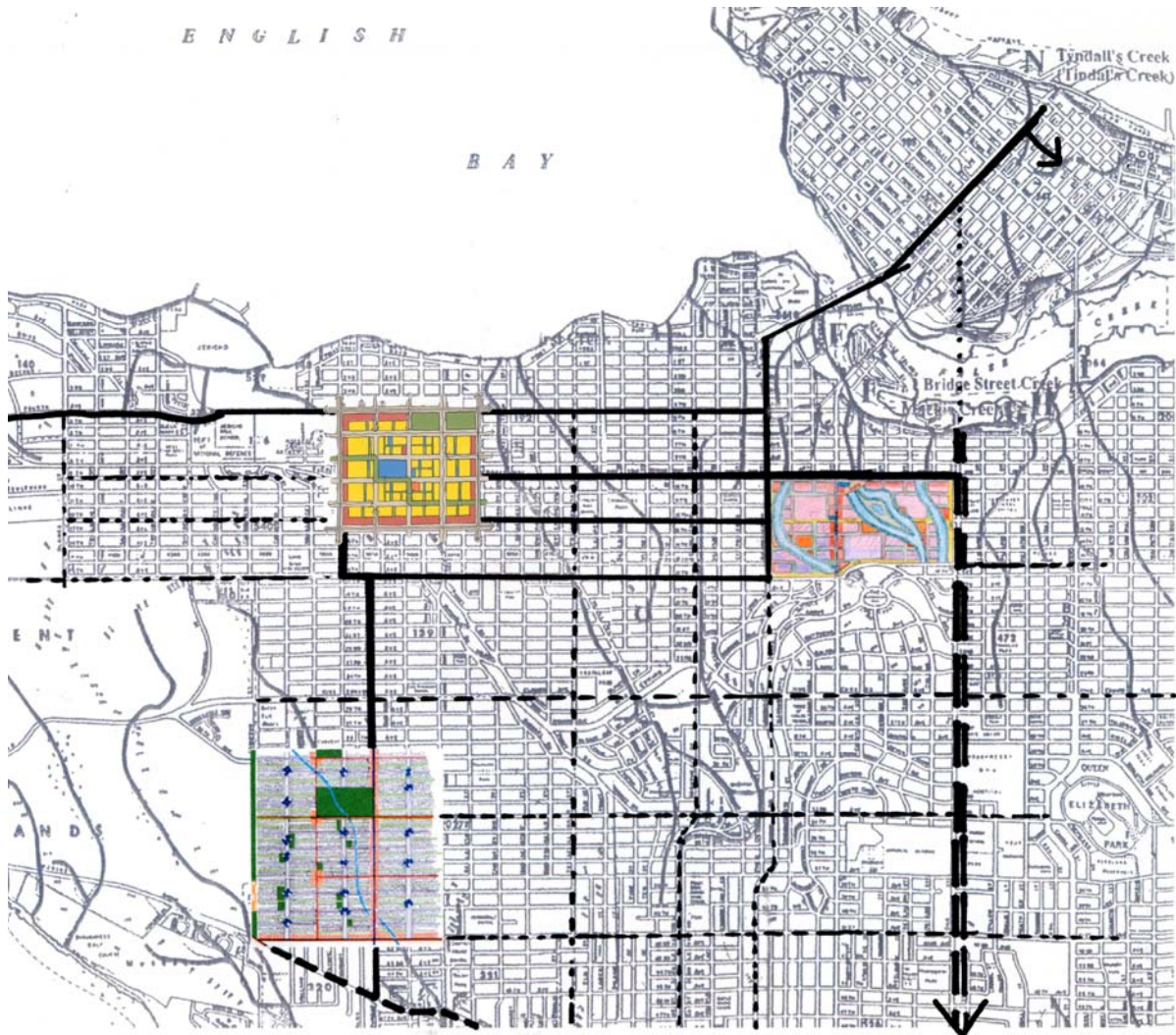


## SECTION B – PEDESTRIAN ORIENTED PATTERN: CITY OF VANCOUVER

### B.1 Vision Overview



### Regional Framework

#### **Energy**

- 50% of all energy used within the Region to be produced by the Region.
- Energy production methods to include geothermal/ hydro/ wind/ solar.
- Regional underground energy grid to exist down to the parcel level.

#### **Food**

- 20% of the Region's food to be produced at the community level; on-site production.
- 40% of the Region's food to be produced within the Lower-Mainland; inter-regional production.
- 40% of the Region's food to be produced by the National/ International food production system.

#### **Transportation**

- Transportation to occur at three levels:
  - Local
  - Regional
  - Inter-Regional

#### **Waste**

- 100% Regional processing of non-compostable/ non-recyclable items.

#### **Water**

- 100% Potable Water requirements to be met by Regional grid infrastructure.



## B.2 Mackenzie Heights District – Key Features/ Systems



### Community Systems Framework

#### **PARCEL**

##### **Energy**

- 100% solar/ heat pump technology - surplus to regional grid via underground piping

##### **Waste water/sanitation**

- 80% grey water dealt with on site
- 0% black water - composting toilets

##### **Stormwater**

- 100% on-site retention
  - 20% green roof
  - 40% vegetated areas
  - 40% cistern storage/ potable water

#### **BLOCK/ CLUSTER**

##### **Energy**

- Community 'Hub' buildings 80% geothermal, 20% solar
- Wind power to augment grid.

##### **Wastewater**

- 20% to block bio-swale
- Food production
- 20% community gardens

##### **Transportation**

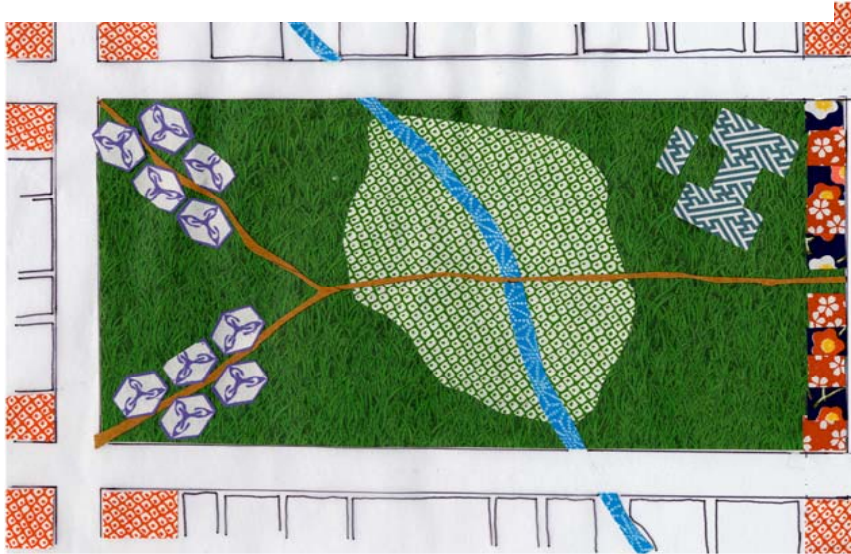
- Centralized co-op car storage with road access limited to main corridors
- Alternate block scale vehicle transport on internal streets/paths

#### **DISTRICT**

- Potable water piped conventionally to augment internal systems
- Communication sub-system connected to global grid



## Community Greenspace



Urban Agriculture along the major commercial corridor creates a unique possibility for production and sales of locally produced food. Urban food production in this zone will focus on commercial production, providing year-round harvests with intensive greenhouse and hydroponic production.



Wind power, present within the greenspace, provides a cheap and efficient means to simply augment the power supply within the grid.



Daylighted streams allow for the creation of wetlands within greenspace. These in turn can provide opportunities for habitat, groundwater re-charge, stormwater filtration and recreation.

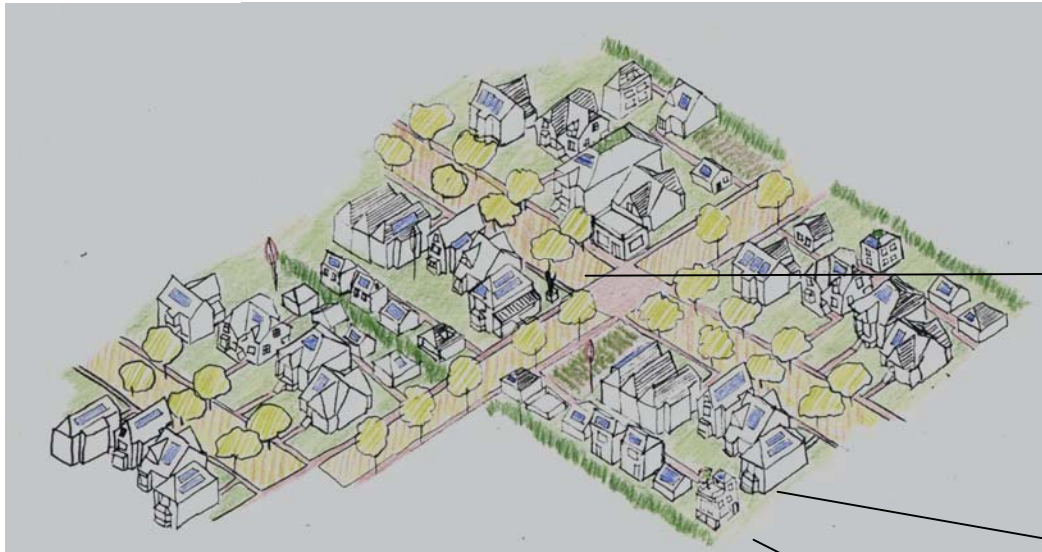


Daylighted streams allow for recreation, habitat, aesthetic and stormwater filtration possibilities. The restored riparian corridor maintains an aesthetic greenspace, as well as habitat, throughout the community. Stream/ road crossings provide opportunities for public art and expression in original bridge crossings.

### Targets Addressed:

- 20% of the District's food requirements to be produced locally.
  - **Commercial urban agriculture occurring along major commercial strip, providing both production and sales opportunities.**
- 25% of District land protected in perpetuity for parks/ natural areas.
  - **Parkland status ensured through policy.**
- 100% of buried streams daylighted and restored.
- 100% of riparian areas restored and protected.
  - **Daylighted streams and restored riparian corridors increase greenspace, habitat and aesthetic value throughout the community.**
- 100% of buildings obtaining at least 50% of energy from parcel/ block.
  - **Additional energy gained from wind power to augment grid power supply.**
- 100% of dwelling units within 400m of basic shopping/ services.
  - **Pedestrian access to allow for recreation as well as alternate routes to amenities and transportation.**

## Block Layout



Dunbar Community Vision (Vision Direction 3.5)  
[http://www.city.vancouver.bc.ca/commsvcs/planning/cityplan/visions/DUN\\_SFAreas.pdf](http://www.city.vancouver.bc.ca/commsvcs/planning/cityplan/visions/DUN_SFAreas.pdf)

Infill housing for increased density and oriented for solar energy

Porous paved reduced-scale street for emergency, light vehicle and cycle access

Public art, plaza, small gathering place

Community gardens and green roofs



Vegetated bio-swale  
 Grey water recycling  
 Storm-water cistern collection/infiltration

Traditional potable water supply augmented locally

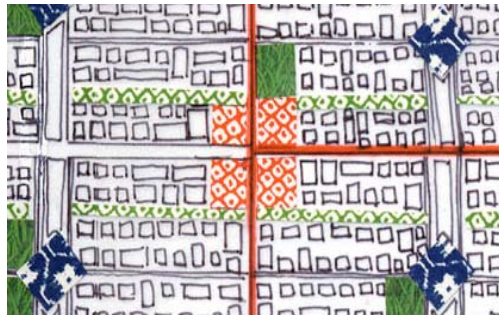
On-site energy production connected to district power grid

### Targets Addressed:

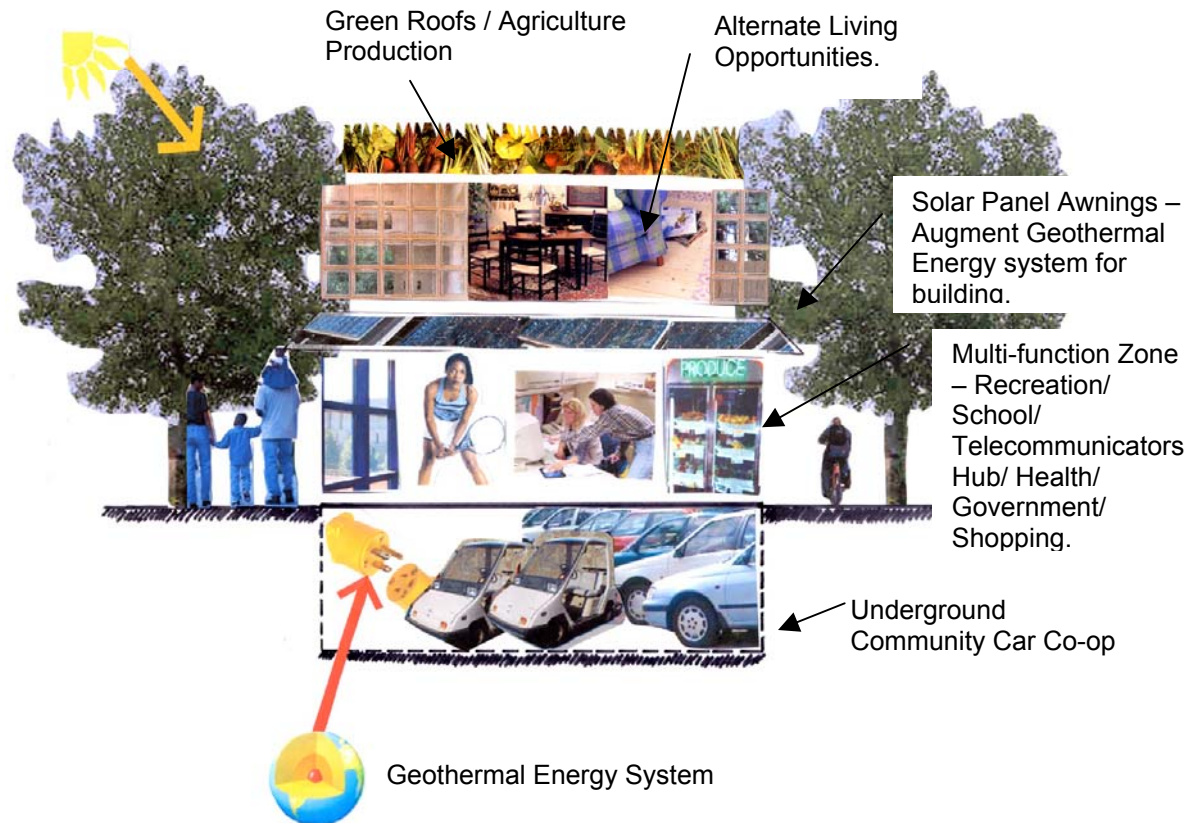
- Maintain existing grid pattern, but modify streets to include porous paving for access by emergency vehicles, delivery vehicles, cycles, local mini-vehicles for transport of elderly, or access challenged people, in addition to paths for walking
- Include within each block multi-use public meeting spaces which could form the hub for small scale recreation organization, continuing education, communication centres, recycling depots, public art display space, community garden space, emergency preparedness, co-operative activity
- Infill to achieve 40 persons/ha density to support infrastructure costs with a variety of housing types, including age-in-place homes, which feature 'friendly faces' on the 'street'
- Utilize existing lanes for alternate paths, vegetated bio-swales, composting, and stormwater management strategies, and also function as front door amenity spaces for in-filled smaller dwelling units, and age-in-place accommodations, and food production
- Orient new structures to take best advantage of solar power opportunities
- Achieve stormwater management objectives through porous paving, collection systems and encouragement of tree planting



## Block Layout – Community Hub



Community activities are concentrated together to create a centralized community zone. The community 'Hubs' occur at all major neighbourhood level intersections. Each building, occurring in clusters, will have various multi-use functions on the main level, with a community car co-op underneath and alternate living opportunities above. These buildings will operate on geothermal heat, the surplus which will feed into the grid to augment power for residential systems. The District's communication sub-station is located on top of one of these buildings.



## Targets Addressed:

### Community Car Co-op:

- Limits automobile use to the inter-neighbourhood level. Alternate transportation provided as pick-up/ drop-off service. Provides central place/ energy to re-charge cars. Provides option for personal vehicle travel without having to own. Re-enforces central neighbourhood zone and interaction.

### Multi-function Zone:

- Provides for flexibility to respond to individual neighbourhood needs – Areas for Recreation/ Schooling/ Telecommunicators Hub/ Health/ Government/ Shopping.
- Provides designated neighbourhood areas for emergency shelter and disaster aid.

### Alternate Living Opportunities:

- Provides dwelling units within much closer proximity than 400m of basic needs/ amenities.
- Provides lively atmosphere and interaction for neighbourhood residents – especially children and the elderly.

### Green Roofs:

- Allows for food production, aiding to achieve 20% of locally produced food.
- Allow for stormwater absorption

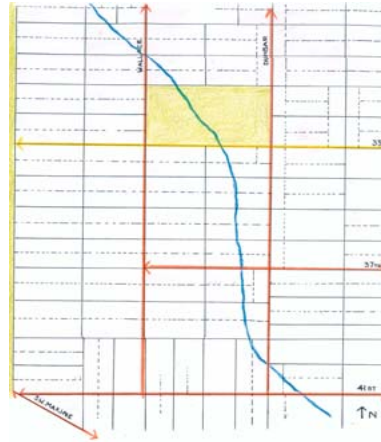
### Communications:

- Provision of sub-station connected to the global grid.

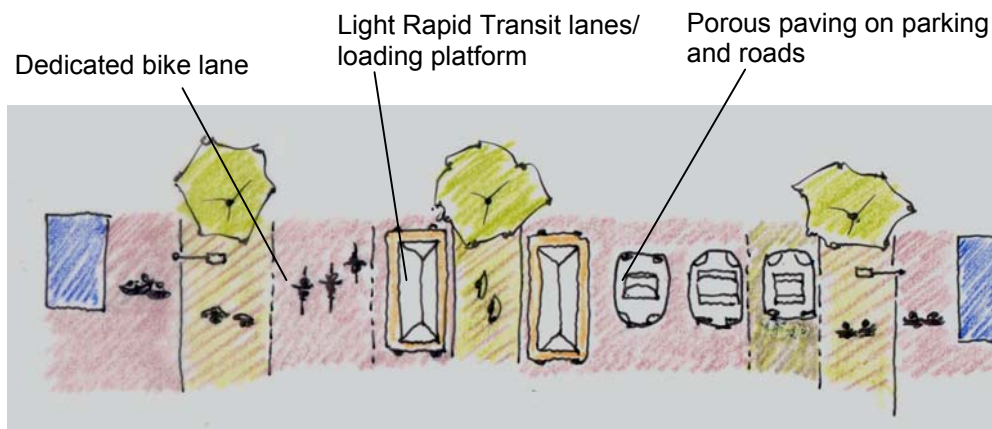
## Transportation

Dunbar Street is the main commercial street in the neighbourhood and provides shops for most human needs. It is within 5 minute walking or alternate transit distance from the adjacent residences.

It is a major corridor that provides vehicle access for LRT, automobiles, delivery and emergency vehicles, as well as dedicated space for cycling, walking and other methods of transportation.



Dedicated bicycle lane, transit at centre median, two lanes through traffic and one parking lane

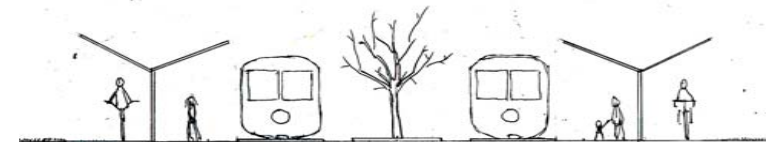


## Transportation Targets:

- 80% non-auto use
- 60 % bicycle use
  - Provide well connected, multi- tiered transit systems, and a provision of live, work and play options within 5 minute walking distance from residence

## Transportation Network:

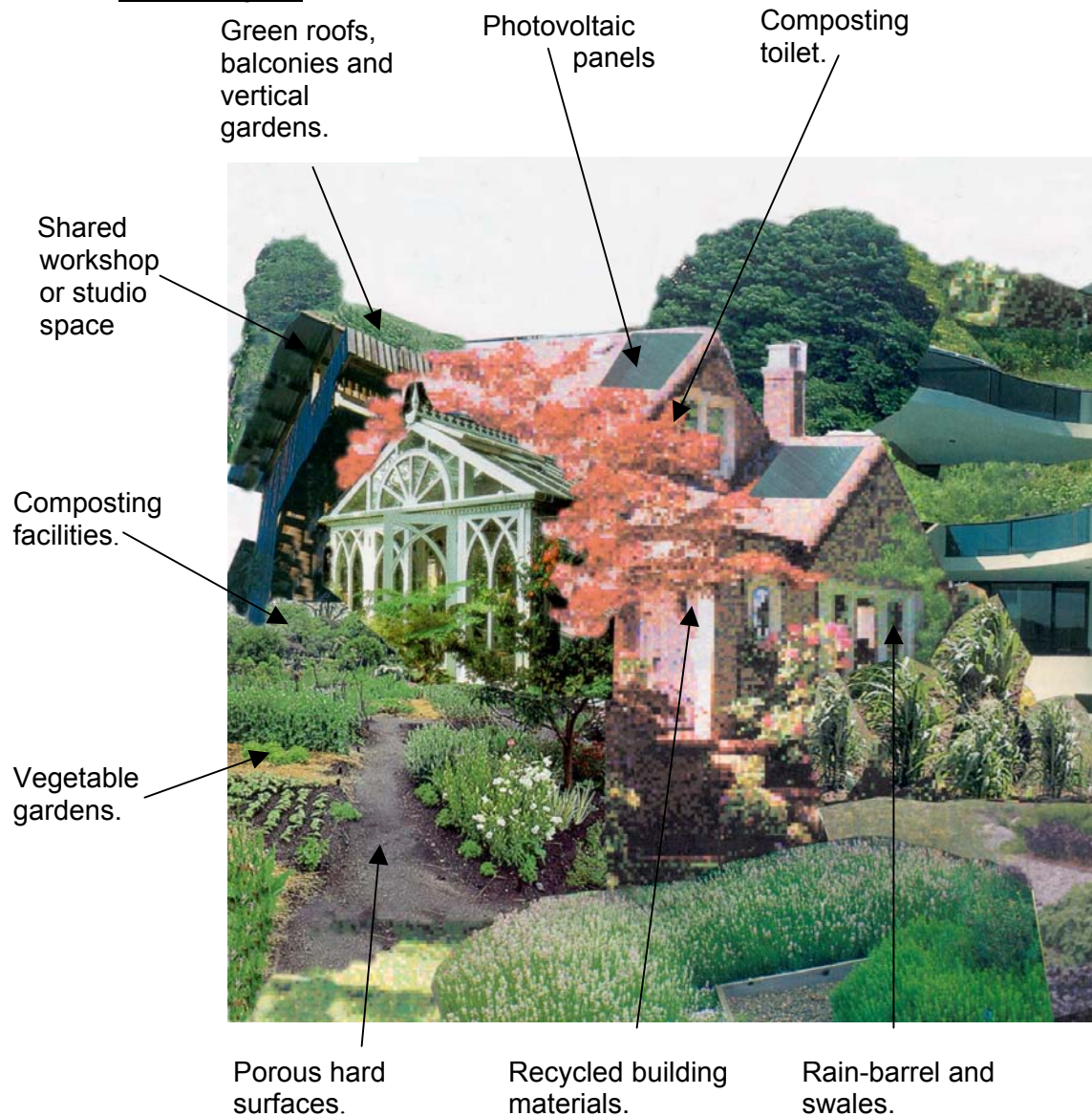
- Primary transportation corridors within the neighbourhood are limited to Wallace, Dunbar, 33<sup>rd</sup>, 37<sup>th</sup>, 41<sup>st</sup> and South West Marine Drive. **(All other streets are park/ pedestrian ways with limited auto and emergency access.)**
- With the exception of 33<sup>rd</sup>, these streets accommodate transit, auto, bicycles and pedestrians, connecting to the larger regional systems.
- Transit is a Light Rail System (LRT) with frequent stops, allowing for five minute walking access for all residents.
- 33<sup>rd</sup> Street provides a local access only "Hop-on/ Hop-off" transportation system with covered walkways and bikeways.



"Hop-on/ Hop-off" local transportation/ covered walkway/ covered bikeway



### Parcel Layout



### **Parcel Targets**

- Infill housing density of up to 40 persons per hectare.
- 'Friendly face' to the street for community interaction and safety.
- Oriented within 30 degrees of east-west.
- Green roofs, vertical gardens and balconies and ground vegetation provide insulation, stormwater absorption, and urban agriculture. 20% stormwater absorbed by green roofs, 40% by other vegetated and porous surfaces, 40% stored in cisterns for reuse.
- 100% of energy needs provided through solar voltaic panels.
- 80% 'grey' water used for irrigation or absorbed on site.
- 0% 'black' water leaves site. Composting toilets provide organic fertilizer for gardens.
- Buildings built or retrofitted to LEED PLATINUM standards.
- Garden areas used for laundry lines.
- 100% organic waste composed and used in the gardens.
- Live/work arrangements encouraged through shared workshops or studios.
- Recycled building materials used for retrofits or new buildings.