

Carnot Refrigeration CO2 technologies for your applications

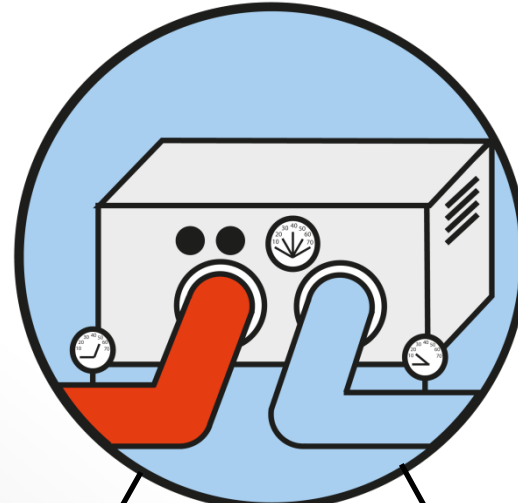
State of the industry



Supermarket



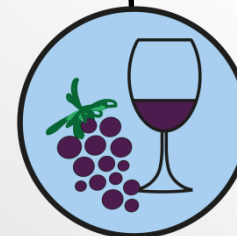
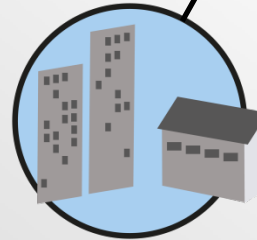
**Refrigerated
Warehouse
&
Industrial
food process**



Carnot Chiller



**Aquilon™
Data Center**



ATMO business case
AMERICA sphere natural refrigerants

25 & 26 June 2015 — Atlanta, Georgia



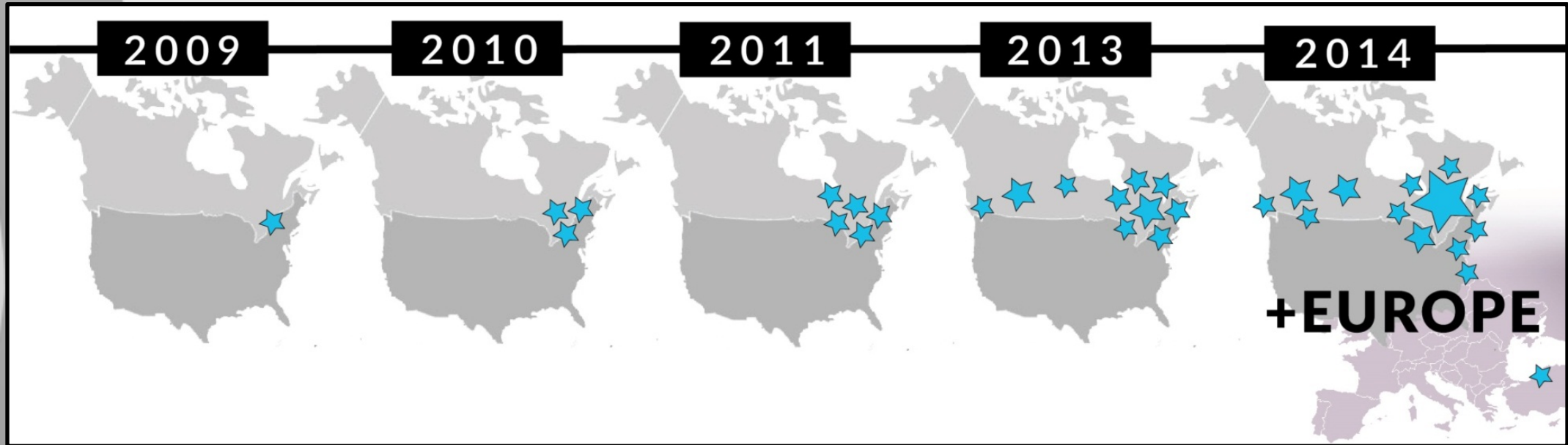
OUR HEAD OFFICE IN QUEBEC, CANADA



15 ENGINEERS // 5 TECHNICIANS // 30 PRODUCTION EMPLOYEES // 5 ADMINISTRATION PEOPLE



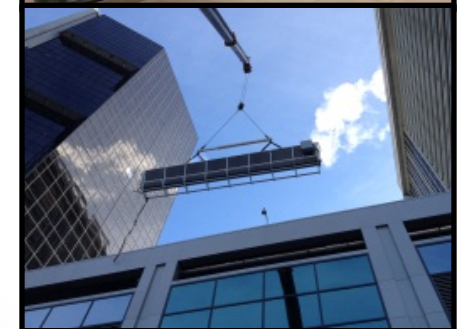
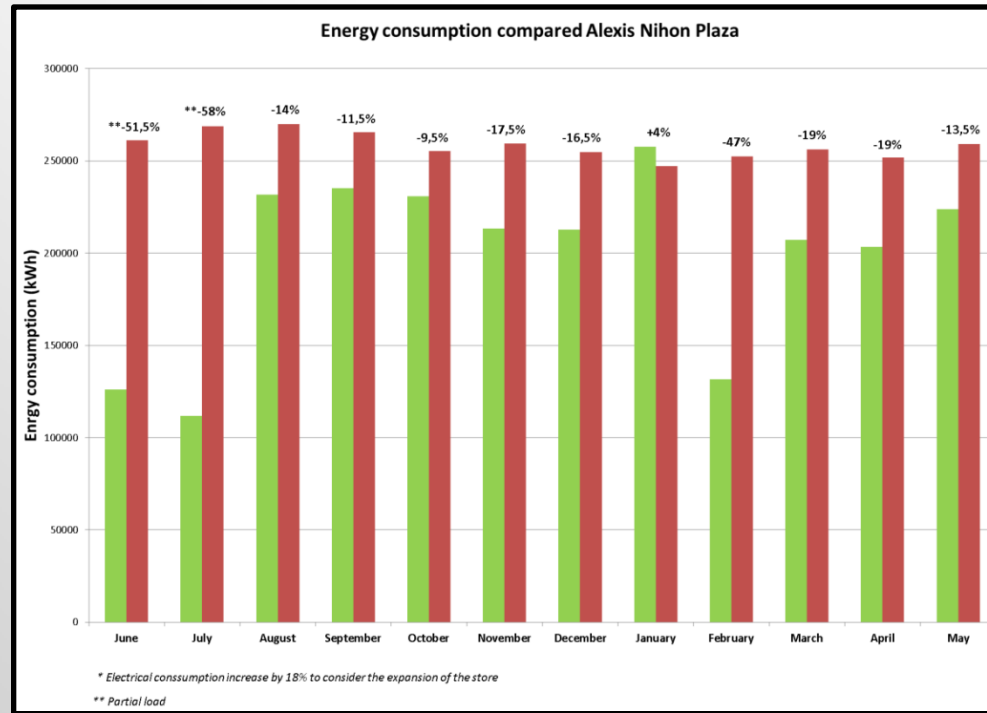
Leader in CO₂ since 2008...





Urban Supermarket Retrofit

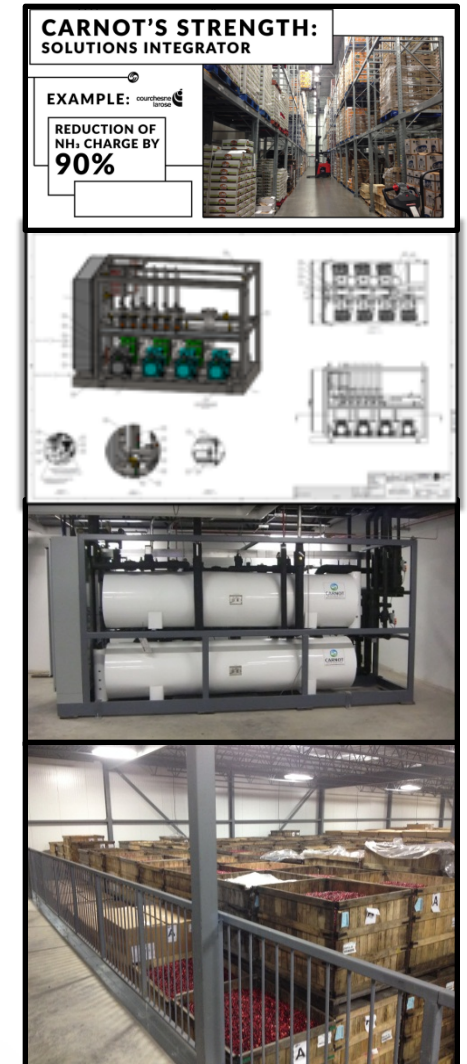
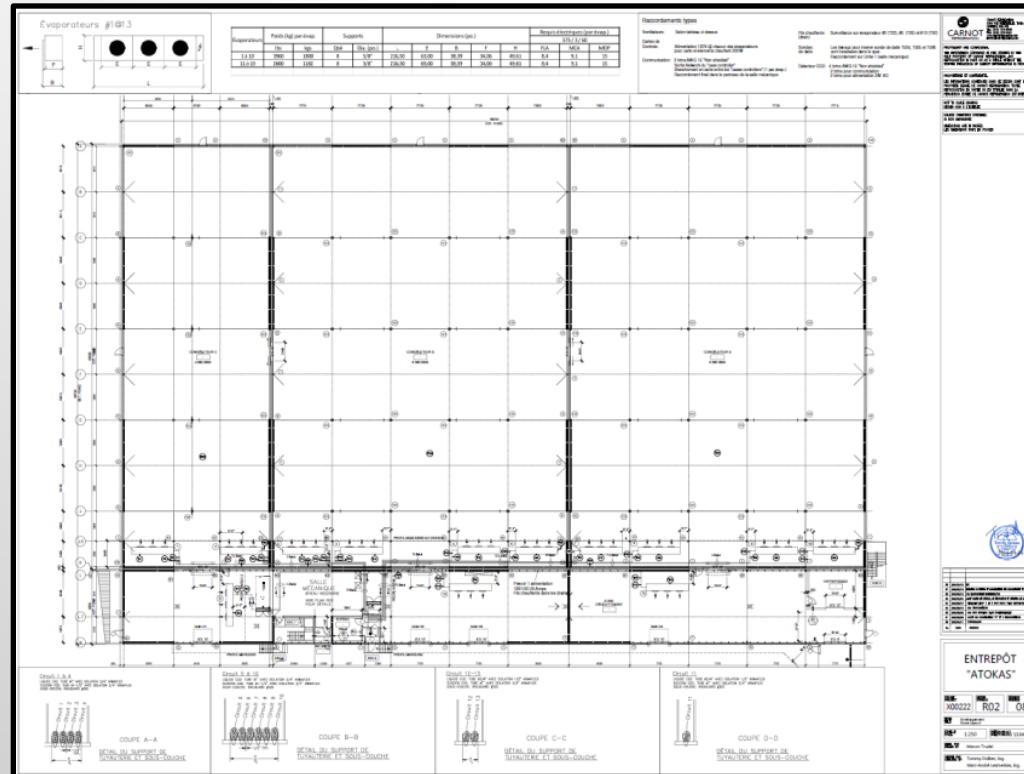
Localisation; Downtown Montreal
Particularities; Urban Store on 3 floors.
Refrigerant; TC - R744
Capacity (cooling); 325 KW (1 100kBtu/hr)
Capacity (Heating); RCIntel 182 KW (620 kBtu/hr)





Industrial process

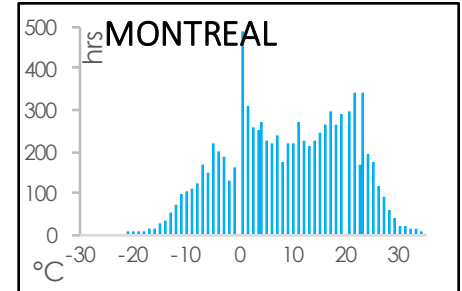
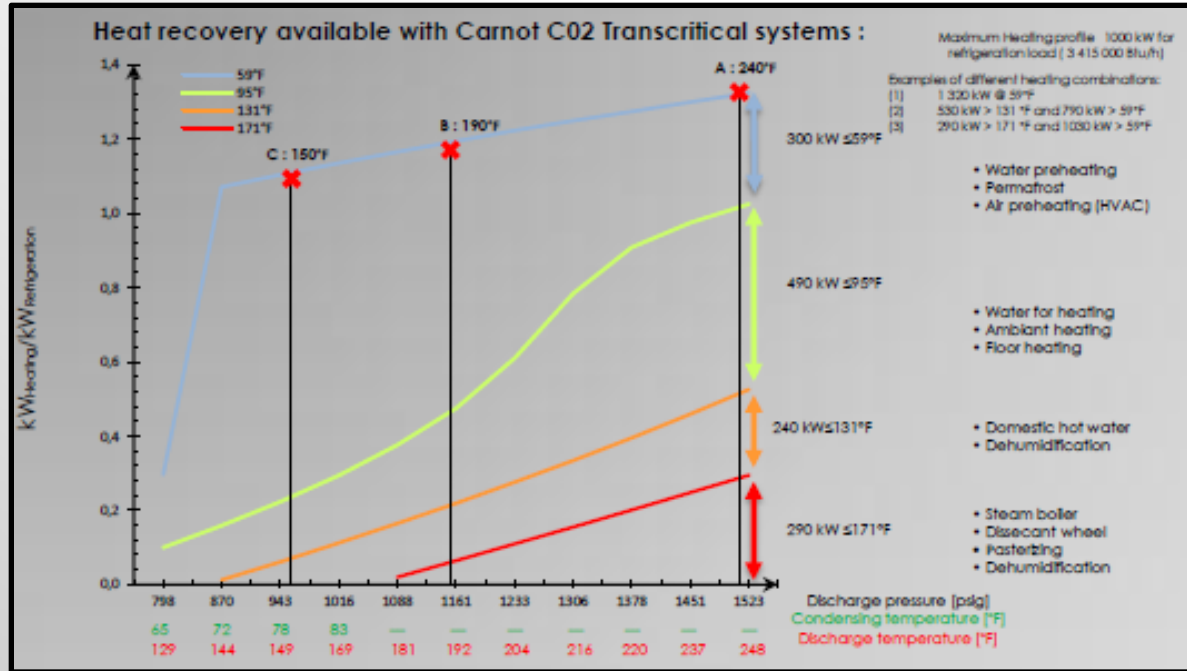
Localisation; Plessisville, Qc, Canada
Particularities; Cranberries Blast & holding
Refrigerant; TC R744
Capacity (cooling); 1250 KW (356 TR)
NEWS: a 5MW (1500 TR) NH3/R744 cascade is under construction in our plant!





CO2 Liquid Chillers

Localisation; Longueuil, Qc, Canada
Particularities; Ice Rink
Refrigerant; TC R744
Capacity (cooling); 280 KW (80 TR)
Capacity (Heating); RCIntel 386 KW



RCIntel - Advantageous

RCIntel consists of an assembly of various components such as valves, sensors and cards modules that allows energy recovery from the process in a strategic and intelligent manner.

Heat recovery available with Carnot CO2 transcritical systems:

Adaptive operational system:

RCIntel Decisions Algorithm:

- The refrigeration capacity software
- Ask the hot water and preheat of the variable software
- Decision: Reduce the heat pressure to improve the overall COP

RCIntel makes your system work as hard as it should be, no more.

Real-time artificial intelligence to ensure optimal performances that allow:

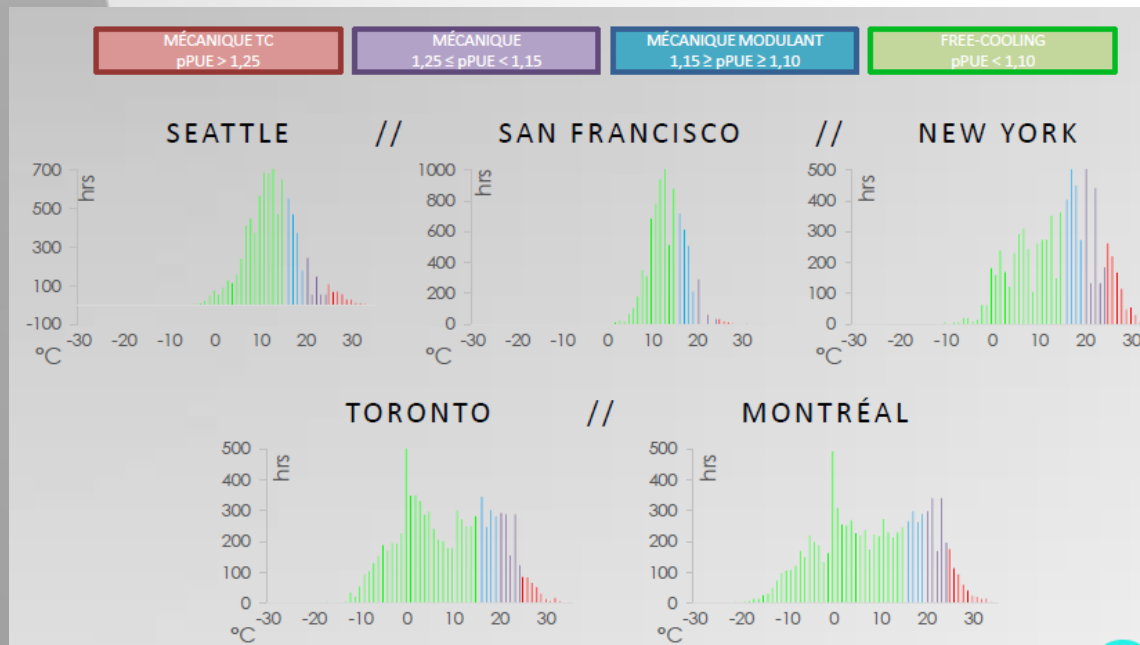
- Reduction of energy consumption for heating process;
- Elimination of boiler to produce heat;
- Recurrent significant monetary savings year after year.





AQUILON CRAC unit

Localisation; Ottawa, Ontario, Canada
Particularities; Data Center
Refrigerant; TC R744
Capacity (cooling); 105 KW (30 TR)
NEWS: RAIN CYCLE Free Cooling (Patented)



LESSONS LEARNED

- **Initial cost is now attractive**
- **Proven reduction of Energy Consumption in most cases.**
(Thanks to RCIntel and Rain Cycle Free cooling)
- **Safe Refrigerant**
- **Field technicians handle the transition through R744**
- **Parts are available**

FUTURE PLANS

We are in:

- **Supermarkets**
- **Industrial process**
- **Chillers**
- **Data centers with CO2 CRAC unit and CO2 Chillers**

New applications come to us each weeks!