

THE LIVING PALLET

Term Project

Submitted to:
Langara College

ENVS 2100
Applied Environmental Studies: CityStudio

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Acknowledgment

It was a great experience to do the term project in the important field of Environmental Studies to actively contribute to the development of the City of Vancouver and make it more sustainable.

We would like to express our deepest appreciation to all those people who provided us with the opportunity to complete the project. We give special gratitude to our professors Andrew Egan, Mike Smith-Cairns and the City Staff for their contribution in suggestions, encouragement, feedback and constructive criticism for the project.

Furthermore, we would like to acknowledge with much appreciation the crucial role of our City Hall representative, Dane Doleman, for providing us with the information to complete the final steps of our project and Jaycee Clarkson, from the Environmental Youth Alliance, for her suggestions and knowledge about the area and the plant species native to Vancouver. Also, we are thankful to Jane Pickering, the Translink's Senior Manager of Development Services, for providing us with information related to Translink's Public art implementation process.

Most importantly, we appreciate the opportunity to have our voices heard by the City of Vancouver, which may not be possible without the CityStudio.

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Abstract

This project aims to transform the underbelly of the Terminal Avenue Skytrain underpass by installing vertical pallet gardens around the columns, creating a living wall as an aesthetic and environmental addition to the neighbourhood. Greening of a neighbourhood with these green art pieces can help the neighbourhood reduce crime rates and feel safe and included, in return, helping to reach the Healthy City Strategy (HCS) of being and feeling safe and included, as well as contributing to the HCS of expressing ourselves with increased public participation and community engagement in arts and culture. Furthermore, the added biodiversity of sustainable vegetation implemented in the vertical garden will eliminate airborne toxins and generate better air quality in the nearby surroundings to help with the HCS goal to provide a healthy and livable environment for Vancouverites to thrive in. (Timur 600). Additional biodiversity also aligns with the Greenest City Action Plan goals of Access to Nature and Clean air. Furthermore, the repurposing of Pallets otherwise headed to the landfill helps contribute to The Greenest City Action Plan.

Main and Terminal is the 10th busiest Skytrain station in Metro Vancouver and the area continues to increase in congestion as residents, schools and businesses in the area develop, causing foot traffic around the station to increase. The immediate area to the east of the station has very little to do with social and community engagement because it has been mostly industrial for many years and is aesthetically bland and boring. Crime rates are currently high in the area making the area feel unsafe and uninviting. Motor vehicle traffic increasing on Terminal Avenue under the Skytrain is continually raising the air pollution in the surrounding environment. With the railway tracks above and the busy roads below, sound pollution is particularly high around this station.

Many wooden pallets are being thrown away instead of being repurposed in Vancouver. Therefore, in an effort to be more sustainable, wood pallets will be the upcycled host for the vertical garden vegetation. Most of the Skytrain stations have columns with blind surfaces and receive adequate solar radiation. For these reasons and the context of the location, a vertical pallet garden surrounding one or more columns of the Skytrain underpass is proposed as a permanent display using a frame around the columns for installation to minimize contact with the columns. This could significantly upgrade the public perception of the barren underbelly of the Terminal Skytrain with the addition of the public art pieces while addressing the goals of The City of Vancouver. Furthermore, a living wall can act as a location staple to attract people to the area which can be beneficial to nearby businesses.

Methodology

While constructing the model, recyclable resources like scaffolding, construction pallets or concrete framework and wood panels can be used. The materials can be easily dismantled whenever needed and is cheap and affordable. The vertical arrangement of the boxes provides solar optimization at different levels and ventilation by natural convection. Some of the watering is promoted by rainwater. Maintenance can be carried out by the Cities Green Street Program volunteers while special consideration of foreign and indigenous plants to be planted will be carried out by a reliable third party, namely Environmental Youth alliance.

With our focus on the Skytrain underbelly, we wanted to construct a piece that would assist the City of Vancouver achieve its Greenest City goals and Healthy City Strategy. This project adds greenery to a predominantly industrial area using native plant species recommended by the City of Vancouver while helping the city achieve its Access to Nature goals.

The pallets would be collected from industries around the city reducing the wood waste in our landfills. Filling them with donated and purchased foliage and stacking them along the columns would act as a sound buffer along the Terminal Avenue stretch of Skytrain making the area more tolerable to pedestrians and cyclists. A frame around the column has been proposed to secure the installation of 3 stacked pallets on all four sides of the columns. This technique would minimize contact with the columns and can easily be modified to open to make room for maintenance, much like the frames surrounding Skytrain columns in Richmond. The Scale of the project can range from one of the columns to all 35 of them. Two columns specifically stand out as the ideal project site on Terminal Avenue just North of Station Street. These two columns arch over Terminal Avenue and are not under the Skytrain, exposing them to the rain and sun at all times.

Seeing the modified pallets will also inspire the public to upcycle and see the potential to reuse materials for aesthetically pleasing pieces.

Along with the reduction of noise, having green spaces also has many benefits to the local residents. For example, the studies have shown that community green spaces have positive impacts on the mental health of local residents (Kazmierczak and James, 2007). Areas with green spaces have also observed a reduction in crime rates (Gorham, et al, 2009) and as a result seen increases in property values.

Furthermore, after seeing similar projects being successfully implemented in places like Bangkok, Mexico City and even locally in Richmond or Coquitlam, we figured our city should take a step in the right direction by making the unused spaces under our Skytrain and road bridges more verdant.

Results

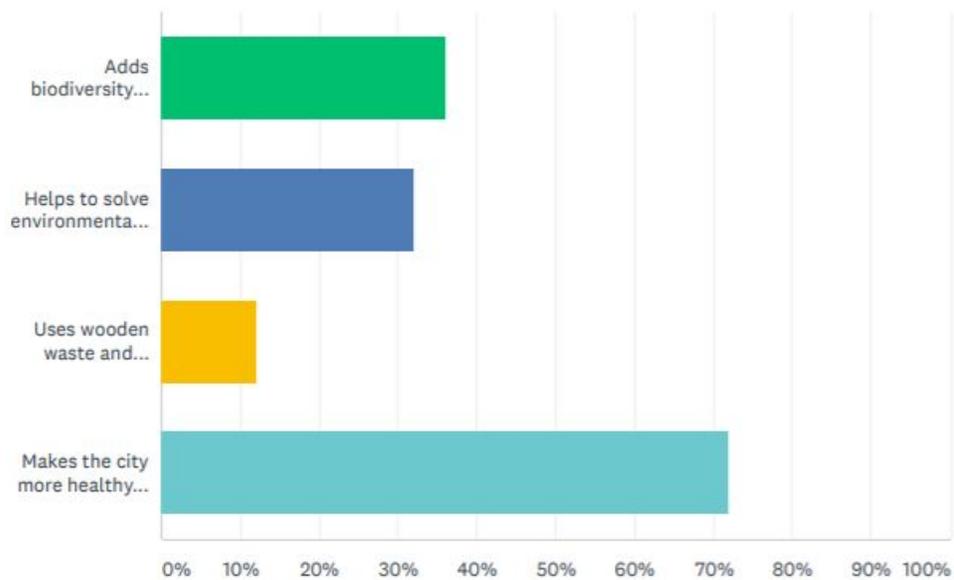
Many similarities are found the way people and local communities think about the project and its effects on the City through an online survey conducted. The survey comprises of all the major aspects of dealt through The Living Pallet project; people were asked to choose the most suitable option according to their knowledge and awareness of the environment.

Q1



If you see this transformation at the main street science world station, then according to you, which biggest change will it bring to the City of Vancouver?(you may choose the two most suitable options too)

Answered: 25 Skipped: 0



ANSWER CHOICES

RESPONSES

Adds biodiversity which improves the outlook of the city.

36.00% 9

Helps to solve environmental issues like sound and air pollution.

32.00% 8

Uses wooden waste and promotes upcycling.

12.00% 3

Makes the city more healthy and green and thus more sustainable.

72.00% 18

Total Respondents: 25

Budget

The living pallet is a scalable project ranging from 1 to 35 columns stretching the Terminal Avenue under way. For clarity purposes, the budget will highlight the cost of 1 column covered by 12 pallets which can then be multiplied by 35.

Expense Description:	Cost:
Pallet modification and planting of Garden (Volunteer)	\$0
Pallet collection for 1 column of 3 stacked pallets x 4 sides (12) - Gas cost	\$20-\$40
Plant cost for 12 pallets	\$500 - \$1,000
Installation Cost + Installation Materials (Scott Paragon) - Subject to major discounts on multiple units.	\$8,00- \$12,000
Maintenance (Volunteer)	\$0
Total Minimum	\$8,520
Total Maximum	\$13,040

Improvements

The Living Pallet could be improved by gaining further information and research about how Translink maintains the Skytrain's concrete pillars and the rail pathway above. Maintenance information will influence installation techniques to address these concerns. Working with Translink Engineers would play a crucial role in pallet installation techniques. The progression of our project could have improved by expanding our network and collaborating with more City Hall staff members to apply their criticism and expertise about the anatomy of the skytrain station. Seeing the different perspective of our project would provide a better understanding with our installation of the vertical garden. Acquiring opinions and inputs from the public and local businesses would help us address the concerns of different Stakeholders and give us the opportunity to include their point of view. Extending our knowledge on these topics and seeing the capabilities of it would have been advantageous towards our project, The Living Pallet.

Conclusion

Since we all know that City Studio aims to shift the way students and City Staff work together to co-create solutions for the City and make Vancouver more sustainable, The Living Pallet project is helpful for the City in reaching its goals:

- The strategies link to Healthy City Strategy by reducing crime rates and helping people to express better with increased public participation and community engagement in arts and culture.
- Improved air quality provides a healthy and livable environment to city dwellers to thrive in as well as aids in achieving Greenest City Action Plan.
- Making people aware of the Zero-Waste Program and influencing them to think twice for reusing the materials before disposal.

This report examines how the objectives of the project will be implemented after the authorization of the Translink. The City dwellers, City Staff, and urban planners should benefit from existing mechanisms that focus on sustainable use of resources and thereby co-relate traditional knowledge with modern science. The feasibility of the project is underdetermined. The complexity of environmental knowledge and public awareness can be extrapolated from the living model that tries to incorporate social, cultural and economic factors.

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