

vancouver **MASTER PLAN**



Key Concepts:

- This plan shows how the city might look in 2050
- All of the colored areas indicate where things are expected to change
- We anticipate a doubling of population and jobs by this time
- The imperative is to reduce per capita GHG by at least 80%
- Six separate teams worked on sub sections of the map, with the seams between sections co-ordinated collaboratively
- Higher density along transit arterials provides a pathway to achieve this goal
- Opportunities for green infrastructure are found mostly through re-purposing some streets for green function
- The designs incorporate a myriad of solutions in response to issues of demographic shift, energy use, and sense of place

1.5 million inhabitants. Assuming that current trends continue, we expect this population to be reached some time after 2050. You are looking at a large photograph of the existing city that we have altered to show potential changes. Places on the map that appear as black and white are, we speculate, largely unchanged through 2050. Areas where you see vibrant colours are areas where we expect more significant change might occur. Most of this change occurs in places where we expect new buildings, either as re-development on locations where buildings presently exist (well over 90% of the cases) or on sites that are presently unoccupied. Other important elements include the bright white lines that indicate major transit corridors (in our case we assume these are streetcar lines) and the vivid green lines and areas that indicate either existing open spaces to be preserved or new open spaces to be created. You will note that many existing streets have been coloured green, indicating that certain streets in the system are proposed as part of the "green grid", streets that have some combination of ecological agricultural, alternative transportation, or recreational function.

On the following pages we show six enlarged details of this map, each one produced by a small collaborative of urban designers. We provided each of the teams with a population and jobs growth target sufficient to meet the assumed doubling of jobs and population for the city. Their main task was to arrange this population within their 25 square kilometer area, and to do so in a way that would meet previously determined sustainability targets. Key among those targets was the imperative to reduce by at least 80% the per capita greenhouse gas (GHG) produced by

Finally, and importantly, each of the six squares provides, in a myriad of ways, opportunities to demonstrate the implications of discoveries identified in the first four chapters of this book: the streetcar city, energy consequences, demographic realities, and the primacy of place.



The northwest section is composed of the West Point Grey, Dunbar, Kitsilano and Arbutus-Ridge communities. Currently these neighbourhoods are distinguished from the rest of the city by their more human scale, vibrant commercial corridors and adjacency to the UBC endowment lands and Pacific Spirit Park. In order to maintain and enhance the unique character of these places, our plan extends

mixed-use corridors and intensifies density across the site, concentrating this density along streetcar routes. This plan accommodates an additional 35,965 people, increasing the population from 46,561 to 82,526. Accordingly, the number of jobs available in the area increases by 10,298, from 34,211 to 44,509 by 2050. The reclamation of the waterfront for public use adds to the



generous amount of green, open space the area already enjoys. Intermittent streets transform into permeable greenways exclusively available to pedestrians and cyclists. Placement of the greenways according to topography and connecting parks, schools and community centres allows for the incorporation of stormwater management practices as well as the creation of an alternative mobility network

of green corridors. Kitsilano epitomizes the positive qualities of a neighbourhood originally shaped by the streetcar. We reinstate old streetcar lines like those along 4th Avenue and Broadway and place additional streetcar routes along important arterials such as Macdonald Street and Cornwall Avenue.

Below:

increasing density.



Tate Francesca White

Source of 3D models: http://elementsdb.sala.ubc.ca.

Mixed-use buildings frame the intersection of 16th Avenue and Macdonald Street. The presence of retail and office space allows for more people to work and shop in areas closer to home and accessible by transit. Row houses are used to buffer higher density residential buildings and provide accessible housing for an aging population. Placement of such typologies along greenways preserves sense of place while

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TEAM MEMBERS: Sara Orchard and Tate Francesca White

Key Concepts:

Four major strategies influenced the 2050 plan for the northwest section of Vancouver:

- Reclaim the waterfront for public use, creating a sizable addition to open, green space that can serve a diversity of programming functions.
- Add mixed-use commercial areas along streetcar routes targeted toward currently under-served neighbourhoods.
- Transform a number of streets into greenways to provide a five-minute walking radius to green corridors.
- Redevelop the former military base to extend the grid and desirable characteristics of Kitsilano while adding residential density.





Sara Orchard

Source of 3D models: http://elementsdb.sala.ubc.ca.

Left:

Redevelopment of Alma Street and 4th Avenue expands the commercial corridor and increases density into the military base. Access to commercial areas, greenways and offices helps to decrease the need to travel outside the community for basic needs. A mix of housing typologies allows for seniors, families, and students to live here. A rhythm is created by building form and the presence of regular greenways. In order to enhance the sense of place, a distinct pattern of commercial and higher density residential surround lower densities to create unique experiences when walking along major and minor corridors. Greenways weave through the area as an alternate transportation route.

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TEAM MEMBERS: Sara Orchard and Tate Francesca White

- Increase density into the military base.
- Mix housing typologies to allow for residents of all ages and incomes to live in the area.
- Transform a number of streets into greenways to create an alternative transportation route.

Right:

Strategically place buildings to preserve a midblock green corridor. The perspective shows a view looking south down this corridor from 16th Ave. Such an application of residential density behind mixed-use buildings creates more complete and vibrant neighbourhoods. Retaining open space assuages the sense of overcrowding and allows for the inclusion of green infrastructure elements like the stormwater planters seen in front of the townhouse adjacent to the cafe. Stacked townhouses retain compatibility with the singlefamily houses that can be seen in the distance.

Below:

The site section demonstrates in greater detail the transition from the streetcar arterial at 16th Ave to the lower density fabric past 18th Ave. A variety of open spaces – private interior courtyards and rooftop gardens and public greenways – are distributed amongst the increased residential density to provide a valuable amenity to residents and surrounding communities. Ground floor units (coloured pink) are ideal for seniors. They replicate lower density living but offer better accessibility to services and social interaction. Reclamation of 18th Ave as a greenway promotes green mobility choices and buffers lower density areas against the higher density buildings.



Below:

Shadow studies greatly influence the design because of the blocks' position south of the arterial. We used appropriate setbacks and height limitations so as to not cast streets, green corridors, courtyards and rooftop gardens in the shade. Thus, the highest points of buildings and openings for courtyards are oriented to the south to optimize solar angles.

Spring Equinox



Summer Solstice



10:00 AM

12:00 PM









TEAM MEMBER: Tate Francesca White

Key design principles: Residential density behind mixed- use corridors

- Include a variety of unit types and sizes so that the fluctuating needs of a demographically shifting population can be accommodated.
- Use buildings to define outdoor spaces that serve public and private uses, including leisure, recreation and gardening.
- Design higher density buildings so as to not cast shadows on surrounding spaces or overwhelm adjacent lower density communities.





2:00 PM

The anticipated drastic reduction of car use in the future results in the potential for residential streets to be transformed into greenways. With no cars on the greenways, the traditional road right-of-way can take on other functions such as community gathering spaces, stormwater management, and the safe movement routes for pedestrians and cyclists. This greenway design examines a section of Dunbar Street in Kitsilano as an example of what a residential greenway could look like in the future. The diagram to the right depicts a schematic representation of potential programming along the street. Active areas include opportunities for activities such as community gardening and sports, whereas passive areas focus on facilitating movement through the neighbourhood in a pleasurable way. Similarly, high intensity corners incorporate cafe seating and performance spaces on the road. Stormwater management features are a common link between the spaces, allowing for natural drainage while increasing amenity. A diversity of spaces starts to create a rhythm and generates interest for people using the greenway.







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Proposed Waterfront Park



Opposite, top:

The greenway incorporates community gathering space, in this case an area for community gardening and pick-up sports. Rain gardens help define the space and provide forage for birds and habitat for pollinators.

Opposite, bottom:

Raingardens increase the neighbourhood aesthetic, manage stormwater and provide habitat. In passive, less programmed areas, alternate pathways weaving through the raingardens allow for the users to learn about and explore the rain gardens.

Bottom:

A low area at an entry/exit point offers the opportunity for the rain garden to engulf the former asphalt street. A boardwalk elevates pedestrians above the garden. An alternative path for bikes and faster moving lane for pedestrians is also provided.



Raingardens are used to separate movement from more stationary activities in this high intensity corner situation. Pathways are shared by pedestrians and cyclists



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TEAM MEMBER: Sara Orchard

Key design principles: Green the grid; reclaim the road for people

- Transform selected neighbourhood streets into greenways, linking parks, community centres, and other amenities.
- Close greenways off to motorized vehicles to allow for the safe movement of pedestrians and cyclists.
- Use sections of greenways for community-centred activities including community gardens and sports
- Incorporate stormwater management and habitat into greenways
- Vary greenway design to enrich the experience for the pedestrian and cyclist



The Kerrisdale and south Dunbar area in the southwest of Vancouver is presently experiencing the projected demographic shift for 2050: this area already contains a large elderly population. This demographic, in combination with the predominant typology of the detached single family home, leaves a lot of empty nesters in more space than they know what to do with. Clearly the next few decades will bring a natural opportunity to house a broader demographic mix, give new and old residents with more services, and provide better transit to more new residents.

In this area, we assume that Kerrisdale will experience an anomalous demographic shift from the rest of the city. In 2050, we assume this area will once again be populated by young families and also with UBC students due to the proximity of the university. We have developed a master plan for this area keeping with the targets of a projected population growth of 25,436 and the creation of 1,600 new jobs. The big moves in this area include: the development of a student living area with a focus on walkability and green corridors; the implementation of the streetcar line along along Dunbar Street, West Blvd, SW Marine Dr, 41st Ave and MacKenzie St; an overall densification along major corridors through mixed use typologies; and, the transformation of an existing public golf course into a regional park bordering a light industrial live-work space. Most importantly, this area will undergo a gentle densification that capitalizes on and extends existing neighbourhood qualities.

Bottom :

A mixed use building typology lines the main corridor on 41st Ave. This typically consists of 4-6 storey walk-ups. Mid-density buildings generally fall behind the mixed use at 3-4 storeys. Taller buildings locate to the north of greenspace. Existing single family homes are retrofitted to accommodate multi-family residences.



Lisa Lang

Source of 3D models: http://elementsdb.sala.ubc.ca.



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TEAM MEMBERS: Jingjing Sun, James Godwin, Lisa Lang

- Develop a student housing area in the southwest corner.
- Restore the West Blvd. streetcar line; extend streetcar routes along 41 Ave to service UBC, SW Marine Dr., Dunbar and Mackenzie St.
- Transform the existing city golf course into a regional park and light industrial area.
- Preserve and protect existing old growth forests and create green corridors to link existing and proposed green space.

Bottom:

To accommodate the increased density, the northeastern subarea on both sides of Mackenzie Street requires mixed used developments along the tram corridor. Balaclava Park is an ecological stepping stone that becomes linked with other natural areas through green corridors. 4-6 storey mixed use buildings locate on both sides of the tramway corridor. New housing types include laneway infill, duplex, rowhouse and multifamily complexes.



Below:

The Dunbar Greens is a case study in increasing residential density in an area currently predominated by single family homes. The massing model shows the large amount and variation of proposed residential dwelling types, and the mixed use typologies along the main arterial.





Source of 3D models: http://elementsdb.sala.ubc.ca James Godwin





At the corner of SW Marine Dr. and 41st Ave. exists a unique opportunity for the development of a student community. This area lies along the crossroads of the proposed streetcar lines making it a perfect spot for a node. Mixed use buildings lines 41st Ave. through to Dunbar Street.

Of great importance in this area is the green network that is created by

connecting areas of old growth and allowing them to flourish. We convert existing backyards into community green space and green mobility pathways with access to the Musqueam forest nearby. These spaces can be lined with gardens for local food, rainwater retention and filtration to provide clean water and possibly district energy. Existing single family residencies convert to multiple dwellings and property lines are erased allowing for increased housing clusters in these areas. We maintain lower densities on SW Marine to mesh with the single family housing south of the street.

Interconnected green space:

By mapping out the existing old growth trees in the area, an interconnected green network reveals itself. We then preserve this network from development and cluster housing around the network. This space becomes a sort of public commons with rainwater retention/treatment and urban agriculture along the periphery.



Housing density and typology:

In 2050, property lines become skewed to accommodate the expected density increase. Underused front yards enable laneway-style housing to overlap property lines without obstructing access to existing housing. The current single family dwellings convert to multifamily residences. Mixed use and mid-density buildings locate along arterials.



Public versus private space and circulation:

Purple represents the public spaces in 2050. The light pink are private areas and courtyards surrounding the lower density housing. The magenta represents the semi-private areas in former backyards which will be converted to urban agriculture spaces for the residents.





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TEAM MEMBER: Lisa Lang

Key design principles: Green communities dictated through continuous habitat design

- Locate old growth trees and restructure block parcels in order to preserve these networks as well as provide local common grounds
- Enable pieces of adjacent properties to be sold together to make room for laneway style housing in the fronts of existing houses
- Create a small node with amenities accessible to the streetcar line for students going to UBC
- Make local roads pedestrian only with bike lanes through paving cues and plantings, for a demographic that currently is less reliant on vehicles
- Taper the density to blend with surrounding lower density typologies







Above:

By increasing canopy cover and greenspace, laneway housing reclaims 'back alleys' and turns them into vibrant, pedestrian friendly areas

Opposite:

Examples of the woonerf, or pedestrian oriented street, from urban areas in Portland and the Netherlands provide examples of alternatives to standard paved solutions

Bottom centre:

The expanded role of street trees will create a continuous canopy cover increasing habitat coverage and tieing into Vancouver's larger green street network. At the same time, laneway housing forms an invisible density increase.







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TEAM MEMBER: James Godwin

Key design principles: Facilitation and protection of habitat

In the southwest, Kerrisdale is an area with a large canopy cover formed by numerous old coniferous and deciduous trees. Mixed in with primarily single family homes, they provide the perfect starting point for an alternative, habitat oriented, form of the green street. By increasing plantings to fill this already extensive canopy, the area will become a green network of immeasurable value to local wildlife. With the addition of laneway housing, the benefits will include:

- Large green canopy cover
- Invisible density
- Revitalized laneways
- Connections to the larger green street network
- New affordable housing



The northern part of McCleery Golf course in the Vancouver southwest area is an ideal site for both light industrial and residential development. The site is perfectly suited for both working and living because of its close proximity to SW Marine Drive, a major road that leads to the airport, and a proposed regional park to the south.

In addition, the site is situated on a drainage basin, where water is collected and released into the ocean. This unique drainage situation means that green infrastructure such as urban wetlands, green roofs, rain gardens and curbside swales are well suited to be used on site. Existing natural drainage features, such as a wetland pond, further enhance the design. Increasing the ecological function of the wetland by encouraging the growth of native plant species will enhance the site both aesthetically and ecologically.

In a larger context, the site also acts as an ecological stepping stone that links nearby green spaces.

The new building typology created for the site consists of double height industrial space on the ground floor, office space on the second floor and residential space on the upper floors. The ground floor is a flexible studio space that can accommodate a variety of light industrial activities. Glass walls help to maximize sun exposure in the studio spaces. Many of the buildings have green roofs and terraced roof top gardens for residents to enjoy.

The overall objective for this design is to create a new type of light industrial district that embraces industrial, residential and commercial activities in the same area, thereby promoting local industry, affordable housing and a greener future for the city.





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TEAM MEMBER: Jingjing Sun

- New types of industrial districts mix light industrial, residential and commercial uses together within a 5 minute walking distance of each other help to activate the area at all times of the day.
- New building typologies with light industrial space on the ground floor and residential space above promote local industry and provide affordable housing for the Dunbar area.
- An interconnected street network extends and connects the city grid.
- A linked green network connects existing green spaces to the larger context.
- Green infrastructure, such as urban wetlands, green roofs, rain gardens and curbside swales, mitigate stormwater runoff on site.



This area connects downtown to its surrounding neighbourhoods. Therefore, any new proposals should tie together the neighbourhoods' unique physical and social characteristics.

This area's population will grow from 151,720 to 228,147. Additional housing locates mainly at False Creek Flats, Main Street and the Mt. Pleasant industrial lands because these areas are a short walking or transit distance to adjacent areas experiencing significant job growth.

Already job rich, this area is an ideal zone to extend the city's jobs base to include hundreds of green jobs in green industries. Jobs become cleaner and safer and they can mix more readily into commercial and residential buildings, thus land use can be carefully desegregated.

New developments tap into the existing Southeast False Creek neighbourhood energy utility. With the Flats proposed to be an energy precinct, additional clean energy can be supplied. Green corridors, favouring walking and cycling, weave through this area and include pocket-parks for local residents.





Below: The industrial lands surrounding the Flats have been re-imagined as a vibrant mixed-use community, while maintaining an industrial fabric. Creative industry, academic and other institutions, artist live-work spaces, and new and exciting commercial activities will create an energetic district. New innovative building typologies will foster economic clusters and creative industry while allowing for live-work spaces that make the site vibrant 24/7. Green corridors will connect this area to the False Creek seawall while mitigating storm water runoff. Gross FSR will increase from 0.4 to 2.2.



Sam Mohamad-Khany

naster plan

Streetcar lines are investments that can spur concurrent and future growth. Thus, we strategically introduce routes to support new developments with better east-west and north-south connections.

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TEAM MEMBERS: Pat Chan, Paula Livingstone and Sam Mohamad-Khany

- Use streetcar-oriented corridors as connectors between downtown, the Olympic Village and the rest of Vancouver, while gradually stepping down from downtown's tower format.
- Use the streetcar as an urban investment to spur the development of creative industry, future jobs and housing in areas like the False Creeks Flats and Great Northern Way.
- Link existing green open spaces together to create a green network that provide comfortable walking avenues through the neighbourhood blocks while enhancing the city's environmental performance.
- Ensure that a 5-minute walking distance is applied to all densified arterials to make walking to amenities and transit comfortable for all ages.

Below:

Existing: FSR: 1.2 Land use: Light industry. Typology: 2-3 storey attached buildings.

Proposed: FSR: 2.1 Land use: Mixed use (Light industry-residential and commercial-residential). Typology: 3-8 storeys attached buildings.

Activate the area by restoring the streetcar and introducing mixed use typologies such as commercial-residential and live-work; ensure better relationships between buildings and the open space; a green network provides comfortable pedestrian paths through the neighborhood.



Below:

As an urban investment, a revived streetcar line on the Arbutus Greenway can activate Arbutus with more visual, architectural and programmatic diversity. This makes walking more pleasurable. Moreover, a mixed use corridor allows for "trip chaining" as people commute to and from their homes and work along the Greenway. Density need not be drastic here. The existing gross FSR of 0.45 for the 6 blocks around this junction can be increased to 0.73 by introducing neighbourhood-scale buildings such as mixed use buildings along Arbutus, 4-storey woodframe walk-ups and townhouses with laneway infills (for deeper lots) in the current single-family lots.





Paula Livingstone

Pat Chan



The industrial lands surrounding the Flats has an immense potential to foster an energetic economic cluster. This would bring together 21st century green jobs and creative industry, while allowing for a complete community to form around this unique industrial fabric.

As illustrated in the systems diagram below, the consolidation of the train tracks and the better utilization of the land around this area, combined with the re-connection of the grid allows for the emergence of a fabric that is highly accessible by public transportation, bike, car and by foot. This increased connectivity allows for ample car access particularly for commercial needs in a city with 80% less cars, while also allowing for the "pedestrianization" of the major intersection at the heart of this area.

Similarly, an interconnected green network running through this site provides continuous connection for habitat and storm water runoff, while also serving as a natural amenity for the public. Therefore, green corridors and pocket parks provide a natural connection from East Vancouver to the False Creek seawall, with an urban experience for cyclists and pedestrians.

Finally, as Vancouver becomes an exchange city, rooftops, parks and streets will be better utilized for public gathering and exchange of ideas, while urban agriculture and rooftop gardens further reduce the city's impact on the environment.

Pocket parks as gathering and exchange places: Precedent from the High Line project, New York



Rooftop gardens and urban farming: Precedent from the High Line project, New York



industrial Streetcar Access zone: Systems Pedestrian Only diagram Streets highlighting **Habitat Connection** major ideas

> Stormwater Connection

Activo alleyways industrial other use Precedent from Melbourne alleyways



Green grid allows for

water management & recreational uses:

proposed green corridor,

Illustration of the

with a view of the downtown skyline and Science World

continuous habitat, storm





Pedestrian only streets: Precedent From Mexico City



Heart of the new neighbourhood: Rendering of the main intersection





Rooftops utilized is meetine places: Precedent from midtown Manhattan, New York







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TEAM MEMBER: Sam Mohamad-Khany

Key design principles: Emerging cluster of strategic green jobs and creative industry in the greenest city

- Re-think the industrial zone: build on the industrial fabric of the Flats, while strategically implanting green jobs and creative industry.
- Green mobility: reintroduce the grid, allowing for increased access by multiple modes of transportation
- Exchange city: reclaim the streets for pedestrians, while turning pocket parks and rooftops into places of exchange and public gathering.
- Green grid: create green corridors for continuous habitat, runoff mitigation, as well as recreational uses for pedestrians and cyclists.
- Innovative places for a new economy: utilize alleyways for industrial uses, while on-street showrooms showcase Vancouver's latest innovations.
- Increased resiliency: Urban agriculture on the rooftops contributes to the city's resiliency in a post-Carbon world.



Ensure that green open spaces are always within close proximity of the future residences, buildings and services by organizing these along a green network - a green spine - that runs from the Olympic Village to Broadway.

Mixed Land Use: Achieve a mix of land uses by expanding the existing light industrial programs, while incorporating commercial and residential spaces in an integrative way. We propose commercial along Manitoba Street from Broadway down to the Salt Building, which marks an entrance to the Olympic Village Scatter light industry uses throughout the neighbourhood, located at grade, while placing offices immediately above them. We propose residences on the 3rd floor and above. These measures increase the FSR from 1.2 to 2.2.

A central green network: We propose a network of greenspaces as the organizational spine for this district. By breaking the superblock into units and opening the interiors of the blocks, we add pocket parks and resting areas for local residents. We interconnect parks through pedestrian paths and laneway community gardens. Runoff is retained in the pocket parks and detention areas and then directed to False Creek through Hinge Park and the proposed bio-swale.

Passive energy: The buildings are oriented for passive energy efficiency through solar orentation and siting for natural ventilation. For instance, taller buldings are located to the north while lower buildings are located to the south. Also, residences are situated on the upper levels to take advantage of passive solar energy.







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TEAM MEMBER: Paula Livingstone

- Activate the Mount Pleasant industrial area through innovative mixeduse opportunities. Light industrial programs are expanded while commercial and residential spaces are incorporated in an integrated way.
- We propose a network of greenspaces as the organizational spine for this district. Pocket parks and resting areas are designed by breaking the superblock into units and opening the interiors of the blocks.
- The buildings are oriented for passive energy efficiency through solar orentation and siting for natural ventilation.

The Arbutus-King Edward junction with its irregular street-grid and landmark power station presents an opportunity to develop a gateway to the heart of the Arbutus neighbourhood. For example, architecture and urban design responsive to the power station site's unique block configuration and historey can sustain the site's landmark status. On the same site, there can be boutique crafts shops, offices, housing, weekend markets and a public art-plaza like those on Granville Island. Most importantly, part of the railway that veers off Arbutus and goes through the power station site can become a pedestrian- and trams-only passage offering a car-free urban street experience.

However, this development will not be an isolated high-density site. All along Arbutus, arterial-fronting blocks will have widened sidewalks (through reclaimed car lanes) with 2-to-6 storey mixed-use buildings forming an undulating streetwa This exemplifies future arterial designs when car usage decreases by 80%. This change in land use can provide increased jobs and housing to foster a "complete community"¹ and a better public realm.

Qualitatively, increased street-level services and activities allow locals to trip-chain as they commute to and from their home and/or work along Arbutus. Socioculturally, an active street offers more eyes-

on-the-street and makes it a place where one can dwell and build social, personal and cultural attachment. Moreover, mixed use corridors will become increasingly important as the population ages. With over 50% of the Arbutus neighbourhood population already over 50 years-old², nearby shops and atgrade accessible transport vehicles like streetcars become necessary as physical mobility wanes.

The overall objective is to create a pedestrian- and transit-oriented Arbutus corridor that respects the unique historeys and urban morphologies of each segment of the corridor in future designs.



Traveling south along the tram tracks one enters the redeveloped power station site. Boutique art studios line the tracks. Moving on, the 1900m² artpark featuring sculpture using disused powerlines sits on the west. Mid-rise buildings with cafes and offices fronts onto the art-park, offering locals the opportunity to work closer to home.

Bottom (Looking at Art-Park from Arbutus Street): Walking along Arbutus one encounters more ground-level activities like eateries, groceries and services (i.e. banks, post offices and clinics). With these programs, Arbutus becomes a highstreet more than a car thoroughfare. Also, on the Arbutus edge of the power station, glimpses of the newly created public art-park peer through.





Notes:

¹City of Vancouver, Vancouver 2020: A Bright Green Future, p.24 ² City of Vancouver, City of Vancouver Statistics, http://gw.city.vancouver.bc.ca/commsvcs/planning/ census/2006/localareas/arbutus.pdf (Accessed: October 17th 2009)





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TEAM MEMBER: Pat Chan

- Arbutus as an energy corridor becomes part of the area's collective identity. When excavating for tram tracks, district energy pipes running from the Southeast False Creek Energy Neighbourhood Utility are laid for future and existing developments.
- The power station as a landmark site houses an energy museum showing how 'typical' neighbourhoods like Arbutus converted to green energy. The site also houses an art-plaza, artist studios, mixed use buildings that front both Arbutus, and the art-park.
- Arbutus as a pedestrian- and transitoriented arterial exemplifies future arterial designs when car usage decreases by 80%.
- Urban realm for the aged is important. Being able to walk and take transit to services gives seniors independence, in turn raising their self-esteem.
- Respect heritage buildings by repurposing some Shaugnessy houses for small offices, eateries and shops without significantly altering the houses' architectural and historical integrity.



The south area is home to just under 80,000 people. It is framed by King Edward Ave. and the Fraser River to the north and south respectively, and Fraser and Arbutus streets to the east and west. The planning grid is immediately obvious. It is expected that some time after 2050, the population of Vancouver will double. At that time 25% of the city's population will be over 65. Our design strategy requires that we house and provide job space for the increased population.

This is achieved through intensifying along corridors and establishing mini nodes in neighbourhoods to serve residents within walking distance. A reorganization of the industrial precinct will provide 50% of the new job sites required. The balance is distributed throughout the grid. We must plan for a reduction in GHG emissions, and provide adequate green space. Building out from the central corridor of the grid has been



our key strategy. The construction of the Canada Line rapid transit system was a very significant move in making city transit connections. A proposed streetcar line will support the rapid transit investment. Green space is integral to the fabric of Vancouver; an interconnected green corridor knits smaller communities to the greater city.

Current green infrastructure/open space: 8.7ha Planned: +15 ha in public park/cemetery, park reclamation of public golf course, pocket parks, greenways, waterfront along river.



Building out from the central corridor achieves increased job space and residential density without sacrificing neighbourhood fabric.

Accommodating double the population is achieved with integration and investment at a neighbourhood scale – the city is adapted, not rebuilt.



arteries

Below:

Nicci Theroux



Current transit: Canada line along Cambie corridor to airport, bus routes on all major

Planned: + 2 stations on Cambie, streetcar network, reinvigorated Arbutus corridor.

vancouver SOUTH



TEAM MEMBERS: Jia Cheng, Cindy Hung, Nicci Theroux

- Optimize the investment in Skytrain transit along Cambie Corridor; reinvigorate the streetcar; reactivate the Arbutus corridor;
- Link to community centres and schools through an interconnected network of green corridors;
- Accommodate everyday travel needs through walking, cycling or transit;
- Provide a range of affordable housing choices, and encourage gentle and invisible density while maintaining neighbourhood character;
- Ensure job space close to where people live, and revitalize existing industrial precinct along the Fraser River with restored rail corridor that also utilizes Arbutus corridor;
- Enhance access to public amenities in neighbourhoods with community scaled mixed-use development

Below:

Oakridge Centre and a planned high street along Cambie corridor will provide a large number of retail jobs. Office towers near the skytrain station will accommodate a variety of office jobs.

Office building height steps down from 16 storey towers in Oakridge Centre to around 10-12 storeys around the intersection of 41 Ave. and Cambie St. Mixed use buildings are 6-8 storey mid rise with 2 storey retail at the base.

Green Cambie corridor by taking out 3 lanes of traffic on the west side. Two lanes are planned to be greenways for pedestrians and one lane is planned to accommodate biking.



Below:

Concentrate developments around major transit corridors -- the Canada Line along Cambie and a proposed tram along 57th

Locate nodes of higher density housing types that include mixed use commercial within walking distance of all residences.

Street designs focus on enhancing the pedestrian experience and increasing pedestrian safety. This includes a new residential square, bike lanes and shorter distances between street crossings.





Jia Cheng

Cindy Hung

d



Automobile Lane

9

Three automobile traffic lanes remain on Cambie St. The middle lane is alternated based on traffic need.

Greenway:

Two previous automobile lanes are converted to pedestrian walkways and one lane is converted to a two-way bike lane.

Station:

The skytrain station has entrances on streets and to the plaza. The tram station sits adjacent to it.



SI.

Aerial view of Oakridge Node





Cambie Greenway

Two rows of tall street trees stand along the walkway, shading the adjacent road and seating areas. The flowers in the planter are blooming and the wind carries the smell of fresh baked goods around the corner of the plaza. On a sunny day, people come out of the office and enjoy their lunch break on the benches. At rush hour, the walkway is busy and full of passers-by who rush to and from the station. For rest of the day the street is calm, occupied by strollers, joggers, bikers and dog walkers.



Oakridge Plaza

Oakridge Plaza is a vibrant gathering space both for everyday activities and for community events. The east and north edges are interlaced with seating and stairs and the west and south edges are framed by store fronts. In the middle, four tall lampposts mark the stage for street artists and performers. During weekends, Oakridge community centre makes use of the plaza for local markets, art exhibitions and community performances.



vancouver SOUTH



TEAM MEMBER: Jia Cheng

Key design principles: Oakridge green node Motion+exchange+gather

- Green mobility: Cambie Greenway provides a safer and more comfortable walking/biking environment for people.
- Green jobs: New jobs are distributed along with the residential developments on Cambie and 41; Oakridge is an important live/work node. The station serves as an important exchange point for public transit.
- Green community: The plaza is a public space for people to gather and bond. Making meaningful gathering spaces is important for a greener, healthier community.





Conventions:

Urban wetland



Ephemeral landscape



Recreation







Edge access

(c)





Far left: Linear waterfront park with night and day programing; allow for seasonal flooding of Fraser River.

Above: Plan of South Cambie at the river edge: a waterfront park, mixed-use and industrial precincts co-habit the waterfront.

Upper right: Reclaim the waterfront as public realm under the bridge and along the river's edge.

Lower right: Urban wetlands connect to green infrastructure with a thick band of open space that provides rainwater and stormwater treatment for the industrial and mixed use communities nearby.







vancouver SOUTH



TEAM MEMBER: Nicci Theroux

- Reclaim the waterfront and reintegrate it into the public realm: provide access to nature with a connected network of natural areas and parks along the Fraser River that are accessible by walking, cycling and public transit
- An environmental network of green infrastructure connects the city grid to urban wetlands at the river's edge: collect stormwater from mixed use and industrial areas for infiltration prior to flow into the Fraser River
- A multi-modal greenway supports habitat and stormwater management; revitalize the interurban rail to connect Vancouver to the lower mainland
- A linear waterfront park provides an opportunity for all day programming, and connects people with ephemeral qualities of the Fraser River and the natural floodplain landscape



Connected green ways and green spaces:

Connecting the 57th Ave. design with the new Cambie Green Way creates continuous green corridors both north-south and east-west.

Experiencing transit:

The overall design concentrates developments around major transit corridors and major nodes. Therefore, this is a heavy duty node serving public transit (streetcar on 57th Ave and the Cambie Canada Line), bikes, vehicles, and pedestrians. The purpose of the 3-level design is to direct the different traffic systems safely and to experience the transit systems in an evocative way. The on-street level has reduced the vehicle traffic by transforming 2 lanes of Cambie Street to bike lanes and wider pedestrian sidewalks. The streetcar lanes and the bike lane on 57th also have unique paving textures to indicate the nature of a slower traffic zone. Less vehicular









traffic and shorter pedestrian crossings are more suitable to accommodate the elderly and families with children. In addition, there is a mid-level pedestrian crossing between the street level and bottom Skytrain level. The mid-level crossing not only makes crossings easier and safer, it allows light to infiltrate from ground level down to the Skytrain level and generates a distinct pedestrian experience, allowing transit flow to be visible

Pedestrian friendly mix-use residential:

The Cambie and 57th Ave node is an integration of major public transit elements and desirable urban amenities such as schools, parks, community centres and a hospital. The node satisfies demands for higher density residential developments and provides destination commercial developments within walking distance. Streetscape designs such as safe intersections, green boulevards, pocket squares, daylighted stormwater channels, planters, seatings and unique pavements encourage walking.

Street level: Mixed use residential, different pavings, transit stations and streetcar views on

57th Ave.

Street Level This level accommodates pedestrian traffic, streetcars, bikes and fewer



Diagonal pedestrian crossings at this level allow users to experience transit flows from above and below.

vancouver SOUTH



TEAM MEMBER: Cindy Hung

The bottom level infiltrates light from strengthened glass on the street level.



Key design principles: Cambie and 57th-Dogwood Green+transit+ pedestrian

- Connect the 57th Ave design with the new Cambie Greenway, creating continuous green corridors both north-south and east-west.
- Concentrate developments around major transit corridors. 3-level design accommodates different traffic systems flowing through the intersection: vehicles, streetcars, bikes, and pedestrians; the mid-level pedestrian crossing and the lower Skytrain line.
- Incorporate streetscape designs such as safe intersections, green boulevards, bike lanes, pocket squares, daylighted stormwater channels, planters, seating and pavings to encourage walking.



Vancouver Northeast (VNE) is comprised of the Hastings Sunrise, Grandview Woodland, Strathcona, Downtown Eastside, Mt. Pleasant, Kensington/Cedar Cottage and Collingwood/Renfrew communities. The current population of VNE is 102,302 people, who live in a mixture of singlefamily homes and 3-4 storey apartment buildings. The population of this area is

projected to increase almost 80% to 183,672 people by 2050. The proposed plan for VNE increases housing density along streetcar corridors, adjacent to green spaces, around schools and community centres. New housing types include 4 storey mixed use buildings, 4-6 storey apartments, townhouses, rowhouses and laneway homes.





Currently, open space in VNE is scattered, providing little connectivity for people, wildlife or water. The proposed green space plan creates a network of open space that connects the larger neighbourhoods with nodes in the Flats, Trout Lake, Still Creek, and the PNE. Throughout the VNE, a finer scale of green space connects neighbourhood parks, schools, community centres and green streets.

Below::

movement.



Rebecca Colter

This neighbourhood densifies around the streetcar routes and skytrain stops. 4-6 storey mixed use buildings locate along the corridors, 4 storey apartments and townhouses occupy the mid blocks and industrial buildings locate along the rail and Skytrain line for ease of goods

Source of 3D models: http://elementsdb.sala.ubc.ca.

vancouver **NORTHEAST**



TEAM MEMBERS: Rebecca Colter, Margaret Soulstein, Peiqi Wang

- Bury the freeway and create an open space legacy
- Create pedestrian and transit friendly green boulevards
- Densify industrial areas to increase job opportunities and open spaces
- 'Green' the skytrain route
- Daylight historical streams where appropriate

Below:

Strengthen the existing industrial nature of this area by integrating additional residential and mixed uses into the area, including affordable housing. New commercial and artists' space will awaken the area by bringing activities beyond business hours. The green network is the backbone of this space, residents have easy access to this open space in the VNE.



Below:

This neighbourhood densifies around the intersection of two green boulevards: Hastings and Renfrew. Along the boulevards are 4-6 storey mixed use buildings, 4 storey apartments, rowhouses and laneway homes located inside the blocks. The PNE block also increases density with mixed use buildings of retail and entertainment related jobs.





Source of 3D models: http://elementsdb.sala.ubc.ca.

Margaret Soulstein

Peiqi Wang





Left:

Known as the Still Creek Gateway Park, this job centre is located adjacent to the Rupert Skytrain stop between Broadway Avenue and Grandview Highway. As a local solution to the broader master plan objectives, this area serves as an interconnected place along the green grid with strategic green jobs and a portion of continuous habitat. With green transportation networks, a lighter footprint, green buildings and access to nature, this office park is an example of Vancouver's success as the greenest city by 2050.

The mixed use nature of this area provides opportunities for various users. Not only will the park serve the employees who work here, it may also attract retail customers, restaurant patrons, those utilizing the larger green network, and neighbourhood dog walkers.



Left:

This section is a schematic representation of the green buildings and the programming within these spaces. The design utilizes basements as storage and parking areas, zones first floors for commercial use, and dedicates floors above to office space. Green product research and development are likely practices in these offices.

Left:

This elevation represents the specific character of the built elements. The buildings reference traditional Pacific northwest architecture style: post and beam construction using native western red cedar.

As determined in chapter two, 4-6 storey wood framed buildings are energy efficient structures. These buildings achieve a 'green' status through use of this framing system, green roofs, connection to a district energy system, and other energy smart techniques.



B′



vancouver NORTHEAST



TEAM MEMBER: Rebecca Colter

- The Rupert Skytrain stop services Vancouver residents and suburban dwellers, creating an interconnected place along a green transportation network
- This strategic job centre serves as a hub for green enterprise companies
- The revived streetcar line runs along the Rupert Street greenway, serving neighbourhood residents and connecting the green grid throughout the city
- With the complete revival of Still Creek, this park serves as a piece of continuous habitat through east Vancouver



Green job locations interconnected with continuous habitat



The city at work along industrial local streets



This industrial area is situated along the

However, even along the streets and buildings, trees and plantings are integrated, providing simpler, cheaper and greener methods of handling stormwater management, habitat and public amenity.

By integrating a range of industrial uses with residential and situating this district close to commercial mixed use and parks, this area will maintain a vibrant atmosphere once the 5 o'clock whistle has



vancouver NORTHEAST



TEAM MEMBER: Margaret M. Soulstein

Key design principles:

- Integrate industrial and residential land use
- Create a transparent city at work •
- Weave the green network with green jobs

On the eastern reaches of the False Creek Flats, where Strathcona and Mt. Pleasant meet, we are weaving a new city fabric. This fabric is rich with green jobs, which are critical in meeting the employment projections of 2050. This fabric is new because it integrates a diversity of industrial jobs into one area and into one building. We designed this area to attract companies who will offer light industrial Production, Distribution and Repair (PDR) services. By localizing PDR this will significantly decrease the reliance on fuel to ship goods from elsewhere and thereby reduce GHG emissions. Furthermore, by designing an industrial complex with the intent of attracting a range of businesses, there is an inherent flexibility that will allow the area to adapt to future uses.



Top :

Naturalization of the intersection of E. Hastings and Renfrew Streets; sidewalks and the PNE entrance square are restored and arranged to a human scale; boulevard trees and landscape bring nature back to this intersection and generate a green gateway to the PNE grounds and the surrounding vibrant, livable neighbourhood. With an 80% decrease in car usage, the parking lot across the street is reclaimed for a pocket park as an extension of Hastings Community Park to better serve PNE visitors and provide local residents with an immediate green space. Streetcars are introduced onto E. Hastings St. and Renfrew St. as a major mode of public transit to connect the PNE and the neighbourhood with Renfrew Skytrain Station (View 1).

Right:

Two images showing the existing condition of this intersection that it is now completely automobile-dependent, without any green spaces that would encourage pedestrian activities. Building forms do not promote human interactions.





Below:

Conceptual diagram of the intersection of E Hastings St. and Renfrew St. illustrating the key concepts of the gateway to the PNE entertainment center.

2:

Reclaiming the streets for pedestrian use. Convenience stores, cafes, restaurants, and daily services are provided around the intersection serving both PNE visitors and local residents. With less traffic, streets become places where people can gather and socialize. Buildings with green roofs and terraces enhance interaction (View 2).



- Streetcar routes connects PNE with Skytrain
- Residential and commercial
- mixed use buildings with daily services
- Green roofs and facades as semi-private open spaces
- Green entrance square also operates as a neighbourhood gathering place
- Streets restored as pedestrianoriented places encourage communication and interaction
- Hastings Community Park extension



vancouver NORTHEAST



TEAM MEMBER: Peiqi Wang

- Green mobility: Reintroduce the streetcar system to E. Hastings and Renfrew arterials, complemented by multiple modes of public transportation, to increase accessibility to the PNE and neighbouring communities.
- Revitalization of open spaces: Revitalize arterial streets, existing parking lots and the central gathering square as major green spaces at the intersection of E. Hastings and Renfrew, creating a green entrance to the PNE and providing local residents with a daily dose of nature.
- Pedestrian places: Restore streets and the PNE entrance square for pedestrian activities. Everyday services supplied by the mixed use buildings around the intersection offer potential to enhance communication and interaction on streets.



For 2050, Southeast Vancouver foresees an increase of 82,000 residents (a 63% increase from current population) and an increase of 76,000 jobs. To accommodate this dramatic increase of residents and workers, we have identified catalysts in existing anchors such as SE Fraserlands and Joyce Village, as well as unrealized potentials along corridors such as

Kingsway, Knight, Victoria, and Kerr. Live, work and play are possible within a 5 minute walking distance; proposed land use and density are concentrated along corridors; changes are graduated to connect with the existing fabric of single family dwellings. Within a 5 minute walk, residents can access the streetcar system running along

major arterials, further connecting each neighbourhood to the larger whole as demonstrated by the circular route along Kingsway connecting to surrounding Skytrain stations. To balance the needs of both the region and the neighbourhood, a new light industrial-commercial typology is introduced along Knight and Kingsway.

By connecting green spaces across this site, the proposal forms a shifted grid of green infrastructure running parallel to major arterials (and occasionally on minor ones). This provides both an ecological framework and alternate route for bikes and pedestrians accessing schools and amenities. There is also an opportunity to reintroduce streams that were previously lost, creating continuous habitat corridors.





Super-connectivity enables liveable density: The area between Kingsway and the Skytrain line will be a transit mega-node. A streetcar loop connects the parallel transit corridors of the Skytrain Expo line and a dedicated-lane interurban-capable light rail line on Kingsway.

With transit options available in every direction, cars need very little space. A fabric of 4-6 storey buildings just off the arterials provides density without crowding. Lanes flex as space for urban agriculture, green streets or live-work studios.



Niall MacRae

vancouver SOUTHEAST



TEAM MEMBERS: Neda Roohnia, Niall MacRae and Mary Wong

- Enable 5-min walkability through close proximity of live, work, play
- Re-introduce and create streetcar routes to connect neighbouring communities
- Introduce a new, light, flexible industrial-commercial typology
- Create ecological and pedestrian corridors connecting schools and parks, forming an 'alternate grid'
- Daylight historical streams in large, intact green spaces

Below:

In this neighbourhood, mixed use buildings locate along the corridor and residential buildings occupy the mid blocks. This maintains a hierarchy between mid-rise and low-rise buildings. This pattern of land use creates both public (along the corridor) and private spaces for residents. We based the neighbourhood design on a careful consideration of different land uses, hierarchy between public and private areas, spaces in between buildings and the creation of an intimate environment for both the public and residents in the neighbourhood.



Below:

The design incorporates green infrastructure into streetcar tracks for infiltration and visual qualities. Green corridors for bikes and pedestrians connect midblock between schools and parks. These corridors cross major arterials like Knight and/or run parallel to others, such as 41st avenue. Forty-percent of the site's job increase locates along the Knight corridor where a new typology services this regional and neighbourhood corridor. This light, flexible industrial-commercial building includes a first floor with double-height ceilings for flexible programming, topped with two storeys of offices. This is complimented by 4-storey residential buildings, providing live-work opportunities.



Neda Roohnia

<image><caption>







This site is located between Kingsway St, Earls St, Slocan St. and Vannes Ave. We based the intervention on daylighting the buried stream. The key design concept is the integration of the riparian zone and the city grid to create landscapes with different sides. qualities. The intention in this design is to highlight these different characteristics.

For example, the southern part of the site that is exposed to Kingsway has more of an urban character compared to the

central parts which express a more natural landscape. Both parts provide active public Above: realms. We follow the same pattern along the green corridors, which connect the urban corridors to the stream on both

The section on top demonstrates three major types of landscape along the green corridors; a section of the green street, the community gardens, and the stream and riparian zone. The other section demonstrates pocket gardens in between the building blocks.



Above and below:

One of the key features in this design is a stormwater management plan. The water runoff stays on the surface and drains to the two open bioswales parallel to the stream. Two parkways designed along these bioswales allow movement of people and water together. With this approach, the design meets the target of improving the habitat value of the site as well as the public realm.

riparian zone.



View to the community garden and riparian zone



vancouver SOUTHEAST



TEAM MEMBER: Neda Roohnia

Key design principles:

- Interconnect green spaces and the stream riparian zone
- Move people and water together
- Highlight different qualities of the landscapes in the site
- Create a gradient of public and semi-public open spaces along the corridors.

Other design considerations include: creating open spaces and pocket gardens in between the building blocks, avoiding continuous solid walls along the corridors, and interconnecting these small gardens and other natural features to the

Production, Distribution, Repair (PDR) Typology:

Adaptability is the key to the future, and flexible features such as high ceilings and generous floor space will cater to a variety of users over the span of a building's life. This may include food wholesalers, fashion manufacturers, building material suppliers, and gallery-studios. Topped by two storeys of office space, sided by two residential units, and built with underground parking, the collective typology makes a gradual transition to the existing residential fabric.

Mid-block Bikeway:

Many of Vancouver's parks and schools can be accessed by mid-block connections. These strategic corridors accommodate green transportation for bicycles and pedestrians.



Existing house

Knight Street Typology:

line; creating opportunities for social interactions within the

community.



Below:

(Top) Defined by residential fronts on either side, the notion of the traditional back lane is revisited. This back lane is prioritized for pedestrians with limited vehicle access, mainly those travelling a short distance to an underground parkade. (Bottom) With a widened sidewalk and permeable front, the community will easily access local businesses, fostering a place of social exchange.

Laneway with residential fronting:











TEAM MEMBER: Mary Wong

Key design principles:

Knight street is an arterial connecting two major ports. This corridor accommodates light industrial use with office space and residential units:

- Connect Knight street to the larger network of greenways that provide pedestrian and bicycle access to schools and parks.
- As Vancouver's economy shifts from resource management to knowledge based business, the need for adaptable spaces becomes a priority. This design proposes innovative and flexible green job facilities.
- By enabling local production and short delivery distances, Knight Street is a local solution to the larger goal of reducing GHG emissions.





Left: Kingsway at Rupert

The flatiron shape of the PDR and live-work space at Kingsway and Rupert announces the vitality of this neighborhood and its high street. This is the new Kingsway: green, vibrant, mode-flexible and pedestrianfriendly.

Below: Kingsway at Killarney

Still for cars but without the car-oriented infrastructure. Green medians, street trees and dedicated streetcar lanes soften the concrete jungle for pedestrians. Lanes widen to accommodate street trees and bike paths. Rowhouse or apartments with semi-private courtyards that open onto these lanes are prime real estate for cyclists and pedestrians that use the extensive green grid network on a daily basis.









vancouver SOUTHEAST



TEAM MEMBER: Niall MacRae

Key design principles: Kingsway as a satellite urban core

- Multiple job centres are within easy reach of the Skytrain and streetcar systems. Neighborhoods are walkable, urbane and intimate.
- Transit opportunities and capacity for significant increases in density along the Kingsway corridor lead to growth, vibrant communities, and transitfostered urban amenities.
- Parallel people-moving arterials and the connections between them are key. Joyce, Rupert, Slocan and Nanaimo form parallel circuit connections and at these intersections, urban form synergies start to happen.
- Kingsway becomes an urban high street. PDR industrial and live-work opportunities are integrated into the high street to provide local jobs. With Kingsway itself dedicated to transit and transportation, the lanes to the south become alternative green arterials for bike and pedestrian oriented lifestyles.