

# SPOTLIGHT

WaterFurnace International, Inc.

Case Study 39

## Canadian home improvement host uses Earth's energy

### Key Features

**Square Footage:** 3,200

**Type of System:** Closed Vertical Loop

**Number of Units:** 1

**Total Capacity (HVAC Tons):** 4



### The voice of home improvement

In his 35 years of involvement in the home improvement industry, Shell Busey and his wife Frankie have had a lot of homes — 12 to be exact. So when the time came for them to build their last home, they knew they wanted it to be right in every respect.

Shell is well known throughout Canada and the province of British Columbia in particular as the voice of home improvement. His “*Home Discovery*” and “*Home Ideas*” radio shows, and “*Home Check*” national TV show are relied upon by many homeowners throughout the country who turn to Shell for

advice regarding renovation and home repair. He is the author of two volumes of home improvement tips as well. In British Columbia, Shell has logged countless miles as BC Hydro’s Power Smart Consultant, doing seminars for the utility and providing information to homeowners at home shows.

### A quiet neighbor

The site for the Busey home is in a quiet Vancouver, BC, suburb on a challenging lot that corkscrews some 13 feet front to back, so they decided architect Sylvain Boulanger of Guilford would help them fit their ideas into the site.

Nestled into towering conifers, the house features 3,200 square feet on three floors with the garage underneath, with a graceful water feature along side. The home meshes nicely with the next door neighbors’ property, which happens to be owned by the Busey’s best friends.

A major concern was the HVAC system (Air Management System) for the home. Shell explains, “I’m a 100% bug on forced air heat. I want to clean it, move it, heat it and cool it.” However, he didn’t want the intrusive noise and architectural impact of an air

source heat pump, and he wanted to have a minimal design impact on the house as a whole.

When he talked with WaterFurnace dealer Doug Rempel, owner of SOLACE Energy Centre in Vancouver, Shell quickly realized that a geothermal heat pump was the answer he and Frankie had been looking for. It would give them the comfort they sought, be highly economical to run, have safe operation, and would be a good neighbor in terms of absence of noise and visibility. They'd get their forced air heating and cooling, and have domestic hot water assist as well.

Geothermal technology incorporates an indoor unit with a system of pipes installed in the ground to utilize the relatively constant temperature of the earth to offer heating and cooling.

"The primary focus of SOLACE is air management," says Doug, "and geothermal is by far the most appropriate technology in terms of

***"The primary focus of SOLACE is air management, and geothermal is by far the most appropriate technology in terms of the environment. Our goal is to be a steward of the Earth's resources, and geothermal ties in nicely to the company's philosophy."***

— Doug Rempel, Owner,  
SOLACE Energy Centre

the environment. Our goal is to be a steward of the Earth's resources, and geothermal ties in nicely to the company's philosophy." With 21 years of HVAC experience, SOLACE installs mainly residential systems in the greater Vancouver area as well as in rural British Columbia.

### **Just pennies a day**

SOLACE did the energy analysis of the home, and the recommended system turned out to be a WaterFurnace Premier®2 ATV045 4-ton unit with a two-speed compressor and desuperheater hot water assist. It is coupled to a WaterFurnace IntelliZone system which provides four independently controlled zones: the upper office and parlor, the guest and craft rooms, the master bedroom, and the great room and kitchen. Shell installed a 4" pleated media filter to scrub the air, and the Premier's electronically controlled blower is so inexpensive to operate (literally just pennies per day) that the fan is set to constantly run. Because the continuous fan benefits air management, it also facilitates the integration of fresh air from the Heat Recovery Ventilator (HRV).

The site was too constrained for a horizontal loop, so SOLACE provided four vertical bores in the front yard, each 150' deep and containing a loop of 3/4" high density polyethylene geothermal pipe. Each bore was then back-filled with bentonite clay grout.

### **The best room in the house**

Since the home is being used by the local utility as a teaching tool, it is fully energy efficient, quali-

***"Being involved in the industry, I'm looking to get the ultimate in design and efficiency... I wanted new technology, and I definitely wanted to avoid fossil fuels if possible. This seemed right for us."***

— Shell Busey, Homeowner

fies under BC Hydro's Power Smart program, and features many innovative products. The Buseys even took the time to paint the supply ducts red and the return ducts blue in the utility room.

In the end, why did the Buseys choose WaterFurnace for their home? "Being involved in the industry, I'm looking to get the ultimate in design and efficiency... I wanted new technology, and I definitely wanted to avoid fossil fuels if possible," Shell points out. "This seemed right for us."

Shell smiles. When they have their house warming party and he's asked by his guests to show them his favorite room in the house, he says it won't be surprising if he leads them downstairs to his WaterFurnace system.

