

# GeoExchange

## Desert Cools Private Arena



**Ice Box** - our motto has always been "knowledge is power" GeoExchange knowledge saves 40% in energy giving us power where we need it

**Client**  
The Ice Box Arena Corp., is located in the Upper Sonoran Desert in Kamloops B.C. The arena is the only private facility in the region.

### The Situation:

The 2298 square meter steel frame building needed to go up quickly to meet the arenas pre-booked ice time commitments. The budget had no room for costly extras. The arena would have one full size sheet of ice, dressing rooms, washroom facilities, equipment storage, lobby complete with a second storey lounge and office space. Limited initial operating funds meant the arena would have to make a profit immediately.



**Challenge**  
- 30° C winters  
+ 40° C summers  
Desert climate and a new business concept of a private arena competing with subsidized public arenas. Keeping operating costs low would be crucial.

### The Solution:

GeoExchange; the chosen system incurred no additional costs plus saves 50 % in annual costs. The 90 ton GeoExchange open loop would be drilled into the parking area. Ice Kube Systems provided the heat pumps and installation expertise.



**Key**  
Project planning; financiers needed proof in the business case that GeoExchange would lower energy costs and reduce maintenance. Reliability during the start-up years would ensure an ongoing success.

### The Result:

An arena that competes with public facilities. During the first five years of operation less than \$100 was spent on system repairs and maintenance was an estimated twenty percent of a conventional system. Today the Ice Box total annual energy bill is less than \$40,000. The system runs year round and is host to international hockey tournaments , league play and ice rentals for corporate events. The Ice Box Arena is proof that exploring an opportunity in GeoExchange pays off.

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## Kamloops July 1998 Ice Kube visits Ice Box

GeoExchange experts, Ice Kube Systems Ltd. of Manitoba packed their bags for Kamloops in mid July of 1998. October saw the first skaters using the brand new facility. Three years of project planning and research came together in one hundred days.

## Why they choose Geo-X

Owner, Brian Silverson found GeoExchange on the internet and then was convinced by Ed Lohrenze of Ice Kube Systems that the economy of this system would save 40% in energy. No additional costs were charged to the budget for GeoExchange. Careful planning saw this project conclude with the same initial costs as a conventional system. This was in large part due to the fact The Ice Box sits on the Thompson River flats in Kamloops and uses an open loop with drilled wells. Further savings are achieved using in-house maintenance, a refrigeration ticket is not needed with GeoExchange.

### Contact:

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"E&OE"



Open loop well in parking area



## Cost vs. Payback

No additional capital costs were incurred, GeoExchange was 19% of the total budget. At a savings of \$20,000 per annum the no-cost system has further paid off 50% of the installation.



## Energy Usage

The arena's operational costs are an estimated 50% cheaper than conventional facilities. Ice is in at The Ice Box Arena 365 days per year to accommodate hockey schools and skating programs. As a matter of fact the rink has been in continuous operation since opening in 1998. The rink saves **K** 250,000 kW.h/year; in line with initial estimates. In reflection, the owners would move the mechanical room to the front of the building;  
*"GeoExchange runs so quietly. It would make better use of the otherwise wasted space".*



Arena hosts international tournaments

## Quick Ice Box Facts

- Built in 1998
- 90 ton open "pump & dump" loop
- **No** extra cost for GeoExchange
- Geo X = Conventional System
- 40% energy savings
- + Lower maintenance fees
- + Interior ice melt pit
- + Reduced greenhouse gases



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