

# Preserving our past with future solutions



## Environment Action Committee Meeting

*Tuesday, December 7th, 2021*

By: Will, Sarah, Aydin, Ryan, & Noel



# Can you identify these buildings?



# About Us



- Team members: Aydin, Noel, Sarah, Will, & Ryan
- Grades 9-11 students in different high schools in Mississauga
- Venturer Scouts of the 1st Port Credit Sea Scout Group

## BUILDING SHOWCASE - USPS Morgan Processing and Distribution Center



- Reduces energy usage by up to 15%
- Reduces stormwater runoff contaminants up to 75%
- Extends roof life expectancy by 40-50 years

## Our Plan

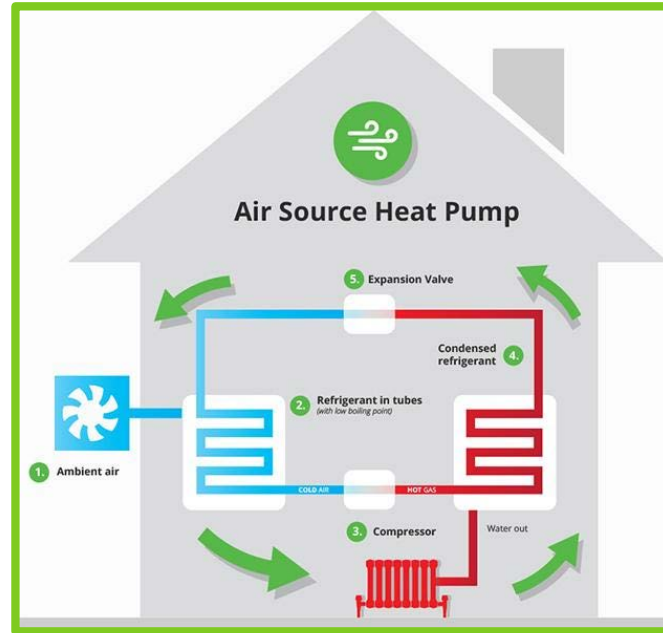
Our plan of action is:

- **Phase 1:** Implement a heat pump system, insulate the building
- **Phase 2:** Install an intensive green roof
- **Phase 3:** Install solar panels on the roof to work hand in hand with the green roof

## Phase 1 - Heat Pumps

- Less expensive to install
- Less disruptive to environment
- Reduces energy consumption

Efficiency of “300%” vs 70- 96% by gas/oil boiler	\$7k - 11k
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## Phase 1 - Insulation



- Insulation reduces **heat exchange** across a surface
- **Reduces** energy costs by **retaining/blocking** heat
- More **effective** than fibre glass

Reducing heating/cooling costs  
by up to 15%

**\$48k** ( $\$1.6/\text{ft}^2 \times$   
 $30\text{k ft}^2$  (est.)

## Phase 2 - Green Roof

- Intensive Green Roof has **multipurpose** usage
- Can be used **recreationally** and support solar panels
- Green Roofs longevity extends to **40 years** and higher



Reducing energy demand for cooling by up to **75%**

**\$750k** ( $\$25/\text{ft}^2 \times 30\text{k ft}^2$  (est.))



## Phase 3 - Solar Panels






- The solar panels will be **anchor-mounted solar panels**.
- Its ideal for roofs with **weight constraints** like the SAIB
- These solar panels will impact energy conservation efforts **positively**

Producing energy to offset cooling/heating needs (250-400W/hr/panel)	\$100-350k
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## Summary of the Proposed Initiatives - Energy Conservation Effectiveness vs Cost

Device/System/Technology	Energy Conservation Effectiveness	Cost
Air source heat pump	Efficiency of “300%” vs 70-96% by gas/oil boiler	\$7k - 11k
Insulation	Reducing heating/cooling costs by <b>up to 15%</b>	<b>\$48k</b> ( \$1.6/ft <sup>2</sup> x 30k ft <sup>2</sup> (est.)
Green Roof	Reducing energy demand for cooling by <b>up to 75%</b>	<b>\$750k</b> ( \$25/ft <sup>2</sup> x 30k ft <sup>2</sup> (est.)
Solar Panels	Producing energy to offset cooling/heating needs (250-400W/hr/panel)	<b>\$100-350k</b>

# Grants and Financial Aid

Grant Name	Logo	Maximum Funding	Applicability	Founding Organization
Canada Greener Homes Grant		\$5,000 Additional money per kilowatt produced	Applying as a green developer applying green technologies	Government of Canada
Friends of the Environment		\$8,000	Applying to improve educational and historical nature of the site	TD Banking
Green Municipal Fund		\$1,500,000	Applying as a green developer applying to reduce the community carbon footprint	Federation of Canadian Municipalities

## Conclusion



**CLIMATE  
CHANGE**

- **Phase 1:** Implement a heat pump system, insulate the building
- **Phase 2:** Install an intensive green roof
- **Phase 3:** Install solar panels on the roof to work hand in hand with the green roof



**Thank you for listening!**  
**Questions?**