Business Plan of the Rebuild Hub:

Innovating for a Triple Bottom Line

by

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Abstract

The objective of this thesis study is to develop a business plan to establish a social enterprise for a client organization, the Pacific Community Resources Society (PCRS). This local, non-profit organization provides community resources and job training programs for individuals who are often vulnerable or marginalized from communities in the Lower Mainland.

The City of Vancouver and PCRS are currently collaborating on a joint project to advance the local deconstruction and the reclaimed building material industries. The joint venture aims to fulfil a dual mission: a) to divert construction/demolition waste from landfills by promoting building material reuse and recycling, and b) to provide green job training and employment opportunities to youth with barriers to employment. The former mission directly addresses City of Vancouver's key priorities of becoming the greenest city in the world by 2020 and fostering a green economy. The latter underscores PCRS' core commitment to providing employment and life skill training for underemployed youth at the inner city.

The goal of this thesis study is to design a business plan to create a social enterprise that will fulfil the partnership's dual mission. The needs of the client organization and their partners were assessed and a strategic analysis of the local deconstruction and used building material retail industries was conducted. After evaluating strategic options, this thesis study proposed to develop a business plan to establish a multi-centre retail operation named The ReBuild Hub. This operation will include: a) a retail centre to sell salvaged building material; b) a deconstruction centre to offer deconstruction services, and c) a training unit that will train "at risk" youth hand-on skills in the construction and trade industry using the 2 operation units as training sites. Collectively, these three units will be positioned to advance the mission of the partnership and to achieve a triple bottom line profit.

Dedication

This thesis is dedicated to Jeff and Peyton.

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Executive Summary

This thesis study's goal was to develop a business plan to establish a social enterprise for a client organization, the Pacific Community Resources Society (PCRS). This local, non-profit organization provides community resources to marginalized individuals in local communities.

The City of Vancouver and PCRS are currently collaborating on a joint project to advance both the deconstruction and the reclaimed building material industries locally to fulfil a dual mission: a) to divert demolition waste from landfills by promoting building material reuse and recycling, and b) to provide green job training and employment opportunities to youth with barriers to employment. The former mission directly addresses the City of Vancouver's key priorities of becoming the greenest city in the world by 2020. The latter underscores PCRS' core commitment to providing employment and life skill training for underemployed youth at the inner city.

The goal of this thesis study is to design a business plan to create a social enterprise that will fulfil the partnership's dual mission. The needs of the client organization and their partners were assessed and a strategic analysis of the deconstruction and used building materials retail industries was conducted. After evaluating strategic options, this study proposed to develop a plan to establish a multi-centre retail operation named the ReBuild Hub that will include: a) a retail centre to sell salvaged building material; b) a deconstruction centre to offer deconstruction services, and c) a training unit that will train "at risk" youth hand-on skills in the construction and trade industry using the 2 operation units as training sites. Collectively, these three units will be positioned to advance the mission of the partnership and to achieve a triple bottom line profit.

The Rebuild Hub will emerge as a new program initiated by the Pacific Community Resources Society (PCRS) in partnership with the City of Vancouver, and will encompass three interdependent units:

The **Retail Centre** is a retail operation that will intake donations of salvaged building materials, and after refurbishment resells the materials to generate revenue to fund operation and training units. Approximately 90% of total revenue of the ReBuild Hub will be generated through the retail sales of donated used building materials. One important differentiator of the ReBuild Hub is that extensive marketing effort will be devoted to actively solicit donations of used building supplies from the public including local businesses, corporations, public agencies, and rental building owners.

The **Deconstruction/Salvage Centre** will provide residential deconstruction services through partnership with locally established deconstruction specialists/businesses, functioning as a promoter as well as a connector for the local deconstruction industry. The salvage service will be provided by in-house staff and offered at free-of-charge to donors of valuable materials.

The **Training Centre** will co-ordinate and implement on-the-job training programs, using the Retail and Deconstruction/Salvage Centres as training sites, educating trainees with relevant industry skill sets, work experiences, and professional connections.

The ReBuild Hub will be the first in Metro Vancouver to offer such a hybrid operation to locally advance both the deconstruction and the material reuse industries. Given the current fragmented and disconnected state of these local industries, the Hub's presence can potentially raise their public profile and market capacity to stimulate demand. For the deconstruction industry, the Hub will function as an "industry connector" to attract and engage local deconstruction/green demolition operators to come to the site to donate their salvaged products, attend industry-related seminars/meetings, advertise their businesses, recruit PCRS trainees, and form local industry networks. For the material reuse industry, the Hub represents a highly visible and easily accessible outlet for used building supply donors and buyers, playing an active role in promoting the concept and applications of material reuse. The Hub's parallel function as a training base will develop new deconstruction/salvage technicians to enter the green industry and advance trainees' employment opportunities through engagement with industry members who do businesses with the Hub.

The target market for used building materials includes private home renovators, rental property owners, and commercial contractors or developers. As for deconstruction, the target market includes residential homeowners who want to take down or renovate part of their houses. A number of market factors signify positive growth potentials for these industries. BC home renovation and construction expenditures have been projected to rise in the next 3 years. In parallel, trends in the industry (rising demand for the Leadership in Energy and Environmental Design (LEED) system), the economy (a rise in willing to buy used building material due to recessionary climate), and societal perceptions (increasing popularity of sustainable practices) collectively show favourable signs on the demand of green practices. These conditions also point to positive job opportunities in the trade or green job sector for graduated trainees from the ReBuild Hub.

1: Introduction

The aim of this thesis study is to develop a business plan to establish an innovative social enterprise for a client organization, the Pacific Community Resources Society (PCRS). With 240 employees and an annual operating budget of $14M, PCRS is an established non-profit organization in the local social and community services industry. It delivers specialized community resources programs throughout Metro Vancouver for children, youth, adults and families, who are often vulnerable or marginalized from society due to multiple social and/or economic barriers that prevent them from accessing mainstream public services. Programs include the delivery of alternate education, employment training, addiction counselling, housing search support, and prevention services.

PCRS and the City of Vancouver are proposing a joint venture to advance the deconstruction and the used building material industries. Their mission is twofold: a) to divert construction/demolition waste from landfills by promoting building material reuse and recycling, and b) to provide innovative green job training and employment opportunities to local youth with multiple barriers to employment. The former mission directly addresses City of Vancouver's key priorities of becoming the greenest city in the world by 2020 and fostering a green economy. The latter underscores PCRS' core commitment to providing innovative employment and life skill training for underemployed "at risk" youth.

To be included in the partnership, PCRS must generate a business proposal that will promote both green industries and advance green job training and employment opportunities for multi-barrier youth. The goal of this thesis study is to identify entrepreneurial opportunities within the two industries that will fit with the capabilities of PCRS and design a business plan for starting up a social enterprise that will fulfil the partnership's dual mission.

2: Deconstruction Industry in Metro Vancouver

This section provides an analysis of the deconstruction industry in the residential housing sector in Metro Vancouver, BC, Canada. The geography of the current undertaking is limited to Metro Vancouver, BC, because governing bylaws for property development, including deconstruction or demolition, are different between districts or regions within each Canadian province. The Metro Vancouver district includes Vancouver, Surrey, New Westminster, West Vancouver, North Vancouver, Burnaby, Coquitlam, Port Coquitlam, Maple Ridge, Langley, Delta, Pitt Meadows, White Rock, Richmond, Port Moody, and Lions Bay.

2.1 Industry overview

Building deconstruction, an alternative to mechanical demolition, refers to a specific green method of dismantling unwanted residential or commercial building structures [1]. The practice involves a systematic, planned, and careful approach to disassembling building materials in pieces using primarily hand tools. Deconstruction aims to maximize the amount of recoverable materials for reuse, recycle, or resell, to conserve quality building resources and to minimize the flow of construction and demolition waste stream to the landfill. Contrary to deconstruction, mechanical demolition indiscriminately tears down a housing structure with machineries and consequently generates an enormous amount of waste for the landfill. Approximately 22% of disposal materials at the local landfills are construction and demolition waste [2], which includes furniture, appliances, roofing, gypsum dry wall, concrete, bricks, insulation, metals, windows, doors, glass, and wood.

Deconstruction confers environmental, social and economic benefits (Table 1). The practice creates new jobs for the community, especially in the low-income sector. Unlike demolition, which is highly mechanical and capital intensive, deconstruction is highly labour intensive, yet the labour skill required is fairly basic. This indicates low skilled adults from marginalized communities can be trained for this trade and increase their opportunities for employment [3]. The recovered building material can be sold to generate revenue, and provide a supply of affordable used building materials to families to renovate their homes. Diversion of

building materials from landfills decrease disposal and transportation cost, and create economic opportunities for small businesses in the recycling, reuse, and resale sectors [4].

Table 1. Comparison of Deconstruction vs. Demolition – Advantages and Disadvantages

	Advantages	Disadvantages
Deconstruction	• Decrease waste • Create local. low skilled, green jobs • Create green business opportunities • Supply affordable renovation products • Generate revenue from material resale • Save disposal and transportation costs	• 15 to 30% higher in cost • 2 to 10 times longer in project duration • Require a larger crew (4 to 8 members) • Few local suppliers to choose from
Demolition	• Lower cost • Shorter project duration • Require only 2-member crew	• Increase waste volume by 30 to 70% • Require high capital investment in machinery and highly skilled operator • Lack of green job or business opportunity creation

Based on company website information, approximately 6 out of 56 demolition companies in the Lower Mainland offer residential and/or commercial deconstruction as one of their service options. Two local used building material retailers offer residential deconstruction as an additional service. The management personnel of each of the 5 demolition companies and of the two retailers offering deconstruction were interviewed in this study to gain their industry insights [5]; and their company names are listed in Appendix A. In addition, David Bannink from RE-USE Consulting, Bellingham, Washington was interviewed on the U.S. deconstruction industry. David has been in the reusable building materials industry for almost 17 years, and was the recipient of the national "Building Deconstructor of the Year" award in 2009 given by the Building Materials Reuse Association, Chicago, IL [6].

The deconstruction sector is still at the infancy stage of its industry cycle in Metro Vancouver [5], as well as in other regions of Canada [6]. Despite its obvious benefits, deconstruction is rarely employed as a method to remove unwanted residential structures in Metro Vancouver [5] or throughout Canada due to its higher costs and longer time requirements

[7]. Demolition is still the mainstream, if not the sole, practice due to its speed of taking buildings apart and relatively low costs. The cost of deconstruction to property owners in Metro Vancouver is about 15 to 30% higher than demolition due to intense labour requirement and longer project time [5]. For example, demolishing a 2-storey residential home (2,400 square feet) takes about one day, requiring a crew of 2 member and an excavator. Deconstruction can take up to 5 days to 2 weeks, depending on the experience of the crew (2 to 8 members) and the complexity of the structure to be removed [1, 5, 6, 7].

2.2 Industry Value Chain

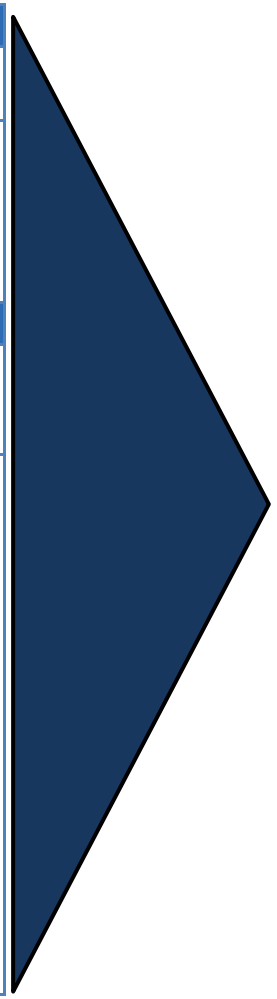
The value chain of the local deconstruction industry is illustrated in Figure 1. The process is initiated by a property owner with a residential house destined for removal. The house owner attains a development permit from the city hall, which gives legal permission to begin property development, and then recruits a deconstruction company to remove the housing structure. The service a deconstruction company provides is the partial or complete removal of the housing complex using mainly hand tools, beginning from soft stripping (detachment of non-structural building material) to structural disassembly (dismantling of the frame of the house). The service includes removal of all deconstructed materials from the site and clearing the land space for new development to begin.

Materials derived from deconstruction are commonly sorted on site into resalable, recyclable or waste category, and then transported to a temporary storage site until buyers are found. A transportation company can be hired to move the material but all of the local companies own their own transportation vehicles for this purpose [5]. Products that cannot be resold but are recyclable (such as wood, metal, or plastic waste) are transported to recycling facilities. Materials that have no resale value and are non-recyclable are sent to the landfill for disposal. There is no revenue for recycling or disposal at landfill; both activities incur a cost due to transportation and recycling or disposal fee. It is common practice in both Canada and the US that deconstruction companies take ownership of the salvaged material.

Figure 1. Deconstruction industry value chain

SUPPORT ACTIVITIES			
Organizational infrastructure	**Human Resource Management**	**Technology Development**	**Procurement**
Finance management; facility maintenance; governance	Recruit and train deconstruction specialists; industry certification and safety training	Company website development and maintenance	Equipment and tool; supplies for office operation

PRIMARY ACTIVITIES					
Customer Acquisition	**Property Assessment**	**Deconstruct Residential Structure**	**Sort and Segregate Materials**	**Transport Materials off site**	**Market and Sell Salvaged Materials**
Market the deconstruction practice as a green option to remove residential housing structure; potential clients contact company to enquire about the deconstruction service	Meet with potential clients and visit their properties to assess cost and time to deconstruct the housing structure; bid competitively to win the contract	Transport equipment and tools to work site and systematically disassemble the structure	Building materials derived from deconstruction are sorted into different waste streams: waste, recycling, or salvaged for resale	Remove all deconstructed materials from worksite in preparation for construction development; transport segregated materials to their respective destinations for further processing	Clean, refurbish, and prepare materials derived from deconstruction for resale; advertise materials on-line; customer pick up or delivery



Marketing and selling salvaged materials, at the final phase of the value chain, is a critical step in generating additional revenue to offset the high labour costs, enabling the deconstruction operator to bid competitively against demolition contracts. Products that can be reused readily (such as cabinets, appliances, wood, metal) are sold directly to end consumers, such as private home owners or contractors, using on-line retail sites such as Craigslist or eBay. Less common products are refurbished through value-added processes to increase their functionality and/or aesthetic appearance, enabling a higher selling price. At the resale stage, deconstruction operators are competing in the Used Building Material Retail Industry (Section 3), which is termed the Material Reuse industry in the US [8].

All of the companies interviewed are vertically integrated [5]. Each company carries out all of the major activities along the deconstruction supply chain, consistent with findings of their U.S. counterparts [1, 6]. These activities include: recruiting and training their own labour, using their own machinery during the operation, operating their own hauling vehicles, storing salvaged material in their own warehouses or yards, and marketing and selling the salvaged material to the public. The marketing effort mainly consists of using on-line retail sites such as Craigslist or eBay to advertise salvaged products. In addition,there is no networking or collaboration amongst local operators; each interviewee claimed that he/she does not know of other members in the local area that carry out deconstruction, indicating that each company works in isolation. One of the biggest problems faced by these companies is the lack of space available to store the salvaged products after retrieval.

2.3 Barriers to local market growth

The main barriers to practicing deconstruction include: a) long time frame required to complete projects; high labor costs; b) lack of storage space for salvaged products which cannot be disassembled for storage; c) lack of incentives for building contractors to choose deconstruction which lengthens project time and increases costs; d) lack of access to market for used building materials; e) low profit margin in resale of used material due to high labor and fuel costs; f) difficult to compete with cheap, new, imported building materials at Home Depot or Rona; g) lack of supportive government policies to incentivize the practice in the industry; and g) home owners' lack of awareness of the deconstruction option. These barriers were observed by businesses in Metro Vancouver, and throughout Canada and their US counterparts [1, 5, 6, 7].

2.4 Key success factors/strategic drivers

Both local and U.S. industry experts interviewed in this study indicated that the key criteria to a successful deconstruction project include possessing: 1) A keen, discriminate eye on selecting only houses that would yield a sufficient amount of valuable, easily assessable, resalable materials; 2) a large skilled and experienced crew (5 to 10 members) to rapidly deconstruct the home in a time frame comparable to demolition and rapidly retrieve salvaged material without damage; and 3) a network to access buyers of used construction materials

These attributes decrease operation time and costs; deconstruction operators can bid competitively against the demolition option because profits can be recovered material resale, and to complete the project at a shorter time-frame.

2.5 Recommendation of policy amendment to promote the local deconstruction industry

Interviewed industry experts recommended that local governments should amend regulations to encourage homeowners to employ deconstruction over demolition. They anticipate that the demand for deconstruction has the potential to grow rapidly given its inherent environmental and economic benefits. Their recommendations include to:

- Increase the tipping fee at the landfill
- Institute a deconstruction permit and shorten the application period for the deconstruction permit over demolition permit (This recommendation has been instituted as a bylaw by the City of Vancouver on February 2012)
- Providing tax receipts to home owners who donate their salvaged material to non-profit deconstruction businesses
- Develop a certification system for used building material to increase consumer confidence
- Increase the types of material targeted for mandatory recycling and develop new recycling facilities to support the mandate

2.6 PEST Analysis

This segment provides a PEST analysis of external forces affecting the deconstruction industry at Metro Vancouver (Table 2). The analysis assumes the viewpoint of PCRS positioning as a potential new entrant.

Political

Metro Vancouver and the City of Vancouver have respectively mandated the ambitious environmental goals of achieving 70% waste diversion by 2015 and becoming the greenest city in the world by 2020. Local landfills (Delta and Cache Creek) are reaching maximum capacity[1]. Both government agencies aim to divert waste from landfills by developing new policies and programs that encourage reuse and recycle. One of the strategies includes promoting the practice of residential deconstruction and the reuse of salvaged building to divert local construction and demolition waste which represent 22% of landfill disposal. City of Vancouver recently instituted a new bylaw promoting deconstruction over demolition for housing removal. Under the new law, deconstruction permit is issued to homeowners 2 weeks in advance of development/building permit issuance, which is required for both demolition and property development. Deconstruction specialists are given 2 additional weeks of lead time to complete the disassembling process before construction begins. Similar regulations in the US have produced favourable economic and environmental outcomes for the industry [1, 6, 8, 9], and Canada may run the same course given the cultural similarities.

At present, no regulations exist to govern or standardize deconstruction in Canada but the practice is beginning to receive more industry attention. The Canadian Standards Association announced in early 2011 that it has been developing the first national standard on deconstruction to promote safety and quality assurance; the first edition is anticipated for publication sometime in 2012 [10]. In the U.S., a number of newly established deconstruction associations representing industry members have formed a collective voice to advance the industry by effecting favourable governmental regulations, pooling resources for creating new markets for used building products, and developing innovative techniques and tools to increase practice efficiency [11, 12].

[1] Personal communication with staff at the City of Vancouver, 2010

Table 2. PEST Analysis of the deconstruction industry

Political	Economic
• Metro Vancouver mandated to achieve 70% waste diversion by 2015 • City of Vancouver mandated to become the greenest city in the world by 2020 • City of Vancouver Landfills are reaching maximum capacity • Both the City of Vancouver and Metro Vancouver mandated to promote deconstruction industry to divert construction/demolition waste from landfill and encourage material reuse and recycle • City of Vancouver launched new by-laws in February 2012 favoring the adoption of deconstruction over demolition in removing residential housing structures • US government has, in recent years, successfully developed and applied housing deconstruction policies, producing favourable economic and environmental results • Canadian Standards Association has been working on a proposal, since 2008, to develop the first industry standard on the deconstruction of buildings to promote safety and consistency in practice	• Downturn in economy has led to: - a reduction in local demand for deconstruction - demolition companies closing or shrinking their deconstruction operation because of the costly need of expansive space for storing salvaged materials - an increase in willingness to buy used building materials by home owners/renters for home renovation projects • Leadership in Energy and Environmental Design (LEED) system, a green building rating system, is becoming increasingly popular and more widely adopted
Social	**Technological**
• Public awareness and demand for environmentally sustainable activities are on the rise • Public and private sectors are increasingly embracing the concept of creating green jobs	• Specialized tools and techniques for conducting deconstruction have been developed in the US to improve process efficiency and better preserve the quality of salvaged building materials

Economic

The demand for local residential deconstruction has declined in the past 3 years by about 20% due to a declining economy [5]; rising labor and fuel costs render deconstruction to be even more cost inefficient. The drop in demand caused businesses to either eliminate deconstruction from their service offering or shrink the operation unit due, in part, to the costly need of storage space. On the other hand, the recession has made consumers more price-sensitive and increased

their willingness to purchase used-goods, which often perform just as well as new goods for half the price. In parallel, the downturn of the US economy in recent years has led to an increased demand for used building material as consumers and contractors attempt to decrease cost of building and renovations [8]. For example, used cherry wood cabinets in good condition are sold for 15% of retail price of new cabinets.

An important industry trend is the growing popularity and adoption of the Leadership in Energy and Environmental Design (LEED) system, which is a green building rating system. As green building becomes more of an expectation, there will be an increase in demand for used products and for environmentally friendly building practices such as salvaging building material. This growing trend can translate into a boost for the deconstruction industry. Unlike the residential sector, the local demand for commercial deconstruction has increased by 1 to 5% because of the growing popularity of the LEED system; about 2 to 5% of commercial projects are LEED certified [5]. One key incentive of choosing the LEED system is that commercial clients can broadcast their involvement to establish a positive public image that they are socially responsible corporate citizens.

Social

Public awareness and demand for environmentally sustainable activities are on the rise. This suggests an increasing importance being placed on environmentally friendly building choices and this may translate into a greater demand for both used-products and salvaging/deconstruction services.

Technology

The practice of deconstruction is not a technology-intensive activity, mainly relying on specialized skills and hand tools. In Canada, the adoption of specialized tools is low and many companies use general tools to conduct deconstruction [5].

2.7 Competitor Analysis

Local competitors comprise of two strategic groups: 1) demolition companies that offer strictly mechanical demolition and, and 2) hybrid demolition/salvage companies that offer both demolition and deconstruction services. Based on company website information, there are currently 56 demolition companies and 6 of these companies are hybrid companies in Metro Vancouver.

2.7.1 Demolition Businesses

Some demolition companies have formal operation structure and sophisticated machineries, having up to 40 team members. The majority of businesses are small operations consisting of 2 to 10 members with basic equipment. None of the demolition businesses has a significant share of the market in the industry. All of these demolition or hybrid companies are industry specialists, operate in the Lower Mainland, provide a variety of demolition-related services, and can potentially become key competitors if PCRS' enters the deconstruction industry.

The Mckinsey 7S framework is used to analyse the internal situation of two key representative competitors, Ace Demolition and D. Litchfield & Co. Ltd. Both operators have been established for over 20 and 50 years respectively, and are highly reputable in the demolition industry in both residential and commercial sectors. The interviewees do not know their respective market share in the industry. Analysis of each of the 7 elements are described as follows and the results are summarized in Appendix B.

Shared Values

Shared values of both incumbents include strong teamwork, safety-focused, and delivering high quality services.

Strategy

Both incumbents' strategies focus on providing a comprehensive set of high quality, demolition related services, or a one-stop shopping concept, to their customers. High quality service means that the operator completes the project on time and on budget, and the crew is well-trained and works under strict safety rules. Comprehensive offering means that each business performs all of the activities in the demolition operation process, including drywall removal, hazardous material removal (asbestos), sorting and separating waste in industrial bins, and delivering waste to recycling, disposal or resale depots for further processing. Incumbents invest in sophisticated equipment to perform all the tasks.

Another important component of their strategies is to employ an environmentally friendly approach to demolition. Operators would cost-effectively recycle as much demolition waste as is possible, instead of dumping them directly in the landfills, sometimes reaching up to 75 to 95% of waste being recycled. This recycling rate is comparable to the waste diversion rate of deconstruction. More and more demolition companies are employing this green strategy of recycling and advertising it to their potential clients as a differentiator. Clients are being offered

a relatively low cost and less environmentally destructive method to remove their housing structure. In addition, being established businesses, these 2 operators have cultivated large networks within the industry, which is crucial to gaining partnership and access to valuable projects in the Lower Mainland. Marketing of services are mainly conducted through company website, industry networking and customer referrals.

Structure

Ace Demolition has about 10 employees, and the decision making process is likely to be centralized.

D. Litchfield & Co. Ltd. has about 25 employees and the decision making process is likely to be centralized.

Systems

The main system that runs both companies is operation.

Style

For both companies, the management style is likely to be task-oriented; owners and management direct how work is performed with input from employees.

Staff

Staff members of both companies are industry workers hired to specialize in providing demolition-related services and supported services for the operation.

Skills

Both companies' operation teams are highly trained in their specialized function, including hazardous material removal, excavator operation, and transportation.

Summary

Based on the 7S Framework analysis, both Ace Demolition and D. Litchfield & Co. Ltd. are well-positioned to be strong players in the demolition industry. Both companies have established operations with 20 to 50 years of industry experience, invested in sophisticated operation equipment, recruited highly skilled workers, built strong industry network and reputation, and differentiated themselves as green operators. If the demand for deconstruction increases significantly, both players can readily add the green practice to its service offerings and provide quality service in deconstruction. They would become important and strong competitors given their solid reputation and capabilities in relation to a new entrant, such as PCRS.

In theory, all of the demolition companies in the Lower Mainland can additionally offer deconstruction given the relative ease of learning this practice. However, both companies, as well as other industry incumbents, have invested heavily in infrastructure, equipment and training to carry out demolition; they may choose not to enter the deconstruction industry because they can pursue more valuable demolition projects given their capabilities. The main difference between a demolition company that has a high recycling rate versus a deconstruction company is that the latter takes the additional step of reusing, instead of recycling, the materials derived from disassembling a home. Demolition businesses that dedicate themselves to performing deconstruction likely hold a strong dedication or conviction to preserving the environment and its future, which is beyond the business goal of making a profit and using a green concept for differentiation.

2.7.2 Hybrid Companies

The hybrid companies are mainly small businesses, comprising of 2 to 10 members; they have originated as green demolition companies that have later added deconstruction to their service menu due to emerging demand. For example, a local hybrid company, known as the Pacific Labour demolition, differentiates itself by actively promoting deconstruction to clients, who originally requested for demolition. The operator has successfully persuaded a portion of their clients to switch to the green practice. The owner of this company hires and trains marginalized individuals to carry out the deconstruction work, which further enhances the social appeal of this practice. A key strategy is to have a keen, discriminate eye on selecting only houses that would yield a sufficient amount of valuable, easily assessable, resalable materials; to have a skilled and experienced crew to rapidly deconstruct the home in a timeframe comparable to demolition; and to rapidly retrieve salvaged material without damage. In addition, it is important to be able to effectively market used construction materials and to assess end users in a cheap, effective way.

The demolition and deconstruction industries are not centralized and appear fragmented; no players dominate either industries, and there is very little or no collaborations between companies [5]. No companies in Metro Vancouver identified themselves as solely deconstruction companies, as that seen in the US [1, 6, 8]. The barrier to entry is low in the deconstruction industry. The practice does not require advanced technology and the capital investment is low, involving only purchases of small power tools. Further, the practice involves basic skills that can be learned by a low-skilled individual, and there is no stringent regulations that prohibit the entry of new players. The ease of entry means that all of the demolition companies in Metro

Vancouver can potentially adopt the deconstruction practice once it becomes popular and profitable. Given that incumbent demolition companies already have a client network established, the possibility of conversion by demolition companies would drastically intensify competition in a short period of time.

2.8 Customer Analysis

2.8.1 Market size and growth rate

There is currently no statistical data on the market size and trends on the deconstruction industry in Canada. Metro Vancouver reported that there are currently about 2000 residential houses being demolished annually in the Lower Mainland, but the number of houses that had been removed by the deconstruction method per year is unknown. The interviewed deconstruction/demolition companies in this study revealed that very few (0 to 5%) of their residential clients requested for deconstruction in 2010. The demand for residential deconstruction decreased by an estimated 20% in the past 3 years due to a declining economy; rising labor and fuel costs also render deconstruction to be even more cost inefficient. Data obtained from the current study indicate that the local companies collectively deconstructed (full or partial) approximately 36 residential homes and 72 commercial buildings in 2010. None of the businesses were operating at full capacity.

2.8.2 Market segmentation

The broader market of the local deconstruction industry includes owners of property structures that require removal to accommodate new property development. The market can be categorized into 3 broad sectors based on clients' needs:

- Commercial Sector: Office building, warehouses, barns, and factories
- Public Sector: Schools, government office buildings, military buildings, and hospitals
- Residential Sector: Single home houses, condos, and apartments

As a new entrant, PCRS is interested in pursuing the residential sector because deconstructing a 2-storey house is far less technical than deconstructing a commercial facility, allowing low skilled laborers to be trained for the practice. The residential sector can be further segmented as follows:

- Segmentation by demographic:
    - High income: Home owners with high earnings are more likely to have higher priced homes with more valuable, salvageable building materials, such as fireplaces, mantles, and wooden cabinets.
    - Moderate income
- Segmentation by psychographic:
    - Environmentally conscious: These home owners are more likely to have a higher willingness to tolerate a higher cost and longer project time associated with deconstruction.
    - Environmentally indifferent: This group is more likely to focus on a low cost approach to removing the housing structure.
- Segmentation by geography:
    - Older, affluent neighborhood: West Vancouver, West side of Vancouver, East Vancouver, North Vancouver, Downtown Vancouver, Kitsilano, Fraserview. Houses in these older neighborhoods are more likely to have valuable wood incorporated in the housing structures.
    - Newer neighborhood with more recently built homes - Surrey and Burnaby. New homes are less likely to have valuable woods in the housing structure.

The ideal target market of residential deconstruction consists of high income, environmentally conscious home-owners with houses that have a significant amount of valuable, salvageable building materials; these houses are likely to be located in more affluent neighbourhoods. This profile is consistent with the description of the customer profile provided by interviewed deconstruction operators: upper income bracket, middle-aged, environmentally conscious, and tolerant of higher cost and longer project time. These clients place higher value on the environment and want to see the younger generation inheriting a cleaner and healthier planet [5]. Therefore, the initial phase of marketing activities for promoting the deconstruction business should be focused on reaching the ideal target market.

2.8.3 Customer Preference

The current study had conducted phone interviews and on-line surveys with home owners at the Lower Mainland to gain their perspectives on deconstruction; the sample size was 121

households. Please see Appendix C for questions and responses. The results show that almost 50% of interviewees did not know the definition of building deconstruction, and that they were not aware that such an option exists. This lack of awareness poses an important barrier because homeowners and building contractors are the primary decision makers in the process of selecting deconstruction vs. demolition in a building project. General contractors commonly do not select deconstruction over demolition because the associated higher costs and longer process. An overwhelming ~90% of respondents reported that they were willing to consider using deconstruction over demolition after knowing the environmental and social benefits associated with the practice, and that they were willing to wait a longer period and pay a higher cost.

2.8.4 Customer Perception

The current study had conducted phone interviews and on-line surveys with home owners at the Lower Mainland to gain their perspectives on the practice of deconstruction; the sample size was 121 households. Please see Appendix C for the questionnaire and participants' responses. The results show that almost 50% of interviewees did not know the definition of building deconstruction, and that they were not aware that such an option exists. This lack of awareness poses an important barrier for the practice because homeowners and building contractors are the primary decision makers in a home development project. General contractors commonly do not recommend deconstruction over demolition because the associated higher costs and longer process [5, 7]. An overwhelming 90% of respondents reported that they were willing to consider using deconstruction over demolition after being informed of the associated benefits, and to wait a longer period and pay a higher cost. These positive responses stand in sharp contrast to the interview responses from demolition/deconstruction hybrid operators [5], who stated that their clients' request for the deconstruction practice has been less than 1%; greater than 99% of clients opted for demolition due to lower price and shorter project time. Potential explanations for this discrepancy include:

- On actual projects, contractors are the main consultant on advising homeowners on the method to use to remove housing structure, and contractors always select demolition due to lower costs [5].
- Positive responses from this study may represent that homeowners were willing to "consider" deconstruction over demolition; perhaps when it comes to making the actual decision, they likely would not adopt the deconstruction practice.

- Willing participants in this study may be biased toward more environmentally friendly practices.

The positive responses from the current study underscore the importance of designing marketing activities to move the residential target market - high income, environmentally conscious home -owners with valuable, salvageable building materials – from good intent to taking action. The message of marketing activities should focus on disseminating the benefits of deconstruction, accentuating the hidden long-term cost of demolition, and inform the market on how to access the deconstruction service. Messages can be broadcasted through: a) local home improvement shows, trade conferences or environmentally-focus community events; b) social media; c) partnering with environmental committees in neighbour schools (children can educate their parents); d) partnering with local construction businesses which deal with high-end customers; and e) and local media. Testimonies from homeowners who have had their homes deconstructed should be incorporated into marketing activities to personalize the message. On the supply side, deconstruction operations have to make their services highly visible and easy to access. In addition, best practices need to be established to advance the techniques and procedure to shorten the time duration of projects and improving quality of service.

2.9 Suppliers

The suppliers of the deconstruction industry involve both the private and public sectors and they are listed as follows:

Private sector:

- Deconstruction workers/supervisors: Workers need to be properly trained so valuable building components are dismantled skilfully and safely to preserve the best possible condition to maximize product resale value.
- Supplier of hand power tools customized for deconstruction
- Rental companies of large and small machineries and equipment used for deconstruction
- Insurance companies responsible for insuring the construction site and on-site workers
- Waste bin suppliers to provide large bins to separate waste, recyclable, and resalable products
- Transportation companies hired to transport salvaged material from construction site to storage, resale, recycling or disposal location

- Recycling facilities
- Disposal facilities
- Companies offering services in refurbishing used building material
- Commercial property owners leasing the property to deconstruction company operation

Public sector:

Local government agencies: City of Vancouver and Metro Vancouver issue demolition permits to property owners to provide legal permission for the building structure to be removed.

2.10 Porter's Five Forces Analysis

This section presents an analysis of the Porter's five forces on the deconstruction industry in Metro Vancouver (Appendix D).

Suppliers

The supplier power in the private sector is relatively low; deconstruction companies have a wide variety of suppliers to choose from and the switching cost is low. For example, this practice does not require large, customized equipment or tools; regular, small, hand-held building tools are used and they are readily available in local hardware stores. With respect to labour, this practice does not require a highly skilled or educated work force. Low-skilled labourers can be trained within a few weeks to capably assist in deconstructing a house, and the demand for deconstruction labour is currently very low. However, the supplier power in the public sector is high because local governments can draft policies that drastically affect the employment of deconstruction. Given that Metro Vancouver and the City of Vancouver have ambitious environmental goals, the deconstruction industry will likely receive favourable support.

Potential entrants

The barrier to entry is low to the deconstruction industry: a) the practice does not require advanced technology; b) capital investment is low; c) skill level is basic; and d) there is little service differentiation between providers. There is no stringent regulation that prohibits the entry of new players. Local, established demolition businesses can readily add the deconstruction option to their list of service offerings; they already have the organizational infrastructure, business network, equipment, and working knowledge to remove housing structures.

Substitutes

The substitute for deconstruction is mechanical demolition, which has immense power because it is the prevailing practice for housing structure removal in Metro Vancouver [2]. There is a total of 56 demolition companies in the Lower Mainland and only 6 demolition/deconstruction hybrid operations. There is little service differentiation and the main driving force is cost.

Competitors

Direct competitors include demolition companies and demolition/salvage contractors located in Metro Vancouver. The current prevailing method for removing housing structures is mechanical demolition. It would take extensive time and marketing effort to persuade home owners and contractors, who have already built strong relationships with existing demolition companies, to make the switch from demolition to deconstruction. Therefore, competition is intense in the deconstruction industry, and the switching cost is high because of the higher costs associated with deconstruction.

Buyers

Residential property owners with housing structure to be removed are the potential buyers of the deconstruction service. The buyers have high level of power because they can freely choose between deconstruction vs. demolition. Given the higher cost, longer process time, and having fewer suppliers to choose from, buyers are more likely to prefer demolition over deconstruction, especially during an economic downturn.

Summary

In the current state, the fledgling deconstruction industry is not a profitable or attractive industry for both incumbents and new entrants. The bargaining power of buyers is high due to low switching cost to demolition, which poses as a huge threat as a substitute service. The threat of new entrants is high due to ease of starting a new deconstruction business. The private sector suppliers do not have much bargaining power, while the public sector supplier of development permit has strong legislative power to promote deconstruction.

The major issue faced by the deconstruction industry is its inability to match the speed and cost of demolition, and the lack of public awareness of this option. Despite these pitfalls, the deconstruction industry has high growth potentials due to supportive policy development and other potential supportive programs initiated by the government. If local governments amend

[2] Personal communication with Metro Vancouver staff, 2010

their regulations to favour the use of deconstruction over demolition, consumers will be more likely to choose the former due to the many environmental and economic benefits associated with this practice.

However, once the deconstruction practice becomes widely accepted, the rivalry will be intense due to the lower barrier to entry; the large number of established demolition firms can readily add deconstruction to its list of services. Market development for used building materials will be a critical factor on ensuring that the flow of salvaged products does not bottleneck at the material resale level. Otherwise, the salvaged items will flow back to the landfill for disposal due to lack of a market and the high cost of storage.

3: The Used Building Material Retail Industry in Metro Vancouver

3.1 Industry overview

Certain individual building materials preserve their structural, functional, and/or aesthetic value even after their current application expires in a given building. This value can be captured by material reuse, which is the practice of incorporating previously used material into new projects [11]. Salvaging building materials prior to demolishing buildings, soft-stripping interior components in renovation projects, or deconstruction all make building materials available for reuse. Commonly reused materials include timber, large dimension lumber, stone, brick, tile, doors, windows, floor panels, cabinets, and bathroom fixtures.

Similar to deconstruction, material reuse confers environmental, social, and economical benefits. Reusing materials not only divert them from the waste stream, but also lowers resource and energy consumption by reducing the need to produce new materials. Reusing materials is preferable to recycling them because less remanufacturing and processing are required, and less associated waste is generated [13]. In some cases, salvaged materials possess characteristics that are generally unavailable in new materials, such as old growth timber or antique ornamental items [14]. In addition, material reuse businesses create jobs in the local communities [15].

Current businesses that operate in the material reuse industry, in both Canada and the U.S., are mainly comprised of individual private or non-profit operations that collect locally available materials through donations, salvage, or deconstruction and sell them at retail locations [13-15]. The sizes of these stores vary, as do their services and the degree to which they modify or prepare materials for sale. In the U.S., the market for selling used building materials is growing, and retailers are taking different approaches to improve their businesses by expanding their operations geographically while others are diversifying the services they offer.

In addition, a number of U.S. organizations/associations mandated to promoting building material reuse have been established, including the Building Materials Reuse Association [11] and the Reuse Development Organization [16]. They maintain an online directory of used building material organizations, contractors, deconstruction, and reuse related organizations across the country. No such associations have yet been formed in Canada to set up networks

within the industry to connect professionals locally, regionally or nationally. There are currently no statistical data available in Canada or the U.S. to indicate the market size and revenue amount of the used building material retail industry. In both countries, the industry appears to be at the growth phase of the industry life cycle with the U.S. being more advanced in the practice.

In Metro Vancouver, the used building material retail industry consists of three strategic groups: a) private for-profit retail businesses; b) non-profit retail businesses; and c) deconstruction companies that sell their salvaged materials out of their storage yard/warehouse, home or work site. There are only a handful of retailers in the Lower Mainland, which mainly comprised of small operations (3 to 10 member staff). Each operation is involved in selling both new and used materials, as well as offering additional product lines including kitchen appliances, furniture, and antique items. Non-profit retailers are solely operated by the ReStore, which is the used building supply store operated by Habitat for Humanity affiliates; there are three branches in the Lower mainland - Burnaby, South Vancouver, and Abbotsford.

The private retailers include Surrey New and Used Store, Chilliwack New and Used Store, Jack's New and Used Store (2 branches), and Bent Nail New and Pre-owned Building Supplies. All of these retailers, with the exception of Jack's New and Used Store, were interviewed in the current study to gain their perspective on the industry [18, Appendix E]. In addition, there are private sellers, such as homeowners, who sell the used building material directly to the public using on-line websites such as Craigslist or eBay.

3.2 Industry Value Chain

The value chain of the used building materials retail industry is presented in Figure 2. Used building material retailers require a large facility to store the inventory, which is the same issue faced by deconstruction operators. After acquiring the retail facility, the operator needs to:

- Acquire used building materials, through purchases or donations, from local suppliers such as contractors, demolition companies, corporations, and property owners. Some suppliers or donors may drop off materials at the retail site, but some will require free pick up.
- Prepare used products for resale through sorting, cleaning, repairing/refurbishing, stocking, and pricing
- Market and sell products on site

Customers come to retail site to purchase goods and the retailer offers customer services such as finding the right material and loading. Common operational traits of these for-profit and non-profit businesses include:

- Being selective on supply intake, accepting only items that can be re-sale quickly; the most valuable and popular items include complete sets of kitchen cabinets, vinyl windows, doors, flooring, good quality electrical lighting, and old timber.
- Offering salvage and pick up services at free of charge
- Not accepting or selling salvaged commercial building materials such as office desks, filing cabinets, shelving, cubicles, and metal beams; these large items occupy too much space, and the market for these products is currently non-existent. This is apparently attributed to businesses wanting only new furniture during retrofitting.
- Minimizing investment on product refurbishment prior to sales because of high labor cost - cleaning and minor repairs only.
- Consistently controlling inventory level by promoting product turnover using the pricing strategy – otherwise, materials pile up quickly due to frequent supply intake.
- Having the highest operational costs in space rental and labor
- Manually tracking inventory - automatic barcode system is not feasible because each item is unique.
- Maintaining the entirety of its own operation and does not partner with other businesses – each has own truck fleet for pick-up and delivery, storage space (own or lease), salvage sales, and transportation crew, and refurbishment operation.
- Advertising products on company Website only – little to no investment in marketing or advertising

Figure 2. Value Chain of the Used Building Material Retail Industry

SUPPORT ACTIVITIES			
Organizational infrastructure	**Human Resource Management**	**Technology Development**	**Procurement**
Finance management; retail facility management; governance	Recruit and train specialists to assess the value of and sell used building materials	Company website development and maintenance; web-based ordering and sales	Used building materials for resale; supplies and infrastructure set up for retail and office operation
PRIMARY ACTIVITIES			
Inbound Logistics	**Operation**	**Marketing and sales**	**Services**
Search for used building materials to stock inventory; transport materials to retail site; build relationship with suppliers or donors of used building materials	Clean, refurbish, price, and shelve used building products; set up displays	Advertise materials on-line; provide services to customers at the retail store, over the phone, or on-line	Provide customer service on sold materials

3.3 Barriers to Market Growth

Challenges faced by the used building material industry as reported by local retailers and their U.S. counterparts [9,12, 18] include:

- *Perception of reused materials*: Consumers perceive used items as having lower quality than their new equivalents due to aesthetic differences, concern in structural integrity, or contamination risk.
- *Supply and Scalability*: Supply is highly dependent on the trend of residential and commercial renovation, thereby leading to unpredictable, limited, or inconsistent supply of materials.
- *Requiring ample store space and high labour cost*: Because all used products are assembled and unique, the space required to display a variety of items is large and it is labour intensive to maintain inventory records. The cost of rent for the retail property in Metro Vancouver is

formidable. Local, interviewed retailers commented that they would like to expand by opening new branches in different municipalities, but the cost of renting retail space made this growth option infeasible.

3.4 PEST Analysis

This section provides a PEST analysis of the external forces impacting the local used building material retail industry (Table 3). The analysis is conducted from the viewpoint of PCRS positioning as a potential new entrant.

Political

As previously stated in Section 2, MetroVancouver and the City of Vancouver have respectively mandated the ambitious environmental goals of achieving 70% waste diversion by 2015 and becoming the greenest city in the world by 2020. Political policies that promote deconstruction and environmentally friendly practices will lead to an increase in used building material supply and enhance consumer awareness.

Economic

The recession has made consumers more price-sensitive and increased their willingness to purchase used-building products, which often perform just as well as new goods for half the price [18]. An important industry trend is the growing adoption of the LEED green building rating system, which requires a specified amount of salvaging. This will increase the supply.

Social

Consumers are becoming more aware of sustainable building practices, such as green buildings.

Technology

Advancing technology in producing new building materials at lower costs has impacted the used building material industry because of the lower prices associated with new building materials [18], thus increasing competition in the industry.

Table 3. PEST analysis of the used building material industry

Political	Economic
• Metro Vancouver mandated to achieve 70% waste diversion by 2015 • City of Vancouver mandated to become the greenest city in the world by 2020 • City of Vancouver Landfills are reaching maximum capacity • Both the City of Vancouver and Metro Vancouver mandated to promote deconstruction industry to divert construction/demolition waste from landfill and encourage material reuse and recycle • City of Vancouver launched new by-laws in February 2012 favoring the adoption of deconstruction over demolition in removing residential housing structures • US government has, in recent years, successfully developed and applied housing deconstruction policies, producing favourable economic and environmental results • Canadian Standards Association has been working on a proposal, since 2008, to develop the first industry standard on the deconstruction of buildings to promote safety and consistency in practice	• Downturn in economy has led to: - a reduction in local demand for deconstruction - demolition companies closing or shrinking their deconstruction operation because of the costly need of expansive space for storing salvaged materials - an increase in willingness to buy used building materials by home owners/renters for home renovation projects • Leadership in Energy and Environmental Design (LEED) system, a green building rating system, is becoming increasingly popular and more widely adopted
Social	**Technological**
• Public awareness and demand for environmentally sustainable activities are on the rise • Public and private sectors are increasingly embracing the concept of creating green jobs	• Specialized tools and techniques for conducting deconstruction have been developed in the US to improve process efficiency and better preserve the quality of salvaged building materials

3.5 Competitor analysis

Local competitors include used building material retailers, private sellers and new building material retailers. There are only a handful of retailers in the Lower Mainland, which mainly comprised of small operations (3 to 10 member staff). Each operation is involved in selling both new and used materials, as well as offering additional product lines including kitchen appliances, furniture, and antique items.

3.5.1 Used building material retailers

Local businesses are mainly comprised of either for-private or non-profit operation. Key for-profit businesses include Surrey New and Used Store (Surrey, BC), Chilliwack New and Used Store (Chilliwack, BC), Jack's New and Used Store (Burnaby, BC), and Bent Nail New and Pre-owned Building Supplies (Abbotsford, BC). These operators purchase locally available used building supplies for inventory. Their suppliers include private sellers, contractors, green demolition or deconstruction businesses; only a small proportion (<5%) of supplies come from private donation.

Non-profit retailers are solely operated by the ReStore, which is the building supply store operated by Habitat for Humanity affiliates; there are three branches in the Lower mainland - Burnaby, South Vancouver, and Abbotsford. Their used building supply inventory is donated by the public, which minimizes their inventory costs and increases their profit margin in relation to for-profit businesses.

Based on geography, key competitors include Jack's New and Used Store, Surrey New and Used Store, and Restores (Burnaby and South Vancouver branches). The management of the latter two businesses were interviewed in this study and their internal situation is analysed using the Mckinsey 7S framework. Analysis of the 7 elements is described below and summarized in Appendix F.

Shared Values

Surrey New & Used: Shared values include strong teamwork and delivering good quality services.

Restore: Shared values include: a) a mandate to raise national funds to support house building projects of Habitat for Humanity, an international charitable organization; b) forming strong partnership with volunteers and donors to gain profit from retail sales to fund mandated projects to meet corporate mission.

Strategy

Both incumbents' strategies focus on providing a large selection of good condition, used building materials at minimal operation costs to increase profit margin. The commonalities of their key strategy include:

- Minimizing operation costs by avoiding investment on: a) product refurbishment prior to sales – only cleaning and minor repairs are undertaken; and b) marketing activities except for on-line advertising through company website, Craigslist or e-Bay
- Being selective on supply intake, accepting only items that can be re-sale quickly; the most valuable and popular items include complete sets of kitchen cabinets, vinyl windows, doors, flooring, good quality electrical lighting, and old timber
- Promoting product turnover by using pricing strategy
- Maintaining the entirety of its own operation and does not partner with other businesses, which allows for better control of the operation. Each business has own truck fleet for pick-up and delivery, storage space (own or lease), transportation crew, and refurbishment operation.

One important difference between the for-profit and non-profit businesses is on the supply side. The for-profit operator purchases locally available used building supplies for inventory. Their suppliers include private sellers, contractors, green demolition or deconstruction businesses; only a small proportion (<5%) of supplies come from private donation. In contrast, all of Restores' inventory comes from donation, and 90% of donated products come from private home renovators, with a small proportion being donated by businesses.

Structure

Surrey New & Used: The decision making process is likely to be centralized with management making decisions with input from staff. Coordination of activities and communication are conducted through informal meetings between owner and staff.

Restore: There are ~62 branches of Restore located throughout Canada. The national head office, which is Habitat for Humanity Canada, is located in Ontario. The head office makes corporate decisions on the operations of Restore branches with input from regional management.

Systems

Surrey New & Used: The main system appears to be operation, and the owners oversee all of the operational and support activities with assistance from staff with specialized skills.

Restore: The main system of local branches appears to be operation and the branches receive strong corporate support services from the national head office in Canada. Restore branches in Canada have been in operation for over 20 years, and are well-established operations.

Style

For both businesses, the management style is likely to be task-oriented, and the owner or management directs how the work is done with input from employees.

Staff

Surrey New & Used: The staff members are industry workers with specialized skills in providing retail services of used building materials and supported services (finance, accounting, IT) for the operation.

Restore:

All of the workers, with the exception of the management, are volunteers.

Skills

Surrey New & Used: The company's operation team appears to be well-trained in their specialized functions.

Restore: The manager of the operations is highly knowledgeable, skilled and dedicated. All of the volunteer workers receive on the job training to provide services to customers, stock inventory, and load and transport donated products. Volunteers are not industry specialists.

Summary

Based on the 7S Framework analysis, both Surrey New and Used and Restores are well-positioned to be strong players in the local used building material retail industry. Both companies have established operations with over 20 years of industry experience and have built strong industry networks and reputation. The other key for-profit competitor, Jack's New and Used, is also a well- established operation with over 20 years of industry experience. These incumbents' potential responses to PCRS' new entry could be to lower prices and/or increase promotional effort. This will intensify the competition and decrease profits for all parties.

A potential solution would be to stimulate and increase the demand for used building product supplies, which is a joined mandate of both the City of Vancouver and PCRS. The local government, in partnership with community leaders, may launch marketing activities to stimulate the used building product market in order to divert demolition waste from the landfill. As a new entrant, PCRS would face fierce competition and have to seek out a niche position not yet occupied by these local players in order to be successful.

3.5.2 Private Sellers

Private sellers are individuals who salvaged used building products from their own home renovation and sell directly to the public using on-line websites such as Craigslist or eBay. Their goal is to sell and remove the product quickly from the renovation site to prepare for new development or to accommodate new furniture.

3.5.3 New building material retailers

New building material retailers, such as Home Depot and Rona, sell a wide assortment of new building materials. In addition to the wide range of assortment, new products are available in large quantities and for a long period of time. Used products, on the other hand, are usually available in only a single unit. This product uniqueness prevents contractors from buying large quantities of same products to fulfil the needs of large building projects. In addition, eco-conscious products are emerging in these retailers to promote the green concept.

The key strategy of these retailers is to provide a high level of in-store and off-site customer service to promote their do-it-yourself products; this is contrary to used building product retailers which do not invest in extensive customer service. Also, the major buying power of these stores allows them to buy at volume discount prices from their suppliers and to pass on the savings to end consumers. Further, with advancing technology in manufacturing, the associated declining costs and prices of new materials result in fierce competition amongst new or used product retailers.

Both Home Depot and Rona will be local competitors, but their products are substitutes and will not have the high level of competitive impact as the used building material retailers. Prices of used building products are still only 20 to 40% of new materials.

3.6 Customer analysis

3.6.1 Market size and Growth

Through interviews, local retailers indicated that the sales revenue for used building materials increased by 5 to 20% annually in the past 3 years due to economic downturn; more consumers are willing to buy used products to save on costs. On the contrary, sales of new products have been on the decline by about 5 to 10%. There has been little or no growth with respect to opening new operation branches because of the prohibiting land costs in setting up new stores. There have been little to no new entrants into this local industry in the past 10 years

because of this barrier of entry. Most of the private retailers own their commercial property and facility, and have been established for greater than 20 years [18].

The LEED system has increased both supply and demand for used building products; used materials are required to be incorporated into LEED certified projects. In addition, commercial organizations subscribing to the LEED system must retrofit at specific time points to maintain energy efficiency, and many will discard valuable used building materials prematurely to meet new standards, thus increasing supply to reuse retailers.

There is currently no statistical data on the market size or trends on the used building materials retail industry in Canada. One aspect of the construction industry, which is renovation, can be used as a market indicator of the used building material retail industry. According to a 2011 survey conducted by the Canada Mortgage and Housing Corporation (CMHC) [19, 20], approximately 41% of Vancouver household owners performed some form of renovation in 2010. The average spending on renovation was $15,709, which was the highest amongst 10 major cities surveyed in Canada. The total renovation expenditure by Vancouver household owners totalled $3.5 billion in 2010.

Renovation spending in British Columbia had increased for the twelfth consecutive year. A report by the Construction Sector Council indicates that the renovation expenditure in BC will continue to rise by 1 to 3% annually for the next 3 years [21]. These statistics signify that the renovation market is strong in Metro Vancouver and should continue its solid performance in the coming years, which is a positive sign for the sales of used building materials. Consistent with this view, local material reuse retailers also echoed that sales have increased and anticipated the positive trend to continue.

3.6.2 Market Segmentation

The used building material retailers interviewed reported that approximately 90% of buyers are private homeowners and rental property owners, and 10% of buyers are contractors. The low level of demand of contractors is mainly associated with the unique nature of used products. Unlike new products, used products are usually available in only a single unit and only at a single time point. This product uniqueness prevents contractors from buying large quantities of same products at different time points to fulfil the needs of their building projects.

The target market includes:

- *Private home renovators*: Individuals or groups who spend any amount to repair, alter, or improve their property/belongings.
- *Rental property owners:* Rental suite owners require used products to repair or renovate suite for existing or future tenants.
- *Commercial contractors or developers*: Organizations that spend any amount to repair, alter, or improve their property/belonging or constructing a building for commercial use.

3.6.3 Customer Perception

The current study had conducted phone interviews and on-line surveys with home owners at the Lower Mainland to gain their perspectives on the use of reclaimed building materials in home renovation projects. Please see Appendix C for a summary of the questionnaire and responses. The results show that about 63% of respondents had purchased used building products for renovation in the past – a demonstrated market. The top four factors that would increase consumers' willingness to purchase used building supplies include product cleanliness, low prices, easy accessibility to the retailer, and advertisement/awareness. In agreement, local retailers indicated that the top factors on promoting sales are price and product suitability. The most popular items include good quality cabinets, appliances, timber, windows and doors. They also mentioned that if prices were low enough, customers would buy items that are not completely compatible with their needs.

3.7 Supplier Analysis

The suppliers of the used building material industry involve both the private and public sectors and they are listed as follows:

<u>Private sector</u>

- Workers/supervisors: These workers need to be properly trained on how to market used building supplies at the retail level and on accurately assessing the resell potential of used items being supply to the store.
- Commercial property owners leasing land space for the retail operation
- Insurance companies responsible for insuring the retail site and on-site workers

- Transportation companies hired to transport salvaged material from supplier site to retail site
- Recycling facilities
- Disposal facilities
- Companies offering services in refurbishing used building materials
- Commercial property owners leasing the property to deconstruction company to operate the business
- Suppliers of used building materials include:
    - For-profit retail businesses: The suppliers include private homeowners, building contractors or green demolition companies, selling their used products at a negotiated price.
    - b) Non-profit retail businesses: The suppliers are primarily private homeowners who donate their product at free of charge. To a lesser extent, building contractors or green demolition companies also donate their products but expect a tax receipt in return.
    - c) Deconstruction companies: These operators supply their own products through deconstruction, and usually sell their salvaged materials out of their storage yard/warehouse, home or work site.

Public sector

Local government agencies: City of Vancouver and Metro Vancouver issue operation permit, which allows a used building material retail store to operate in a particular neighbourhood. These permits are difficult to obtain because local residents usually vote against having a "junk yard" like operation within their neighbourhood.

3.8 Porter's Five Forces Analysis

This section presents an analysis of the degree of profitability of the used building material industry in Metro Vancouver using the Porter's five forces modal of competition. The following reviews each of five competitive forces (Appendix G).

Competitors

There are a large number of direct competitors such as other used building materials retailers, private sellers, and new building supply retailers. The latter group has strong brands and offer quality services, such as Rona or Home Depot, and has large marketing budgets. The

switching cost is low for consumers and there is low customer loyalty. There is some product differentiation and the used building material retailers allocate only minimal effort to marketing. Therefore, competition is intense.

Suppliers

In the private sector, the number of suppliers to each key input is high, and the switching cost is relatively low. One potential exception is the suppliers of used building materials. The retailer may have developed a good working relationship with a particular contractor or demolition company who regularly supplies good quality material; in this case, it is important to maintain a good working relationship. In the public sector, the local government has the absolute legal authority to issue or revoke an operation licence if the retailer violates operation policy. An example of the latter includes storing used building materials at the outside yard if the permit explicitly stipulates that all products must be stored inside. Thus, the public sector supplier is very powerful.

Potential entrants

The barrier to entry is high exclusively due to the high cost of renting retail property for the operation. Otherwise, running the operation does not require advanced technology or highly skilled labour. Capital investment is low, requiring only a cash terminal and steel racks to store the supplies. One likely entrant is new building supply retailer, such as Rona or Home Depot, which already have large retail spaces.

Substitutes

The substitute is new building supplies. For some new items, their prices are comparable to their used counterparts. Also, new materials are available in a much wider selection than used materials. Therefore, there is a high level of tendency to substitute.

Buyers

There are a large number of consumers for used building products, but their purchases are usually small. Because each used product is usually unique and does not come in large quantities of identical units, this prevents purchases by commercial builders who usually buy large quantities for commercial development. New building products are readily available and reasonably prices, thus serving as powerful substitutes. Consumers are highly price sensitive and buyer powers are moderate.

Summary:

The competitive rivalry is high in the used building material industry at Metro Vancouver. In addition, substitutes are a big threat as new building supply retailers provide new products at competitive prices and with wider selections; some of them also have strong brand names and marketing savvy in the community, having established some level of customer loyalty. The political climate is rather neutral at this point because there is no policy in place that directly impacts the used building material industry. Although the newly established policy for deconstruction is favourable, the deconstruction operators sell the salvaged building materials directly to the consumers instead of partnering with retail stores. This will lead to increased competition. On the economic side, the level of demand for used building material is growing at about 10 to 20% annually, mainly due to an increased willingness of consumers to purchase used building materials to save costs during an economic downturn [18]. Also, the continued rise in renovation activities will have a positive impact on both demand and supply.

In the current state, the used building material retail industry is moderately attractive for incumbents due to the rise in demand. However, the cost of renting the retail space poses as a big challenge in maintaining and growing the business. The industry is likely more favorable for the non-profit retailers than the for-profit private retailers. The former attains most used building supplies through donation, thereby saving on inventory cost and attaining a larger profit margin. Indeed, the non-profit retailers are undergoing expansion to open new branches in Metro Vancouver. As for new entrants, the cost of rent in Vancouver will be a huge barrier and the new player will need to seek out locations that are in the suburban area where rent is lower but sacrifice in visibility and accessibility.

4: Analysis of PCRS

4.1 Overview of PCRS

PCRS is a not-for-profit organization established in 1984, with about 200 employees and a $14M annual budget. Its vision and mission statements are as follows:

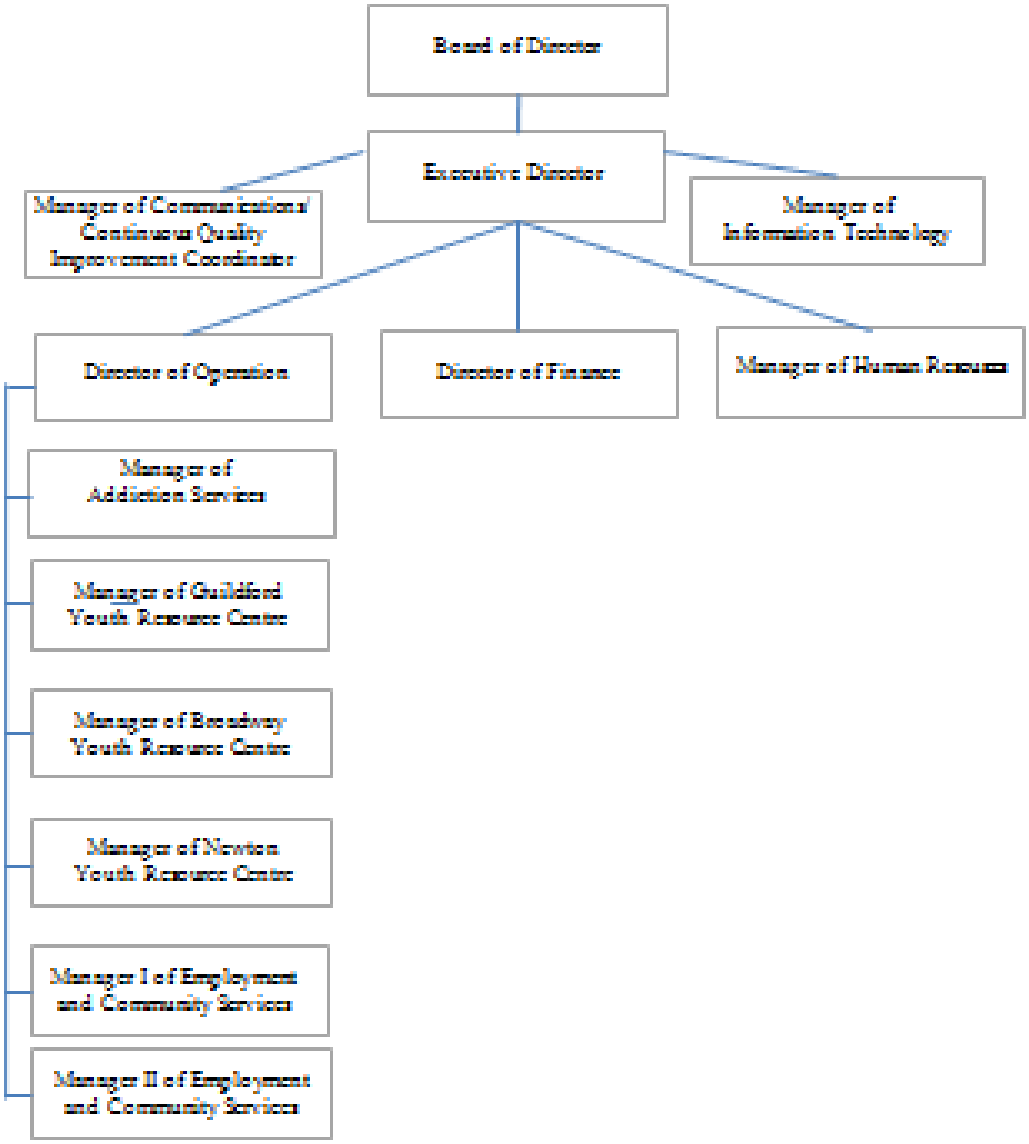
- Vision statement: "Our vision is one of healthy, civic, and productive people living in socially sustainable, safe and caring communities."
- Mission statement: "Our mission is to enhance the social, emotional, educational and economic well-being of children, youth, adults and families through the delivery of quality services in a partnership with other agencies, government, business, and communities."

The organization provides alternate education, employment, addiction counselling and prevention services, housing support, and cultural enrichment for individuals from marginalized communities in Metro Vancouver. With 2 central operating facilities in Surrey and in Vancouver, PCRS delivers over 45 on-site or off-site programs through partnership with non-profit organizations, businesses, and various levels of government. In addition, PCRS is involved in community-based research, advocacy, and community development to identify service gaps and strategies to address social problems such as poverty, child abuse, mental health, substance abuse, violence and homelessness.

4.1.1 Organizational structure

PCRS has a well-established reputation in providing social and community services to the marginalized community. The organization is governed by a board of directors and the executive director; the organization chart is presented in Figure 3. The strengths of PCRS lie in its ability to effectively deliver specialized programs to clients with multiple barriers and reintegrate them into the communities and/or reattachment to employment.

Figure 3. Organizational Chart of PCRS



4.1.2 Funding sources of PCRS

The funding sources of PCRS have the following break-down [22]:

- Government contract: 11%
- Ministry of Children and Family development: 42%
- Ministry of social Development: 28%

- Government contracts: 11%
- Other income: 6%

4.1.3 PCRS clients

Clients of PCRS have multiple needs and the following shows statistics of its client profile [22]:

90% have school problems

80% have a history of abuse or neglect

60% have substance abuse problems

50% have criminal involvement, either current of in the past

50% have fetal alcohol spectrum disorder or other learning disabilities

Over 45% have mental health problems

4.1.4 Social impacts of PCRS

The social impacts of PCRS' services include [22]:

- Decreasing isolation
- Decreasing homelessness, and securing safe, affordable housing
- Reconnecting youth to schools and academic achievement
- Academic upgrading for young people who have dropped out of school
- Building drug and alcohol prevention and awareness
- Reducing dependence on drugs and alcohol
- Protecting children and youth
- Developing parenting skills
- Enhancing early childhood development and infant immunization
- Attachment to labour force
- Strengthening connection with community

4.2 Analysis of PCRS with McKinsey 7S framework

The Mckinsey 7S framework is used to analyse the internal situation of PCRS to assess whether its internal elements are aligned and well positioned to operate effectively in the social services, deconstruction, or the used building material industry. The internal positions of key incumbent players in the deconstruction industry, Pacific Labour demolition, and the used building material retail industry, Restore, are also presented and compared. Analysis of each of the 7 elements are described as follows and the results are summarized in Table 4.

Table 4. McKinsey 7S framework analysis of PCRS in the social services, deconstruction, or used building material industry

Factors	Social Service PCRS	Deconstruction PCRS	Deconstruction Incumbent Player Pacific Labour Demolition	Used Building Material Retail PCRS	Used Building Material Retail Incumbent Player ReStore
Shared Value	High	Low	Moderate	Low	High
Strategy	High	Low	Moderate	Low	High
Structure	High	Low-Moderate	Moderate	Low-Moderate	High
Systems	High	Low	Moderate	Low	High
Style	High	Moderate	Moderate	Low-Moderate	High
Staff	High	Low	Moderate	Low	High
Skills	High	Low	High	Low	High

*Each factor is scored high, moderate, low to Moderate, or low with respect to how well it is aligned to achieve high performance in the respective industry.

Shared Values

- Social services industry - *PCRS*: Shared values include having a strong dedication to continually improvement, collaborative team culture, transparency in operation and finance, and fair compensation to employees.
- Deconstruction and used building material industry:
    - *PCRS*: Although PCRS has no experience in these sectors, its values listed under social services industry are completely transferrable to this industry. A small proportion of PCRS employees are involved in the social enterprise project for this industry and

enthused to advance this venture to provide more training and employment opportunities for their clients.

- *Incumbents*: Shared values include strong teamwork and safety, delivering high quality services

Strategy

- Social services industry - *PCRS*: Its strategy focuses on being a one-stop centre for its clients by providing a comprehensive and integrated network of services through extensive intra- and inter-agency partnerships. This community approach enables PCRS to seamlessly guide their clients out of troubled states and progress toward independence and productivity.
- Deconstruction industry:
  - *PCRS*: Although the agency has no previous experience in this industry, it has initiated and successfully completed two deconstruction pilot projects in partnership with a local, established deconstruction operator and the City of Vancouver. With demonstrated ability to forge strong working partnerships, PCRS can enter this industry through strategic collaborations with local deconstruction specialists, green businesses and government agencies.
  - *Incumbent*: The strategy is to compete effectively against demolition companies by offering competitive pricing for the deconstruction service while maintaining a healthy profit margin by salvaging valuable used materials for resale. The business dedicates effort to promoting the green practice over demolition to their customers. The promotion theme was "what kind of world would you like to leave behind to your grandchildren?"; about 30% of customers were willing to make the switch after having awareness of the green option and its associated benefits.
- Used building retail industry:
  - *PCRS*: It can form partnership with, or attain mentorship, from locally established retail operators. The challenge is that local operators may perceive PCRS as a competitor and may not be willing to share their trade expertise in the absence of mutual benefits.
  - *Incumbent*: The strategy is to compete on providing low prices, an extensive selection, and good quality services, and to bring in new inventories weekly so customers will return regularly.

Structure

- Social services industry – *PCRS*: As shown by the PCRS organizational chart (Figure 3), the agency structure is relatively flat. The executive members include the Board of directors, the executive directors and 2 directors overseeing operation and finance. At the management level, there are only 7 managers overseeing about 200 employees. The division of responsibilities amongst managers is based both on geography and nature of services.
    - Managers provide monthly report to the Director of operation who coordinates their activities and integrate the information for reporting to the Executive Director.
    - Communication within the organization is mainly conducted through weekly meetings within team and monthly meetings between teams.
    - Decision making is decentralized. Information concerning clients' needs and operation improvement flow from the "bottom up". Managers have extensive latitude in making recommendations on new initiatives and required changes, the majority of which are allowed to move forward after assessing their impact.
- Deconstruction and used building material industry:
    - *PCRS*: The decentralized nature of the organization would be a good model for entry into the deconstruction industry. Its participation in this industry can be initiated as a separate program, operating as a social enterprise and recruiting management personnel who are knowledgeable in this sector.
    - *Incumbents*: The operations are small, ranging between 2 to 10 employees. The organization structure is very flat – the owner and the staff. The decision making process is centralized; the owners or management direct the operation.

Systems

- Social Service Industry – *PCRS*: The main systems that run the organization are operation and finance, ensuring that clients' needs are met, and that service is provided within budgets. This is evident in the organization map where one director is assigned to each of the two systems. Government funding is highly regulated and regular expenditure reporting to the government is mandatory.
    - Quality of services are regularly monitored and evaluated by the "Continuous Quality Improvement" committee, and is annually evaluated and accredited by an official body of the industry, known as CARF, to ensure adherence to best practices.

- All promotional communications, both internal and external, are reviewed by the communication manager to ensure messages consistently align with mission.

- Deconstruction and used building material industries :
  - *PCRS*: The dedicated effort of PCRS to continuously monitor, evaluate, and improve its performance through established internal mechanisms will be a core asset to have in the 2 green industries. This approa ch will be valuable in promoting best practices and advancing the industries.
  - *Incumbents*: The owner or management oversee all of the operational and financial activities.

Style

- Social Service Industry – *PCRS*: The management style is participative; employees have a strong decision-making role, and management actively seek a cooperative relationship with their employees. For example, the staff is not unionized and has representation on the Board of Directors; about 40% of board seats are occupied by staff representatives. These are uncommon characteristics in the industry and they aim to promote transparency and collaboration to drive high quality services. Staff turnover is low.
- Deconstruction and used building material industries:
  - *PCRS:* The agency's participative leadership style is highly suitable for entering the 2 green industries to collaboratively promote change in consumer perception and behaviour to improve industry performance.
  - *Incumbents*: The management style is task-oriented and the management directs the operation.

Staff

- Social Service Industry – *PCRS*: About 90% of the staff are child and youth care workers with social services training, and extensive experience in the field. Personnel in the IT or finance department have specialized training relating to their sector. The composition of talents in the organization is highly capable of implementing the organizational strategies.

- Deconstruction Industry:
    - *PCRS*: The staff team directly involved with the previous 2 deconstruction pilot projects have theoretical knowledge of the practice. A social work manager has been designated to explore the potentials of entering this industry. No other specialized staff has been recruited to work in this industry.
    - *Incumbent*: Staff conducting deconstruction is typically the demolition crew. No specialized staff is allocated to only deconstruction.
- Used building material industry:
    - *PCRS*: No staff members have skills or experience in this sector.
    - *Incumbent*: Staff members are skilled in providing operational and support services for this industry.

Skills

- Social Service Industry – *PCRS*: The strongest skills represented in the organization are community social work skills, team work, and specialized interpersonal skills to connect with clients.
- Deconstruction Industry:
    - *PCRS*: No staff members have trained skills or experience to carry out the practice.
    - *Incumbent*: Staff conducting deconstruction is typically the demolition crew who learned the deconstruction skills through on-the-job training. The skill set is not as advanced as the US, which has formalized training available.
- Used building material industry:
    - *PCRS*: No staff members have trained skills or experience to carry out the practice.
    - *Incumbent*: Staff members are skilled on the trade.

Summary

Based on the 7S Framework analysis, PCRS is well-positioned to achieve its intended objectives in the social service industry. All of the factors in the framework are aligned to optimize its operational performance – its ability to plan, organize and implement complex projects in an integrative manner and to seamlessly deliver a multitude of services and programs to a highly challenging multi-barriered clientele.

PCRS currently lacks specialized staff and skill sets to effectively enter the deconstruction or used building material retail industry. However, PCRS possesses core competences that will be an asset as a new entrant, including strong team culture, participatory leadership, decentralized decision making processes, and a continual focus on improvement. These qualities will enable PCRS to learn, respond and adapt effectively to change. Although its operation system is built upon the delivery of social services, it has strong financial and IT systems that the two green industries lack. In addition, PCRS has a strong brand name and working partnerships in the non-profit and green business community. These are important qualities on promoting collaborations and building trust in the industries.

Incumbents in the deconstruction and used building material industries have not yet reached their full operating potential and many lack a focused strategy to promote their respective sector. Best practices need to be established and implemented to promote their profile, practices, services, and products.

5: Implications and Directions

5.1 McKinsey 9-box matrix analysis of PCRS business strength in the deconstruction and the used building material retail industries

The following provides a McKinsey 9-Box Matrix analysis of the business strength of PCRS as a new entrant in the deconstruction (Table 5) or used building material industry, (Table 6).

5.1.1 Deconstruction industry

5.1.1.1 Overview of key criteria determining deconstruction industry attractiveness

- **Market size**: Metro Vancouver reported approximately 2000 residential houses were being demolished annually in the Lower Mainland between 2007 to 2010[3]. This information was extrapolated from the number of residential development permits issued in these years. Given that the cost of deconstructing an average home of 2500 square feet area is about $25,000; the potential market size is estimated to be $50M. Based on this study's primary research, an estimate of rough 36 houses were deconstructed in 2010, which is only about 1.8% of the potential market. Therefore, there is a potential to stimulate the current demand and grow the market.
- **Market growth rate**: The number of development permit issued to residential homeowners remains relatively constant between 2007 to 2010[4]. Thus, it is assumed the growth rate is close to zero. However, the demand for deconstruction was reduced by 20% from 2010 to 2011 due to economic downturn; fewer clients were willing to pay the higher price and accept the longer project length. Thus, the growth rate is zero.
- **Industry Profitability**: The profitability of the deconstruction industry is low, as shown by Porter's Five Forces analysis (Appendix D).

[3] Personal communication with staff from Metro Vancouver, 2010
[4] Personal communication with staff from Metro Vancouver, 2010

Table 5. GE/McKinsey 9 box matrix analysis of PCRS' business strength in the deconstruction industry

A. **Key criteria to determine deconstruction industry attractiveness**

Factor	Weight (a)	Score Out of 10 (b)	Weighted Score (a*b)
Industry size	3	6	18
Industry growth rate	3	1	3
Market profitability	3	4	12
Opportunity to differentiate	3	5	15
Competition Intensity	3	7	21
Overall risk	3	4	12
Total Weighted Score			**81/180 = 0.45**

B. **Key criteria to determine business strength of PCRS**

Factor	Weight (A)	Score Out of 10 (B)	Weighted Score (A*B)
Strengths of assets/competences	3	3	9
Market share	3	0	0
Production capacities	3	0	0
Distribution channel access	3	3	9
Relative brand strength	3	8	24
Access to finance/resources	3	6	18
Total Weighted Score			**60/180 = 0.33**

C. **PCRS' position in the GE/McKinsey 9 box matrix**

		Business Unit Strengths		
		High	**Medium**	**Low**
Industry Attractiveness	**High**	Grow	Grow	Hold
	Medium	Grow	Hold	**PCRS** Harvest
	Low	Hold	Harvest	Harvest

- **Opportunity to differentiate:** There are opportunities to differentiate between competitors, for example, based on marketing or market segmentation. However, current industry incumbents mainly focused on price competition.
- **Competition Intensity**: There are only a handful of local deconstruction operators because the service is not in high demand; only about 6 demolition companies in the Lower Mainland offer deconstruction as a service option. However, demolition is a strong substitute and there are 56 demolition companies in the lower mainland. Thus, competition is high.
- **Overall risk:** The risk in deconstruction is moderately high because of the following: 1) Buyers exist at 2 levels; one acquiring the deconstruction service and the other, buying the used products. The reliance on 2 levels of revenue makes profitability less predictable; and 2) it is sometimes difficult to accurately assess whether materials can be salvaged for resale during initial inspection; what appears valuable on the surface commonly end up having no resale value after revealing the internal structure.

5.1.1.2 Overview of key criteria determining business strength of PCRS in the deconstruction industry

- **Market Share:** PCRS does not have any market share in the industry.
- **Production Capacities:** PCRS does not have any production capacity in the industry.
- **Distribution channel access:** PCRS does have ties to local deconstruction operators.
- **Relative Brand Strength**: PCRS has successfully conducted two deconstruction pilot projects, which received public attention through promotion by the City of Vancouver. The agency's brand name in community services is very strong.
- **Access to finance/resources:** PCRS has a strong financial position, and have successfully received government funding for its innovative projects in the past 28 years. In addition, it has established strong partnership with local government and businesses who can be potential funders for new innovative projects.

5.1.1.3 Summary of PCRS' business strength in the deconstruction industry

As shown in the McKinsey 9 Box Matrix analysis, the local deconstruction industry is not attractive and PCRS currently lacks the business strength to develop or grow the business. The analysis places PCRS at the worst position in the 9-box matrix, indicating that PCRS should not enter this industry as a new entrant. However, the local government has a strong interest to

grow the industry through policy change and funding supportive initiatives. With financial support from the government and local partners, PCRS can develop its business strength but this will require a high level of financial and time commitment.

5.1.2 Used building material industry

5.1.2.1 Overview of key criteria determining used building materials retail industry attractiveness

- **Market size and growth rate**: Because no statistical data are available on the Canadian market size, BC renovation trends have been applied as a market indicator. Renovation spending in BC is projected to rise by 1 to 3% annually for the next 3 years [19, 20]. These statistics signify that the renovation market is strong in Metro Vancouver and should continue its solid performance in the coming years, which is a positive sign for the sales of used building materials. Consistent with this view, local retailers indicated that sales have increased by 5 to 20% annually over the past 3 years [18].
- **Industry Profitability**: The profitability of the industry is at a moderate level, as shown by the Porter's 5 Forces model analysis (Appendix G).
- **Opportunity to differentiate:** There are opportunities to differentiate between competitors using marketing or value-added processes. However, incumbents invest little to no effort on differentiation due mainly to a lack of budget and expertise.
- **Competition Intensity**: The competition intensity in the industry is moderately high. There are only a handful of major retailers, but there are many web-based sellers. In addition, new building products are strong substitutes.
- **Overall risk:** The risk in the industry is moderately high because of the following: a) hTe supply and demand of used building material is often unpredictable; and b) the fixed cost, such as rent, is very high.

5.1.2.2 Overview of key criteria determining business strength of PCRS in used building materials retail industry

- **Market Share:** PCRS does not have any market share in the industry.
- **Production Capacities:** PCRS does not have production capacity in the industry.

Table 6. GE/McKinsey 9box matrix analysis of PCRS' business strength in the used building material retail industry

A. Key criteria to determine used building material retail industry attractiveness

FACTOR	WEIGHT (A)	SCORE OUT OF 10 (B)	WEIGHTED SCORE (A*B)
Industry size	3	7	21
Industry growth rate	3	7	21
Market profitability	3	6	18
Opportunity to differentiate	3	6	18
Competition Intensity	3	5	15
Overall risk	3	5	15
Total Weighted Score			108/180 = 0.60

B. Key criteria to determine business strength of PCRS

FACTOR	WEIGHT (A)	SCORE OUT OF 10 (B)	WEIGHTED SCORE (A*B)
Strengths of assets/competences	3	3	9
Market share	3	0	0
Production capacities	3	0	0
Distribution channel access	3	0	0
Relative brand strength	3	8	24
Access to finance/resources	3	6	18
Total Weighted Score			51/180 = 0.28

C. PCRS' position in the GE/McKinsey 9 Box Matrix

		Business Unit Strengths		
		High	Medium	Low
Industry Attractiveness	High	Grow	Grow	Hold
	Medium	Grow	Hold	**PCRS** Harvest
	Low	Hold	Harvest	Harvest

- **Distribution channel access:** PCRS does not have a distribution structure in the industry.
- **Relative Brand Strength**: PCRS has no brand strength in the industry.
- **Access to finance/resources:** PCRS has a strong financial position, and have successfully received government funding for its innovative projects in the past 28 years. In addition, it has established strong partnership with local government and businesses who can be potential supporters and funders.

5.1.2.3 Summary of PCRS' business strength in the used building materials retail industry

The industry attractiveness of the used building material industry is at a moderate level, and has a higher industry attractiveness score than the deconstruction industry. PCRS' business strength in the retail industry has, however, a slightly lower score than that of the deconstruction industry. To boost deconstruction, used building material resale must be stimulated to ensure that the flow of products does not bottleneck at the resale level. Otherwise, unsold salvaged products will end up in the landfill. The position of PCRS in the retail industry indicates that it has weak business strengths in a moderately attractive industry; it should not enter this industry. Attempts to gain market share by increasing business strengths could prove to be very expensive and must be done with caution. The local government can support this activity and increase the business strength of PCRS.

5.2 Summary and solution principles

5.2.1 Problem Statement

To be included in the collaborative partnership with the City of Vancouver, PCRS must generate a business proposal that will promote the deconstruction and/or used building material industries, while advancing green job training and employment for multi-barriered individuals.

5.2.2 Management Preferences

To fulfil the missions of the dual partnership, PCRS must identify social entrepreneurial opportunities within the two industries that will fit with the existing capabilities of PCRS. Further, the proposed plan must cultivate and grow the market in both industries and stimulate demand and supply. The following lists the key criteria that must be fulfilled by the proposal.

- Leverage existing core strengths of PCRS
- Divert construction/demolition waste from landfill
- Promote the deconstruction industry
- Promote the used building materials retail industry
- Create sustainable training and/or employment opportunities for multi-barriered youth
- Capable of becoming economically viable in 5 years

5.2.3 Strategic Issues

The key criteria that must be fulfilled by PCRS' proposal are highly challenging. The McKinsey 7S Framework analysis shows that PCRS currently lacks specialized staff and skills to effectively enter both green industries. PCRS' core competences reside in its capabilities to:

- Deliver community social programs and services, education, and job training to clients from marginalized communities
- Effectively navigate the government funding processes to attain financial support to fund programs
- Establish community network and partnership to access and expand social services and resources

The analysis shows that the industry attractiveness of the deconstruction and used building material retail sectors is relatively low, and PCRS currently lacks the business strength to develop or grow the business as a new entrant. However, both industries have strong growth potentials and the local government has a strong interest to grow the industry through policy change and funding supportive initiatives. PCRS is already collaborating with the local government to advance the green initiative as a joint venture.

Although PCRS' operation system is built upon the delivery of social services, it has established strong financial and IT systems that the two industries lack. In addition, PCRS has a strong brand name and working partnerships in the non-profit and green business community; these are important qualities on promoting collaborations and building trust in the green industries. With financial support from the government and devoted local partners, PCRS can develop its business strength but this will come at a high level of financial and time commitment.

6: Potential Solutions

6.1 Strategic options

Given the current conditions of both green industries and PCRS' core competences, four strategic directions are proposed and Table 7 provides the weighted score of each option.

1. **Provider of deconstruction training**: PCRS can become the provider of deconstruction training, offering this service to its clientele and the public, and leveraging its core strength of training delivery. Initial stages can involve partnering with local deconstruction specialists for instruction. Once PCRS become proficient on this practice, it can build on existing training programs to offer advanced services such as "train the trainers", teaching the practice to the management of the green trade sector.

   Later stages can involve partnering with local trade schools to achieve deconstruction certification and advance innovation. Advantages of this approach include developing a green work force and standardizing the practice. The core challenge is the current lack of demand for deconstruction, which cannot be stimulated by training more workers.

2. **Deconstruction operator**: PCRS can develop its skills in deconstruction and provide the service to the public. At the same time, PCRS can provide on-the-job deconstruction training to its clienteles. Initial stages can involve partnering with local deconstruction specialists who will train PCRS staff. It will be challenging, however, to convince locally established operators to provide the training for they are competitors to PCRS.

   Alternatively, deconstruction consultants are available for hire from the US. For example, Dave Bennink is an experienced consultant, has been in the industry for over 20 years, and will be happy to provide training, as established in this study's interview [6] Disadvantages will be similar to that discussed under option 1; the approach will not directly stimulate demand unless extensive effort is dedicated to marketing. In addition, the high cost of storing used building products and a lack of distribution outlet to sell the salvaged items will pose as big problems, as currently faced by local deconstruction operators.

Table 7. Weighted score of strategic options of PCRS

Operator		Deconstruction Training Provider		Deconstruction Operator		Used Building Material Retailer		Merged Operation	
FACTOR	Weighted (A)	Score out of 10 (B)	Weighted Score (A*B)	Score out of 10 (B)	Weighted Score (A*B)	Score out of 10 (B)	Weighted Score (A*B)	Score out of 10 (B)	Weighted Score (A*B)
Leverage core strengths	**3**	7	21	3	9	3	9	3	9
Divert waste from landfill	**3**	2	6	5	15	7	21	8	24
Promote deconstruction industry	**3**	5	15	7	21	2	6	7	21
Promote used building materials retail industry	**3**	4	12	2	6	7	21	7	21
Create training opportunities	**3**	7	21	6	18	6	18	9	27
Create employment opportunities	**3**	2	6	5	15	6	18	7	21
Economically viable in 5 years	**3**	5	15	6	18	7	21	7	21
Total Weighted Score		**84/210 =0.40**		**102/210=0.49**		**114/210=0.53**		**144/210=0.69**	

3. **Used building materials retailer**: PCRS can start up a retail operation to sell used building material in the lower mainland, and provide training and employment opportunities to its clientele. PCRS can partner with local retailers or hire a US consultant, such as Dave Bennink, to learn the trade. This requires less technical training than deconstruction, and an experienced store manager can be recruited to oversee the operation. A big challenge would be to find a suitable commercial property for the operation and to pay for the high lease cost. This option also does not promote deconstruction.

4. **Hybrid operation**: PCRS can both start up a used building materials retail operation and offer the deconstruction service. PCRS clients can be trained and be employed in both deconstruction and operating the retail store. This approach will require multiple levels of partnership and the hybrid operation must have an innovative and focused marketing strategy in place to promote the two green industries simultaneously, stimulating demand and supply.

7: Recommendations

7.1 The recommended option

The recommended option is the hybrid operation, which received the highest weighted score (Table 7) on fulfilling the key criteria needed in the proposal. This option aims to bridge the gap between the City of Vancouver and Metro Vancouver's need to divert waste from landfills and PCRS' need to provide green job training and employment opportunities to "at risk" youth. The hybrid operation contributes to:

- The advancement of the deconstruction and used building materials retail industries: Given the current fragmented and disconnected state of these local industries, the hybrid operation can potentially raise their public profile and market capacity to stimulate demand.
    - For the deconstruction industry, the hybrid operation will function as an "industry connector" to attract and engage local deconstruction/green demolition operators to come to the site to donate their salvaged products, attend industry-related seminars/meetings, advertise their businesses, recruit PCRS trainees, and form local industry networks.
    - For the material reuse industry, the hybrid operation represents a highly visible and easily accessible outlet for used building supply donors and buyers, playing an active role on promoting the concept and applications of material reuse.
- The formation of a training base that will offer a variety of training and employment opportunities to multi-barriered trainees
- The creation of new green jobs: If the supply and demand for both industries can be expanded, there will be more employment opportunities in both sectors.

7.2 Business model development

7.2.1 The business concept

The hybrid operation will be named the "Rebuild Hub". Consistent with its mandate, the name "ReBuild Hub" connotes a dual meaning: a) provide "at risk" youth with new opportunities

to rebuild their future and b) provide used building materials a second life in rebuild projects. The Rebuild Hub, operating as a non-profit social enterprise, will emerge as a new program initiated by PCRS. The ReBuild Hub will encompass three interdependent units: the Retail Centre, the Deconstruction/Salvage Centre, and the Training Centre. The three centres will operate integratively to divert construction/demolition waste from landfills, promote the material reuse concept, and expand training and employment opportunities for those youth who are the hardest to hire.

7.2.2 The Product/Service, market segmentation, and suppliers

A. **The Retail Centre**:

The retail operation will accept donations of salvaged building materials and resells the materials after sorting, cleaning, repairing, refurbishing, pricing, and shelving. The revenue generated will be used to fund the operation and training units. The centre will offer pre-approved, free pickup or salvaging service if the donation is of significant value. One important differentiator of the ReBuild Hub is that extensive marketing effort will be devoted to actively soliciting donations of used building supplies from the public including local businesses, corporations, public agencies, and rental building owners. This proactive approach will expand material supply to the Hub and publically promote the reuse concept by soliciting and acquiring new donors; the Hub's strategy is to make it easy for potential donors to implement the concept of material reuse.

At the retail centre, the staff will assist donors and buyers load/unload on site, and promote sales by providing pricing and product information, offering renovation ideas and suggestions, negotiating prices, helping customers seek specific products that are not currently available and soliciting customer feedback to optimize future service/product offerings. Another differentiating factor of the ReBuild Hub is the high quality services and superior condition of used building products for sale. The program trainees at the centre will devote considerable attention to repairing and refurbishing donated products to maximize their reuse value. Currently, all other local used building material retailers invest little or no effort in refurbishment to minimize costs.

The unit will also carry out community outreach activities to proactively solicit donations from potential donors in different sectors, recruit volunteers for the operation and training units, and promote the concept and applications of material reuse.

- Target market includes:
    - *Private Home Renovators*: Individuals or groups who spend any amount to repair, alter, or improve their property/belongings
    - *Rental Property Owners:* Rental suite owners needing to repair or renovate suite for existing or future tenants.
    - *Commercial Contractors or developers*: Organizations that spend any amount to repair, alter, or improve their property/belonging or constructing a building for commercial use
- Used building products suppliers include:
    - Medium to large local corporations: they undergo retrofit every 5 years, and they can be approached to market the Hub's salvage service.
    - Reputable green demolition companies and contractors
    - Department stores, large furniture stores, building stores, and appliance stores: They can be approached to solicit to donate their unsalable, returned appliances, furniture, or building-related products
    - Private home owners
    - Land developers

B. **The Deconstruction/Salvage Centre**:

This operation will provide deconstruction services through partnership with local deconstruction specialists/businesses, and function as a promoter and a connector to advance the local deconstruction industry. There are a number of advantages associated with forming local partnerships:

- *Provide immediate service without immediate capital outlay*: Partnering with local businesses equipped with the right skills and expertise, as well as with the essential equipment to carry out deconstruction, allows the Hub to promote and offer the service immediately without expending financial resources on purchasing equipment and labour training. This is an economically feasible option given the current low level of demand for deconstruction.
- *Engage industry members*: This approach encourages the exchange of dialogues, and the establishment of networks and collaborations amongst industry members, all of which are critical to the formation of a collective voice/force to advance the industry. In addition, the

Hub's collaborative approach will enable local businesses to utilize their excess capacity and encourage industry members to invest on promoting this service to their clients.

- *Provide scalable operation*: If the demand for deconstruction were to increase or decrease abruptly, the Hub can readily expand or contract its partnerships to meet changes in demand.

The salvage service will be delivered by in-house staff and offered at free-of-charge to suppliers donating valuable materials; this approach makes it easy for potential donors to implement the concept of material reuse.

- Target market includes homeowners wanting to tear down or renovate part of their houses.
- Suppliers of labour include deconstruction specialists.

C. **The Training Centre**:

This unit is responsible for co-ordinating and implementing PCRS training programs that utilize the ReBuild Hub as an on-the-job training site. A PCRS training supervisor will oversee the training process on site. The length of PCRS training programs is about 12 to 16 weeks, which is apportioned between life skill training in the classroom and on the job training at the Retail Centre; this means that each trainee will have approximately one to two months of practicum training to become proficient on the various operational activities at the Hub.

All trainees will begin at the basic training level, which involves loading, sorting, cleaning, repairing, refurbishing, pricing, stocking shelves, and recording inventory. Once they can perform these activities proficiently, the trainees can advance to deconstruction training, serving customers if they exhibit natural talent in communication and interpersonal skills, or do research over the internet to determine product pricing if they show skills/interest in using computers.

In addition, external partners (arts, business, or information technology students) can be recruited to participate in the training process. For example, arts students from post-secondary institutions can be recruited as volunteers to give guidance and mentorship to the trainees to conduct creative work with used building materials; their creations can be showcased in the Hub to raise awareness of using reclaimed material. Trainees who successfully completed the training program will be eligible to apply for future available employment at the Hub, and submit their resumes to the Hub's company website, which will be viewed by potential industry employers.

- Target market includes PCRS clients who are multi-barriered youth.
- Suppliers include community youth populations who meet the criteria set out by PCRS.

7.2.3 Partnerships

Partners for the ReBuild Hub include the City of Vancouver and other local government agencies, green businesses, and non-profit organizations in the green trade or community social services sectors.

Potential Partners:

- City of Vancouver: Provide land or grant, and consultation support to advance ReBuild Hub operation
- Federal, provincial and local government funding agencies: Provide grant support for life skill and employment training
- Vancity: Provide grant and consultation support to advance the ReBuild Hub project through implementation
- Deconstruction Specialists: Connect specialists with potential clients and provide an outlet to market their products and advertise their service to raise awareness
- .Green Demolition Businesses: Provide an outlet to donate their salvaged products and project a positive public image
- Tradeworks Training Society: Partner in product refurbishment to increase product value
- Corporations: Solicit long-term sponsorship for supply donation and event sponsorship - position as socially responsible business
- ReStore – Habitat for Humanity: Collaborate on customer referrals; trade products, share spaces
- Vancouver Heritage Foundation: Partner in sourcing, storage, retail sales, & marketing

7.2.4 Value Proposition

Services or products to be offered by the Retail, Deconstruction/Salvage and Training Centres at the ReBuild Hub will contribute to a triple-bottom line profit by delivering value to the following stakeholders:

- For supply donors:
    - Decrease salvage, disposal and transportation costs and save time
    - Establish positive public image; save the environment

- Financial gain through receiving tax receipts

- For used building supply buyers:
  - Save on renovation costs and time by being able to conveniently access quality used-building products at affordable prices

- For local deconstruction specialists/businesses and other reuse retailers:
  - Connect reuse/deconstruction and community members to establish industry network, raise industry awareness and profile, stimulate demand, and expand potential market
  - Gain a retail outlet for salvaged materials
  - Increase the capacity of and develop the deconstruction sector by delivering training that will lead to more skilled deconstruction technicians

- For deconstruction clients:
  - Save the environment; receive tax receipt for donated products

- For trainees:
  - Gain a variety of hands-on training opportunities and work experiences to raise employment opportunities
  - Connect with industry experts and community members to gain role model support

- For City of Vancouver and Metro Vancouver:
  - Stimulate demand for deconstruction and for reclaimed building materials, thereby diverting construction and demolition waste from landfills
  - Inner city youth gain valuable job skills and industry connections that will raise their employment opportunities, which will in turn lower poverty in local communities

7.2.5 Differentiating Factors

- *Superior products/services*: PCRS trainees will dedicate time to refurbishing or customizing reclaimed products to increase value but will sell at competitive prices. Other retailers expend minimum or no effort in this area. On site-staff and trainees will be dedicated to providing quality service.

- *Proactively outreach to market and community to stimulate demand*: Talents will be recruited to conduct outreach and marketing activities to stimulate demand and uncover innovative approaches to advance local industries.
- *Strong partners*: PCRS has strong community and governmental partners to collectively advance the venture to achieve a triple bottom line.
- *Central location*: A centrally located facility will gain public visibility and provide convenient access to buyers and donors.
- *Divert construction/demolition waste from the landfills*: The entire operation of the ReBuild Hub will be streamlined to make it easy for the public to implement the concept of material reuse, thereby decreasing the volume of waste being channeled to the landfills.
- *Raise employment opportunities of "at risk" youth*: The diverse range of hands-on training and potential industry exposure will increase graduates' probability of being hired in the increasingly popular green job sector.

7.2.6 Key resources

PCRS has an established infrastructure for IT, finance, and training. These resources will be used to assist setting up the ReBuild Hub. Application for funding will be sent to community and government granting agencies to gain financial assistance to start up this operation. In addition, governmental partners will be pursued to request for land support, which will be a huge cost in this venture.

7.2.7 Revenue streams

The revenue streams in the first 5 years will come from: a) Revenue of used building material retail operation and deconstruction, b) Grants from federal, provincial and local governments, and c) Grants and financial sponsorship from local businesses.

8: Implementation Plan

8.1 Entry and growth strategy

The ReBuild Hub will start operation by potentially renting a facility with land from the City of Vancouver either at free of charge or at a drastically discounted price. Given that land requirement is the biggest barrier to entry in the material reuse industry, support from the City of Vancouver will provide the ReBuild Hub considerable leverage as a new entrant. The site will be renovated to configure a used building material retailer layout; the design will be adapted to accommodate on-site training programs and offices. All of the equipment, infrastructure, and furniture will be of reclaimed origin and if possible, refurbished to refine their image.

Marketing efforts related to proactively soliciting donation of building products will be launched 3 months prior to the official opening date. For example, deconstruction operators who had been interviewed in this study all mentioned the lack of space available to store their salvaged products; thus, they should be approached to consider donating their existing products to the Hub and in return, they will gain a tax receipt and free advertising of their business at the Hub.

In parallel, marketing effort will be dedicated to gaining public exposure by developing company website; by recruiting volunteers; and by engaging social media, the local media, community members, the government, and industry members. PCRS will design training programs that can be effectively implemented at the Hub. The facility should be stocked with products and the training programs should be ready to launch on the official opening date.

After the operation achieves competitive efficiency and effectiveness, the ReBuild Hub will, in partnership with local trade colleges, expand its programs to include professional "Building Deconstruction Training Curriculum" and offer these programs to the public to advance the technical practice.

8.2 Overall schedule

Figure 4 shows an implementation timeline marking the milestones critical to developing the ReBuild Hub:

A. Complete of design and development of facility for operation

B. Obtain key financing

C. Search for partners to collaborate in operation

D. Identify land and facility for the operation

E. Hire key managers and personnel for operation

F. Solicit and acquiring donations of used building material

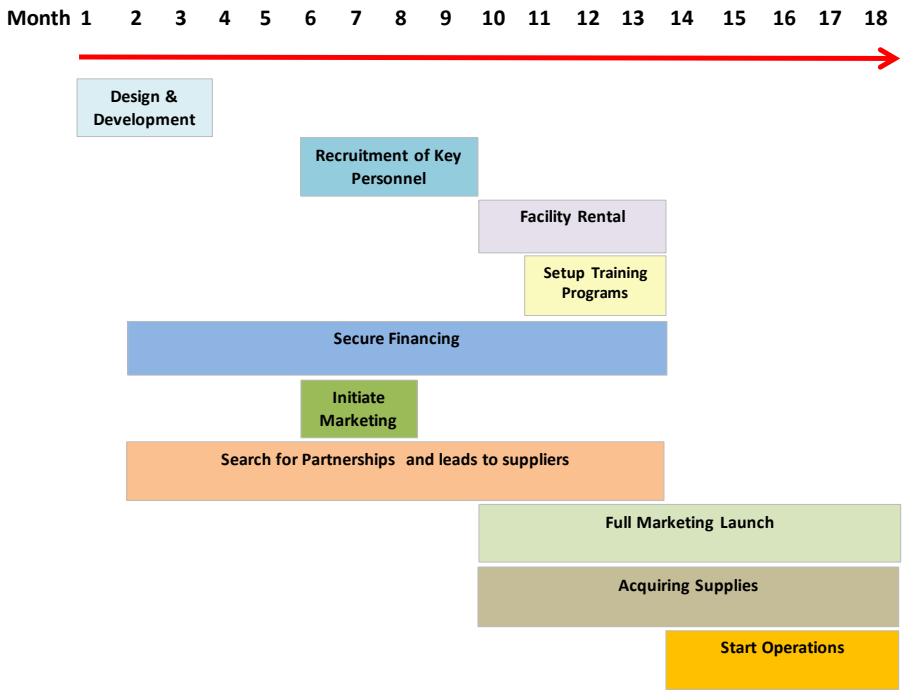
G. Initiate marketing activities

H. Set up training programs

I. Prepare land and facility for operation: order material, infrastructure set up, buy equipment

J. Operation start date

Figure 4. Implementation timeline



8.3 Marketing

8.3.1 Marketing strategy

Marketing will be an important source of differentiation for the ReBuild Hub since other used building material retailers and deconstruction companies do not invest on marketing and instead, rely mainly on their company website and word-of-mouth advertising. Effective promotion will be critical to developing the Hub's brand identification with good quality products/services, low prices, and as a promoter of the material reuse and deconstruction industries. Marketing efforts will focus on personal selling, company website, publicity, social media, and industry events to broadcast the Hub's products and services to target markets and the Hub's trainees to potential employers in the industry.

8.3.2 Pricing

A. The Retail Centre:

Best practice in the industry indicates that pricing is consistently based on percent cost reduction from new product [13]. For instance, it is a general rule to price at 50 to 70% below comparable new products at Home Depot. Buyers of used products are price-sensitive; thus, staff must maintain their knowledge of current prices by visiting hardware stores, covering media reviews, and accessing internet to do quick researches. If materials stay longer than a specified amount of time, like 6 weeks, prices must be lowered to promote turnover.

B. The Deconstruction/Salvage Centre:

Prices charged for deconstruction must be competitive to the demolition price and will be decided between the Hub and the deconstruction business partners.

8.3.3 Proactive solicit used building supplies

To be a successful in the material reuse sector, the ReBuild Hub must have a constant supply of valuable materials to sell. Most used building material retailers gain their supply when their donors or suppliers notify them of the availability. In contrast, the ReBuild Hub will take a proactive approach and actively seek out potential donors on a regular basis. The ability to issue

tax receipts and having a well-recognized brand name are crucial in gaining large volume of good quality donations. Potential suppliers include:

- Medium to large local corporations: They undergo retrofit every 5 years, and they can be approached to market the Hub's service on salvaging products.
- Reputable green demolition companies and contractors
- Department stores, large furniture stores, building stores, and appliance stores: They can be approached to solicit to donate their unsalable, returned appliances, furniture, or building-related products to the ReBuild Hub, which will offer free pick up and salvage services for valuable materials.
- Private home owners and land developers

In addition, the ReBuild Hub's staff will maintain current knowledge on apartments or commercial buildings that are destined to be demolished, and contact their owners to gain permission to view potentially valuable, salvageable products prior to tear down.

8.3.4 Selling:

The staff should maintain current knowledge on green buildings being developed and approach their contractors to promote the Hub's products. On site, staff will provide quality customer support service and consistently solicit feedback from customers to continually optimize the sales operation.

8.3.5 Advertising and Sales Promotions

A number of channels will be used to inform the target market about the availability of products and the benefits the ReBuild Hub is offering:

- Company website will be updated regularity with newly arrived products and special deals
- Advertise the company on Craigslist and highlight only valuable products
- Conduct community outreach at trade shows, conferences, local community events

8.3.6 Social Media

Connecting with potential donors or customers using social media will be important for the ReBuild Hub to raise awareness on the value of its products and services. To do this

effectively, several social media tools can be combined and a consistent stream of messages sent out. These messages must attempt to establish an interactive dialogue with customers and take a story-telling approach. Customers want informative and useful content or else they will become disinterested; therefore, no more than 20% of the Hub's social media activities should be promotional. The following are the key social media tools (SMT) that can be used along with an explanation for the optimal method of application:

- Facebook:
    - Create a company or group profile for the Hub: Adjust settings so that anyone can post on the page. This will allow Facebook members to "Like" the Hub's page and notifications will appear on their "newsfeed" whenever the Hub posts on its "Wall."
    - Start a dialogue with customers: the Hub will post videos, pictures, and stories of customer projects created using the Hub's products or success stories of the Hub's trainees.
    - Post monthly newsletters: Letters can be released using the Facebook page and linked to any articles written about the Hub.
- Twitter:
    - "Tweets" should be sent out on a daily basis in short sentence form and include strong action words. If the Tweet does not stand out customers will not read it.
    - Tweets can sometimes include links to other pages that are related to the Hub's service or product offering (ie. Do-it-yourself websites).
- Linkedin:
    - LinkedIn will act as a platform for the Hub to communicate within the industry and as a networking tool.
    - The Hub's profile should list all of the projects and initiatives it has completed. In addition, it should emphasize the Hub's role as a connector within the industry by recognizing other players' achievements.

- YouTube:
    - This platform can be used as a marketing tool for workshops offered at the Hub and to raise awareness. For instance, do-it-yourself training videos, tour of the facility, or training seminars for trainees can be posted.
    - The videos must tell a story and be consistent with messages send from other social media tools.
- Blog:
    - The Hub blog should focus on only one aspect of the facility. For instance, it can blog about do-it-yourself work, environmentally friendly activities, or youth workshops. Without focus, the blog can become disjointed and is not likely to motivate viewers to return.

8.3.7 Publicity

There should be a plan working with the City of Vancouver to gain media attention and publicity, especially during the development of the facility to build anticipation in the public. This is free advertising and has far reaching effects, but it needs to be carried out in a well-planned cascade of activities to build a positive reputation.

8.3.8 Distribution

The primary distribution channel will be the ReBuild Hub facility. A web-based distribution can also be set up at the company website or at other used product sites.

8.4 Financial Plan

8.4.1 Start-Up Costs and Financing

Table 8 shows a breakdown of the total start-up cost in preparing the ReBuild Hub for operation prior to its official opening. The costs include:

- *Advertising and promotion*: To solicit used building supply donations three months before official opening
- *Interior decoration*: To decorate the interior with signage and set up retail infrastructure (hire PCRS trainees)

- *Warehouse equipmen*t: Warehouse fixtures and equipment to facilitate operation
- *Office equipment/furniture*: Desk, tables, and chairs, software to operate the POS cash register
- *Insurance*: To insure the facility for three months prior to opening to allow for remodelling and set up
- *Remodelling*: Exterior/interior cleaning and painting of a ~10,000 square feet facility and set up all interior display racks
- *Signage*: Two large (2' x 10') outdoor signs
- *Manager salary*: Hub Manager will begin work at full time 3 months prior to official opening to solicit donations, supervise handling and set up of donations, supervise temporary staff, prepare the facility for official opening, and establish operation protocol.
- *Salvage specialist salary:* Salvage Specialist will begin work at full time 3 months prior to official opening to assist the manager in salvaging supplies and setting up the warehouse.
- *IT specialist wages:* To prepare donated building material for sale one month before official opening ($9/hour for 20 hour-week for 4 weeks for - hire PCRS trainees)
- *Legal fee for incorporation:* The cost of hiring legal service to legally set the operation

The start-up expense of $77, 170.00 will be claimed in the Year 1 Income Statement (Table 9). An assumption is made that a bank loan of $170,000.00 will be required to pay for the total start-up costs which include an additional $19,182.33 in cash to pay for unexpected start-up expenses.

Table 8. ReBuild Hub start up costs

Startup Expenses	**Cost**
Advertising and Promotion	$ 5,000.00
Interior Decorating	$ 2,000.00
Warehouse equipment	$ 35,075.00
Office equipment/furniture	$ 6,320.00
Insurance	$ 2,400.00
Remodeling	$ 11,720.00
Signs	$ 1,000.00
Hub Manager salary (3 months)	$ 17,500.00
1 Salvage Specialist (3 months)	$ 11,700.00
1 IT specialist (3 months - 50% capacity)	$ 5,850.00
Legal fee for incorporation	$ 20,000.00
Total start up cost:	$ 118,565.00

8.4.2 Pro forma income statements at "rent-free" condition: 5 year projection

8.4.2.1 Revenue:

The ReBuild Hub will derive 90% of its revenue from selling used building materials donated by the public and the remaining 10% from providing residential deconstruction services through partnership with local deconstruction specialists/businesses. There is currently no statistics on the market or financial information of used building material retailers or deconstruction businesses for Canada or Metro Vancouver. However, financial information is available for a Lower Mainland non-profit material reuse retailer, the ReStore, which shares some operational similarities with the ReBuild Hub. Because of the obligatory disclosure policy for Canadian charities, as stipulated by the Canadian Revenue Agency, the ReStore's financial statements are available through the Canadian Revenue Agency website. The 2010 sales revenue for the local ReStore (Burnaby) was reported to be approximately $720,000.00.

Both the ReStore and the ReBuild Hub are charities, sell used building materials, and are located in the Lower Mainland. Based on these similarities, the sales revenue for the ReBuild Hub at Year 1 is estimated to be 40% of the ReStore's 2010 revenue. The conservative estimation of achieving only 40% of ReStore's revenue is to reflect the emerging, un-established, position of the ReBuild Hub. Based on local market information and trends presented in the Industry Analysis section, the annual revenue of the ReBuild Hub is estimated to increase by 10% year over year.

Figure 9 shows the Pro Forma Income Statement over a 5 year projection. This set of projection is made under the assumption that the City of Vancouver will support this venture by providing free use of land and facility for the ReBuild Hub in the initial 5 years of operation. In this scenario, the Hub will be able to achieve a positive net operation profit yearly. At year 3, the operation profit is estimated to grow to $79,953.38, which is sufficient to fund the full training expenses and still yield a positive net income of $22,501.21. The net income will continue to rise over the next 2 years. Training expenses shown on this income statement will likely be funded by public training grants obtained by PCRS; despite this possibility, training expenses are included on the income statement to maintain a conservative financial projection. Figure 10 displays the Pro forma Income Statements under the condition that a rental fee will be charged at the market value of $175,000. Under this condition, the operation suffers major losses for all 5 years and is economically not viable. Thus it is crucial for the ReBuild Hub to receive financial support from key partners during the start-up phase to make this operation feasible.

Table 9 . The ReBuild Hub – Pro forma income statement at "rent-free" condition – 5 year projection

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues:					
Total revenue	$ 336,000.00	$ 369,600.00	$ 406,560.00	$ 447,216.00	$ 491,937.60
Cost of sales	$ -	$ -	$ -	$ -	$ -
Gross margin	$ 336,000.00	$ 369,600.00	$ 406,560.00	$ 447,216.00	$ 491,937.60
Expenses:					
Overhead					
Advertising and Promotion	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00
Insurance	$ 10,000.00	$ 10,500.00	$ 11,025.00	$ 11,576.25	$ 12,155.06
Vehicle maintainance and fuel	$ 6,000.00	$ 6,300.00	$ 6,615.00	$ 6,945.75	$ 7,293.04
Salaries - management	$ 70,000.00	$ 72,100.00	$ 74,263.00	$ 76,490.89	$ 78,785.62
Wages-hourly employees	$ 168,480.00	$ 171,007.20	$ 173,572.31	$ 176,175.89	$ 178,818.53
Utilities & telephones	$ 7,000.00	$ 7,350.00	$ 7,717.50	$ 8,103.38	$ 8,508.54
Occupancy fee	$ -	$ -	$ -	$ -	$ -
Depreciation (warehouse and office equipment)	$ 4,139.50	$ 3,722.50	$ 3,722.50	$ 3,722.50	$ 3,722.50
Office supplies & expenses	$ 1,500.00	$ 1,530.00	$ 1,560.60	$ 1,591.81	$ 1,623.65
Professional fees	$ 10,000.00	$ 11,000.00	$ 12,100.00	$ 13,310.00	$ 14,641.00
Bank charges & interest	$ 6,720.00	$ 7,392.00	$ 8,131.20	$ 8,944.32	$ 9,838.75
Start up expense (excluding equipment cost)	$ 77,170.00	$ -	$ -	$ -	$ -
Total overhead expenses	$ 303,839.50	$ 310,901.70	$ 318,707.11	$ 326,860.79	$ 335,386.69
Loan					
Interest expense	$ 9,093.17	$ 8,512.71	$ 7,899.51	$ 7,251.72	$ 6,567.40
Total loan expenses	$ 9,093.17	$ 8,512.71	$ 7,899.51	$ 7,251.72	$ 6,567.40
Total operating expenditure and interest expense	$ 312,932.67	$ 319,414.41	$ 326,606.62	$ 334,112.51	$ 341,954.09
Net Operating Income	**$ 23,067.33**	**$ 50,185.59**	**$ 79,953.38**	**$ 113,103.49**	**$ 149,983.51**
Donation to PCRS Training Program					
Training expenditure					
Salaries-training specialist	$ 15,000.00	$ 15,450.00	$ 15,913.50	$ 27,318.18	$ 28,137.72
Wages - hourly trainees	$ 40,320.00	$ 40,924.80	$ 41,538.67	$ 63,242.63	$ 85,588.36
Total training expenses	$ 55,320.00	$ 56,374.80	$ 57,452.17	$ 90,560.80	$ 113,726.08
Total operating and training expenditure and interest expense	$ 368,252.67	$ 375,789.21	$ 384,058.79	$ 424,673.31	$ 455,680.17
Net income	**-$32,252.67**	**-$6,189.21**	**$22,501.21**	**$22,542.69**	**$36,257.43**

Table 10. The ReBuild Hub – Pro forma income statement with rental fee – 5 year projection

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues:					
Total revenue	$ 336,000.00	$ 369,600.00	$ 406,560.00	$ 447,216.00	$ 491,937.60
Cost of sales	$ -	$ -	$ -	$ -	$ -
Gross margin	$ 336,000.00	$ 369,600.00	$ 406,560.00	$ 447,216.00	$ 491,937.60
Expenses:					
Overhead					
Advertising and Promotion	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00
Insurance	$ 10,000.00	$ 10,500.00	$ 11,025.00	$ 11,576.25	$ 12,155.06
Vehicle maintainance and fuel	$ 6,000.00	$ 6,300.00	$ 6,615.00	$ 6,945.75	$ 7,293.04
Salaries - management	$ 70,000.00	$ 72,100.00	$ 74,263.00	$ 76,490.89	$ 78,785.62
Wages-hourly employees	$ 168,480.00	$ 171,007.20	$ 173,572.31	$ 176,175.89	$ 178,818.53
Utilities & telephones	$ 7,000.00	$ 7,350.00	$ 7,717.50	$ 8,103.38	$ 8,508.54
Occupancy fee	**$ 175,000.00**	**$ 175,000.00**	**$ 175,000.00**	**$ 175,000.00**	**$ 175,000.00**
Depreciation (warehouse and office equipment)	$ 4,139.50	$ 3,722.50	$ 3,722.50	$ 3,722.50	$ 3,722.50
Office supplies & expenses	$ 1,500.00	$ 1,530.00	$ 1,560.60	$ 1,591.81	$ 1,623.65
Professional fees	$ 10,000.00	$ 11,000.00	$ 12,100.00	$ 13,310.00	$ 14,641.00
Bank charges & interest	$ 6,720.00	$ 7,392.00	$ 8,131.20	$ 8,944.32	$ 9,838.75
Start up expense (excluding equipment cost)	$ 77,170.00	$ -	$ -	$ -	$ -
Total overhead expenses	$ 478,839.50	$ 485,901.70	$ 493,707.11	$ 501,860.79	$ 510,386.69
Loan					
Interest expense	$ 9,093.17	$ 8,512.71	$ 7,899.51	$ 7,251.72	$ 6,567.40
Total loan expenses	$ 9,093.17	$ 8,512.71	$ 7,899.51	$ 7,251.72	$ 6,567.40
Total operating expenditure and interest expense	$ 487,932.67	$ 494,414.41	$ 501,606.62	$ 509,112.51	$ 516,954.09
Net Operating Income	-$ 151,932.67	-$ 124,814.41	-$ 95,046.62	-$ 61,896.51	-$ 25,016.49
Donation to PCRS Training Program					
Training expenditure					
Salaries-training specialist	$ 15,000.00	$ 15,450.00	$ 15,913.50	$ 27,318.18	$ 28,137.72
Wages - hourly trainees	$ 40,320.00	$ 40,924.80	$ 41,538.67	$ 63,242.63	$ 85,588.36
Total training expenses	$ 55,320.00	$ 56,374.80	$ 57,452.17	$ 90,560.80	$ 113,726.08
Net income	-$207,252.67	-$181,189.21	-$152,498.79	-$152,457.31	-$138,742.57

8.4.2.2 Variable and fixed costs:

Details of the different expense categories listed in the income statements are discussed in the following sections.

Variable costs

All of the inventory of the ReBuild Hub will be donated by the public; thus the cost of goods sold for the Retail Centre is estimated to be zero. As for the Deconstruction/Salvage Centre, the main expense would be wages of the Hub Manager and the Salvage Specialist for they will be involved

in co-ordinating deconstruction services with industry partners, but their wages will be fixed as salaries.

Fixed costs

Overhead fixed costs, which have a greater impact on the Hub's bottom line, will be highest in Year 1 at 90% of total revenue and gradually decrease to 68% at Year 5. The decrease in the percentage of expenses to revenue is due to the expected disproportionate rise in year over year sales in relation to the rise in year over year expenses. The ReBuild Hub's fixed costs are expected to include the following:

- *Advertising and promotion*: Industry standards suggest a marketing budget of only 3% of annual revenue, but the ReBuild Hub will invest at $20,000 annually to build its brand and reputation to acquire customers and suppliers.
- *Insurance*: The cost for Year 1 will be set at $10,000, which is comparable to the cost of similar operations, with an increase of 5% year-over-year.
- *Salaries – management*: There will be one full time Hub Manager to oversee the entire operation (Table 11 - Operation Staff Costs).
- Wages – hourly employees: There will be 1.4 full time equivalent (FTE) Customer Service Specialist (1.4 FTE), 1 FTE Salvage Specialist, 1 FTE Community Outreach and Administration Specialist, and 0.6 FTE IT Specialist in all 5 years (Table 12).
- *Utilities and Telephone:* The cost will be set at $7000 at Year 1, which is based on known average charges in similar operations, and will increase by 5% year over year.
- ***Occupancy Fee*: For a facility with 10,000 square feet area, the rent is about $175,000 per year in the Lower Mainland. However, it is assumed that the City of Vancouver will lease the land and facility to the ReBuild Hub at free of charge for the first 5 years of operation to assist the social enterprise in gaining traction.**
- *Depreciation*: Depreciation of warehouse and office equipment is based on a straight-line depreciation model of 10% over a 10 year period.
- *Office supplies and expenses*: The cost will be set at $1500 for Year 1 with a 2.0% increase year over year.
- *Professional fees*: In Year 1, $10,000 will be spent on auditing and the fee will increase by 2% year over year.

- *Interest and bank charge:* Bank charges for accepting credit card transactions and constitute 2% of total revenue.
- *Salaries – program training specialist:* In Year 1, a PCRS training supervisor will be hired part time (0.3 FTE) to oversee the PCRS job training program that will occur on site (Table 12 – Training Staffing Costs).
- *Wages – hourly trainees*: The number of trainees recruited to the PCRS job training program will increase as the program expands with time. The trainees will be paid a minimum wage during their training periods (Table 11).
- *Interest expense*: A bank loan in the amount of $170,000 will be acquired to pay for the total start-up costs. The terms for the loan is estimated at 5% fixed interest rate amortized over 12 years.

8.4.2.3 Staffing plan:

- *Salaried Staff*: The ReBuild Hub will open for business 7 days per week. The operation will be managed by one full time Hub Manager five days per week who will be on-call on off days in the first year.
- *Hourly Employees*: There will be 1.4 full time equivalent (FTE) Customer Service Specialist (1.4 FTE), 1 FTE Salvage Specialist, 1 FTE Community Outreach and Administration Specialist, and 0.6 FTE IT Specialist in all 5 years (Table 11).
- *Program Training Staff*: A part time Program Training Specialist will be hired to oversee the PCRS job training program that will occur on site. This employee will be responsible for designing and implementing training sessions at the ReBuild Hub (Table 12).
- *Hourly Trainees:* The number of trainees recruited to the PCRS job training program will increase as the program expands with time. The trainees will be paid a minimum wage during their training period, and trained to assist in fully preparing donated used building materials for sale. In Year 1, the training program will be operating only part time, offering a total of 32 weeks of training time. The duration of training is assumed to be 4 weeks for each cohort of trainees. There will be a total of 8 cohorts of trainees (3 members per cohort) in the first year, training a total of 24 members. In subsequent years, the program will expand to intake more trainees and operate more programs (Table 12).

Table 11. Operation staffing costs

Salaried Employees

Salaried Staff Positions	**Year 1 Salary**	**Year 2 Salary**	**Year 3 Salary**	**Year 4 Salary**	**Year 5 Salary**
Hub Manager	$56,000	$57,680	$59,410	$61,193	$63,028
Annual cost of living increase for salary	3%				

Salaried Staff Time (as % of FTE*)	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Hub Manager	100%	100%	100%	100%	100%
Assistant Hub Manager	100%	100%	100%	100%	100%

*FTE=Full Time Equivalent

Hourly Employees

Hourly Staff Positions and Wages	**Year 1 Hourly Wage**	**Year 2 Hourly Wage**	**Year 3 Hourly Wage**	**Year 4 Hourly Wage**	**Year 5 Hourly Wage**
Salvage Specialist	$18.00	$18.27	$18.54	$18.82	$19.10
Customer Service specialist	$15.00	$15.23	$15.45	$15.69	$15.92
Administration and Community Outreach	$15.00	$15.23	$15.45	$15.69	$15.92
IT and Social Media Specialist	$18.00	$18.27	$18.54	$18.82	$19.10
Annual cost of living increase for salary	1.5%				

Hourly Staff Time (Hrs/week/employee)	**Year 1 Hours/Week**	**Year 2 Hours/Week**	**Year 3 Hours/Week**	**Year 4 Hours/Week**	**Year 5 Hours/Week**
Salvage Specialist	40	40	40	40	40
Customer Service specialist	40	40	40	40	40
Administration and Community Outreach	40	40	40	40	40
IT and Social Media Specialist	24	24	24	24	24

Number of employees per position	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Salvage Specialist	1.0	1.0	1.0	1.0	1.0
Customer Service specialist	1.4	1.4	1.4	1.4	1.4
Administration and Community Outreach	1.0	1.0	1.0	1.0	1.0
IT and Social Media Specialist	1.0	1.0	1.0	1.0	1.0

Staffing Expenses:

Fringe Benefits and Vacation pay	25% of total wages
Weeks per year	52 weeks used to calculate annual wages

Total Staffing Costs:	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Hub Manager	$70,000	$72,100	$74,263	$76,491	$78,786
Subtotal Salaried Employees	**$70,000**	**$72,100**	**$74,263**	**$76,491**	**$78,786**
Salvage Specialist	$46,800.00	$47,502.00	$48,214.53	$48,937.75	$49,671.81
Customer Service specialist	$54,600.00	$55,419.00	$56,250.29	$57,094.04	$57,950.45
Administration and Community Outreach	$39,000.00	$39,585.00	$40,178.78	$40,781.46	$41,393.18
IT and Social Media Specialist	$28,080.00	$28,501.20	$28,928.72	$29,362.65	$29,803.09
Subtotal Hourly Employees	**$168,480.00**	**$171,007.20**	**$173,572.31**	**$176,175.89**	**$178,818.53**
Total Operation Staffing Costs	**$238,480.00**	**$243,107.20**	**$247,835.31**	**$252,666.78**	**$257,604.15**

Table 12. Training staffing costs

Training Staff Position	Year 1 Salary	Year 2 Salary	Year 3 Salary	Year 4 Salary	Year 5 Salary
Program Training Specialist	$40,000	$41,200	$42,436	$43,709	$45,020
Annual cost of living increase for salary	3%				
Training Staff Time (as % of FTE)	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Training Specialist	30%	30%	30%	50%	50%
Hourly Trainees					
Hourly Prainee Positions and Wages	**Year 1 Hourly Wage**	**Year 2 Hourly Wage**	**Year 3 Hourly Wage**	**Year 4 Hourly Wage**	**Year 5 Hourly Wage**
General Trainees	$10.50	$10.66	$10.82	$10.98	$11.14
Annual cost of living increase for salary	1.5%				
Hourly Trainee Time (Hrs/week/trainee)	**Year 1 Hours/Week**	**Year 2 Hours/Week**	**Year 3 Hours/Week**	**Year 4 Hours/Week**	**Year 5 Hours/Week**
General Trainees	40	40	40	40	40
Number of employees per position	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
General Trainees	3	3	3	4	4
Staffing Expenses:					
Fringe Benefits	25% of total wages				
Training weeks per year	32	32	32	36	48
Total Training Staffing Cost:					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Training Specialist	$15,000	$15,450	$15,914	$27,318	$28,138
Subtotal Salaried Employees	**$15,000**	**$15,450**	**$15,914**	**$27,318**	**$28,138**
General Trainees	$40,320	$40,925	$41,539	$63,243	$85,588
Subtotal Hourly trainees	**$40,320**	**$40,925**	**$41,539**	**$63,243**	**$85,588**
Total Training Staffing Cost	**$55,320.00**	**$56,374.80**	**$57,452.17**	**$90,560.80**	**$113,726.08**

8.5 Risk assessment

A. Potential risks faced by ReBuild Hub during the operation include:

Industry risks:

- Change in current municipal government's priorities
- Competition response hurts Hub's position (cut prices)
- Not able to break into industry because of incumbents' superior relationships
- Competitors expand and/or copy the Rebuild Hub's business platform
- Insufficient supply of donations (excess demand)
- Insufficient demand for used building materials

Financing risks:

- Not able to obtain sufficient funding
- Unexpected damage to equipment
- Operation and/or training costs in excess of estimates
- Actual annual revenue falls short of estimated annual revenue – Please see Table 13 for the Pro forma Income Statement under the pessimistic scenario where the annual revenue for year 1 is only 30%, instead of the estimated 40%, of the ReStore's 2010 revenue.

Table 13. ReBuild Hub Pro forma income statement at "rent-free" condition – pessimistic scenario – 5 year projection

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues:					
Total revenue	$264,000.00	$290,400.00	$319,440.00	$351,384.00	$386,522.40
Cost of sales	$ -	$ -	$ -	$ -	$ -
Gross margin	$264,000.00	$290,400.00	$319,440.00	$351,384.00	$386,522.40
Expenses:					
Overhead					
Advertising and Promotion	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00
Insurance	$ 10,000.00	$ 10,500.00	$ 11,025.00	$ 11,576.25	$ 12,155.06
Vehicle maintainance and fuel	$ 6,000.00	$ 6,300.00	$ 6,615.00	$ 6,945.75	$ 7,293.04
Salaries - management	$ 70,000.00	$ 72,100.00	$ 74,263.00	$ 76,490.89	$ 78,785.62
Wages-hourly employees	$168,480.00	$171,007.20	$173,572.31	$176,175.89	$178,818.53
Utilities & telephones	$ 7,000.00	$ 7,350.00	$ 7,717.50	$ 8,103.38	$ 8,508.54
Occupancy fee	$ -	$ -	$ -	$ -	$ -
Depreciation (warehouse and office equipment)	$ 4,139.50	$ 3,722.50	$ 3,722.50	$ 3,722.50	$ 3,722.50
Office supplies & expenses	$ 1,500.00	$ 1,530.00	$ 1,560.60	$ 1,591.81	$ 1,623.65
Professional fees	$ 10,000.00	$ 11,000.00	$ 12,100.00	$ 13,310.00	$ 14,641.00
Bank charges & interest	$ 5,280.00	$ 5,808.00	$ 6,388.80	$ 7,027.68	$ 7,730.45
Start up expense (equipment cost)	$ 77,170.00	$ -	$ -	$ -	$ -
Total overhead expenses	$302,399.50	$309,317.70	$316,964.71	$324,944.15	$333,278.39
Loan					
Interest expense	$ 9,093.17	$ 8,512.71	$ 7,899.51	$ 7,251.72	$ 6,567.40
Total loan expenses	$ 9,093.17	$ 8,512.71	$ 7,899.51	$ 7,251.72	$ 6,567.40
Total operating expenditure and interest expense	$311,492.67	$317,830.41	$324,864.22	$332,195.87	$339,845.79
Net Operating Income	-$ 47,492.67	-$ 27,430.41	-$ 5,424.22	$ 19,188.13	$ 46,676.61
Donation to PCRS Training Program					
Training expenditure					
Salaries-training specialist	$ 15,000.00	$ 15,450.00	$ 15,913.50	$ 27,318.18	$ 28,137.72
Wages - hourly trainees	$ 40,320.00	$ 40,924.80	$ 41,538.67	$ 63,242.63	$ 85,588.36
Total training expenses	$ 55,320.00	$ 56,374.80	$ 57,452.17	$ 90,560.80	$113,726.08
Total operating and training expenditure and interest expense	$366,812.67	$374,205.21	$382,316.39	$422,756.67	$453,571.86
Net income	-$102,812.67	-$83,805.21	-$62,876.39	-$71,372.67	-$67,049.46

9: Conclusion

To be included in the collaborative partnership with the City of Vancouver, PCRS must generate a business proposal that will promote the deconstruction and/or used building material industries, while advancing green job training and employment for multi-barriered individuals. After assessing the capabilities of PCRS and needs of key partners, conducting a strategic analysis of the two green industries in Metro Vancouver, and evaluating four strategic options, this thesis study proposed to develop a business plan to develop a plan to establish a multi-centre retail operation named the ReBuild Hub that will include: a) a retail centre to sell salvaged building material; b) a deconstruction centre to offer deconstruction services, and c) a training unit that will train "at risk" youth hand-on skills in the construction and trade industry using the 2 operation units as training sites. Collectively, these three units will be positioned to advance the mission of the partnership and to achieve a triple bottom line profit.

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Appendices

Appendix A.

Names of Demolition or Hybrid Demolition/Deconstruction Businesses Interviewed

Demolition companies

- Ace Demolition, Maple Ridge, BC
- Assertive Excavation and Demolition, Surrey, BC

Demolition companies offering deconstruction services:

- 3R Demolition, Burnaby, BC: The general manager was interviewed briefly as a panel member at local Zero Waste Challenge Conferences at May 17, 2011 (Coquitlam, BC) and at May 31, 2011 (Surrey, BC). Although this company lists deconstruction as a service option, the manager indicated that no residential clients had requested for the deconstruction service.
- Aerostars Services, Abbotsford, BC: Offers both residential or commercial deconstruction
- D. Litchfield Demolition and Used Building Materials, Port Coquitlam, BC: Offers both residential and commercial deconstruction
- Fraser Trucking and Tractor Ltd, Surrey, BC: Offers only commercial deconstruction
- Pacific Labour and Demolition, Surrey, BC: Offers commercial and residential deconstruction

Used building material retails offering deconstruction service:

- Bent nails New and Used Building Supplies, Abbotsford, BC: Offers only partial deconstruction
- Western Reclaimed Timber Corp., Maple Ridge, BC: Offers commercial and residential deconstruction

US Deconstruction Specialist:

- David Bennink - owner of RE-USE Consulting

Appendix B.

McKinsey 7S framework analysis of Incumbent Players in the Local Demolition Industry

	Ace Demolition	D. Litchfield & Co. Ltd
Shared Value	High	High
Strategy	High	High
Structure	High	High
Systems	High	High
Style	High	High
Staff	High	High
Skills	High	High

Appendix C.

Responses from Phone Interviews and On-Line Surveys of Home Owners on Deconstruction and Material Reuse in the Lower Mainland

Sample size = 121 households

Questions and Responses:

1. Have you ever heard of the term deconstruction before?

- "yes" = 52%
- "No" = 48%

2. Would you consider using deconstruction over demolition knowing after knowing its environmental and social benefits?

- **"**Yes" = 94%
- "No" = 6%

3. Given that demolition takes approximately 3 days to complete, how much additional time would you be willing to wait for deconstruction?

- "None" = 4%
- "2x more" = 26%
- "3x more" = 18%
- "Does not matter" = 36%
- "No answer" = 16%

4. What is the additional cost over demolition you are willing to accept?

- "None" = 8%
- "Less than $3000" = 22%
- "$3000 to $5000" = 41%
- "$5001 to $8000" = 7%
- "Greater than $8000" = 8%
- "No answer" = 14%

5. Have you purchased used building materials or products for your home decoration or renovations in the past?

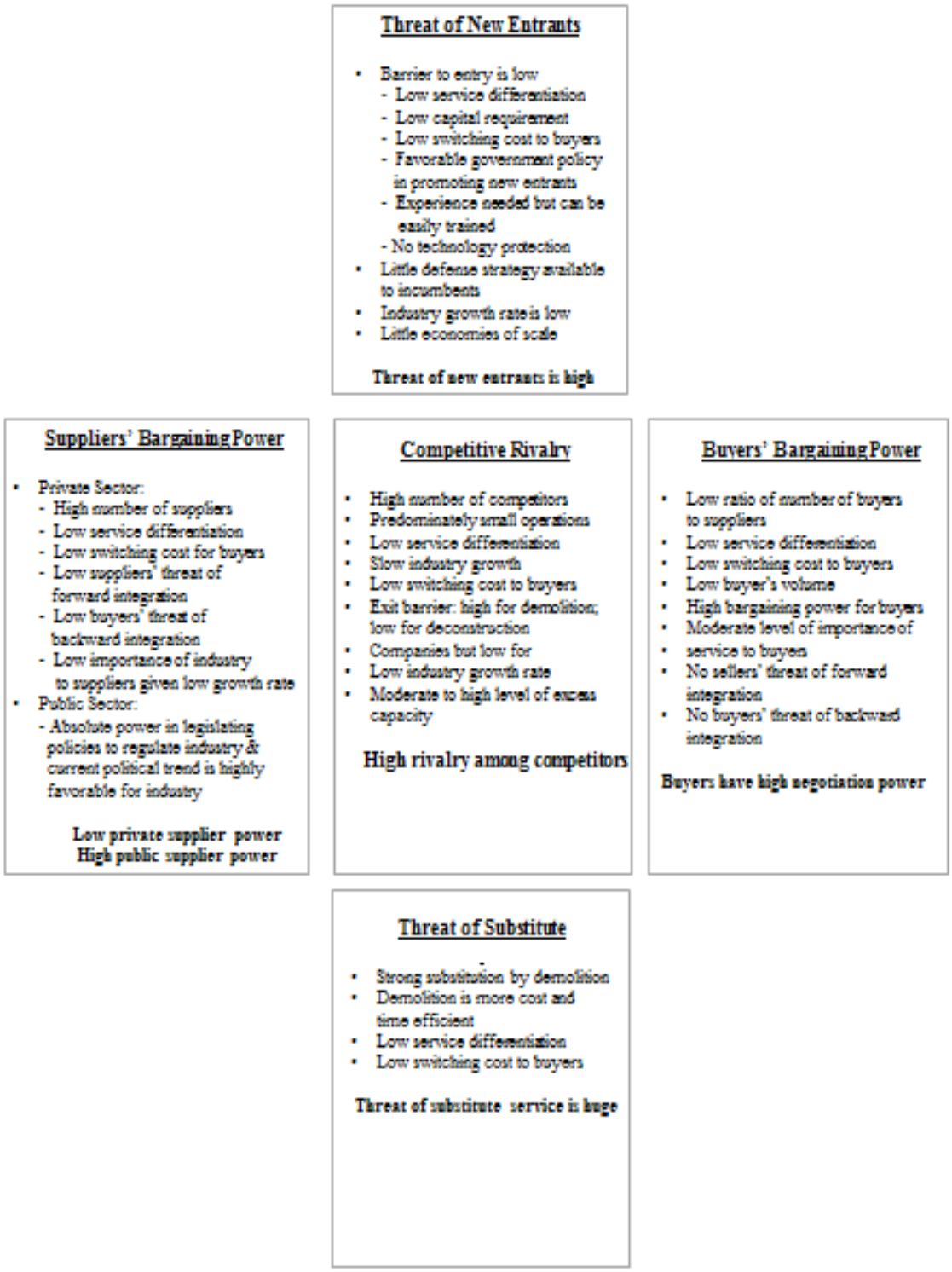
- "Yes" = 62%
- "No" = 38%

6. What would make you more willing to purchase used materials?

- Top three answers were: Low prices, cleanliness of products, easy access to retailer

Appendix D.

Porter's Five Forces Model of Competition in the Deconstruction Industry



Appendix E.

Names of Used Building Material Retailers Interviewed for this Study

Non-profit retailers include:

- Restore; there are three branches in the Lower mainland - Burnaby, South Vancouver, and Abbotsford.

The private retailers include:

- Surrey New and Used Store, Surrey, BC
- Chilliwack New and Used Store, Chilliwack, BC
- Bent Nail New and Pre-owned Building Supplies, Abbotsford, BC

Appendix F.

McKinsey 7S Framework Analysis of Incumbent Players in the Local Used Building Material Retail Industry

	Surrey New & Used	Restore
Shared Value	High	High
Strategy	High	High
Structure	High	High
Systems	High	High
Style	High	High
Staff	High	High
Skills	High	High

Appendix G.

Porter's 5 Forces Model of Competition of Used Building Material Retail Industry