

# **Cobble Hill Community Hall Geothermal Heating Project - October 2016**

November 24, 2016

## **Introduction:**

The Shawnigan Cobble Hill Farmers Institute and Agricultural Society (the Farmers Institute) owns, maintains and operates the Cobble Hill Hall, the Youth Hall, the Stu Armour Building and the fairgrounds, which are located in the heart of the Cobble Hill Village.

These holdings give the Cobble Hill community a great place to gather and enjoy expansive spaces in the core area. When these properties are combined with Cobble Hill Mountain and the Cobble Hill Common they present a unique entity for Area 'C'.

Over the course of the past five years, the Directors of the Farmers Institute have been focused on upgrading the hall in order to make its operation more efficient while at the same time keeping ever increasing costs manageable. Although more work needs to be done, the largest project involved replacing the existing aging oil furnaces with geothermal heating.

## **1) Project Details:**

In order to determine the best system to replace the decades old oil fired furnaces, the Farmers Institute Board of Directors examined and viewed several different heating options. These included upgrading to gas fired furnaces, installing air to air heat exchange units and installing geothermal loops in the horse field to heat fluid to a constant temperature before entering heat exchange units located in the basement.

Once the research was done, the Board of Directors determined the best system for the hall would be the geothermal loops. Consequently, three companies were invited to provide quotes. Only two responded with bids: Mercury Refrigeration and Lockhart Industries. Negotiations then proceeded to see if an in-kind contribution to this community project would be provided.

Lockhart Industries is a Cobble Hill based company and it offered to do the work for cost. This contribution saved the Farmers Institute approximately \$30,000.00. In addition, Lockhart Industries engineered the project and oversaw the sheet metal work along with the field trenching.

Once Lockhart Industries was established as the successful bidder, the Farmers Institute entered into a contract with the company and the work proceeded in the stages outlined below.

- a) BROD Demolition was contracted in late September to remove the ducting containing asbestos in the basement as well as the vents containing asbestos that protruded into the main hall. Asbestos abatement costs totalled \$5,040.00. As part of their in-kind contribution to the project, the company also removed the two oil furnaces, the oil tank and all old items stored in the basement thus making a safe work area for the other trades.
- b) Central Landscaping used their two large excavators to dig two 25 foot wide by 300 foot long trenches in the horse field. Again, as a local company they provided an in-kind contribution to the Farmers Institute. Their invoice was \$8,925.00 which included the road crossing.

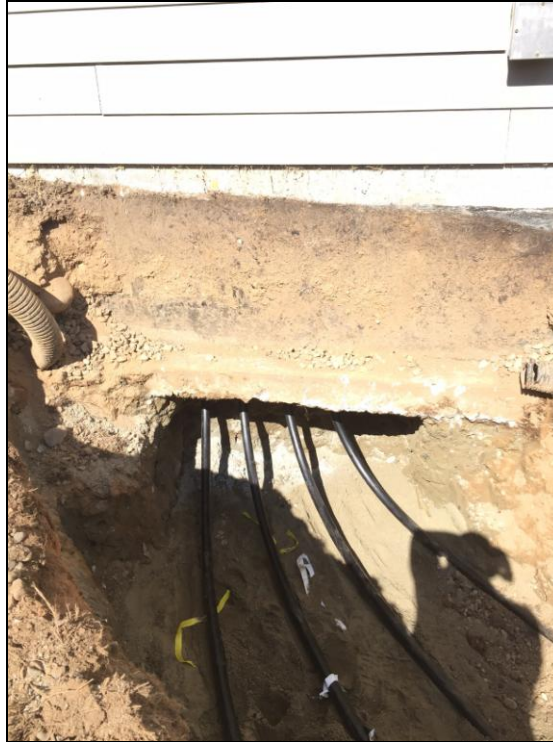




Once the trenching was complete, a small army of volunteers laid the geothermal piping in the trenches and the horse field was then backfilled.



To guard against vandalism, the geothermal lines were dug under the concrete foundation. Holes were then drilled in the basement floor to accommodate the installation of the pipes.







- c) Next came the sheet metal work, which was also included in the Lockhart bid. Basically, this company installed all new duct work and venting in the hall as well as connected the duct work to the heat exchange units.





- d) With everything in place the Farmers Institute's electrician, Calverley Electric, installed the electrical equipment needed to run the system. His invoices and the invoices for HB Horsman for parts totalled \$7,096.72.

The geothermal heating system has been operating for approximately six weeks and all users notice a difference in the feel of the heat. Many who attend the South Cowichan Seniors lunch in the hall say the hall is much more comfortable.

## **2) Projected Costs:**

In the project outline submitted to the CVRD dated August 31, 2016, the Farmers Institute projected a budget of \$108,369.00 for the Geothermal project. The Farmers Institute was able to reduce costs by providing hundreds of hours of volunteer labour and negotiating price reductions with local companies. Consequently, the total project cost was \$85,038.69.

## **3) Project Outcomes:**

Hall users immediately reported the air inside the hall was fresher, lighter and did not smell so heavy. By eliminating the two oil fired furnaces used to heat the hall it is estimated the new system will save a thousand or more dollar in oil and electrical costs and eliminate about 25-30 tons of CO<sub>2</sub> per year. In addition, with the old oil tank

removed from the basement the overall safety of this community gathering place has increased significantly. The geothermal system is estimated to last two to three times longer than a fossil fuel heating system as well as giving the Farmers Institute the opportunity to cool the building during the summer months.

As the completion of the project is relatively new, the degree to which it has contributed to the objectives of cleaner air, cleaner water and reduced GHG emissions are only anecdotal at the writing of this report. However, the Farmers Institute is committed to submitting its electrical bills annually to the CVRD for a period of ten years, or longer, so any energy cost savings can be accurately calculated and reported.

If you have any further questions please contact the undersigned at 250.701.1756 or email to [ggiles12@shaw.ca](mailto:ggiles12@shaw.ca)

As always our gratitude goes to the CVRD for enabling this terrific project to proceed in this near century old building.



Gerry Giles, Secretary  
Shawnigan Cobble Hill Farmers Institute  
and Agricultural Society