

Sustainable Energy Design Project Draft Descriptions – SEE 410W – Fall 2022

Project Title:

Refining and Testing of an Electric Retrofit for the Stanley Park Train

Project Summary:

The Stanley Park Railway is a popular attraction in Vancouver, welcoming more than 200,000 visitors each year. The attraction consists of a 15-minute ride through 2km of Stanley Park Forest on a gas-powered train. The Stanley Park Railway is looking for a new drivetrain solution due to an abundance of mechanical failures in the existing gas-powered engine, as well as to eliminate emissions. This project is a continuation of a capstone project from early 2022. The previous capstone team worked on this project to design an electric retrofit and has virtually tested their design through modelling with MATLAB powertrain Blockset and Simulink. The team also worked with the city of Vancouver to scope and purchase the parts required for their retrofit design.

The clients are looking for this team to continue the project, to refine the design, while still using the main components, and to build and test the physical retrofit. This will include the design of a loading apparatus for load testing. This project aims to refine the design for an electric retrofit for the Stanley Park train, and to build and test a physical prototype to validate the previous team's modelling.

Project Clients:

City of Vancouver and City Studio

Project Design Objectives:

Identify all the key design requirements with the clients.

Explore the potential designs and approaches for developing the testing apparatus and retrofit.