

Block 27 - 32

Capitalize on the Site

- 27 Allow natural features to shape the block

Connect the Flows

- 28 Make continuous sidewalks
- 29 Design blocks to encourage the flow of people

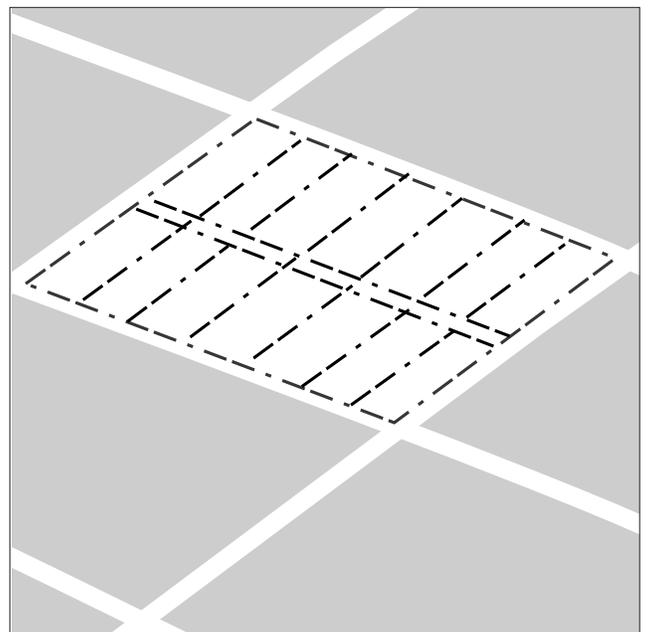
Layer the Systems

- 30 Manage stormwater block by block
- 31 Layer public space onto each block

An Economy of Means

- 32 Make flexible blocks

Blocks are the chunks of developable land that are available after a street pattern is imposed. Smaller blocks result from a more integrated (or net-like) street system, while large, super blocks are the result of a non-integrated, dendritic (or tree-like) street system dominated by dead-end streets. The smaller the block, the finer the grain of development and the more permeable the neighbourhood is for movement.



capitalize on the site



Related Charrette Strategies

B1; C1; C3; F2; I2; J1; K1; L1

Related Guidelines

1; 3; 13; 15; 29.1; 30

ENVIRONMENTALLY SENSITIVE AREAS AND DEVELOPMENT PERMIT AREAS

Areas of high natural value can be identified as Environmentally Sensitive Areas (ESAs) within a community's Official Community Plan.

A community's inventory of ESAs can then inform the placement of roads, block configuration, densities, and other elements of a development through the designation of Development Permit Areas (DPAs). Development in these areas is only allowed through Development Permits, which can contain certain restrictions on development (e.g., watercourse protection, protection and/or enhancement of environmentally sensitive or hazardous areas). See Local Government Act, s. 879 (1) for the range of possible terms allowed under Development Permits.

BLOCK SIZES

Portland Metro Green Streets standards recommends that an ideal block size for both residential and "town centre" uses be between 60 metres to 120 metres in length.

FURTHER RESEARCH/POLICY

Chilibeck, *Land Development Guidelines for the Protection of Aquatic Habitat*.

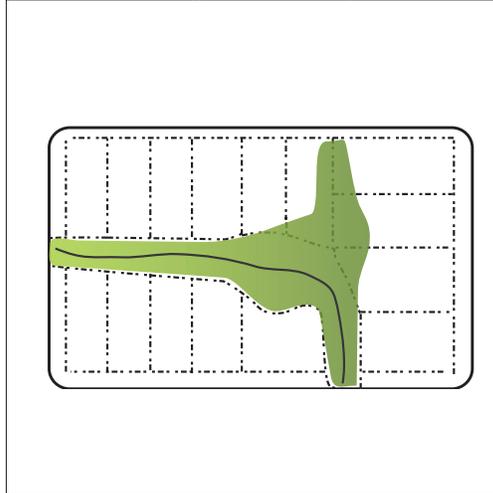
Department of Fisheries and Oceans and Ministry of Environment, Lands and Parks, *Stewardship By-Laws: A Guide for Local Government*, p. 62.

Metro Regional Services, *Green Streets: Environmental Designs for Transportation*, p. VII-1.

27 Allow natural features to shape the block

"Cities, like dreams, are made of desires and fears, even if the thread of their discourse is secret." Italo Calvino, *Invisible Cities*, 1972.

The shape of blocks is not random. In a sustainable community, the block design should satisfy two imperatives: (1) merge blocks with the landscape; and (2) maintain a high degree of interconnectivity and permeability. The recommended maximum standard block length for interconnectivity is 180 metres. Interconnected blocks are easy to understand and to get around in; they are also welcoming. Blocks modified by the landscape are distinguishable from one another and make unique neighbourhoods. Capitalize on the site by allowing natural features to shape the block without eroding interconnectivity.



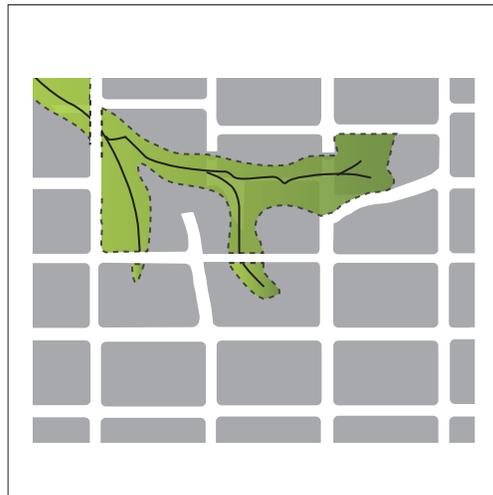
27.1 Wrapped Block

An individual block may wrap itself around a natural feature. The residents whose properties contain the natural feature may hold it either in common (through a strata title for example) or individually (with restrictive covenants on use).



27.2 Pierced Block

A natural feature may pierce one side of a block. Certain streets may "dead-end" in order to maintain the ecological integrity of the natural feature and to provide easy pedestrian access to the site. Preserve the natural feature as a part of a larger public open space system. Houses wrap around the feature and residents benefit from it in many ways. Avoid having a "wall" of backyard fences around the feature. This may be done either by fronting houses onto it or by providing a public space transition between yards and natural areas, such as a lane.



27.3 Modified Block Pattern

A very extensive natural feature might influence the form of many blocks. In some cases a modified street grid favours the natural feature; in others, the structure of streets favours corridor connectivity. The resulting pattern of modified blocks is at once efficient and responsive to key natural features. The natural feature may also act as an automobile-free corridor.



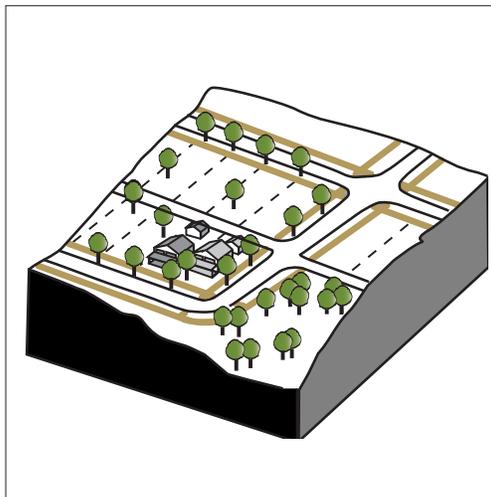
Related Charrette Strategies
E2; F2; G3; H3; I2; I3; L2

Related Guidelines
22.3; 24; 25; 29

28 Make continuous sidewalks.

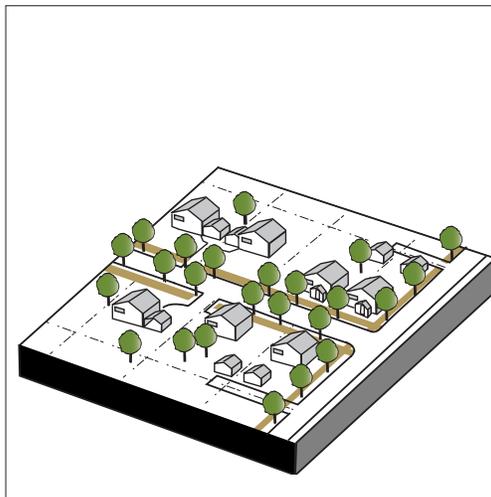
“Blanket Lizard didn’t like the hard ground, because it hurt his feet.” from Australian Aboriginal Childrens’ Story.

People like to feel safe and comfortable when they walk in the community. This means that streets must have sidewalks on both sides — sidewalks that connect to each other as well as to a specific destination. Minor interruptions to pedestrian flow can appreciably reduce pedestrian activity, so connect the flows by making sidewalks continuous sidewalks.



28.1 Encourage Connection

Sidewalks must connect to each other and/or terminate at important destinations. Locate sidewalks on both sides of the street. Having just one sidewalk means small children and the elderly must cross streets unsafely just to go for a walk.



28.2 Discourage Interruption

Whenever possible, locate car storage and service at the rear of buildings and provide lane access. If this is done, then cars will cross the sidewalk at only 2 to 4 places per block rather than at scores of places (i.e., wherever there is a front driveway). For streets with fronting garages, minimize car crossings by sharing one driveway “curb cut” that is accessible to two parcels. Sidewalks frequently interrupted by driveways are unsafe for small children and the elderly.

FURTHER RESEARCH

Burden “Streets and Sidewalks, People and Cars: The Citizens’ Guide to Traffic Calming.”

Institute of Transportation Engineers, *Traditional Neighbourhood Development Street Design Guidelines.*

Swirsky, Karen, et al., *Main Street...When a Highway Runs Through It: A Handbook for Oregon Communities.*

29 Block connect the flows



Related Charrette Strategies
E2; F2; F3; G2; G3; H2; I2; J2; K3; O3

Related Guidelines
5; 13; 15; 17; 23.1; 25; 26

29 Design blocks to encourage the flow of people

“Naturally, when he is in the horse’s ear, Poucet orders it to turn right or left.” Gaston Bachelard, *The Poetics of Space*, 1964.

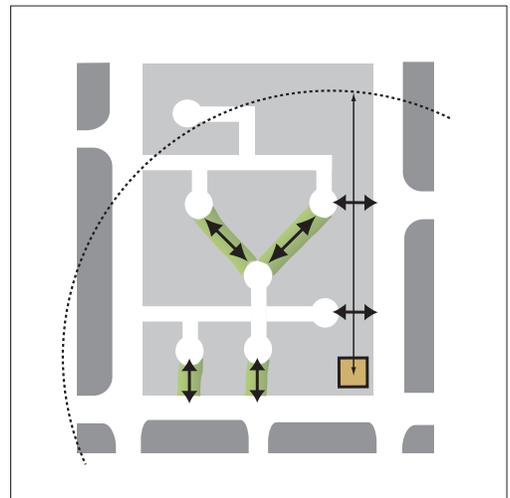
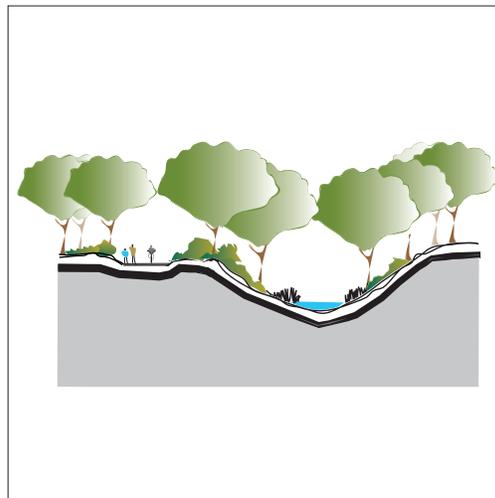
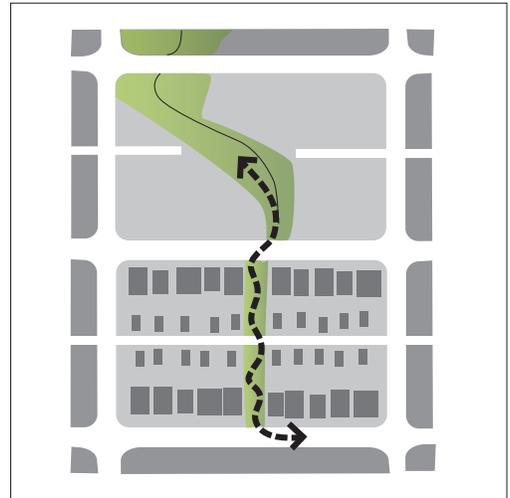
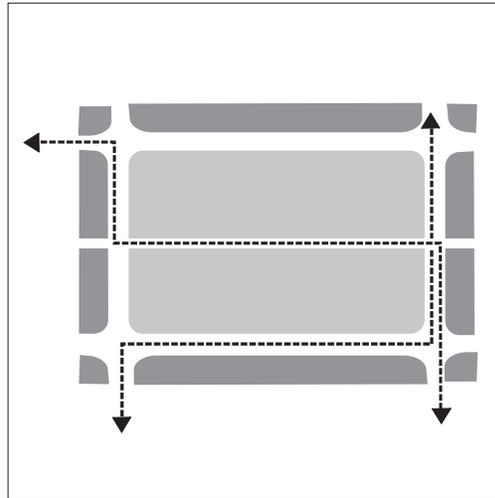
Conventional suburban blocks are often “superblocks” and have circuitous, confusing, and impermeable road systems. This discourages walking, as virtually all trips take longer than they should. The length of blocks should respond to a pedestrian time-measure, which means that streets should interconnect. Within highly pervious fine-grained street networks, common destinations are accessible by direct routes. Compact walkable neighbourhoods also conserve land and energy. Connect the flows of people. Allow people to move freely between blocks.

29.1 Short Blocks

Walking distances should provide the yardstick for determining block dimension. A length of 180 metres is an appropriate maximum block length (virtually all blocks in Vancouver are this length or shorter). Shorter blocks mean more intersections, and more intersections mean reduced car speeds, and fewer pedestrian fatalities on local roads.

29.2 Mid-block Connections

Where it is impossible to avoid large blocks, provide mid-block pathways between parcels or through buildings in order to increase access to the neighbourhood and to provide an alternative to walking on the street. Lighting and visibility should maximize pedestrian safety and comfort. In order to ensure safety, crosswalks and/or signage should indicate crossings at mid-block. Any public path of the mid-block type must be a minimum width of 6 metres.



29.3 Greenways and Trails

Blocks divided by natural features can maintain connectivity and ecological value. Locate greenways near riparian and other sensitive areas at a minimum of 15 metres from the top of the bank. This allows enough width to maintain continuous tree cover, which will preserve habitat connectivity and prevent sunshine from overheating stream water, which is lethal to fish. Permit cyclists to use the edge of riparian buffers.

29.4 Retrofit Large Blocks

Retrofitting existing suburban road systems for increased connectivity is extremely challenging. Wherever opportunities present themselves, make every effort to improve pedestrian and bicycle connectivity to surrounding circulation systems. Increase connectivity for pedestrians and bikes by opening culs-de-sac to foot and bicycle traffic.

FURTHER RESEARCH

Swift and Painter. “Residential Street Typology and Injury Accident Frequency”.

layer the systems



30 Manage stormwater block by block.

“My nostalgia is for what I feel disappearing all around me.” Janet Heyneman, Parabola, Summer 1993.

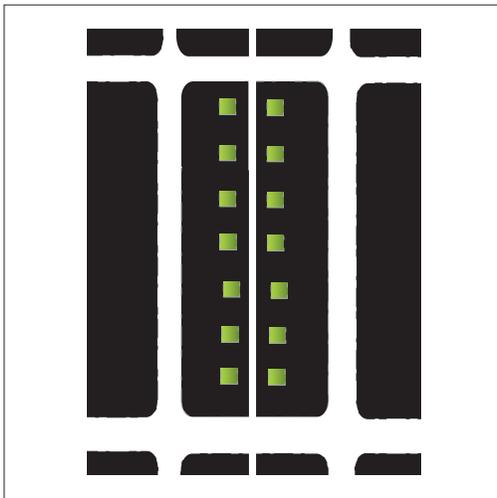
Blocks function as living space and define transportation corridors, and they can also play an important role in the ecological function of the neighbourhood. Large community detention ponds are expensive to build and maintain and while they can be very effective at handling peak flow reduction, they have been shown to be of little benefit in reducing the additional volumes generated by development. The best place to mitigate the bulk of stormwater consequences of urbanization is at the source — in the yards and on the streets of our new communities. Collect, store, and infiltrate as much stormwater as possible on each block, and ensure that all streets, yards, and park spaces play a role in this.

Related Charrette Strategies
A1; D2; D4; E1; F1; I1; J1; K2; N3

Related Guidelines
4; 5; 7.3; 19; 20; 27; 31

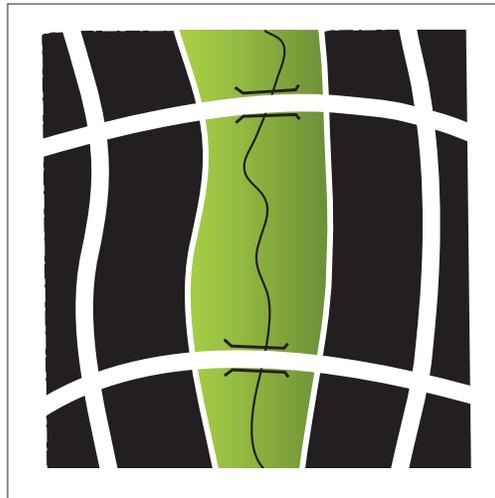
30.1 The Parcel

Infiltrate roof drainage within every parcel on a block to cut the need for stormwater systems in half. Rock pits, retention grading, water retaining planting areas (rain gardens), and rain barrels are viable and practical options.



30.2 The Middle

The middle of a block can serve as a semi-private open space “lane” or “greenway” for a group of single-family residents, a multiple family dwelling, or an apartment. This area can also act as a swale to collect, store, and infiltrate stormwater. Planting the area with shade trees provides bird habitat, and increases soil porosity for increased infiltration.

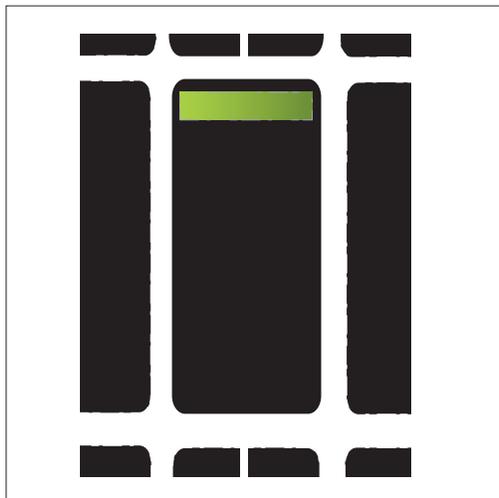


INFILTRATION

The most frequent rainfall events in the lower mainland are those that generate between 4 and 24 mm per day. These small events are also those that carry the greatest amount of pollutants. Whether on individual lots, or within public rights-of-way, infiltration strategies should be chosen with the following factors in mind:

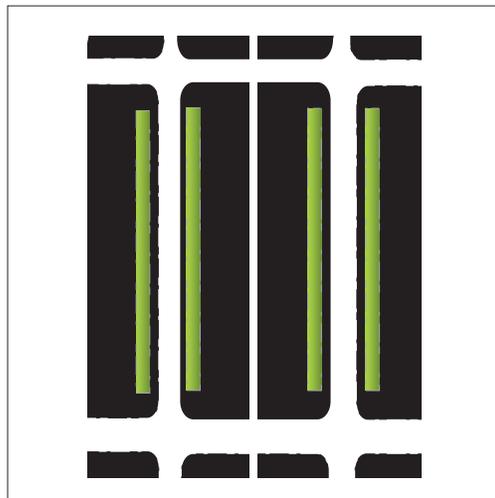
- depth to bedrock
- depth to groundwater
- proximity to stream corridor
- soil percolation rate
- density of tree canopy
- composition of existing forest
- steepness of topography
- level of maintenance

(adapted from Metro Regional Services, 2001).



30.3 The End

Another option is to set aside a portion of a block for the collection, storage, and infiltration of stormwater. This “rain garden” area would also provide a pocket of open space for residents.



30.4 The Street

Street corridors are ideal places for the collection and transportation of stormwater. An interconnected street network can function as an interconnected stormwater network if it is used to capture, transport, and infiltrate stormwater. A boulevard that includes a roadside infiltration swale and street trees provides all this as well as shade and habitat.

FURTHER RESEARCH

Centre for Housing Innovation, *Green Neighbourhoods: Planning and Design Guidelines for Air, Water and Urban Forest Quality*.

Ferguson, *Introduction to Stormwater Management*.

Metro Regional Services, *Green Streets: Environmental Designs for Transportation*. p.V-1b.

31 Block

layer the systems



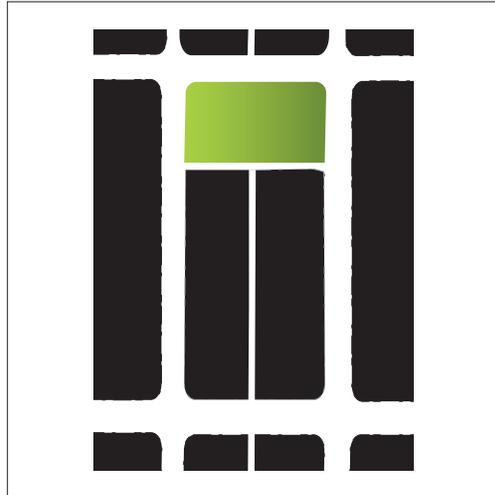
Related Charrette Strategies
B3; C3; D3; H3; J3; K1; L3; N3

Related Guidelines
2.3; 10; 13; 17; 29; 30; 42.4

31 Layer public space onto each block.

“Doors that open on the countryside seem to confer freedom behind the world’s back.” Ramon Gomez de la Serna, Echantillons.

Locate parks or public open spaces within a 3 minute walk of each home. This is especially practical when neighbourhoods contain numerous small parks rather than a single large park. Spread more and smaller areas of recreation space evenly throughout the community so there is park space within a short walk of all residents. Layer public spaces into the fabric of blocks so as to complement the larger open spaces that serve the entire district. Organize each space and allocate use according to local needs. Include gardening or small-scale agriculture as a popular and rewarding element of sustainable community design.



31.1 The Piece

A single lot or block end can provide a crucial community recreation area within easy resident access. A corner lot is a good choice because it will have two sides open to the street; a block end is even better because it has three sides exposed to surrounding streets.



31.2 The Middle

While ordinarily used as an effective service and car storage zone, the middle of a block can sometimes serve as shared communal activity space. In the detail of the Village Homes (Davis, California) plan at left, the small private backyards of the residential lots open out onto a central pedestrian spine that provide connectivity throughout the block.

FURTHER RESEARCH

Corbett and Corbett, *Designing Sustainable Communities: Learning from Village Homes*.

Girling and Helphand, *Yard, Street, Park*.



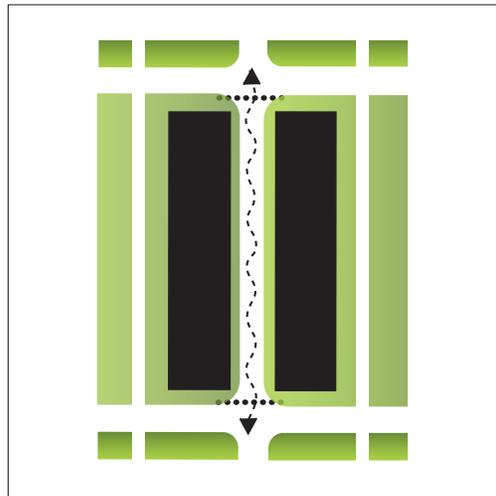
31.3 The Whole

Perhaps the most attractive and useful public space is the whole block park. Houses can then front onto the park, allowing residents to survey park activities easily and informally. Parks of this kind should provide a “green heart,” – a community centre for all residents. (Discourage situations in which houses back onto a park, as this generally results in a “wall” of private fences surrounding the space.)



31.4 The Pedestrian Street

Pedestrian streets function like a public square where people can interact and move around freely. Pedestrian streets can be successful as commercial streets because they attract people who are shopping and strolling. Short segments of pedestrian-only streets, attached to standard streets on either end, are usually the most active as they have the added benefit of being close to other transportation modes and parking. The “Third Street Promenade” in Santa Monica is a highly successful example of this. Consider closing down some streets to car traffic during special occasions, but be careful when considering closing main shopping streets to cars as the success rate for this strategy is sharply divided.



32 Block an economy of means



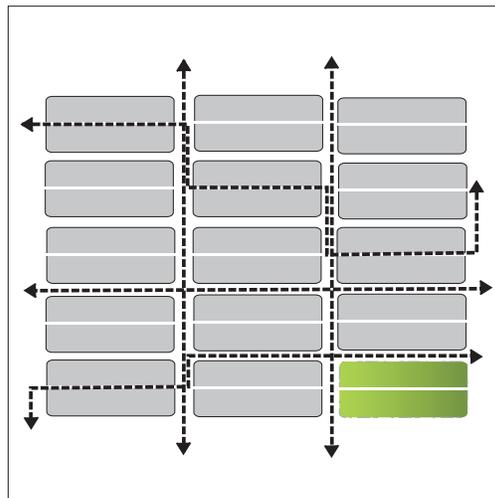
Related Charrette Strategies
A3; C2; I4; J4; M4

Related Guidelines
1.2; 11; 41; 37; 38

32 Make flexible blocks

“Contemplating these essential landscapes, Kublai reflected on the invisible order that sustains cities.” Italo Calvino, *Invisible Cities*, 1972.

The people who live in a block pay the cost of building and maintaining it. Adding even one more house to a street significantly decreases the cost to each individual household. A mix of lot sizes and housing types increases block density without creating a monotonous streetscape.



32.1 Flexible Use

Blocks of no more than 90-by-180 metres are highly efficient and cost-effective because they may be adapted to a variety of residential, commercial, and institutional use. Smaller blocks also create a pedestrian-friendly neighbourhood, which encourages cycling and walking and decreases auto dependence.



32.2 One Block, Many Parcel Types

Each block can accommodate a variety of parcel sizes to suit various living options. The resulting block would include a variety of tenure types (renters and owners), a variety of ages and incomes, and increased architectural variation on the street while still preserving the “single-family feel” of the district.

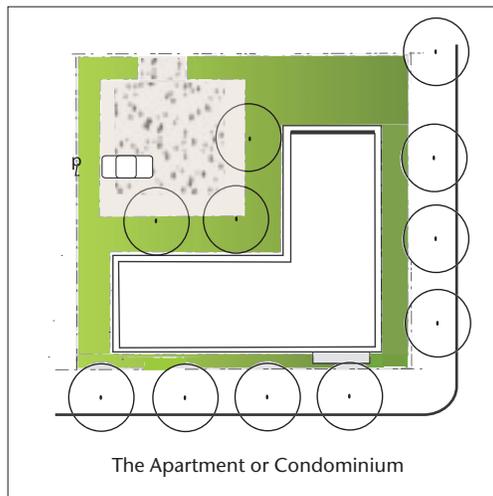
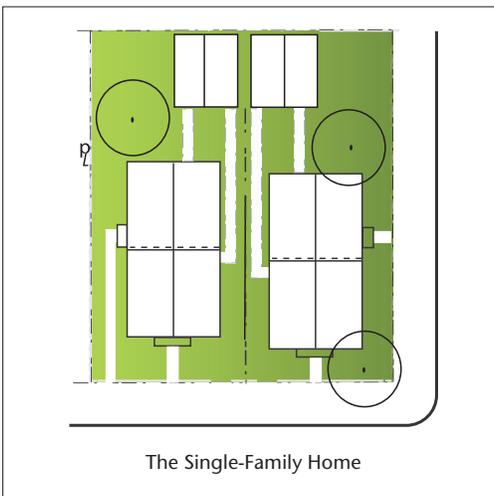
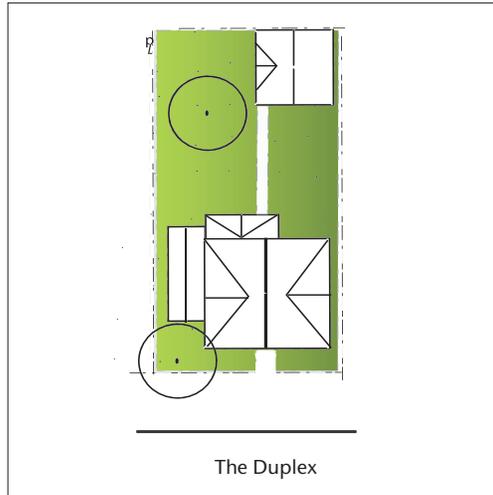
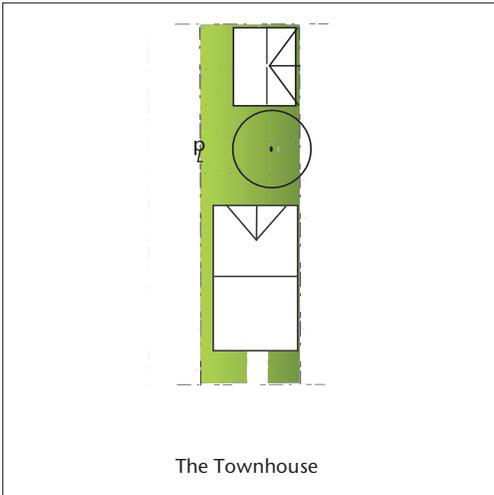
FURTHER RESEARCH

Metro Regional Services, *Green Streets: Environmental Designs for Transportation*, pg. VII-1.



Related Charrette Strategies
A3; C2; I4; J4; M4

Related Guidelines
1.2; 11; 37; 38; 41



FLEXIBLE LOTS

A “flexible lot” can accommodate a variety of house types and still fit into a standard block. As shown, townhouse lots would be 50% to 66% the width of the single family home lot, front-back duplexes would fit on the same size lot as the single-family home, while the apartment block could be built on 3 to 5 single-family home lots combined. The flexible lot accommodates a variety of housing types, engenders social mixing, accommodates ageing in place, and provides land use flexibility over time.