The Transition From Wasting Energy To Harnessing It

(ECO BOOSTER)

EEB Sustainability

Heat Your Building.
Melt Your Snow.
Slash Your Costs

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OUTLINE:

- Who We Are
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- System Credentials
- How It Works
- Data Center
- The Triple Win: Save Money, Enhance Safety, Go Green
- Performance You Can Count On

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OUR OBJECTIVE:

- **Added Value**
- **Cost Efficient**
- **High Performance**
- **User Satisfaction**

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WHO WE ARE:

We are Ottawa based, Canadian professional engineering firm specializing in mechanical and electrical design for commercial, industrial and residential projects. We deliver efficient, code-compliant designs that support building permit approval and practical construction built-form results.

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Background

- Winter in Canada is a Double Burden;
- High Heating Bills
- Costly & Messy Snow Removal
- De-Icing Chemicals damage property and the environment
- The Hassle of coordinating multiple services
- Snow is a safety hazard needs always to be addressed

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Our Innovative

- Every building has its HVAC system for heating & cooling
- Data Centers need cooling 24/7/365 days, year round
- For any HVAC system to operate there is a lost energy.
- This lost energy is the result from operating the mechanical parts of any equipment.
- **Our invention shows the methodology of harvesting this rejected energy and harness it to other heating applications such as; snow melt, heating water, heating and many other applications.**

Invention Advantages & Disadvantages

Advantages:

- Low-cost energy; No added cost to the utility bills, where the heating capacity is increased from 30% to 100% in some case; such as data center.
- Low emission and carbon footprint for the building
- High sustainability performance and improved green building
- When using the snow melt application, public safety in improved significantly.

Disadvantage:

- Some initial cost won't exceed 30% of new related standalone HVAC system

Major Areas of Application

- Data Center
- Governmental buildings
- Commercial Buildings
- Educational Facilities
- Hospitals
- Industrial building with high rejected energy
- Residential houses

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System Credentials

- This invention is registered and certified within;

Innovation, Science and Economic Development Canada.

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How It Works

- 2-in-1 Melt the snow in your driveway while heating your building for the same cost.
- One advanced system that efficiently heats your building and automatically keeps your walkways and driveways clear of snow and ice.

For Data Center:

- Your computer room runs 24/7/365, generating massive heat.
- You pay to pump that heat outside, even in a blizzard.
- This is wasted energy and a missed opportunity.
- We harvest this energy and recycle it for different heating application such as snow melt.

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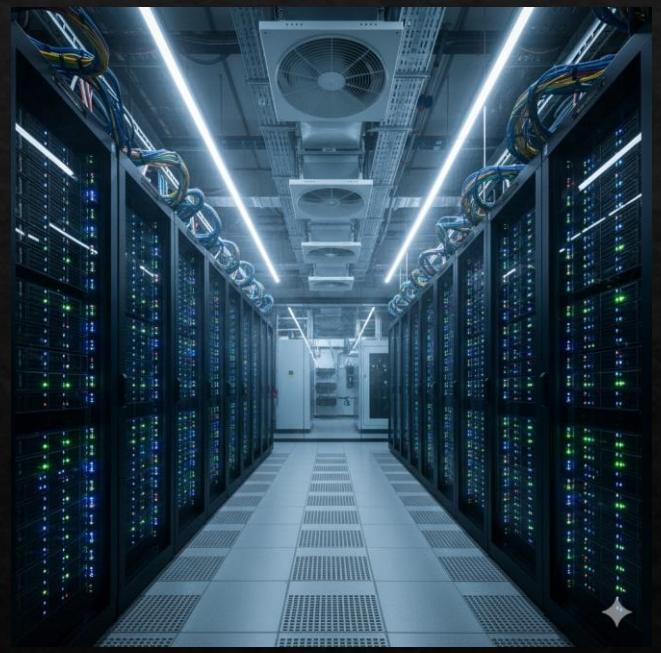
Data Centre
The Brilliantly Simple Solution

- Harness Your Waste Heat.
- We intelligently divert the heat from your IT cooling system to melt snow on your critical pathways and loading docks.
- You turn a pure expense into a valuable service.

How It Works: Effortless Automation

- . IT Room Cools Itself: Your servers stay at the perfect temperature
- Smart Valve Redirects Heat: When snow falls, a sensor tells a valve to send the server heat to pipes under your pavement
- Snow Disappears: The heat melts snow on contact, automatically.



Zero extra energy is consumed for snow melting

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The Triple Win: Save Money, Enhance Safety, Go Green

- Dramatic Cost Savings:
  - Eliminates snow removal contracts for large areas.
  - Reduces your computer room cooling costs by rejecting heat more efficiently in winter.
- Unmatched Safety & Access:
  - Guarantees clear access for employees, deliveries, and emergency services.
  - Eliminates slip-and-fall liability risks.
- Powerful Sustainability Story:
  - Demonstrates a commitment to innovative energy recycling.
  - Significantly reduces your carbon footprint by utilizing waste energy

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Tangible Performance Data Center

- A typical 10-ton computer cooling system can melt snow from over 750 sq. ft. of pavement.
- Covers: Loading docks, main entrances, fire lanes, and pedestrian walkways.
- Operation: Fully automatic and integrated with your building management system (BMS).

The Financial Case: From Cost Center to Profit Center

- Capital Investment: In the modification of the CRAC system and installation of the snow melt loop.
- Operational Savings:
- Direct Savings: Eliminated snow plowing ($1,500 - $5,000+/year depending on area).
- Indirect Savings: Reduced CRAC energy consumption (5-15% annually), extended equipment life.
- Risk Mitigation: Eliminated liability from slips/falls, prevented delivery delays.
- ROI: The system can pay for itself in a few years through direct savings alone.

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How It Works: Simple & Smart non-Data Center

- It Heats: super-efficient heating to keep your building warm. Keep updated with the government sustainability programs.
- It Melts: When a sensor detects snow, it automatically redirects its energy to melt snow under your pavement.
- It Saves: Uses a single, highly efficient energy source for two major winter tasks

Key Benefits for You

- Total Convenience: Wake up to a clear driveway, automatically. No more shoveling or plowing contracts.
- Enhanced Safety: Eliminates slip-and-fall hazards on your property.
- Property Preservation: Stops damage from snow plows and corrosive de-icing salts.
- Eco-Friendly: Uses electricity cleanly and efficiently, with no chemicals.
- Increased Property Value: A modern, high-tech feature for any property.

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Performance You Can Count On non-Data Center

Case Study:

- System: 100,000 BTU/hr Heat Pump with Integrated Snow Melt
- Snow Melt Coverage: Over 600 square feet (e.g., a large two-car driveway and front walkway).
- Operation: Fully automatic. Melts snow effectively even if the building doesn't need heat.

The Investment: Value vs. Cost

- Initial Investment: Higher than a standard heat pump or a standalone snow melt system.
- Long-Term Value:
  - Eliminates annual snow removal contracts ($600 - $1,500+/year).
  - Reduces utility bills.
  - Protects your pavement and landscaping from plow damage (saving $1,000s in repairs).
  - Mitigates liability risks from slips and falls.
  - ROI: The system pays for the snow melt functionality over time through eliminated external costs

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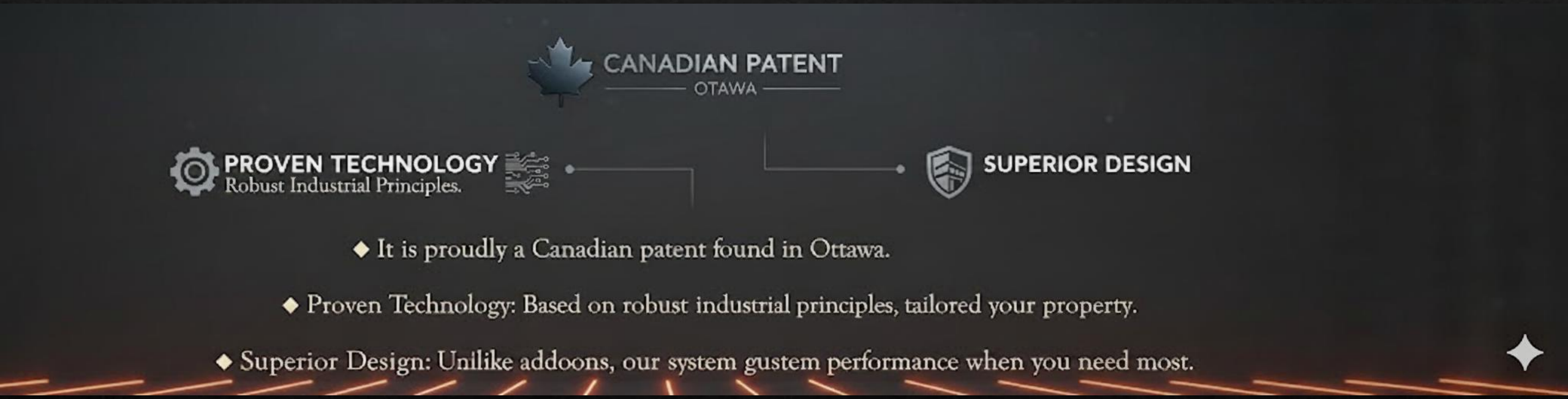
Why This System? Why Us?



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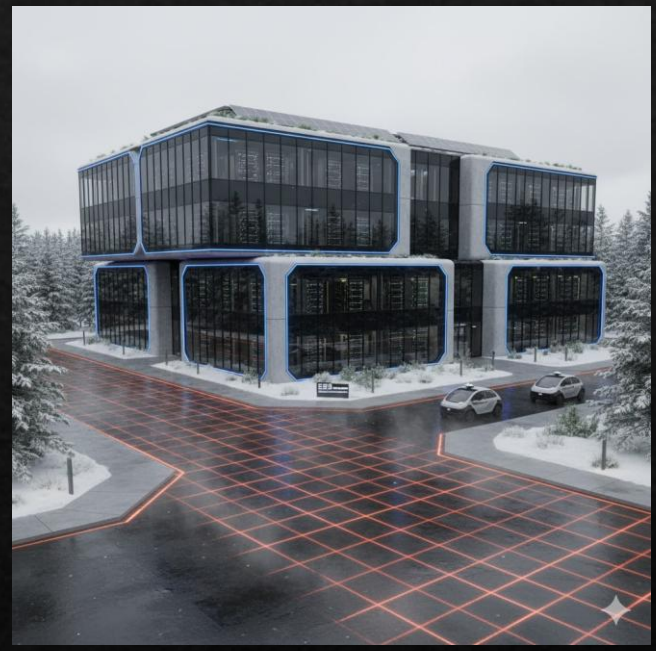
Why This is a Smart Business Decision

- Future-Proofing: Aligns with ESG (Environmental, Social, Governance) goals and sustainable building practices.
- Operational Excellence: Ensures uninterrupted business operations, regardless of weather.
- Intelligence Upgrade: Transforms a basic utility into an intelligent, multi-purpose asset.



We Are The Experts

Thank you

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EEB= SUSTAINABILITY

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