another ***GeoExchange*** *Success Story*

GeoExchange

Ocean Heats & Cools

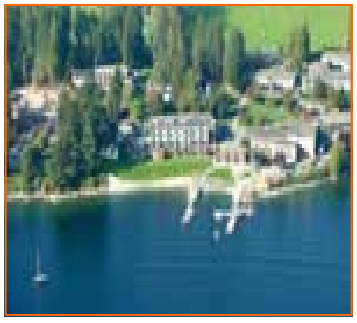
Brentwood College School Theatre

Client

Located on Vancouver Island's eastern shore; an independent university preparatory boarding school for boys and girls in grades 8 to 12. There are 340 fully residential students and 85 day students.

The Situation:

The 2627 square meter building includes a 431 seat theatre, make-up and dressing rooms, ample wing space for set construction, minor repairs and storage, and costume storage, orchestra pit, music suite, dance studio, Green Room, lounge/ catering facilities and a music and multimedia room. The T. Gil Bunch Performing Arts Centre has been a fantastic facility to demonstrate that Brentwood College School is dedicated to a Green Energy philosophy now…and into the future.



Challenge

Brentwood required the state of the art facility to employ economical heat & cooling for the future. The school's international clientele necessitates leadership in Green Energy.

The Solution:

Research = GeoExchange; a BC Hydro Study Grant confirmed that GeoExchange was a viable solution. An estimated 35 % savings were available. The 70 ton GeoExchange loop would be weighted down then submerged into 6 meters of cold sea water. The loop combines with twelve Water Furnace heat pumps to effortlessly heat & cool the theatre.

Key

Planning & forward thinking. Grants from three sources. Brentwood used the ocean as an economical loop site.

The Result:

The planning department and board of directors were rewarded with a winning GeoExchange project . Combined with three grants, the Brentwood system is proof that exploring opportunities in GeoExchange pays off.

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GeoExchange

Eliminate sunk energy costs with an ocean loop

How the Brentwood Faculty & BC Hydro worked together

Brentwood's organization was approached by Lockhart Industries of Duncan, B.C. to explore alternatives with GeoExchange. BC Hydro contributed $6000 for site investigation; the study proved energy savings were possible.

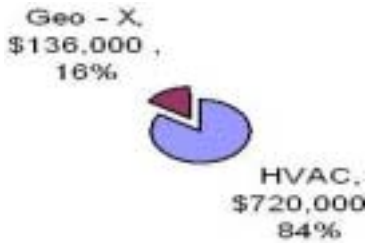
Why they choose Geo-X

Brentwood now had the fiscal information to justify the success of the theatre's GeoExchange system. Stakeholders went forward with planning & design over the following year. Next, the ocean loop would be placed 70 meters offshore in 6 meters of water at low tide.
Permission was granted from Oceans & Fisheries Canada to place the loop on the sea floor. Portions of the 25mm HDPE loop were fabricated off site, coupled, floated into place then sunk .

Ocean loop tie-in at mechanical room

Cost vs. Payback

The capital costs are projected to be paid back by energy savings in six years. Further reducing construction costs were grants totaling $106,000. Total mechanical costs reached $856,000 plus engineering.



Energy Usage

Operational costs are among the lowest in Canada when compared to other similar institutions. The theatre is used 204 days per year averaging ten hours per day plus 35 concerts. The theatre saves 130,000 kW.h/year as estimated plus maintenance fees. Staff would not make any changes to the GeoExchange installation *"due to the high level of stakeholder satisfaction".*

Never used back-up boiler

Quick Theatre Facts

- Built in 2002
- 70 ton ocean loop
- $136,000 GeoExchange cost
- 35 % savings
- Projected 6.3 year payback
- \+ Small mechanical room
- \+ Cost effective air conditioning
- \+ Reduced greenhouse gases

Grant Information

Geo -X	$136,000
Grants Total	$106,000
Actual Cost	$ 30,000
Annual Savings	$ 4,800

6.3 years x $4800 = **paid**

Contact:
Site: Brentwood College School
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