 2 (2001), 140

³⁵ Until society problematized making as an issue of creativity, this pursuit in spoliation occurred without hesitation

³⁶ Maria Fabricius Hanson, *The Eloquence of Appropriation*, (Rome: Accademia di Danimarca, 2003), 178 “Of course, a new unity was achieved by the combination of diverse pieces, but a unity liberated from the tactility of classical architecture, and rich in pictorial qualities instead. One of the strengths of the new architectural idiom was its power to deconstruct material worldliness and pagan qualities that might be associated with the ancient pieces in their original settings. This aim was achieved through the heterogeneity and ruptures of the structural disposition. Accordingly, conspicuously heterogeneous material was sought after, diversity intended, and variation and obliquity desired.”

³⁷ *Ibid*, 173. In offering a variety (*varietas*) of materials, one begins to appreciate the diversity of high craftsmanship and quality of materials. In uniformity, there is nothing that stands out which as a result, exhausts the eye.

but the combination of them that produced beauty. It was not the formal, actual look of the parts that mattered, not their sensuous, physical materiality, but the order that resulted from their combination, a general underlying principle, the quality of opposition as such [...].³⁸

Sharing some of the same underlying principles as Medieval spoils, the accumulation of pieces taken from their origins compounded into a new unity resonates with the proposed formulation of *technemerophilia*.

So, what is a *contemporary* use of *spolia*? There are two levels that commonly refer to reuse: recycling garbage, and reusing something that has been taken (*spolia*). Ontologically speaking, reusing spoils is quite different than recycling garbage material; *recycled garbage is not spolia*. Materials or objects that reach value=0 in their lifespan become defined as garbage; these can be re-cycled and made into something usable again, to find new potential meaning. In contrast, spoils never reach value=0 as they are considered meaningful³⁹ from one generation to the next as loaded meaning reused in a new context. In praxis, *spolia* finds potency in “taking”—taking a small part of *techne* (technology) in the form of reused building⁴⁰ elements, while garbage seeks to “find” value in being cycled back into a system. This procedure of taking for reuse is used to develop an architecture of *technemerophilia*.

A contemporary use of spoils is one of reuse (conservation), in contrast to the unanxious imitation as maintained by the Medieval builders (preservation). Preservation is a blocking of change in time where conservation is adaptation with time. This is paramount to the continuation of tradition and

³⁸ Augustine, “Of True Religion,” in *The Eloquence of Appropriation*, Maria Fabricius Hanson (Rome: Accademia di Danimarca, 2003), 175

³⁹ At the limits of meaningful *spolia*, think of John Soane’s house. In the basement, Soane has a beautifully tiled floor that consists of different types of stone, however the most intriguing of the lot are the black stones. Upon restoration of the floor, it was discovered that the black stones were in fact the bottoms of Port bottles that Soane drank. The low material value of the glass bottles might incline one to think that this is an example of recycling, but it is rather one of reuse, of architectural spoils. For each bottle is embedded the memory of a good night with friends and so its subjective value is constantly slightly greater than 0 (however the caveat in this example is that these memories are not easily passed on to further generations)

⁴⁰ “Used building elements” are not limited to simply architectural building elements in this case, but other material as well. Specifically, for the context of this thesis, the implication is that boat material is equally valid as *techne* to be taken

meaning, which prevents the polemic: total anxiety of changing elements of the past (e.g. historical preservation), or forgetting the imbued meaning, forming garbage (often resulting in demolition).

Rather than considering spoils as verbatim quotation of the work of past builders, we should instead reconsider contemporary spoils as *adaptable* quotations, meaning they (their *techne*) can be taken for modified reuse and reinvention to suit new potential applications and architectural possibilities.

Adaptable quotations further emphasize the fundamental ambiguity of *spolia* in a more open, less self-enclosed way by simultaneously honouring past builders' work and incorporating new purpose and application of modified spoils. Consider Sant'Eufemia at Grado (fig.7), where a Corinthian column capital was taken as *spolia* and reused as a holy water stoup. Here, the spoil is not "verbatim" in the traditional sense, but adapted inventively for a new purpose.



7

This thesis contends that a contemporary reuse of spolia is one that encourages introspection that allows for outsourcing architecture, to reuse valuable elements that speak about its place. Boats are an important aspect of Sackville's history that are passed on between generations (if they are maintained); leftover planes, trusses or wine barrels might speak of another community's past ventures on equal terms.

The act of compounding architecture with spoils of non-architectural origin responds to the ideas of *amorous attraction* as plucking a foreign narrative from its source and reusing it as something non-mimetic that is grounded in local building tradition. This act compresses stimuli of the past into its present experience, stimulating our imaginative powers of inference. Introspection of a community's history, responding to the concept of "weak" architecture should serve as a starting point for compounding leftover material.

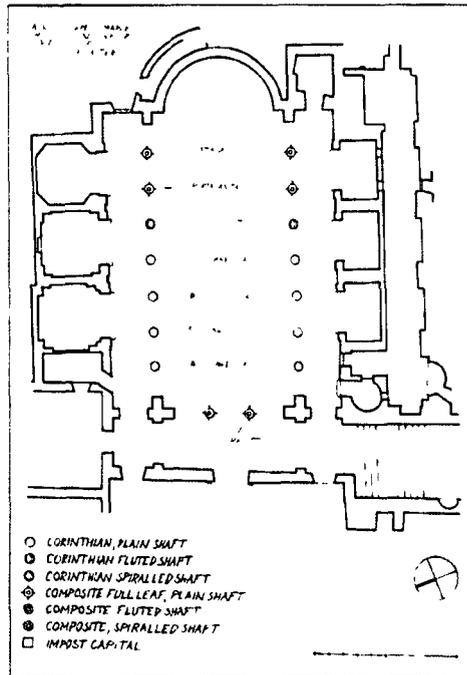


Appropriating Spolia: Classical and Contemporary

A surgical approach must be taken to extract, transport, and appropriate *spolia* into new contexts. In early Christian Rome, the organizing principles of *spolia* generally followed a mutable structure that varied from one church to another. Nevertheless, there were certain recurring tendencies to use quality (of workmanship and age) as an ordering tool used to delineate spatial articulation. Spoils were "appropriated systematically, although the result may not be understood as 'systematic' in the modern sense of the word, but rather as labyrinthine and abundantly diversified."⁴¹ In general, quality of material, workmanship, meaning and content, column orders and pairing were used in the distribution of *spolia*.

For instance, the most precious spoils were reserved for the important areas of the church, such as the choir, or nearest the clergy. Less articulate spoils occupied the areas of the church entry or near seats occupied by common people. The basilica-church of *Sant' Agnese fuori le Mura* in Rome, for example (fig. 8), uses columns of varying quality that culminate next to the triumphal arch.

⁴¹ Maria Fabricius Hanson, *The Eloquence of Appropriation*, (Rome: Accademia di Danimarca, 2003), 291



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Fig. 8: Plan of column arrangement at Sant'Agnese fuori le Mura (625–638). Fig. 9: Red *portasanta* marble columns carrying full-leaf Composite capitals frame this area, with a pair of *pavonazetto* columns adjacent to this, symmetrical rows of *bigio brecciato* columns leading towards the door, framed by simple grey granite columns.

Here, spoils are organized according to the notion of *vetustas*, the quality of age. Architecture made of *spolia* was a figuration of valuing the past, esteemed as being synonymous with preciousness.

The Ionic column order was ranked as taking the most inferior positions, outside or near the entrance, while Corinthian or Composite types were distributed near the choir. The Composite capital—the Italian innovation that combines Greek Corinthian and Ionic orders used specifically in the Roman triumphal arches—is associated with triumph, and so it is placed in important locations in the church.⁴² The Doric order however is hardly valued at all for its arrangement as *spolia*.

A concern for the meaning and content of spoils is represented by the correspondence of the material to important locations of the church. Paulinus of Nola describes the metaphorical meanings

⁴² Maria Fabricius Hanson, *The Eloquence of Appropriation*, (Rome: Accademia di Danimarca, 2003), 121.

of the architecture and its materials, “[...] under the lighted altar a *royal* slab of purple marble covers the bones of saints”.⁴³ Based on the colour and preciousness associated with the difficulty of finding and managing this strain of marble, it was used for the imperial family’s burial places.

The pairing of elements is a more rigorous and consistent approach to managing *spolia* in the early Christian churches. As a general rule, pairs of spoils were taken to mirror each other along the axis of the nave. In the centrally planned Lateran Baptistery, this pairing principle is true, though it is considered an example where a serial coherence was not of interest in building with *spolia*. Two mirrored pairs of simple Ionic columns form a rectangular base in an octagonal ambulatory, with Composite order to the west and Corinthian order to the east. This arrangement is seemingly haphazard, suggests Hanson, though it does illustrate a flexible structure to distribute *spolia* in pairs.

Within the last century, interest in *spolia* has drastically increased in the field of art historical research. Analyzing historical meanings and aesthetics in architectural reuse holds great value for introspection into our own relation to building tradition and history. Corresponding with the early Christian disposition of *spolia*, a contemporary method will loosely articulate some of these tactics of employing *spolia*, but will operate mainly on the flexible production of superimposition.



Technemeroptilia expresses a certain measure of honouring the past, as an “unearthing of archaeological meaning,” that inserts fragments from one context into another. Superimposing layers of *times* onto a place is one of the central processes in the production of “weak” architecture. The accumulation of such discontinuous *times* expressed through *spolia* creates a heterogeneous buildup of historical strata that informs a compressed reading of reality. This renewed fascination with the past can be traced to similar attitudes in early Christian Rome, as observed in this chapter so far

⁴³ Maria Fabricius Hanson, *The Eloquence of Appropriation*, (Rome Accademia di Danimarca, 2003), 122

Solà-Morales describes superimposition figuratively as, overlapping layers that do not make contact but come close to one another. As it concerns *spolia*, Solà-Morales' statement of superimposition is translated literally, here; the spoils from one *time* will inevitably come into contact with another layer, whether old or new. Physically superimposing two different languages as it seems fit in the architecture, will start to accumulate insights into a place and its history for future generations.

The methodologies of ordering *spolia* developed by the early Christians will be mostly rejected to allow for a proposed open, adaptable appropriation of contemporary *spolia*. This is because boat spoils need to be appropriated on the basis of material effectiveness, rather than by conceptual models. The material properties of leftover wooden boats differ drastically from the more durable spoils of antiquity, so the conditions of extraction and selection need to be reconsidered. Unlike marble or granite, which are more consistent in preserving material value, boats that are salvaged from the depths or from beaches suffer corrosive environmental weathering effects. They are subjected to a more severe process of atrophy than marble, and so one is forced to pick and choose between a proportionally smaller and inconsistent palette of reusable boat parts.

Larger structural pieces like the keel and the hull's beams for example, are usually the only substantial reusable parts (parts that scarcely reveal quality comparable to marble capitals). The most sought after material, exterior wood planking—which is quite often in the most dilapidated shape of all—manifests *vetustas* unlike any other aspect of the boat, if salvageable. However, the planking is usually fixed to its bent shape, impossible to re-steam and bend back to its original straight form; this makes it extremely difficult to work with and translate to architecture; the reality is, boat spoils can be slim pickings. Based on these limitations in the extraction of boat spoils, the approach of taking *whatever* is considered useful and meaningful from boats is necessary.

By rejecting the original criteria of appropriating *spolia*, boat spoils need to be accepted or rejected based on a discretionary participation with the object. To reuse boat spoils effectively, they have to be assessed for their transformative potential, extracting what is useful and meaningful from the source, and reimagining its new potential use. Upon doing so, these existing fragments can be reinvented and superimposed with architecture in their new heterogeneous functions.

In the architecture of *technemerophilia*, appropriating spoils depends on case-by-case inspections of the material's potential for reuse as a way of superimposing old fragments on new architecture.

Superimposition maintains a balance of existing fragments converted or translated to new uses, maintaining the simultaneous reading of the past and the present. Reality emerges as a continuum in which the *time* of the new architecture and the *times* of external objects are overlaid in one composite experience.



Frugality

*The typical Canadian trait of modesty is deeply entrenched in New Brunswick, as is the quality of frugality. But if we embrace this mix of utilitarianism with a yearning for meaning, we can transcend our transient and sometimes mental existence and reach for the eternal.*⁴⁴

If we are to discuss *spolia*, we must situate why it has become such an important concept in the contemporary discussion of architecture. The immediate value of using spoils lies in its inventive reuse of waste materials and resources. It symbolizes a new trajectory towards long-term resourcefulness, and the responsible management of economic and material means. Frugality, and *spolia* therein, hold the capacity to reduce materialistic decadence and wasteful lifestyles.

⁴⁴ John Leroux, *Building New Brunswick. An Architectural History* (Fredericton: Goose Lane Editions, 2008), 12

This material resourcefulness inherent to frugality is one of the oldest human qualities of ingenuity. The capacity for restraint summoned by frugal living is deeply rooted in our past but has become popularized in recognition of growing economic and environmental stretch marks. Mapping its origin, frugality can be traced to many religious teachings⁴⁵ that discourage excess and acquisition, encouraging restraint instead. By definition, it is an exercise of acquiring in a restrictive manner, and resourcefully reusing what's available to reach long-term goals.⁴⁶ Though frugality is most often associated with a Scrooge-like character bent on monetary gain and avarice, it is in truth a way of life⁴⁷ in many cases, particularly in rural maritime communities where a "throw-away mentality" is unendurable

Life in the Depression provides examples of frugal sensibility. During this time, an outbreak of arson on Mount Allison Campus in Sackville razed three buildings, including the main Centennial Hall. The disaster stretched the institution's limited funds but what is remarkable is that the community and campus were able to come together and rebuild a modest and frugal renewal out of the left over pieces of the fragmented buildings, using the stone foundations and walls.⁴⁸

Alternatively, frugality can be understood as limiting the use of resources, as opposed to reuse. "No matter how efficient, buildings represent sizeable mobilization of both natural and financial resources. Therefore, the most significant decision with respect to *frugal* design is whether or not to

⁴⁵ First Nations people inhabiting the lands around New Brunswick used to maintain "Miserable as we seem in thy eyes, we consider ourselves much happier than thou, in this we are content with the little we have" (Micmac chief), in John L. Lastovicka et al, "Lifestyle of the Tight and Frugal Theory and Measurement", *The Journal of Consumer Research*, Vol 26, No 1 (June 1999), pp 86

⁴⁶ John L. Lastovicka et al, "Lifestyle of the Tight and Frugal Theory and Measurement", *The Journal of Consumer Research*, Vol 26, No 1 (June 1999), 87

⁴⁷ In many cultures, waste is an abundant and important dimension of daily life. It has always been a source of cultural understanding and social organization. In India for example, food was rarely wasted—any leftover meals were fed to dogs, or to roaming cows. Today however, many families have attained wealth and with that, refrigerators are more prevalent, which were previously non-existent. Of consequence, food is quicker to waste and the structure of its distribution is disrupted. Now, because leftovers are not fed to dogs, people are purchasing pet food, which is also an alien product to their society. Waste is often a built-in feature of culture that can be organized for positive use.

⁴⁸ William B. Hamilton, *At the Crossroads: A History of Sackville New Brunswick* (Kentville, NS: Gaspereaux Press, 2004), 167-8

build at all.”⁴⁹ This understanding of frugal design is used by Brian Mackay-Lyons’ architectural practice. Many of his projects are funded on a “pay-as-you-go” system, where owners initially invest in roofing over a basement where they live until they can afford to build more of their house.⁵⁰ The Howard House in West Pennant, Nova Scotia, reflects this rural economization. Small additions can be made in cautious meditated moves.

Reusing or recycling what’s available before buying something brand new is the usual way of acquiring materials or goods in small communities such as Sackville. “If it’s broken, fix it.” Prior to consumerist lifestyles, people simply made do with whatever materials they had and in doing so, produced less waste.⁵¹ In some cases where individuals’ skills permitted, a do-it-yourself approach was taken to create a *bricolage* of available pieces. Sociologist Martin O’Brien writes about the relationship between *bricolage* and waste:

Part of this history of ‘trash-making’ is a story of the death of the *bricoleur* [...] and the birth of the consumer-disposer—the person who, destructively and belligerently, eradicates potentially reusable materials and discards what are potentially valuable resources [...]. Gone are the skills, the know-how and the social contexts supporting the repair and restoration of the lost objects of desire that now comprise the contents of the throwaway society’s massively monumental landfills.⁵²

The *bricoleur* is a master of frugality who devises inventive solutions out of castaway materials.

Boat building maintains its own tradition of frugality. Wood chips or end pieces produced in workshops are always used for heating or saved for unforeseen future uses. Lofting floors⁵³ are perpetually reused in a variety of ways, by painting over full-scale drawings of boats or reusing the

⁴⁹ Ted Shelton, “Frugality and Robustness,” *Journal of Green Building* Vol 2(1), 2007-1, 110

⁵⁰ Thomas Fischer, “Folk Tech,” *Progressive Architecture* Vol 76 (8), 1995-8, 63

⁵¹ Martin O’Brien, *A Crisis of Waste? Understanding the Rubbish Society* (New York: Routledge, 2008), 31

⁵² *Ibid*

⁵³ Lofting is a process of drawing a boat at 1:1 scale on a plywood decking. Drawing at full scale cuts out the complexity of scaling drawings or of the trial-and-error process of fitting wood joinery. Lofting is considered the best method for building a wooden boat by professional boatbuilders. In Italy, lofting floors are drawn on Genoese stone, painted over with white paint. In maritime Canada, lofting floors are built of timber and painted white for drawing. When the lofting process is complete, these floors are repainted for reuse.

plywood as wall partitions or floor build-outs. Of course, there is also a whole culture of builders who salvage whole boats from the depths or from beaches and over long periods of time replace the damaged parts of the vessel, merging the old with the new.

Spoils hold tremendous potential for insight into local communities. They represent a respect for the past by maintaining superimposed traces of historical narratives worth keeping, and a consideration for the future by reusing waste material, minimizing its destructive impact on the planet. Current day practices of reuse generally do not outsource the architectonic language as a means of offering insight onto a place. Sackville possesses a rich history of shipbuilding, which opens the door to an interesting application of *spolia* to its architecture.



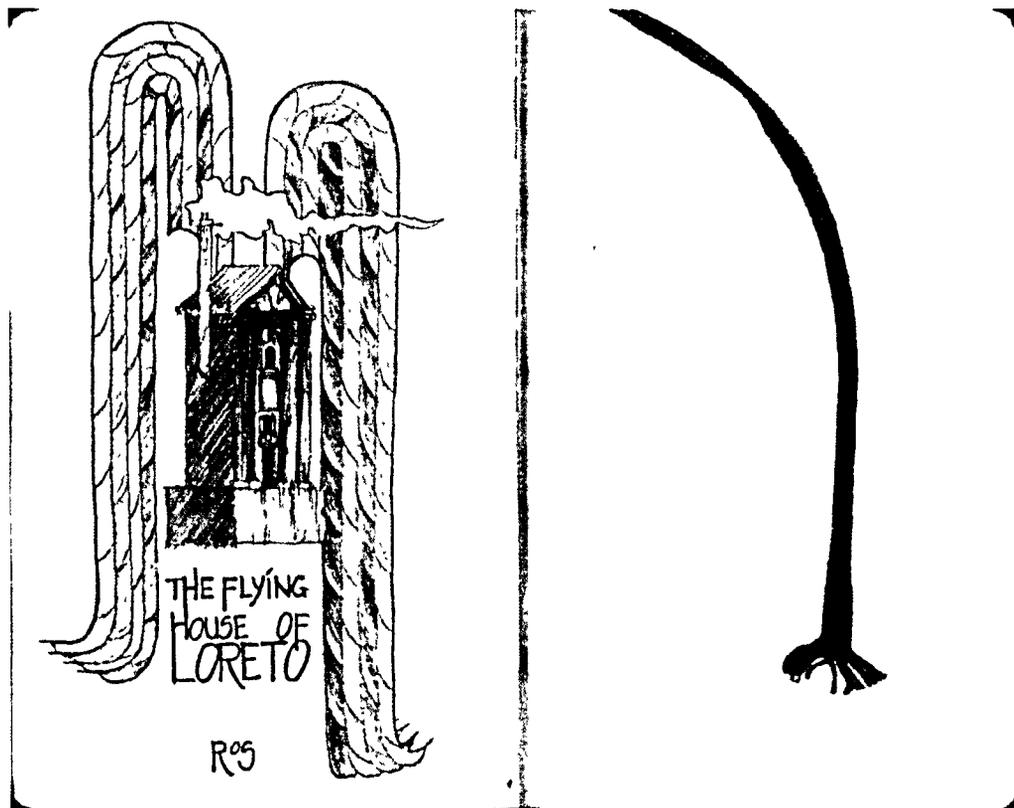
CHAPTER 3

Connective Tactics



The Miracle of the House of Loreto

The Holy House of Loreto is one of the most sacred Christian shrines in the world. It is believed to be the place where the Virgin Mary and Joseph lived, conceived and raised young Jesus.⁵⁴ Joseph was the carpenter of the home; the medieval craftsman's authority was grounded in this humble origin, embracing this as fundamental to the dignity of the craft.⁵⁵ Today, the Marian shrine has a large basilica added around it, constructed by Constantine three centuries after the life of Jesus. From tradition it is believed that the Holy House was transported by angels, from Nazareth to Croatia when it came under threat of destruction in the Crusades in 1291 A.D.⁵⁶ The house relocated then again to Recanti, Italy; and finally a third time moved to its present location in Loreto.



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⁵⁴ William Garratt, *Loreto the New Nazareth and Its Centenary Jubilee* (Whitefish, MT: Kessinger Publishing, 2003).

⁵⁵ Richard Sennett, *The Craftsman* (New Haven & London: Yale University Press, 2008), 55.

⁵⁶ William Garratt, *Loreto the New Nazareth and Its Centenary Jubilee* (Whitefish, MT: Kessinger Publishing, 2003).



II



I2



I3

Figure II is a rendition of the House of Loreto in its original site in Nazareth. Figures I2 is a representation of the flight of the Holy House from Nazareth to its first new location and Figure I3 depicts its integration into the Church of

The process whereby ‘angels’ translated the house is of great interest. We can assume realistically that brick by brick the edifice was dismantled and loaded onto whatever transportation was available, to be relocated and built back into the semblance of its former entity. This practice of disassembly and recontextualization is a fundamental characteristic of the shifting ontological properties of the spoils.

The House of Loreto is like a melting ice cube. It refreezes with a new outward appearance, retaining the same essential meaning. Meaning and memory do not disappear during the change in context—they are reshaped, *translated* into a new physical form. Some aspects evaporate or spill off in the process, but the essential content remains consistent during translation. Similar to the story of the House of Loreto, in this thesis, *spolia* will be taken, translated or converted in order to transport meaning to new contexts.



Translating Boat Spoils to Architecture

“A process of translatio—or a metaphorical process—is exactly what is at stake when building material is removed from its original position, reinvented, and then reinvested with new meanings.”⁵⁷

The term *translatio* (from *transferre*, to carry over) literally means a transferring, or moving of something from one place to another and the turning of (i.e. translating of) something into another language. Translation is a central concept where architectural spoils are concerned because these building fragments must undergo a necessary recontextualization and translation of meaning and utility.

Two types of translations exist in the context of Sackville: “tacit” and “explicit” translations. A “tacit” translation would describe a passive application of building skills, whereas the example of the

⁵⁷ Maria Fabricius Hanson, *The Eloquence of Appropriation*, (Rome: Accademia di Danimarca, 2003), 179

physical building technology being altered to suit the Canadian climate, for example, is an “explicit” translation that achieves invention through skilled building. “Tacit” translations exist all across the Maritimes; Sackville is no exception. Examples can be found in both Nova Scotia and New Brunswick where shipbuilding was most prevalent.

With the decline of the shipbuilding industry, unemployed shipbuilders translated tacit skills to a range of public buildings such as markets, train sheds, mills, churches and exhibition buildings, which used a variety of truss work to support their roofs⁵⁸. The oldest market in North America, the Saint John City Market (fig. 14), employed a queen post system with side bracing whose wooden truss work is credited to unemployed ship carpenters.⁵⁹ The result of applied tacit knowledge of these skilled people is an unusually high level of quality in construction.



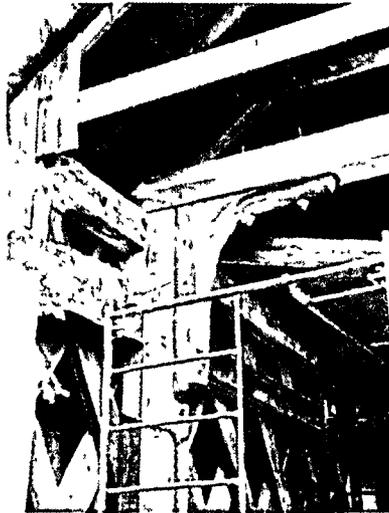
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The City Market was the winning selection in a design competition in 1874. The roof resembles an inverted ship’s keel with hand-hewn timbers and dovetailed joints of exceptional quality and durability. Shipbuilding skills were also influential in the construction of working-class housing communities.

⁵⁸ These buildings were built mostly in St John, where the concentration of unemployed shipbuilders was highest.

⁵⁹ John Leroux, *Building New Brunswick: An Architectural History* (Fredericton: Goose Lane Editions, 2008), 87.

Clustered densely along the shores, places like the Herring Smokehouses in Seal Cove on the island of Grand Manan influenced modest housing designs with their reuse of boat spoils in residential structures. Being an insular community with limited wood resources, this was a clever reuse of material. Near Courtenay Bay in Saint John, castaway ship's knees were also reused in two-storey houses as bracing in the timber structures (fig. 15).⁶⁰ This is one of the few remaining examples of in situ material evidence of that famous shipbuilding site.



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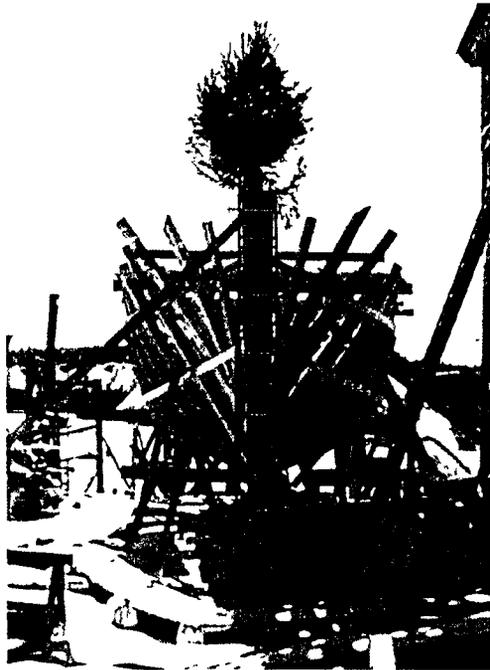
Ship's knees in use at the Milby Covered Bridge in Eastern Quebec. A photograph of the Courtenay Bay Houses was not available, so to illustrate essentially the same application in roof building this is provided instead.

Unique conditions such as these allude to a long-standing connection between boat building and roof making. In Dutch, “roef” is understood as roof but also means “cabin”, or the amalgam of coffin-lid-boat-shed. Historically, these two trades sometimes operated under the same management with the same builders due to the fact that making boat frames was essentially analogous to making inverted trusses, so these technologies sometimes translated from one to the other.

Folklore and tradition comprise “tacit” translations that were carried over from architecture into the boat building traditions. One of the most interesting translations of folklore is the ceremony of

⁶⁰ John Leroux, *Building New Brunswick: An Architectural History* (Fredericton: Goose Lane Editions, 2008), 120

“topping off” (fig.16). This is an ancient custom traced back to 700 A.D. in Scandinavia. People believed that ancestral spirits lived in the trees that were cut down for shelter. To save the spirits from becoming homeless and angry, they would hoist an evergreen tree to the ridgepole of a new building, offering a new home for the displaced.⁶¹ The ceremony is still practiced by many cultures today, but has been adapted to suit changes in building materials. The “topping out” ceremony now usually accompanies the placing of the last beam (for both boats and architecture), and in some cases, flags are used in place of an evergreen tree, but commonly hosts a culinary event.



16

Where Fort Beauséjour is concerned, it is possible that weavers involved in making the gabions would have had a background in sail making. The gabion baskets form the resistant bundles of stone that assist in the making of the fort's earthworks. Garth Wilson, a historian of shipbuilding in Canada contends that the great endeavours such as shipbuilding and fort construction would have involved the community in exchanging ideas of building over the medium of the drawing.⁶² Therefore, in the

⁶¹ “Topping Off” *Carpenter Magazine*, September/October, 2001, 12.

⁶² Garth Wilson, *A History of Shipbuilding and Naval Architecture in Canada* (Ottawa: National Museum of Science and Technology, 1994), 9.

act of community collaboration, *techne* is likely to have been translated from one area of expertise to another.

American historian of technology and science, Lewis Mumford attributes improvements in seventeenth century house building to the success of shipbuilding. “The dwelling house slowly became more habitable in this period: the skill in shipbuilding which every sheltered inlet gave evidence of was carried back into the home, and in the paneling of the walls and the general tidiness and compactness of the apartments, a shipshape order came more and more to prevail.”⁶³ This observation was substantiated by Robert Hale, doctor and military officer from Beverly, Massachusetts who observed the Maritime vernacular architecture first-hand in his journal while traveling Nova Scotia: “Their Bedrooms are made something after the Manner of a Sailors Cabin, but boarded all around about ye bigness of ye Bed ”⁶⁴

Fewer examples exist of “explicit” translations like that of reusing ship’s knees in structural bracing. This opens up an interesting area of exploration for new possible building details that translate physical spoils of boats to architecture. *Technemerophila* proposes to use contemporary *spolia* as “explicit” translations to inspire new building solutions



Case Study: Kengo Kuma and “Particlization”

The work of Japanese architect Kengo Kuma employs some of the principles of “weak” architecture. Though *spolia* is not a part of Kuma’s projects, he values the ideas of “weak” architecture for its

⁶³ Mark Linder, “Mumford’s Metaphors: Sticks and Stones Versus Ships and the Sea,” *Journal of Architectural Education* (1984), Vol 46, No 2 (Nov, 1992), 98

⁶⁴ Robert Hale, *Journal of a Voyage to Nova Scotia*, in William B Hamilton *At the Crossroads: A History of Sackville New Brunswick* (Kentville, NS Gaspercaux Press, 2004), 50

flexibility and contextual sensitivity rather than its monumental conceptual manifestations of “strong” architecture. Kuma’s ultimate goal is to “erase” architecture by process of disintegration and dissolution.⁶⁵ His work consciously fragments materials and masses into “particles” to better relate the building and human body to its surroundings.

I think it is hard to appreciate tactile qualities of materials if they appear as masses. If materials are broken into particles they become more vivid and transient, like rainbows. At times they appear as objects, but with the change of light they disperse like clouds and dissolve like mist. [...] My idea is that architectural forms should be quiet. A symbolic form can kill the environment.⁶⁶

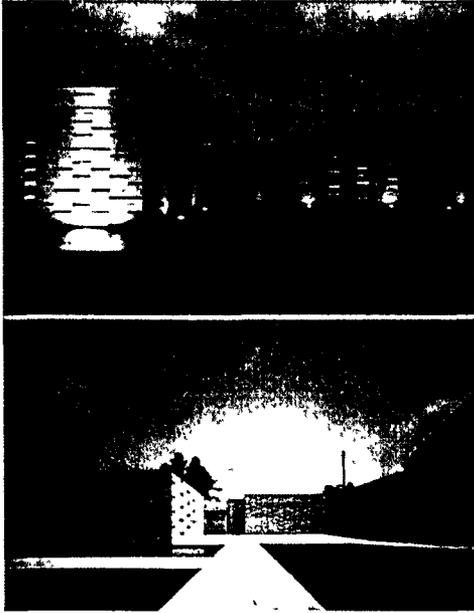
“Weak” architecture is greatly concerned with regional building materials and practices that adapt to the local environments. Vernacular materials are chosen to coexist peacefully, articulated to compliment that which is already there, not conquer its context. In an interview, Kuma even suggests that “weak” architecture can be literally understood as breaking down masses and materials to weaken its impact. “The concrete building is very strong – too strong for the human body. I think that the human body is very weak and fragile. So people can’t feel comfortable in strong places. But if the building itself is as weak as a human body, we feel comfortable.”⁶⁷ The Stone Museum in Nasu, Japan (figs. 17, 18) challenges this concept of weakening the impact of heavy masses and materials.

Using stone for the museum was an unavoidable request from the client, so Kuma used stone from a nearby quarry, (owned by the same client). By stacking stone plates of 1.6-by-0.5-inches by 4.9 feet, these were stacked in such a way to allow gaps between the pieces. One-third of the wall was replaced with void spaces at no cost to the strength of the wall. From the inside, the space is much lighter, and approachable from the exterior.

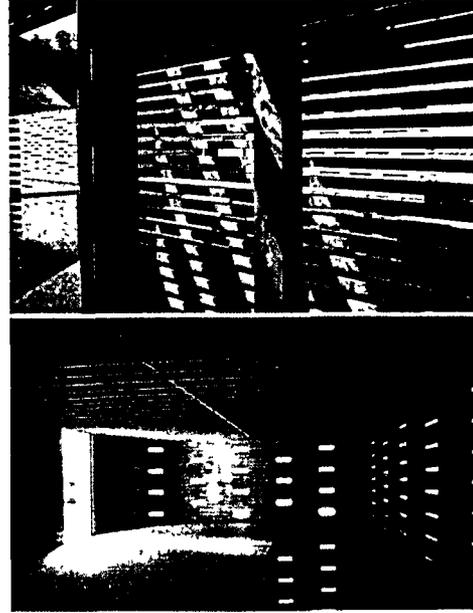
⁶⁵ Botond Bogner, *Kengo Kuma: Selected Works* (New York: Princeton Architectural Press, 2005), 14

⁶⁶ Vladimir Belogolovsky, “One on One: Elusive Architecture Interview with Kengo Kuma,” *ArchNewsNow*, <http://www.archnewsnow.com/features/Feature286.htm>

⁶⁷ Vladimir Belogolovsky, “One on One: Elusive Architecture Interview with Kengo Kuma,” *ArchNewsNow*, <http://www.archnewsnow.com/features/Feature286.htm>



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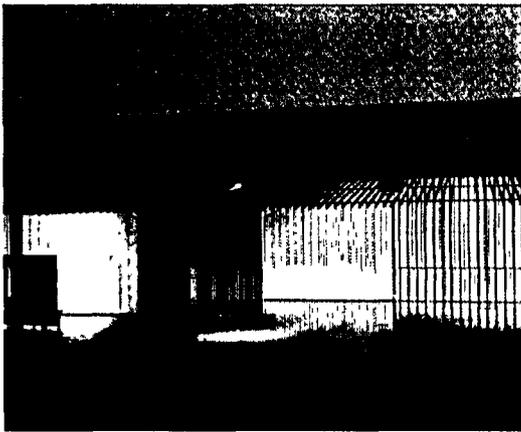
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“Weak” architecture can reveal insights of a place by uncovering its multiple layers of meaning. It can physically unearth preexisting construction methods in old architecture and connect them as integral parts of a finished design. The work of architects such as Kengo Kuma suggests some of the hidden potential packed in to “weak” architecture as an archaeological unearthing of meaning. Architecture can derive sensitive readings of a site in this manner, freeing it from previously closed systems.

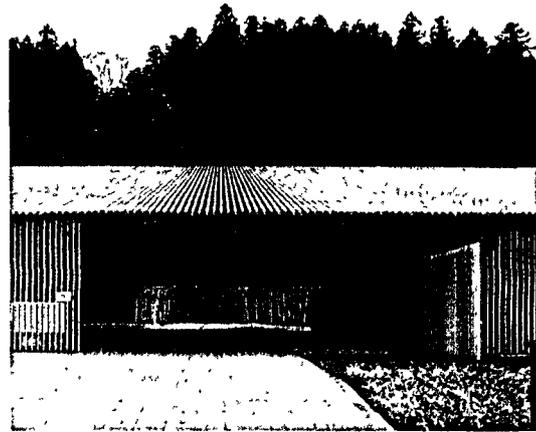
Kuma uses the term “particlizing” to describe his procedure of breaking down natural materials into smaller particles (e.g. Stone Museum). The purpose of “particlizing” is experientially *connective*, to allow light, wind and sound to penetrate the building freely and to relate the environment with the people inside.⁶⁸ These particles are determined based on their scale or size, distance between and from the users, and the speed of activity around the spaces. This approach is not focused on giving priority to plan, shape and elevation, but instead the individual “particles” of which the architecture is made up. “Particlization” thus undermines the monolithic appearance of architecture, which then emerges as a more permeable, phenomenal, and ephemeral presence.

⁶⁸ Botond Bogнар, *Kengo Kuma: Selected Works* (New York: Princeton Architectural Press, 2005), 16-17.

In the Ando Hiroshige Museum (fig. 19, 20), wood slats are used to express “particlization”. In fact, virtually all planes in the building—walls, roof, partitions and furniture are made out of cedar louvers grown on the mountain adjacent the museum. Advances in flammability allowed the abundant use of cedar, and computer-based structural analyses were made to develop a new type of extremely thin louver. Particle surfaces reduce planes to filters that bring the landscape in to the building, and the users out to the natural environment.



19



20

“Weak” architecture in Kuma’s terms is an attempt to bridge the traditional with contemporary innovation. This method uses technologies in combination with local natural materials as a way of fixing the lobotomized⁶⁹ connection between building and its community, using particles⁷⁰.

Kuma’s work is an inspirational point of entry for a sensitive approach to root a building in a fragile community such as Sackville. “Weak” architecture is a shift in perception for architecture. Rather than looking upon a building’s form as a spectator, this strategy suggests looking outward from the inside of the building.

⁶⁹ Lobotomy consists of cutting the connections to and from the prefrontal cortex. This procedure has fallen out of clinical use in favour of various drugs used to treat mental health issues including schizophrenia, clinical depression, and various anxiety disorders. Here the term is used to connote the severance between head and hand, internal understanding and external activity, concealing the way things behave internally.

⁷⁰ Kuma refers specifically to Modernism and the work of Le Corbusier and Mies Van der Rohe who created objects of concrete or glass that despite their visual continuities or transparency did not achieve a fusion with the natural environment, only a complete fragmentation from the land.



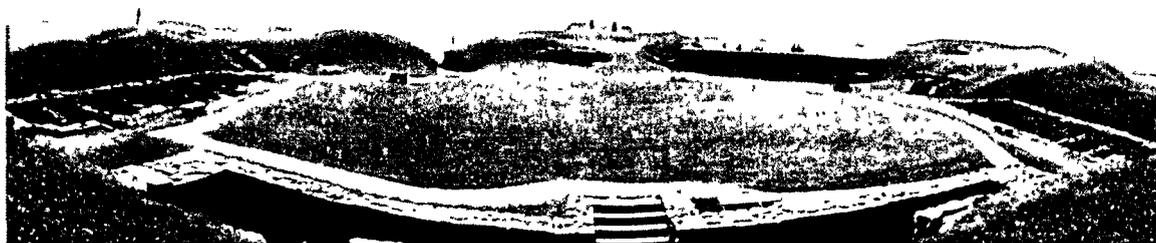
CHAPTER 4

Site



Elemental Consciousness

To understand the past and present landscapes of the site, it is necessary to consider the geography of the area. A number of important natural features have a great influence on the area around Sackville: the Tantramar⁷¹ Marsh, proximity to the Sea, the presence of red sandstone and an abundance of forested land.



21

The Tantramar Marsh's grassy-watery expanses that buffer the riparian boundary of land and sea, meet the ridges to the north, east and west of Sackville. These provided dense forests of red spruce, balsam fir, hemlock, aspen, birch and maple, which later supplied the shipbuilding industry. It also established a source of materials for the Fort Beaséjour's commanding presence over the lowland salt marsh—or *prés salé* in the local language—and the strategically invaluable Cumberland Basin, head of the Bay of Fundy.

Converting *les prés* to tillable land was the first objective for the Acadian colonists who committed two decades of work to initially draining and dyking a few hectares of land. To the surprise of those first stewards, the rich silt deposits, which in some cases reached up to twelve meters deep, provided bursting crops without fertilizer. Upon this discovery, the whole marshland was then systematically

⁷¹ The name Tantramar comes from the French *tantamarre*, meaning “loud noise” or “racket”. This is attributed to the early presence of migratory shorebirds that caused such an intense noise that many early Acadian settlers couldn't sleep at night because of the birds.

converted to agricultural fields. The farms around Sackville were once described by Governor Lawrence as a “northern Eden”, and described by another as “the biggest hay-field in the world”—testament to the rigorous work of the Acadian settlers.⁷² Population, culture, and skill flourished in concert with the rich harvests of the marshland fields—its productive success withheld by the skillful building and maintenance of the dykes.



22

The marshes played a critical role in the strategic positioning⁷³ of the Fort Beauséjour. To establish a military presence in the area of Sackville, the only advantageous location was on the ridges overlooking the marshlands. Christopher Duffy writes on Vauban’s strategic planning that the “strength of marsh fortresses increase with every yard of swampy ground approached upon the fort,” but supporting that, the healthiness of the site was of greater concern in positioning the

⁷² William B. Hamilton, *At the Crossroads: A History of Sackville New Brunswick* (Kentville, NS: Gaspereaux Press, 2004), 65

⁷³ Lieutenant-Colonel Chris M. Hand, contends that the actual siting of the fort was a poor one. It was too far from the water basin to threaten shipping and too far forward on the slope to defend the ridge crest. To do both would have stretched the labour requirements beyond feasibility.

fortification.⁷⁴ Perched on the brow of the ridge, there is good depth (approximately one hundred meters) of well-drained soil.

Leaping forward in time to the Great Expulsion, the Acadians had been forced to leave the dykes in abandonment, and as a result the fields sluggishly eroded and swept away from storm water and tidal flooding over the centuries that followed. They never quite fulfilled their anticipation as “granary of Nova Scotia”⁷⁵ and by the end of World War 2, the dykes were fully discharged. At this time, the Maritime Marshlands Reclamation Act was initiated to preserve the marshlands, which resulted in the repair and construction of dykes and development of the Sackville Community Pasture.

Unproductive marsh areas were converted to habitats for marshland and wildlife. “By 1970 the conclusion was reached that ‘the twenty year war to save the region’s most fertile soil had been won.’”⁷⁶ Today, the fields are protected along with Fort Beauséjour which slowly erodes back into the ridge in this state of historic preservation.

The discovery of high-quality red sandstone drastically affected the fate of the town in its unique way. In the nineteenth century, the Sackville Freestone Company was founded to operate a sandstone quarry. The company began when Charles Pickard discovered a reddish stone outcropping on his farm. Upon further inspection, it was discovered to be a rich and valuable deposit of building stone. *The Canadian Architect and Builder* reported the finding in its trade journal:

The stone extends through 15 to 20 acres of Mr. Pickard’s farm at a depth of 3 to 15 feet below the surface. The beds which lie in a horizontal position are from 4 to 9 feet thick . The stone is a rich shade of light or reddish brown, which combines nicely with brick and will give a building a bright clean appearance. The stone has been pronounced first class in quality.⁷⁷

⁷⁴ Christopher Duffy, *Fire and Stone: The Science of Fortress Warfare 1660-1860* (London: Greenhill Press, 2nd Sub Edition, 1996), 27, 31

⁷⁵ Considering the geographical position of the Fort Beauséjour and its immediate proximity to the Nova Scotia border, the Tantramar Marsh extends far into its neighboring province that shares equally in its productive harvest

⁷⁶ William B. Hamilton, *At the Crossroads: A History of Sackville New Brunswick* (Kentville, NS: Gaspereaux Press, 2004), 199

⁷⁷ Charles Pickard, “Mount Allison Archives” in *At the Crossroads: A History of Sackville New Brunswick*, William B. Hamilton (Kentville, NS: Gaspereaux Press, 2004), 60

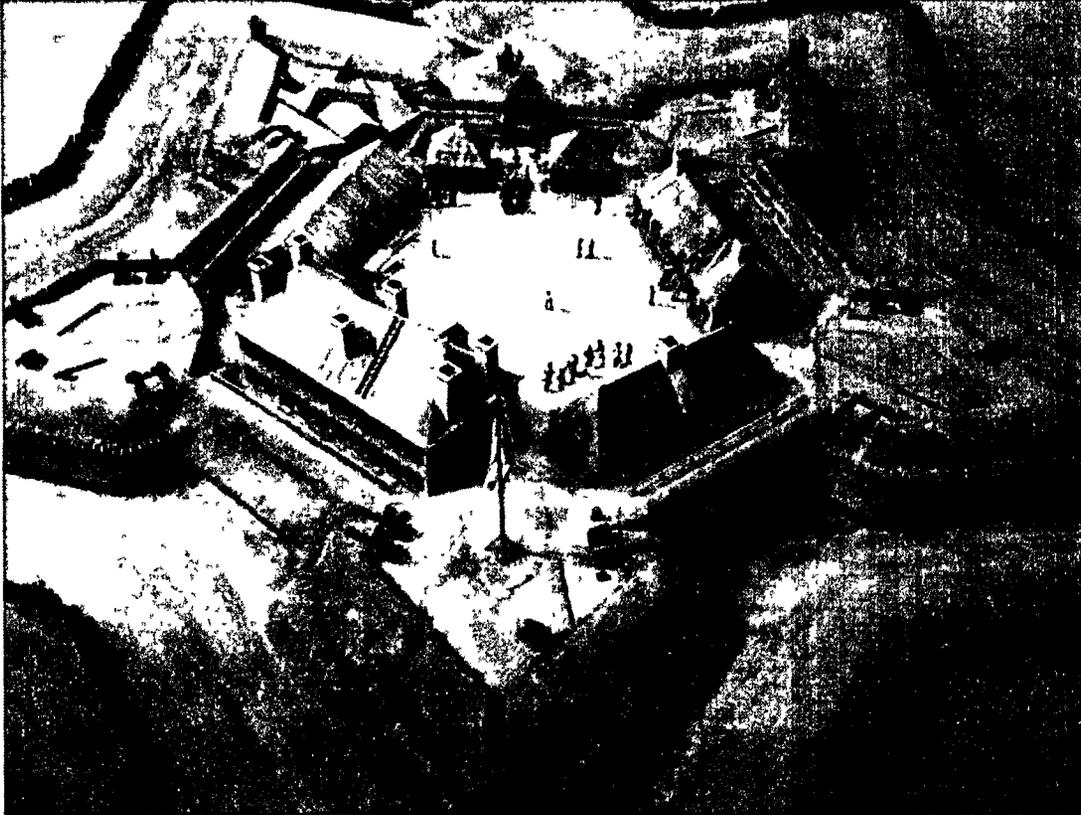
The stone from Pickard's farm would become a defining feature for the community of Sackville. Some of the building stone made its way at first into the men's residence on Mount Allison campus, forging a contract that would last for years to come.



23

Though the valuable sandstone was not used in the construction of the Fort Beauséjour, rudimentary stonework was most certainly a major process in the making of gabions used to build up the earth works of the fortification. This was most likely achieved through forced labour of native Miq'mak and Acadian workers instructed to round up rubble to fill weaved baskets called gabions.⁷⁸ The gabions were then stacked like layers in a cake and backfilled to form hardy slopes defensible to cannon-fire. More sophisticated levels of stone working would occur in the laying of foundations and brick arches within the fort which still stand intact.

⁷⁸ Christopher Duffy, *Fire and Stone* (Vancouver: Douglas David & Charles Limited, 1975), 35.



24

Model of Fort Beauséjour in the Visitor's Centre as it would appear
under French occupation in 1754

Wood was one of the most important materials for the area, harvesting nearby forests to build an ephemeral palisade at the periphery of the earth-works. Small branches were cut to make baskets for the gabions in the fort. The gabions are barrel-like wrappings weaved together using branches like wickerwork. Open at both ends, they are filled with stone rubble, stacked then back-filled. The gabions represent a certain level of building sophistication, requiring skilled labourers in the work of weaving.

Completely overgrown with short grass, the visitor will find little more than orange lichen growing on grey-pink stone foundations, pink brick paths and supply bunkers. These are situated in narrow and low enclosures within the bastions and curtain walls (walls connecting bastions) and in here, the rich smell of centuries-old timber strikes the senses.

Standing at the epicenter of the fort's geometry, one is engulfed in a grassy crater, having no relationship to the horizon, and sharp contrast to blue but often grey sky. The light is often dull because of persistent layers of clouds that are so familiar to Atlantic areas. Standing on top of the earthworks, the wind is more noticeable. One looks across a vast golden marsh basin and muddy expanse of the Bay of Fundy's tidal inlet.



The Geometry of Fortification

Geometry is evidence of civilization. In a shipwreck off the coast of Rhodes, Aristippus the Socratic philosopher noticed inscriptions in the sand of the beach and said to his companions, “We can hope for the best for I see the signs of men”⁷⁹ (fig. 25). Lines as evidence of human presence, but also of high-culture and an instrument of practical utility

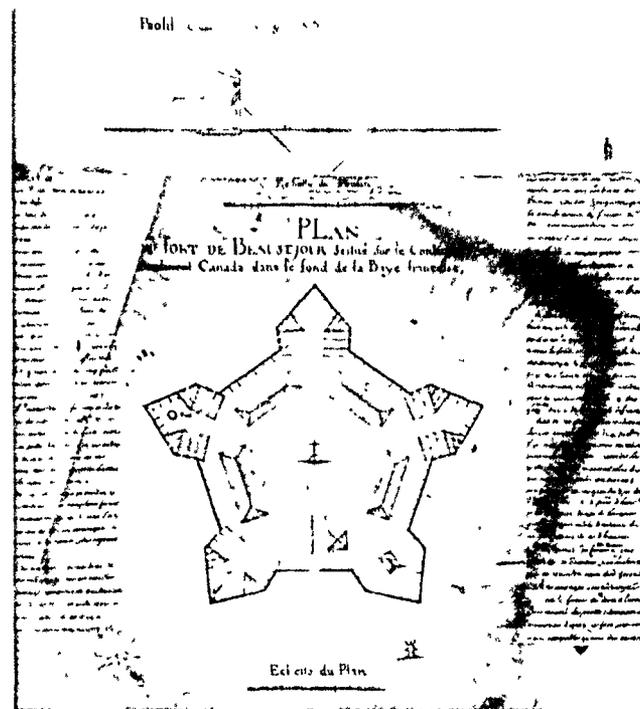


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⁷⁹ J. L. Heilbron, *Geometry Civilized: History, Culture, and Technique* (Oxford: Clarendon Press, 1998), frontispiece

Evidence of human culture in the Maritimes of the New World is found in the lines drawn in the wetland farms of the Tantramar Marsh. Like the old familiar story of the ‘origin of geometry’⁸⁰ in Egypt, the Acadians were equally implicated in retracing the farm property lines flooded by the tides of the Bay of Fundy.

Tracing the geometry of Fort Beauséjour happens to fall between a paradigm shift in architecture and fort design. Previously, fortresses, palaces, and cities were designed—from Filarete to Scamozzi—in the Renaissance utopian scheme of *la città ideale*.⁸¹ Square-, star- and hexagonal-shaped fortifications were built as idealized symbols of the relation between human body and the cosmos. Further, spatial divisions within fortified cities created distinct sections that corresponded to the four cardinal regions of the sky, thus reflecting a cosmic order.⁸² Sebastien LePrestre de Vauban,



⁸⁰ We owe the origin of geometry to the Egyptian tax collector King Sesostris divided all the land among his agrarian inhabitants who retraced the property lines each year they were washed away by the flooding Nile. Those whose lands were washed away by floodwater would calculate any remaining area of usable land and their rent was proportioned accordingly.

⁸¹ Siegfried Giedion, *Space, Time and Architecture* (Cambridge: Harvard University Press, 2002), 42-7.

⁸² Alberto Pérez-Gomez, *Architecture and the Crisis of Modern Science* (Cambridge: MIT Press, 1985).

eradicated these ideals in favour of a scientific rationalization in an emerging Age of Reason. His interest towards impenetrability motivated symbolic geometry to be sacrificed for the sake of defensive advantage.

Pentagonal forts can be drawn in many different ways (about eight different methods). However, the Fort Beauséjour skipped much of the process of relating the fort to the landscape (and astronomical relationships too) by simply using ready-made plans based on a set of standardized rules outlined by Vauban. The result, as Chris M. Hand remarked, was a strategically poorly sited building. It is also void of cosmopoetic meaning embedded in its geometry.

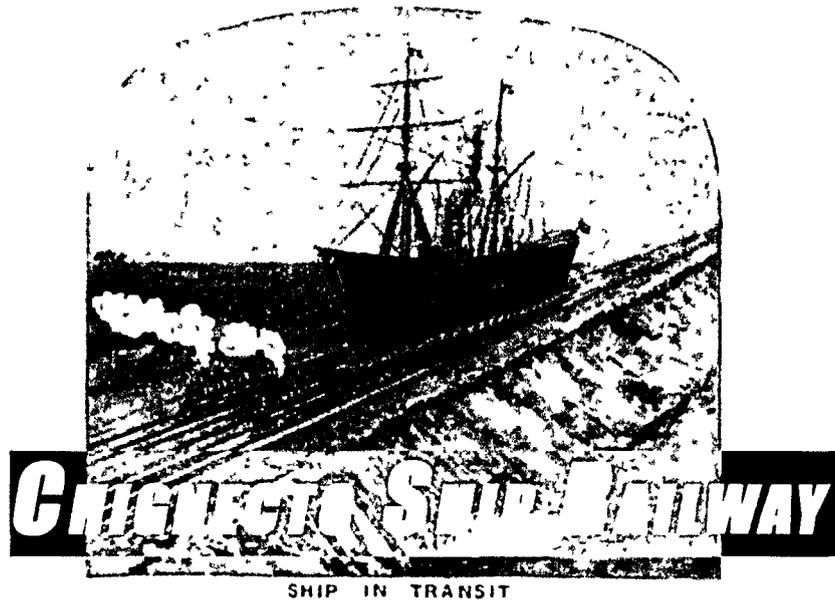


The Chignecto Ship Railway

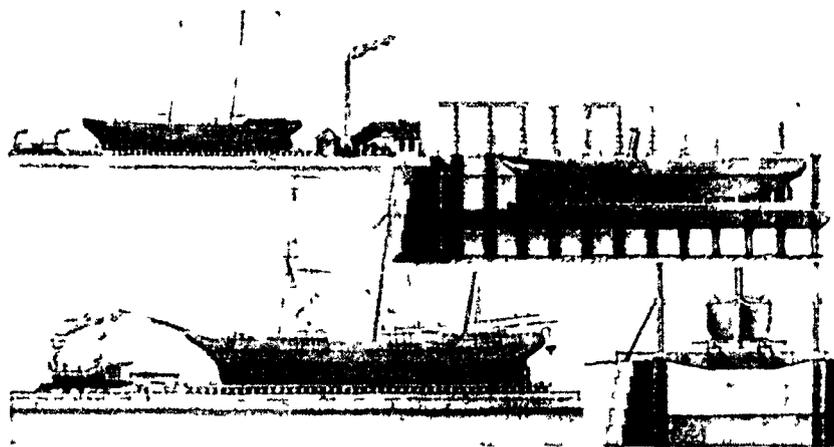
The Chignecto Ship Railway was an ambitious project, led by railway engineer Henry Ketchum that sought to taxi full size ships from the Northumberland Strait at Tidnish to the Chignecto Bay by Fort Lawrence. The five hundred mile journey around Nova Scotia from New England to the St. Lawrence Seaway would have been shortened to only 17 miles. The project was nearly complete by 1891 but then abandoned at the collapse of the British economy and local political disinterest in the venture.

Spoils of the railway and arched bridges were collected for reuse in the visitor's centre and over the years, local inhabitants gradually extracted materials from supply buildings, brick piles, even the stone from the docks at Fort Lawrence. "Some time later even the stones of the great docks were dredged up out of their deep mud covering and taken away. Now nothing remains to show where once so much was, and so much more was expected to be. Nothing but a sea of grass waving in the marsh

wind.”⁸³ To the North, stones from the Tidnish dock were extracted and reused at Cape Tormentine in the construction of a new dock for the P.E I ferry M. V. Abegweit. The rails were ripped up and dispersed for different uses. Today, virtually all evidence of shipyards, docks and the Chignecto Ship railway are gone—dismantled by the public for their own reuse.



27



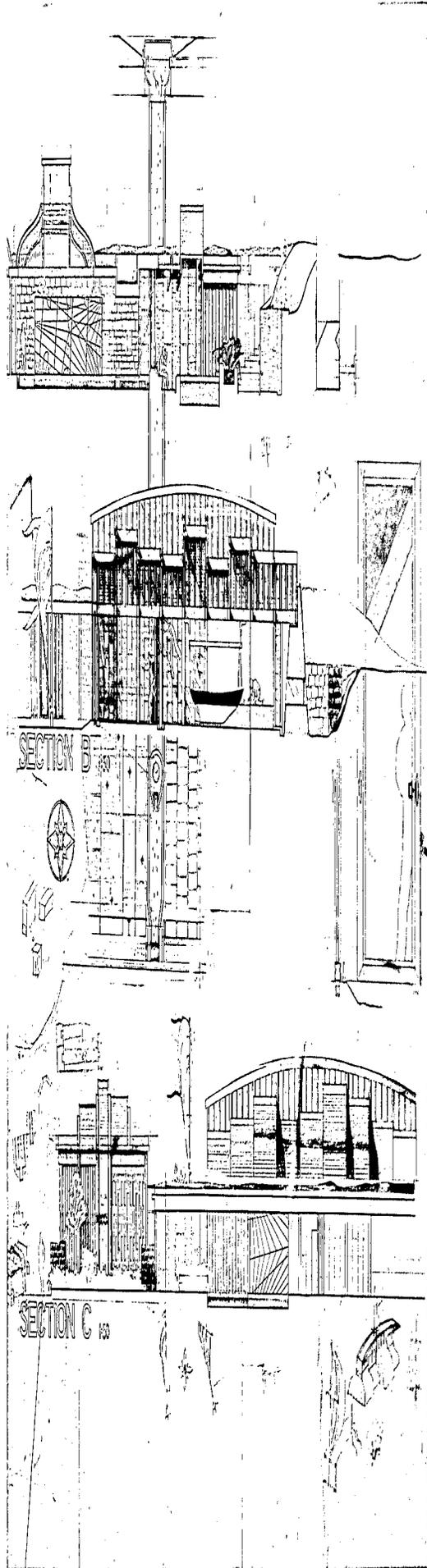
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⁸³ Pearl MacD Atkins, "A Touch of Cumberland History - Chignecto Ship Railway" *The Citizen*, October 25, 1986, Page Three



CHAPTER 5

Design Methodologies





Design Methodologies

This chapter will reveal the design methodologies taken to achieve the theoretical proposition of *technemerophilia* in a boatbuilding and repair workshop situated at the Fort Beauséjour. Methods of drawing and design considerations will be analyzed in order to provide a big picture of the architectural component of this thesis.

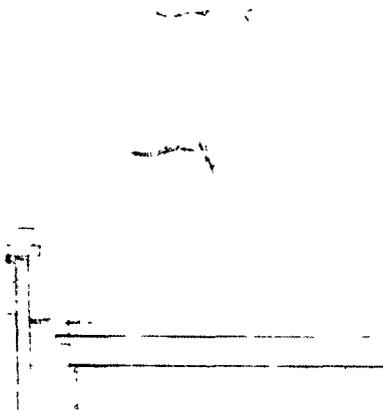


Program

A boatbuilding and repair workshop in the Fort Beauséjour near Sackville will demonstrate the possible imagining of an architecture of *technemerophilia*. This facility is designed for building and repairing small-scale wooden pleasure-craft of a maximum length of 13 meters. As a secondary use, the workshop can house derelict boats awaiting renewal or recycling them as biomass fuel.

Ceremonial Design Considerations

“Topping-out” is an event that characterizes both architecture and boat building, performed by the builders who place the last beam in the structure. In architecture, this is often the highest point of the



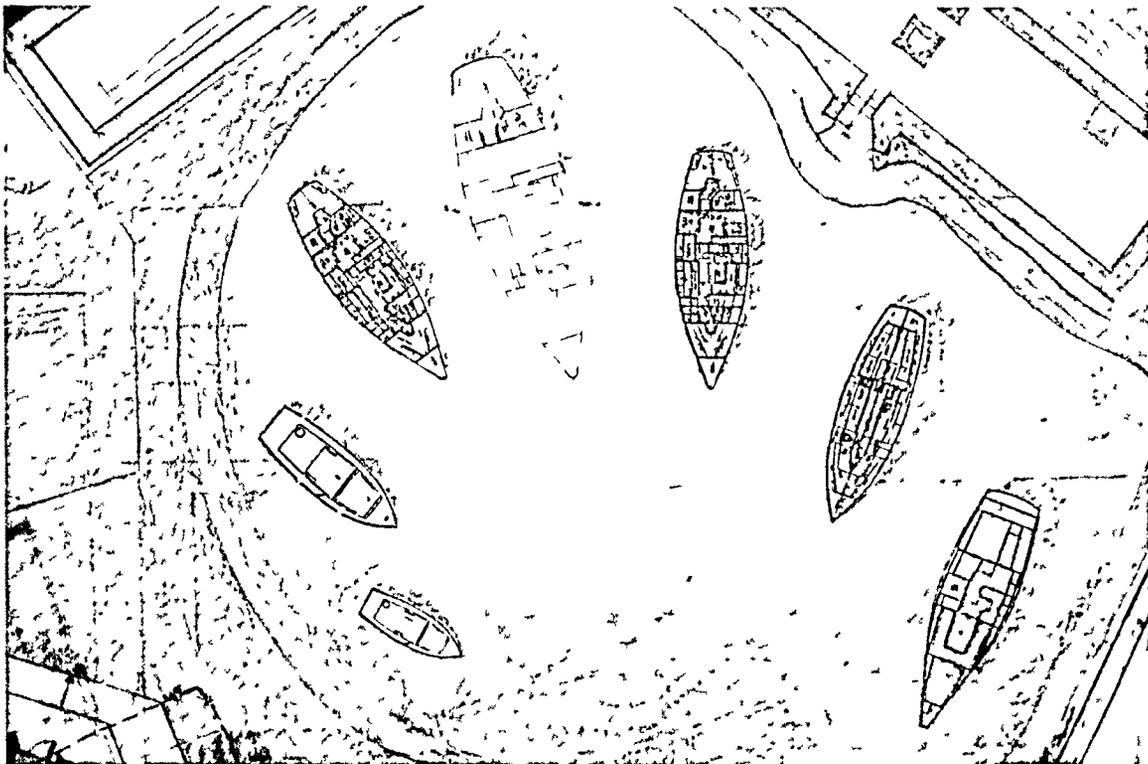
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building that hosts an evergreen tree or a flag and a celebratory meal is often a part of the ceremony. For the boatbuilding workshop, this place is reserved for the last and highest beam to be set above the main workshop space. Leftover sails will be reused as a patchwork flag that will be hoisted and permanently installed in this location. Similar flags will appear once the construction is complete so that the sound of flapping sails is heard throughout.

With such a large green space at the centre of the fort, there is a great potential for boat shows to take place (fig. 32). To suit this kind of temporal gathering, the current entry space to the fort is widened to provide passage. For these events, wooden boats or vessels as large as yachts can be displayed on simple props (usually owned by the boat owner). The bakery on site can supply snacks during the event. With this many people present, there will undoubtedly be individuals interested in exploring the workshop. Large windows in the heavy defensive wall have been designed to allow a peek in to the workshop space, but also visitors are allowed to walk on the roof of the proposed

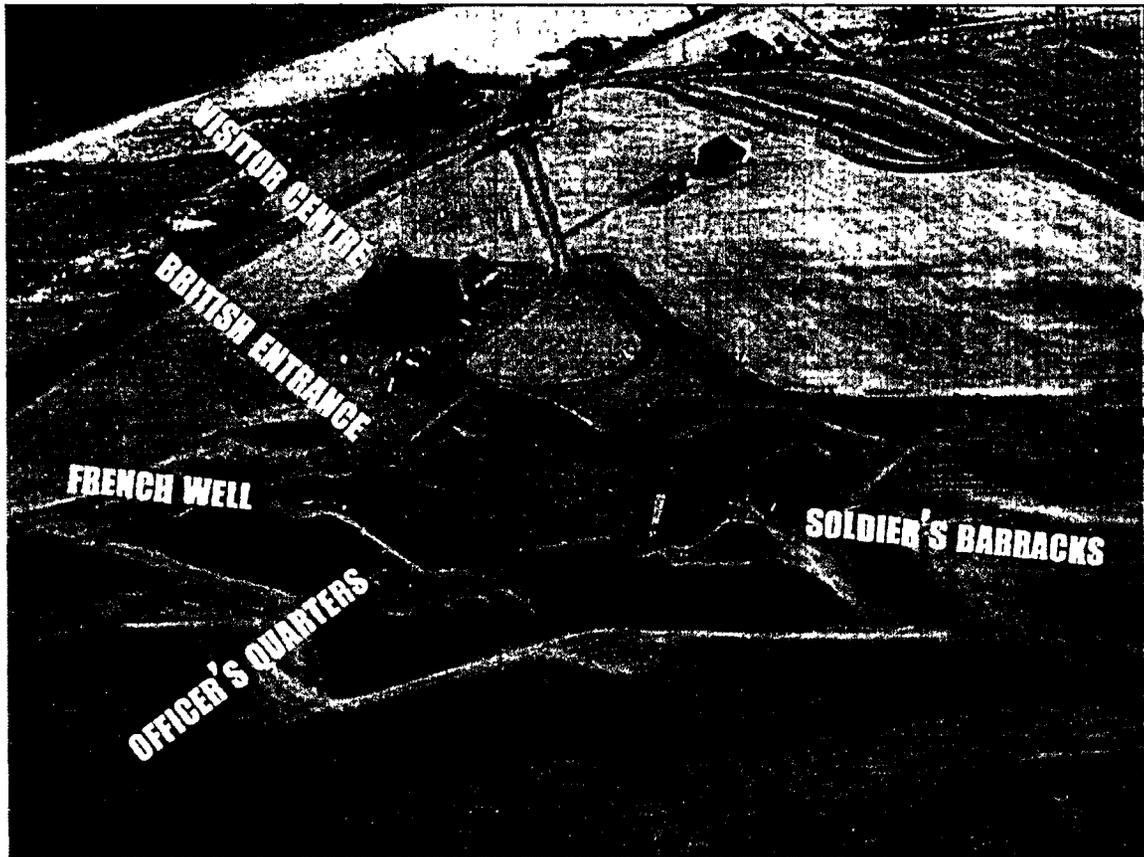


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building and look in to the space from the clerestory windows. Official boat launching is conducted at the shoreline. Boats are moved from their workshop studio space and towed to the shore on an existing road that connects to the waterfront. A firm slipway and space is provided for on looking.

Siting

Locating a boatbuilding workshop in the Fort Beauséjour is a difficult fit. Shipyards generally require immediate access to the shore, constructing calculated slipways for ship launching. Addressing this concern of a lacking presence of water has generated the design of a testing pool near the workshop. This pool is treated like a regular swimming pool, with water-sealed concrete bottom installed with a lift to easily test maquettes and final designs.



33

Though this gesture attempts to address access to water, there still stands the greater question of what is actually keeping the boatbuilding workshop in the Fort? Working with the existing fort

provides a solid base with which to work from—a preserved mass of dormant ruins. This otherwise immutable landscape provides a contrasting backdrop to discuss (and possibly exaggerate) an imagining of contemporary *spolia* inspired by boatbuilding. Boats are mobile, quickly shifting objects that further express this “weak” and “strong” relationship. Approaching the fort from a “weak” perspective offers interesting hidden gems of building techniques that give insight to the place and its history. Practicality may fall short in many respects for justifying its location, but in terms of testing out *technemeroiphilia*, it is an adequate location.

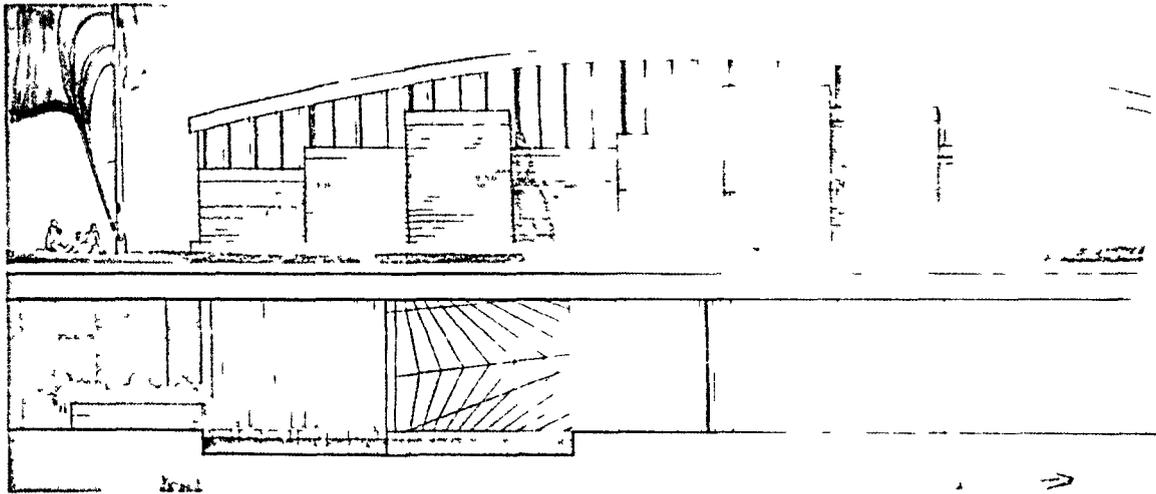
The fort will still function as a place to visit, and the public is encouraged to observe the activities that unfold in the workshops, attend boat shows or launches, and participate in carpentry courses. The Visitor’s Centre will remain unchanged, with exception to adjustments in its parking layout. Currently, a large looping driveway cuts through the south rampart, providing an instantaneous arrival to the fort.

This entrance sequence is tailored for an automobile experience and loses all relationship to experiencing the site first-hand before reading about it in the Visitor’s Centre. The proposed parking will be partially sunken, “erased” in the ground, out of view from the fort, and visitors will be guided along a path made of reused wooden boat planks, culminating at the Visitor’s Centre. The intent of hiding the parking is not purely aesthetic; it is the beginning of “erasing” certain parts of the architecture, in Kuma’s terms. This concentrates the connection of architecture with its landscape. Another concern is keeping the earthworks from eroding. New gabions will be made as retaining walls to hold the soil from seeping away.

Translations of *Spolia*

The most prevailing *translation* of boats to architecture is expressed in the roof system (fig. 34, 35). Here, the structural ribs of several castaway wooden boats will be needed to surgically remove the

structural members for their reuse. First, these hulls are sliced in half along the axis of the keel, using a scaled-up version of a half-hull saw⁸⁴ Removing the planking, the pairs of ribs are copied to make four ribs in total and connected with new structural beam-work to define one roof section. Arranging multiple roof sections in sequence results in a variegated roof pattern, that starts to reveal a rhythm of old and new.

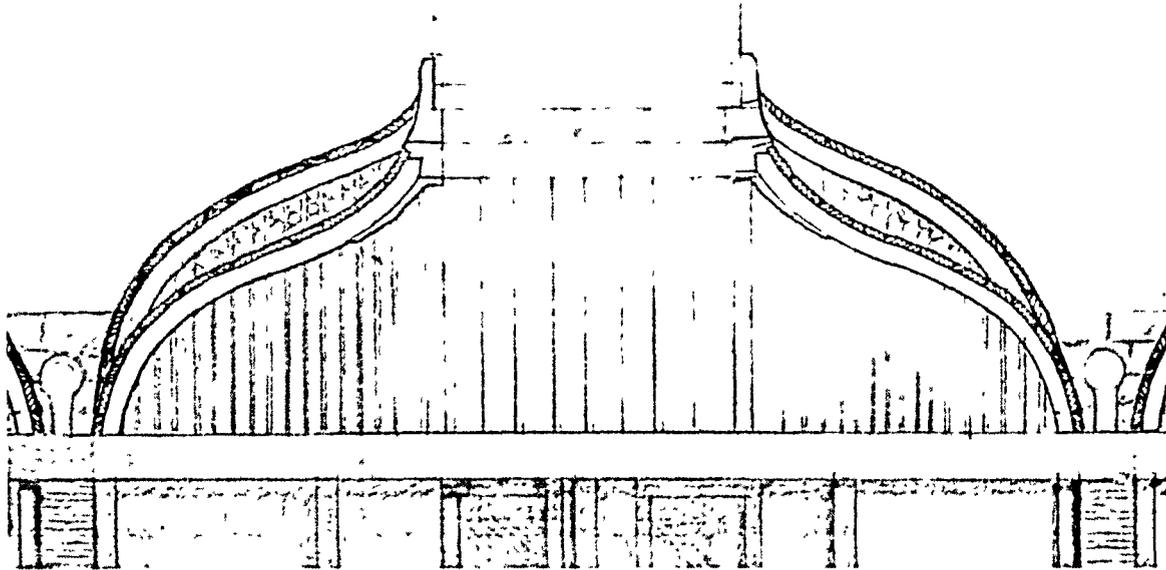


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Using boat spoils in the roof structure starts to reveal composite solutions discussed in the first chapter on *amorous attraction*. The roof is connected analogically to the boat's hull, creating something that is visually unlike any previous roof structure, but connected through the similarity of being roof and boat, a liminal structure, whose boat aspect is tied to the history of the place.

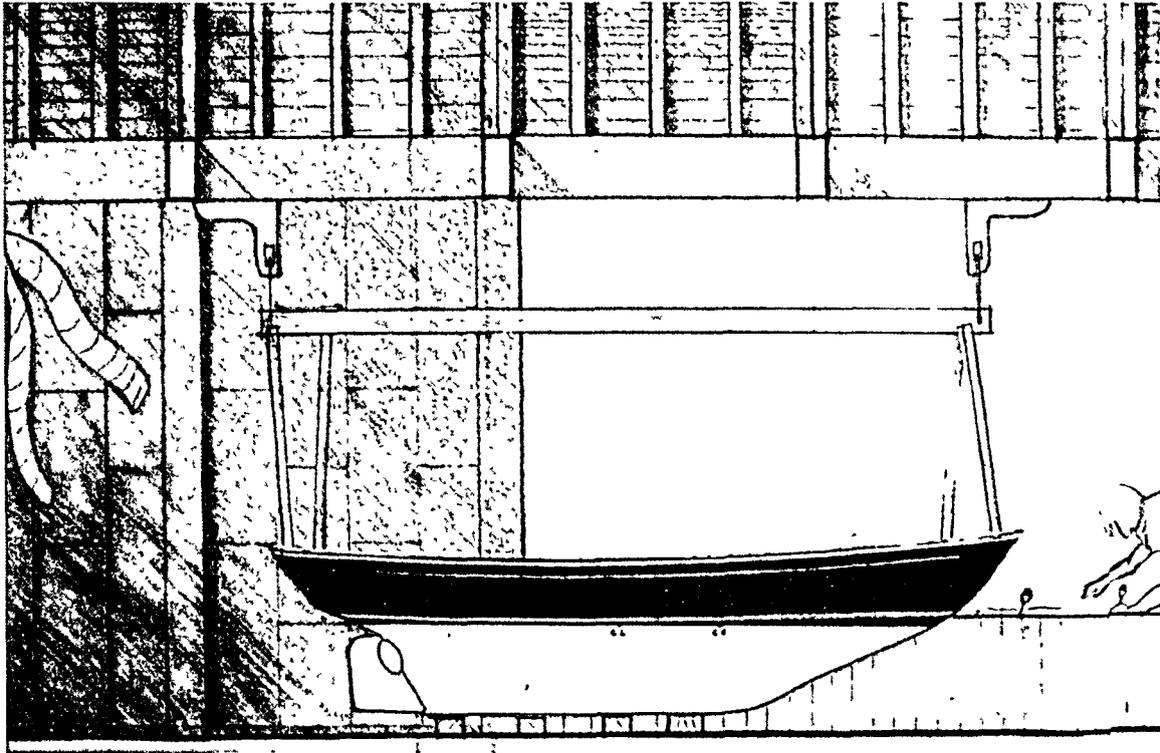
The curved exterior roof surface will be clad in reused and new lapstrake (or clinker) wood planking. Lapstrake is one of three main planking techniques used in boat building and is quite applicable to architecture, sharing similar, if not identical traits as clapboard siding. Acadians and other settlers used this siding method for centuries. Lapstrake is a stretched version of shingle siding, which is also common to the area. Shingles were originally made by cutting leftover wood into shakes, but later mimicked and manufactured with new wood to achieve the same look.

⁸⁴ These cutting devices are normally used for measuring boat maquettes, which are tested for their hydrodynamic integrity or aesthetic quality. Models are cut in half along the keel of the boat and one half of the model is fixed to a plank of wood. Measurements are derived from this reference object in the full-scale production. Full-scale half-hull saws exist which can be applied for salvaging leftover boats.



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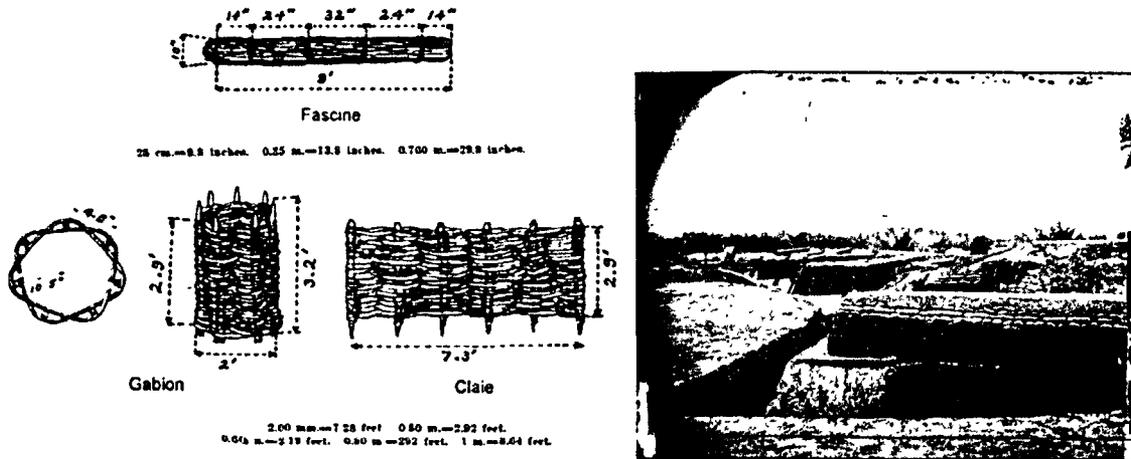
Boats can be built in a mould upright or upside down. When they are upright (keel closest to the floor), small supporting members are needed to keep the boat from falling outward from gravity. Stability is achieved by hanging a light timber beam from the ceiling above the length of the boat, and attaching supporting members from the mould to the boat's gunnels (fig. 36). In many workshops, this wooden member is often fixed to the roof in haphazard ways, often causing minor damage to the existing ceiling. To minimize wear-and-tear on the proposed trusses, movable ship's knees are attached to the lowest beam in the roof truss, and translated into a base that can support the hanging wooden beam used in the boat's framing. Rather than supporting the roof, like the Grand Manan fishers, it instead supports an analogous roof: the boat hull. This subtle detail actively engages



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the worker through reused material as elements that can be controlled by a participant in boatbuilding.

Gabions are weaved baskets that contain rubble used for earthworks (fig. 37). In the Fort Beauséjour, gabions were stacked in layers and backfilled to form earth walls defensible from canon-fire. This economical and durable building method has recently reemerged in contemporary architecture using metal baskets. The boatbuilding workshop will use rope and metal rods filled with stone for structural columns and in non-structural locations, rope and wood sticks. They can be manipulated into variable shapes: small or large baskets, squares or cylinders. Having a sail-making shop onsite, the new gabions will be made and maintained with locally weaved rope instead of branches or reeds



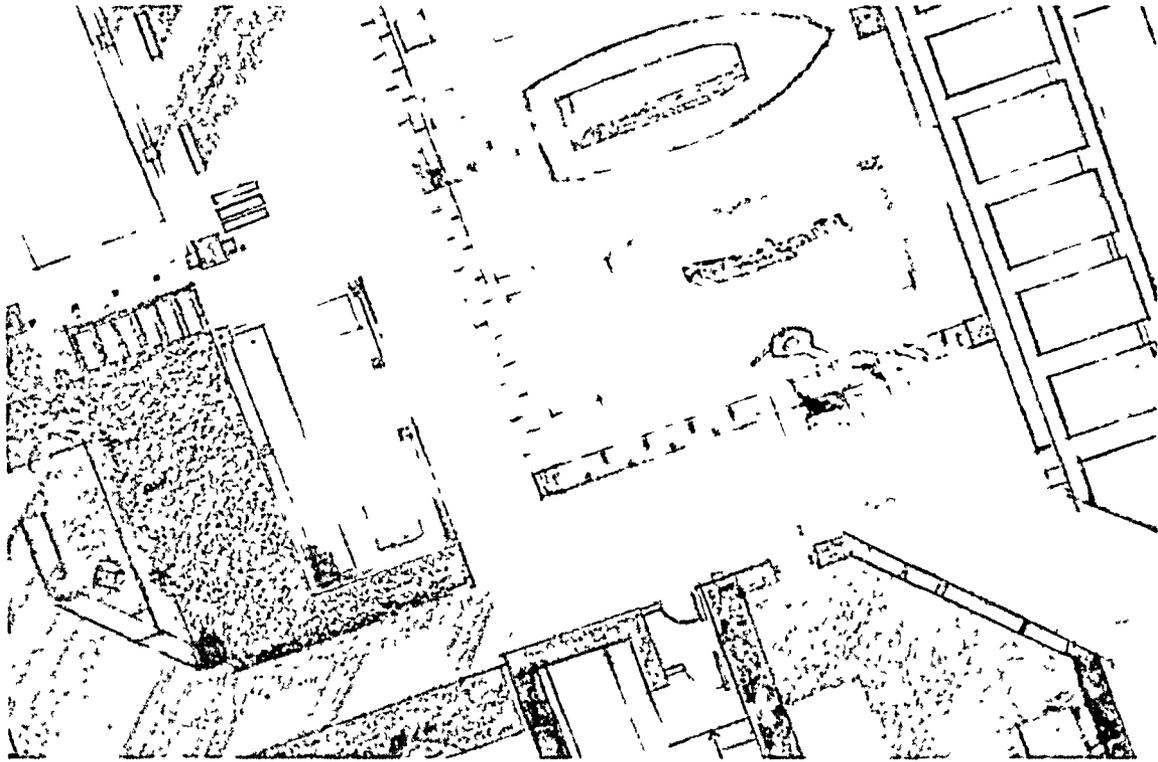
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Figure 38: Gabions are stacked vertically on horizontally oriented fascines in the exposed ramparts of the Yorktown fortification.

that were used in the making of the fort's original gabions. Stone rubble for filling gabions is acquired locally. Gabions are an additional example of applying “weak” thought by unearthing traditional building methods and local materials and reapplying them to suit contemporary applications. The gabion was the point of entry in the architectural project in working (from a “weak” perspective) with spolia.

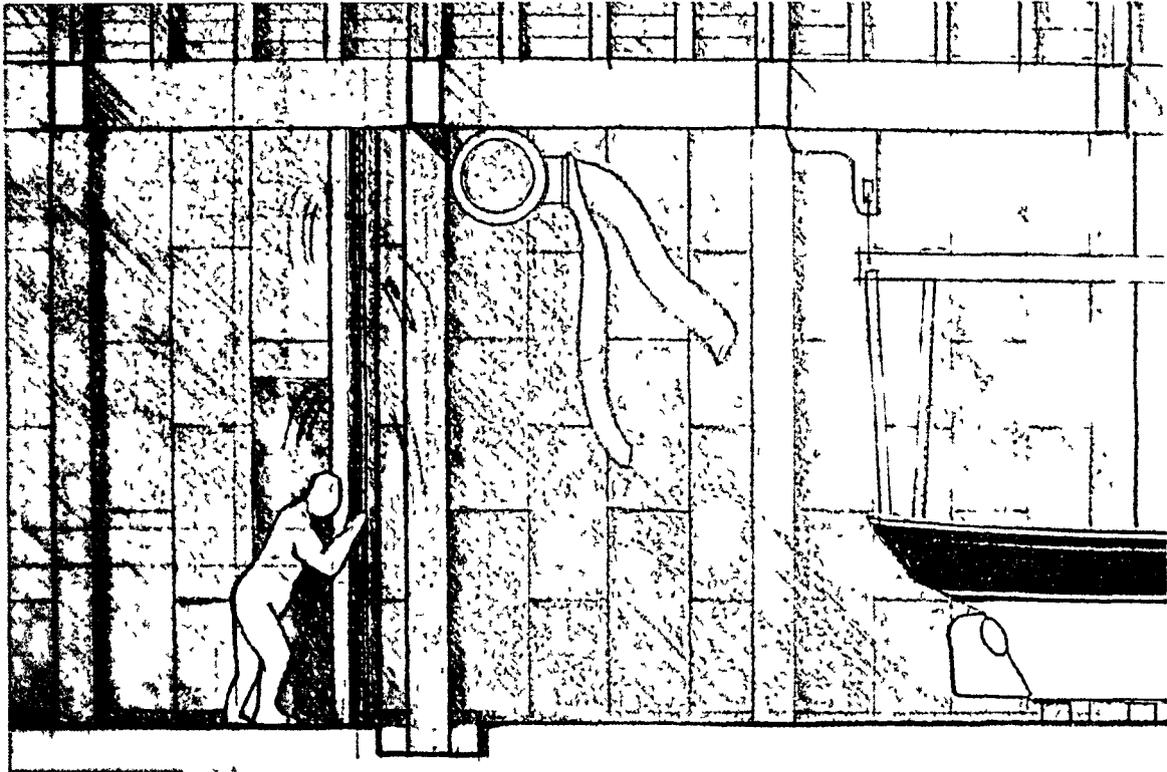
Having discussed the roof and walls, the floors of the workshop spaces are made of stone blocks of any foundations or walls dug out of the excavation process of building the workshop. These stones typically have a grey-pinkish hue and many of them display the texture of hand-chiseled surfaces. In an effort of conserving this tactile quality, the stone blocks are broken down into pieces and laid into tiled patterns on sand bedding, with the hand-chiseled surfaces facing upward. Small crevices in the stone flooring that divide “studio spaces” will allow wood chips and sawdust to be swept into removable catchments for the furnace (fig. 39). In non-workshop spaces, the floors use larger sized polished pink sandstone slabs.



39

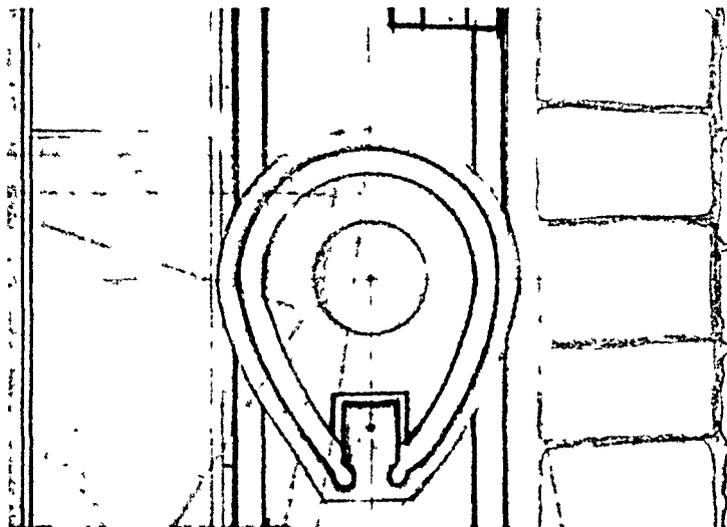
These proposed details are examples of reuse, and making composites with spoils. However, they do not explicitly incorporate other bodily sensorial experiences, which is what “weak” architecture provides beyond reusing *spolia*. The following are composite details that explicitly connect the inhabitant through sensorial participation with boat spoils to the landscape.

Boat ventilators are installed at strategic locations throughout the exterior roof of the workshop. These fragments connect the workshop air with the exterior atmosphere. On the inside, ship’s sails are reused and sewn into the form of hanging wind flags and attached to the mouth of the vent on the interior. The inhabitants can operate their own vents from the workshop, allowing air into the space using a crank system. When the wind blows the ship’s sails are animated, and spread fresh air in all directions, connecting the boat builder to the element of wind through the spoils (fig. 40).

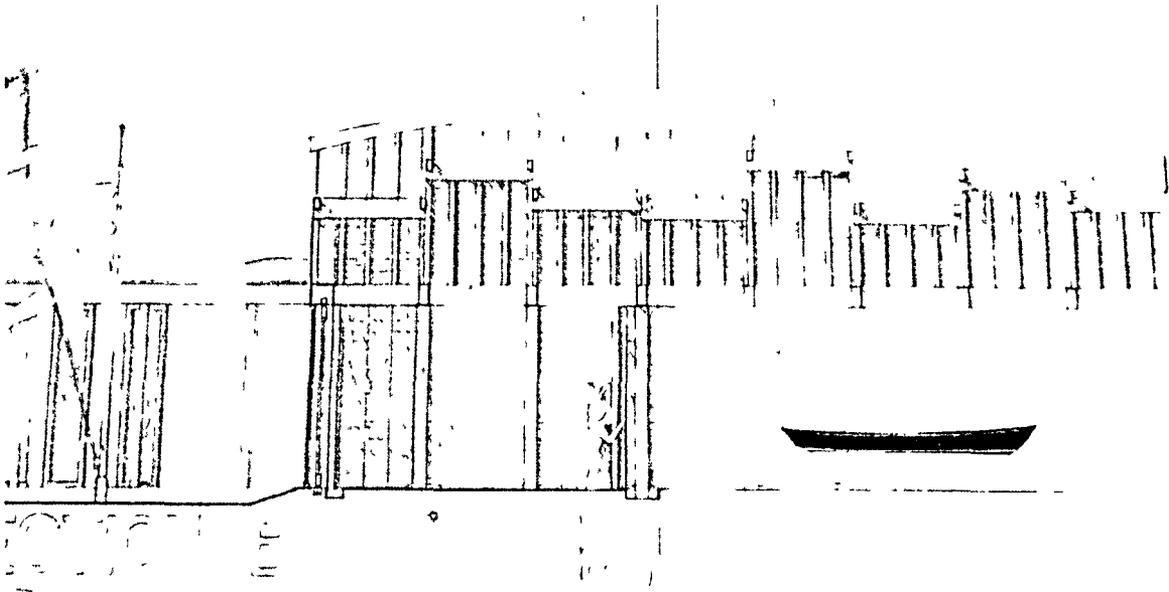
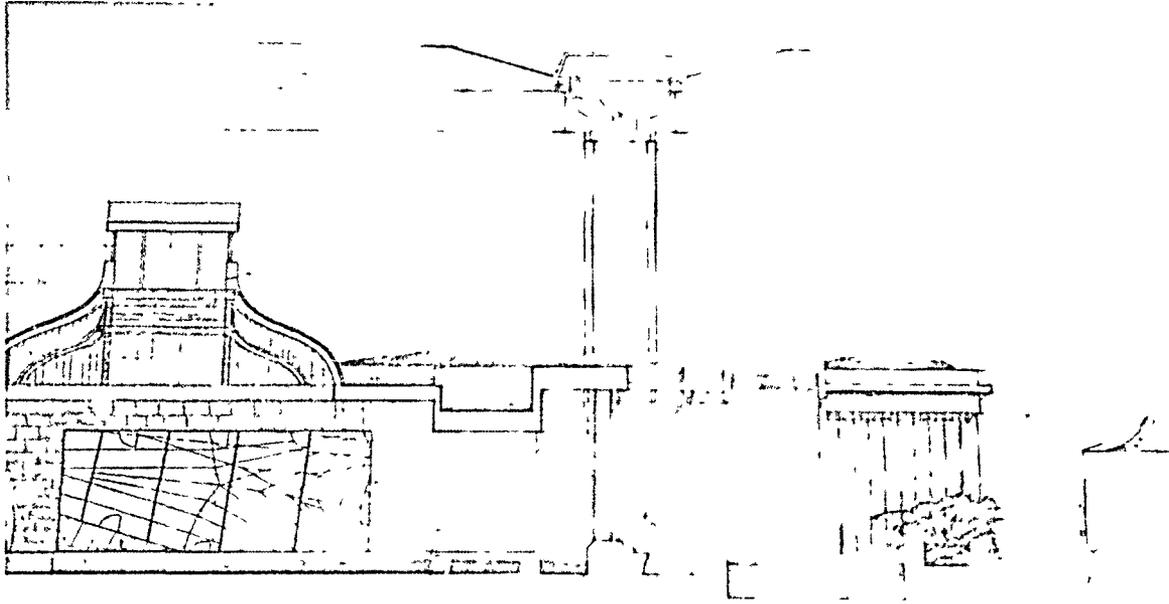


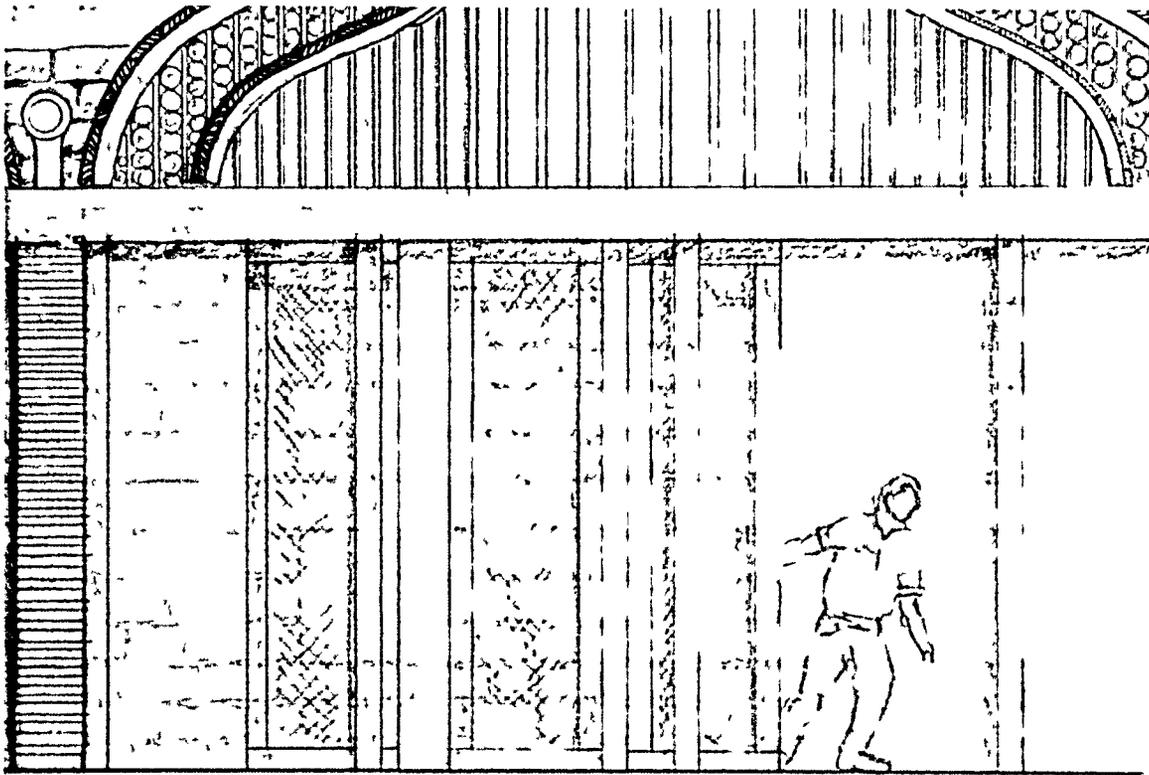
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When rain falls, water is channeled on the roof to internally draining down pipes that are made of hollow metal sailing masts (figs. 41-42). The metallic material amplifies the sound of the rain, which is harvested within and drained from the building. In the winter, these pipes are sealed and reopened in the spring.



41

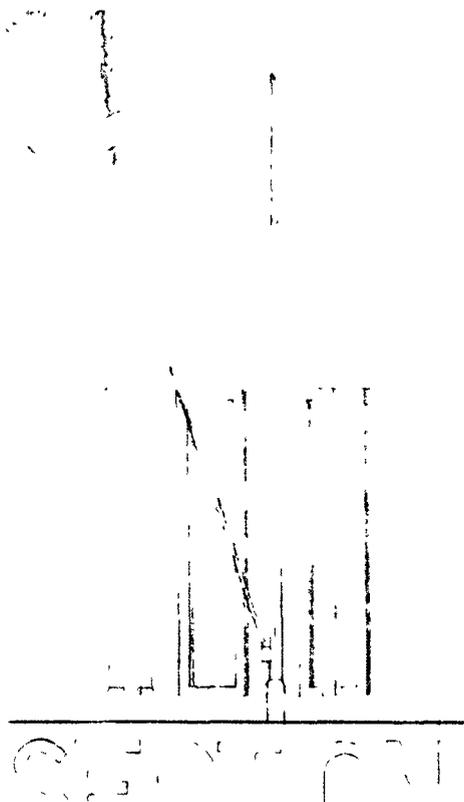




43

Certain areas of the workshop's interior partition walls are made up of sliding vertically oriented panels (fig 43). Sandwiching locally abundant hay within an aluminium mesh would begin to resemble the coarser *colombage bousillé* wall systems made by the Acadian settlers. However, the desired effect of this mesh system is to create a mobile translucency, giving boat builders the flexibility to control and experience sunlight, and heat in their workshop spaces. Light becomes tactile in this design, engaging the inhabitant with these soft textural surfaces. Maintenance of these panels does not depend on consumption or importation, but simply raking nearby hay fields and actively controlling the level of light filtration by the density of hay sandwiched in the panels.

The "topping-off" ceremony will install a flag made of reused ship sails on the uppermost structural beam of the workshop. This crowning flag will later be accompanied by a series of flags that are positioned on or around the building to animate the sound of flapping ship sails (fig. 44).



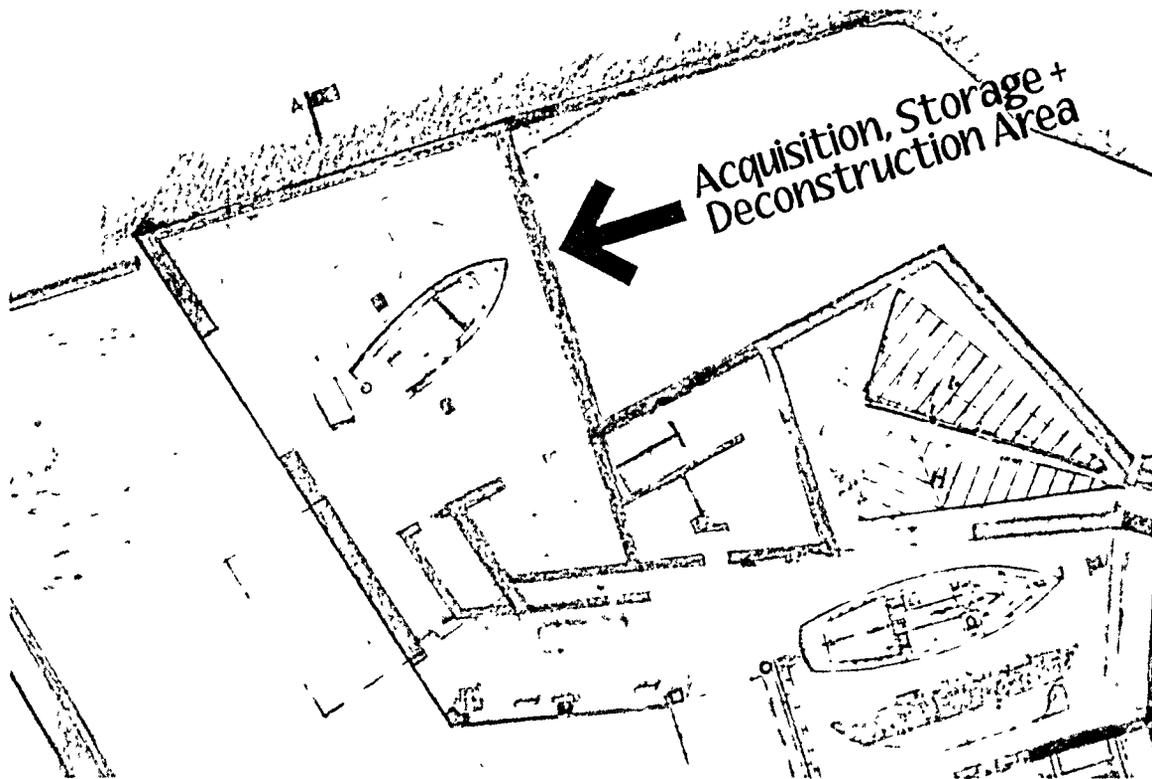
44

No two railings in the building will be alike. Each one reuses boat spoils in a different way, to connect touch with place. In one case, a ship's keel is modified to make a slotted railing. In another, reused rope and metal brackets are combined to form details that exhibit *vetustas*—the quality of age—and a tactile experience of the place through the boat spoils.

The sum of all of these architectural details contributes to an overall experience of architecture as a corporeal participation with composite details inspired by local building histories. This participation connects the inhabitants to the landscape, head and hand, and control of spaces through leftover materials. Beginning with an introspective examination of previous “layers” of history, methods and materials, new solutions emerge as continuations to this past.

Acquisition, Deconstruction & Storage

In tandem with the constructive motivations of the boatbuilding workshop is a destructive component. Leftover boats are dismantled for reuse. A wing of the boatbuilding facility is dedicated to receiving, dismantling, storing, and processing waste wood for reuse as bio-fuel. High-quality pieces suitable for reuse are stored for the future. Boats can be towed-in by the public to the loading



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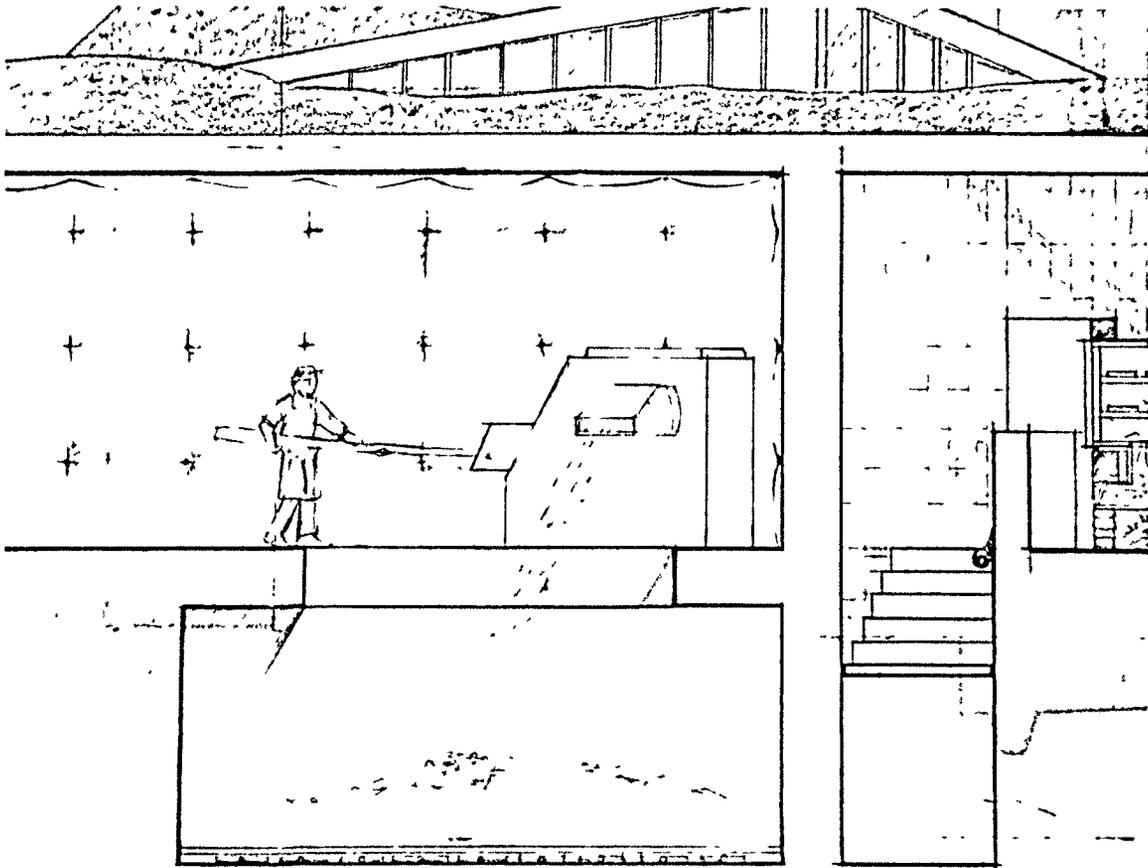
area of the facility. Once inside, the owner and available employees can dismantle the boats over an extended period of time. Having previously discussed the large amounts of waste wood produced in this course of assessment, unusable wood is processed by a heavy-duty wood chipper and used for heating the building in a sawdust and woodchip furnace. This area of the facility is partly sunk into the ground, allowing workers an unobstructed view of the landscape, while maintaining a green roof for visitors to walk over. Sound proofing the space is of greater concern however; industrial-grade fiberglass acoustic baffles are used which are clad in leftover boat sails for added sound dampening and reuse of material.

The reasoning behind including a deconstruction function to the proposed building relates to the relationship of conservation versus preservation. In boating terms, this is commonly understood as renewal versus restoration. In the former, boats can be salvaged and renewed by replacing parts with newer technology or fresh materials. Sometimes the original boat is entirely replaced piece by piece with new materials and details. This long, time-consuming process is ultimately rewarding, resulting in a deep connection to the built object and value of maintenance over instant consumption.

Restoration, in contrast, is salvaging a boat and rebuilding it to the image of its historical form, down to the details. These replicas—sometimes stunning anachronisms—are often unseaworthy. In boatbuilding culture, this correlation is more life threatening and a more potent message that boats (and architecture) need to adapt to current situations, through maintenance and reuse. Consuming and only building new products is not a sufficient solution to sustainable living.

Sustainable Functions

A wood chip furnace is designed to heat the building (fig. 46). Waste wood that is considered unfit for translation is reused as heat energy, putting it through a wood chipper and blown into a particle reservoir for incineration. Hot air produced from this is moderated and streamed through ducts fixed with fabric “wind flags” to gently blow air around the working spaces from the ceiling. In this way, the building starts to “breathe” warm air when heat is turned on. The workshop spaces’ stone floors offer passive solar heat gain.

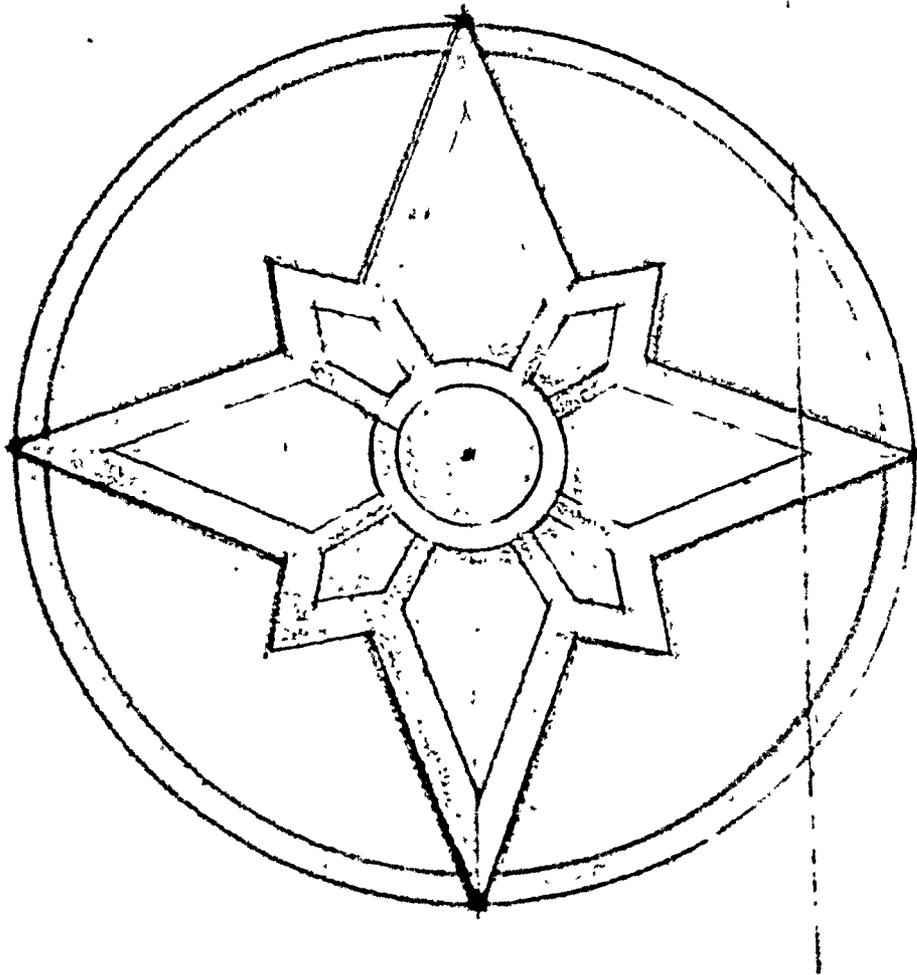


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Operable vents that are used in boats achieve ventilation throughout the building. These are placed at key locations, and completely hand-operated. These vents stop water from penetrating the interior space—a vital performance for boats, and equally translatable to architecture. The same “wind flags” are used in this design; warm and cold air is experienced through the translation of ship sails as ventilators.

Boats should not be built without sight or sound of water. The roof structure is designed to allow rain- and melt-water to enter the building in a controlled way rather than repel it. This water is purified and used for drinking and sanitary services and also connected to a testing pool that simultaneously attempts to stretch out towards the Bay of Fundy to visually connect the fort and the boat builders to the natural landscape.

Lighting the spaces is mostly dependent on natural sunlight. Sliding translucent panels controls natural lighting in the workshop spaces. Clerestory lighting has a strong presence to provide indirect lighting. Artificial lights are integrated into the boat-roof. Embedded in the pink sandstone slabs in the workshop spaces are brass star-shaped lights. The brass is melted down from reused boat



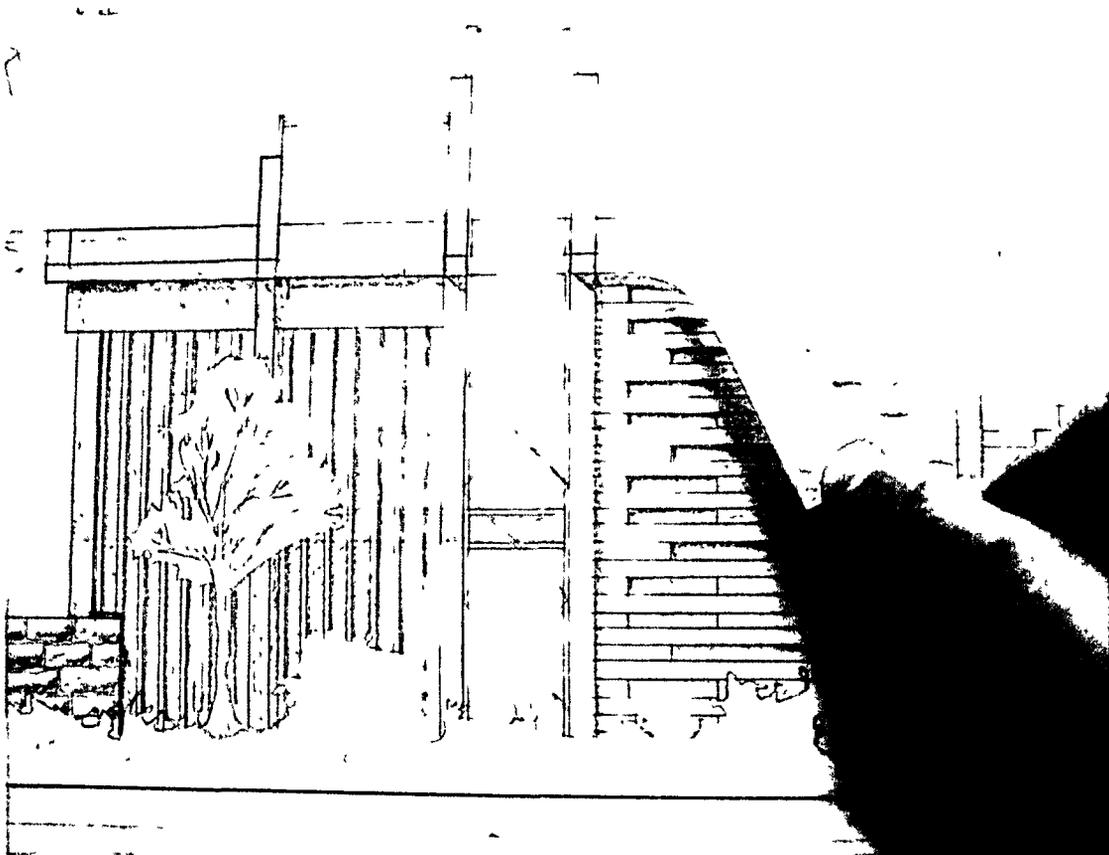
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ornaments and cast into star-shapes; glass is cut from reused bottles to fit the star geometry. The same detail appears on the roof and in locations around the building.



Drawing

The initial cut into the first drawing board was made to delineate the definitive underlying geometry of the fort—the construction lines used to draw a pentagon. From this gesture, overlapping layers reveal traces of the making of the fort’s geometry. Using translucent vellum, overlays are used to achieve a process of continually adding fragments, revising them and recognizing past thoughts to inspire new interpretations. Throughout the entire process, very little was erased—everything was overlapped by new drawing stratum. These drawings become repositories of knowledge, becoming archeological topologies for digging into the past.



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The act of collage, cutting and pasting is used as a chief strategy because of its similarity to the “cutting and pasting” of architectural spoils. Treating diagrams, tools, conceptual or historical narratives as such, the drawings take a more direct approach to taking and reusing fragments. Appropriating drawing fragments does not follow the system of pairing spoils per se, but rather

follows a more informal and discretionary system that uses fragments that are narratively and compositionally interesting. Where revisions are concerned, entire drawings are sometimes covered up, or minute areas are overlapped with cutouts to filter out redundancies.

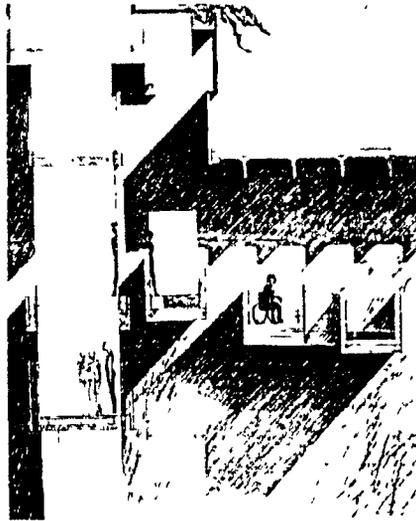
It is interesting to note that this method of cutting and pasting in drawing is also similar in approach to “weak” architecture. Adaptable layers of meaning are shifted in a flexible manner, creating an archive of fragments that, once overlapped, behave as independent traces of a past logic. These elements can be extracted and salvaged to produce aged references that are “reborn” from the draught.

To convey *translatio* in drawing, photocopies are made of external drawings or texts and chemically transferred onto the vellum with acetone. The journal of John Thomas and Louis de Courville was taken and translated into an underlay of the site plan. The etching of the Miracle of the House of Loreto was also translated through this same process, and fragments of the author’s sketchbook can be found in a number of cases as translated versions of the original copy.

The act of chemically transferring, cutting and pasting depends very much on adhesives, which create sticky drawings. A small effect of this tactile quality is that the paper collects atmospheric fragments throughout the drawing process, accumulating sediment in the drawing. Early in this process, fishing line was pasted on the site plan to denote topological delineations, which picked up on eraser shavings and fabric lint.

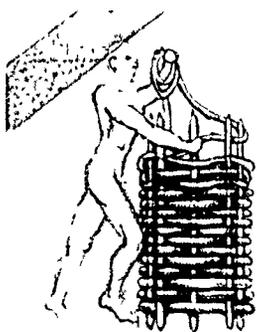
Human figures play an important role in the understanding of the drawings. A tradition of drawing animated figures is rooted in the architectural drawings of Carlo Scarpa and his pupil, Valeriano Pastor, as examined by author Dr. Marco Frascari in *A Tradition of Architectural Figures: A Search for*

Vita Beata. Pastor uses three human figures, inspired by Scarpa, as narrative bodies that interact with program, daily use, and construction processes (fig. 49).

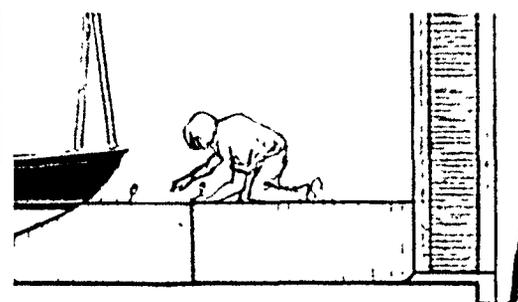


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Based on this established tradition, three figures are used in the context of this thesis to reveal similar intentions. Homogeneous nude characters will animate the making of building technologies such as gabions, or grafting boat spoils to the architecture. Clothed people that appear varied in size, apparel and age will attempt to show the daily use of the workshop and the site. Finally, floating characters will appear in the form of historically significant people such as Mi'qmac Natives, Vauban, or the Acadians, to reveal narratives and stories of the site.



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Conclusion

Applying the theory of *technemerophilia* to the site Fort Beauséjour taps in to a potentially rich source of architectural insight, inspired by the history of shipbuilding and vernacular architecture in New Brunswick. Building techniques that have been fragmented from the community's consciousness are reinvigorated in contemporary translations of the past. Using Fort Beauséjour as a testing ground for a theoretical proposition reveals a potentially rich architecture that is grounded in local materials and details.

Spolia is essential to taking *techne* from one place and reinventing it as a composite solution in another context. *Spolia* is a frugal and responsible operation that considers the future and past at the same time. Using spoils from boats is unorthodox in Sackville, but rare hints of its use in rural locations around New Brunswick suggest a potentially great exploration into this process.

Amorous attraction contends that we have forgotten how to think analogically, that we should conduct the nobler task of connecting or compounding images to create similarities, not differences. In architecture, the thirst for *difference* or the signature building, motivated by fashionable trends has led to a thriving of ahistorical operations that seemingly have no historical precedent. Responding to this phenomenon, Stafford argues that making compounds—collages of narratives put into relation with one another—can begin to emphasize making connections in this age of disconnections.

Stafford's theory is limited by a visual bias, when architecture demands a total corporeal engagement with the spaces around us. The process of "weak" architecture supplements this deficiency and adds to the former a contextual sensitivity bound to the human senses and the connection to place through these experiences. The "weak" process involves uncovering the past layers of history,

building methods, and materials to reinventing them to grow out of the details to relevant use in contemporary applications. Sackville's history is abundant with layers such as these to work with in a boatbuilding and repair workshop.

The proposed architectural project is designed through the lens of Stafford and Solà-Morales' theories, under the proposed parent theory *technemerophilia*. The building reuses boat spoils to achieve connection between the inhabitant, the landscape and place, all through an active engagement with reused boat parts. By connecting the inhabitant through active sensorial engagement with boat spoils, this workshop explores the potential of strengthening a deeper connection between architecture and a *genius loci* that grows out of a rich history of shipbuilding and vernacular architecture, manifest in its details.

Throughout this process, certain observations have been made. Initially, it was believed that maritime fort construction and boat building had many analogous construction techniques. This was substantiated by only one brief statement in a historical text. However, this relationship was overstated, and in it was discovered that there is some but very little similarity between fort- and shipbuilding methods. This resulted in the unconventional location of the proposed building, which in the end offers a valuable base for demonstrating *technemerophilia*. Nonetheless, the two projects still represent important community-involved ventures that stimulated the thesis of taking or exchanging *techné*.

The question may arise as to whether or not a theory of *technemerophilia* can be applied as a legitimate model for other projects. Central to the process of "weak" architecture is the operation of introspection, of reading in to the past, which is likely to produce variable outcomes within a predictable procedure. In doing so, a new design philosophy is not needed to replace the last; rather ideas emerge out of an existing fabric of historical precedents. As such, this method is not limited to

the specific project at hand, but does in fact possess the flexibility to be applied to other projects. Success of this procedure does of course greatly depend on the richness of a location's past building histories. In a virgin site (if this is possible), *technemerophilia* will be unbalanced in terms of reusing local spoils, or alluding to past building traditions or material choices, and will be forced into a "strong" approach. Proposed architecture in this hypothetical situation would depend on raw materials and the introduction of methods that require slow translations over time.

The other question is whether *technemerophilia* is useful in other places where industrial endeavours took place? Reusing boats work reasonably well as translated objects compounded into architecture; Planes or boxcars for example that speak of another community's past would also create connections to history through "weak" insight. Since this is beyond the scope of the thesis, it would be interesting to test the theory in a variety of architectonic conditions.

In terms of learning through making connections and similarities between disparate parts, the thesis succeeds in that two otherwise distinctly individual building technologies are grafted together as a liminal whole. The result is a unique building that combines building details from foreign narratives in a composite building that is sustainably connected at a much deeper level to place-making than what currently exists in Sackville.



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