energy edge
New Brunswick Power
Number 2

Kent Amusement Park

Air-to-Water Heat Pump Installation

St-Louis-de-Kent, N.B. Canada

Air-to-Water Heat Pump for Pool Saves 90% Of Heating Costs!

Small businesses, especially those which operate seasonally, are vulnerable to changing economic conditions. Paring operating costs, including energy costs, is good business. So is enlisting outside advice to examine individual cost items.

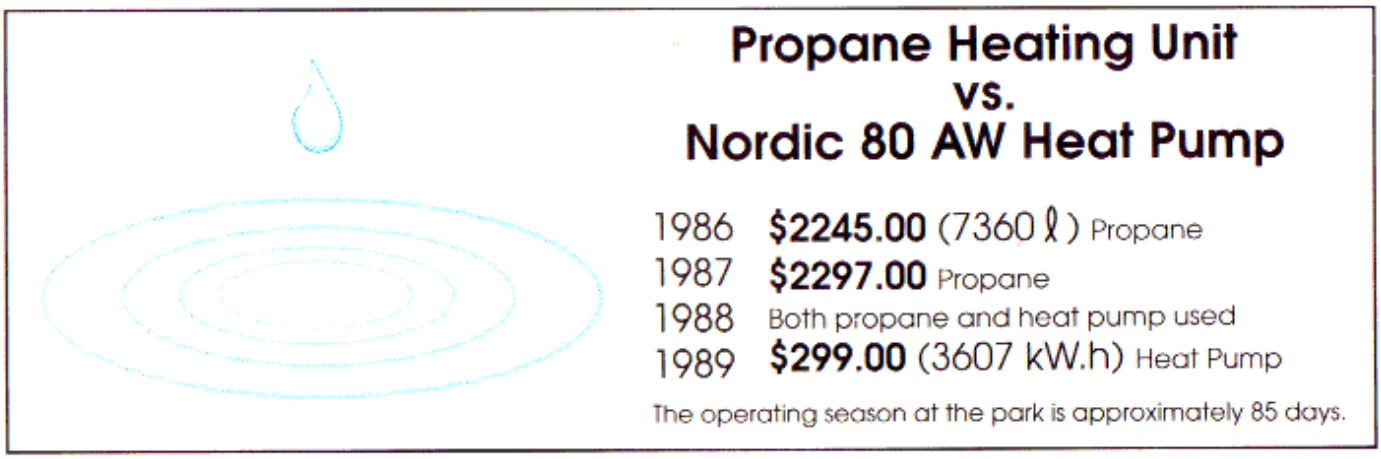
The Kent Amusement Park

Two friends, Gerald Stewart and Jean Louis Gigou, discovered the facts of small business life when they launched the Kent Amusement Park (Parc de Amusement Kent) in July 1985. The park is located on NB Route 134, north of St-Louis-de-Kent and just south of the paved road leading to Kouchibouguac National Park. The attractively landscaped park is open seven days a week from 10 a.m. until 8 p.m. from early June through Labour Day weekend. It has an 18 hole miniature golf course, a baseball batting cage, a canteen and picnic tables and a major attraction - a lighted water slide which snakes down from a 30-foot tower into a L-shaped pool. The pool is 3 feet deep and measures 26 x 22 if. and 18 x 48 if. Water for the slide and pool is heated, usually to 78 or 80 degrees F. In early 1988, after three operating seasons, the partners decided to investigate ways of paring operating costs and telephoned their NB Power district office in Chatham, New Brunswick for advice. An NB Power Customer Service Representative examined their pool heating costs and recommended switching from a propane burner system to an air-to-water heat pump. The recommendation was based on a comparison of the actual cost of heating with propane at the amusement park and projected heat pump use.

The New System

The partners opted for the changeover based on the indicated energy savings. They chose a heat pump manufactured by Maritime Geothermal of Petitcodiac. NB. Maritime Geothermal's model 80 AW 'Nordic' air-to-water heat pump was installed outdoors next to the pool pump house at a cost of approximately $5500. No major construction was required to connect the heat pump to the pool's water system. The Nordic 5 metal case measures 48 inches high x 32 inches wide x 28 inches long. It operated for the first time in late summer ~988 and is rated 5 -HP (90000 BTU's). In addition to heating the pool at a fraction of the former cost, it exhausts chilled air into the upper level of the pump-house which used to get uncomfortably hot on a sunny summer day.

Since the heat pump came into service, day-to-day operations remain essentially unchanged. The heat pump has to be started a couple of days before the park opens for the year as it takes it a little longer to heat the pool water up to the thermostat set temperature at the beginning of the season. When the pool is not in use, an insulating pool blanket is unrolled to cover the water surface - a practice which began in 1985.



Comparative water heating costs at the Kent amusement park.

Heat Pump Savings

Savings as high as 90 per cent are being realized by the Kent Amusement Park when the cost of heating with the Nordic-80 AW during the 1989 operating season is compared with the cost of heating with propane in 1986 and 1987. The number of warm days and nights varies from one season to another, but the figures cited above clearly indicate how energy and cost-efficient the Nordic air-to-water heat pump is. In fact, it will have paid for itself in two and a half seasons.

Conclusion

For a summer business which has to heat large volumes of water. an air-to-water heat pump system is ideal. Air-to-water heat pumps like the Nordic-80 AW heat water efficiently and inexpensively. In simplest terms, the unit captures or extracts heat from the ambient air and transfers it to water. The chilled exhaust air can be employed for cooling interior spaces. NB Power personnel are always available to help solve problems dealing

with energy and energy costs.

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