

Town of Pelham Council Report

Wednesday, March 05, 2025

Subject: Green Wall Project at the Meridian Community Centre

Prepared By: Samantha Witkowski, Environmental Coordinator

Department: Community Planning and Development

Recommendation:

BE IT RESOLVED THAT Council receive report 2025-0060 “Green Wall Project at the Meridian Community Center,” for information;

AND THAT Council endorse the installation of a fully integrated green wall system at the Meridian Community Centre, pending a successful grant application.

Background:

This report provides Town Council with information on a proposed Green Wall installation opportunity at the Meridian Community Centre (MCC). This project has arisen, at least in part, because of knowledge gained from participating in the Communities in Bloom competition.

Green walls (also referred to as living walls) are a form of green infrastructure which integrates vegetation into built environments to provide a range of environmental, social, and health benefits. These vertical garden systems feature plants growing on a structural support mounted to an interior wall, often incorporating built-in irrigation and drainage systems. They are designed to function as a living ecosystem, supporting diverse plant life while requiring minimal spatial footprint.

A green wall installation aligns with the Town of Pelham’s Strategic Plan, including the pillars of environmental sustainability, enhancing public spaces, and community well-being. The MCC is a central hub for community activities and presents an excellent opportunity to incorporate green infrastructure while fostering environmental awareness, enriching visitor experiences, and creating a vibrant, sustainable focal point for the community.

Analysis:

Key Benefits of a Green Wall

In addition to being an aesthetic feature, green walls offer significant environmental, social, and health benefits. These advantages make them an excellent addition to public spaces, where their impact can be maximized for the community's benefit. Broadly, these benefits can include:

Improved air quality: Green walls act as natural air purifiers by filtering indoor pollutants like carbon dioxide and volatile organic compounds (VOCs), as well as removing particulate matter like dust and allergens from the air. This contributes to a healthier indoor environment for visitors.

Thermal regulation and energy efficiency: By improving indoor air quality, green walls reduce the need for outdoor air circulation, which can lower heating and cooling costs. Additionally, the plants' natural cooling effect can help regulate indoor temperatures, creating a more comfortable space for visitors.

Noise reduction: Green walls act as sound absorbers, minimizing noise levels within the building and enhancing its overall ambiance.

Improved health and well-being: Numerous studies have shown that proximity to greenery reduces stress, improves mood, and boosts overall mental health.

Enhanced aesthetic: Green walls transform indoor spaces into vibrant environments and showcase sustainability in action to foster environmental awareness among residents.

Proposed Next Steps

Green walls come in a variety of systems, from simple to vastly complex, leading to different approaches in design, installation, and maintenance. The space being considered at the MCC is a wall located in the main atrium, which receives moderate daylight. The green wall has the potential to be 10.5 x 8 feet or 84 square feet.

Staff have identified grant opportunities and are consulting with various Green Wall installation companies to better understand the feasibility and challenges associated with installing various systems in the space being considered. This includes exploring irrigation and drainage requirements, lighting needs, supporting infrastructure, timelines for installation, etc.

Financial Considerations:

The full cost of a Green Wall varies depending on design and size. Generally, there are two models which can be considered for an installation at the MCC:

Model One: Smaller Initial Investment of an Independent Green Wall System

The first model requires a smaller initial investment of approximately \$7,000 – \$ 8,000 to install an independent Green Wall system at the MCC. This green wall system would be independent of the building's infrastructure (i.e., it would not be integrated into the water supply or require a power connection), reducing the installation complexity and cost.

Because this model only considers the cost of installing the structural system of the Green Wall, staff could seek opportunities to partner with a local greenhouse to provide the plants needed to complete the project. This system design can hold roughly 324 4-inch potted plants. Additionally, local community groups could potentially be engaged to assist in planting the Green Wall, fostering community involvement and support in the project.

While this model reduces upfront costs and encourages local partnership, ongoing maintenance would be required to ensure the health of the plants. Monthly maintenance, which includes manual watering and plant care, is estimated at approximately \$300 per month.

Model Two: Larger Initial Investment of a Fully Integrated Green Wall System

The second model requires a significantly larger initial investment of approximately \$40,000 due to its sophisticated design, which involves integration with the building's infrastructure. This model includes generally more fulsome and varied plant life and is a superior product.

In this model, the Green Wall system itself is designed to connect directly to the building's water supply and drainage system, ensuring automated irrigation and reducing manual upkeep. It also incorporates a hydroponic mechanical system with a pump to distribute water efficiently through the Green Wall. In addition to plumbing, the system requires electrical power for fans and pumps. Depending on feasibility, this Green Wall system may also connect to the building's HVAC for enhanced air quality benefits. In addition, this model includes the provision of plant materials which is estimated to hold between 350 – 500 plants.

This model also needs to consider ongoing maintenance costs. Annual maintenance service for this type of system is estimated at \$7,700, or \$641 per month. This includes both system maintenance and plant care.

Given the financial implications associated with the proposed project, the Town will apply for a \$52,283 grant through the Green Cities Foundation to help fund the initial project installation and lighting. The #GreenMyCity grant provides support for the

building of green spaces that serve different populations and environments. The funder reviews applications on a rolling basis; information on the notification of grant status was not available at the time of writing this report.

Alternatives Reviewed:

The town is not obligated to install a Green Wall at the MCC; accordingly, Council can decide not to pursue the proposed project.

Strategic Plan Relationship: Environmental and Climate Change Adaptation

The installation of a Green Wall at the MCC aligns with the Town of Pelham’s strategic priority related to environmental and climate change adaptation. Green walls are a form of green infrastructure that contribute to improved air quality. They can also provide mental health benefits to visitors to the space. This project supports the Town’s commitment to fostering a healthier, more sustainable community by integrating a living plant system into the built environment.

Consultation:

Staff have consulted with multiple Green Wall installation companies to determine the possible scope and requirements of various Green Wall system options for the potential MCC installation. Further consultations with such companies should focus on determining the feasibility of installing the different model options presented above at the MCC. Additional consultations with local greenhouses and community groups are also being explored for potential partnerships in plant sourcing and installation.

RCW Staff were also consulted in the writing and review of this report.

Other Pertinent Reports/Attachments:

N/A

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