Kitasoo Xai'xais First Nation

Demand Side Management and Energy Efficient Housing Policy Flyer

Background

In the spring of 2015, the Kitasoo Xai'xais First Nation retained Pinna Sustainability to design and complete a scope of work to reduce the community's electricity demand. This project involved community engagement on energy literacy, building energy audits, local contractor training, building upgrades, and an exploration of how energy efficiency could be added into the way homes are built and maintained in the community. An important outcome of this work was the **Energy Efficiency Housing Policy** that has since been adopted by Council. Below is a brief description of each of these activities, and a copy of the policy that was drafted during this project.

Improving Community Energy Literacy

A playful energy themed skit was planned during an annual school camping trip to Marvin Island (a traditional village site of the Kitasoo / Xai'xais people). This participatory exercise introduced how electricity is made from water, illustrated how community members use electricity in their homes, and demonstrated why energy conservation will benefit the community over time. The students responded with interest and excitement, and asked to be involved in future energy conservation activities.

Pinna Sustainability

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Completing Building Energy Audits

Building assessments were performed on homes and community buildings with the purpose of:

- Assessing typical construction and condition of homes,
- Identifying opportunities to reduce energy consumption,
- Training community members to perform basic upgrades, and
- Undertaking simple upgrades of a number of houses.

The audits identified possible upgrades that can be done to existing buildings to improve energy performance and reduce energy costs.

Training Local Contractors

A key objective of this project was to ensure local community members benefit from economic opportunities whenever possible. As part of the building energy audits, local contractors were trained on how to perform energy upgrades to homes. Topics included:

- An introduction to energy efficiency,
- Safety considerations,
- How to read an analog electrical meter,
- Materials used in energy efficiency upgrades,
- Common places to look for air leaks and penetrations,
- How to seal air leaks and penetrations,
- Different types of lighting, and
- Purpose and installation of low-flow water fixtures.

The Fraser Basin Council kindly donated resources to hire local contractors to attend assessments and receive training to assist with the upgrades.

Building Upgrades

Based on the findings of the building audits, and as part of the training exercise, upgrades were performed on six houses, the band office suite, and two teacherages. These were simple upgrades intended to identify and seal major sources of air leakage, insulate hot water piping, install low-flow faucets and showerheads, and install more efficient lights. It is predicted that these upgrades will save close to 10% of energy spent on heating in each building.

Tides Canada

vancouver foundation

This work was developed in partnership with the Tides Canada Initiatives Society and the Vancouver Foundation.

Energy Efficiency Housing Policy

The Energy Efficient Housing Policy was created to ensure adequate energy efficiency related maintenance is performed on existing homes, and new homebuilding projects are built to the highest standards possible. In order to ensure a new policy would effectively conserve energy in Klemtu homes, this task involved:

- A review of opportunities to incorporate energy efficient practices in home maintenance procedures,
- A needs assessment to determine how to effectively implement new energy savings recommendations, and
- An exploration of governance procedures to properly embed this work into the organizational culture of Klemtu.

Below is a copy this policy.

Kitasoo Xai'xais Energy Efficient Housing Policy

1 Goals for Energy Efficiency in Houses

1.1 Reduce electricity use to conserve the community hydro-electricity supply.

1.2 Reduce use of fossil fuels to reduce impacts on the environment.

1.3 Reduce cost of energy for households.

2 Energy Efficiency in All Homes

2.1 Plug-in electric heaters are not permitted.

2.2 The Band will conduct a study to determine the most suitable fuel source(s) for new air and water heating appliances, based on modeling the future supply of electricity.

2.3 New and existing houses will have an electricity meter installed, and the Band will monitor meters on an ongoing basis.

2.4 Where possible, landscaping should be installed that permits direct sunlight penetration in the winter, but protects from direct sunlight in the afternoon hours during the summer.

3 Energy Efficiency in New Construction

3.1 Passive heating design is strongly encouraged for all new houses. Passive features should include: orienting homes to take maximum advantage of passive solar energy, minimizing glazing on east, north and west facing walls, and maximizing potential for natural ventilation.

3.2 New houses should have an airtightness test (CAN/CGSB-149.10 "Determination of the Airtightness of Building Envelopes by the Fan Depressurization Method") performed upon completion of the building envelope, prior to installation of drywall, while the air barrier is still accessible for service.

3.3 New houses will achieve energy performance equal to or greater than required by the BC Building Code (latest edition) or the National Energy Code of Canada for Buildings (latest edition).

3.4 Final payment of contracts will be contingent on documentation confirming the new house passes an airtightness test conducted by a certified energy auditor.

3.5 New houses will install energy efficient products and devices according to the energy-efficient building checklist (Appendix A). This includes doors, windows, lighting, appliances, fixtures, user-friendly heating and lighting control systems (e.g. programmable thermostats and motion-sensor lighting), etc.

3.6 All new home occupants will be provided pre-occupancy training on how to operate energy systems efficiently, including how to use programmable thermostats.

4 Energy Efficiency in All Existing Houses

4.1 The Band will upgrade existing houses according to the energy-efficient building checklist (Appendix A), as needed, and when funds become available.

4.2 The Band will create a plan to conduct building envelope air sealing on all existing homes.

4.3 The Band will maintain an inventory of all major appliances, including age, fuel type, and efficiency.

4.4 Renovation contracts will incorporate all applicable elements from the energy-efficient building checklist (Appendix A).