

SMALL DIAMETER ROUNDWOOD  
TO HOLLOWBEAM  
A BUSINESS PLAN FOR THE  
ALEX FRASER RESEARCH FOREST

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Submitted To:  
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## ***Executive Summary***

The following is a business plan for our company BJPS Forest Products Limited which will be producing our product HollowBeam. Currently in the Alex Fraser Research Forest there is a large supply of small diameter Douglas-fir that needs to be removed to provide winter habitat for the mule deer. Our product is made from the Douglas-fir logs that have been thinned from this forest. After ~~the~~ logs have been brought to our facility the processing begins. The logs are cut into 4 ft lengths and turned into octagons. They are then dried, cut into quarters and glued inside out, producing a beautiful longitudinal grain beam with a whole through the middle. ✓

This product has potential to be successful in the market place because it is a differentiated wood product. We will be going after the high-end residential building market as our target market. This includes promoting our product at trade shows and in hardware stores, and sending out flyers to specifiers. The mission statement of our company is "We provide premium wood products to global markets through ecologically sound and sustainable forest management." We will continuously remember this statement as we expand, as it will be the basis for our business.

Our company BJPS will be managed by Ken ~~Day~~<sup>?</sup>. Ken is the manager of the Alex Fraser Research Forest and a Registered Professional Forester. The rest of the management team will be headed up by UBC grads and students Andrew Burke, Brendan Singbiel, Chris Johnston and Steve Page.

Our business also appears to be very profitable on paper. It could potentially make upwards of \$750,000 in the first year ~~alone~~. It would also require approximately \$1.2 million in equity being raised to get the company. Most of the profits generated would be fed back into the company to help it grow and expand. This would include increasing the number of logs harvested, as well as buying new machinery. It is a long range goal to have all outsourced activities moved in house as well.

## **1.0 Introduction**

Over the past century the appearance of British Columbia's interior forests has changed significantly. This is because there has been a drastic change in the number of forest fires due to human settlement. Because of this, stand densities have been increasing and the forest has been changing. It is becoming very difficult for large diameter trees to survive while small diameter trees are found everywhere. This presents a problem for the mule deer that rely on the canopies of the large diameter trees to keep snow off of the forest floor. The mule deer need the forest floor to be bare so that they can forage for food in the winter. In an attempt to counteract the lack of forest fires, thinning of the small diameter Douglas fir is occurring in many interior forests, including the Alex Fraser Research Forest.

With the thinning of these trees came a very important question: what are we going to do with this small diameter wood? We have looked at many possible uses for this wood, and have decided on one idea. By cutting the logs into an octagonal shape, quartering them, and gluing them inside out, we were able to produce very beautiful, yet strong beams. These beams are very unique because they have an interesting grain pattern and a whole through the middle. The goal of this company is to produce high quality wood beams, while providing habitat for the mule deer.

The UBC/Alex Fraser Research Forest (AFRF) is located on the Interior plateau of British Columbia. The closest communities are Williams Lake, 150 Mile House, Likely and Horsefly. The AFRF is composed of two separate timber supply areas; the Gavin Lake block and the Knife Creek block (see Appendix C). The entire forested area of the AFRF is over 9800 ha. The AFRF is composed of a diverse range of ecosystem zones, varying from high-elevation, sub-boreal spruce and fir stands to semi-arid Douglas-fir and lodgepole pine stands. The timber for this project will be drawn from the Interior Douglas-fir (IDF) ecosystems.

## **2.0 Industry Overview**

The wood products industry is very important to Canada. We have had a long standing tradition of producing some of the highest quality lumber and wood products in the world. For the most part, Canada exports and sells dimensional lumber and raw logs. The problem with this is that these are commodity products. It is the nature of a commodity product that over time, the price will be driven down. This is because technology is always advancing, and more efficient ways to produce commodities are always discovered. As well, market pressure always drives down their prices. It is often questioned whether the export of commodity products is a sustainable business practice.

Businesses in Canada have been trying to put more of an emphasis on value added and differentiated wood products. This is because value added products are potentially more sustainable in the long run. In addition, when commodity products are sent to other countries, they are usually further manufactured there. If however, the product was manufactured further in Canada, it would be able to be sold for more money and more income would be generated domestically.

Having a differentiated product is important as well. Any company can produce a Douglas-fir timber; however we are talking about producing a specialized wood product. A product like this isn't available anywhere else. The whole through the middle is completely unique, as well as the grain pattern, and the "green" aspect. It is new products like this that will help the wood products industry in the long run.

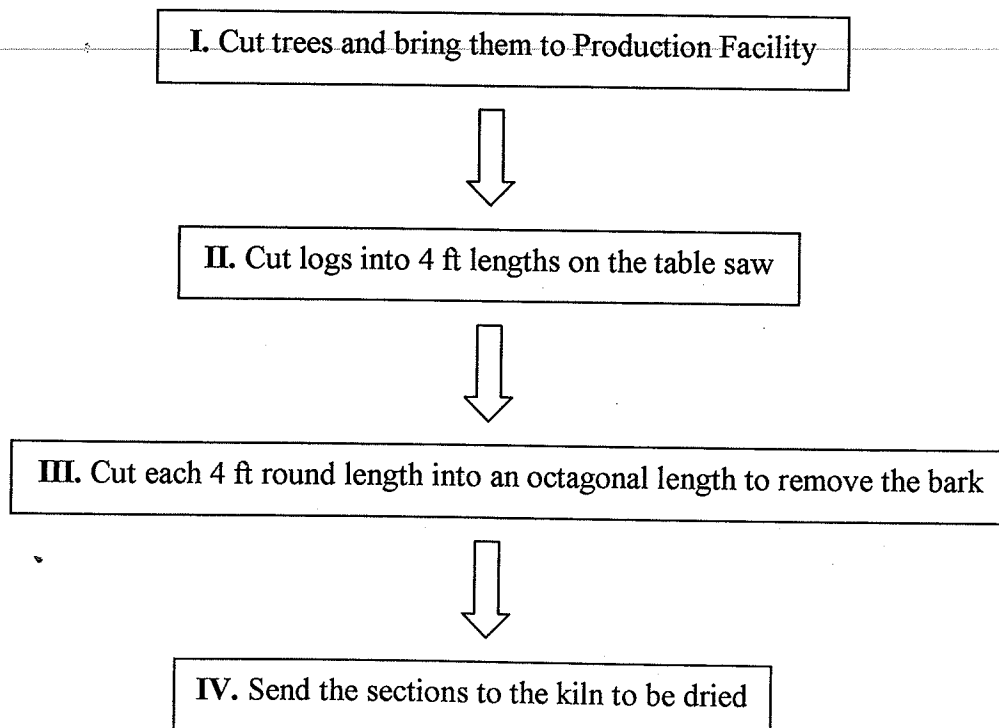
### ***3.0 Product, Service, and Process***

#### ***A. Product Description***

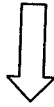
Our product, HollowBeam, will be manufactured using the Douglas-fir from the Alex Fraser Research Forest. It will come in 12 foot lengths, which will be pieced together from smaller segments. It will come in square form, with the dimensions 3 inches by 3 inches. After the HollowBeams are assembled, they will be expertly finished by an outsourced finishing firm. We will then package the beams on pallets and cover them with a vapour barrier, ready for distribution. HollowBeams will be perfect for use in interior applications as they will be of exceptional quality. When compared to regular Douglas-fir beams, their quality will be much more consistent, as well as having a nicer grain pattern. In addition they will be kiln dried to reduce warping.

#### ***B. Production Process***

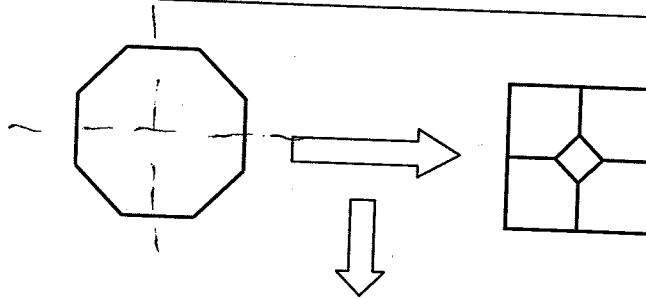
The production process for manufacturing our product HollowBeam can be seen below:



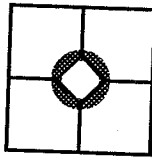
V. Bring the sections back to the table saw and cut them into quarters



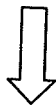
VI. Glue the sections back together with the insides out.



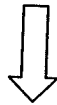
VII. Drill press the ends so the sections can be connected with thick, hollow dowels



VIII. Glue the sections together into beams



IX. Run the sections through the jointer and thickness planer



X. Sand the beams and send them out for finishing



XI. Get the beams back from finishing and package them for distribution.

## 4.0 Marketing Plan

↑ Good  
First and foremost we will be marketing our product as environmentally friendly. Each beam will come with a sticker stating that the wood was removed to provide habitat for the mule deer. We also plan on making informational pamphlets and flyers for trade shows and hardware stores. Producing a "green" product is a great way to differentiate your product and capture market segment that wouldn't normally be interested. As well, many people are willing to pay more money for a product than they normally would if it is environmentally friendly. With the trend in the industry being "green" products, we believe this will be a very appealing aspect of our product.

The next aspect of our product we will be marketing is the hole through the middle. There are many different end users we will be targeting because of this feature. Initially we thought that our beams would be ideal for running wires through. Some possible end uses are railings or ceiling beams. Also, our beams would be ideal for use in the manufacturing of lamps. It wasn't until after we manufactured one of the beams that we realized we didn't just need to focus on end uses with wires. *what?*

With the way the beams are manufactured, the end product shows vertical grain on all four sides. Because of the slow grown nature of this wood, it has a very beautiful tight grain pattern. This makes our product very suitable for any high-end interior application, and provides us with yet another market. As well as being very beautiful, we will stand behind our product 100%. Quality and Reliability will be the main focus of our production. We feel this is necessary in providing our customers with the total product.

A very important part of this business will be making sure that our product is available where there is demand for it. We are planning on distributing our product directly to customers, as well as through a merchant. We plan on HollowBeams being available at hardware stores and hopefully box stores such as Home Depot. There will be a fair amount of co-operation along the supply chain. BJPS will be responsible for bringing the raw material from the forest to the manufacturing facility, and back and forth from the outsourced finishing facility. We will then package the goods ourselves, and outsource



our distribution to Toews Trucking. Also, if it is necessary, we can distribute our goods using the CN Railway.

After looking at various prices for lumber we have decided on a price of \$40 for one of our 12 foot HollowBeams. A similar piece of kiln dried Douglas-fir, could cost as much as \$35. We feel that \$40 is a fair price based on the fact that it is a specialty product which also provides habitat for the mule deer. The beams themselves cost approximately \$10 to manufacture, while allocated fixed costs total another \$10. This means that it costs BJPS roughly \$20 to manufacture each HollowBeam. This also means that we are planning on marking up our product 100%.

As far as promotion goes, we plan on advertising our product in several different ways. We will place advertisement in wood products journals, and as mentioned before, make flyers and pamphlets for hardware stores and trade shows. In addition we will be sending these pamphlets out to architects, and possibly try to get our product showcased in design magazines. Rather than just promoting it as a beam, we will be promoting HollowBeam as aesthetically pleasing, and perfect for use in high end interior applications.

## **5.0 Business Organization**

BJPS Forest Products is a limited company, and as such it will experience the following advantages:

- limited legal liability
- small business tax rate
- it is a separate entity from its owners and investors

BJPS Forest Products will control and manage the business as a separate entity from the Alex Fraser Research Forest. BJPS will retain all financial all profits and assume all losses. The AFRF will allow BJPS to harvest the small diameter Douglas-fir but will not provide any financial support towards the operation.

The management team will be lead by the manager of the AFRF, Ken Day. He has a Masters of Forestry and is a Registered Professional Forester. He has managed the AFRF for several years and has been very active in the Cariboo forest sector during that time. After Ken Day, the students will form the majority of the management. Mangers also have a deep vested interest as part owners in the profitability of BJPS Forest Products.

Andrew Burke will become the company's Sales Manager and Rep. He will keep track of all the sales that are made and the funds that are coming into the company. Brendan Singbiel will become the facility's Kiln Operator. Steve Page will monitor and manage the shipping and receiving aspect of BJPS. He will be the direct link between the BJPS and our outsourced trucking company Toews Trucking. Chris Johnston will become the office manager, who is in charge of bookkeeping and secretarial duties. He will also be in charge of handling our product finishing.

Dr. Rob Kozak has been, and will continue to be, a regular advisor to the management team. He holds a doctorate degree in wood science and his specialty at UBC is sustainable business management. He also has various experiences working with industry and government within the forest sector including value added wood products.

## **6.0 Operating Plan**

### ***A. Location & Requirements***

Our processing facility will be located in Williams Lake. It will be located there in order to reduce transportation costs from the research forest. As well, we believe there are good lines of distribution from Williams Lake via train or truck. Our facility will need to have small to medium sized shop floor in order to house the machinery necessary to process our product. We have estimated the cost of such a structure, including the surrounding land, to cost approximately \$350,000 in Williams Lake. Some of the other requirements for our facility are listed below:

#### **Facility Needs:**

- Storage area for incoming logs
- Storage for kiln dried logs
- Enclosed building with a large open floor space for manufacturing (at least 3500 sq. feet)
- Office area
- Shipping area with truck bay(s)
- Total lot size of approx. 1-2 acres

#### **Equipment:**

- Sliding Table saw
- Radial arm saw
- Kiln
- Gluing Racks
- Wide Belt Sander
- Jointer and Planer
- Fork lift and Factory Trucks
- Drill Press
- Cube Van

## ***B. Labour Force & Personnel***

Listed below is the entire labour force needed for our company along with the salary for each position:

<b>Position</b>	<b>Salary</b>	
▪ General production manager (president)	\$65,000	
▪ Sales manager/rep - treasurer	\$50,000	} low.
▪ Shipping/Receiving manager	\$32,000	
▪ Office manager - secretary/bookkeeper	\$31,000	
▪ Kiln Operator	\$31,000	
▪ Table saw operator	\$24,000	
▪ Jointer/Planer/Sander Operator	\$24,000	
▪ Drill press operator	\$24,000	
▪ Assembly Person	\$24,000	
	<u>\$305,000</u>	

### **General Production Manager**

The General Production Manager's job is to control the output of the shop and to oversee that everything else in the company is running smoothly. They are the person solely responsible for the day to day operations of the plant.

### **Sales Manager/Treasurer**

This person is in charge of sales for the company. It is their job to facilitate the sale of our product to our clients. They also keep track of the funds coming into the company, along with all of our accounts receivable. The Sales Manager will constantly be looking for new markets for our product.

### **Shipping/Receiving Manager**

The Shipping Receiving Manager coordinates all of the shipping of our product to the client. They are in charge of acquiring the raw logs from the research forest according to

the production schedule. They will also be in charge of sending our near completed product to our outsourced finishing partner and getting our sawdust off to the pellet plant.

#### **Office manager - secretary/bookkeeper**

The office manager will handle all of the secretary type duties, they will also be required to perform payroll as well as keep track of the accounting and bookkeeping for the company.

#### **Kiln Operator**

The kiln operator is responsible for running the kiln. They will also be asked to fill in other areas of production while the kiln is not running or doesn't need to be manned.

#### **Table Saw Operator**

Use the table saw to trim off the bark as well as quarter the logs after they have been kiln dried.

#### **Jointer/Planer/Sander Operator**

Use the jointer, planer, and sander to get the product to the final dimensions.

#### **Drill Press Operator**

Use the drill press to drill out holes in the ends of the pieces so that they can be joined together with dowelling.

#### **Assembly Person**

Glue up the product the final product and clamp it in the gluing racks.

### ***C. Raw Materials***

The raw materials needed for the product will be acquired from the Alex Fraser Research Forest located near Williams Lake. The small diameter trees are being harvested at a rate of 20 m<sup>3</sup>/day and can be obtained (including delivery) for approximately \$50/m<sup>3</sup>. We

have estimated that there will be approximately 150 days per year that we can log. In a year we are estimating bringing in around 3000 m<sup>3</sup> of logs at a logging price of about \$150,000. These figures are representative of the small logging operation that is currently in place, and if demand requires, the rate at which the trees are harvested could conceivably be quickened. The trees will be shipped by truck from the forest to the plant.

#### ***D. Production Schedule***

Due to the relatively low-tech nature of our production, we do not expect there to be a large amount of time needed for the plant to become fully operational and running at the expected capacity. The following is the anticipated work schedule.

- 1 shift @ 40 hours/week, 8 hours/day
  
- 40 hours/week x 50 weeks/yr = 2000 hours/yr

#### ***E. Long Range Plans***

The long term goal of the business is to grow into a profitable medium sized company which has increased its production significantly in order to fulfill the increasing demand for its product. This can be achieved by efficient marketing strategies and a high quality product.

## 7.0 Financial Plan

### A. Capital Requirements

Below is a list of all of the necessary capital requirements our company needs for our first year of operations:

<b>Machinery:</b>			<b>Allocation / Beam:</b>
Sliding Table Saw		\$10,000	
Jointer		\$5,000	
Thickness Planer		\$5,000	
Wide Belt Sander		\$8,000	
Kiln		\$220,000	
Radial Arm Saw		\$2,000	
Gluing Racks		\$2,000	
Drill Press		\$4,000	
<b>Total Machinery Cost</b>		<b>\$256,000</b>	
<b>Facility:</b>			
Land and Building		\$350,000	
<b>Total Facility Cost</b>		<b>\$350,000</b>	
<b>Working Capital:</b>			
One year's salaries and wages		\$305,000	
Contingency money		\$100,000	
Receivables		\$100,000	
<b>Inventory:</b>			
Saw Blades ( 10 Blades x \$100/Blade)		\$1,000	\$0.03
Jointer Knives ( 10 Knives x \$20/Knife)		\$200	\$0.01
Planer Knives ( 10 Knives x \$20/Knife)		\$200	\$0.01
Sanding Discs ( 500 Discs x \$1/Disc)		\$500	\$0.01
Glue ( 20 Bottles x \$5/Bottle)		\$100	\$0.00
Stickers (10,000 Stickers x \$.1/Sticker)		\$1,000	\$0.03
Pallets (200 Pallets x \$4/Pallet)		\$800	\$0.02
Packaging (200 Pallets x \$5/Packaging)		\$1,000	\$0.03
Joints (18,000 Joints x \$.50/Joint)		\$9,000	\$0.24
<b>Total Inventory</b>		<b>\$13,800</b>	
<b>Total Working Capital:</b>		<b>\$518,800</b>	

<b>Miscellaneous:</b>			
Forklift and Factory Trucks		\$12,000	\$0.32
Cube Van		\$30,000	\$0.80
Miscellaneous Tools & Supplies		\$5,000	
Office Furniture		\$3,000	
Administration Supplies		\$2,000	
<b>Miscellaneous Total</b>		<b>\$52,000</b>	
<b>Total:</b>		<b>\$1,176,800</b>	

### ***B. Financing Plan***

Due to the nature of this company, we will be applying for government and small business grants and loans to get this project off the ground. We should be able to achieve this because the logs will be coming from a research forest and the whole project was started in order to preserve feeding areas for the mule deer. These loans would have very low interest rates therefore we have not factored them into the business plan. It is our plan to pay off the loans in the early stages of the company, while investing most of the profits back into the company for better machinery and expansion.



### *C. Pro Forma Balance Sheet*

<b>Current Assets:</b>		
Cash		\$505,000
Inventory		13,800
Supplies		5,000
<b>Fixed Assets:</b>		
Machinery		256,000
Forklift and Trucks		42,000
Miscellaneous Tools		5,000
Facility		350,000
<b>Total Assets:</b>		<b>\$1,176,800</b>

<b>Liability and Owner's Equity</b>		
Current Liabilities		\$305,000
Long-term Liabilities		256,000
Owner's Equity		615,800
<b>Total Liability and Owner's Equity:</b>		<b>\$1,176,800</b>

### *D. Projected Income for Year One*

The projected income for the first year of operations can be found on the following page.

<b>Sales Plan:</b>						
Month	January	February	March	April	May	
Units Produced	0	0	3,000	3,300	3,900	
Dollar Sales	\$0	\$0	\$120,000	\$132,000	\$156,000	

<b>Financial Plan:</b>						
Sales	Rates (\$/Unit)	\$0	\$0	\$120,000	\$132,000	\$156,000
<b>Cost Of Goods Sold</b>						
<b>Materials</b>						
Logs	\$4.000	0	12,000	13,200	15,600	16,800
Glue	\$0.003	0	9	10	12	13
Packaging	\$0.027	0	81	89	105	113
Pallets	\$0.021	0	63	69	82	88
Joints	\$0.241	0	723	795	940	1,012
Finishing	\$2.000	0	6,000	6,600	7,800	8,400
<b>Total Material</b>	<b>\$6,292</b>	<b>\$0</b>	<b>\$18,876</b>	<b>\$20,764</b>	<b>\$24,539</b>	<b>\$26,426</b>
<b>Direct Labour</b>	<b>\$2,761</b>	<b>\$0</b>	<b>\$8,283</b>	<b>\$9,111</b>	<b>\$10,768</b>	<b>\$11,596</b>
<b>Fixed Overhead</b>						
Indirect Labour		0	2,666	2,666	2,666	2,666
Benefits		0	3,333	3,333	3,333	3,333
Equipment Depreciation		0	2,050	2,050	2,050	2,050
<b>Variable Overhead</b>						
Kiln Heating	\$0.900	0	2,700	2,970	3,510	3,780
Utilities	\$0.500	0	1,500	1,650	1,950	2,100
Used Inventory	\$0.078	0	234	257	304	328
<b>Total Overhead</b>		<b>\$0</b>	<b>\$10,749</b>	<b>\$11,019</b>	<b>\$11,559</b>	<b>\$11,829</b>
<b>Total Cost Of Goods Sold</b>	<b>\$10,531</b>	<b>\$0</b>	<b>\$37,908</b>	<b>\$40,894</b>	<b>\$46,866</b>	<b>\$49,852</b>
<b>Gross Profit</b>		<b>\$0</b>	<b>-\$37,908</b>	<b>\$79,106</b>	<b>\$85,134</b>	<b>\$106,148</b>
<b>Selling, General, Administrative and Sales</b>						
Salaries		6,750	6,750	6,750	6,750	6,750
Benefits		1,350	1,350	1,350	1,350	1,350
Shipping	\$1.000	0	0	3,000	3,300	3,900
Travel		0	1,000	1,000	1,000	1,000
Office Supplies		167	167	167	167	167
Miscellaneous		500	500	500	500	500
<b>Total S, G, A &amp; S</b>	<b>\$1,000</b>	<b>\$8,767</b>	<b>\$9,767</b>	<b>\$12,767</b>	<b>\$13,067</b>	<b>\$13,667</b>
<b>Earnings Before Taxes (EBIT)</b>	<b>\$11,531</b>	<b>-\$8,767</b>	<b>-\$47,675</b>	<b>\$66,339</b>	<b>\$72,067</b>	<b>\$92,481</b>

June	July	August	September	October	November	December	Totals
4,200	4,300	3,900	3,500	3,000	2,300	2,100	33,500
\$168,000	\$172,000	\$156,000	\$140,000	\$120,000	\$92,000	\$84,000	1,340,000

\$168,000	\$172,000	\$156,000	\$140,000	\$120,000	\$92,000	\$84,000	\$1,340,000
17,200	15,600	14,000	12,000	9,200	8,400	8,400	142,400
13	12	11	9	7	6	6	107
116	105	95	81	62	57	57	961
90	82	74	63	48	44	44	748
1,036	940	844	723	554	506	506	8,580
8,600	7,800	7,000	6,000	4,600	4,200	4,200	71,200
\$27,056	\$24,539	\$22,022	\$18,876	\$14,472	\$13,213	\$13,213	\$223,995
\$11,872	\$10,768	\$9,664	\$8,283	\$6,350	\$5,798	\$5,798	\$98,292
2,666	2,666	2,666	2,666	2,666	2,666	2,666	29,326
3,333	3,333	3,333	3,333	3,333	3,333	3,333	36,663
2,050	2,050	2,050	2,050	2,050	2,050	2,050	22,550
3,870	3,510	3,150	2,700	2,070	1,890	1,890	32,040
2,150	1,950	1,750	1,500	1,150	1,050	1,050	17,800
335	304	273	234	179	164	164	2,777
\$11,919	\$11,559	\$11,199	\$10,749	\$10,119	\$9,939	\$9,939	\$120,579
\$50,847	\$46,866	\$42,885	\$37,908	\$30,941	\$28,950	\$28,950	\$442,866
\$117,153	\$125,134	\$113,116	\$102,092	\$89,059	\$63,050	\$55,050	\$897,134
6,750	6,750	6,750	6,750	6,750	6,750	6,750	81,000
1,350	1,350	1,350	1,350	1,350	1,350	1,350	16,200
4,200	4,300	3,900	3,500	3,000	2,300	2,100	33,500
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
167	167	167	167	167	167	167	167
500	500	500	500	500	500	500	500
\$13,957	\$14,067	\$13,667	\$13,267	\$12,767	\$12,067	\$11,867	\$132,367
\$103,186	\$111,067	\$99,449	\$88,825	\$76,292	\$50,983	\$43,183	\$764,767

## **8.0 Limitations**

At the current time there is a need to remove the small diameter trees from the Alex Fraser research forest. If in the future this was deemed unnecessary, it is possible that the price of the raw material could increase, causing reduction in our profits. The weather will also play a role in the future of our company; a long and snowy winter would limit the amount of raw logs that could be harvested. This would limit the amount of product we would be able to produce and in turn this would limit our profitability. The biggest threat to our business is a downturn in the US economy and the resultant downturn in the housing market. Since we will be marketing mostly to architects and finishing woodworkers, we need new homes and buildings to be built in order to sell the majority of our product. If this happens, we would have to search out new markets which could prove to be very costly.

*Appendix*

*Appendix A:*

**Assumptions:** ✓

I.

<i>Beams made per year:</i>		
Cross Sectional Area	0.015	m <sup>2</sup>
Length = One cubic meter	64.99	m
Cubic meters per logging day	20	m <sup>3</sup>
Number of Logging days	150	days
Length of Log per year	194982	m
70% Recovery	70%	
Length of 3x3 produced	136488	m
Converted to feet	447680	ft
<b>Number of 12 foot beams</b>	<b>37307</b>	<b>beams</b>

II.

<i>Raw Material Price:</i>	
Cost of 1m <sup>3</sup>	\$50.00
Length per cubic meter	64.99
Converted to feet	213.17
70% Recovery	149.22
Number of beams	12.43
<b>\$ / Beam</b>	<b>\$4.00</b>

III.

All variable material costs we determined by dividing the expected cost by the number of beams produced per year. This gives a value that has the units \$ per beam made. Finishing was estimated at \$2 per beam.

IV.

<i>Kiln Heating Rate</i>		
Kiln Rate	\$100 / 1000	b.f.
Volume of one beam	0.021254	m <sup>3</sup>
1000 Board Feet =	2.36	m <sup>3</sup>
Beams per 1000 B.F.	111.04	beams
<b>Cost per beam</b>	<b>\$0.90</b>	<b>/ beam</b>

V.

**Utilities was estimated based off of Kiln Rate**

<i>Used Inventory</i>	Amount Used	Per Beam
Saw Blades	\$1,000	\$0.027
Jointer Knives	\$200	\$0.005
Planer Knives	\$200	\$0.005
Sandpaper	\$500	\$0.013
Stickers	\$1,000	\$0.027
<b>Total</b>	<b>\$2,900</b>	<b>\$0.078</b>

VII. *Benefits are based at 20% of salaries*

VIII. *Shipping*

Assumed approximately 100 beams per pallet  
 Assumed approximately \$100 to ship each pallet  
 Amounts to \$1/Beam

IX. *Travel*

This is the cost of traveling to trade shows and other facilities  
 Assumed 5 days per month at \$200 per day

<i>Direct Labour Cost</i>	
Kiln Operator	\$31,000
Table saw operator	\$24,000
Jointer/Planer/Sander Operator	\$24,000
Assembly Person	\$24,000
Total	\$103,000
<b>Rate per piece</b>	<b>\$2.76</b>

<i>COGS Benefits - 20%</i>	
Kiln Operator	\$6,200
Table saw operator	\$4,800
Jointer/Planer/Sander Operator	\$4,800
Assembly Person	\$4,800
Shipping/Receiving manager	\$6,400
General production manager (president)	\$13,000
Total	\$40,000
<b>Per Month</b>	<b>\$3,333.33</b>

XII. **S,A,G,&S Labour**

Office manager - secretary/bookkeeper	\$31,000
Sales manager/rep - treasurer	\$50,000
Total	\$81,000
<b>Per Month</b>	<b>\$6,750</b>

XIII. **S,A,G,&S Benefits - 20%**

Office manager - secretary/bookkeeper	\$6,200.0
Sales manager/rep - treasurer	\$10,000.0
Total	\$16,200.0
<b>Per Month</b>	<b>\$1,350.0</b>

XIV. **Office Supplies:**  
Assuming \$2000 per year or \$167 per month.

XV. **Selling Price:**  
We are planning on selling each beam for \$40.  
This seems reasonable because a similar beam of green Douglas Fir without the hole is approximately \$30.

XVI. **Equipment Depreciation:**  
We are assuming a salvage value of \$10,000 after 10 years:

Total Machinery cost - Salvage =	\$246,000.00
Depreciation = 10% per year	\$24,600.00
<b>Per month</b>	<b>\$2,050.00</b>

XVII. **Used Inventory:**

Saw Blades ( 10 Blades x \$100/Blade)	\$0.027
Jointer Knives ( 10 Knives x \$20/Knife)	\$0.005
Planer Knives ( 10 Knives x \$20/Knife)	\$0.005
Sanding Discs ( 500 Discs x \$1/Disc)	\$0.013
Stickers (10,000 Stickers x \$.1/Sticker)	\$0.027
<b>Total per unit</b>	<b>\$0.078</b>

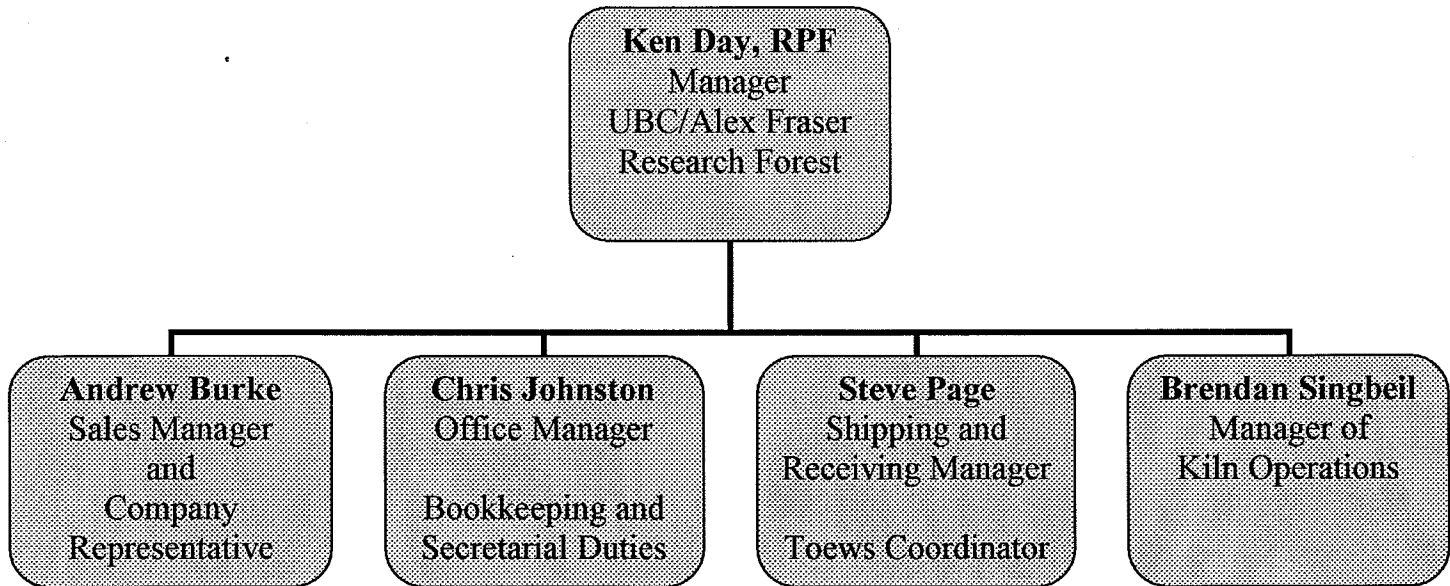
XVIII. **Indirect Labour:**

Shipping/Receiving manager	\$32,000
<b>Total per month</b>	<b>\$2,666.67</b>



*Appendix B:*

**Management breakdown:**



**Andrew Burke**

Andrew is currently enrolled in his 3<sup>rd</sup> year at the University of British Columbia. He has almost finished his degree in Wood Products Processing from the Faculty of Forestry. In addition to his BScW, Andrew is also getting a Minor in Commerce. He intends to use the skills from his marketing and accounting classes to move the company forward and help it expand in a low risk way. He is also very people oriented, and is excited about the chance to travel to tradeshows and showcase HollowBeam.

**Chris Johnston**

Chris holds multiple post-secondary diplomas and has been involved in the British Columbia forestry industry for ten years. He graduated from Northwest Community College, Terrace, as an Integrated Resource Management Technician in 1998. His forestry experience is limited to the North Coast of BC, but includes a diverse range of positions. Chris' involvement in forestry has been in the "front-end" of the industry;

building roads and bridges, booming and towing timber, heli-logging, salvage logging, running a bush-mill and as part of Forest License management team. He also spent time sub-contracting to the BC Ministry of Forests as crew aboard the MV Coast Ranger, the last MoF built patrol boat in service today. Chris graduated from the UBC Faculty of Forestry, Forest Resource Management (BSF) in 2005.

### **Steve Page**

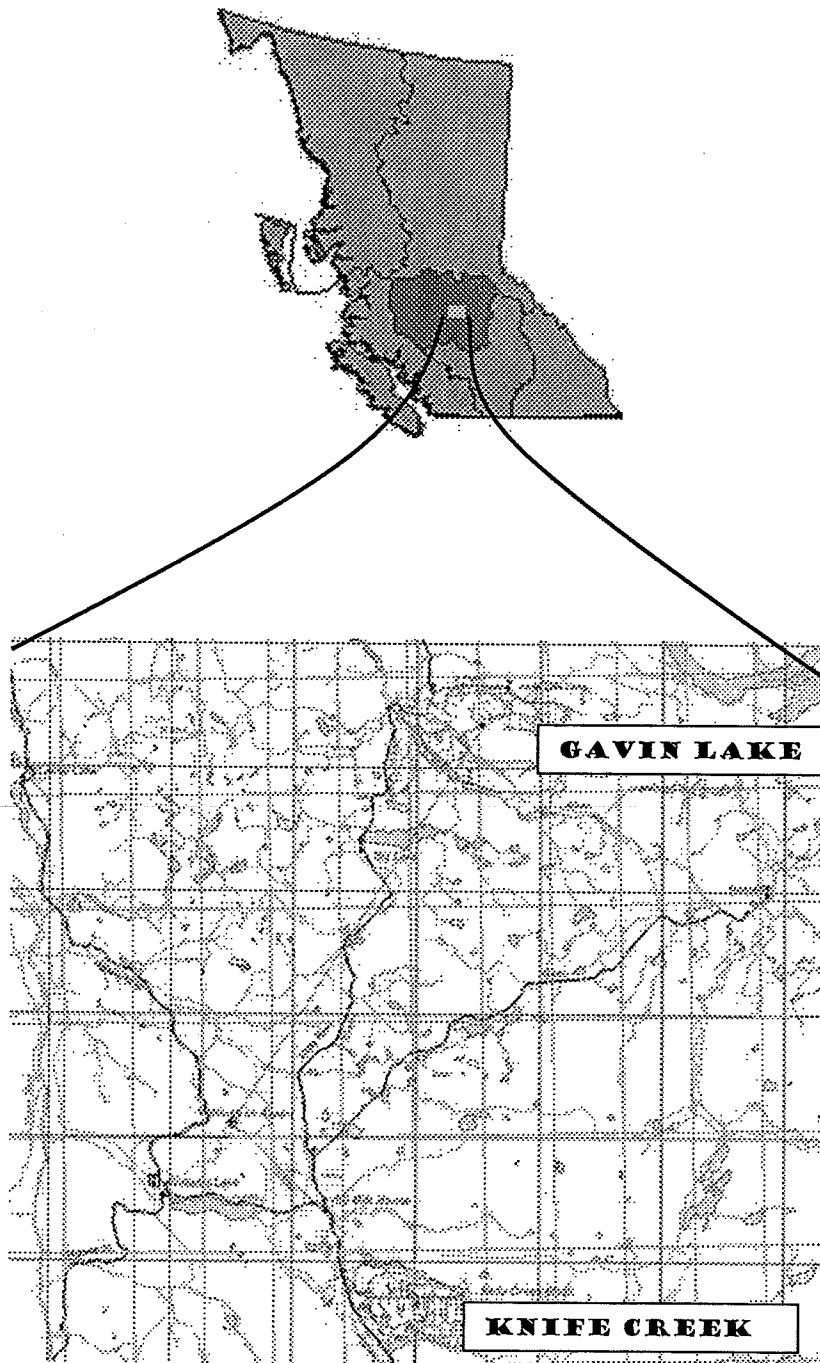
Steve has built on his British Columbia Institute of Technology Diploma in forestry with several years of forest management experience in various locations within B.C. and Alaska. This included four years in the Cariboo region. The majority of his focus has been in the planning and supervision of logging and road building activities. He worked as a self employed consultant and as an employee of large consulting firms and major forest tenure holders. This experience benefited him as he continued his education by completing a degree from UBC in Forest Operations to gain the theory in forest operations and business management. He is qualified as a forester in training and an engineer in training.

### **Brendan Singbeil**

Brendan has been working with wood his whole life. He is currently finishing a degree in wood products processing from the University of British Columbia where he works in the simulation lab. Last summer he took the UBC Centre for Advanced Wood Processing Kiln Training program which qualifies him to run most small kilns. Brendan currently owns his own skim board company Navigate and is currently trying to expand it throughout the lower mainland.

*Appendix C:*

**Location of the Alex Fraser Research Forest:**



## *Appendix D:*

### **Waste Management:**

It is important to note what is being done with our waste from the facility. All of the trim ends and sawdust will be collected and sent to the pelletizing facility in Williams Lake. It will be mixed in with pine pellets to increase their burning efficiency. A Douglas-fir pellet will produce more BTU's and less smoke than a pine pellet; therefore, there will be a demand for these pellets. We have looked at the associated costs and are planning on this being a breakeven operation. The cost of the pellets sold should just cover the cost of sending the pellets to the pelletizer. We have considered all of our possible options for the waste management, and have decided this is the best alternative.

***Sources:***

1. A Planning Guide For Small and Medium Wood Products Companies: The Keys To Success. Bratkovich, Steve and Jeff Howe.  
<[http://courses.forestry.ubc.ca/wood465/Howe%20&%20Bratkovich\\_Planning%20Guide.pdf](http://courses.forestry.ubc.ca/wood465/Howe%20&%20Bratkovich_Planning%20Guide.pdf)>
2. Wood 465 Lecture Notes. Kozak, Rob.  
<<http://courses.forestry.ubc.ca/wood465/>>
3. Ace Hardware: Lumber Price Estimation  
<<http://www.acehardware.net/estimate/>>
4. British Columbia Ministry of Sustainable Resource Management. 1995. Cariboo-Chilcotin Land Use Plan. Government of British Columbia. Appendix 1.

