

GRANDVIEW GREENWAY
An Investigation of Ecological Enhancement & Stormwater Management as a Means of
Connection in an Urban Environment

by

GREG STEWART

B.Sc., University of Calgary, 1994

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF LANDSCAPE ARCHITECTURE

in

LANDSCAPE ARCHITECTURE PROGRAM
THE FACULTY OF AGRICULTURAL SCIENCES

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

April 1998

© Gregory Paul Stewart, 1998

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of LANDSCAPE ARCHITECTURE

The University of British Columbia
Vancouver, Canada

Date APRIL 30 / 98

TABLE OF CONTENTS

Abstract		ii
List of Drawings		iv
Analysis		
	Aerial photo	L1
	Route Options and Focus Areas	L2
	Topography & Hydrology	L3
	Watershed Boundaries	L4
	Utilities & Watershed Boundaries Post Development	L5
	Openspace	L6
	Circulation	L7
	Structures & Zoning	L8
	Site Analysis (Pre 1950's)	L9
	Site Analysis (Present Day)	L10
Trout Lake		
	Trout Lake Watershed	L11
	Runoff Calculations	L12
Trout Lake to Grandview Cut		
	Ravine Option	L13
	Trout Lake Ravine Elevations	L14
	Trout Lake Ravine Bridge Detail	L15
	Lakewood Drive Option	L16
	Lakewood Drive Elevations	L17
Grandview Cut		
	Grandview Cut Plan & Elevations	L18
	Grandview Cut Plan & Elevations	L19
False Creek Flats		
	Route Option 1	L20
	Route Option 2	L21
	Route Option 3	L22
	False Creek Flats Urban Canal	L23
China Creek Park		
	Park Layout Plan	L24
	China Creek Park Elevations	L25
False Creek		
	Grandview Canal & Estuary	L26
	Grandview Canal Sections	L27

ABSTRACT

Greenways are linear open spaces, sometimes called "Green Links" which connect parks, Nature preserves, cultural features, historic sites, neighbourhoods, schools and shopping areas. They are often located along either natural corridors like ocean fronts, rivers, stream valleys, ridgelines, or built landscapes such as rail rights-of-way converted to recreational use, canals, trails, scenic roads, lanes or dedicated or shared streets. In the city of Vancouver there is a great opportunity to establish a link between Trout Lake, located in East Vancouver, and False Creek, located in the heart of Vancouver. The mission for this thesis project is to design a greenway connecting Trout Lake to False Creek with special focus on ecological enhancement and stormwater management.

The Route itself has already received citywide support in *City Plan* approved in 1995. The Greenway, as indicated in the report, will connect Trout Lake to False Creek via the Grandview Cut. With city policy supporting the greenway, the bulk of the thesis is incorporating ecological enhancement and stormwater management into the design. Stormwater from the Trout Lake watershed will be brought to the surface, cleaned through biofiltration by wetlands, and used to sustain a stream, which flows year round to False Creek. By design the stream will be able to support a number of fish habitat, such as Coastal Cutthroat, Coho Salmon, and the endangered Salish Sucker, to name a few. As the Greenway reaches False Creek Flats there is an opportunity to daylight (bring to the surface) two of Vancouver's historic lost streams: China Creek, and Brewery Creek.

The study begins with a series of large-scale context analyses, looking at how the proposed Grandview Greenway fits into the city of Vancouver as a whole. The analyses include topography, hydrology, watershed boundaries, utilities, openspace, circulation, structures, zoning, and how cultural views and perceptions of the environment have changed over the past 50 years.

Trout lake watershed in its built form is the next area of focus. Starting at the individual lot, an analysis of the current condition is identified as it relates to stormwater management. Suggestions are made to increase the amount of groundwater infiltration, while reducing the amount of surface runoff collected in the watershed. Runoff calculations for the watershed illustrate the limits to the proposed system ie. the maximum size of wetland needed to store and treat all stormwater runoff before it enters Trout Lake, and the minimum flow the creek will require during summer dry periods. All calculations support the feasibility of the proposed greenway in its entirety.

Route options are explored to connect the stream to the Grandview Cut, followed by the detailed design of the Grandview Cut to accommodate the stream, pedestrians, cyclists, the existing rail line, and wildlife. Once in the False Creek Flats, route options are once again explored to link the stream to False Creek. Now in the industrial section of the greenway route, the form of the stream changes from a model of a natural system to that of an urban canal. This allows the system to accommodate more water, while using less total land area.

China Creek Park is the next detailed design focus. The goal is to daylight China Creek through the park and connect it to the Grandview Greenway system. It is proposed that for this section of the greenway, the initiative be entirely derived through community groups as well as special interest groups, rather than by the City of Vancouver. What is proposed is at a smaller scale with less intervention to the Landscape.

The final stage of the proposed greenway is the estuary as it enters False Creek near Science World. Detailed design shows how the canal enters False Creek and how it relates to Science World, the Sea Wall, and to the proposed Sustainable Community of Southeast False Creek.