

Jennings Heating & Cooling

Began as a coal delivery company in 1931

Currently we have over 25,000 customers

Our services include:

Heating & Cooling Systems

Geothermal Heating & Cooling

Solar Thermal Installations

Residential and Commercial Energy Audits

Commercial Design Build Projects

Residential and Commercial Electrical Upgrades

Facilities Maintenance

Fireplaces and Awnings

Upgrades for windows and insulation.

***Your Source for Improving Efficiency
at Home and Work.***

Mechanical Design Build Capabilities with Comfort and Energy Savings at Center Stage



Hula Hoop Factory becomes a Church.

Saving on Heating and Cooling Costs
by installing Geothermal System



Significant and Enduring Solutions

Step 1

Decrease Consumption

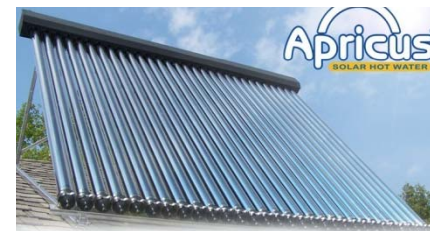
**Energy Survey to determine
Energy Saving Opportunities**



Step 2

Increase use of renewable energy

Sustainable Alternative Energy



Simultaneously Possible and Necessary!

36% of All Energy Consumed in the United States is used in our buildings



Nega-Watts, Using Less



“SOLAR ENERGY”

- Solar Energy can be broken down into two different categories: **Solar Thermal & Photovoltaic (PV)**
- Solar Thermal uses the Sun’s energy to heat water for domestic hot water & space heating.
- Photovoltaic solar power converts the Sun’s energy into electricity

Solar Thermal vs. Photovoltaic (PV)

- Solar Thermal can capture up to **80%** of the Sun's energy, while PV can capture up to about **15%**.
- PV is generally around **5 times** more expensive than Solar Thermal
- In order to equal the output of a 36 sq. ft. Solar Thermal array, a PV array would have to be about 210 sq. ft.

Solar Thermal Energy Systems Represent One of the Most Cost Effective Renewable Energy Investments



Storage for Solar Thermal

Tank on the left uses an externally mounted flat plate heat exchanger. Tank on the right utilizes an internal copper coil heat exchanger.



Our first Solar Thermal Install



Homeowner called and asked for HELP!

Originally used PEX which would melt

Note scaffolding on side and back of house

This installation was completed 2 years ago

Our installer call in disbelief as collector temperature reached 360 degrees!

Solar Thermal Evacuated Tube Installation
Completed 5-19-08, Portage County



LEED Platinum Home in Oberlin

Utilizes 3 types of Solar

Passive Solar-

This past winter on a sunny day outside temperature was 0 degree
At 8:00 P.M the temperature inside was 70 degrees. With no heat source that night the inside temperature dropped to 61 degrees-a loss of only 9 degrees in a 12 hour period.

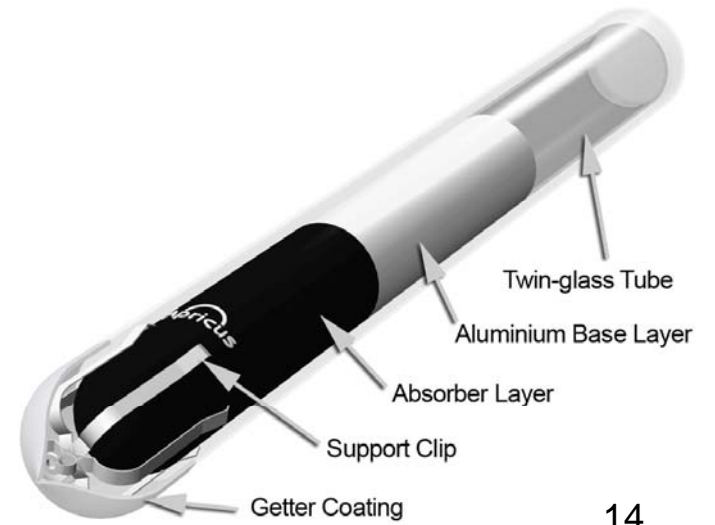
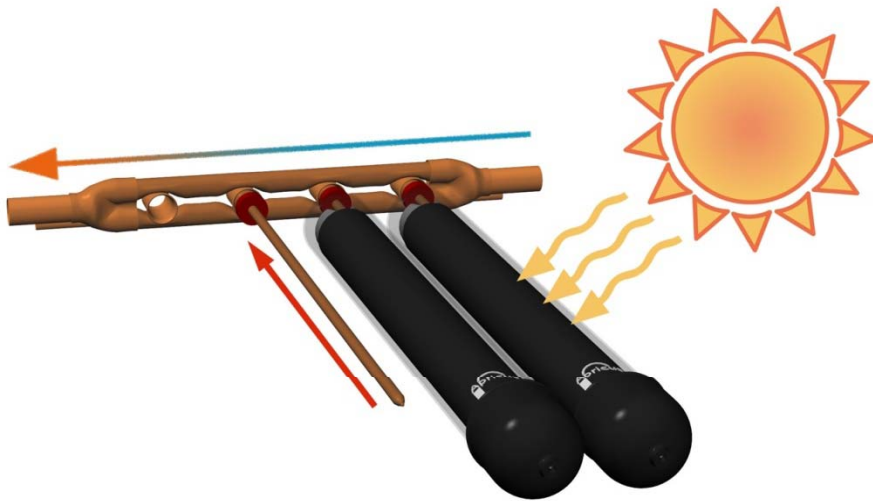
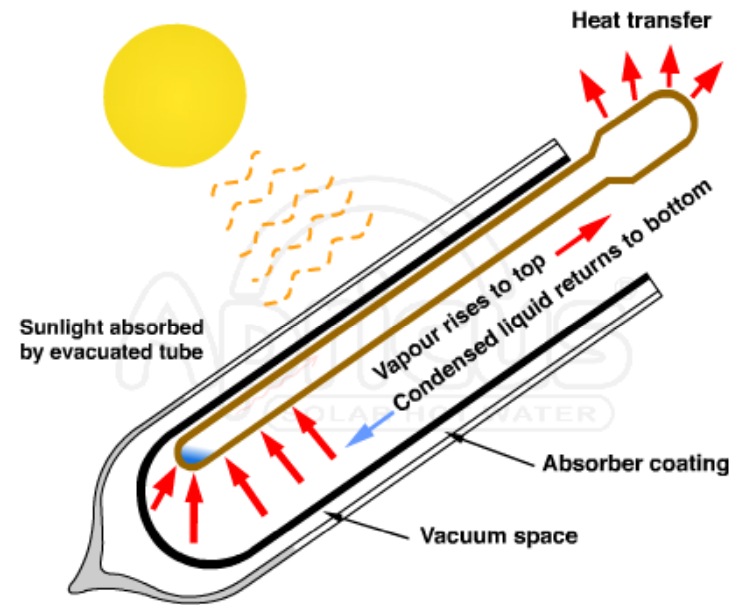
Solar Photovoltaic-

3.12 kW System provides much of electric needs (house has LED lights, super efficient appliances)

Solar Thermal-

Apricus 30 tube (evacuated) system produces similar amount of energy as the Photovoltaic system.







Apricus APKE-Demo Collector

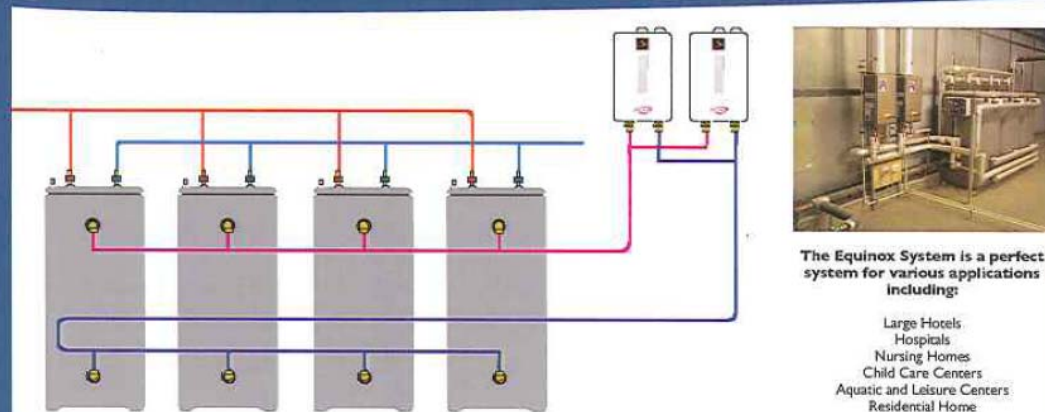
Petrolia, Ontario – Retirement Home Installation



S.U.N. EQUINOX

- Equinox system is a single system that is able to provide both hot water and space heating
- The Equinox is “Solar Ready” so your able to integrate existing solar, install it at the same time, or add it in the future





The Equinox System is a perfect system for various applications including:

- Large Hotels
- Hospitals
- Nursing Homes
- Child Care Centers
- Aquatic and Leisure Centers
- Residential Home
- Holiday Resorts
- Caravan Parks
- Water Treatment Facilities
- Restaurants
- Golf Courses
- Large Office Buildings
- Industrial Processing
- Food Processing Plants

The ideal solution for all large systems

The issue of water hygiene is of particular relevance in the case of buildings with a large hot water demand. In hotels, hospitals, sports halls and senior centers, the supply of hot water is extremely important.

The SUN Equinox Heating System optimally meets the most demanding water hygiene requirements, since it operates like a flow water heater with regard to domestic water. Where there is a demand for large volumes of hot water, several Equinox Systems are simply connected to each other like modules. This has the advantage that the available space can be used in various ways. With the appropriate control technology equipment, it is also possible to install decentralized hot water storage tank systems in large supply networks.

Thanks to its light weight and its favorable dimensions, the Sanicube hot water storage tank is easy to transport and can be easily incorporated into existing buildings. In this case, large hot water storage tank systems can be connected to each other.

The variable storage tank system

The SUN Equinox Heating System enables a very wide range of system variants. It is possible to meet the most complex demands with the different heat exchanger designs in the Equinox Heating System range. As a result, several heat sources can be integrated to produce additional heat extraction for a swimming pool or similar. In these cases, the whole systems usually remains relatively simple and clearly arranged and the control technology costs are generally low.

In the event of a subsequent change in the performance requirements, the system can often be modified very easily and flexibly without having to increase or decrease the number of Equinox Heating Systems owing to the modular layout.

Possible fields of application

The calculation of the required number of SUN Equinox Heating Systems and the corresponding total heating output depends on the required maximum withdrawal quantity (withdrawal per unit of time) and on the withdrawal profile based on the dimensioning. Inside large widely dispersed buildings, it can also often be worthwhile to distribute several Equinox Heating System decentralized outside the building and to install them as close as possible to the consumers, thereby minimizing heat losses and saving on pumps and expensive pipelines.

Hotels or hospitals often require large volumes of hot water instantly. The volume of heat stored in the SUN Equinox Heating System is so large that a momentary increase in demand can be covered, even if the recharging output of the heat generator is comparatively small.

Short-term hot water output for each Equinox Heating System therefore does not depend on the output of the heat generator to any great extent. If several SUN Equinox Heating Systems are connected to each other in a large system, the outputs of the individual storage tanks are added to each other.



Novotel Darling Harbor Sydney
525 Room Hotel
Space Heating-Pool Heating
14 x Hot Water Storage Tanks
16 x Gas Flash Heaters



S LINE ON DEMAND WATER HEATER



- ✓ 4 Models with Capacities up to 199,000 Btu/h
- ✓ Fully Condensing Operation with Energy Factors above 0.9
- ✓ Sealed Combustion, Vents with Schedule 40 PVC
- ✓ Simple to Install
- ✓ Field Conversion to LP Available

QuietSide's ODW water heater provides on demand water heating with exceptional efficiency due to the innovative use of the S line heat exchanger combination. With the simple twist of a faucet this unit can provide from 0.7 to over 7 GPM (45 DegF temperature rise) of controlled hot water delivered at exactly the temperature required for the perfect shower.

The S line heat exchangers allow the unit to operate at above 90% efficiency, easily surpassing the minimum standard for IRS tax rebates and allowing the use of PVC venting materials due to the extremely low flue gas temperature. A self diagnostic microprocessor control controls unit operation to provide a stable delivered water temperature, the easy to use keypad control allows the user to select from a large temperature range to exactly match their requirements.



Comfort through Innovation

QuietSide Corporation Santa Fe Springs, CA 888-699-6067 / Carlisle, PA 866-243-6498

www.quietside.com

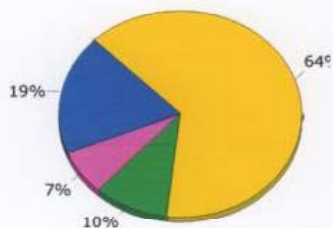


Building Modeling - Deciding What to Upgrade First. By reducing building loads & Right Sizing, the cost of a renewable system can be reduced by as much as 40%!

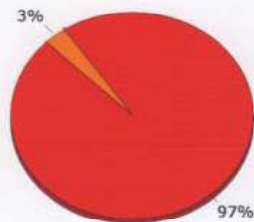
Annual Energy Consumption by Enduse

	Electricity kWh (x000)	Natural Gas MBtu	Steam Btu	Chilled Water Btu
Space Cool	221.0	-	-	-
Heat Reject.	-	-	-	-
Refrigeration	-	-	-	-
Space Heat	-	3,017.0	-	-
HP Supp.	-	-	-	-
Hot Water	-	96.6	-	-
Vent. Fans	80.3	-	-	-
Pumps & Aux.	0.2	-	-	-
Ext. Usage	-	-	-	-
Misc. Equip.	114.0	-	-	-
Task Lights	-	-	-	-
Area Lights	740.5	-	-	-
Total	1,156.0	3,113.6	-	-

- Area Lighting
- Exterior Usage
- Water Heating
- Refrigeration
- Task Lighting
- Pumps & Aux.
- Ht Pump Supp.
- Heat Rejection
- Misc. Equipment
- Ventilation Fans
- Space Heating
- Space Cooling

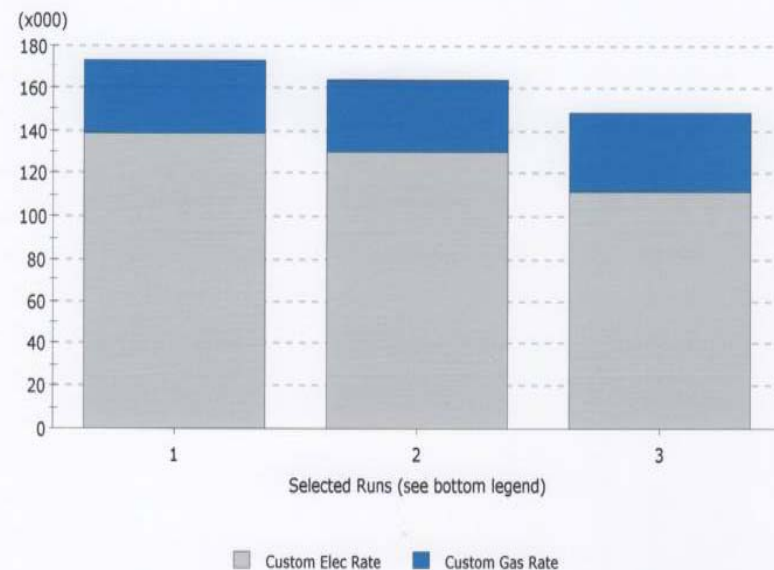


Electricity



Natural Gas

Annual Utility Bills (\$)



1. 100,000 Foot Department Store - Baseline Design (11/18/07 @ 17:16) (annual bill: \$ 172,964)
2. 100,000 Foot Department Store - Pkg HVAC Eff EEM (11/18/07 @ 17:16) (annual bill: \$ 163,848)
3. 100,000 Foot Department Store - Lighting Power EEM (11/18/07 @ 17:16) (annual bill: \$ 148,326)

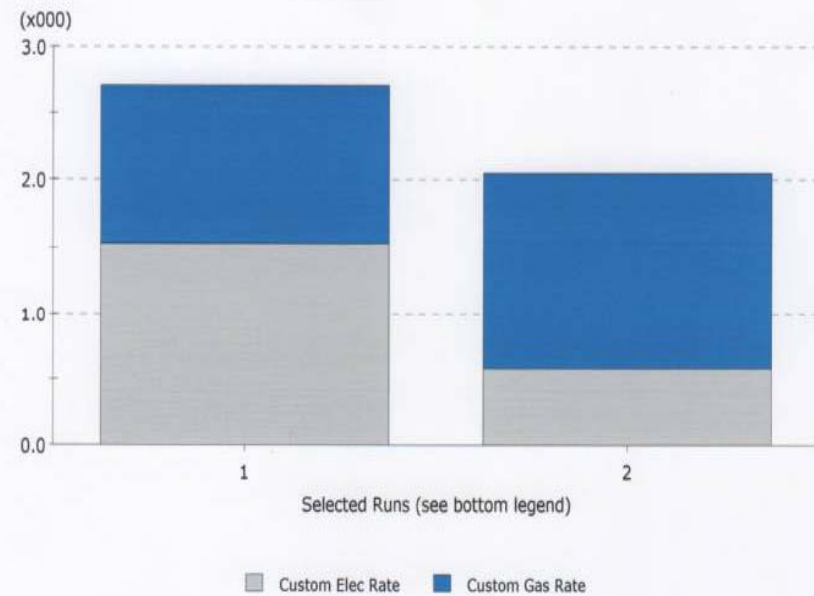
Lighting Upgrade for this Showroom

Monthly Utility Bills (\$)



■ Jennings Showroom - Baseline Design (11/19/07 @ 20:34)
■ Jennings Showroom - Lighting Power EEM (11/19/07 @ 20:34)

Annual Utility Bills (\$)



1. Jennings Showroom - Baseline Design (11/19/07 @ 20:34) (annual bill: \$ 2,709)
 2. Jennings Showroom - Lighting Power EEM (11/19/07 @ 20:34) (annual bill: \$ 2,055)

Showroom with Incandescent Lighting



Fed Stimulus Plan

Category		FOR	AMOUNT
1	Electricity Grid	\$	11,000,000,000
2	Renewable Energy Loans for Projects	\$	8,000,000,000
3	Renovate and repair federal buildings	\$	6,700,000,000
4	Grants for state and local governments	\$	6,900,000,000
5	Energy retrofits for low-income housing	\$	2,500,000,000
6	Energy efficiency and renewable energy research	\$	2,000,000,000
7	Loans for vehicle battery manufacturers	\$	2,000,000,000
8	Energy efficiency grants and loans for schools, governments and utilities	\$	1,500,000,000
9	Weatherizing homes	\$	6,200,000,000
10	Rebates for smart appliances	\$	300,000,000
11	Replacing federal vehicles with alternative fuel cars	\$	600,000,000
12	Grant program for electric vehicle technology	\$	200,000,000
13	Projects for cleaning fossil energy	\$	2,400,000,000
14	Department of Defense research	\$	35,000,000

Key Provisions

- Energy Efficient Improvements for Federal Buildings.
- Solar Water Heating Incentives, removing the \$2,000 cap on the 30% personal tax credit (still excludes pools and hot tubs).
- Green Collar Jobs

Jennings BHAG

Big Hairy Audacious Goal

Our BHAG for the next 10 years is:

- To help our customer mitigate 40,000,000 Pounds of Carbon Dioxide Emissions over the next 10 years. That's 20,000 Tons of Carbon Emissions

We are currently helping to mitigate 1,500 tons per year.

Big Hairy Audacious Goal #2

- To Install 400 Renewable Energy Source Systems over the next 10 Years.

These installations, depending on the size and type would add an additional 400 to 1,000 Tons of CO₂ mitigated by our customers.

Our Showroom



The Original Green Roof ?



CO Anyone?



High Static!



**JENNINGS HEATING
and COOLING CO INC**

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