HOW TO EAT A LOBSTER [& OTHER SEA ADVENTURES]

by

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Dedicated to my dad - for having all sorts of [useful] information for me.

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ABSTRACT

Rural communities are declining in population and opportunity in many parts of Canada and the world. The loss of rural communities and their craft and culture causes damage to societal diversity. The Maritime provinces are experiencing declining rural populations in many communities, such as the town of Yarmouth, outside of regional centers such as the Halifax Regional Municipality and the Cape Breton Regional Municipality. Through analysis of existing industry (industrial processes, buildings and symbiotic relationships) and a strategy for consolidation and growth, Yarmouth will provide an example of an architectural approach to this concern. Learning from industry conditions, the development will capitalize on the assets of the town and add value through closing existing loops, creating opportunities, and exposing and proliferating culture. The project culminates in a waste processing plant, market, and restaurant that allows locals and tourists to experience the entire process of local industry, craft and culture.

ACKNOWLEDGEMENTS

A special thanks to everyone who so graciously took the time to explain, show and talk about the various industries and all their components that have been studied here. To be specific, I would like to thank Crowell's Farms Ltd. [Sandi, Ronnie and Sandra], Wades Wire Traps [Carol, Cyril and 'Uncle' Wade], the Yarmouth Office of the Town Planner [Tracy Bruce], and everyone else who has contributed to this thesis in any capacity.

To my thesis committee members - Susan Fitzgerald & Ted Cavanagh - my sincerest thanks. I appreciate all you have done for me in leading me through this experience. And a special thanks to Niall Savage for guiding me in the beginning stages of this process, and for supporting my outlandish title.

To my classmates - we've been through a lot, and there's a lot yet to come, but I'm glad we had each other to laugh with along the way.

DEFINITIONS

CRAFT: a job or activity that requires special skill

DUMPING DAY: the first day of lobster fishing

DRAGGING: a type of fishing where a large net is dragged along the ocean floor

FILLET: a piece or slice of boneless meat or fish

FISH MEAL: ground dried fish and fish waste used as fertilizer and animal food

LOBSTER CAR: a floating weighing station where lobster fishermen sell and store lobsters temporarily

LOBSTER POUND: indoor or outdoor sea-water filled holding tanks for lobster

OFFAL: the discarded parts of the fish after processing

POT: a trap for catching lobsters

ROE: the eggs of a fish especially when still enclosed in the ovarian membrane

SEINE: a large net with sinkers on one edge and floats on the other that hangs vertically in the water and is used to enclose and catch fish when its ends are pulled together

TRAWL: a length of rope with a buoy on each end, off of which is attached a series of lobster pots

TOMALLEY: the liver of the lobster

TONNAGE: the size of a ship or the total weight that it carries in tons

YARN: a casual talk with someone

CHAPTER 1: RURAL DECLINE

> Atlantic Canadians, past and present alike, have combined regional pride and relentless optimism, with a Sisyphean resignation to the idea that it may well be their lot to struggle rather than to arrive.[1]

With advances in industry, transportation, and technology people have followed trend and convenience and migrated into and out of the city, suburbs and country.[2] Many once booming rural towns are finding themselves in economic and population decline. Nova Scotia is a prime example of the decline and decay that is prevalent in the four Maritime Provinces. Through looking at published documentation and statistics the town of Yarmouth, Nova Scotia is identified as a good example of the rural decline that many of the Maritime Provinces are experiencing[3]. Yarmouth, like many small coastal towns primarily relies on harvesting ocean creatures such as lobster and herring to sustain itself.

This thesis believes that a value added approach while intersecting existing industry will allow the continuity of a struggling town by reinvigorating pride in place and encouraging the private sector economic growth. Through studying the structure and system of current industry and identifying areas of opportunity, this thesis attempts to capitalize on the existing industry and cultural heritage of the town of Yarmouth by embracing current industry by-products and gaps to create new industrial and social opportunities for the community.

The intervention creates an opportunity for a celebration of seafood and the cultural heritage that created the town. Waste product from the existing industries is brought to the waste processing plant for composting. The market is a place of commerce for fishermen and farmers, and the restaurant exposes the process of preparing, cooking, shucking and eating seafood; how to eat a lobster.

This proposal addresses sustainability on four levels - environmental sustainability by using locally existing product and by-product to create a new form of

1. Margaret Conrad, and James Hiller. *Atlantic Canada: A Region in the Making* (Ontario: Oxford University Press, 2001), 3
2. Carolyn Steel. *Hungry City: How Food Shapes Our Lives* (London: Chatto & Windus, 2008), 178-179
3 Statistics Canada, 2012, (Census Profile).

income, economic sustainability through fostering new private sector development that keep money local, social sustainability by involving the community and promoting personal investment and finally cultural sustainability by creating an intervention that is of the place and rooted in the culture of the people.

Many local industries have been studied for their overlaps and presence in the town. Of these industries, three were identified as being strongly linked, and having tangible by-products that will be studied for their potential use. The primary industry is *lobster fishing* - that has developed from a small scale inshore fishery to a large extremely competitive offshore fishery. The secondary industry is *fish processing* - herring (among other seafood) is harvested for its roe, filleted, and the offal is processed into lobster bait and fish meal. The tertiary industry is *mink fur farming* - an offshoot of the first two industries, mink fur farming has relatively recently boomed due to the vast amounts of waste produced by the fish plants that is processed into an oily nutritious animal feed.[4]

Thesis Question

How can studying the local industries enhance the cultural identity of Yarmouth and act as a catalyst for community renewal and development, with methodologies applicable to other rural communities?

Position

The reality of changing populations and economic situations must be addressed in small communities. This thesis is addressing issues of rural decline through the lense of adaptation. This does not mean returning to former "glory days", but understanding and exploiting local economic and social opportunities. Through a value added approach where the sum is greater than the parts, a community can analyze its primary industries to provide an opportunity for natural growth through sustainable waste management and opportunity exploitation.

4. Jane Taber, "Nova Scotia's Mink Farms Are Booming – but the Neighbours Aren't Pleased," *The Globe and Mail,* August 17, 2012.

CHAPTER 2: SITE SELECTION

> Given our serious demographic challenges and weak performance across the economy, we need to focus as a province on three critical areas of change:
>
> 1. We need business and community leadership in the pursuit of economic growth: these sectors need to pull the economy forward rather than it being pushed by government policies and investments.
>
> 2. We need to achieve significantly higher rates of attraction and retention of both inter-provincial and international immigrants to grow the population overall, increase the number of entrepreneurs, and renew the labour force.
>
> 3. We need greatly improved performance in the areas productivity, trade, innovation and value- added production. These are the essential drivers for renewal and expansion across all industry sectors and business types, whether small, medium or large. They are particularly important in the traditional rural industries — fisheries, agriculture, forestry and tourism — where too many enterprises have not kept pace with their competitive environments.[5]

Urban migration is a real and prevalent concern for many rural communities, locally, nationally, and globally. This demographic change is creating a void in our rural communities. This thesis works with the understanding that the processes outlined could be used on a variety of communities. An example town of Yarmouth, Nova Scotia has been chosen as a specific study site for various reason which are outlined in this chapter. With the extreme mobility of the young generation, many skilled workers and educated youth are moving out of the Maritimes in search of work.

Canada's Ocean Playground [Nova Scotia]

Nova Scotia is a prime example of the decline and decay that is prevalent in the Maritime Provinces. The population increase for all of Canada between 2006 and 2011 was +5.9%, but the four Maritime provinces saw much less growth - Prince Edward Island at +3.2%, New Brunswick at +2.9%, Newfoundland and Labrador at +1.8% and finally Nova Scotia at +0.9%[6]. This means that Nova Scotia is a full 5 percentage points behind the Canadian average. With the sole exception of Northwest Territories which saw 0.0% population change, Nova Scotia has experienced the least amount of population growth in the country.[7]

5. Ray Ivany, "The Report of the Nova Scotia Commission on Building Our New Economy." *Nova Scotia Commission on Building Our New Economy,* (Halifax, 2014), 4.

6 Statistics Canada, 2012, (Census Profile).

7 Ibid.

Some documentation predicts the population of the province may begin to decline over the next few decades.[8] Where does that leave Nova Scotia in terms of the country as a whole? Put simply, it is struggling. There have been many reports of the economic despair being experienced by the province, such as *The Report of the Nova Scotia Commission on Building Our New Economy*, that outlines the facts that if the province continues to fall behind modern times, there will be no way of recovering.

There is hope for the province. Nova Scotia has a lot of positive character traits that should be celebrated and expanded upon to encourage positive growth. This growth may not take the form of the former glory many of these towns once held, but in a humble and positive adaptation. There is a future for Nova Scotia and through interventions such as the project described in the following pages the province can and will become a positive influence for the Maritime provinces and the rest of Canada.

On The Edge of Everywhere [Yarmouth]

"On the edge of everywhere" is the slogan of the Town of Yarmouth, and it is very truthful. Yarmouth is at the Southern tip of the province, acting as a rural hub for most of South Western Nova Scotia. Two major highways end at the town, and unless you are driving the entire circumference of the province or have travelled on the ferry from Maine, tourist rarely are just "passing through" Yarmouth.

Yarmouth is at a hinge point; with its rich cultural history of industry associated with the Atlantic Ocean, the town is ripe for revival. With an uncertain lobster fishing future, and many of the young people leaving the area a change is eminent. *The Report of the Nova Scotia Commission on Building Our New Economy* identifies how the future of the province of Nova Scotia is dependent on the decisions that are made today. Yarmouth is a good example due to its rich industrial history, and current provision of numerous services and resources. The location of the town means it is not residential commuter community for any city or urban area.

8. Ivany, "The Report of the Nova Scotia Commission on Building Our New Economy," 12.

The town is home to approximately 6,800 residents, and Yarmouth County is home to approximately 25,000 residents.[9] The 2011 Census data identifies the town of Yarmouth as having a -5.6% population decline relative to the 2006 Census. To compare this to an urban condition, the Halifax Regional Municipality (HRM) has seen a population growth of +4.7%[10] over the same time period. In spite of declining populations Yarmouth has a lot to offer - an expansive RCMP detachment, a large hospital, a Nova Scotia Community College campus, satellite campuses of Dalhousie University and Université Sainte-Anne, Government services and local businesses that serve town residents as well as attract County residents into the town. As "big box" and chain stores such as Atlantic Superstore, Sobeys and NSLC, are becoming every more present in the town, locally owned retail shops are succumbing to the competition and creating a vacant void in the downtown.

Not only is the population of Yarmouth declining, according to the 2011 census data, the percentage of the population over the age of 64 is 19.23% for Yarmouth County[11]. When this is compared to the national average of 14.77% and provincial average of 16.64% one can see that there are vast numbers of 65+ residents living in the area.[12] Variations of age within a population is healthy for a well balanced community, however a high level of 65+ indicates that working age people may not be suppling enough income to support an area and encourage growth. To exemplify this point, the majority of new buildings in the town serve to house seniors/barrier free living (this includes both senior focused apartments and multiple nursing homes). Because of the economic downturn the town has faced, many of the current buildings were appearing neglected and dismal.

Within the last few years, there have been programs implemented from both local and provincial levels of government aimed at improving street scapes and curb appeal of existing businesses and homes in the downtown area.[13] In addition to

9. Statistics Canada, 2012, (Census Profile).
10. Ibid.
11 Ibid.
12 Ibid.
13. "N.S. Funding Available for Yarmouth Homes." *Chronicle-Herald* (Halifax), August 11, 2015.

the physical changes, there have also been attitudinal changes as of late - there is a newly implemented transit route and the town is working to encourage a local pride that has been missing from the area.

Yarmouth has local industries that serve to support the town economically, and will provide a framework through which this proposal will identify and develop a system of adaptation. The waste processing plant will deal with the physical waste that the industries produce and will create employment for locals. The craft associated with seafood will be bolstered through this proposal in the form of a restaurant that will celebrate the local industries, and a market that supports the current system of commerce.

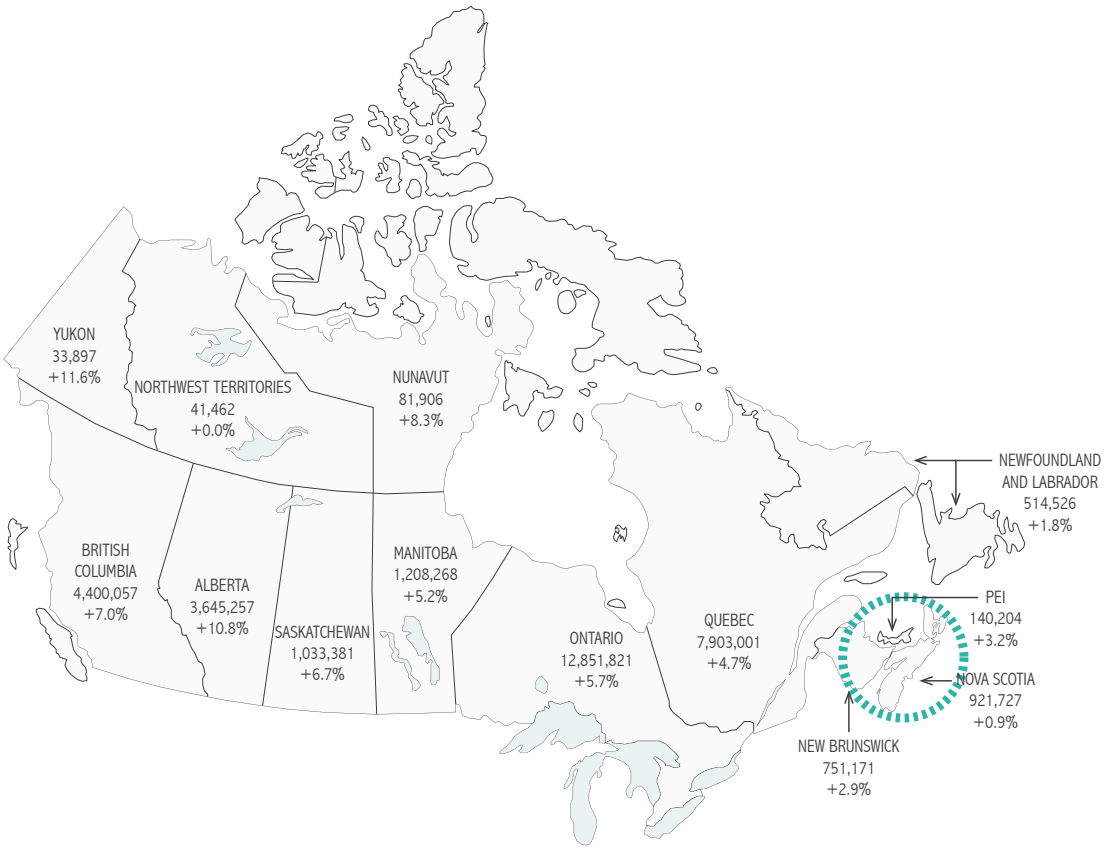

Figure 1. A map of Canada outlining the population and percentage change from 2006-2011; data from Statistics Canada.

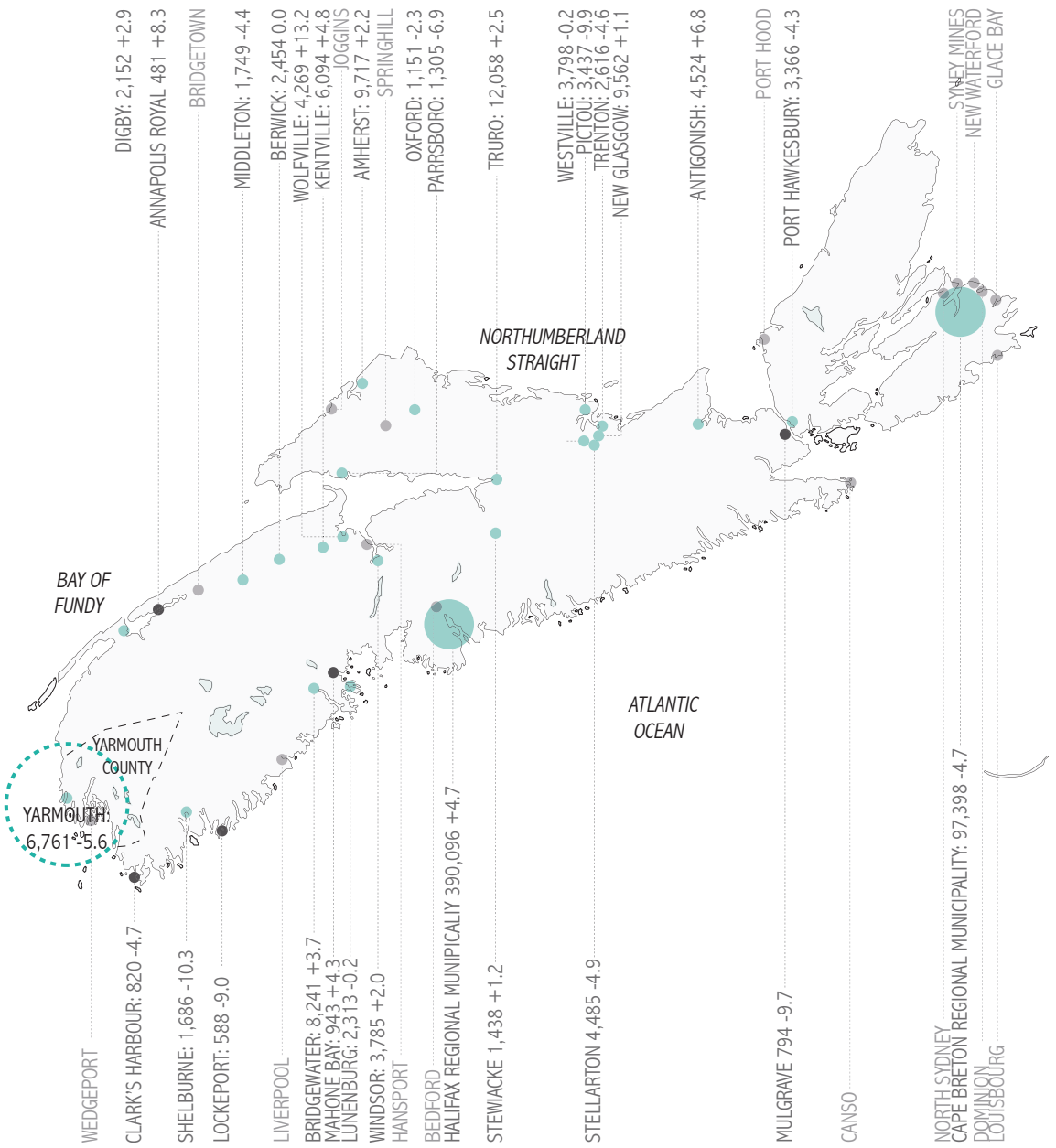

Figure 2. A map of Nova Scotia defining the communities designated as towns, their population, and percentage change from 2006 - 2011. Towns without population information have been dissolved of their township; data from Statistics Canada.

Figure 3. A map of Yarmouth, Nova Scotia, data from Yarmouth Office of the Town Planner.

Figure 4. A map of Yarmouth, highlighting existing industries, vacancies and the study site; base map from Yarmouth Office of the Town Planner, images from Google Maps.

CHAPTER 3: WHAT WAS, WHAT IS, AND WHAT'S TO COME

Capitalizing on existing identity rather than trying to create a new one.[14]

Pots to Pelts

Yarmouth, like many small towns, relies primarily on harvesting natural resources to sustain itself. The ocean is the main reason for all industry investments and opportunities in the area. While other industries exist, the ocean based industries drive the economy and therefore provide the opportunity for any other venture that crops up in the town. There are three main industries identified and studied in this thesis - these are lobster fishing, fish processing, and mink fur farming.

The existing industries are congruous and support each other. The project outlined will use an analytical approach to identify, analyze and intersect the existing

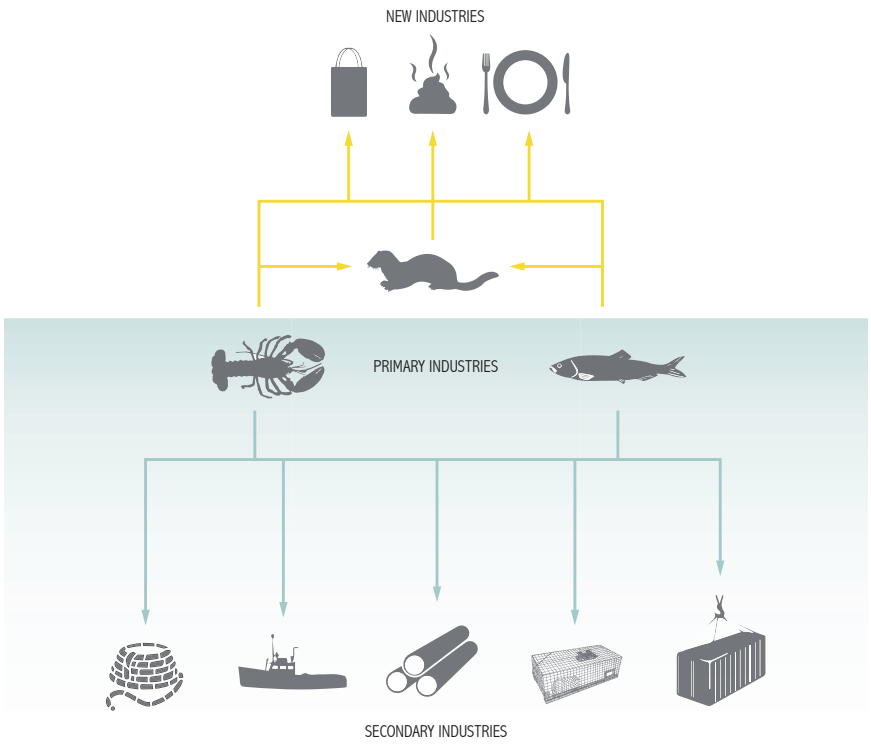

Figure 5. Analysis of the primary, secondary and newly proposed industries.

14. Adam Radwanski, "Rust Belt Revival: Lessons for Southwest Ontario from America's Industrial Heartland," *The Globe and Mail*, January 16, 2015.

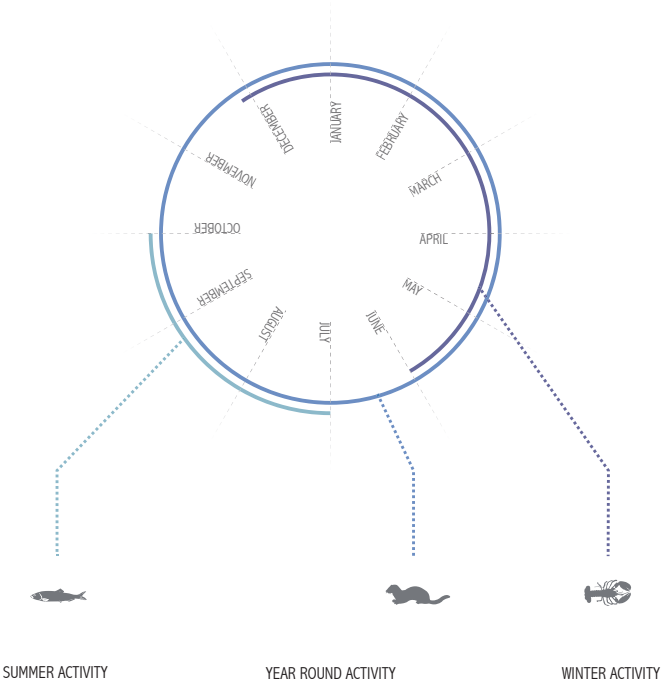

Figure 6. Calendar of current seasonal industries.

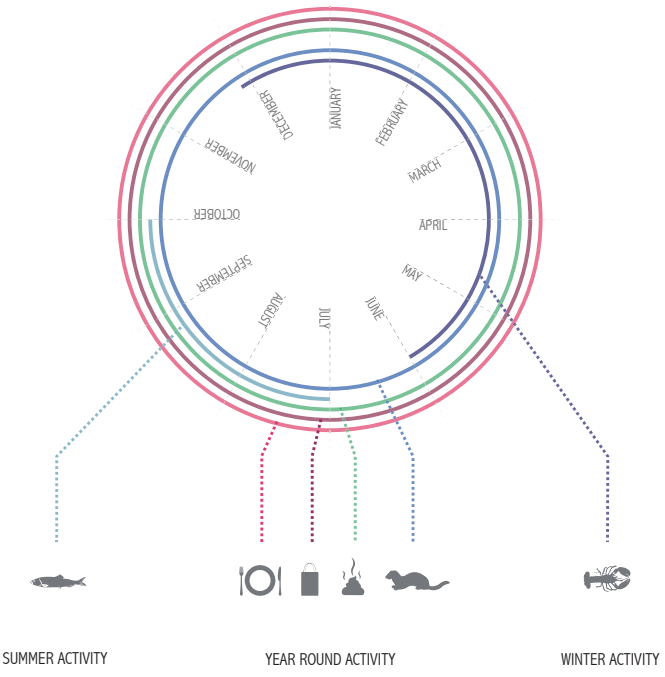

Figure 7. Calendar of current seasonal industries and newly proposed programs.

industry to find an opportunity for a value added intervention. The intervention will utilize the current by-products by converting the organic waste into a usable product - compost - that is the catalyst for the rest of the project. To begin, the three industries will be examined in their function, overlaps, by-products and architectural expression.

Lobster Fishing [Boats, Cars & Pounds]

Once a poor mans food that was fed to servants and prisoners, in a fascinating sequence of events the lobster has climbed the social ladder onto the plates of up-scale restaurants (For this story, see Appendix A). Parallel to the wooden shipbuilding history, lobster fishing has been a constant industry for the people of South West Nova Scotia. Although it saw ups and downs in the market and a changing clientele, the lobster industry has provided income to the area for many generations - and this still true today. Lobster fishing is a part of everyday life for most residents.

The lobster industry has developed from a small scale inshore fishery into a large extremely competitive offshore fishery. Boats have grown in size and technological advancements. Fishermen who used to set their pots into the harbour and haul them by hand now may steam for up to 6 hours off shore and haul trawls with hydraulic machinery. The industry runs as a continuous supply and demand game. Pricing, pot limits and defined fishing seasons have shaped the industry as it stands today.

Currently the landed catch in Lobster Fishing Area 34 (includes all of Yarmouth County shore line; See Figure 8) is the highest in Canada.[15] Lobster fishing is an incubator for many other industries in the area. Boat building and trap shops are directly related to the abundance of lobster in the shores off Nova Scotia. In addition to these direct industries, most of the towns businesses operate with money from the lobster industry. Harvesting lobsters provides income to the area which then filters down into the shops and services provided in the town.

15. Government of Canada, *Assessment of Lobster (Homarus Americanus) in Lobster Fishing Area (LFA) 34*, Fisheries and Oceans Canada, Science, 2013.

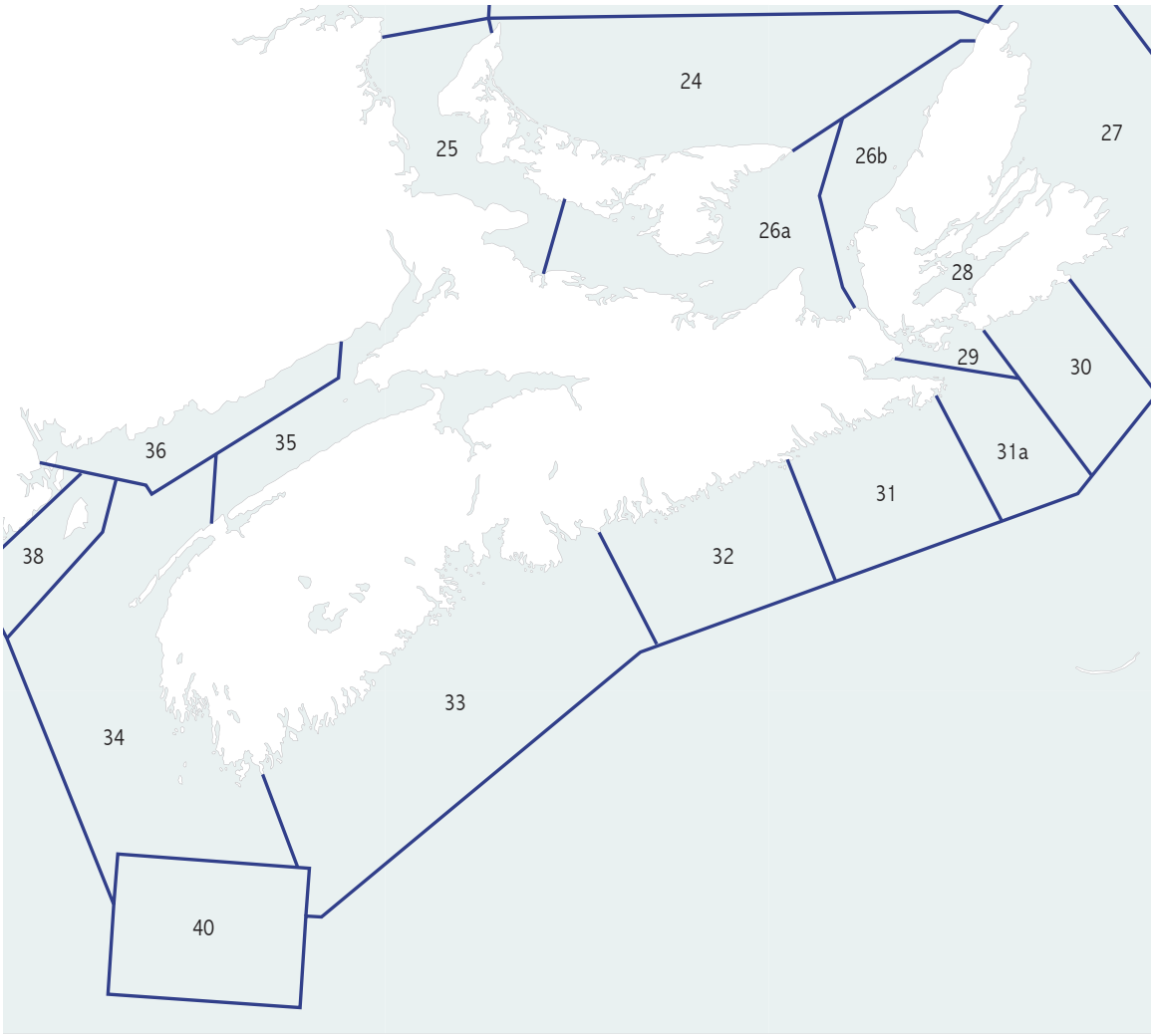

Figure 8. A map of the Lobster Fishing Areas in Nova Scotia and PEI; data from Department of Fisheries and Oceans.

Figure 9. Lobster fishing boats preparing for the start of the season.

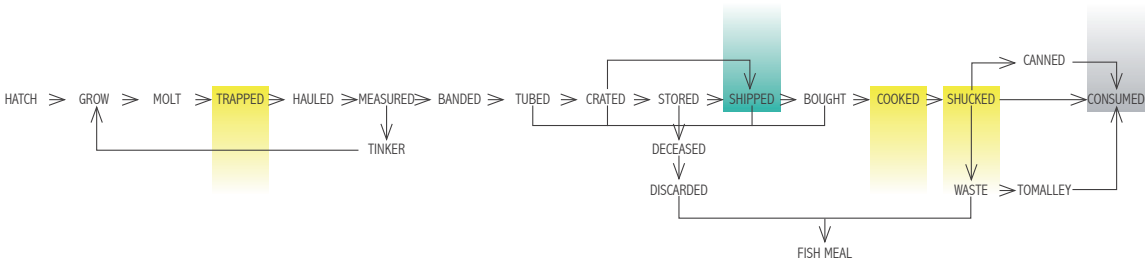

Figure 10. A flow chart of the process of lobster fishing.

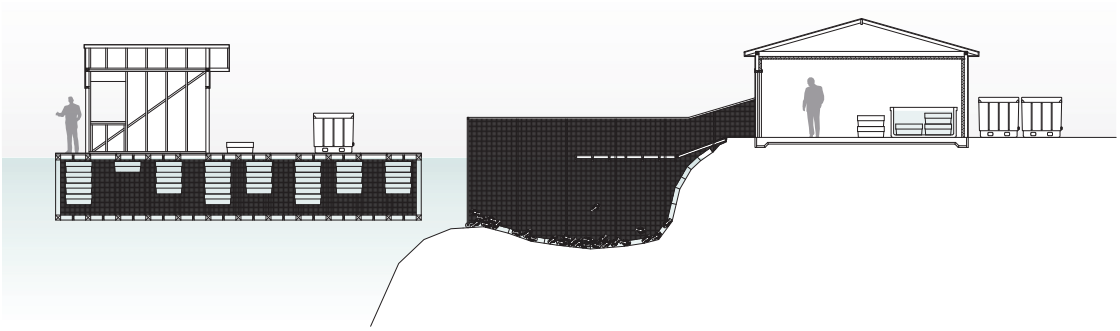

Figure 11. Lobster car and lobster pound.

There are many built forms involved in the lobster fishing process - including boats, lobster cars and lobster pounds. The boats have under-deck holds filled with sea water that enable crates of lobsters to be transported back to shore without having to spend time out of the water. After arriving at the wharf, the fishermen will transport the crates of lobsters out of the boat, onto a lobster car where the crates are weighed and stored. The car has storage under its deck (in the water), and the crates can be strung together off the side of the car. The crates then have a few possibilities for further transportation. They may be loaded directly onto trucks that ship the lobsters out of province or to the airport for air transport. If the lobsters do not get shipped directly from the car, they may spend some time in a lobster pound. The pound is a longer term holding facility for the lobsters. Depending on the style of pound (tank house or open air) the lobsters are held either in crates in an enclosed tank house with continuously circulating sea water, or are dumped free into an outdoor perimeter-enclosed section of harbour that allows for natural tides and circulation to keep the sea water fresh.

Dumping day is acknowledged through the region on signs, in churches and in the

media, and its is not uncommon for high school students to quit school and start fishing at a young age. The prior day local priests make their way around the communities saying a blessing on the season and the fishermen, and the morning of Dumping Day many spectators arrive at the wharves and various lookout points to watch the boats disembark for the first day in the season.

Fish Processing [Boats & Plants]

In addition to lobster fishing, the area supports many fish processing plants. These plants receive fish that was dragged or seined and process the fish, either removing the roe or filleting the flesh (or both). Most fish plants process a variety of fish, shellfish and crustaceans to maintain economic viability, but for the sake of this study, Herring processing has been studied. Herring is harvested for its roe or filleted, and the remainder of the fish is processed into lobster bait and fish meal. The roe is primarily exported to Europe and Asia and the fillets may be exported internationally or get shipped to markets throughout Canada and the USA.

Like the lobster industry, fish processing begins in the depths of the ocean. Schools of fish are either seined or dragged with nets and large boats. The fish is then held under the deck of the boat in a hold that is filled with sea water. Once the boat reaches shore the contents of the hold are either pumped or bucketed out into bins that transport the fish to processing.

Arriving at the processing plant in bins, the fish is then carried on conveyor belts along the line of fish plant workers at their stations. The worker then selects a fish, and dresses it - how is determined by what type of fish and what portion of the fish is being harvested. For this study Herring is cut open and the mature eggs (roe) is removed and sorted into categories. The roe can either be hard or soft and of good or poor quality. The remains of the fish are discarded into a hole in the surface of the workers station that feeds into a water trough, washing the waste away. The valuable portions are placed into plastic lined boxes for weighing, packaging and shipping.

Fish meal is a by-product of fish processing. It is used to feed farm animals as

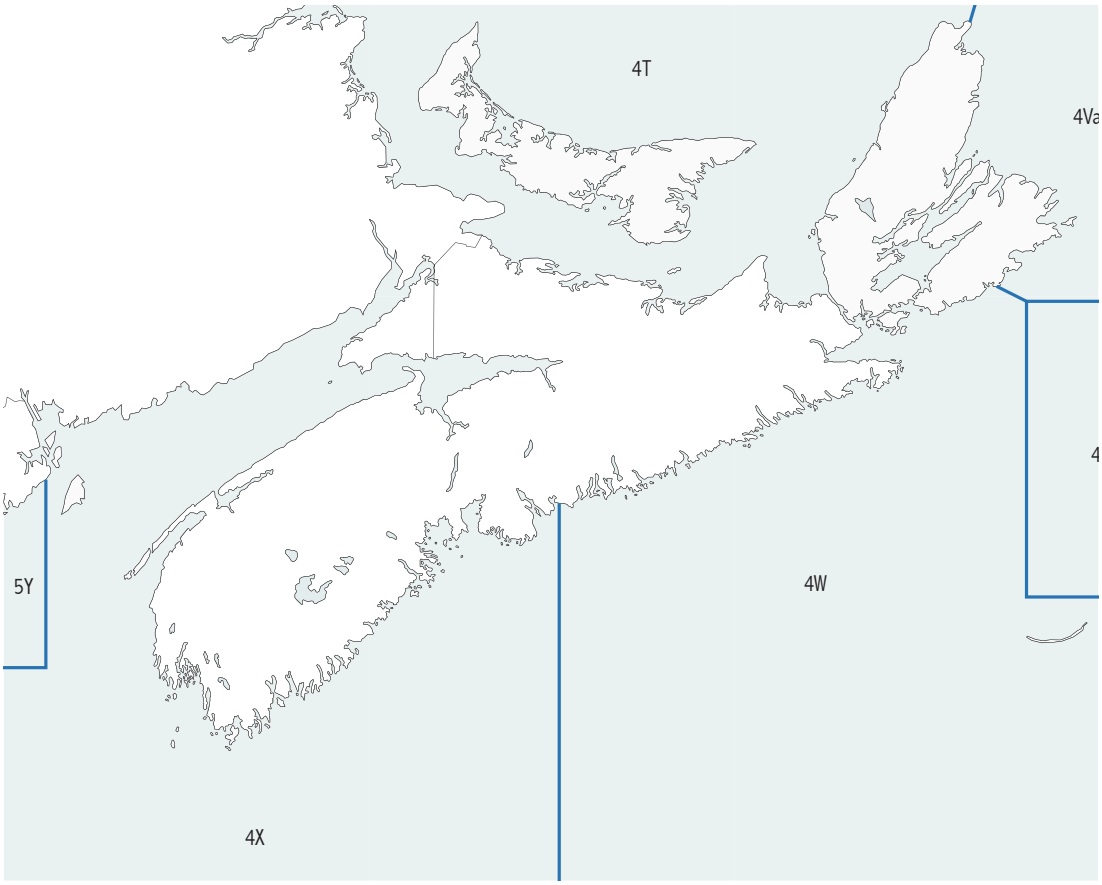

Figure 12. A map of the Herring Fishing Areas in Nova Scotia and PEI. Data from Department of Fisheries and Oceans.

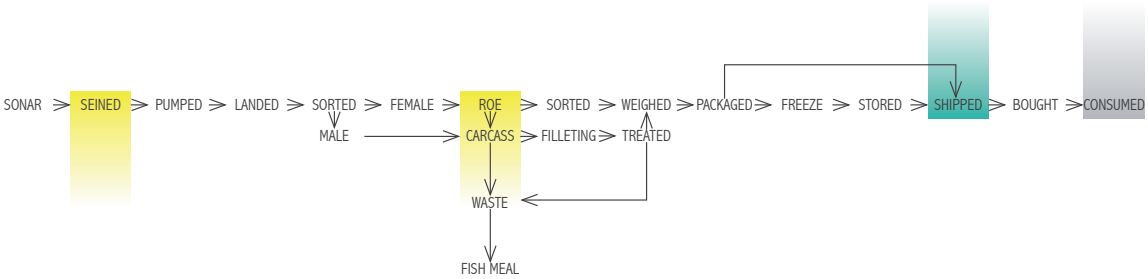

Figure 13. A flow chart of the process of fish processing.

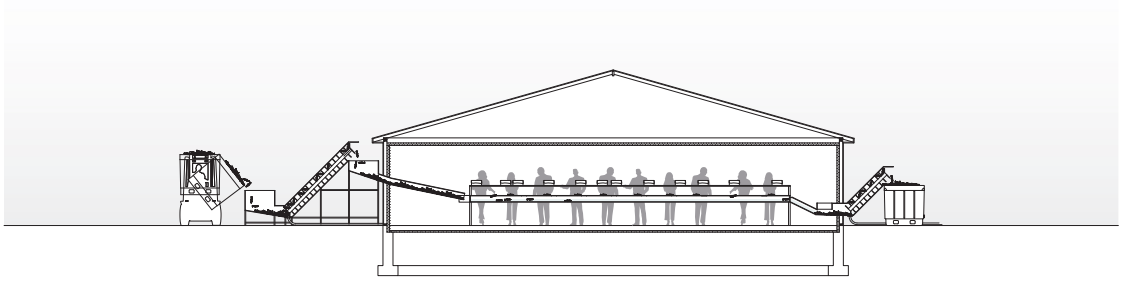

Figure 14. A drawing of the process of fish processing.

it is a rich source of protein and oils. The offal from the processing is cooked, pressed, dried and ground into a nutritious powder that is sold to distributors for both aquatic and land farms.

Mink Fur Farming [Barns - Cages, Waste and Pelting]

In 1870 the first Canadian attempts at raising mink were recorded in Ontario by the Patterson Brothers.[16] However, mink fur farming has relatively recently boomed in Nova Scotia in reference to the success of farms and the vast amounts of waste produced by the fish plants.[17] Mink fur farming has become a major industry for Nova Scotia, particularly the Southern portion of the province (See Figure 15). Approximately half of Canadian mink are raised in Nova Scotia.[18] Nova Scotia mink is known for its lustrous black coat that has become a highly demanded product due to its color neutrality.

The mink are bred, raised and slaughtered for their fur pelts. The pelts are graded and often shipped to Europe and Asia for processing into high quality garments.[19] The mink farms however leave a rather large amount of pungent by-product of animal waste and pelted carcasses to be dealt with within very lose procedural guidelines. There is currently much turmoil among farm neighbors about the treacherous conditions surrounding the animal waste as it smells, attracts flies and seagulls and has been accused of contaminating multiple waterways and bodies of water with toxic algae.[20]

The current state of mink farms in the news and media is almost always concerning issues of smell and proper disposal of waste. There have been recent moves made in attempts to deal with these issues, such as providing information workshops about how farms can properly compost on site.[21] There are possibilities of

16. Farmed Fur | More Info, *Truth About Fur,* accessed October 17, 2015.
17. Taber, "Nova Scotia's Mink Farms Are Booming – but the Neighbours Aren't Pleased."
18. Farmed Fur | More Info.
19. Taber, "Nova Scotia's Mink Farms Are Booming – but the Neighbours Aren't Pleased."
20. Brian Medel, "Mink Farms Identified as Polluter of Yarmouth, Digby Lakes," *Chronicle-Herald* (Halifax), April 3, 2012.
21. "On-Farm Composting Course, Truro, NS - Sept 22 and 23," *Nova Scotia Mink Blog*, August 31, 2015.

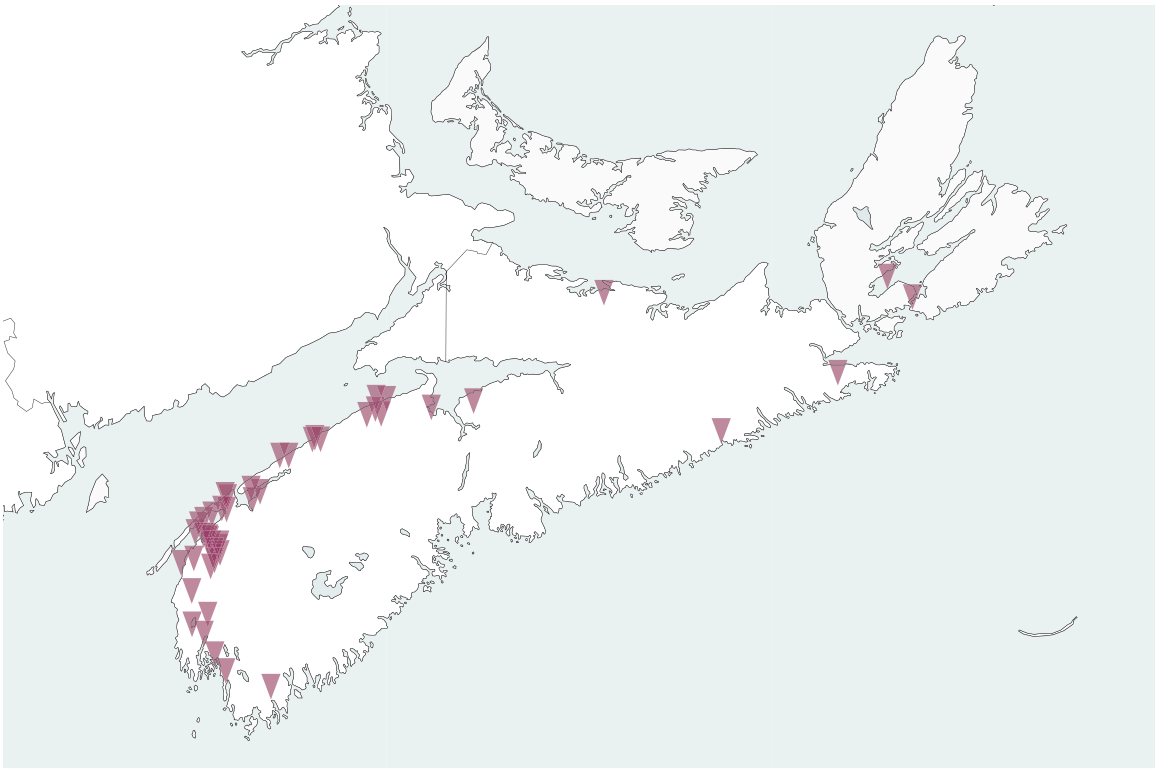

Figure 15. A map of the existing mink farms in Nova Scotia.

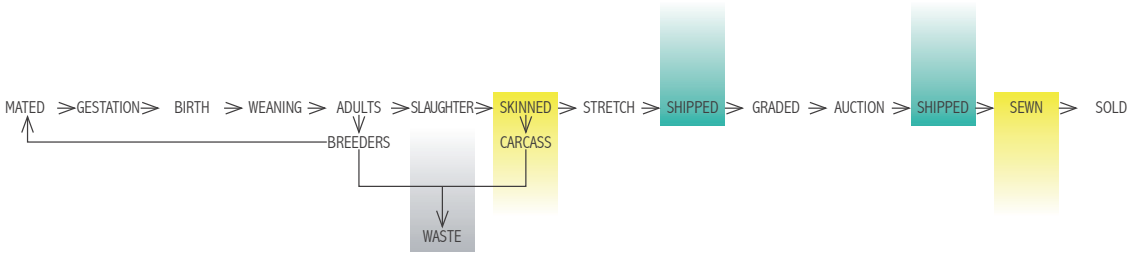

Figure 16. A flow chart of the process of mink fur farming.

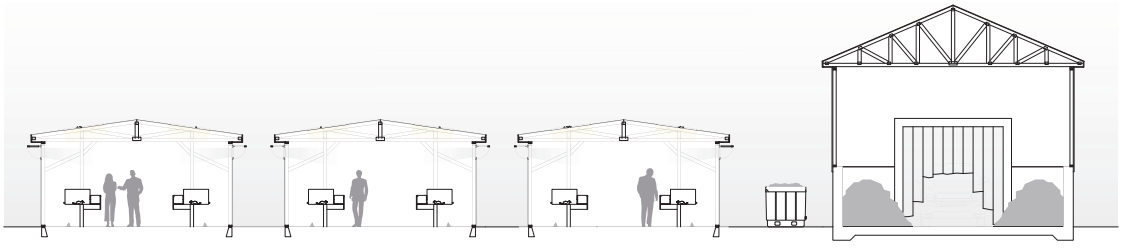

Figure 17. A drawing of the process of mink fur farming.

processing the waste into fertilizer, biofuel and fuel pellets [22] and the fat from the pelts can be processed into mink oil used in leather tanneries.[23]

Mink are raised in barns that can span up to 500 feet in length. Newer barns are approximately 19 feet across and provide the animals with a cage, a nest, a manipulatable object (a toy) and a water source. Natural light and ventilation are essential in these barns. This is achieved through operable clearstory windows along the walls and translucent panels in the roof. The barn is designed very intentionally with specific dimensions between the cages to allow the various carts and machinery to pass through, and a two-foot passage behind the cages so workers can service the water line. Their food is administered daily by a worker, and waste falls onto a removable mat under the cages. The waste is removed periodically by pulling out the mat and collecting the waste for disposal.

The waste then gets stored in another barn specifically built for this purpose. It has a poured concrete slab floor and concrete pony walls. The structure has open ends that allow a truck or tractor to drive through the building. The waste is turned and aerated to aid in decomposition while in the barn. Pelting happens in an off-site location as conditions must be carefully controlled.

Intersections, Gaps & Opportunities

Through identifying the structure and system of current industry and areas of opportunity, this thesis attempts to determine a strategy for using the waste by-products of the existing industries of the town to create new growth. This new growth is multipartite. There will be a waste processing plant that converts the organic by-products into valuable compost. The market and restaurant celebrate the local industries by providing opportunities of commerce for the fishermen and also passively teach patrons the processes involved in preparing, cooking and eating the seafood.

22. Joann Alberstat, "Digby County Mink Manure Project to Help Turn on Lights," *Chronicle-Herald* (Halifax), April 3, 2013.

23. "Services," *Spec Environmental Solutions* - Home, accessed October 24, 2015.

CHAPTER 4: THE PROJECT

> Innovation is something that emerges out of need — as opposed to invention, which I think emerges out of a dream of success.[24]

This thesis is comprised of a three part system that processes waste from existing industry and celebrates food product. The three parts are a waste processing plant, market and restaurant. This project will work to invigorate local economy and a general attitude towards the local ability for residents to invest in themselves.

Sum > Parts

The analysis of the town of Yarmouth led to a conclusion that there is an opportunity to utilize waste and by-products of the existing industry and create a series of buildings that lead the user along a path from Main Street to the waterfront (and vice versa) as a representation of the local craft and culture that makes the area unique. The path leads the user from the restaurant on Main Street, to the market, and down past the waste processing plant. The path ends with a floating dock system on the water that responds to the tides and allows users to get onto the same plane as the water.

The waste plant is where current end-of-line industry by-product and waste can be processed into something valuable. Lobster shells, fish offal and mink waste are the primary targets for the composting facility. Currently the waste from the lobster and fish industry is dumped into the ocean, or shipped off for processing to a plant in another county. The current status of the mink waste is unacceptable and is it possibly causing much of the algae and pollution of waterways in the vicinity of the farms. The waste plant takes seafood and farm waste and composts it into an organic compost. The compost can then be used in gardens and greenhouses, or sold to other venues for personal gardening needs. Fishermen can bring their waste directly into the plant from the neighbouring wharf.

The market is a place of commerce for local fishermen as well as produce and

24. Lisa Paterson, "Fogo Island Economic Success 'absolutely Transferable,' Zita Cobb Says," *CBC*, October 25, 2015.

other market vendors. This market is in addition to an existing market on a nearby site. The two together will form a Market Court that will be used as summertime expansion space for the vendors. Spoiled goods can be returned to the waste plant for processing into compost. Overhead doors open along the North and South sides of the market to draw users into and through the building onto the habitable roof of the waste plant below. This habitable roof provides a great viewing platform to the many public festival events that take place along the waterfront.

The restaurant space is located in the heart of the downtown. Fronting onto Main Street the restaurant is the link that brings the public into the proposal from the downtown core. A key feature in creating a successful development is to address time-of day use. This part of the project will be used both during the day for educational purposes, after hours as a food service establishment. Any organic waste produced by the restaurant will be returned to the waste processing plant to be processed back into compost. To the South of the restaurant is a Court for Food services, such as Food Trucks and outdoor public lobster boils. This Court becomes an extension of the restaurant in climate weather as the walls of the restaurant contain overhead door that open up to engage with the court.

The form of the building will engage Main Street, and promote public participation by showcasing the steps of the seafood process - from ocean to plate. This is very important as the public needs to be invested in the project to make it successful. Exposing all parts of the process to the various participants will allow them to understand why their part is important and should be treated with care. The purpose of this project is to highlight the local craft and culture through promoting the local industries. This will root the new portion of the system in the previously existing structure allowing it to have an autonomous but logical existence.

Following Functional Form

Construction techniques in the region provide a basis for the structural and formal qualities of this thesis. The three main industries were studied in both function and form to inform the design. The Six Points for an Architectural Resistance

as outlined by Kenneth Frampton[25], and principles derived from the local industry buildings work together to create a didactic approach to building that informs the user of the local techniques within a modern design. The design techniques used focus on different principles derived from the industrial buildings and develop methods for creating a passive education.

The buildings utilize a traditional wood bent system of construction that allows the envelope to be hung outboard of the structure. This enables the celebration of the structure on the interior while maintaining a pure gable form on the exterior.

The sides of the buildings have overhead doors that in climate weather can open to allow flow into and out of the buildings to the adjacent courts. Horizontal slats allow for shading when the doors are open, but still allow sun and visual access when the doors are closed. The doors are on manual cranks that allow for a tactile experience of opening the buildings to the courts.

Material development is an essential part of the analysis of industry in rural communities. Historically materials were developed based on accessible resources and the reuse and repurposing of other materials. For example wood is a primary material used in Yarmouth industries due to its prevalence, and local knowledge on how to work and manipulate the timbers.[26] The evolution of materials can be seen as developments in technology and accessibility. Lobster pots for example provide a direct window into the evolution of materials. The lobster pots in Yarmouth are all made of metal wire coated in plastic - opposed to lobster pots in Prince Edward Island which are made of wood lined with a twine mesh. Cape Breton provides and intermediary example of the transition between the two material palates. This is a unique example, as the development has not occurred everywhere simultaneously - suggesting that fishermen have preferred to maintain historic practices for various reasons. Other materials such as rope has developed consistently through all regions to suggest a superiority of current

25. Kenneth Frampton, *Labour, Work and Architecture: Collected Essays on Architecture and Design,* (London: Phaidon Press, 2002), 77.

26. Alan Gowans, *New England Architecture in Nova Scotia* (Detroit: Detroit Institute of Arts, 1962), 18.

materials over traditional materials.

The materials used in the buildings are emblematic of the locally used materials. Larch wood provides a resistance to water and rot and is readily available. The other primary material used is stainless steel that references the many industries and components of the town.

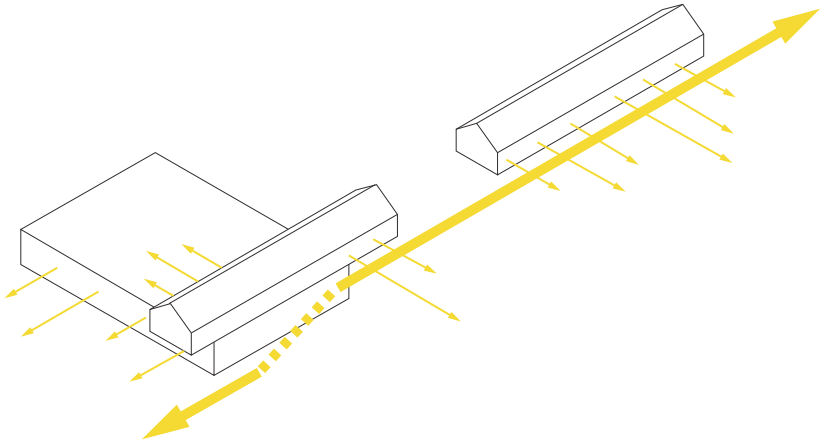

Figure 18. Path orientation.

Figure 19. Site plan indicating path, base map from Yarmouth Office of the Town Planner.

Figure 20. Elevation of restaurant intervention.

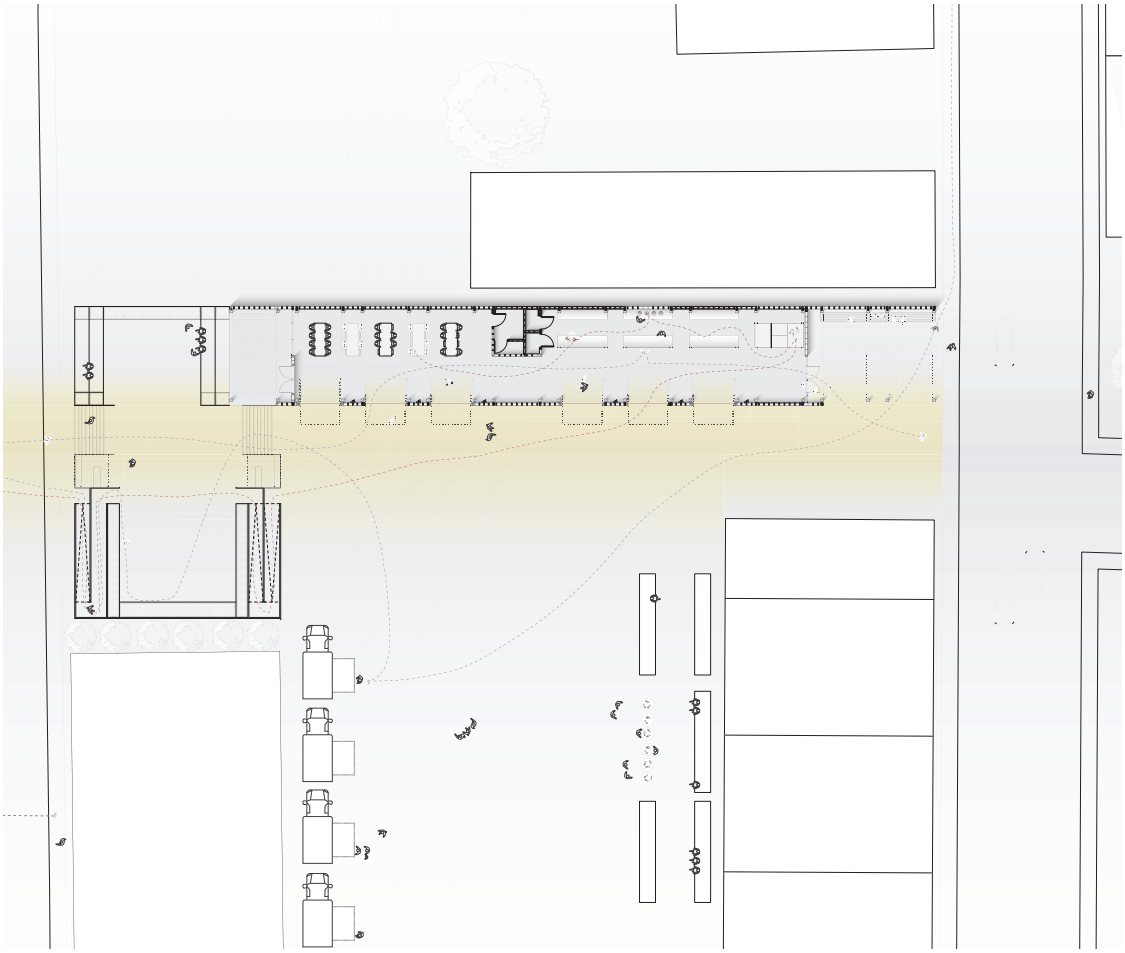

Figure 21. Plan of restaurant intervention and social spaces, base map from Yarmouth Office of the Town Planner.

Figure 22. Render of restaurant, background image from Google Maps.

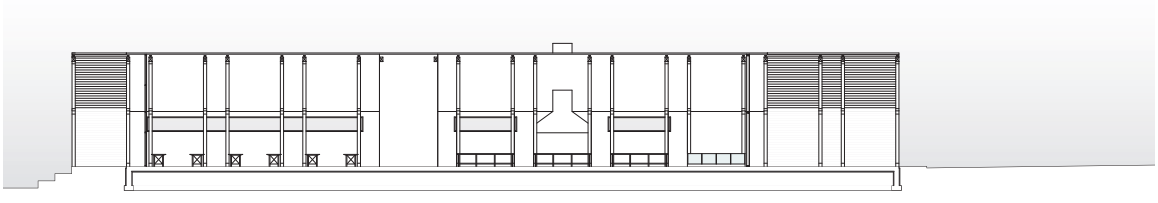

Figure 23. Section of restaurant.

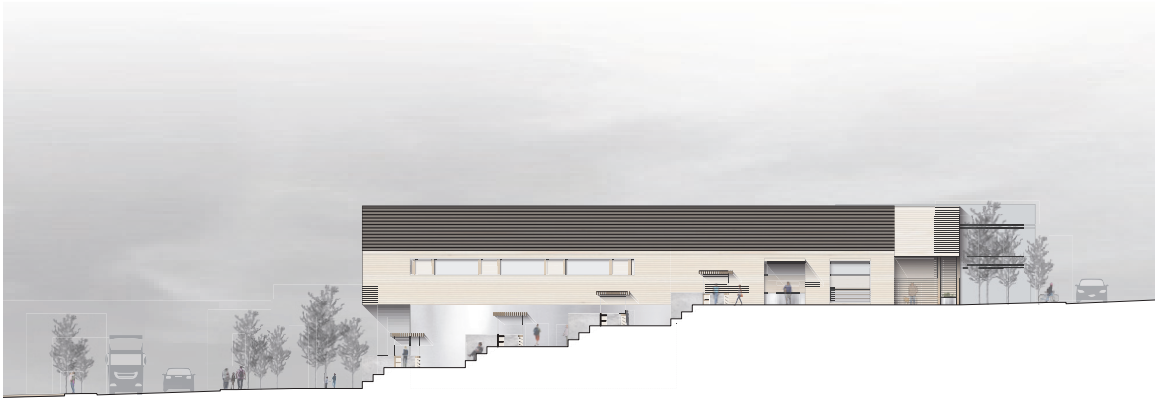

Figure 24. Elevation of market and waste plant intervention.

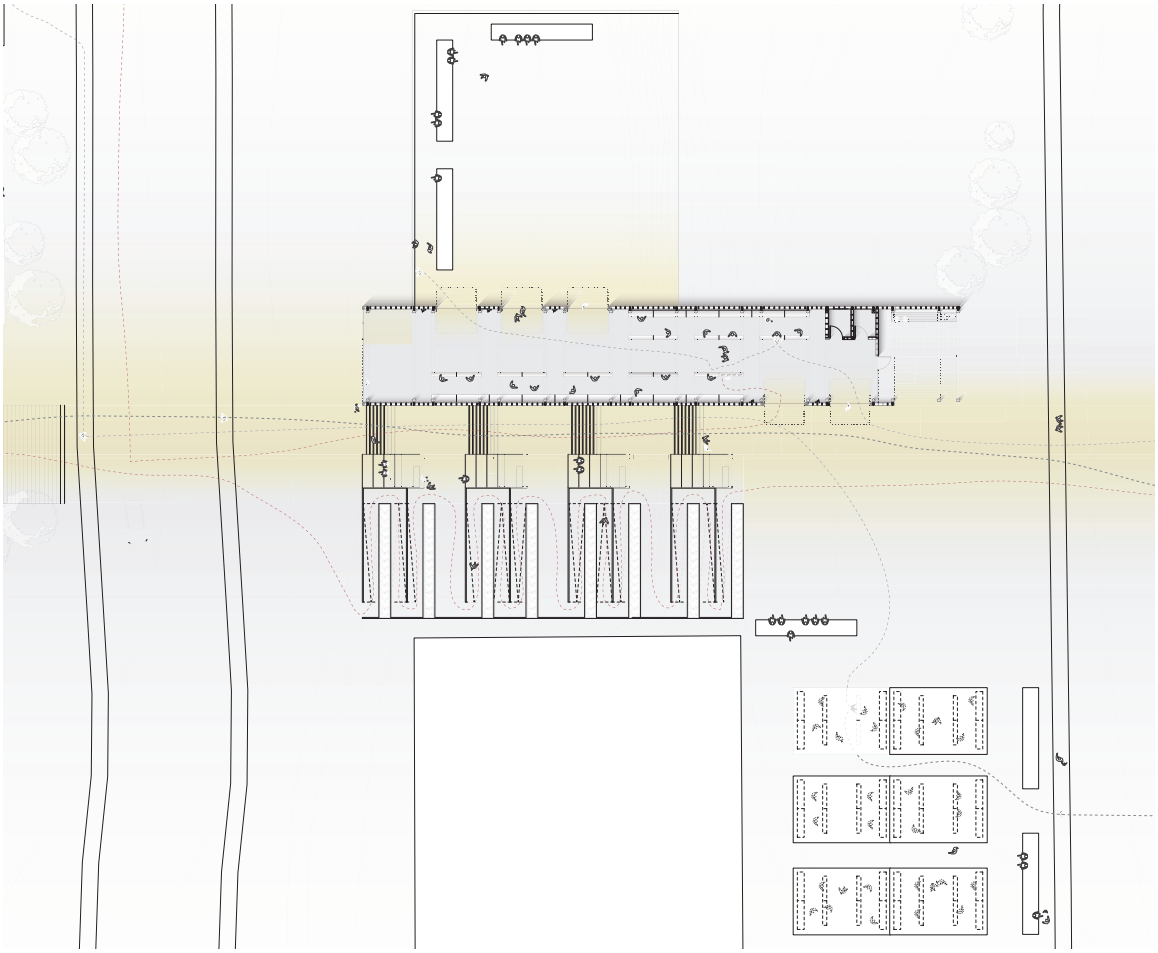

Figure 25. Plan of market intervention and social spaces, base map from Yarmouth Office of the Town Planner.

Figure 26. Render of market, background image from Google Maps.

Figure 27. Section of market and waste plant.

Figure 28. Cross section of market, background image from Google Maps.

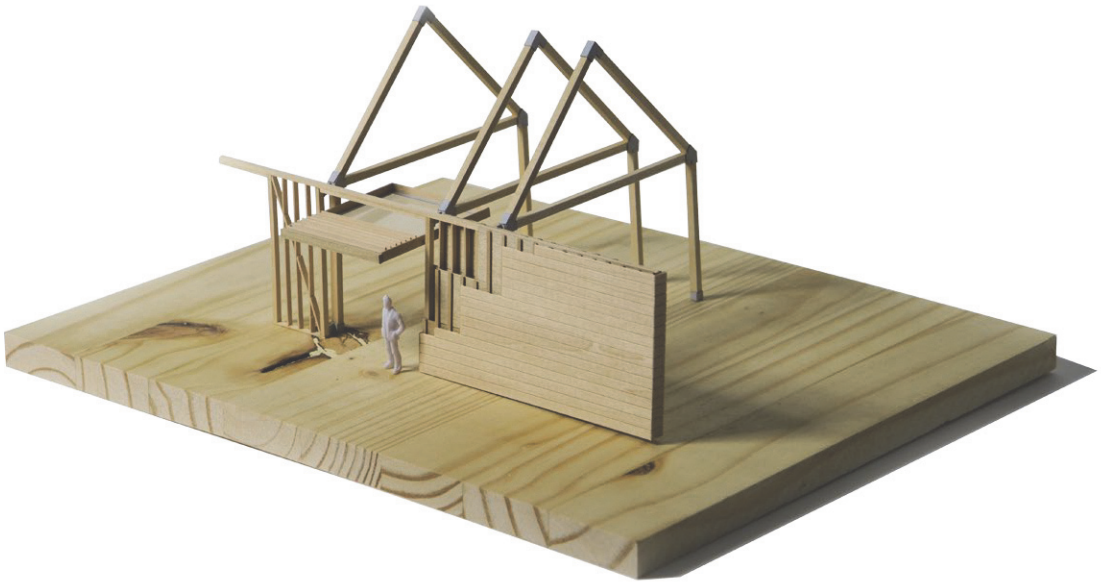

Figure 29. Construction detail model of overhead doors.

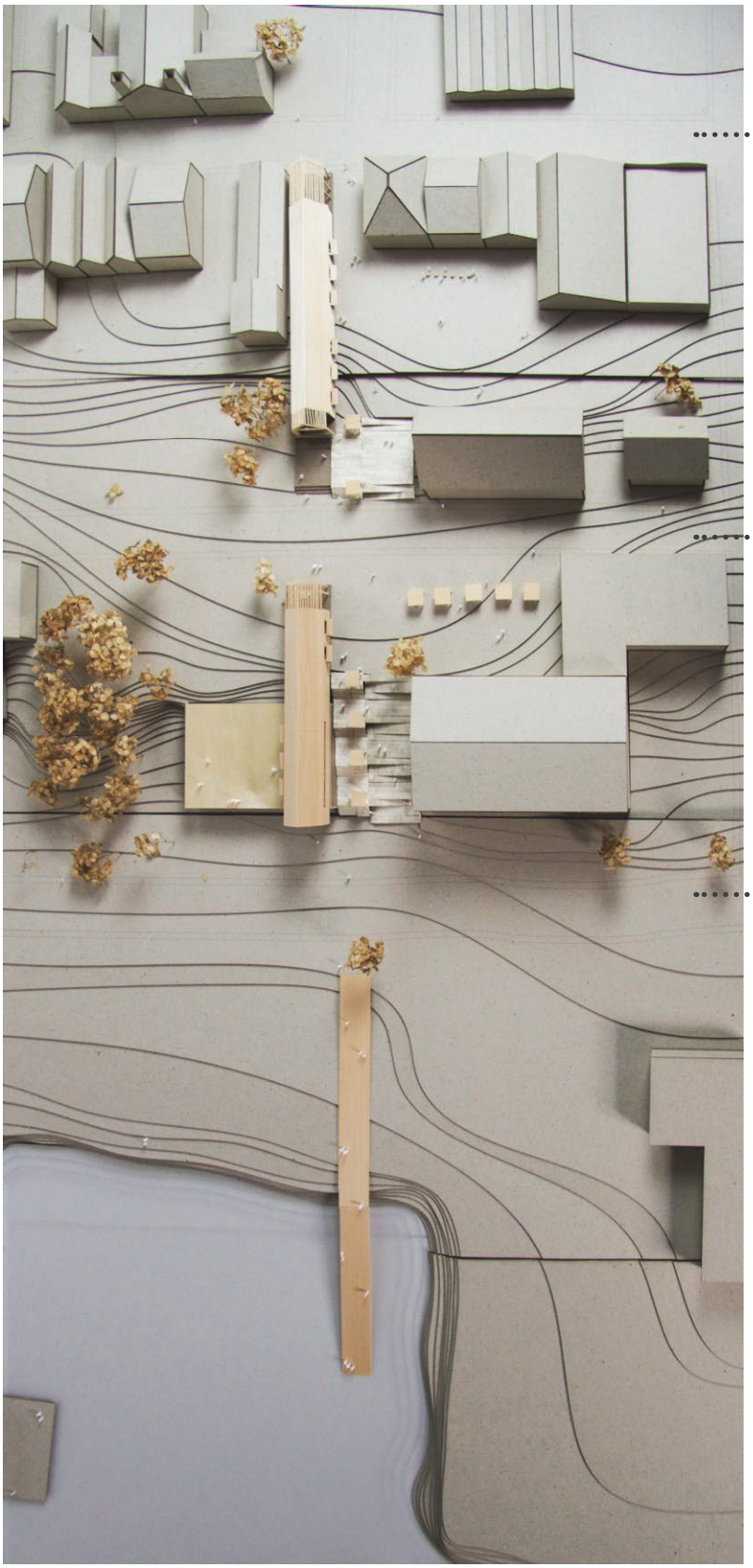

Figure 30. Model of site with intervention indicated in wood.

Chapter 5: Conclusion

Waste Processing as Catalyst

The waste plant represents an idea of bringing the "underbelly" of the community into the open and celebrating it instead of trying to hide it. Waste is not often an asset of a community, but finding a productive use for it can lead to economic and environmental benefits. Keeping the waste processing in the center of the town allows the economic stimulation and jobs to remain local and also expose the general public to the realities of the local industries.

Waste processing cannot be addressed without issues of smell arising. The waste would most definitely have a smell, and due to this the waste plant would need a much more extensive research background before implementation. Through technologies such as bio-digesters and air filtration systems much of the smell could be contained, but there is also something to be said about allowing a portion of the smell to remain. The industries themselves have a smell, and therefore the town also has a smell. It is part of the life and experience of the residents and visitors.

Now or Never

The premise of "small town revitalization" is not new. It is also not without faults. Changing demographics are a constant in a dynamic world. This is, has been and will be true. Utopian responses are not the answer, but having a hope in the future is essential for the continuation of small communities.

Through identifying, analyzing and intersecting existing industry in the town of Yarmouth, the craft and culture of seafood have been able to be preserved and proliferated. Education is the key to maintenance of ideals of the past and understanding traditions. This project allows the local craft and culture to be celebrated. As a function of this, current industry by-products are being used as a sustainable intervention in the town. There will be new by-products produced, some of which will be able to be fed back into the system.

Figure 31. Plan and section of the waste processing plant.

APPENDIX A: YARNS

The History of the Lobster

Lobster might seem to taste better to us because it's so expensive.[27]

Lobsters have two visible claws, the pincher and the crusher. They do as their names suggest and aid the lobster in navigating, defending and interacting with the world around it. The lobster also has an invisible claw, and this claw was used in the last few centuries by the crustacean to significantly climb the social ladder.

1600, 1700 and 1800's lobsters were servants food. They littered the shore lines of New England and washed up in piles left to rot. Servants masters were forced to sign contracts not to feed servants lobsters more than thrice weekly. Coming into the late 1800's and early 1900's the spread of rails throughout the country provided an opportunity for train operators to take advantage of the lack of information flow across the country. If train passengers were not aware of what lobster was, they could be fed it without the knowledge that it was considered poor peoples food. This saved the train significant money on providing expensive dishes to its customers[28].

This was the beginning of the revolution. Train passengers became so infatuated with the lobster that they began asking for it in restaurants - something that had never happened until now. Before long restaurants were serving it and due to growing demand were charging more for it. This was the transformation that brings lobster into the life of luxury it now occupies in our current society[29].

The Cat Came Back

2009 saw the shut down of "The Cat" - a pontoon ferry service that transported passengers from Yarmouth to Portland and Bar Harbour, Maine. This shut down had devastating effects on the province, county and particularly downtown Yarmouth. Shops and restaurants closed, and those remaining struggled hard

27. Daniel Luzer, "How Lobster Got Fancy," *Pacific Standard*. June 7, 2013.

28 Ibid.

29 Ibid.

against the declining tourist consumers they so heavily relied on.

In 2014 a few ferry operating service took over the route and reopened a ferry between Yarmouth and Portland, ME. This was great news for the town, as locals saw this as an opportunity for renewed faith that the town could survive. This re-opening did not come without strife however - within the first year of operation the company used all of its allotted government stipend intended to be used over the next 7 years. After another less than successful operating year, the route was purchased by a rival company with the hopes of lowering the prices and encouraging ferry travel. The future of the ferry is uncertain, but the locals remain hopeful that the service will continue to bring tourists into the town.

APPENDIX B: CASE STUDIES

Fogo Island

> The inherent value of rural places can be reclaimed and made relevant for the 21st century; that losing our rural communities and the human ways of knowing they contain is neither inevitable or necessary.[30]

Once a struggling rural town on the North Eastern point of Newfoundland, Fogo Island has recently reinvented itself through an Inn/artists studio development.[31] The Shorefast Foundation, started by native Fogo resident Zita Cobb is responsible for huge personal investment and initiation to begin the project.[32] The foundation works under the three principles that:

> There is inherent, irreplaceable value in place itself and that the key to sustainability lies in nurturing the specificity of place; in the intellectual heritage and cultural wisdom, talent, knowledge and abundance that exists naturally in each place;
>
> That with an initial investment, viable enterprises and businesses can be developed so that the surpluses from these businesses (social enterprises) contribute to the resilience and economic wellbeing of the community;
>
> That art is a way of knowing, of belonging, of questioning, of innovating. It is a way of participating in a global conversation and a way of making sense of the world. As such, it has the potential to contribute to positive social change.[33]

Through studying place, initial investment and believing in the power of art, a struggling community can reinvent themselves into a successful place the locals are proud of and decide to remain.

In addition to creating a tourist destination, the project creates local opportunity within existing craft and cultural frameworks. The furniture and bedding at the Inn is made locally, providing an income for local craft professionals. Any repairs to these items are also done locally, by the original makers. The Inn employs locals - further increasing the local economy.

The example of Fogo Island is relevant to this thesis as there are principles of lo-

30. "Shorefast Foundation," *Shorefast Foundation*, accessed October 25, 2015.

31. Amy Minsky, "The Big Idea: Canada's rural areas are in decline, one woman has a solution," *Global News*, May 4, 2014.

32. Ibid.

33. "Shorefast Foundation."

cal investment that can be applied. Also the recognition of value in place and how local attitudes can create a dynamic, attractive desirable destination for tourists.

The Shakers

> The peculiar grace of a Shaker chair is due to the fact that it was built by someone capable of believing that an angel might come sit on it. –Thomas Merton[34]

When speaking of the integration of craft and culture, the Shakers can not be left out. A people group that existed primarily in New England, the Shakers are emblematic the idea of craft as an engrained form of culture. Care and attention to detail was the root of all their labour - regardless of the task.[35] A deeply pious people, there was a belief that in order to "attain a spiritual heaven" one must first "create a heaven on earth".[36] This sentiment along with ideas of simplicity and perfection describe most of the day to day activities of the Shaker. The Shakers shared all the work on their compounds rotating between jobs periodically in order to remove personal pride in produced goods. Equality was essential for the Shakers, which to them meant equality between all members of the same gender.

The Shakers were well known for their hand labour, as everything was made simple, useful and sound.[37] If something was not made well, it was removed and re-made with the intentional perfection that was culturally demanded.[38] An example of a house built with an unfamiliar material (limestone) was rebuilt after the Shakers studied with locals to learn how to properly use the material.[39] It was due to the rise of the machine age that the Shakers could no longer build items for less than they could be purchased for. This caused a rift in the values of the perfection of made goods as a religious practice, and negative consequences were results of this.[40]

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34. Amy Stechler and Ken Burns. *The Shakers: Hands to Work, Hearts to God : The History and Visions of the United Society of Believers in Christ's Second Appearing from 1774 to the Present* (New York: Aperture Foundation, 1987), 5.
35. Ibid., 75.
36. Ibid., 13.
37. Ibid., 20.
38. Ibid., 45-47.
39. Ibid.
40. Ibid., 115.

Figure 32. Fogo Island Inn; image from Azure.

Figure 33. Shaker Chair; image from Kaufmann Merchantile.

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