

**The Polyvalent Ruin:  
Reconciling Time and Place in Rural Nova Scotia**

by

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## **ABSTRACT**

The thesis examines the effects of depopulation in Canso, Nova Scotia and articulates a response to the challenges of building in a socially and economically precarious community.

In examining the fluxuations in historical population and economy it is concluded that Canso is not on an inevitably downward trajectory. Rather, it is a historically resilient community which has gone through many cycles of growth and decline.

The population of Canso is aging which presents an immediate need for elderly housing. This program is used as the catalyst for any number of future programmatic uses accommodated by an architectural framework designed for adaptation and disassembly.

The historical continuity of this inconstant architecture is articulated by the intersection of building and landscape, creating a ruin which is both a record of the building in time and the inspiration for possible future development.

## **ACKNOWLEDGEMENTS**

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I would also like to thank all the students and faculty of the Dalhousie Faculty of Architecture and Planning for creating a wonderful and supportive atmosphere of learning. You have all made my years spent in Halifax an absolute pleasure.

Lastly, I would like to thank my family for believing in me and giving me both the time and opportunity to have made it so far.

## CHAPTER 1: INTRODUCTION

There is an inefficiency in designing without considering the effects of time on a project. The purely spatially based design approach responds to client needs and social factors which may change dramatically or cease to exist all-together long before the project fulfills its expected lifetime. When a building design does reflect the passage of time it often does so in a linear and over-prescriptive fashion anticipating a specific chain of events the predication of which is rooted in the present. Our assumptions of future use are undermined by our tendency to plan according to information rooted in the present. Architecture in time exists in plurality and uncertainty and must be given the room to change in unpredictable ways. Allowing future users to adapt the building to unforeseen opportunities or challenges These types of strategies are invaluable in designing for declining communities because they allow building programs to change quickly and easily.



Canso, located on the north-eastern coast of mainland N.S.

The community of Canso, Nova Scotia faces a number of social and economic issues stemming from a lack of employment as well as the currently shrinking and aging

population. The thesis proposal will look to strengthening and creating opportunities in Canso's local inshore fishing industry, consolidating community and preserving cultural integrity in the aging community. The proposal will not presuppose how Canso will shrink, grow or change over time, rather it will create a flexible architecture, allowing for any number of scenarios to be addressed. The role of this infrastructure will be to embrace the tenuous existence of this community and create an architecture of impermanence. One that is just as likely to grow alongside the community as it is to recede gracefully and strategically over time.



Collages of Canso waterfront- architecture growing and receding over time

## **Thesis Question**

How can architecture foster a sense of historical continuity and stability while remaining adaptive and flexible within an economically and socially uncertain rural climate?

The thesis project will explore this question and in doing so will reconcile the need of rural architecture to be both responsive to time and rooted in place. The intersection of architecture and landscape will create a physical record of the building and community in time.

The project will establish a building framework on the basis of the current need for elderly housing and community consolidation. This program will serve as a springboard for the project to grow, shrink and adapt unexpectedly along with the community.

## **CHAPTER 2: HISTORY AND CONTEXT**

### **Rural Reconfiguration**

Declining population has been an issue in rural communities throughout Canada since the industrial revolution. The cost savings of mechanizing and centralizing industry meant that smaller communities struggled to compete for jobs and diversify their workforce. Often rural communities relied on only a few main industries such as fishing, forestry, mining, agriculture etc. leaving them unprepared and devastated by sudden changes in industry. As resource-based jobs dried up multitudes of rural communities disappeared while the remaining ones were forced to re-organize their economies.

Today these remaining, resilient communities depend on a diversity of income streams. They have become centers of de-centralized industry, tourist destinations and service hubs for larger rural districts. Most often these identities overlap and the continued prosperity of a community is rooted in a mercurial rather than concrete socio-economic identity.

In Nova Scotia the trend of declining rural populations has been prevalent in most counties, and has become increasingly problematic in the last decades as the proportion of elderly to young working individuals and families has increased significantly. This shift put essential public services under increasing strain. School enrollment rates have declined leading to multiple closures across the province. Medical services have also tended to shrink and consolidate as most graduating medical professionals have little incentive to work in rural communities. Due to the increasing separation between the individual and employment or essential services many rural residents



with the ability to move to the city have done so, further compounding the problem for those who either can not or do not wish to leave their communities.

Guysborough County has experienced the greatest population decline in Nova Scotia, largely due to the significant downturn in the commercial fishing industry at the end of the 20th century. Between 1951 and 2011 the population of the county has decreased from 14,245 to 8,025 due to shrinking in the fisheries, agriculture and forestry sectors.<sup>1</sup> The coastal town of Canso has been especially affected by the decline in commercial fishery in the 1990's.



Fishing fleet in Canso Harbour; photograph by Percy Lumsden.

However, this largely pessimistic reading of rural Nova Scotia, and Guysborough specifically, belies the complexity of the situation by characterizing a complex re-organization of people and resources as a simple decline in population. By recognizing only the negative trends and not specific cases of community re-organization and growth we invariably

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1 Canadian Population Census, Ottawa: Supply and Services Canada, 2011.

propose reactive rather than proactive solutions. In practice this narrow understanding of the situation leads to designers and policy-makers creating short-term fixes; interventions which consider current needs but do not anticipate the possibility of a continuously changing relationship both within and between communities. Rural towns shrink and grow disproportionately to one another in an ongoing process which often has less to do with geography than it does with community resolve. While the majority of towns in rural Nova Scotia shrunk in the latter 20th century, towns like Lunenburg and Cheticamp have been able to thrive by promoting tourism in the area. Their continued success has made these outliers more important within their larger rural context. The disparity between growing and shrinking communities tends to cause towns and villages to consolidate with their more resilient neighbours. In Guysborough county, the town of Guysborough has exhibited a similar relationship with surrounding communities since the decline in the commercial fishing industry.



Some communities in Guysborough County such as the town of Guysborough have converted their working waterfronts to support an increasingly tourism-based economy; photograph by Guysborough Waterfront Society.

Since then the town has embraced its identity as a retirement community and eco-tourism destination. Guysborough has also found success in business ventures, having developed a successful marina, golf course and distillery.

It is important to note that the formerly listed communities are all coastal. Today approximately 70% of Nova Scotia's population lives on the coast or within coastal regions<sup>2</sup>, a fact which is significant to the trajectory of both rural growth and decline in Nova Scotia. The dynamic between coastal and inland communities throughout the province is not universal, however by looking at historical precedent and community trends we can intuit this dynamic for specific geographic regions. For example, in the early 20th century inland communities in Guysborough county declined due to a weak agricultural sector while coastal communities remained relatively stable due to a strong fishing industry.<sup>3</sup> Today these coastal communities can no longer rely primarily on the fishery sector, however they possess much greater economic, cultural and ecological capital which can be re-invested in tourism and eco-tourism.

From a sociological perspective it is important to understand the effects that a rapidly changing population has on everyday community life as well as long-term decision making structures. As economic and social capital decreases- cultural values, social structures, local economies and decision-making mechanisms become

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2 Province of Nova Scotia, *Our Coast: The 2009 State of Nova Scotia's Coast Summary Report*, 1.

3 Timothy Archibald, *A Question of Staying or Leaving: Rural Decline in Guysborough County, 1881-1931*, (MA Thesis, Saint Mary's University, 1987), 4.

increasingly entwined.<sup>4</sup> The success of any one of these aspects is therefore affected by all others. In other words the success of local economic and social institutions becomes increasingly dependant on the self-determination and co-operation within the community. Any proposed intervention would therefore benefit by combining economic opportunity with social programs as well as the opportunity for self-determination within the community.

While it is important to acknowledge and plan around the facts of rural population decline and deindustrialization, it is equally important to understand the history, variability and above all resiliency of these rural communities. The post-industrial age has done little to dampen the boom-bust cycles of small rural economies. Rather, the increased mobility of industry has made this trend both more pronounced and unpredictable. In response to this trend rural economies have become smaller, leaner, but also much more varied and adaptable. Small, locally based industries such as small scale fishing, tourism and in some cases remote working have filled in the voids created by the precarious nature of larger resource based industry in these new economies.

Long term planning within such communities should therefore avoid the anticipation of either decline or growth. Architects, planners and community organisations should instead focus on the anticipation of opportunities and the possibility of unexpected changes within the local socio-economic fabric.

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4 Bert E. Swanson, Richard A. Cohen, and Edith P. Swanson, *Small Towns and Small Towners*, (Beverly Hills: Sage Publications, 1979), 36.

## Canso and Guysborough County

The community of Canso was established by the British in the mid-16th century as a fishing and trading outpost. By the late 19th century Canso played an increasingly important role in the commercial fishing and processing industries in Atlantic Canada with business-owners from across the country invested in the community. With a rapidly growing population and sudden influx of capital Canso was incorporated and officially became a city in 1901. By 1910 local business leaders financed the construction of five additional factories, a customs house, post office and numerous other amenities for the residents. During this decade the population of Canso hovered just above 1,600- the largest it has been to date.



Canso Waterfront from Durrell's Island; photograph courtesy of Canso Historical Society.

During the 20th century the primary economic drivers in Canso and the surrounding communities of Hazel Hill and Dover were inland fishing, commercial cod fishery as well as marine-life processing and cold-storage. Some manufacturing and energy enterprises came and went but the lifeblood and deep cultural heritage of the region has always centered around a strong and productive waterfront.



Canso Fisherman's Strike; photograph by Laura and Clayton Hines; retrieved from smallscalens.

However, the fishing industry in Canso has been very unpredictable throughout the 19th century. The remote location of the community as well as fluctuating fish stock made it difficult for processing plants to operate in the area. This led to significant job losses and population fluctuations, most notably in 1929, 1970 and 1990.

Historically this hardship fostered a sense of co-operation and volunteerism. Canso and the surrounding communities have a deep historical association with the Antigonish co-operative movement. Workers established fishing co-operatives as a way of self-organizing and in 1934 the community established a co-operative store which still operates today as one of the community's most important businesses.

## **PARADE**

### **OF CONCERN!**

### **FOR - STRIKING FISHERMEN and JUSTICE**

### **AGAINST - GOVERNMENT STALLING**

**Place** ..Garrison Grounds

**Date** .. August 19, 1970

**Time** .. 7:00 PM

### **MASS RALLY TO HEAR THE FACTS!** Following parade at the Anglican Diocesan Center, College St. (Approx. 8:00PM)

SPEAKER S: John Lynk, Pres., N.S. Federation of Labour  
 Rev. R.E. Lauder, ST. Peter's, Ketch Harbour  
 J.K. Bell, Sect'y, N.S. Federation of Labour  
 People of the Canso, Mulgrave, Petit de Grat area  
 Rev. Parsons, Canso  
 Homer Stevens, President, United Fishermen & AWU

In 1990 the Government of Canada issued a moratorium on Atlantic cod fishery in response to a sharp decline in the species' population. This devastating event led to the closure of the National Sea processing plant and a loss of more than 500 jobs in the area which began a steady population decline that has proceeded for the time being.<sup>5</sup>

Canso officially dissolved and amalgamated with the county of Guysborough in 2012 because it was no longer able to afford the costs of local governance. Today the community primarily focuses on inshore lobster, crab and shrimp fishing as well as processing and transportation of catch. Additional employment is in the retail and services sector as well as health and education. A declining number of students has led to the closing and demolition of the local high school in 2012 with K-12 education now being consolidated in a feeder school on the edge of the community.



Canso Waterfront, October 2016.

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5 Canso Historical Society, comp, *Portrait of a Century: A Pictorial History of the Town of Canso*, (Casket Printing and Publishing, 2004), 292.

At this point it is important to re-iterate that it is an oversimplification to characterize this chain of events as a single growth and decline of Canso. This shallow reading implicitly predicts an invariably grim future for the community. However, Canso is not defined by a single economic boom, rather it is a series of overlapping cycles which have encompassed many different vocations. During the 20th century alone the community has been involved in mining, natural gas extraction, transatlantic communications and fisheries of a variety of catch for both consumption and processing. This variety in and acceptance of new modes of income is in direct opposition to the idea of Canso as a single boom-bust town, rather, it speaks to the adaptability and resilience of the community.

A contemporary example of this resilience can be found on the waterfront where large scale cod processing has been replaced by small-scale inshore fishery of a variety of new species for export to new and developing markets. In 2011 Louisbourg Seafood Ltd. opened a processing plant in Canso. The plant primarily processes sea cucumber and whelk to be exported to China. In March 2017 the federal government announced a 325 million dollar Atlantic fisheries fund which hopes to invest in these types of expanding markets and re-invigorate the Atlantic fishing industry.<sup>6</sup> In light of these federal investments, local efforts and the looming possibility of some form of the Trans-Pacific partnership it is not unreasonable to imagine that the commercial fishing industry in eastern Nova Scotia could experience another boom.

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<sup>6</sup> Doucette, Keith. *Ottawa Antes up \$325M to Spur Growth in Atlantic Canadian Fisheries*, Metro News, March 10, 2017.



Canso also has a long and storied musical community. It is home of the Stan Rogers festival which attracts 10,000 - 15,000 visitors annually and is a significant annual boost for the economy.



Stan Rogers Folk Festival ; photograph by Guysborough Tourist Association.

However, because the town was so heavily invested in the fishing industry until the 90s' very little consideration was given to the tourism and commercial opportunities associated with the festival. This lack of investment in commercial and tourist infrastructure has in many ways separated the festival from the cultural and social activities of Canso residents. This is especially evident at the waterfront which offers very little incentive for festival goers to leave their campgrounds and venture down into Canso. The festival occurs on the south edge of the community, well away from the two major commercial streets and the center of town.

Despite the tepid engagement between festival goers and townspeople, the Stan Rogers Festival represents a significant opportunity for the community to begin establishing a more permanent, tourism based revenue stream. In order to achieve this goal certain amenities and events associated with the festival should be incorporated

into the town-proper, thereby encouraging visitors to engage with Main street Canso and the waterfront.

It should be noted that the phenomenon of resource based rural communities reorganizing as tourist towns is not unique to Nova Scotia, or even North America. And although this trend can be beneficial to the communities in question there are caveats which must be addressed if any such reorganization can be sustainable in the long term. An over-reliance on tourist based businesses often means that communities become ghost-towns in the off season. In the long term this is detrimental to the development of social institutions as well as other revenue streams. Furthermore, this sort of reorganization goes hand in hand with gentrification which further alienates long time residents from the changing economic and social practices of their community. In light of this, if the festival is to be of lasting benefit to Canso it must begin to have a year round impact on the community rather than simply being an annual influx of capital. Furthermore, the inclusion of service and tourism based infrastructure along the waterfront must not preclude the possibility of a productive working waterfront.

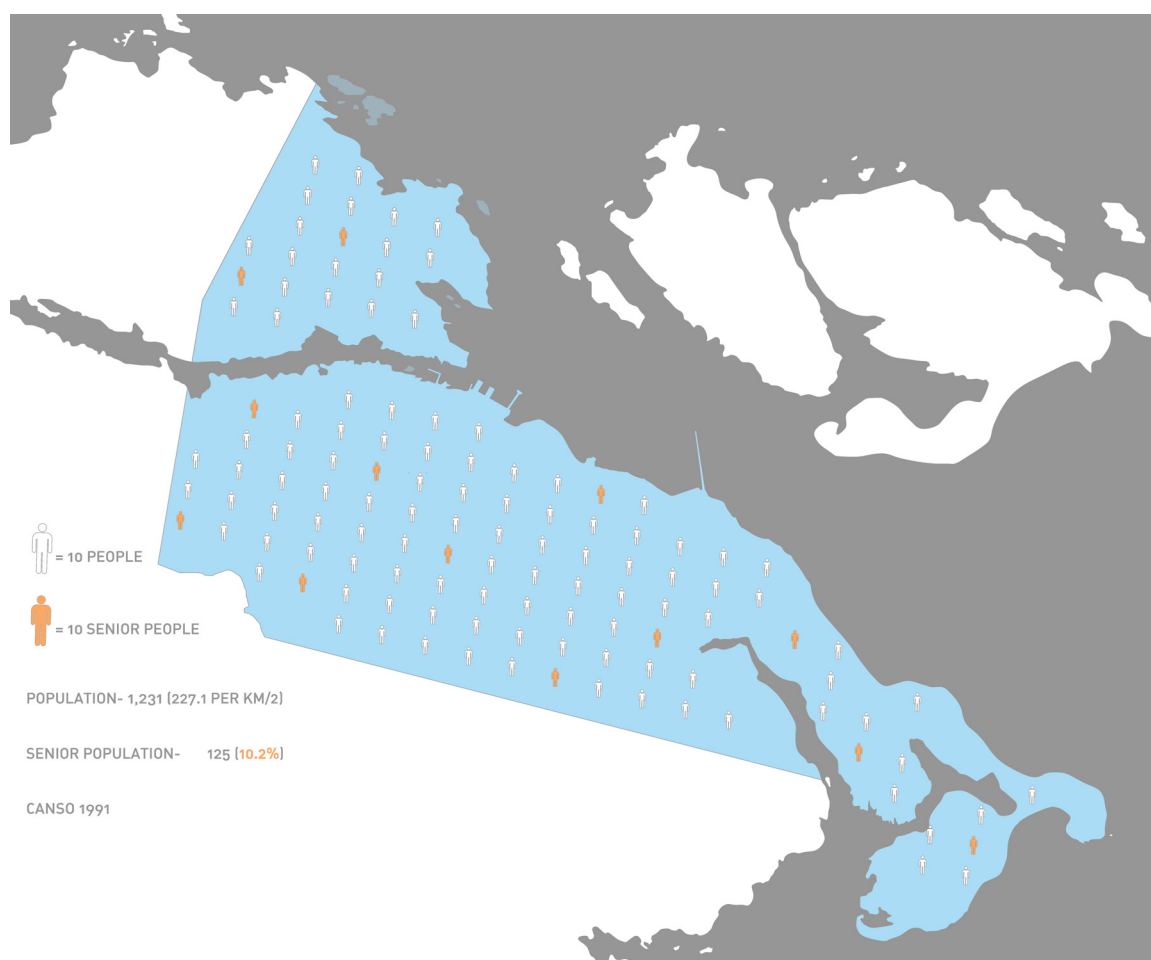
Lastly, with regard to possible sources of population growth, it is important to recognize that the next economic boom could very well be something completely unexpected. From the rapidly increasing viability of the remote office to the unpredictably changing demand for our natural resources in the global market. Even proposals that may seem outlandish such as the Canso spaceport<sup>7</sup> may suddenly, become very real and drastically shift the trajectory of Canso.

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<sup>7</sup> Ruskin, Brett. *N.S. Community Prepares for Economic Liftoff from Proposed Spaceport*, CBC News, October 18, 2017.

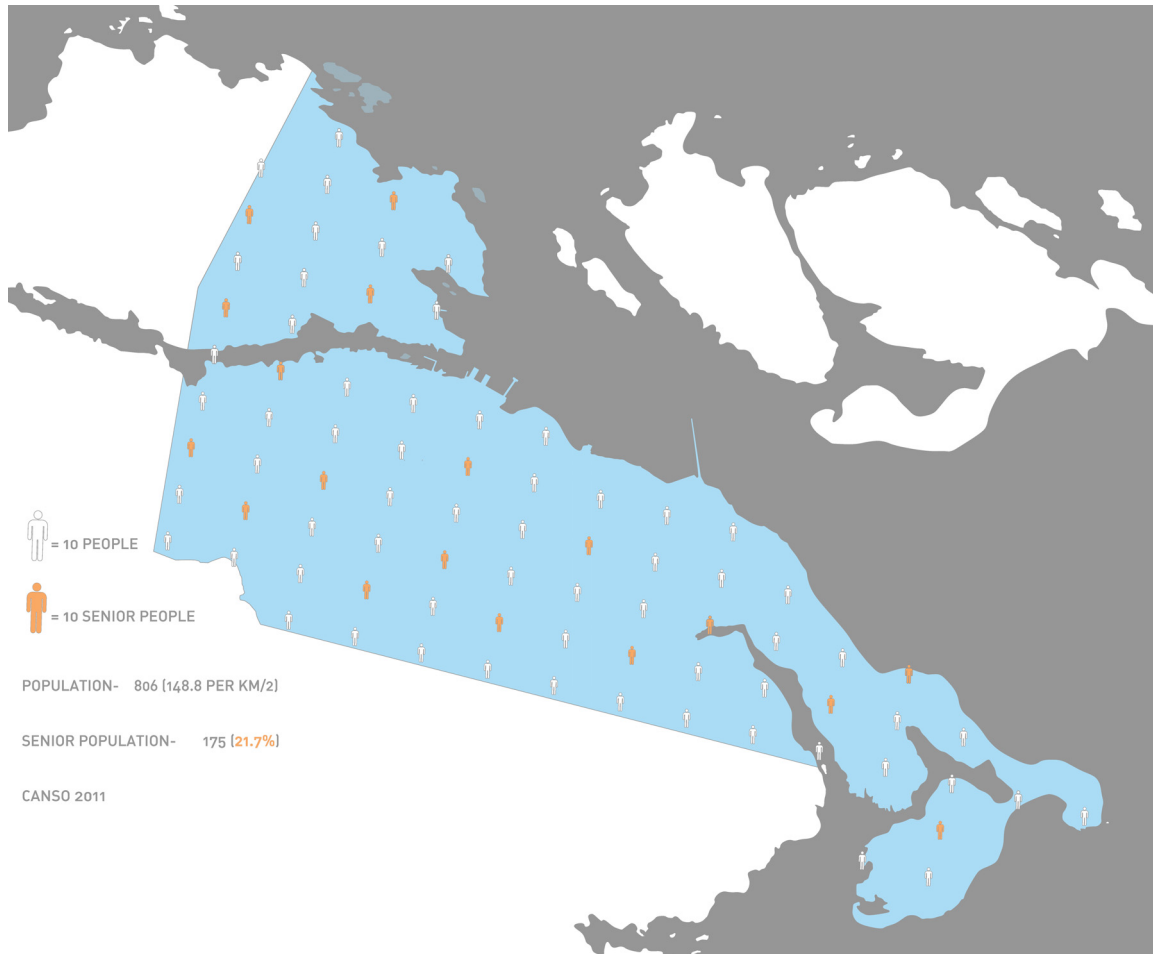
## Shifting Demographics

A majority of residents leaving Canso and the surrounding region do so to find employment. In the last several decades this has led to an increase of the percentage of retirees in the overall population. According to census data this percentage has increased from 10.2 to 21.7 percent between the years of 1991 and 2011.<sup>8</sup>



Canso overall population over 65, 1991; from Statistics Canada.

8 *Senior Statistical Profile 2009*, Department of Seniors, Accessed October 23, 2016, [https://novascotia.ca/seniors/pub/2009\\_StatProfile.pdf](https://novascotia.ca/seniors/pub/2009_StatProfile.pdf). 2.



Canso overall population & senior population, 2011; from Statistics Canada.

Because of its distance from the nearest major city as well as the declining population the seniors in the community have found themselves isolated from essential social services. In a 2008 provincial study seniors living in rural communities raised a number of issues which affected their sense of well-being and community.

Seniors complained that many public spaces were inaccessible due to inadequately paved streets and sidewalks. They also noted a lack of public seating and informal areas of congregation. Seniors who lived outside of population centers also raised the issue of transportation and their inability to engage in social and communal functions if they do not feel comfortable driving. Transportation was also

a crucial issue for seniors needing to see medical specialists in Antigonish or Halifax, prompting many participants to propose that medical specialists should be brought into the community on an annual or biannual basis.

The most important issue raised by seniors was one of housing. The housing stock in rural Nova Scotia are old and inadequately insulated, some relying on wood heat which is difficult for aging occupants to maintain. Seniors felt that in a lot of cases they could no longer maintain their current housing and expressed the need for 'transitional' housing options within their communities.<sup>9</sup> As rural populations age many retirees are seeking to relocate to smaller, more accessible, and more manageable accommodations. These accommodations would fill the niche between independent living and fully assisted living in a nursing home. As such, this 'transitional' living should be designed with a spectrum of housing needs and resident autonomy levels in mind.

Since Canso has existing amenities such as a general store, gas station, library, and hospital, it is an important center-point for smaller surrounding communities such as Hazel Hill, Little Dover and Port Felix as well as the many completely isolated households in the surrounding region. It would therefore make sense for additional senior housing units to be built in Canso to account for the aging population of the town and these surrounding areas.

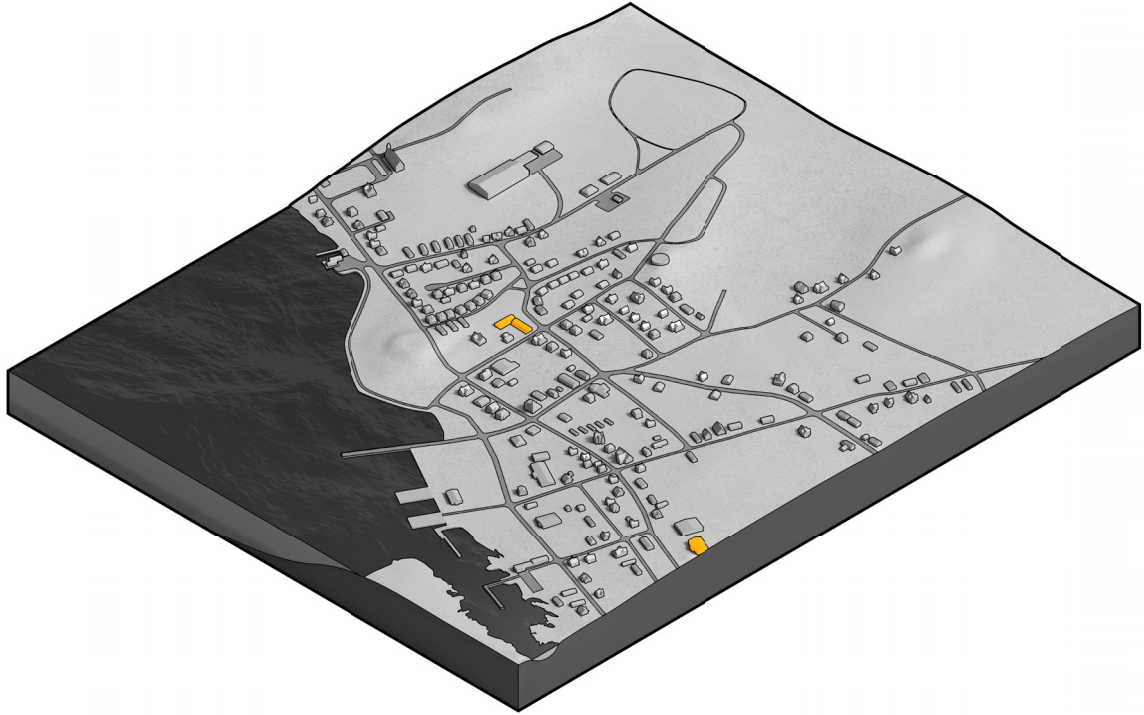
There are currently only 25 senior housing units in Canso, only one of which is accessible.<sup>10</sup> The need for a broader

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9 Janice Keefe, Brenda Hattie, *Age-Friendly Rural and Remote Communities Initiative: Guysborough County*, (Communications Nova Scotia, 2008), 15.

10 Ibid., 15.

range of accessible housing that is close to the amenities found in Canso will be needed in the next two decades as the number of seniors rises.



Location of housing for the elderly in Canso

However, meeting this demand for additional housing is not straightforward considering the historical uncertainty of employment and population in Canso. The current rate of out-migration coupled with the aging population will persist for a significant amount of time regardless of even the most immediate economic interventions. The thesis project will therefore acknowledge that it responds to an immediate need for housing, the lifetime of which can not accurately be determined. For a community of this size the unexpected addition or subtraction of a single workplace could have tremendous effect on the population. Considering the erratic history of industry turnover in the region it is not unfair to expect the need for elderly housing or the opportunity for other community based programs to rise and fall unexpectedly. Any significant architectural intervention in

Canso must therefore embrace a sense of uncertainty. In a practical sense this means that any proposed housing must be adaptive in both program and form. It must be simple to build and economically viable to change and ultimately dismantle. As we are also dealing with the possibility of an economic boom at an unspecified moment in the future, the remnants of this building must also support and inspire new construction. In short, the thesis must respond to a clear and immediate programmatic need within an increasingly uncertain timeline of the community. The process of designing for an uncertain outcome is best understood by exploring the relationship between architecture and time.

## CHAPTER 3: BUILDING NARRATIVE

### Architecture and Time

All buildings change over their lifetimes. Older homes are renovated, community centers get additions to account for increasing populations, and developments are phased to reduce initial costs. Architects, developers and building owners are able to anticipate these changes with a degree of certainty. Some changes, however, are much harder to predict. Businesses leave and join communities, populations fluctuate and user needs change in a way that is often beyond the scope of the original design. These unexpected changes in building use can create significant costs or even lead to the obsolescence of buildings long before their expected end of life. Buildings which cannot adapt are disused, boarded up, demolished or left to deteriorate within the fabric of the community.



Facade of the Hazel-Hill cable station which has been closed since 1962, photograph, 2016.



Thinking of buildings as static objects is therefore detrimental to the adaptability of program and a disservice to the longevity of the project. Architecture must be responsive to time, especially so in communities which are prone to change. Designing and constructing a building is a tremendously expensive undertaking for a small rural community such as Canso. It is therefore essential that the building is resilient in the face of unexpected change and can accommodate a number of both expected and unexpected programs.

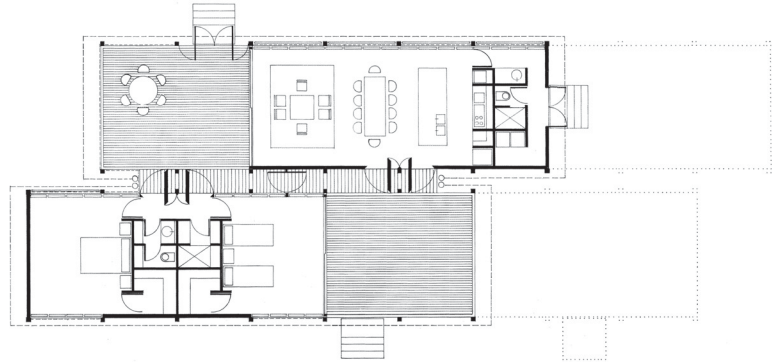
Time based approach to architecture is a broad collection of strategies and has many different interpretations both in theory and in practice. The simplest and most common practice is to create a timeline of the building which responds to predicted future needs of the user(s). These expected changes are then reflected in the initial design decisions.

A good representation of this strategy is planned project phasing. For example, the Marie Short House by the architect Glenn Murcutt. The house is organized as two pavilions which slip past each other creating a central axis. The house was designed to be disassembled, pulled apart and re-assembled as though the pavilions were extruded away from each other over time. The intention of the architect was to create a house which could easily be expanded for a growing family over time. This goal was accomplished by using simple, easily accessible connections, appropriately sized structural components and the same structural bay throughout the house.<sup>11</sup> The initial Phase I house was built in 1975. In 1980 the planned second phase of the project was completed.

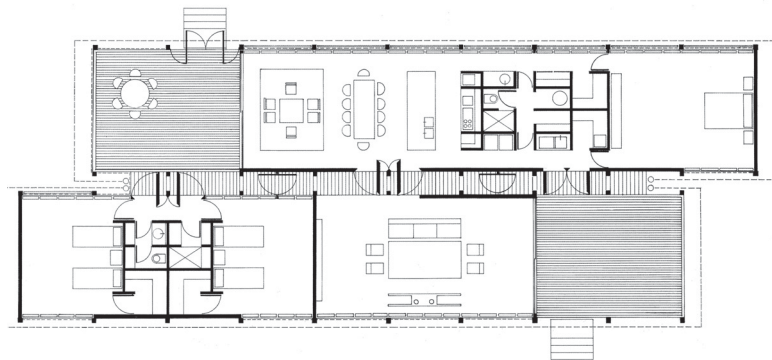
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11 Glenn Murcutt, Maryam Gusheh, *The Architecture of Glenn Murcutt*, (Tokyo: TOTO Shuppan, 2008), 61.

## Phase I



## Phase II



Marie Short House plans- phase I was built in 1975, The phase II addition was made in 1980; plans by Glenn Murcutt Architecture.

The problem with planned phasing is that it is limited by the scope of programs that the architect has initially planned for. While this may not be an issue with single family residences such as the Marie Short house, this method becomes more problematic when dealing with projects that have a larger user base, longer expected lifetime and many more programmatic requirements. Large public projects such as community centres or office buildings are much more susceptible to unexpected changes within their respective communities and economies. One response to this sense of uncertainty is planned obsolescence whereby the eventual disuse of the building is planned into the method of construction. This method requires extensive planning of

the material assemblies, type and schedule of construction as well as the method of dis-assembly and the anticipation of material re-use.

A good example of this approach is the Deltech Park office building in Delft, Netherlands. The building is designed for a maximum lifetime of two decades at which point it can be disassembled and the majority of building components sold for re-use. In detailing the building emphasis was placed on component deconstruction as well as low-tech detailing—meaning that components are standard, cheap and widely available.<sup>12</sup>



Delftech Park office exterior facade and corner detail; photographs by Bierman Henket Architecten.

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12 Bernard Leupen, Heijne Rene, and Jasper Von Zwol, *Time-based Architecture*, (Rotterdam: 010 Publications, 2006), 236.

However, this approach to time based design, wherein the final stage of a building is a meticulously planned erasure from the landscape, represents a significant challenge for architects and planners. The mercurial nature of a building which by design leaves no imprint within its context calls into question the value of architecture as a form of place-making. As such time based design must reconcile the position of being in constant flux with the relationship every building must invariably have with its given context.

There is a growing discussion among contemporary architects as to the elusiveness of appropriate time based design. These practitioners believe that they must eschew the idealized, static monumentality of modernism and embrace an architecture of polyvalence and flexibility.<sup>13</sup> Buildings must be reconfigured, dis-assembled, easily moved and swayed by social and economic factors.

Till defines time within architecture as a series of layers, some communal, others deeply personal. Cyclical, linear, and historic time all intersecting within the growth and decay of the building.<sup>14</sup> A dynamic system of unexpected intersections and parallel narratives. This conceptual model of time-based architecture is staggeringly complex and would demand a high level of building system and program flexibility in practice.

The caveat of this wholly dynamic architecture is its resistance to be rooted in place, or more accurately, to impart some sense of place onto the site. Architecture must in some way resist the flow of time so as to establish

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<sup>13</sup> Ibid., 9.

<sup>14</sup> Jeremy Till, *Architecture Depends*, (Cambridge, MA: MIT Press), 2009, 94.

a relationship with the site- to create a static anchor within a dynamic system.<sup>15</sup>

Herman Hertzberger summarizes these theoretical aspirations in stating that building forms should be polyvalent- that is-

... both lucid and permanent, but changeable in the sense that you can interpret them differently though time.<sup>16</sup>

This conceptual polyvalent architecture reconciles the notion of building in time and building in place by envisioning a form which resists both failure through dis-use and erasure from the landscape.

The work of experimental design firm Smout / Allen often explores this relationship between time based design and the specificity of site. Their 'Retreating Village' project is a conceptual rural village composed of a series of architectural 'devices' which drag a number of dwellings away from an eroding English coastline. This system of rails acts as the physical drawing out of the history of the village through time.

The project is developed through a series of models and experimental drawings which blue the physical location and spatial quality of the village by layering all possible villages in all possible timelines.

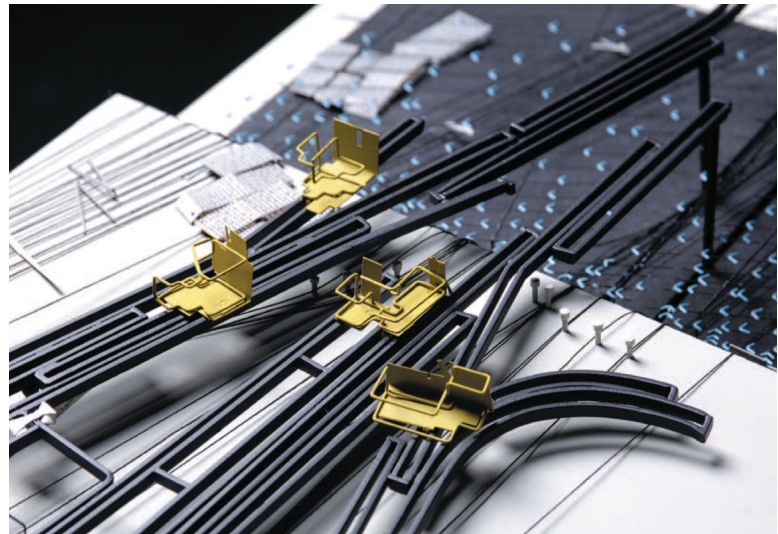
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15 Rene Heijne, Jacques Vink, *Flex Buildings, Designed to Respond to Change*, in *Time-based Architecture*, (Gateshead, England: Urban International, 2005), 60.

16 Herman Herzberger, *Time-Based Building*, in *Time-based Architecture*, (Gateshead, England: Urban International), 2005, 82.

[The Retreating Village] adopts an architectural language of impermanence, of permeable screens, loose-fit structures, and cheap materials that complement and contribute to the nature of the restless landscape.<sup>17</sup>

The ephemeral nature of the dwellings allows the village to change and ultimately dissipate in parallel with the precarious landscape. The series of armatures which physically trace the retreating village are the permanent addition to the landscape which both resists and embraces the timeline of the community. It is the monumental component of a dynamic architecture which roots the timeline of the community within the site.



The Retreating Village, physical model showing the movement of the village across the landscape through time; photograph courtesy of Smout/Allen.

If we use this dichotomy as the basis for a model of time based architecture, we can begin to see how the changes inherent to all buildings can be enriching to the physical space which they occupy. The relationship between building and time traces out the narrative history of use within the landscape.

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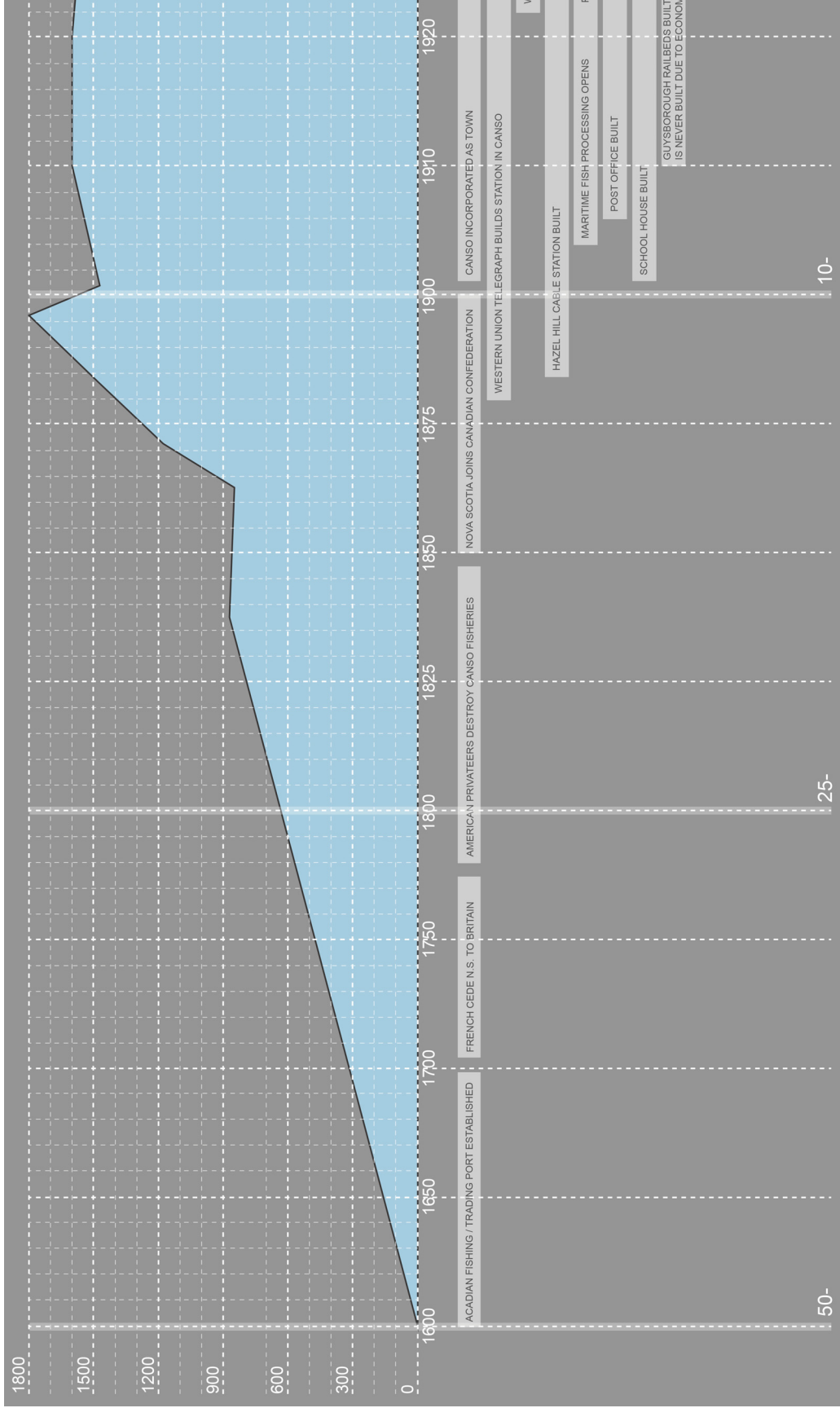
<sup>17</sup> Laura Allen, *Research Output 2: The Retreating Village*, (Royal Academy Summer Exhibition, London, 2005 and 2006), 21.

## Linear and Cyclical Time

In order to appropriately respond to Canso's current needs while simultaneously addressing its tumultuous history and uncertain future it is essential to create linear and cyclical timelines of the community. These timelines can begin to inform the ways in which building programs might change daily, annually and over the life time of the project. They will also help to establish immediate needs of the community which the building(s) will occupy within the fabric of the community.

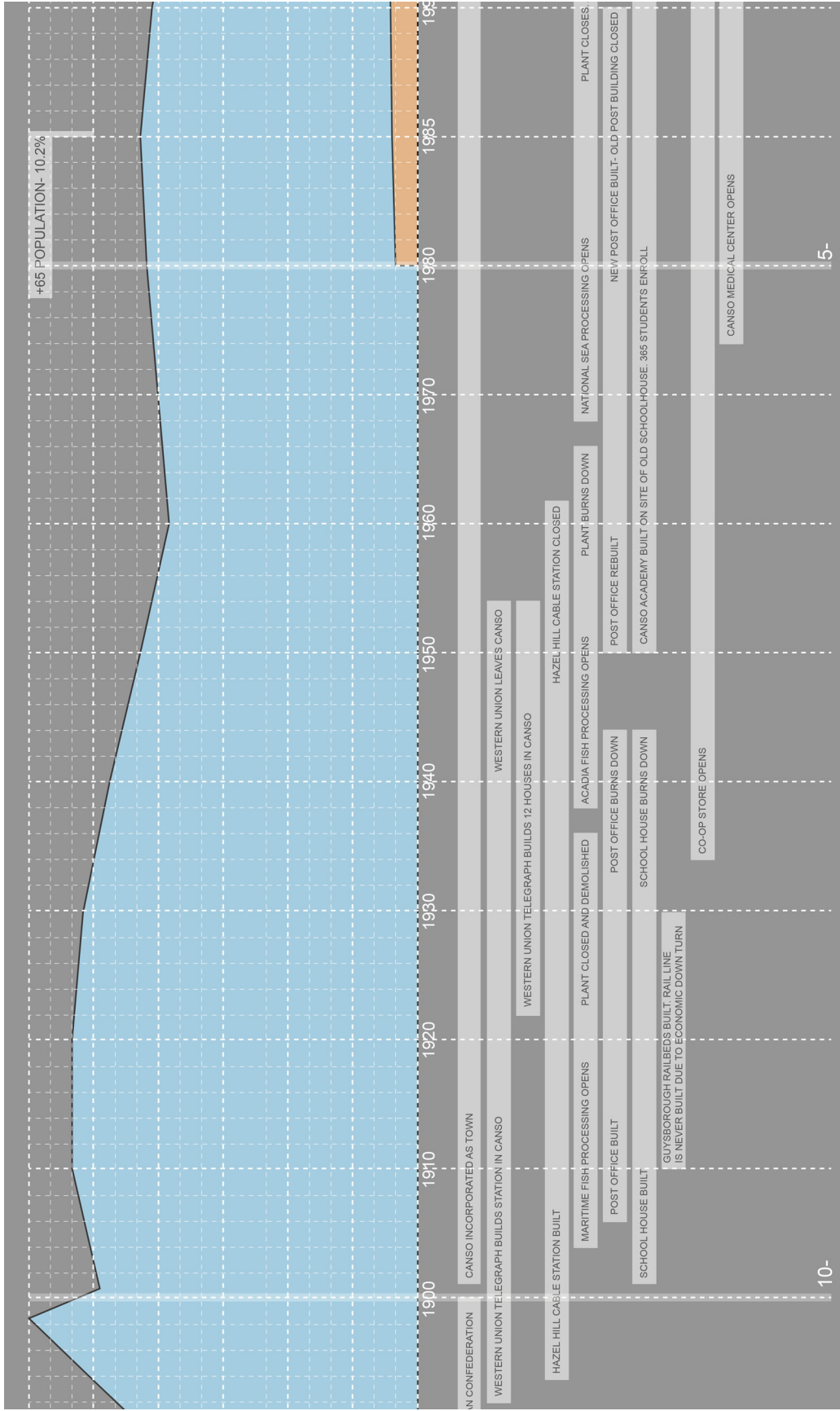
These timeline are not intended to create a specific trajectory for any proposed buildings or the town going forward. The collection of this historical data is meant to illustrate two points; the uncertain nature of economic and social stability in the community and the clear relationship between the state of the community and the lifetimes of certain, significant buildings. The unpredictable nature of Canso resists the planned phasing and obsolescence approach to time-based design. Instead, the following timelines illustrate the need to frame the project as meeting current needs while being receptive to the uncertainties of the future state of the community.

The following graph describes a linear progression of time. The graph shows the fluctuations within the population of Canso since its inception in the 1600's. The graph shows the population growth associated with the industrial boom of the 20th century and the gradual decline of the 21st century. Parallel to this, the graph maps the linear timeline of Canso in terms of significant events which have shaped the community over its roughly four hundred year lifespan.

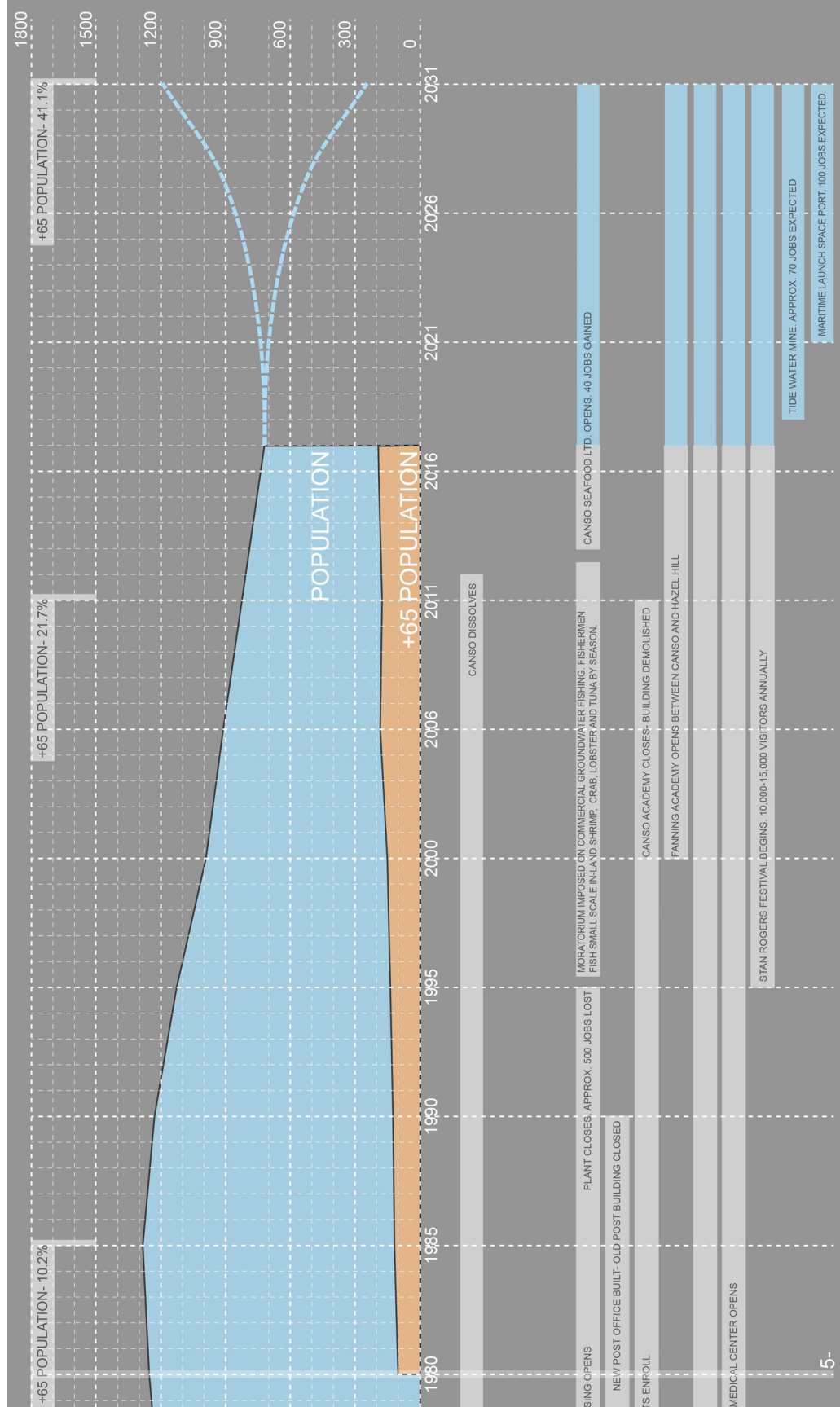


Linear timeline of Canso from 1600-2031. The graph shows the fluctuations of population as well as population of senior citizens. This data is contrasted with significant historical events and building lifetimes in the community; from Statistics Canada and Canso Historical Society. Part 2 on page 29, Part 3 on page 30.

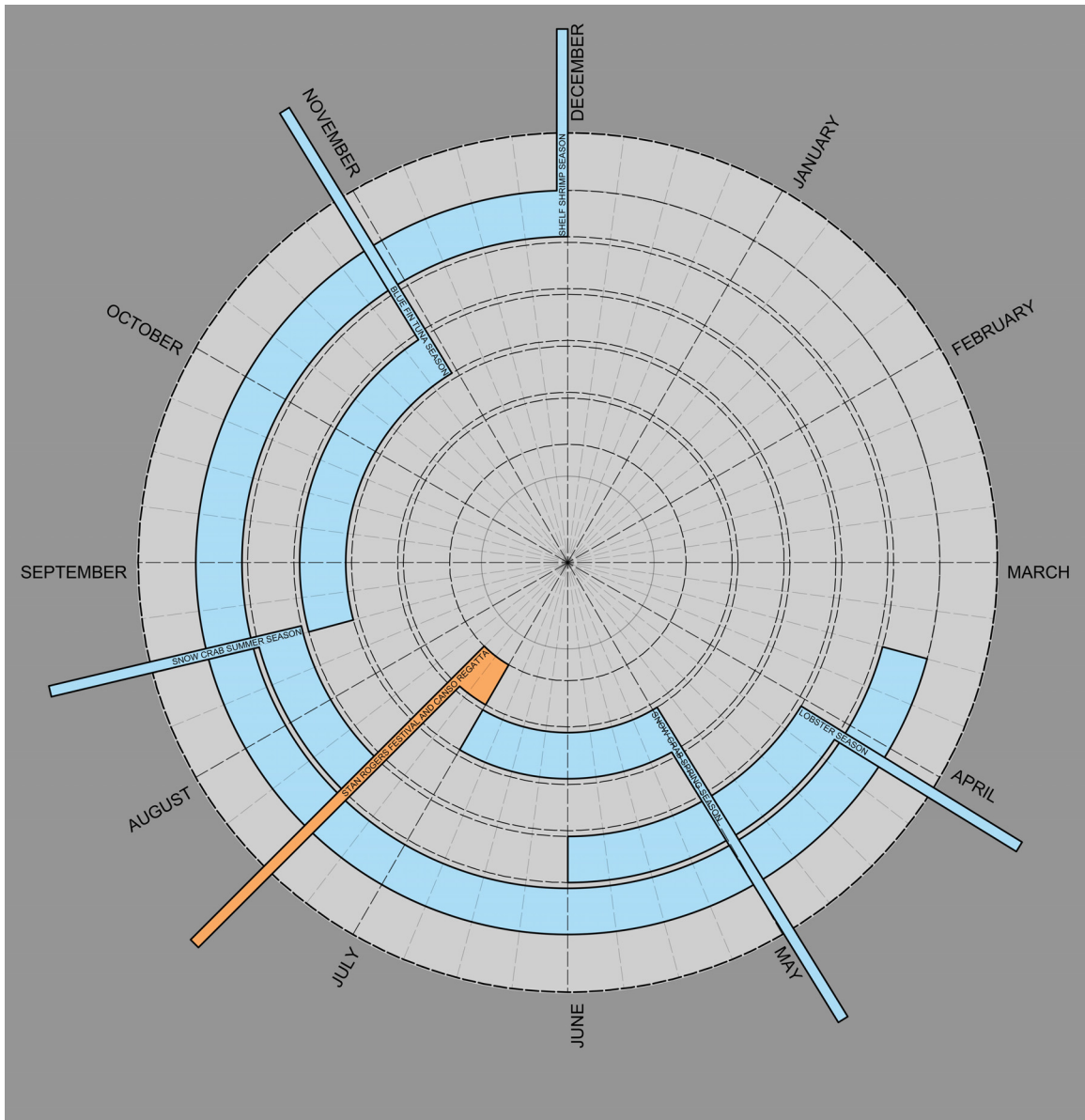




Linear timeline of Canso from 1600-2031. The graph shows the fluctuations of population as well as population of senior citizens. This data is contrasted with significant historical events and building lifetimes in the community; from Statistics Canada and Canso Historical Society. Part 1 on page 28, Part 3 on page 30.



Linear timeline of Canso from 1600-2031. The graph shows the fluctuations of population as well as population of senior citizens. This data is contrasted with significant historical events and building lifetimes in the community; from Statistics Canada and Canso Historical Society. Part 1 on page 28, Part 2 on page 29.



Cyclical timeline of Canso. The graph shows the fishing seasons and annual events and how these events overlap throughout the year; from Fisheries Canada.

The above graph describes the cyclical timeline of the community. Since the decline of large-scale commercial fishing in the 1990's, the local work-force has shifted to small-scale inshore fishery. This means that a waterfront which used to be busy year round now has specific annual cycles related to the different catch seasons. These seasons, along with the significance of the annual music festival means that the working water-front and the community as a whole has well defined peaks and troughs throughout the year.

Beyond responding to the uncertainty of Canso's economic and social conditions over the next decades, the project must also respond to these annual cycles. The annual influxes of people and capital in the community represents an economic and social opportunity to which the building could physically respond.

### **Narrative History Through Building**

In documenting the timeline of Canso it became apparent that the narrative history of this small community is best described through the lifetime of its most significant buildings. For a town of this size the influx of capital associated with a new business often meant the immediate construction of a new plant, social amenity or housing for workers. Conversely, any downturn in the economic climate would be immediately reflected in the use, upkeep and often end-of-life of these significant buildings.

This historical building-use-dis-use cycle of buildings in Canso is most evident during the 20th century. In 1901 to 1910 the commercial fishing companies who began to operate in the area built five factories, worker housing as well as the Canso post-office building.<sup>18</sup> The post office building was needed in response to the growth of the population of Canso and the surrounding communities at the time. The erection of this monumental brick-masonry building was also emblematic Canso's incorporation as a town in 1901.

In 1944 the Post office building burnt down. It was consequently restored to its original condition in 1950.<sup>19</sup> The building continued to operate as a post office until the

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18 Canso Historical Society, comp, *Portrait of a Century*; 11.

19 Ibid., 67.



Canso Post Office 1900-1944; photograph by Percy Lumsden.



Canso Post Office,  
photograph, 2016.

90's when a new, smaller office was built across the street. Although several businesses were in talks of purchasing the former post office as of today the building is regularly maintained, unboarded and unoccupied. The historical value of the post office means that it is unlikely to be demolished. However, the size, construction type and layout of the building make it unsuitable for any of the community's current needs.



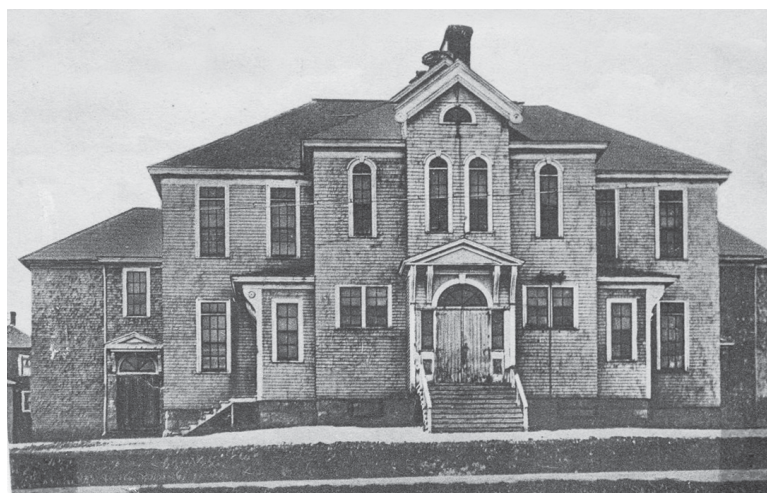
Hazel-Hill Cable Station, photograph, 2016.

The Hazel-Hill Cable station, is in a similar state of dis-use. Built in 1884 this brick-masonry building has been boarded up since it closed in 1962.<sup>20</sup> As is the case with the post-office, the historical significance of this building means that residents have been reluctant to consider demolition. However, unlike the post-office the cable station has been boarded up and left to deteriorate since its closure. Today the building is a sort of tourist attraction, a monument to its own former use and in a way a monument to the former state of the community.

The Canso school house which was built in the 19th century on the intersection of Main street and School street had also burnt down in the fire of 1944. In 1950 this two storey wood-frame school house was replaced with a three storey wood-frame high-school.



Canso Academy 1950-2014; photograph from GoogleMaps.



Canso School House 19-- 1944; photograph by Percy Lumsden.

In 1951 three hundred-and-sixty five students would enroll in the school.<sup>21</sup> By 2011 enrollment had declined significantly enough that the regional school board considered closing down the school. In 2012 the building had been closed and

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<sup>20</sup> Ibid., 235.

<sup>21</sup> Ibid., 221.



Canso Academy demolition;  
video-still from Youtube.

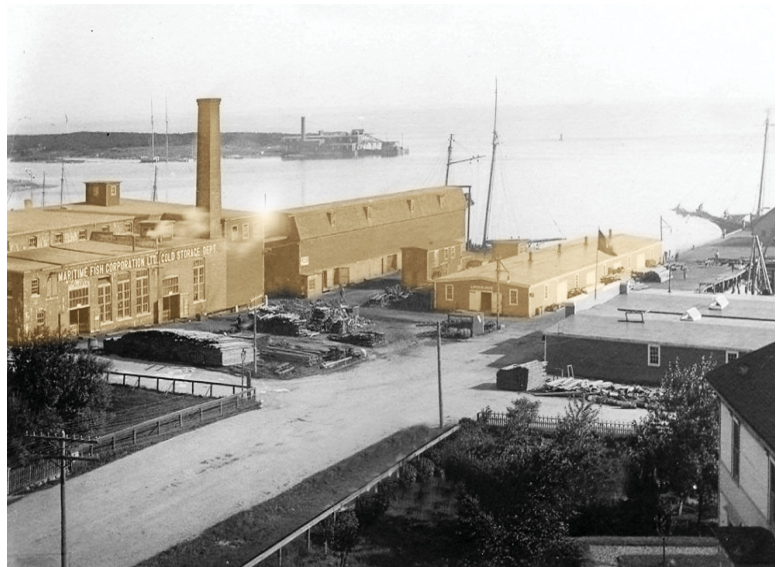
the students sent to a feeder school located between Canso and Hazel Hill.<sup>22</sup> Much to the dismay of the local population, the building had been demolished in 2014. Today this empty lot on School street is a void in the center of the community. However, the historical associations of this place are not lessened by the absence of the building within the fabric of the town.



Canso from Whitman's  
Wharf; photograph by Percy  
Lumsden; retrieved from  
Ancestry.com.

Whitman's Wharf and the adjacent waterfront lots have historically been the most important parts of Canso's working waterfront and arguably the heart of the community itself. The wharf and adjacent waterfront has been the site of Canso's most historically significant industrial buildings.

The Maritime Fish processing plant, built between 1901 and 1910 closed in 1929 due to a downturn in the local economy. The brick-masonry building was demolished in 1939 to make room for a newer processing plant.<sup>23</sup>



Canso, N.S. from Post Office; photograph by Percy Lumsden.

<sup>22</sup> CBC News, *Canso Academy to Close Permanently*, CBC News, March 02, 2012.

<sup>23</sup> Canso Historical Society, comp, *Portrait of a Century*; 72.

In 1966 the Acadia Fish plant which had replaced the 1901 plant suffered a major fire. The re-built plant operated until 1970 when the fisherman's union representing the fishermen in Canso, Mulgrave and Petit De Grat initiated a strike in response to unfair purchasing practices by Acadia Fish Ltd.<sup>24</sup> The economic impact of the strikes would go on to crippled the already struggling company and in 1970 the plant was permanently closed.<sup>25</sup> Shortly thereafter the plant was purchased by National Sea Ltd. who ran it until 1990 when the Atlantic cod moratorium caused the plant to close indefinitely.<sup>26</sup>

Several times throughout the 20th century this site has represented both the economic successes and failures of Canso. Each new facility has initiated an economic boom. Each closure, strike, fire or demolition has represented a historical downturn in the economy.



Canso Waterfront aerial. Highlighted are the processing plant (1966-2008) and Canso Academy (1950-2014). Both sites are currently vacant; photograph by Marinas.com.

24 Brendan Dixon, *Canso: A Historic Fishing Village's Struggle for Workers' Rights*, Students exploring inequality in Canada, November 29, 2012.

25 Canso Historical Society, comp, *Portrait of a Century*; 271.

26 *Ibid.*, 292.



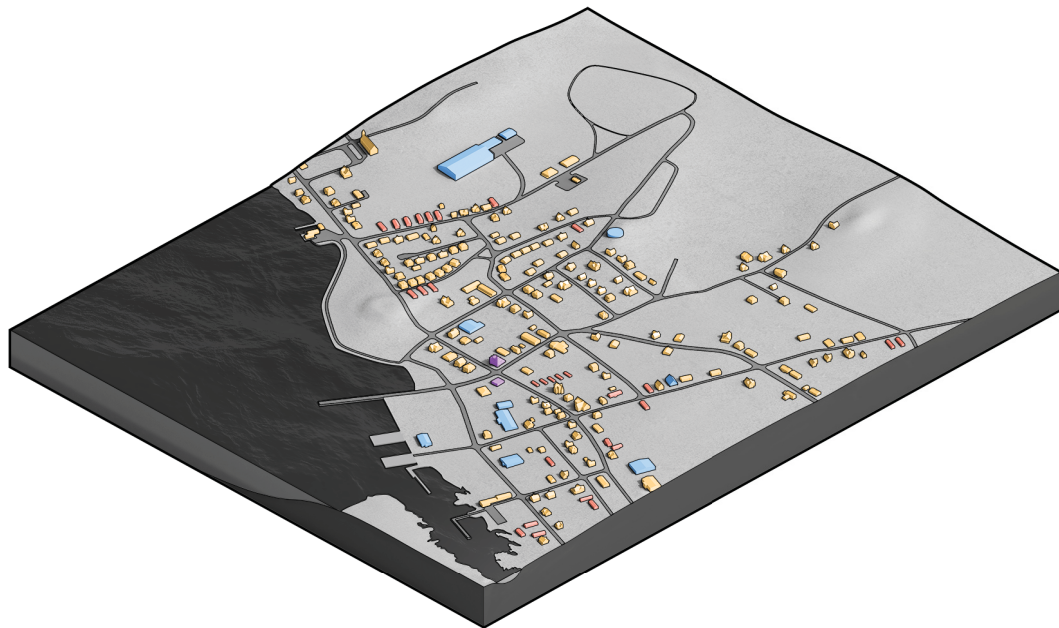
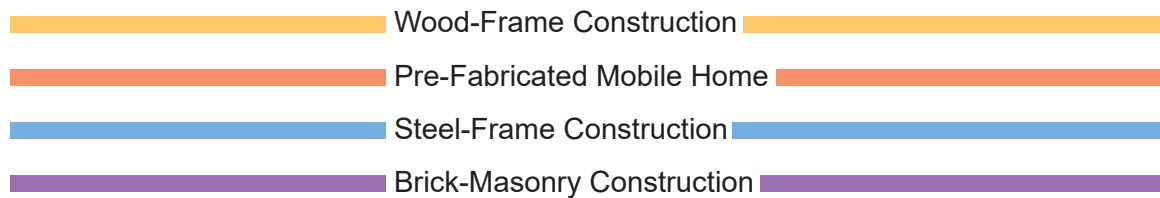
In 2008 the large facility was demolished in order to expand the wharf for the use of fishermen and tourists. However, in the decade that followed very little work has been done to develop the wharf or the adjacent waterfront. Today the site of the former processing plant has been fenced off and largely abandoned.



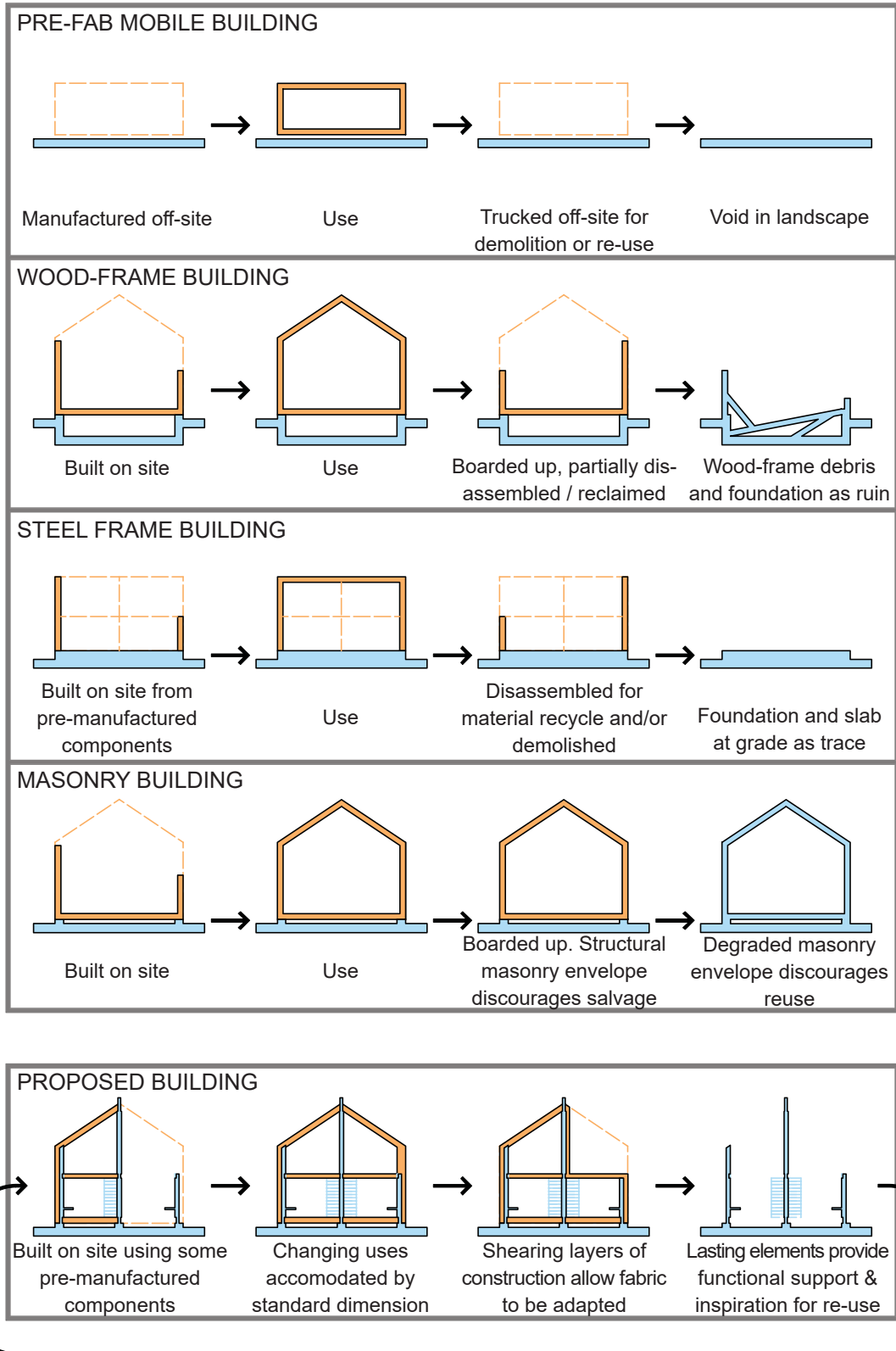
Intersection of Main Street and Water Street. Void left by the processing plant highlighted. Photograph, 2016.

Each of the narrative histories described through the lifetimes of these buildings presents a specific end-of-life paradigm. In the case of the post office and cable station the final expression of the building is that of a monument. A building within the historical fabric of the town which has lost all sense of utility, but which remains wholly intact. On the opposite end of this spectrum, buildings such as the aforementioned school-houses and processing plants have been entirely erased from their respective sites once the programs which they housed could no longer be sustained. However, because of the deep historical associations these buildings had in the community, their complete absence creates socially significant voids within the landscape of the community.

In each of these cases the disuse of the building and its afterlife as either monument or void becomes part of the historical narrative of Canso. However, both of these end-of-life scenarios lack continuity. The void and the monument lack the potential to be re-interpreted through time as the community grows, shrink, ages, etc. Buildings are boarded and abandoned or demolished and replaced because they lack the ability to be re-interpreted, or more accurately, to adapt to meet new, unexpected programmatic requirements. Aside from the implicit historical significance of a building, the end-of-life scenario is usually dependant on the type of building construction in question. The types of materials used for building assemblies as well as the way the building meets the ground will often determine the way in which it is treated after disuse. In Canso the four identifiable construction types are;



Canso digital model. Buildings are highlighted by construction type.



Building lifetimes by construction type. Proposed building highlights a cycle of use disuse and reuse.

Each of the existing building types in the preceding diagram goes through a unique set of steps during its lifetime. When the building eventually becomes disused it is either repurposed, demolished or abandoned. In the context of a small rural community, prone to sudden socio-economic change, the latter outcome is much more likely. In time some of these dis-used buildings in the rural landscape become historical ruins, unique to each construction type. The prefabricated building touches the ground lightly, and ultimately leaves a void in the landscape. The wood frame house leaves the partially scavenged frame. The steel framed building is demolished or partially disassembled, leaving its foundation as a trace. The masonry building resists both adaptation and disassembly. In rural communities this last construction type is most often associated with important communal institutions and thereby resists outright demolition by sheer historical importance. The masonry building is also much more likely to become disused in response to unprecedented communal change since the exterior envelope and in some cases interior partitions are very difficult and costly to modify. Like the Canso post office, this disused ruin which remains relatively whole becomes a monument to its former function.

The problem with these 'ruins' is that they all lack continuity of use. While they are all capable of having historical significance, they have no utility, no quality which would inspire the re-use of the building, its material components or the form they inscribe onto the landscape. These buildings fail to overcome the cycles of social and economic growth and recession which punctuate throughout the history of Canso.

The alternative to these modes of building use and disuse would be an architecture which grows to meet current needs, recedes in response to unexpected change and marks the landscape with the narrative of its use. The tracing of building within the landscape would imply tectonic, structural and programmatic possibility and in so doing would inspire a cycle of re-use. This 'polyvalent' ruin would be monumental and constant within the landscape. However, the ease with which it can be re-interpreted would allow it to engage continuously with a rapidly changing rural community.



Concept image- ruin as traces of building in the landscape.

## CHAPTER 4: BUILDING METHOD

### The Shearing Layers of Change

In anticipating an architecture which is easily adaptive through time it is imperative to develop a building system strategy which will allow the building to be efficiently built, modified and dis-assembled. Allowing a building to grow, shrink or re-organize with the community continuously reinforces the relationship between architecture and user. The ability of architecture to respond to changing user needs also reinforces the sense of ownership that communities have over their buildings. This is especially true if users have the first hand ability to change their environment to suit their needs. When designing a project which is to be potentially modified far beyond the initially conceived scope it is imperative to give the users sufficient agency to plan out how their building develops.

The approaches to adaptable building design are either use based or building system based. Both of these categories can be further broken down into 'soft' and 'hard' subcategories.<sup>27</sup>

'Hard-use' prescriptively outlines a number of spatially overlapping uses that change by way of mobile partitions. Since we are actively trying to encourage unexpected types of use, this strategy would not work as it is for too prescriptive. 'Soft-use' adaptability employs the opposite approach by over-sizing spaces or under-programming in order to encourage unexpected uses through time.

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27 Jeremy Till, Tatjana Schneider, *Flexible Housing: The Means to the End*, (Architectural Research Quarterly 9, no. 3-4, 2005), 293.

The 'hard-technology' and 'soft-technology' approaches both separate building layers in order to encourage change without affecting structure and services. This may preclude a structural frame that supports plug-in modules or a predefined grid that allows for standardization of components.

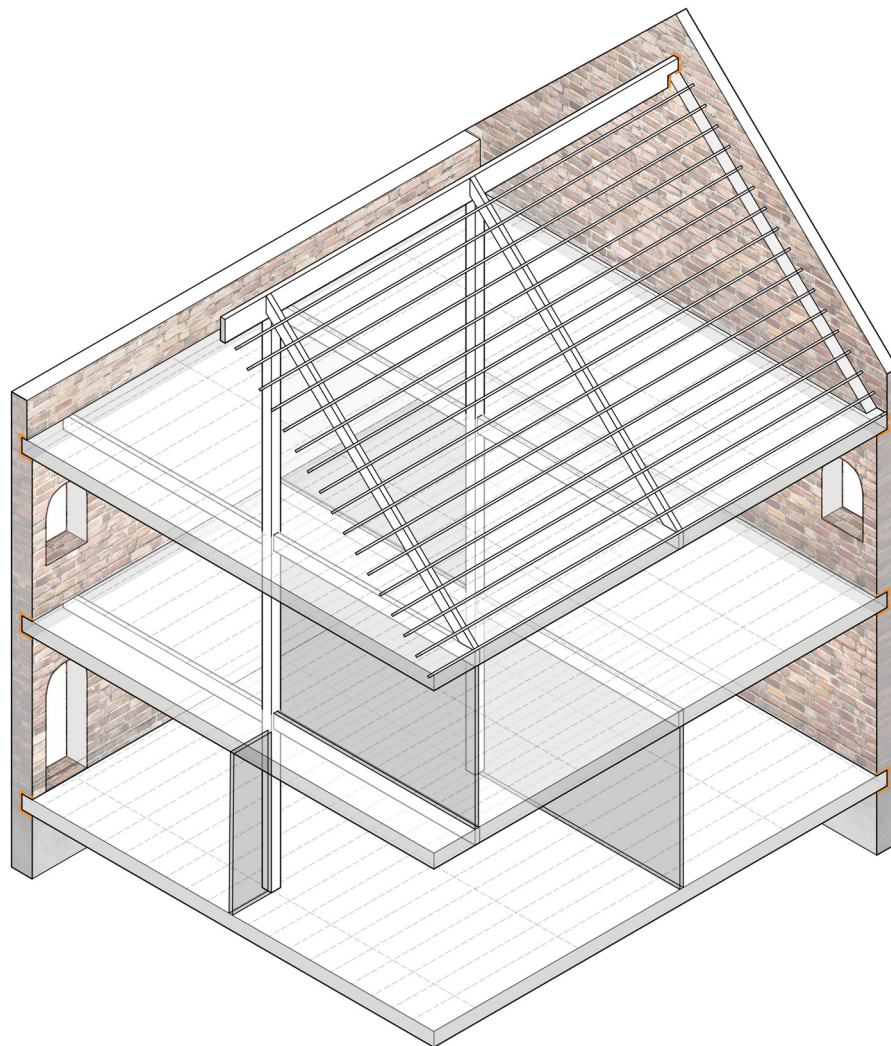
The 'Hard-technology' approach is again more prescriptive and therefore limiting. This approach would employ the use of specifically engineered building systems which would be difficult to adapt or repurpose at a later time. The specificity of components is also prohibitive in that it limits the types of spaces and programs that can be achieved. 'Soft-technology' allows users to determine the way space is filled, adapted and used. The use of standard building techniques and widely available building materials ensures that the cost and difficulty of adaptation is not prohibitive.

The 'soft' approach to use and technology is preferential due to its open-ended nature and use of widely available building materials and construction techniques. The architect Stewart Brand was one of the first practitioner to outline this mode of thinking. In his book 'How Buildings Learn', Brand uses the concept of the 'shearing layers of change' and applies it to the discussion of soft-technology adaptability.<sup>28</sup> The relationship between the shearing layers in time determines the longevity of the building. If the shearing stress is too great the obsolescence of one layer may compromise one or all of the others.

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28 Stewart Brand, *How Buildings Learn: What Happens After They're Built*, (New York: Penguin Books, 1994), 13.

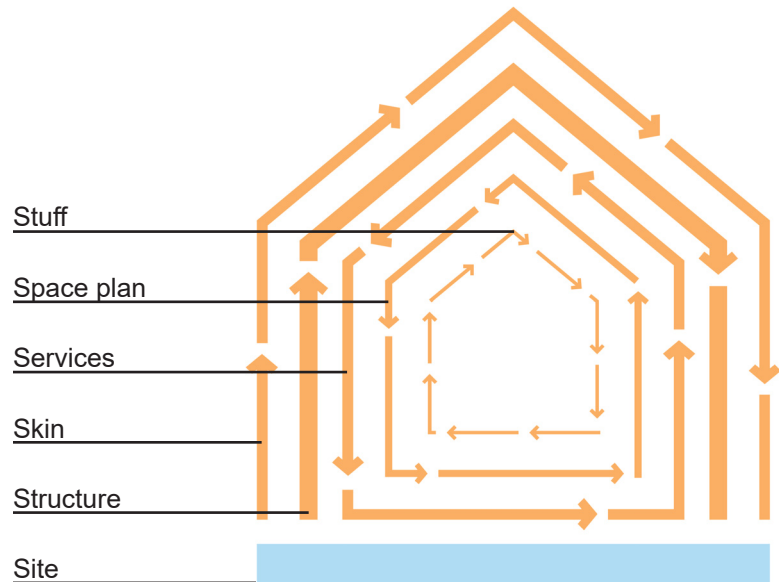
The clearest example of this type of failure can be found in older buildings with structural masonry facades- such as the post office and cable station found in Canso. In the case of these buildings, structural elements, floor and roof assemblies, interior partitions, finishes and building fenestration are tied into the existing masonry structure. The masonry shell is difficult and cost-prohibitive to alter which ultimately limits the parameters of change that can be made to the other 'shearing layers' within this building skin.



Masonry building diagram- the floor and roof assemblies are embedded within the masonry wall structure. Other factors such as location of existing openings and the specific dimensions imposed by the existing masonry superstructure limit the possibility for re-configuration and reuse.



By minimizing the inter-relationships between layers we can offset unnecessary renovation costs or obsolescence of the building. This scenario-buffered building design ensures that there is sufficient maneuvering room to deal with unforeseeably changing building uses.

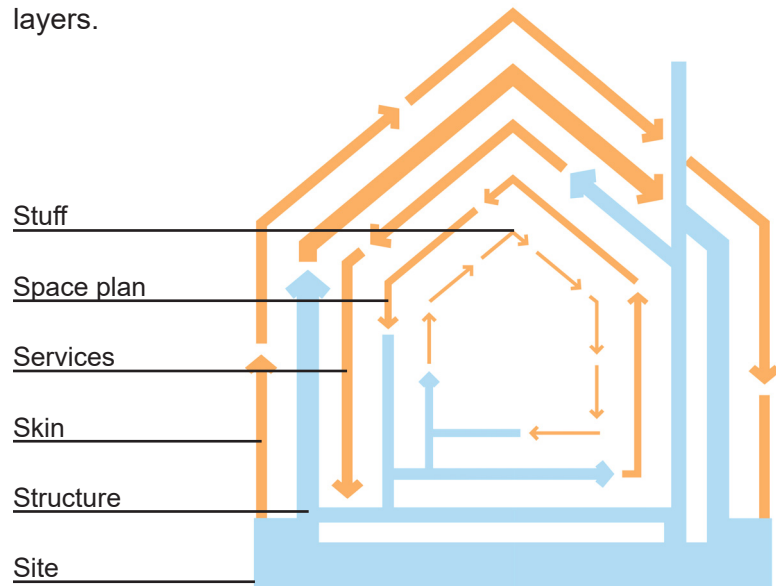


Shearing Layers of Change. Original diagram by Donald Bryan.

The preceding diagram describes the shearing layers of a building, as first conceived by the architect Frank Duffy.<sup>29</sup> While the diagram addresses the relationship between discrete building layers fairly accurately, it can be argued that the relationship between building and site is not sufficiently explored. Since the project is concerned with the intersection of architecture and landscape through time it is important to re-develop this diagram so as to acknowledge the relationship of site to the other shearing layers. If we treat the concept of the previously defined 'polyvalent ruin' as the extension of the landscape we begin to modify the diagram to better reflect the intention of the project. The ruin takes on the roles of the layers with which it intersects, and,

<sup>29</sup> Steve Tiesdell, Matthew Carmona, *Urban Design Reader*, (Architectural Press, 2007), 302.

in so doing becomes a useful component of those shearing layers.



Shearing Layers diagram modified to explore relationship of shearing layers and foundation components within the site.

## Methods of Building System Adaptability

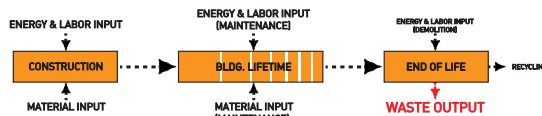
There are several building design strategies which have developed from the shearing-layers definition. These are practices for building assembly and disassembly with the ultimate goal of easy material reuse, recycling or downcycling. Direct reuse of building materials with no re-manufacturing required is the most desirable outcome of these strategies. It is important to consider the following building design practices;

- access to and use of simple, mechanical connections
- use of standard, low tech components and materials
- well defined, repeatable structural grid
- separation and centralization of services
- very limited or no use of adhesives
- components sized for ease of handling
- use of high quality, recyclable materials

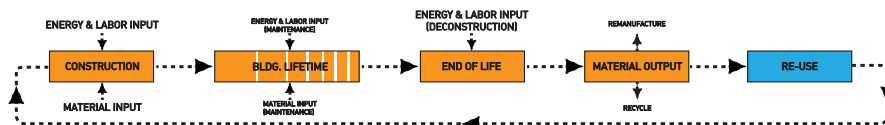
- adequate documentation of building systems for future re-configuration

Reducing of 'shear' in buildings is not limited to the relationship between structure and envelope, or services and interior partitions. It is also important to consider the shear between programs or uses. For example, if we know that a building will house a commercial function for approximately 20 years and a residential function for approximately 50 we will want to ensure that the disuse of the former does not negatively impact the latter.<sup>30</sup> However, since we are addressing programmatic uncertainty it is more appropriate to separate the building into discrete, repeatable modules along a regular structural grid without specifying programmatic requirements.

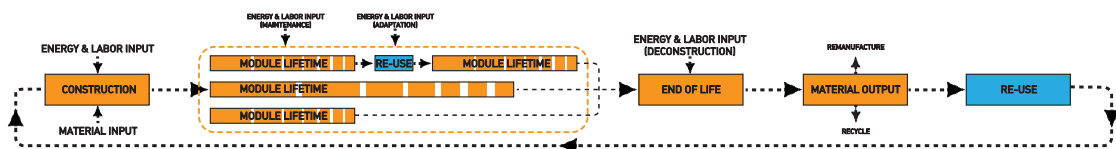
### TYPICAL LIFECYCLE



### DESIGN FOR DISASSEMBLY

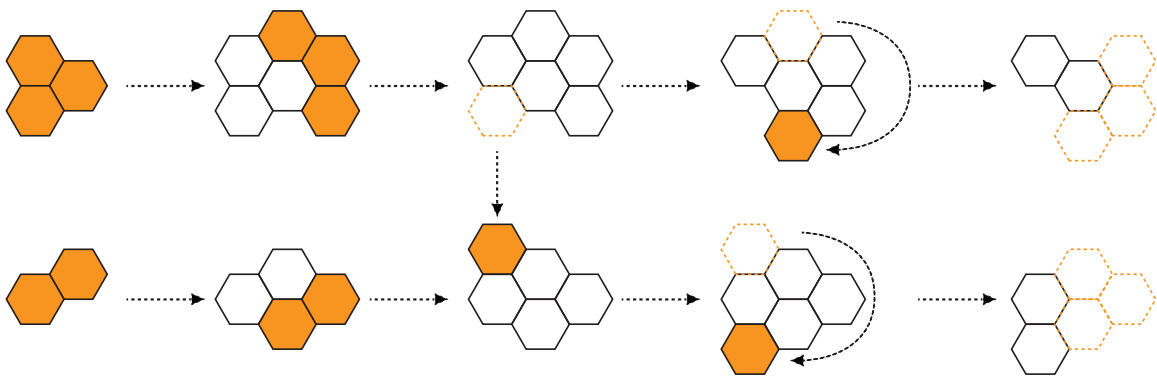


### DESIGN FOR DISASSEMBLY + MODULARIZATION



Building lifetime diagram. By incorporating material reuse through disassembly and modularization by the adoption of a repeated set of dimensions the lifetime of the building is increased.

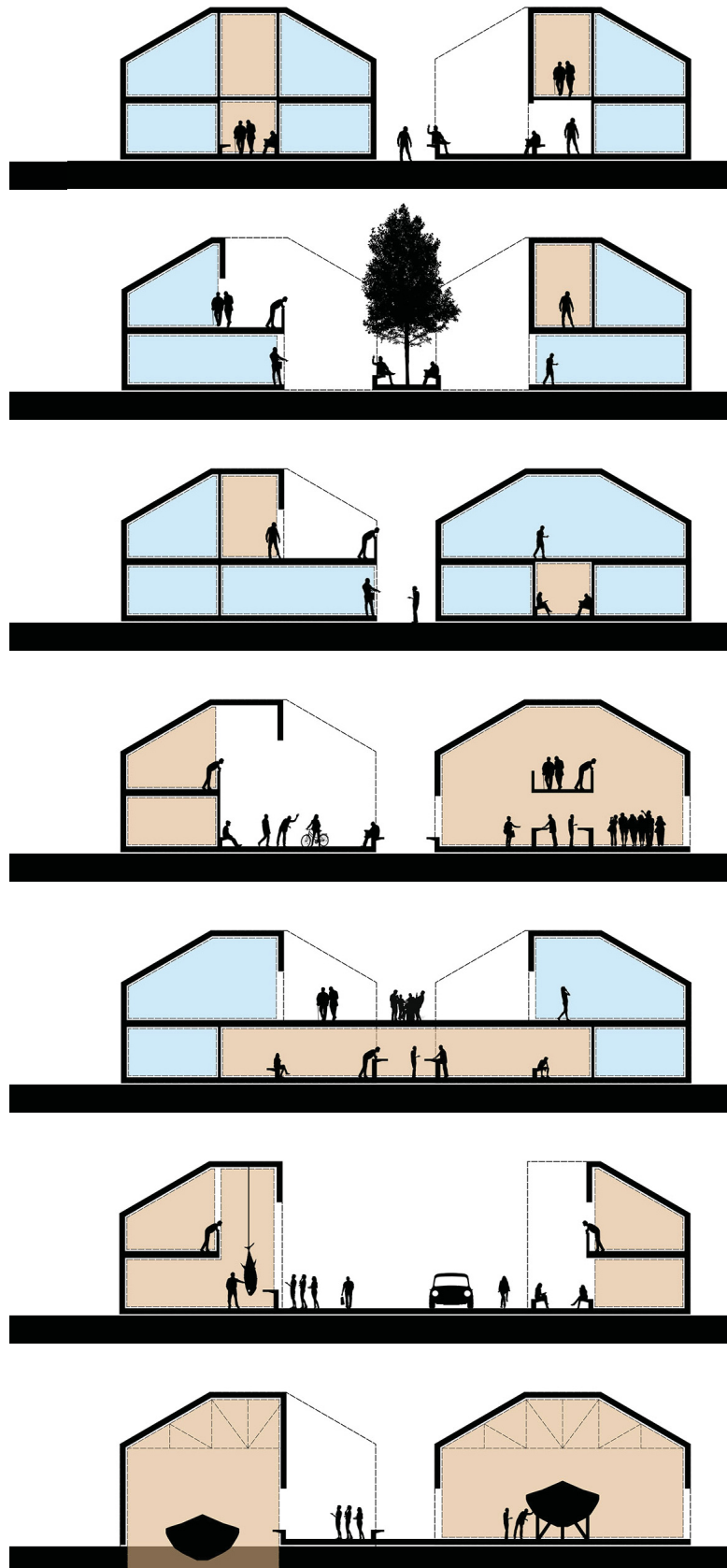
30 John Fernandez. *Designing Diverse Lifetimes for Evolving Buildings*, In *Environmental Diversity in Architecture*, Edited by, Steemers Koen, Mary Ann Steane, 65-82, (London: Spon Press, 2004), 74.



Schematic diagram of building growth, adaptation and deconstruction.

By breaking down the building into a set of repeatable dimensional constraints we can start to imagine a logic for the growth and decay of program over time. Separating the building layers according to the logic of the 'shearing layers' diagram and detailing the building so as to allow efficient assembly and disassembly. This allows for the ease of material input and output as well as the flow of building components both on and between sites.

The specific set of dimensions that repeat throughout the scheme will need to account for a plurality of uses ranging from individual-residential to commercial, large communal spaces or even light-industrial use. In order to hone in on these dimensions, a series of diagrammatic studies in section have been developed. The emphasis of these studies is to show a plurality of programmatic use as well as an ability to create as many unique public-to-private and interior-to-exterior spacial conditions as possible.



Building module sectional diagrams. Exploring a plurality of living situations, intersections of public and private space as well as possible intersections of interior to exterior space.

## CHAPTER 5: DESIGN

### Site Selection

The community of Canso is organized along the waterfront with the intersection of Main street and Water street, which faces Whitman's Wharf, being the town center. Canso proper as well as the surrounding communities of Hazel Hill and Dover are organized as a series of outlying residential pockets and a main cluster of housing, commercial and fishing infrastructure along the waterfront. As the community shrinks the small outlying areas both within and outside Canso are becoming increasingly isolated from the town center. The primary reason for the selection of the two sites will be to consolidate and densify the community as the population ages.



Canso site plan. Main Street and proposed building sites indicated in orange. Significant commercial and communal buildings and paths of travel indicated in blue.

There is also a considerable disconnect between the waterfront, Main street and the site of the Stan Rogers music festival. The community has chosen to demolish the processing plant adjacent to Whitman's wharf in order to redevelop the waterfront to reflect a more tourism based economy. However, there is no discernible path of pedestrian travel between these locations.

The two sites chosen for the project will book-end the major commercial stretch of Main st. and create a connection between the waterfront and the town center. The placement of the project also aims to bring some of the activities associated with the festival into the town, so as to foster greater social and economic engagement between Canso residents and festival goers.

The two sites are also chosen for their historical significance. As noted previously, both Whitman's wharf and the School street lot have been occupied by historically significant buildings. Both sites are currently empty, creating a 'void' condition in the fabric of the community. These sites are important landmarks and for many residents their disuse has become synonymous with the current decline of Canso. By introducing a sense of growth and impermanence to the programs as well as a sense of monumentality to the core elements associated with the landscape the proposed buildings would replace the final negation of these prior landmarks with a sense of both historical continuity and future possibility.

## Seed and Program

### Site 1: School Street

The primary strategy for this site is to use the existing height difference between School street and King street to create two different elevations at which to approach and enter the building. This allows for the creation of a series of interior courtyards between porous blocks of program. The ability to approach the building from either direction and enter on either floor creates a range of different public and private spaces. This allows residents to retain their sense of privacy as well as to freely engage with the larger community of the block.

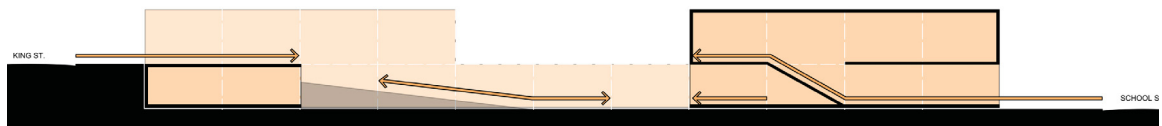


Diagram showing the relationship between School Street and King Street through and around the proposed building.

The initial program for this site is transitional elderly housing which can take on more communal functions as the project develops over time. Since the building will be housing a range of people with different levels of physical ability, the plans and sections of this site have been developed to show an appropriate range of housing options which can be created within the same dimensional grid. Living options range from single room dwellings with shared communal kitchens and laundry to two bedroom apartments with shared public terraces. The porous layout of these units across the site allows a broad range of intersection between public and private space.

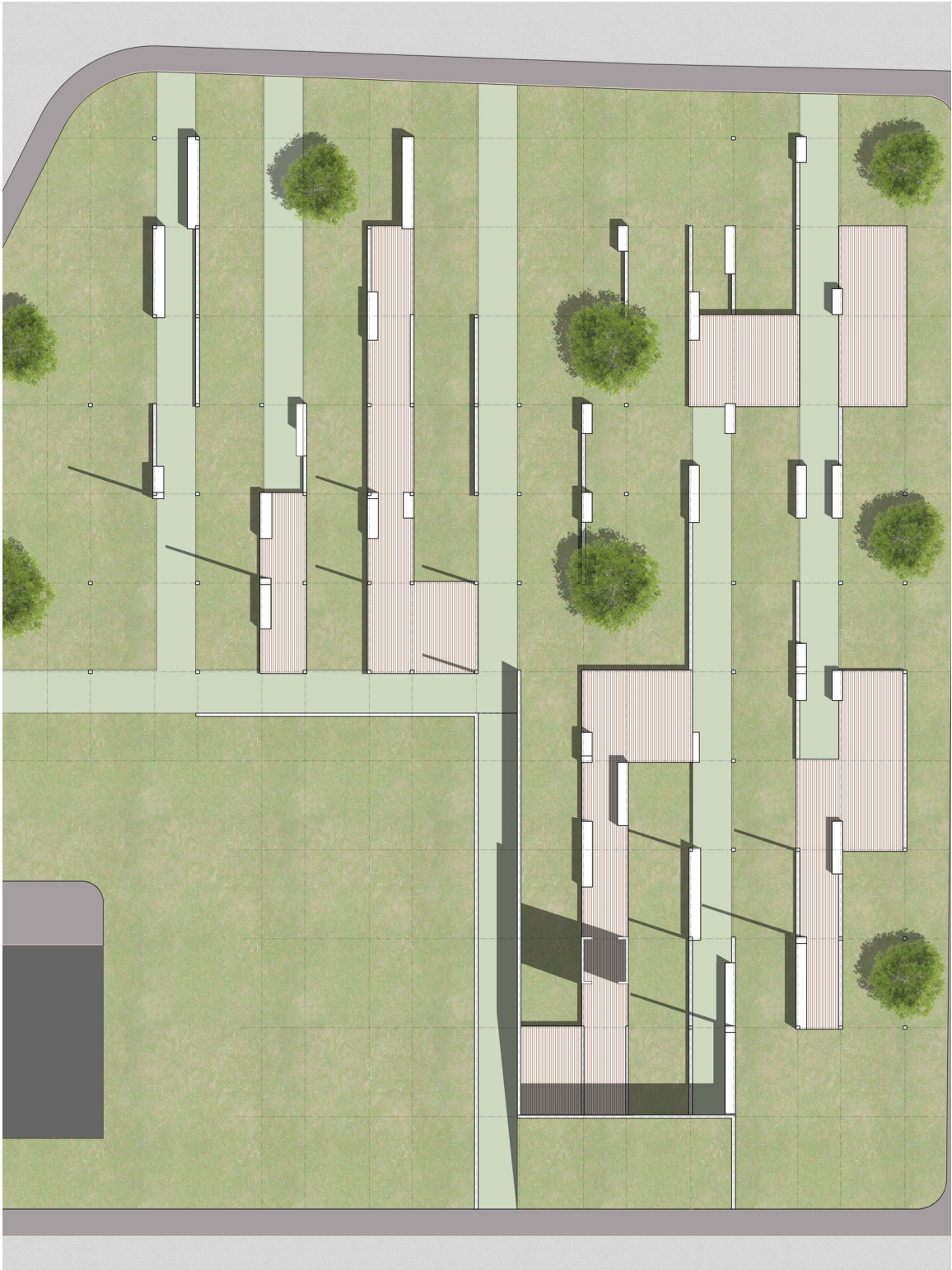




School street proposed building- Main floor plan consisting of mainly smaller single room units for older more dependant residents. Shared kitchen and laundry as well as a small clinic. Some loosely programmed common space along the peripheries of the project for annual activities that could spill out into the courtyards created by the juxtaposition of porous blocks. Emphasis on intersections of public and private space.



School street proposed building- Second floor plan consisting primarily of larger residential units for more independent seniors or other people from the community. Emphasis is placed on developing a number of viable unit types without making the layouts too prescriptive within the block. Porosity between units creates public terraces and private or semi/private outdoor spaces.



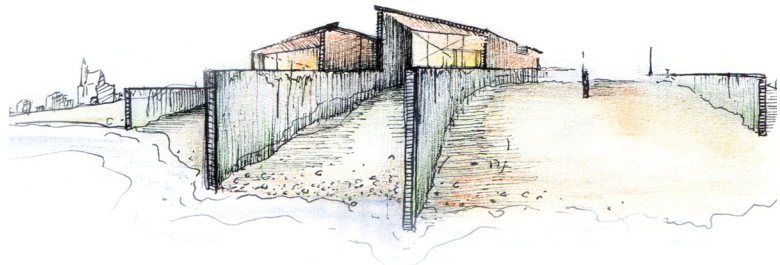
School street site without building. The creation of the new landscape by the 'ruin'.



School street site proposed building section. Emphasis placed on the relationship between interior/ exterior and public/ private space. Interior courtyards and light shafts to allow natural light through and between blocks.

## Site 2: Whitman's Wharf

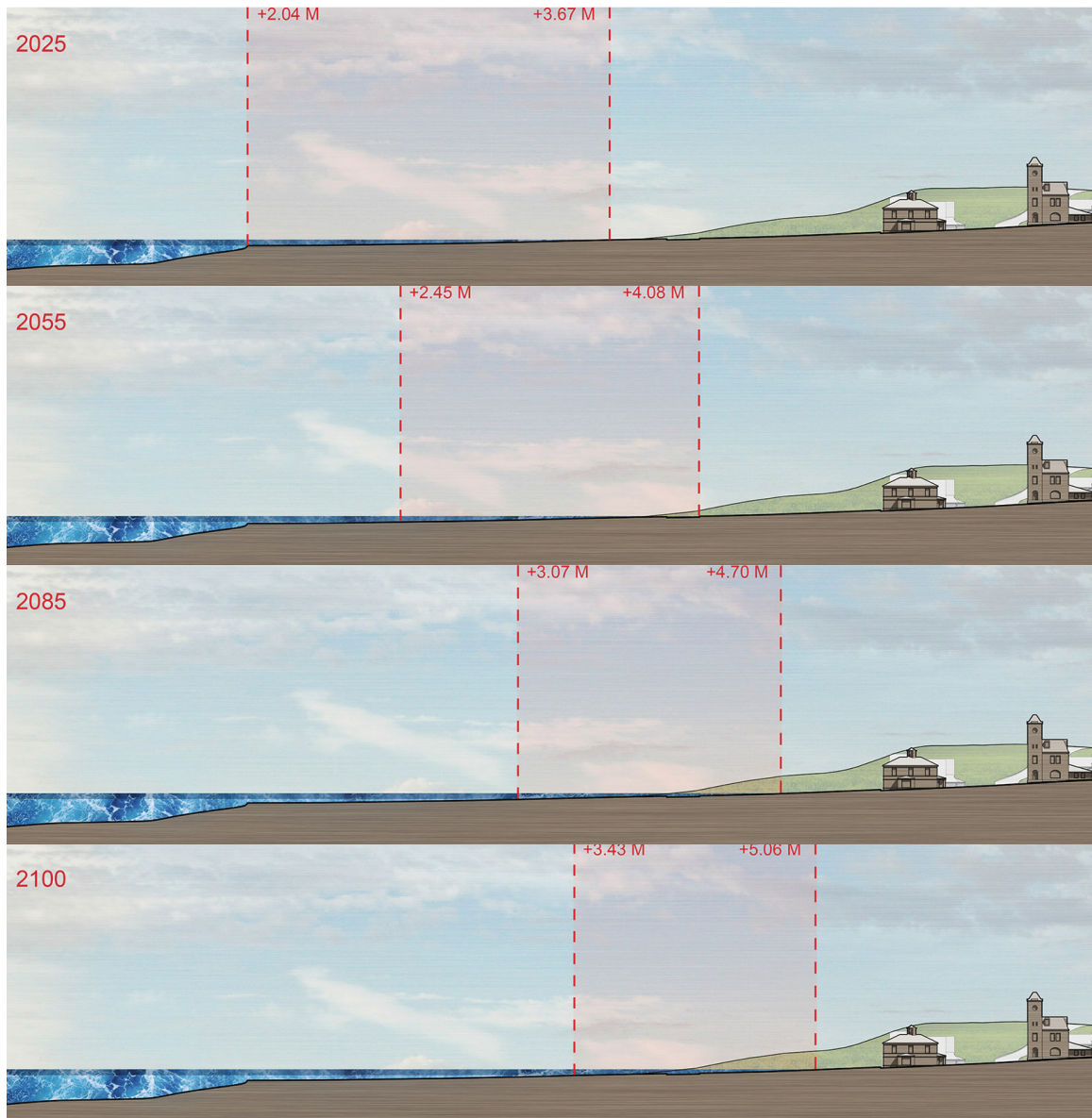
The first strategy for the Canso waterfront is to elevate the building in order to account for the sea-level change predicted over the next century. In many ways the anticipation of the changing coastal landscape runs parallel to the social and economic changes the community is facing. The gradual encroachment of water establishes a trajectory for a building to either grow or diminish over time.



Exploratory drawing- relationship between building, landscape and changing tides.

The rising sea level places both vertical and horizontal constraints on the way in which we can build on the waterfront. Sea level is a complicated metric to predict properly since it depends on a number of factors which may or may not overlap at any given time. The more accurately predictable factors are; the twice daily high-low tide, annual variations between apogee and perigee, monthly variations between spring and neap tides, the annual lunar cycle and crustal subsidence. There are also several factors which are more difficult to predict such as storm surges and wave action. The forecast of sea-level as defined by the combination of these factors is further complicated by the effects of anthropogenic climate change. As polar ice melts due to increasing global temperatures, the sea-level rises. The decrease in global ice coverage also means that more solar heat is trapped by the ocean. This trapped heat as well as the increased

global temperatures heat up the oceans causing further sea level rise due to thermal expansion. Climate change also increases the rate and severity of extreme weather events, causing an increase in the rate and severity of storm surges and wave action.



Coastline section showing global sea-level rise between 2025 and 2100. For each diagram the lower value represents the global sea-level rise added to the highest recorded tide in the area. The upper value is determined by adding the highest recorded storm surge to the lower value. Data from Nova Scotia Department of Environments.

Global sea-level rise is difficult to properly estimate since each prediction scenario gives a timeline of CO<sup>2</sup> emissions based on predictions of future population growth, economic growth and technological change over the next century.<sup>31</sup> These predictions range from drastic emission reduction and ecological conservatism to significant increases in emissions toward the end of the 21st century. For the purpose of this project the worst-case scenario for sea-level rise is used. By using recorded tide and storm surge data as well as global sea-level rise predictions we can make an approximate determination of the horizontal and vertical constraints of sea level on the site.

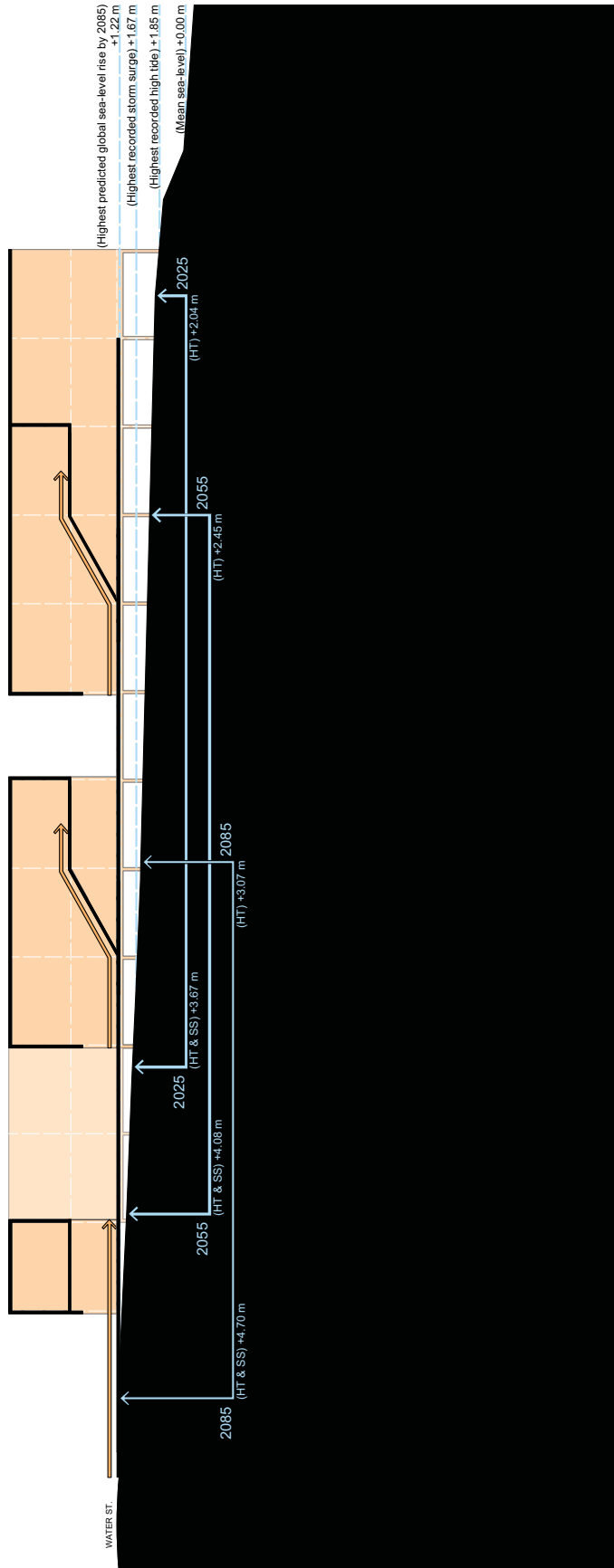
The highest total sea level rise prediction added to the highest recorded tide in the area gives us a horizontal constraint as water moves in across the landscape towards the community. In order to make a proper connection between Whitman's wharf, Main street and the site it is important that the building is placed past this horizontal line.

By taking this same predicted value and adding the height of the highest recorded storm surge in the area we can determine a vertical constrain. This is the height to which the building must be elevated so as not to be submerged in the less likely, but possible event that the highest recorded tide overlaps with the highest recorded storm surge in the highest predicted sea-level rise scenario in the year 2100.<sup>32</sup>

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31 William Richards, Real Daigle, *Scenarios and Guidance for Adaptation to Climate Change and Sea-Level Rise: NS and PEI Municipalities*, (Nova Scotia Department of Environment), 2011, 4.

32 Ibid., 32.



Whitman's wharf site strategy diagram. Exploring relationship between building, landscape and water through time.

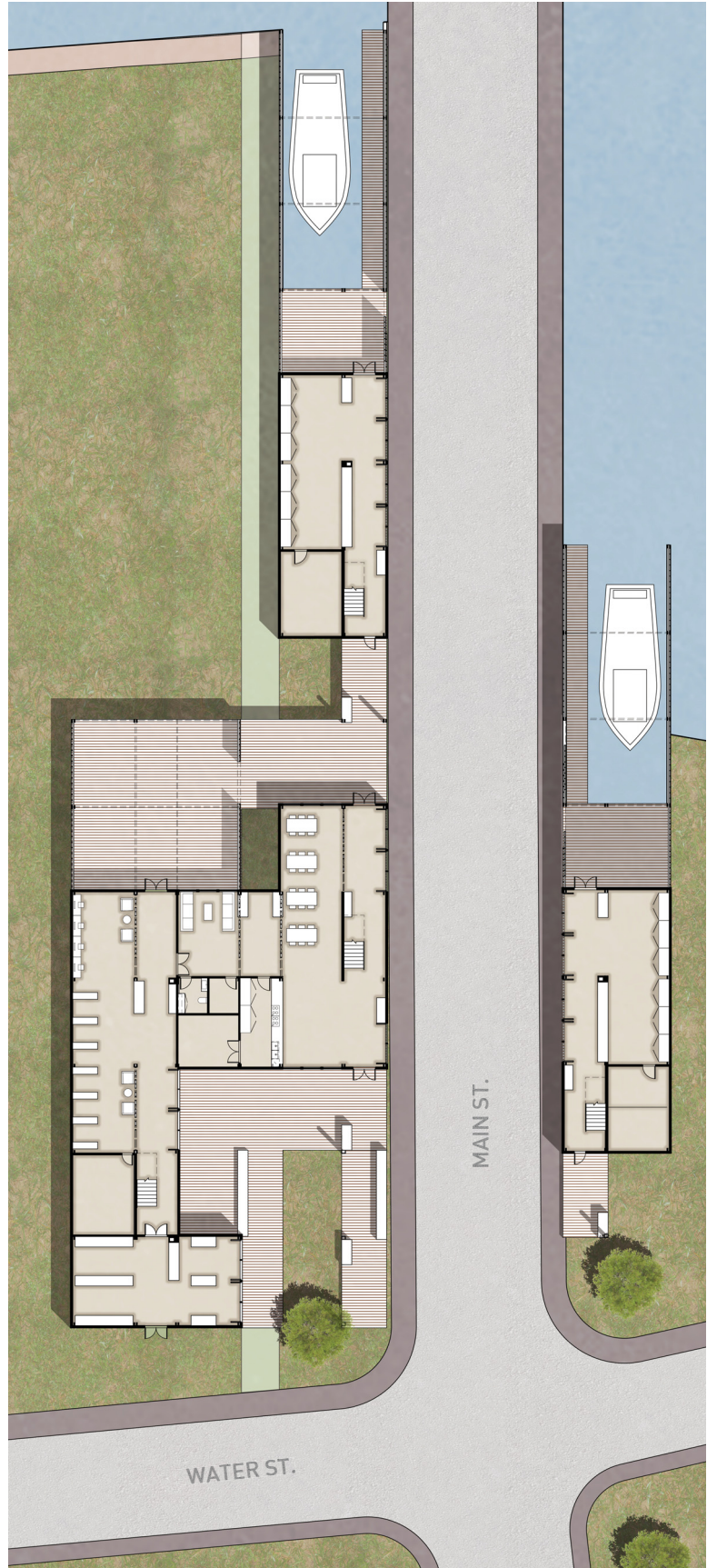


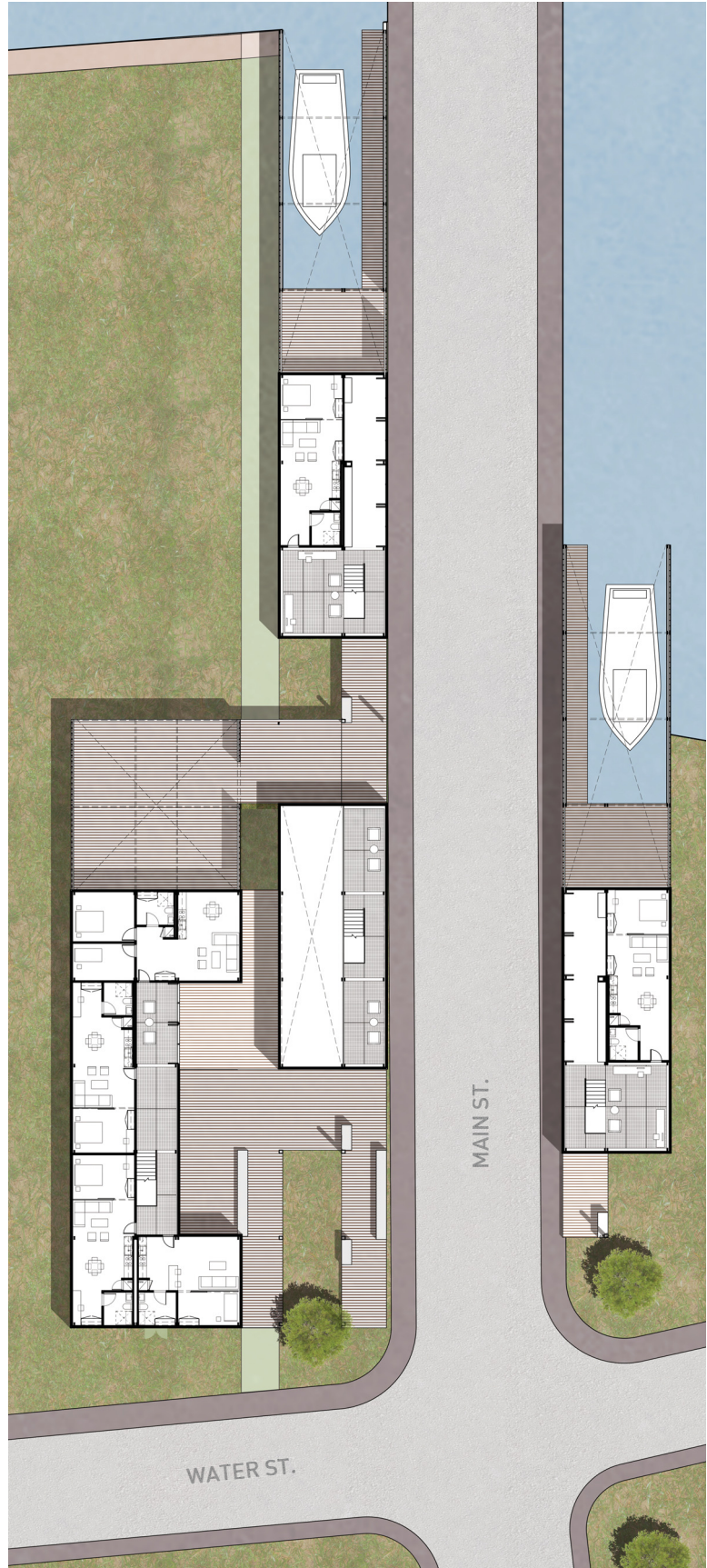
The secondary strategy for the waterfront site is to use the architecture to frame the approach from Main street to Whitman's wharf. By aligning the buildings lengthwise with the wharf and perpendicular to the coast-line a continuity of program is created. The programmatic seed for this site is small scale fishing infrastructure in the form of boathouses which flank and open up onto the wharf. From these, the architecture develops away from the coast over time, incorporating more tourism and community oriented functions, in this case a restaurant and community center. The emphasis is not to prescriptively program these spaces, but rather to show the plurality of possible programs within the constraints of the same building grid. The porous nature of the building as it develops over time allows for the programs to organically spill out onto the wharf when the town experiences increased tourist or fishing activity. The scheme also creates multiple intersections with the rising sea-level. As time goes on the building itself becomes the measure of the rising and falling water.



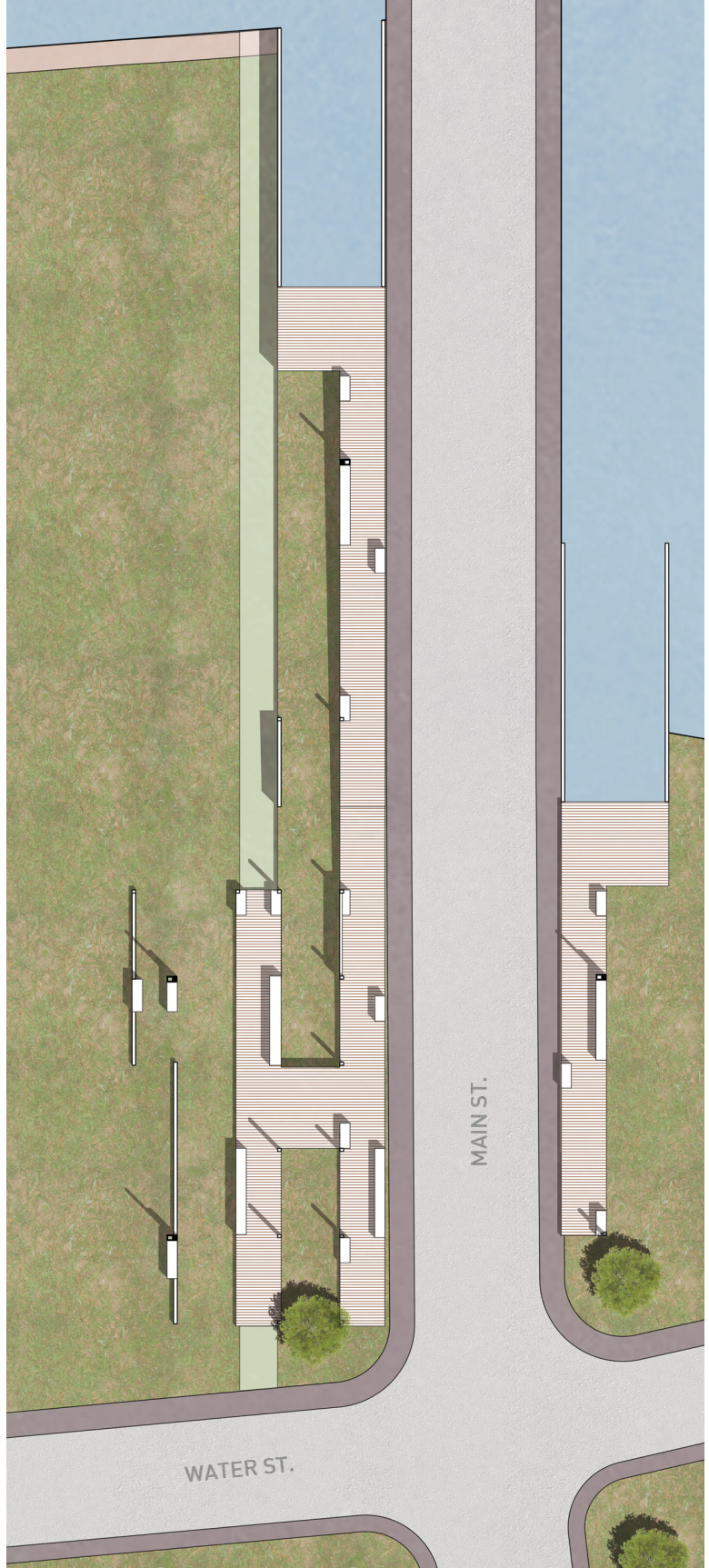
Whitman's Wharf site plan.

Whitman's Wharf site proposed building ground floor plan. Emphasis on the intersection of program with the wharf.

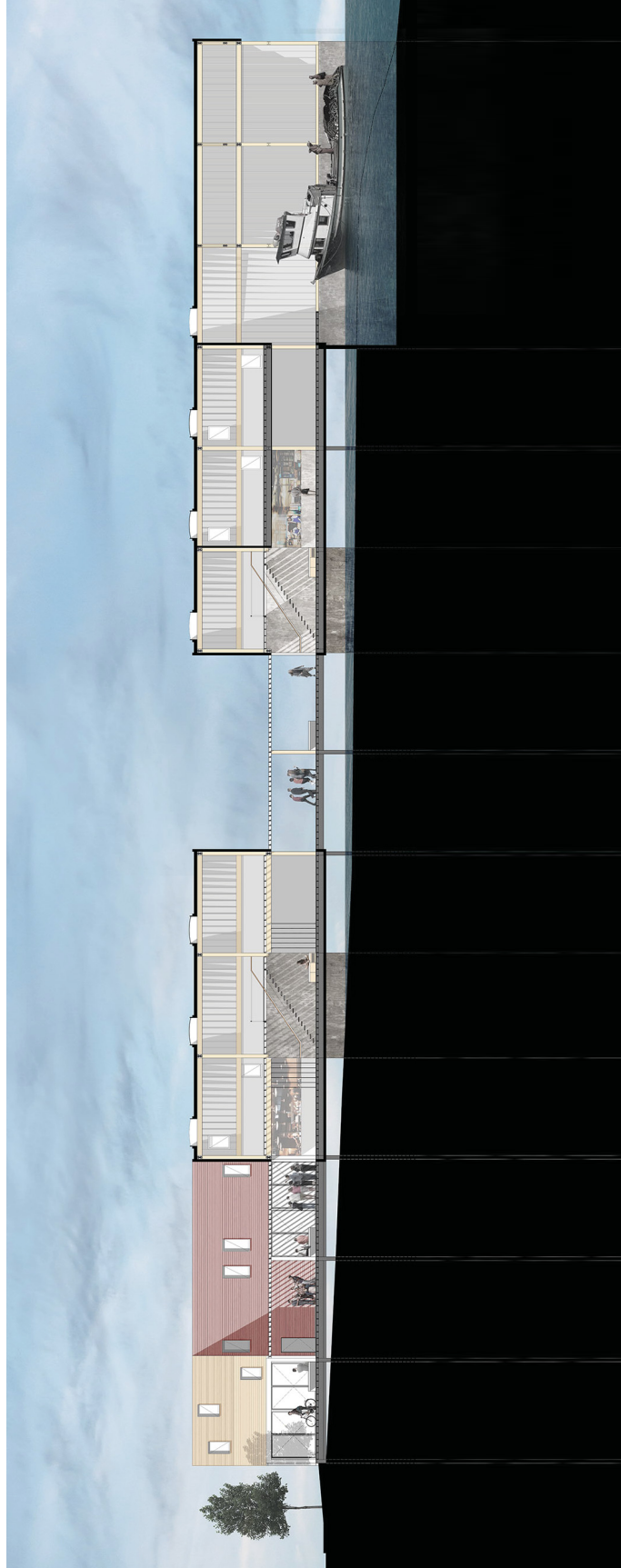




Whitman's Wharf site  
proposed building second  
floor plan.



Whitman's Wharf site without proposed building.

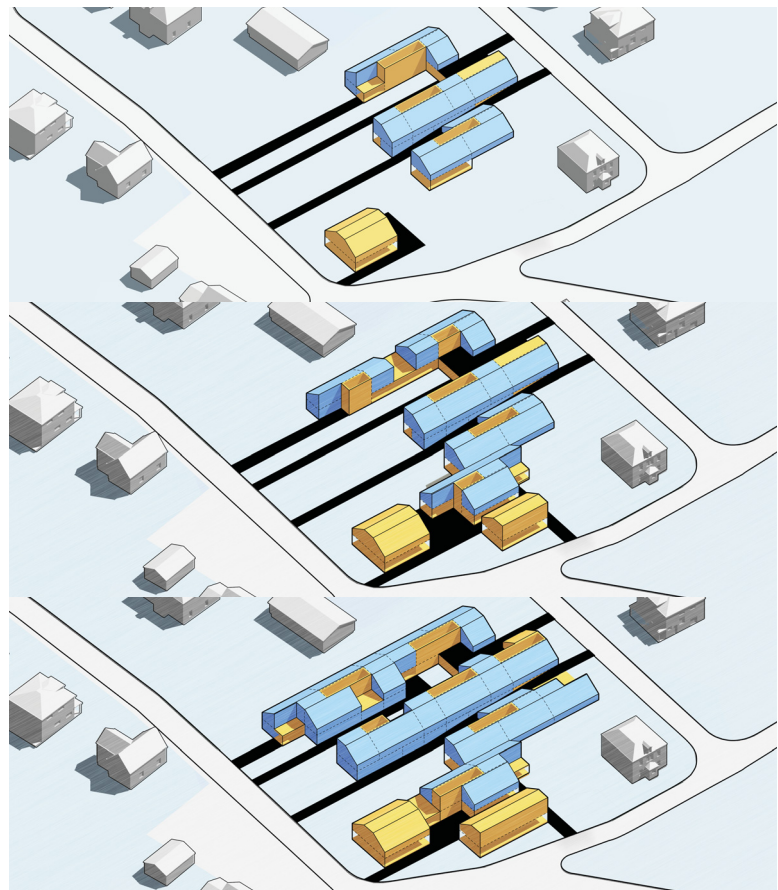


Whitman's wharf site  
proposed building section.

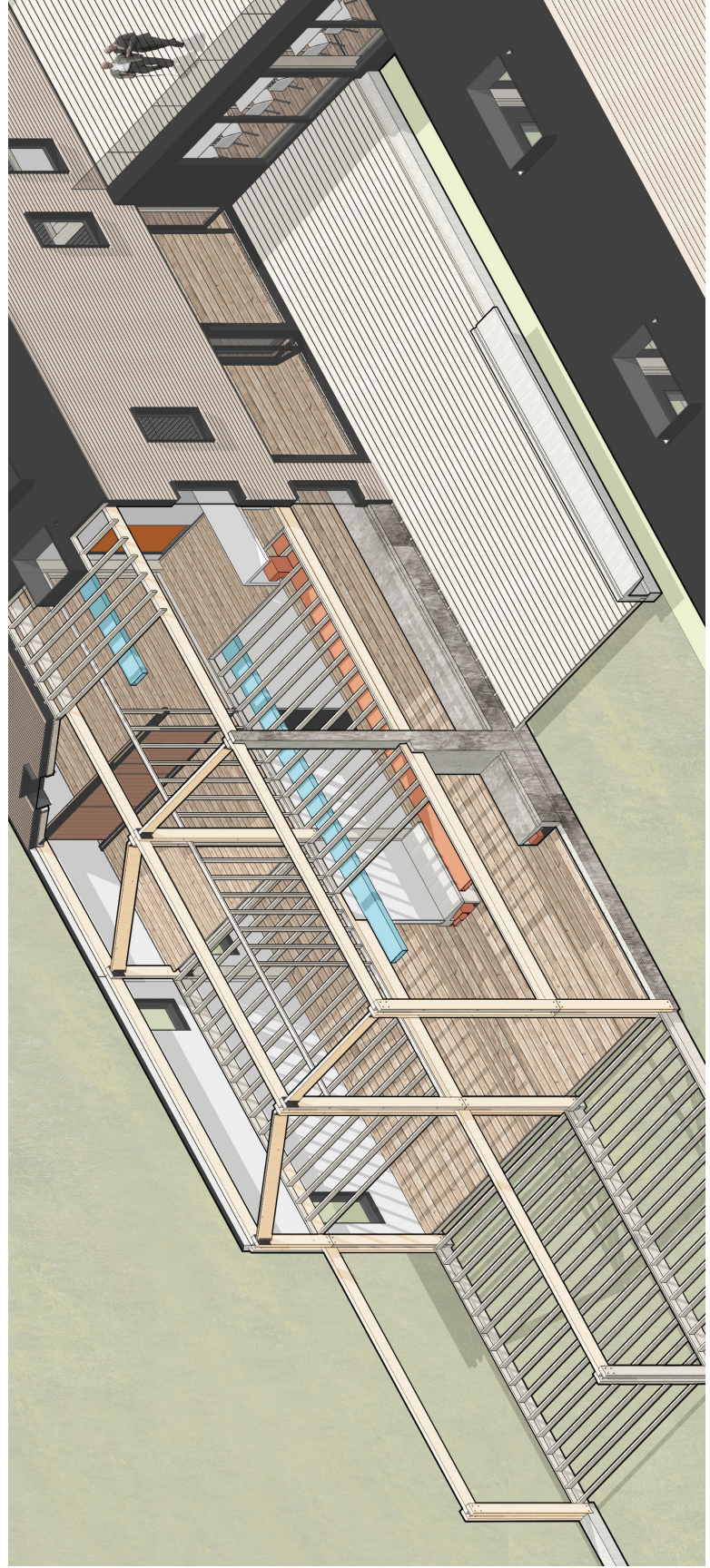
## Growth and Decay

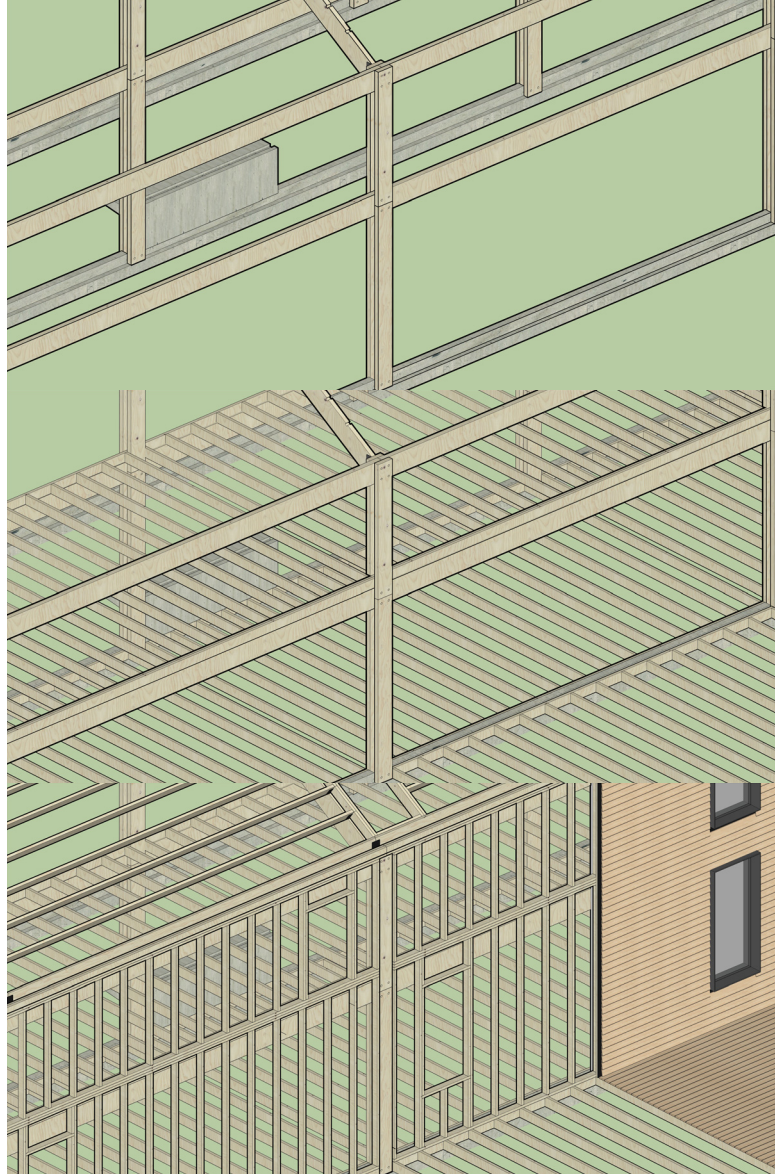
In order to satisfy the conditions for ease of building adaptability the building must be detailed to allow for the separation of shearing layers. In order to achieve this heavy timber construction is used for the project. This type of construction satisfies the requirements for a de-mountable and re-usable architecture. Simple mechanical connections are easy to create, assemble and disassemble on or off site without the need of expensive tools or facilities. The materials can be sourced and milled locally, are durable and can be easily re-used with little or no need for additional re-manufacturing. Because of the heavy timber structural system the exterior envelope and interior partitions are not load bearing and can therefore be reconfigured much more easily.

Diagrams showing the growth (in one direction) or decay (in the other direction) of the building in time. The building modules are impermanent but their trajectory is traced by physical changes of the site. The end condition manifests as a series of monumental objects, indicating the cycles of growth and decline of the project and of Canso.



Exploded axonometric drawing of building systems. Heavy timber construction allowing for separation of exterior envelope and interior partitions. Centralized services along corridor. Foundational element of the ruin reaching up through the building to become seating, structural column and service duct.

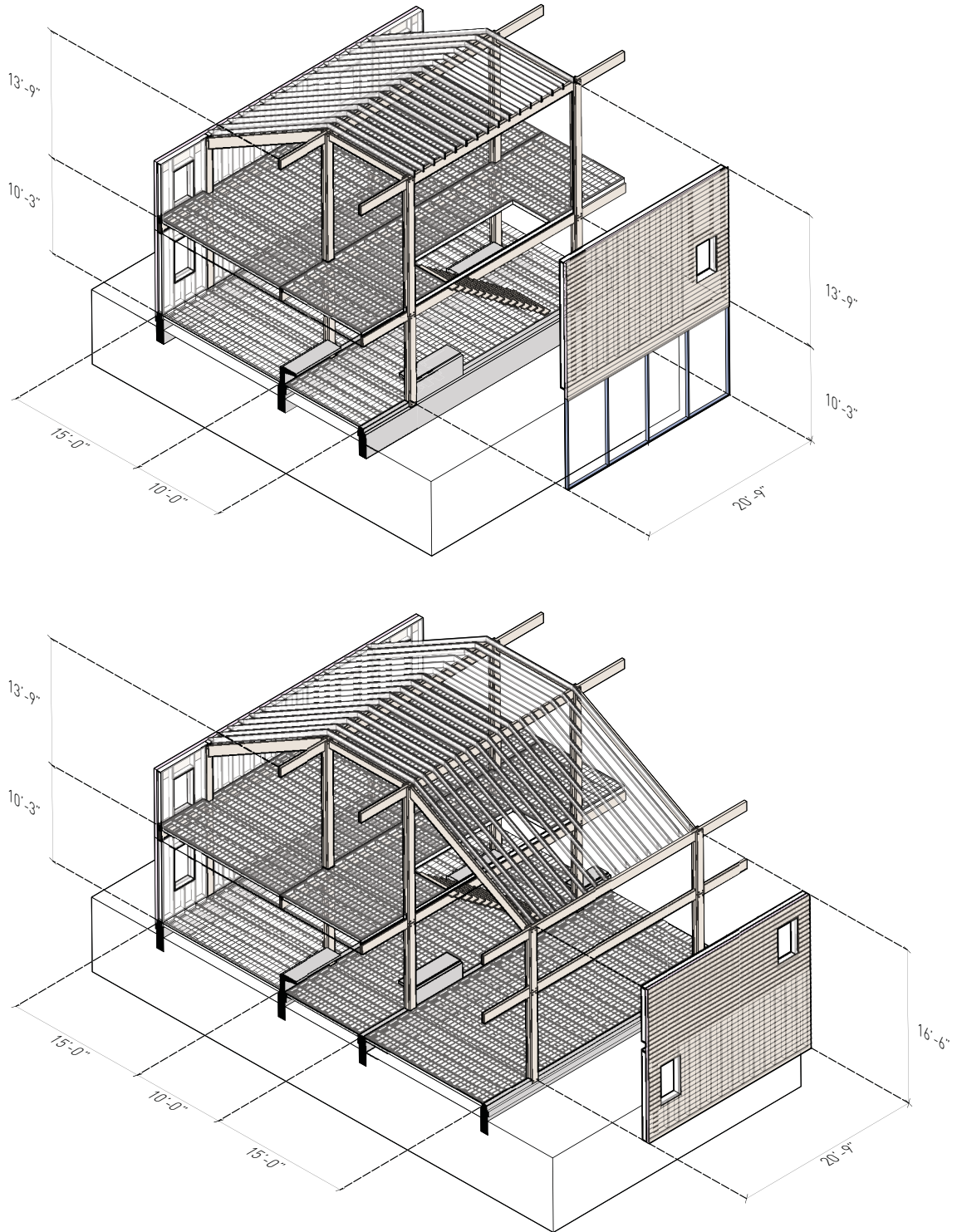




Assembly / disassembly phases.

Since the building invariably follows a set of standard dimensions, interior partitions, exterior envelope and structural members can be re-used in a variety of applications. Standard dimensions of materials are used in order to minimize waste and maximize re-usability. The structural grid of the building is such that a maximum number of possible uses are created whether they are residential, communal or commercial in nature.





Typical parti axonometric- the building parti is composed of one two or three structural bays with services and circulation running along the central bay.

As the building develops beyond the initial scope of the project 'seed' it will inevitably become a patchwork of material expressions. Different paint colors, facade finishes, paving materials and the minutia of the residents' lives will enrich the building with the signification of communal use and time.



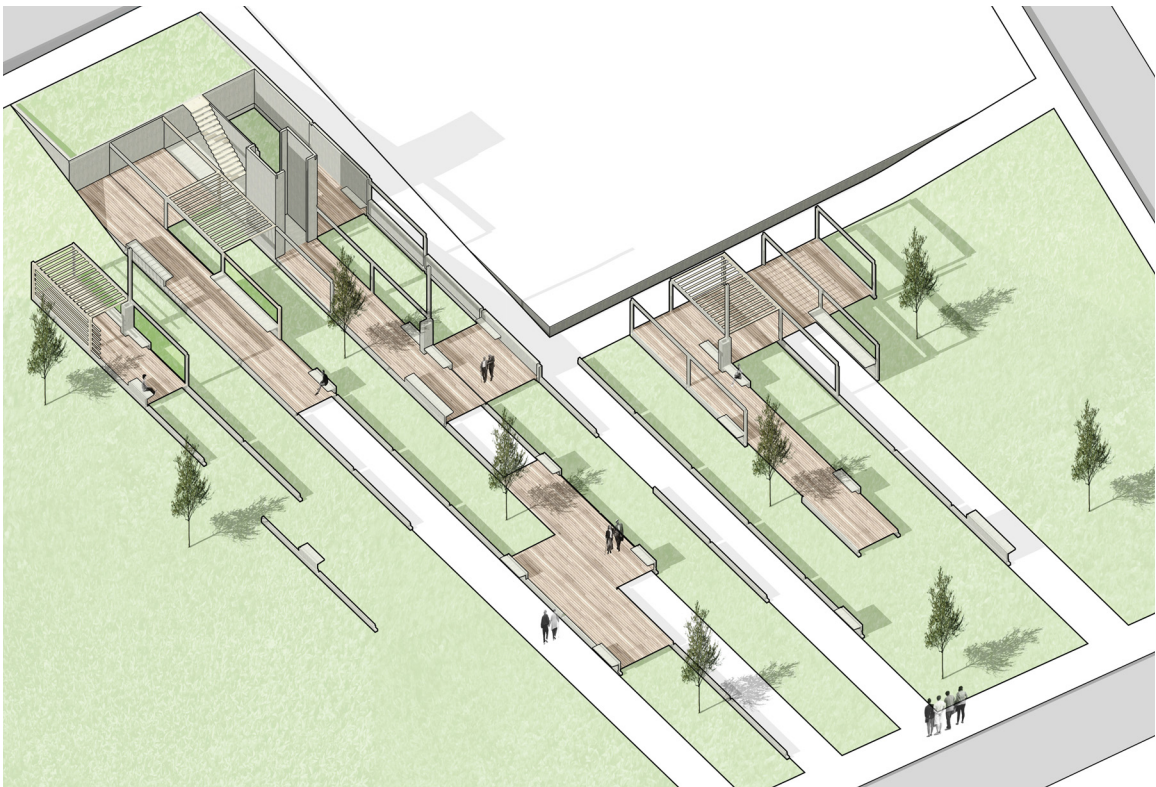
Exterior rendering- School Street site. Communal functions spilling out into exterior courtyards. Facade of building reflects patchwork of use.

Once sections of the building are no longer of use they can be disassembled and the material re-used on site, rebuilt off-site, sold or recycled. If the need for elderly housing decreases or the population drops to a number that can no longer sustain a certain program the building would recede, exposing the foundational elements of the 'ruin'.

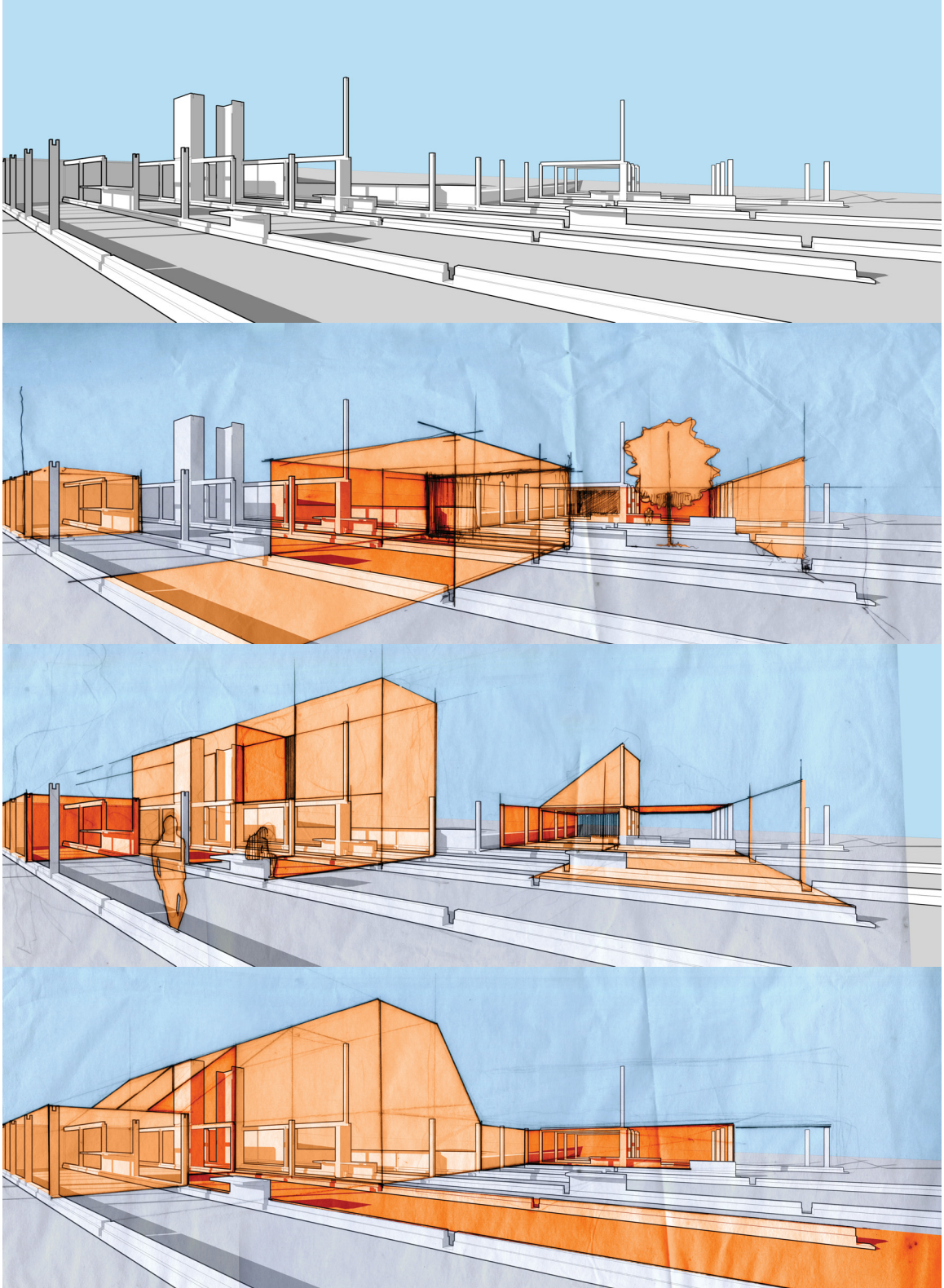
## Ruin and Inspiration

As the building grows, shrinks or adapts over time it traces the landscape, creating a set of foundational elements which embody tectonic, structural and programmatic logics. In so doing the 'polyvalent' ruin intersects with all of the shearing layers taking on the roles of structural components, service ducts, chimney flues, interior separation, interior and exterior seating, foundational elements etc.

In the event that the project is wholly disused and disassembled the ruin remains as a form of historical continuity within the community. It is not the static monument to some former building or some former time. Nor is it the erasure of communal building history as is the case with the void. It is a perpetually re-interpreted set of building logics embedded in the landscape.

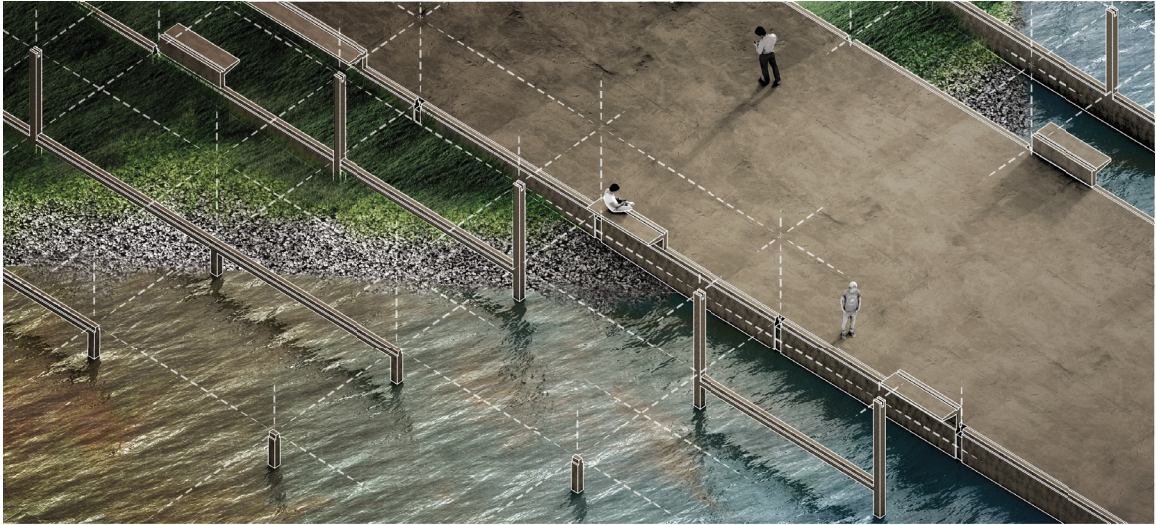


Axonometric diagram- ruin with remnants of building and use.



Diagrammatic vignettes- unexpected possibilities for future re-use of the ruin.

Since the focus of the project has been split between two different sites it follows that two unique ruins would emerge as the building recedes. The differences in the language of the ruin- which is itself composed of standard components and repeating dimensional modules- emerge out of the unique tectonic and programmatic conditions of each site.



Whitman's Wharf axonometric- the growth of the building is oriented around the central axis of the wharf which extends perpendicular to the coastline. The ongoing relationship between this axis and the perpetually changing coastline creates a ruin which is cyclically enveloped and released by the encroaching water.



School Street axonometric- the growth of the building runs parallel to the gradual sloping of the site, down towards the waterfront. The cutting in of foundational elements into this topography is used to break up this large, open space and create small cloistered areas within the topography.

The embedded structural and tectonic logics of the ruin inspire perpetual use and re-interpretation. Within the constraints of the established grid is a language of programmatic and spatial plurality which encourages future generations to re-occupy the ruin. Through century-long cycles of communal growth and decline the ruin is a constant framework for an uncertain, impermanent form of time based architecture.



Conceptual rendering- the re-occupation of the ruin. Creating a historical record of the community while creating opportunities for future in-migration.

## CHAPTER 6: CONCLUSION

Time is the medium that most clearly upsets any notions of static, idealized perfection in architecture... When architecture falls to pieces, when it is compartmentalized, what keeps it together, keeps it from becoming object or worse, object waste is the appeal to spirit, the notion of intent.<sup>33</sup>

The global economic forces of contemporary society have increasingly affected and entwined the lives of all people. We have centralized and created vast economic and informational networks which affect our lives in wholly unpredictable ways. This same tendency has atomized the most vulnerable of rural communities. Separating them from the perpetual progression of modern industry and economy.

In this climate of increasing uncertainty we as architects must embrace the unexpected growth and decline of communities as both an inevitable and enriching part of the design process. We must think beyond current programmatic needs and approach rural design as a form of social and economic incentive.

This thesis has proposed a design language which combines the impermanent nature of contemporary rural architecture and the deep historical implication of building in the rural landscape. In so doing the thesis has worked to reconcile the rift between time based, adaptive design and the historical continuity of community and landscape.

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<sup>33</sup> Jeremy Till, *Architecture Depends*, (Cambridge, MA: MIT, 2009), 69.

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