

capitol hill green avenue
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neighbourhood nodes masterplan : hastings corridor individual design

“Streets are our most accessible public spaces. They should be places where neighbours socialize and build community, and where young and old alike engage in activities that strengthen their physical and creative health. Thus, the guiding design principle for neighbourhood residential streets should be livability.”
(Appleyard & Cox, 2006)

Interest in street design animated early discussions amongst landscape architects and planners. As early as 1910, Frederick Law Olmsted addressed the concept of standardized street designs. He raised awareness about the social, economic, and ecological costs that result from failure to respond intelligently to local landscape conditions. Standardization of street design has come to dominate the 20th century landscape in North America despite the early consideration of these potential conflicts. Standards for road width, curve radius, sightlines, speed, have all been configured for vehicle efficiency, ignoring the important role that streets play for a community in the social and political realm (discussed by Kevin Lynch, Jane Jacobs, and J.B. Jackson). Residential streets are used for a variety of purposes including pedestrian circulation, socializing, the creation of neighbourhood character, front-door access to homes, and childrens play. In an interdisciplinary team, landscape architects provide insight into how these overlapping uses can be accommodated in tandem with vehicular activity in a way that responds to the local landscape and ensures ecological integrity (Ben-Joseph, 1995).

Expanding the repertoire of the street I - Designs for shared use

The first “woonerf” was built in 1976 in the Dutch city of Delft. It was the result of a cumulation of thinking about the concept of “shared streets”, begun in 1959. The concept addresses a set of priorities including environmental quality, noise, pollution, social activity, pedestrian activity, and visual aesthetics, as well as satisfying the needs of vehicular traffic (Ben-Joseph, 1995).

The design principles of shared streets have come to be recognized and implemented internationally. The most distinct feature is a continuous surface that is shared by all users but prioritizes pedestrians physically and psychologically. By designing tight curves, narrow passages, increasing side friction, using natural obstacles such as trees, and visual and sensory cues - such as rough surface materials - drivers can be induced to slow down significantly on the street.

Higher pedestrian use results in safer streets (Appleyard & Cox, 2006). Ben-Joseph (1995) cites investigations into safety and childrens’ play habits on shared streets. The number of accidents was found to decline by more than 20% (and deaths by more than 50%) on these streets, despite the overlap of vehicle and pedestrian activity. Opportunities for children to play and neighbours to socialize are also enriched and can lead to a 20% increase in play activity. Types of play become more complex; the use of toys, bicycles, and the frequency of games which demand more space increases significantly.

Expanding the repertoire of the street II - Designs for reclamation

“We have two results arising from the universal flooding of our towns by the motor-car: (a) the suppression of the variety and character in the ground surface; (b) the invasion of the pedestrian reserves” (Gordon Cullen, 1961)

Roads have become ubiquitous in the urban landscape. Their design inhibits alternative modes of transport and pedestrian use. The woonerf attempts to address this problem, but it cannot fundamentally change the nature of the street. It’s strength lies in its ability to be widely applied.

Reclamation provides an opportunity to drastically change the landscape character of an existing street right-of-way. In reclamation projects vehicular access is terminated, and the space is opened up for new programming and design. Where this is possible, a distinct change in the urban fabric can occur that allows for different types of movement and inhabitation.

The project entitled PARK(ing) has become a well known and celebrated incident of street reclamation. By renting out a parking space and turning it into a small park, It demonstrated how to reclaim public space dominated by the automobile and configure it temporarily for different uses. The installation generated discussion about the potential of street infrastructure to become revitalized social and green space. The efforts of many designers now focus on making these changes permanent.

Introduction and research: streets for dwelling

Expanding the repertoire of the street I Designs for shared use

Expanding the repertoire of the street II Designs for reclamation

Traditional shared street or *woonerf* (1976):



PARK(ing) (2005):



Photos: www.rebargroup.org/projects/parking

New York City High Line (2008):

Reclamation of the old industrial conveyance into a "post-industrial instrument of leisure, life and growth". Proposed by: Field Operations, Diller, Scofidio and Renfro, Olafur Eliasson, Piet Oudolf and Buro Happold.



Goal:

To demonstrate how a street can be redesigned as a public “green avenue” and play a revitalizing role in a new comprehensive open space system in North Burnaby.

Objectives:

Ensure multi-modal access across major roads
... strive for smooth transitions for pedestrians

Reduce vehicular traffic
... block by block, year by year

Enhance experience of the coastal forest
... direct contact with nature

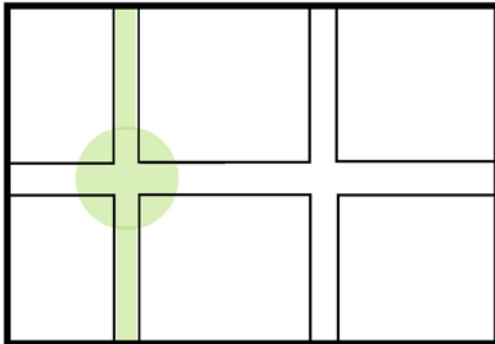
Diversify access and movement
... encourage walking, running, biking, skateboarding, rollerblading, cross-country skiing, scooters, public transit, etc.

Design for everyone
... all ages and physical abilities

Promote ecological function
... promote habitat growth, biodiversity, and stormwater infiltration

Six design principles:

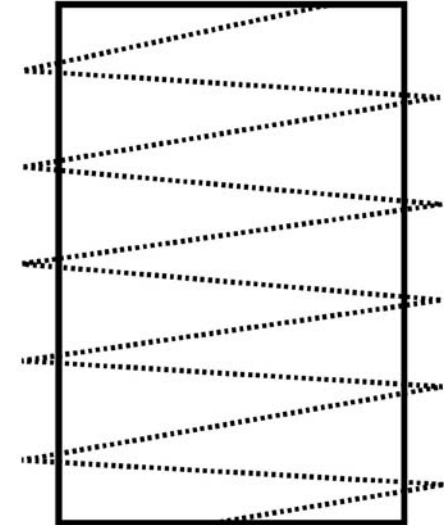
Capitol Hill Green Avenue



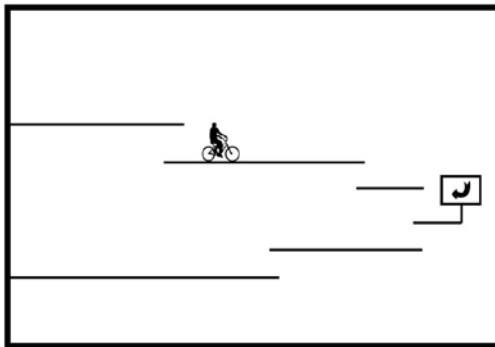
Recognizable "green" intersections



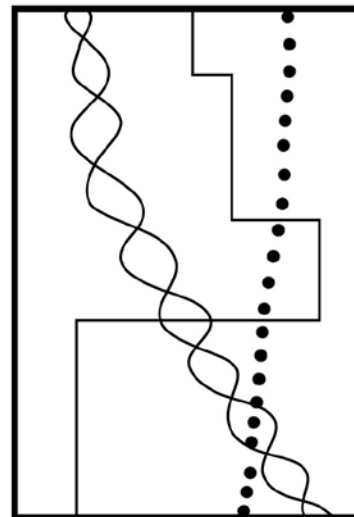
Drivers as guests



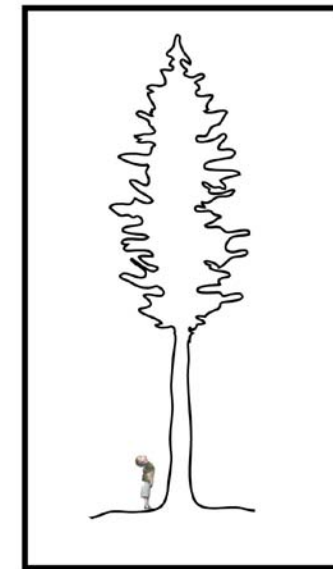
Lateral movement



Connectivity



Multiple modes



Coastal forest

Capitol Hill site:

The Capitol Hill Green Avenue project aims to redesign the unique roads of *Empire Drive* and *Capitol Drive* on Capitol Hill in North Burnaby.

These old roads were established early in the 19th century when Capitol Hill was logged and cleared for development. They differ entirely from the predominant street infrastructure that has built up around them. Contrary to the habitual grid, which was subsequently constructed in the area, *Empire Drive* and *Capitol Drive* conform to the contours of the natural topography, making the steep terrain more easily accessible for pedestrians.

Capitol hill is close to a number of parks and trail systems. It also provides a prospect in every direction of the lower mainland, which can be enjoyed while following the routes of *Empire Drive* and *Capitol Drive*.



Site location
in Burnaby

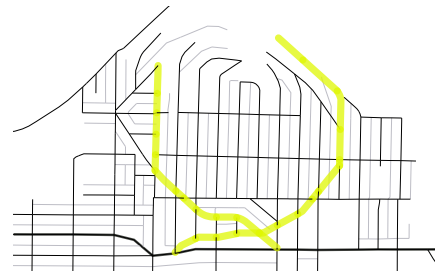


Image: The green avenue contrasting the street grid - a unique opportunity

Capitol Hill Green Avenue



Photo: West side of Capitol Hill from Delta Street, Burnaby Heights



Capitol Hill site:

Capitol Hill Green Avenue



Photos: Tour of Capitol Drive and Empire Drive from Hastings Street

Phasing:

While some portions of the roadway can be fully redesigned straight away, the complete design is reached through a process of phasing, much like the one represented below.

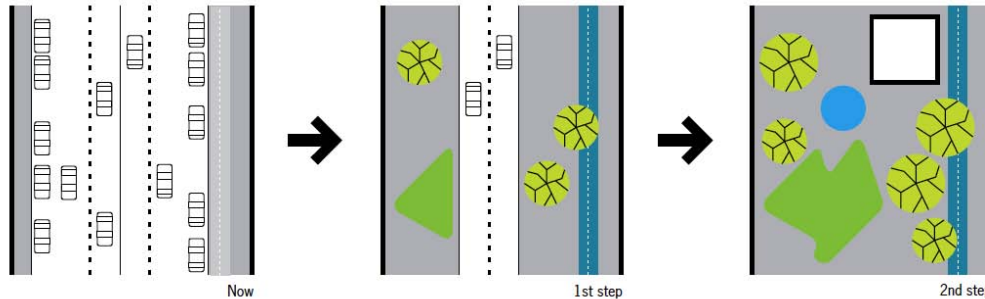


Image: “Green Streets of Malmo”, UiD.

Where it is necessary to preserve vehicle use in the immediate future, the street can be partially redesigned to begin the transition. Within the 50 year target, those specific areas can be altered through land use strategies and building guidelines, and the rest of the design implemented. It is extremely important to involve local residents and gain their support in the project for the phasing to be successful.

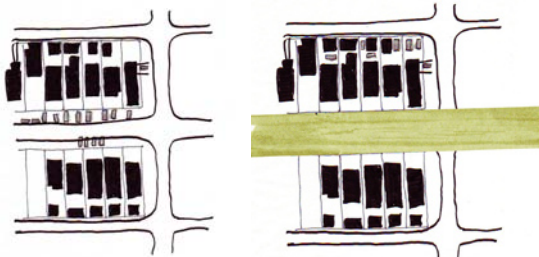


Fig 2: Existing patterns of use in some areas reflect use of the road for parking while garages and laneways are available. Immediate changes can happen in these areas in tandem with education about the green avenue to gain support and community involvement.

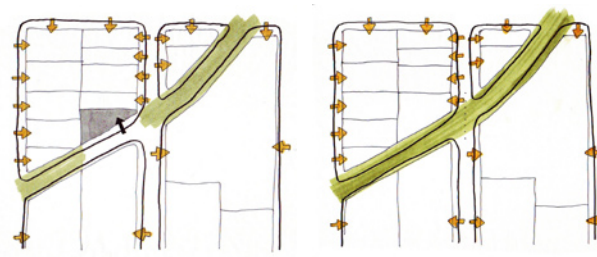


Fig 3: Two lots face the greenway with no access to other streets. To ensure some type of vehicle access in the future and allow the street to be reclaimed for their enjoyment, merging with the adjacent lot and changing the land use allocation within 50 years is possible.

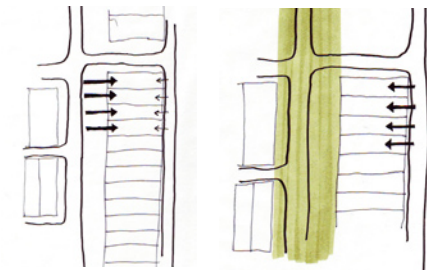
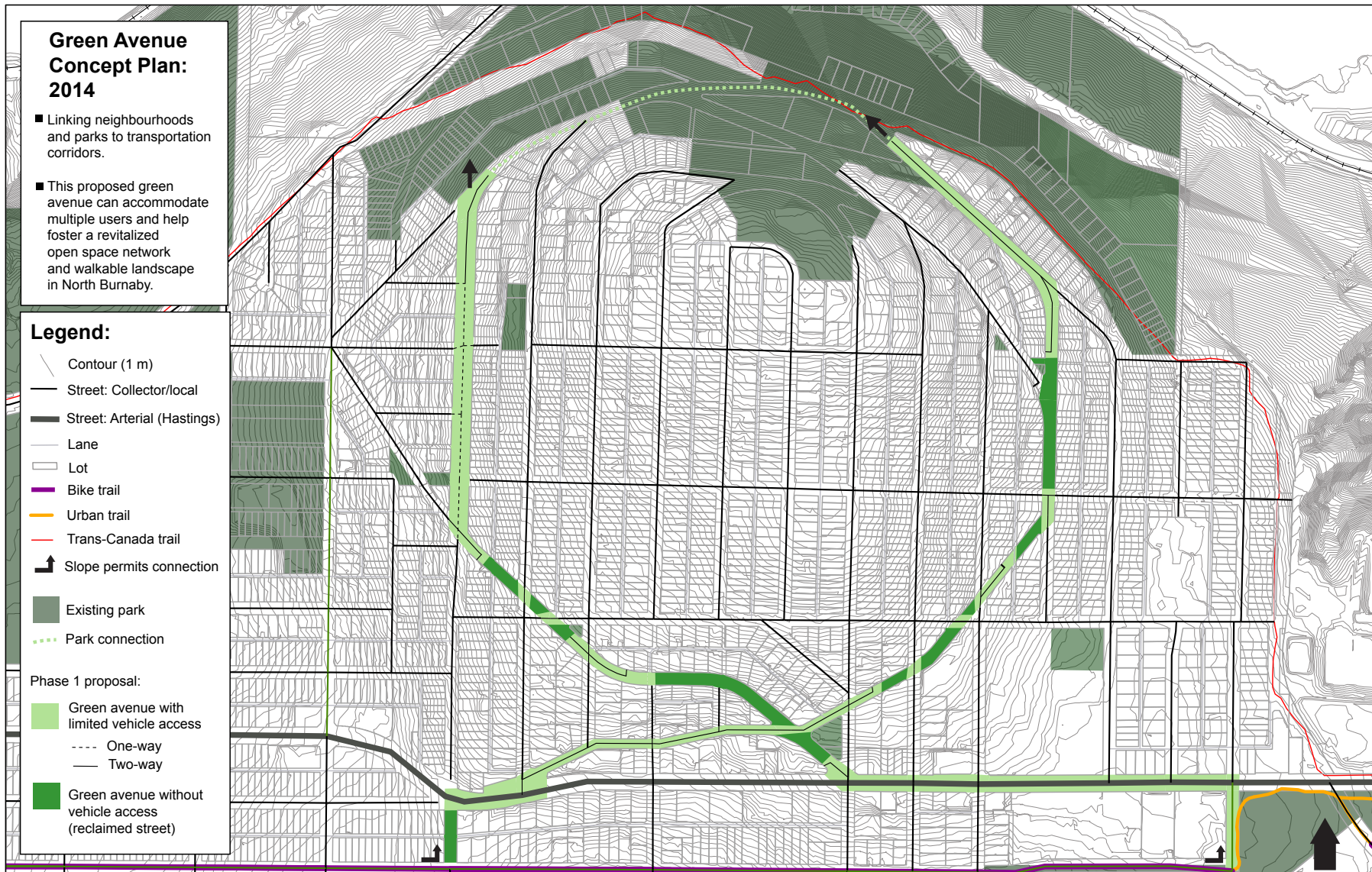
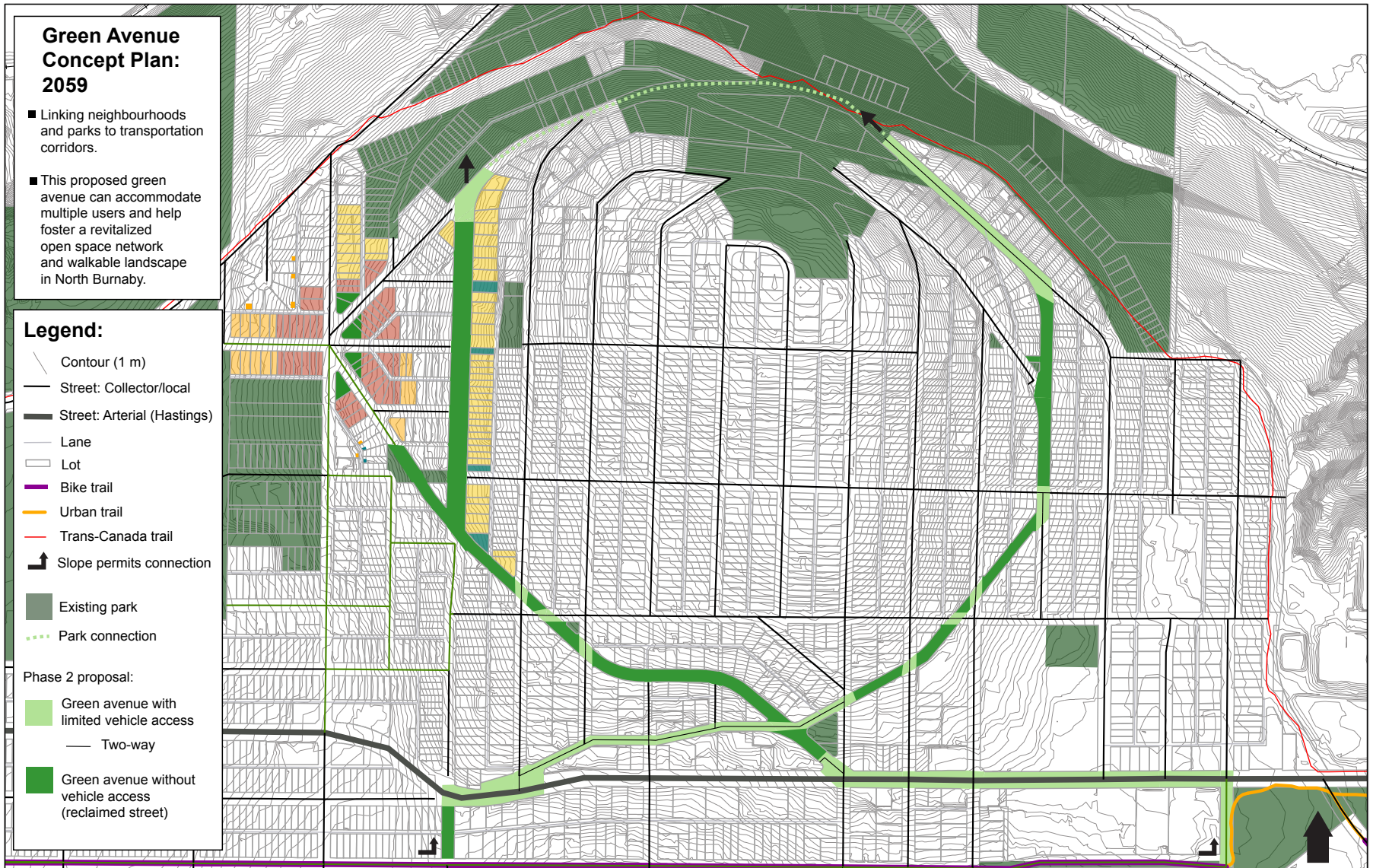


Fig 4: In some cases a front driveway is used despite having lane access to the back of the house and sometimes even a garage. Within 50 years changes can be implemented in the existing buildings, or as they are rebuilt, to ensure that the back access is primary.

The green avenue exhibits three distinct conditions throughout this phasing process: shared street with two-way traffic, shared street with one-way traffic, and reclaimed street without vehicle traffic.





Site design:

Capitol Hill Green Avenue

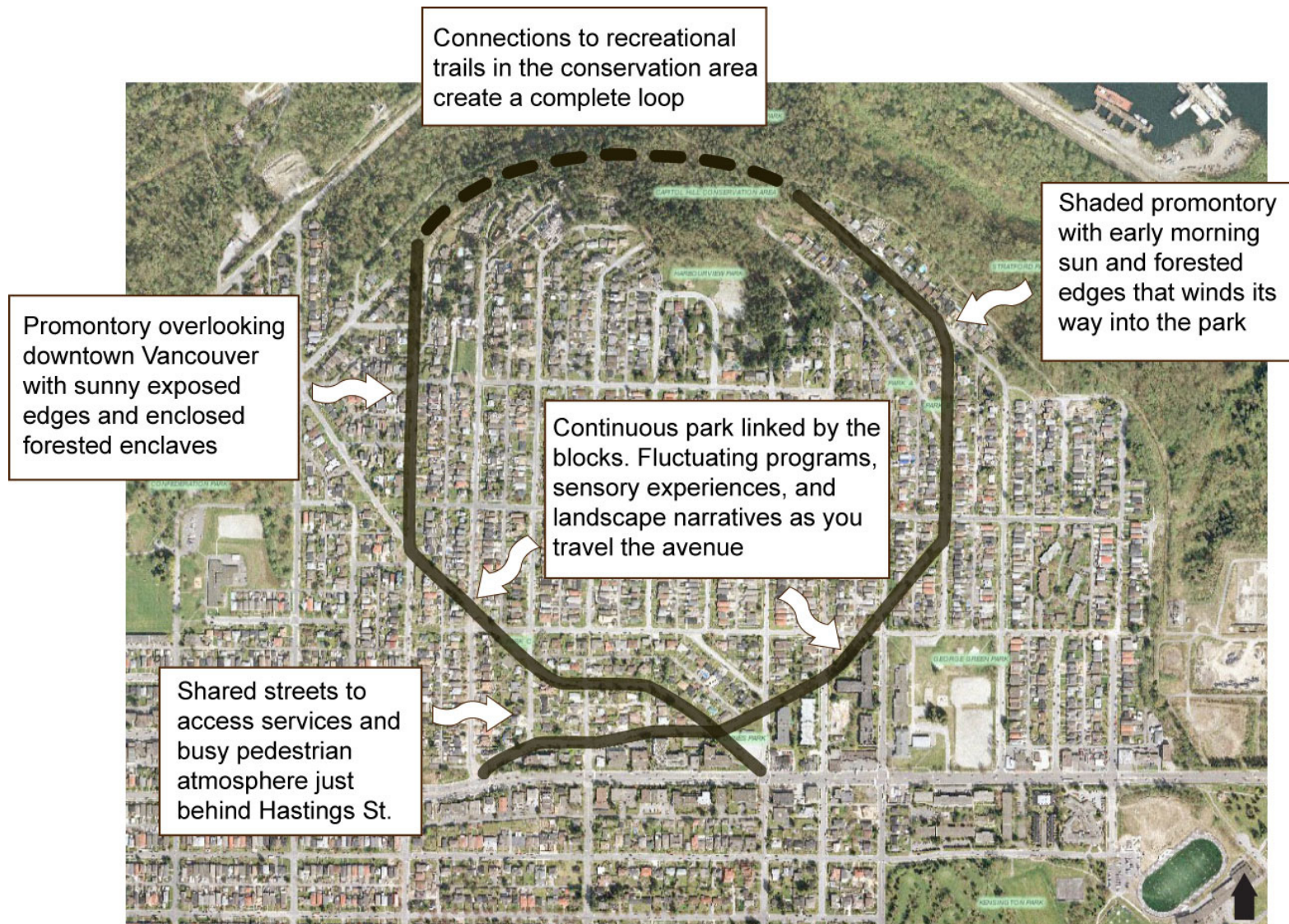


Image: Changing experiences are integral to the overall vision for the avenue

Local street:

Schematic design phase I:

Shared street with one-way traffic

Capitol Hill Green Avenue



Location key: Delta Street



Photo: Looking West from Delta Street



Photo: Driveways on Delta Street

A section of north Delta street serves to illustrate the phasing process. Currently, some of the houses utilize driveways from the street, despite having back access from the lane and a garage.

Local street:

Schematic design phase I: Shared street with one-way traffic

In phase I, the existing road (10 m) is excavated and redesigned, allowing for multi-use pedestrian activities on a combination of hard and soft surfaces. Soft surfaces enable on-site infiltration of stormwater and runoff from adjacent development, and the gradual regrowth of vegetation heightens biodiversity and provides habitat value. Vehicles are accommodated in a one-way direction on a gravel surface that makes them slower and louder amidst pedestrians.



Character sketch: Phase I

Capitol Hill Green Avenue



Plan: Phase I

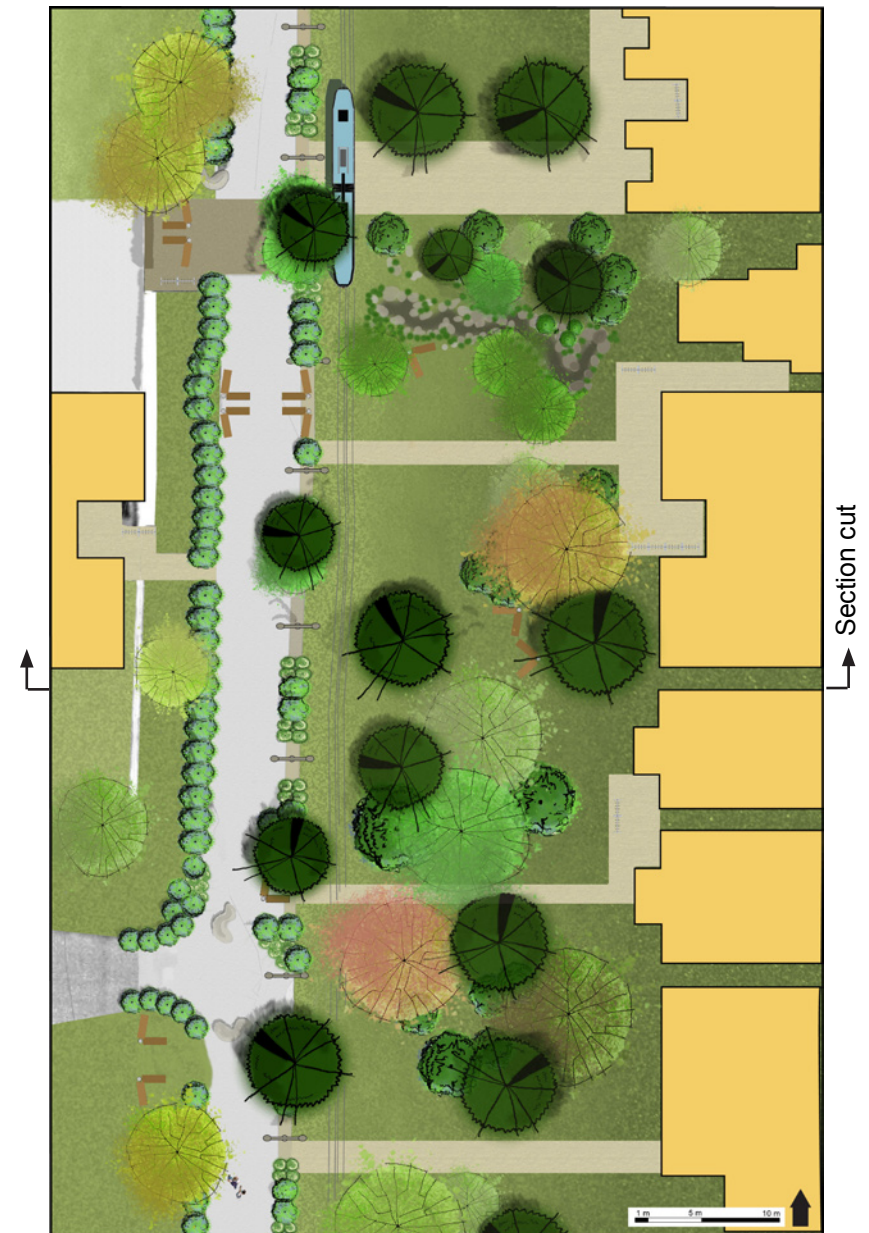
Local street:

Schematic design phase II: Reclaimed street without vehicle traffic

In phase II, this area has grown to be more enclosed and provide experiences of the coastal forest on the slope. The homes have been redeveloped as townhouses that have a higher density and address the green avenue as a public amenity. A tram route on the avenue could be supported by the increased density on the street and in the new neighbourhood node nearby, identified in the Hastings Corridor masterplan. The green avenue and tram may also become an attraction for visitors to the area. If the tram route is not desired, the space can be used for a variety of other programming activities including community-gardens, play areas and recreational pursuits.



Character sketch: phase II



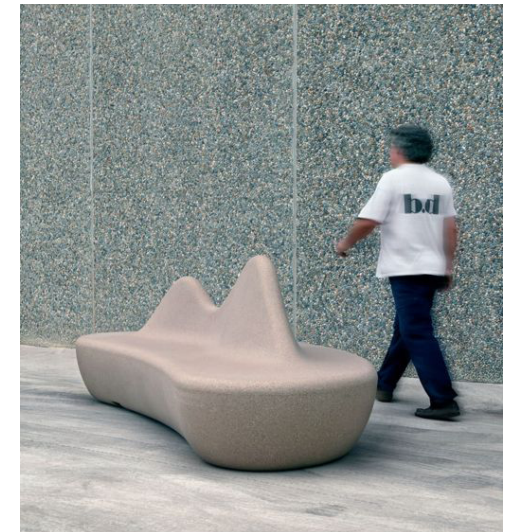
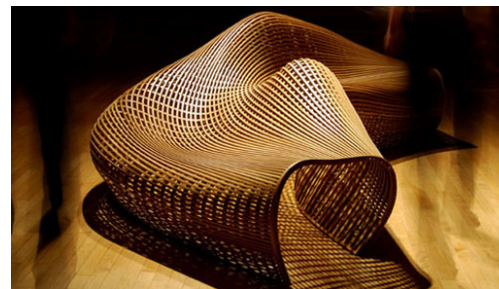
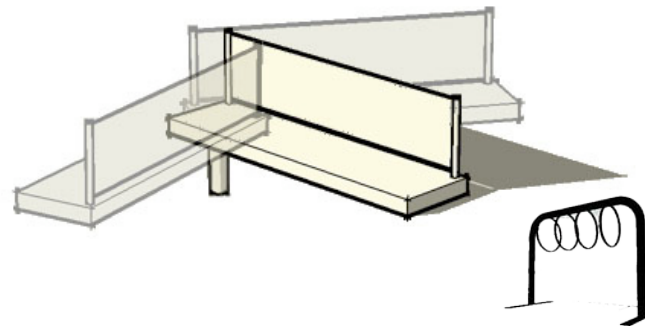
Plan: phase II

Materials:

Capitol Hill Green Avenue



Photos (above): Soft surface changes in the green avenue (left: enables vehicles and alternate pathway; right: softer surfaces spread in the reclaimed coastal forest)



Photos (above): Green avenue plant palette

Top: Snowberry; Middle left: Vine maple;
 Middle right: Feather reed grass;
 Bottom left: Western red cedar "Logan"; Bottom right: Birch
 Other possibilities: Dogwood, Elderberry

Images (above): Inspiration for street furnishings for pedestrians
 (Top left: swivel bench; Top centre: bicycle rack; Bottom left: amorphous bench; Bottom right: bollard bench)

Delta street sections:



Section
Delta Street
Phase I: One-way vehicular traffic on shared street



Section
Delta Street
Phase II: No vehicular traffic/optional streetcar on reclaimed street

Green intersection:



Location key:
Hastings Street & Hythe Avenue

The intersection of Hastings and Hythe is an important connection from Empire Drive to the neighbourhood south of Hastings Street and the regional bicycle route. Due to the steep topography in the area, Delta street is the only street with a gentle enough slope to move pedestrians comfortably. Therefore, the proposal takes advantage of the parallel streets, which move vehicles efficiently, and closes the right-hand-turn from Hastings onto Delta.

In addition, the dedicated left-hand turn lane prioritizes automobile comfort at the expense of pedestrians by diminishing the sidewalk. By removing this dedicated turn lane, sufficient space is opened up to allow for an enjoyable walking path beside the road. In addition, the entrance to the neighbourhood of capitol hill becomes more attractive and accessible.



Character sketch showing widened sidewalks, street trees, and roadside topography.



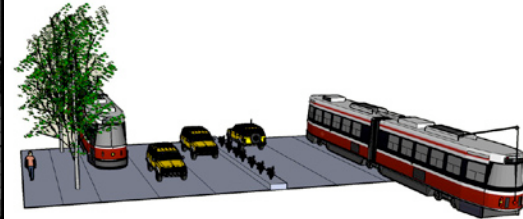
Photo: existing condition

Green intersection:



Plan: Hastings Street & Hythe Avenue

Capitol Hill Green Avenue

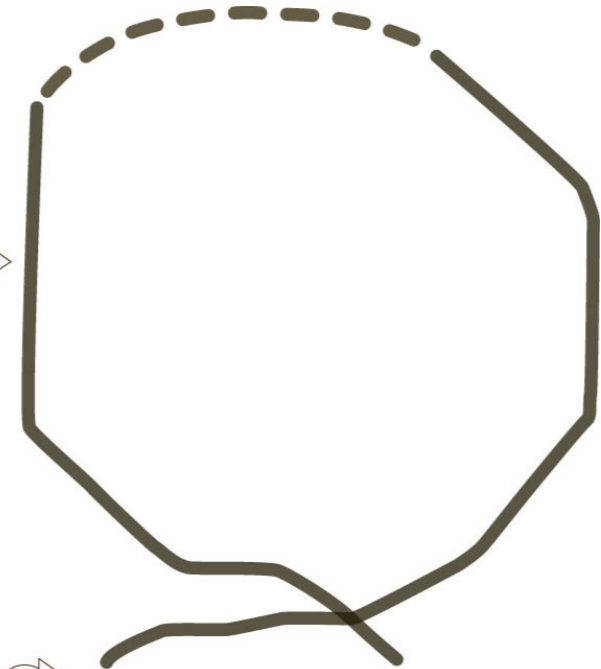


Multi-modal corridor concept:
the addition of a streetcar in the side lanes adds side friction and provides a comfortable and efficient way to travel

Concluding statement:

The invasion of the pedestrian reserves and suppression of variety and character in the ground surface decried by Cullen (1961), is perpetuated by the standardization and auto-dominance of streets. The standard expectations of streets ignore the civic roles they play as places of interaction, gathering, childrens' play, ecological function, and in building the aesthetic character of neighbourhoods. The proposal for the Capitol Hill Green Avenue interprets the concepts of "woonerf" and street reclamation and applies them to the historic streets of Empire Drive and Capitol Drive in North Burnaby.

It is necessary to phase the project according to 5 year and 50 year projections in order to reach the goal of total reclamation. Changes in building guidelines in a few select locations will bridge the transition. Site scale exploration into a local street illustrates how this change can occur by first redesigning the 10 metre road, and eventually expanding the redesign to include the entire 30 metre right-of-way. Site scale exploration of a "green intersection" illustrates changes that can be made to street character by enhancing diverse modes of movement and asserting pedestrian space.



References:

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Baker, Linda. "Streetless in Seattle", *Metropolis Magazine*, 17 April 2006.

Ben-Joseph, Eran. "Changing the residential street scene: Adapting the shared street (Woonerf) concept to the suburban environment", *Journal of the American Planning Association*, vol. 61, iss. 4, Autumn 1995, pg. 504.

Cullen, Gordon. **Townscape**, London: Architectural Press, 1961.