

# Design Consideration in Developing Alternative Housing

A CITY OF TORONTO USER GUIDE



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# Part 1

## Introduction

There is no single way to design and develop alternative housing. Much depends upon the community for which the housing is being built and the funding resources available. In Toronto, housing providers have a vast wealth of experience and knowledge in the development and design of alternative housing.



This User Guide builds on that knowledge. The guide was commissioned by the City of Toronto through funding from the Supporting Communities Partnership Initiative and provides a blueprint for those who are interested in developing alternative housing communities. It provides a summary of nine housing communities which were built in Toronto over the last 20 years. Each housing community was carefully selected to ensure that they represented the widest range of housing types, serving a full spectrum of tenants. In addition, they represent a diversity of management styles both in their development and current operations. The tenants, housing staff, development consultants and architects were interviewed. They identified design principles that not only affect tenant satisfaction, but can affect the management of the facility.

In addition to tenant and staff interviews, community consultations were held with the City of Toronto's Alternative Housing Services Committee (AHS), and with the Women's Housing Advocacy Group (WHAG).

This User Guide is a synthesis of the lessons learned, areas of concern that need to be considered during development and specific recommendations for site selection, materials, and the design of units.

The term "Alternative Housing" in this User Guide refers to housing that is built specifically for tenants who may require support to maintain their housing.

We also recommend that you refer to the Canada Mortgage and Housing Corporation web site [www.cmhc-schl.gc.ca/en/inpr/bude/index.cfm](http://www.cmhc-schl.gc.ca/en/inpr/bude/index.cfm) for housing industry professionals and community groups. This site provides the latest research in housing technology, development and design.

**THE NINE HOUSING COMMUNITIES STUDIED**



**1**  
**Deep Quong Non-Profit Homes Inc.**  
 Shared living in a large old Victorian building for single individuals.



**2**  
**Ecuhome**  
 A small apartment building with studio units for single individuals.



**3**  
**Fred Victor Centre Housing**  
 Shared apartments in two adjacent high-rise complexes for single individuals.



**4**  
**Jarvis Houses**  
 (operated by Homes First Society)  
 Shared housing for older men, located in a renovated century house.



**5**  
**Leonard Street**  
 (operated by St. Clare Multifaith Housing Society)  
 A converted medical building with studio and one-bedroom units.



**6**  
**The Sheila Miller Building**  
 (operated by Homes First Society)  
 A low-rise apartment building with studios, one- and two-bedroom units for single women, and single mothers with children.



**7**  
**Sistershare**  
 A shared house for single women, aged 50 and older, located in a residential neighbourhood.



**8**  
**Strachan House**  
 (operated by Homes First Society)  
 Shared housing in a renovated century old warehouse for single individuals.



**9**  
**Coxwell**  
 (operated by Mainstay Housing)  
 A low-rise apartment building with studio units for single individuals.

There is no prescriptive formula for either the design of or the management model for alternative housing communities. The following chart organizes the nine housing models which were selected by design and social considerations. All of the housing is located in the former City of Toronto.

HOUSING	DESIGN OVERVIEW				SOCIAL OVERVIEW	
	BUILDING SIZE	UNITS/ROOMS	COMMON SPACE	RESIDENT INPUT INTO DESIGN	TENANTS	MANAGEMENT APPROACH
<b>Deep Quong</b>	3 storey converted house	36 person rooming house, private rooms	Extensive indoor/outdoor	None	Formerly homeless single men & women	Live in superintendent & community development staff
<b>Ecuhome</b>	5 storey apt. building	48 studio & 1 bedroom apartments	Little to none	Some	Individuals with mental health challenges	Community development & property management staff
<b>Fred Victor Homes</b>	4-9 storey apt. buildings	Shared 8 person apartments, total 194 individuals	Large living rooms in apts. & some building common space	Some	Formerly homeless single men & women	Community development & property management staff, some by tenants
<b>Jarvis Houses</b>	3 storey converted house	Shared 4 person apartments, total of 24 individuals	Large living rooms & building common space	Extensive	Formerly homeless single men	Community development & 24/7 property management staff, some by tenants
<b>Leonard Street</b>	4 storey converted medical building	51 studio & 1 bedroom apartments	Some indoor/outdoor	None	Single men & women from shelters	Live in superintendent & property management staff
<b>The Sheila Miller</b>	5 storey apt. building	22 studio, 1, 2 & 3 bedroom apartments	Adequate indoor/outdoor	Extensive	Women & children escaping violence	Community development & property management staff, some by tenants
<b>Sistershare</b>	3 storey house	Shared 6 bedroom house, private bedrooms	Common rooms on each floor/ outdoor garden	None	Single women 50 years & older	Property management staff
<b>Strachan House</b>	3 storey converted warehouse	12 shared 5-7 bedroom apartments, total of 76 tenants	Extensive shared space on each floor, indoor & outdoor	Extensive	Formerly homeless single men & women	Community development & 24/7 property management staff, some by tenants
<b>Coxwell</b>	3 storey apt. building	14 SRO* and 1-bedroom apartments	Some indoor/ outdoor	None	Individuals with mental health challenges	Community development & property management staff

\*single-room occupancy

## Part 2 Early Development Considerations

Based on research of these nine buildings, there are a variety of issues that need to be considered during the planning stages of any new development to ensure its success.

### Neighbourhood Selection

The choice of an appropriate neighbourhood is an extremely important element in terms of ensuring tenant satisfaction. Most residents living in alternative housing rely on public transportation, bicycles or walking to traverse the City. Therefore, it is essential that a 24-hour bus/subway/streetcar access be located nearby and that the walk from that stop, to the building is safe. Many staff and tenants suggested that it was important to know their neighbours, and that by developing good relations with them the safety of the neighbourhood as a whole was increased.

Although there are many critical aspects with respect to site selection, tenants interviewed recommended the following as the most important considerations in determining suitability:

- \* Good public transportation
- \* Grocery store within walking distance
- \* Access to schools & relevant service
- \* Access to community centre and parks

It is recommended that you refer to [www.homecomingcoalition.ca](http://www.homecomingcoalition.ca) before proceeding with a site selection. This web site will provide you with some of the considerations and potential challenges that your group might encounter during the site selection process.

### Building Size/Type

The size of a building has an impact on the tenants' sense of community and in some cases their sense of safety. It was reported that it is difficult to foster a sense of community and safety in a large building, when tenants do not encounter each other on a regular basis and get to know one another. Nevertheless, larger buildings offer the advantage of economies of scale, as it may be possible to provide on-site daycare facilities, libraries or community services, and to incorporate economic development programs into the building. Staff and tenants suggested that buildings with less than 50 units are most desirable. In housing designed for women and children, it was recommended that access to yards and play areas is best provided in low-rise or townhouse style dwellings.



### Management Model

Tenants living in alternative housing have a variety of needs and challenges ranging from those with excellent life skills to those with high needs, addictions and/or mental health challenges. In all of these, the housing design and management model can be adjusted to provide a safe and secure environment for both tenants and staff. Of the nine buildings studied, a range of options are illustrated, and each was developed in response to the tenant population to be housed.

Management style has a major impact on the development of community. Yet non-profit housing providers appear to have very different understandings of the community development process, ranging from working collaboratively with tenants and sharing decision-making to organizing occasional social gatherings. Research indicates that involving tenants in decision-making processes is critical in fostering a sense of ownership and community. Ideally, this should begin at the design stage through consultations with prospective tenants.

Community development is a management model which seeks to uncover and highlight the strengths within communities as a means to build a healthy community. The basic tenet of this approach is that, although there are both capacities and deficiencies in every community, a capacities-focussed approach is more likely to empower the community and therefore create positive change.

Tenant satisfaction with housing was often related to their sense of being part of a larger community. In many buildings, where community development was the management model, tenants indicated that they had stayed in their housing (even though it might be very small or shared) for long periods because of the importance of community and the sense of security it had provided.

The different management models combined with (or contingent on) the building size often affects the extent to which the tenants feel connected to a community. There may be 24-hour staffing, a superintendent, or support or community development staff who visit at specific times. In some buildings, the property management staff involved tenants in landscaping or maintenance projects, thereby applying community development principles within a property management model. Other buildings had tenants' councils and infrastructure that involved tenants in decision-making processes ranging from arbitration committees to tenant representation on boards of directors. Several buildings had successfully hired tenants for some maintenance or for on-call duties.



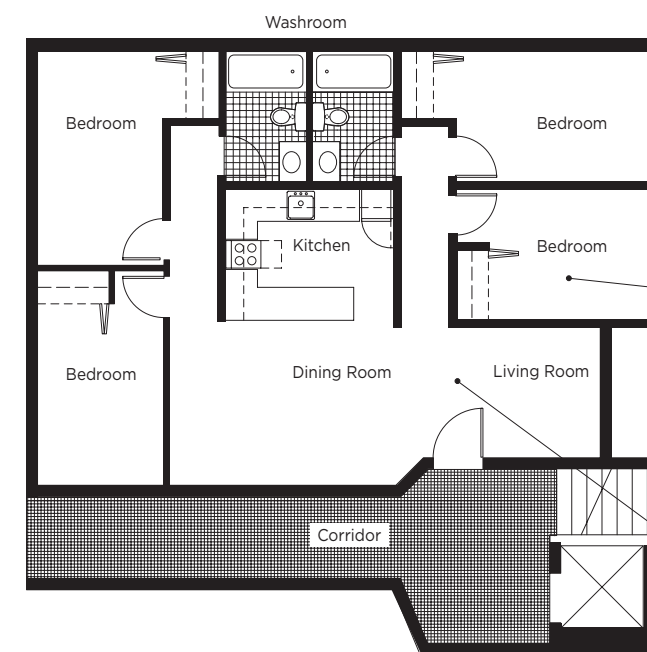
### Shared Versus Self-Contained Units

There are a variety of issues to consider in deciding whether to build shared or self-contained units. The first consideration should reflect the choice of the individuals who will eventually occupy the building. Housing providers agreed that, ideally, tenants should have a choice of shared or self-contained housing, but cost constraints often force non-profits to build shared units or very small studios. As a result, many people end up in shared housing through desperation rather than choice. Tenants who are not suited to this type of housing can become homeless again. Problems can also occur when shared housing, which was originally considered to be transitional, becomes long-term due to the lack of alternatives.

Other Issues to Consider:

- \* Shared space works for a small segment of the population
- \* It was reported that older men, who had spent many years in the hostel system adapted more easily to shared accommodation
- \* In the report *Borderlands of Homelessness: Women's Views on Alternative Housing* (Novac et al., 1996), 84 out of 97 formerly homeless women preferred self-contained housing
- \* In this study, a small group of older women in a shared house reported that they like the model
- \* Staff reported that shared accommodation in houses works better than high-rise apartments because houses are more integrated into the community and provide more space including traditional porches and yard
- \* Shared housing often requires intensive staff support because of the necessity of negotiating common space
- \* Staff must be flexible in their approach and attentive to the changing needs of the tenants if shared housing is to be successful

#### 4 Bedroom Shared Apartment



- **Apartment**
  - Kitchens are the centre of the house. Design them so more than one person can work at a time.
  - Provide adequate appliances for the multiple use. Appliances should be full size.
  - Each resident needs a lockable cabinet. This should be adequate for food supplies as well as cooking utensils.
  - Fridges need lockable compartments as well if they are to be shared. Alternately provide individual fridges. Bar fridges are not adequate.
- **Bedrooms/Washrooms**
  - In shared apartments, make bedrooms large enough to double as sitting rooms.
  - In bedrooms, build in as much storage as possible. It should be adequate for a person's total belongings.
  - Bedrooms should have A/C or, alternatively, ceiling fans.
  - If private washrooms are not provided, have a sink in each bedroom. This will allow for flexibility in individual use of bedrooms.
  - Washrooms should have bath/shower combinations. As well, all washrooms should have floor drains.
- **Living Room/Dining Room**
  - Allow for windows to the corridor beside the front door. If a front door coat closet is not provided, add this storage in each bedroom.

### Selecting Consultants

A development consultant and an architect need to be hired in the early stages of developing a housing community. They each represent your interest during the design and construction of the housing.

The Development Consultant will:

- \* Obtain all necessary development approvals including site plan approvals, rezoning and Ontario Municipal Board approvals
- \* Coordinate the work of consultants hired (appraisers, quality surveyors, etc)
- \* Prepare and coordinate the application for permanent mortgage financing as well as the application for interim financing
- \* Coordinate mortgage advances and manage the budget during construction
- \* Prepare and monitor the capital budget and cash flow projections. Coordinate the final capital cost audit
- \* During construction, act as your agent



The Architect will:

- \* Facilitate discussions with all stakeholders, including the potential tenant group, on the building design
- \* Develop a design for a new building or the retrofit of an existing structure
- \* Obtain approvals/permits from relevant authorities
- \* Oversee construction
- \* Work with the contractor to stay within the construction budget

The selection of an appropriate development consultant and architect is crucial to the success of a new housing community.

The hiring committee should:

- \* Consult other non-profit housing providers for recommendations and municipal staff for references
- \* Provide candidates with clear and specific information about the potential tenant group, the type of housing being considered (shared/self-contained), the proposed management model, funding opportunities/constraints, and the long-term goals of the housing

During the interview candidates should discuss:

- \* Their experience, philosophy and approach to developing non-profit housing
- \* How they propose to involve board members, staff and potential tenants in the process

## Part 3 Design Consideration

Good housing design is a key component of any successful housing community. Consider the organization of the floor plan in both the public and individual suite space as one of the fundamental ways to design safe and useable housing. Request design options which provide you with a range of potential floor plans for the housing and program components.

### Choice of Building Materials

Staff consistently reported that when cheaper materials were used in construction, expensive repairs were soon required. In general, it is less expensive to invest in good quality materials at the start than to try and maintain poor quality materials over time.

For exteriors, long lasting, easily maintained materials such as brick, concrete, metal siding, pre-finished wood siding or concrete board are recommended. Avoid exterior stucco systems due to the historically poor construction quality when installing this material and the high costs of maintenance. Select paving and planting materials that require little or no care. For hard landscape elements, concrete or stone pavers are suggested. Soft landscaping should be perennials and low-maintenance plant materials that require little pruning and watering. Ornamental annual flowers should be isolated in planters or in small discrete beds that are easily accessible. An outdoor water spigot should be located near the planted areas.

Interior finish materials need to differentiate between common and private spaces. Materials should be durable, easily maintained and *replaceable*. When selecting floor finishes, pre-finished hardwood or parquet wood flooring, polished concrete, terrazzo and roll linoleum material are all appropriate. For both common and private rooms, throw rugs are preferable to wall-to-wall carpeting, because they are easy to clean or replace.

Impact resistant gypsum wallboard should be used in place of drywall in hallways and high traffic areas.

Use a combination of concrete board or wood siding on walls (lower half of the wall, 4ft high) with impact resistant wallboard above, to reduce bicycle and stroller damage.

Kitchens take a lot of use and abuse, requiring extensive maintenance. Use durable materials for cabinets. It is cost-effective and ensures a long lasting, relatively maintenance free cabinet. Residentially rated plastic laminate should not be used to finish cabinets as it burns quickly, cracks over time, and cannot be replaced easily. Only use industrial plastic laminate if specified. Use melamine to line the cabinet interiors as the effects of wear and tear on this product is minimal.

For counter tops, consider using plastic wood, stainless steel, concrete board or solid surfacing. Though the capital costs are higher, the operating costs are significantly less. Use heavy duty hinges on doors that allow the door to extend past the 90-degree point. This will reduce the damage from doors that are wrenched off hinges due to excessive force upon opening.

Ensure all lighting fixtures within the building use similar bulbs, for easy replacement. Consider using durable fluorescent lights. Although the capital costs are higher, they consume much less energy, have a longer life, require less maintenance and significantly reduce operating costs.

It is also advisable to use universally designed plumbing fixtures (levers as opposed to knobs) in order to support an aging population.

### HVAC Systems

The heating, ventilation and air conditioning (HVAC) systems were reported as a major source of dissatisfaction for most of the buildings studied. Mechanical systems in some buildings were difficult to maintain and required sophisticated and costly maintenance procedures. The lack of adequate ventilation was particularly problematic. Very few buildings had air conditioning and it was difficult to get fresh air through windows. In some buildings, the air was noticeably stale in the corridors and there was a transfer of odour from units into corridors. Cigarette smoke and its impact on the health of tenants and staff was a concern, particularly in shared space.

Given that many alternative housing sites are located in very urban conditions, the general air quality of the environment is poor. Air conditioning, though an additional cost, helps to alleviate this issue while increasing the comfort level of the tenants. For many living in alternative housing, their lives and daily activities tend to centre inordinately on their residence. As a result, the physical environment, including the air quality, is heavily taxed. Air conditioning helps alleviate the physical distress on the environment and the physical/psychological distress of the tenants. In particular, staff noted that tenants in air conditioned buildings are better able to cope, psychologically, during very hot weather.

### Safety and Security

The size of a building has an impact on the tenants' sense of community and in some cases their sense of safety. It can be difficult to foster a sense of community and safety in a large building when tenants do not encounter each other on a regular basis or get to know one another. Larger buildings (over 200 units) offer the advantage of economies of scale, and there are many examples of large successful buildings.

Generally, successful buildings offered a variety of amenity spaces. These rooms, indoor and out, allow the tenants to gather in various sized groups. In many, there should be one room large enough to hold the entire community. In addition, the lobby should be broken down into smaller areas, where groups of tenants can gather and even entertain visitors if their rooms are too small. Larger buildings also make it possible to consider the incorporation of related services (depending on the resident group being housed) such as a daycare, libraries or community services. With this additional activity in the building, there are more opportunities for casual surveillance of the environment, which is the best way to maintain and foster personal safety in a building.

Incorporating security cameras and other technological surveillance systems as part of the building's design is an ongoing debate. There are equal numbers of building managers, staff and tenants who believe it is a valuable deterrent as those who believe it lulls the staff and tenants into a false sense of security. Regardless of the individual housing providers decision to include them or not, the critical issue is that they do not replace the need to include the other safety precautions discussed. Technology is a supplementary safety precaution that will enhance the implementation of safe building design practices.

### Gender Issues

Women with children have particular needs related to child supervision, access to transportation, schools, community centres and parks. Units for women with children should incorporate design features such as kitchens that open into family rooms and windows that face outdoor play areas.

Safety issues were reported to be of greater concern to women than to men. Therefore, neighbourhood safety, locks, security systems and safety issues need to be considered from a gender perspective.

### Green Considerations

Incorporating sustainable features in a new housing project requires that several areas be investigated simultaneously. Some have capital cost implications while others, typically falling under the umbrella of "passive design" strategies, do not. Given the increasing costs of energy, heat, cooling and water, these can be the most expensive line items in your operating budget. If these costs can be minimized, the ongoing operating expense is protected from large fluctuation.

The most popular energy building design program is Leadership in Energy and Environmental Design (LEED). This is an internationally recognized set of guidelines which, when incorporated into the design and construction phases of a building, result in a demonstrably greener, more energy efficient building. There are four levels of LEED certification: Bronze, Silver, Gold and finally Platinum. The capital and operating cost savings for each level are modelled early in the design. This gives the client a very accurate picture of both the increased capital costs and the "payback" period with respect to the operating costs. The "payback" is the term that refers to the number of years it takes for the building to cover those increased costs or literally *payback* the housing developer. Usually, this is a 5 to 7 year period.

There are two costs involved in securing a LEED building, additional professional fees for the consultant team required to implement the LEED program and the cost to apply for LEED certification. Many builders choose to implement the design phase, in order to benefit from an energy efficient building but forgo investing in application/certification process. For more information, you can find the LEED link at Canada Green Building Council at [www.cagbc.org](http://www.cagbc.org).

Recently, the Green Globe program was introduced. It is equally successful from a building design perspective and is less expensive. The web site for Green Globe is [www.greenglobes.com](http://www.greenglobes.com).

Typically the distinguishing characteristic of *passive* design versus the *active* design strategies is that the former are not reliant on any technology for activation. The strategies tend to be generated from a careful study of the site and the building design in relation to the natural elements. In order to exploit this type of energy conservation, the consultant team should investigate a host of issues. Key considerations are to:

- \* Determine the optimum location for the building to maximize daylight, minimize heat gain and allow for natural ventilation of indoor rooms
- \* Look at the building elevation and take into consideration the size and number of windows in relation to its orientation north, south, east and west

Some interesting websites that outline this in greater detail are:

[www.greenbuilder.com/sourcebook/PassiveSol.html](http://www.greenbuilder.com/sourcebook/PassiveSol.html) and [www.rmi.org/images/other/Energy/E0419\\_HEB9WholeSystem.pdf](http://www.rmi.org/images/other/Energy/E0419_HEB9WholeSystem.pdf)

We recommend that you conduct an internet search of all programs, municipal, provincial and federal, that offer financial assistance for sustainable not-for-profit housing. In Canada, programs have been available that have underwritten the cost of upgrading building components such as motion activated light switches, low consumption toilets and programmable thermostats. Cumulatively, these items represent a significant decrease in energy consumption and provide measurable savings.

Any building can, and should, incorporate a combination of both *passive* and *active* strategies. When interviewing a prospective architect, it is important to ask about their experience in designing energy efficient residential buildings. They should be able to provide observations and estimate the cost of potential green strategies for your proposed building.

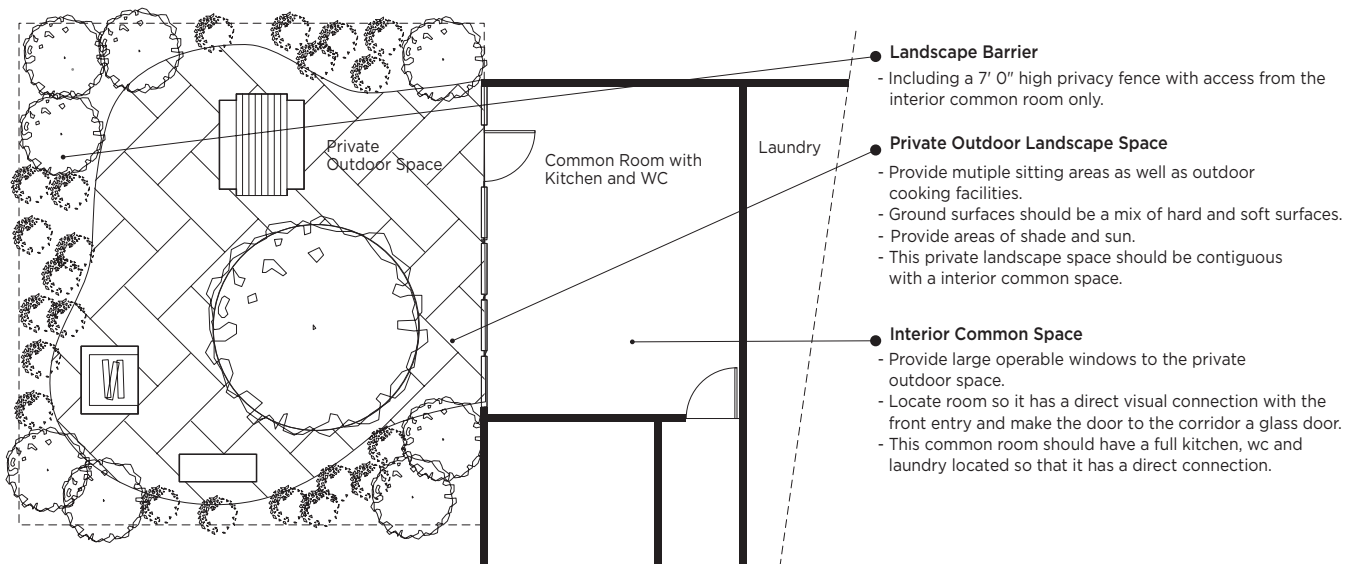
### Outdoor Common Spaces

Both tenants and housing workers emphasized the importance of private outdoor space that can be used to foster a sense of community. Tenants need a sense of privacy and safety as well as a feeling of belonging or ownership. This can be achieved, in part, through the creation of gardens with fencing, shrubbery and/or a locked entrance. Permanent barbeques, garden furniture, benches and ashtrays can enhance a sense of community. A well-designed trellis can provide cover in inclement weather (for smokers) and can create the feeling of an “outdoor room.” In some cases, barbeques were used to share different ethnic foods with those on limited incomes.

#### Other Considerations

- \* Incorporate economic opportunities into the management of outdoor spaces by hiring tenants to manage and/or maintain them
- \* Build community gardens to foster community development. Gardening bridges cultural, age and gender differences. It is inexpensive and requires no formal training
- \* Research small grant opportunities geared towards community garden start-up costs. This work can be facilitated by your development consultant. The neighbourhood community can also participate, assisting tenants with the development and maintenance of a community garden or sharing space and costs

#### Landscape Open Space



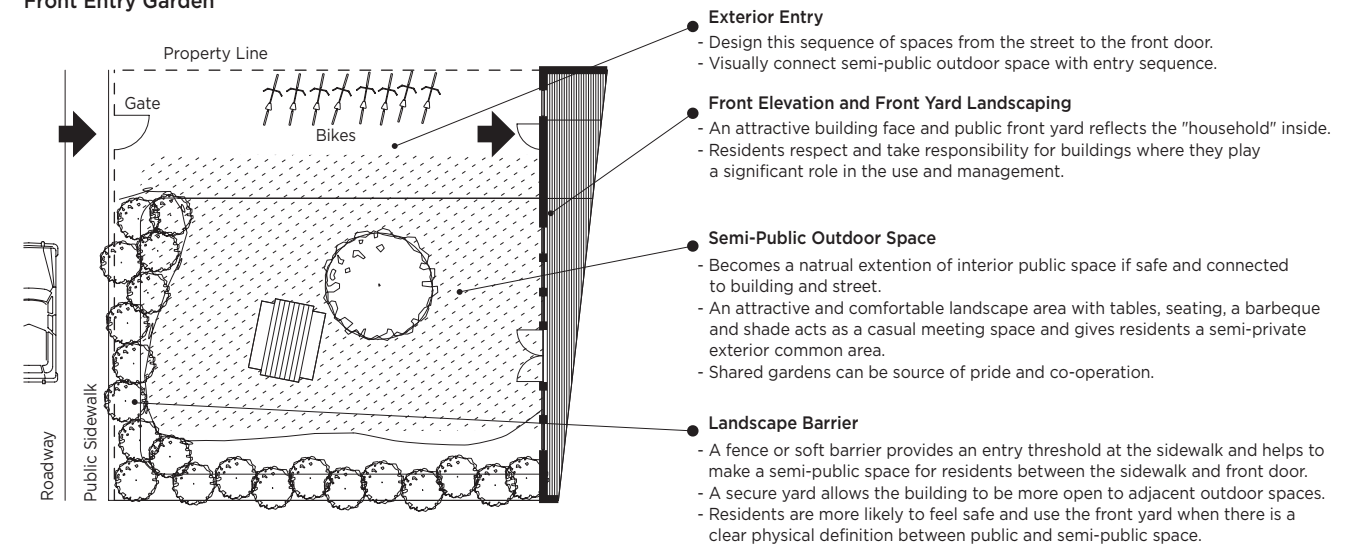
### Building Entrance

The entrance is the public face of a building. It can be a transitional space or a series of spaces with multiple functions extending from the lobby area to the street, including vestibules, a covered space over the front door, and a sidewalk or pathway.

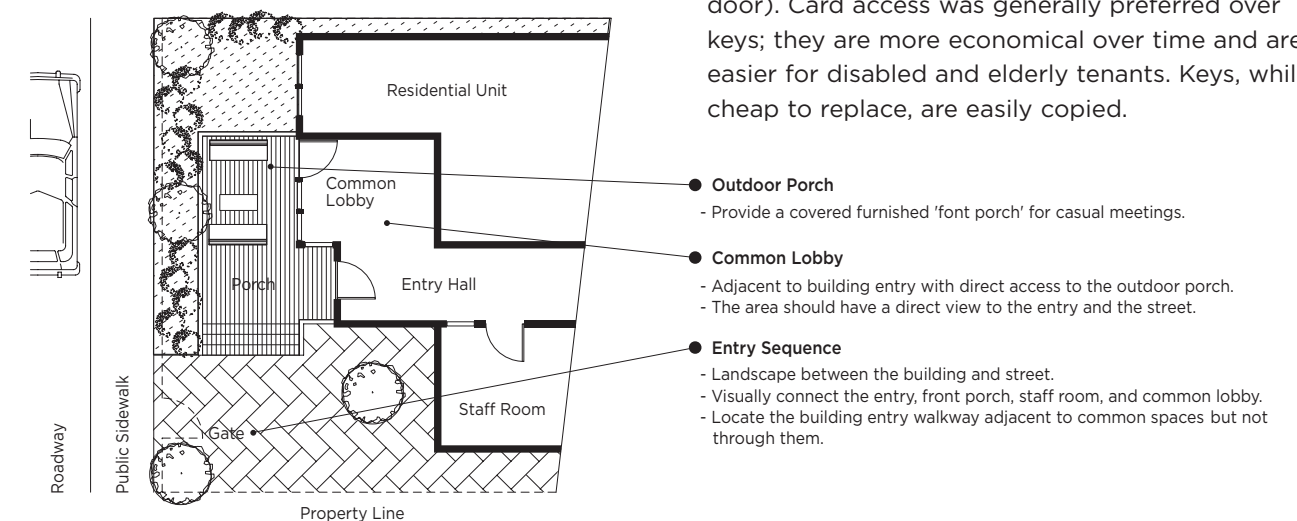
There are several design principles to be considered when designing an entranceway. To ensure safety, there should be clear sightlines between the street and the front door. Landscaping should not be a

visual impediment. The mature height of trees, shrubs and ornamental grasses should be considered in the landscape design. A bicycle rack could also be erected. Incorporating a common space near the entrance increases safety by providing informal surveillance of the building approach and entrance, allowing tenants to identify unwanted visitors. Locating the staff office near the entranceway enhances a sense of safety and security.

#### Front Entry Garden

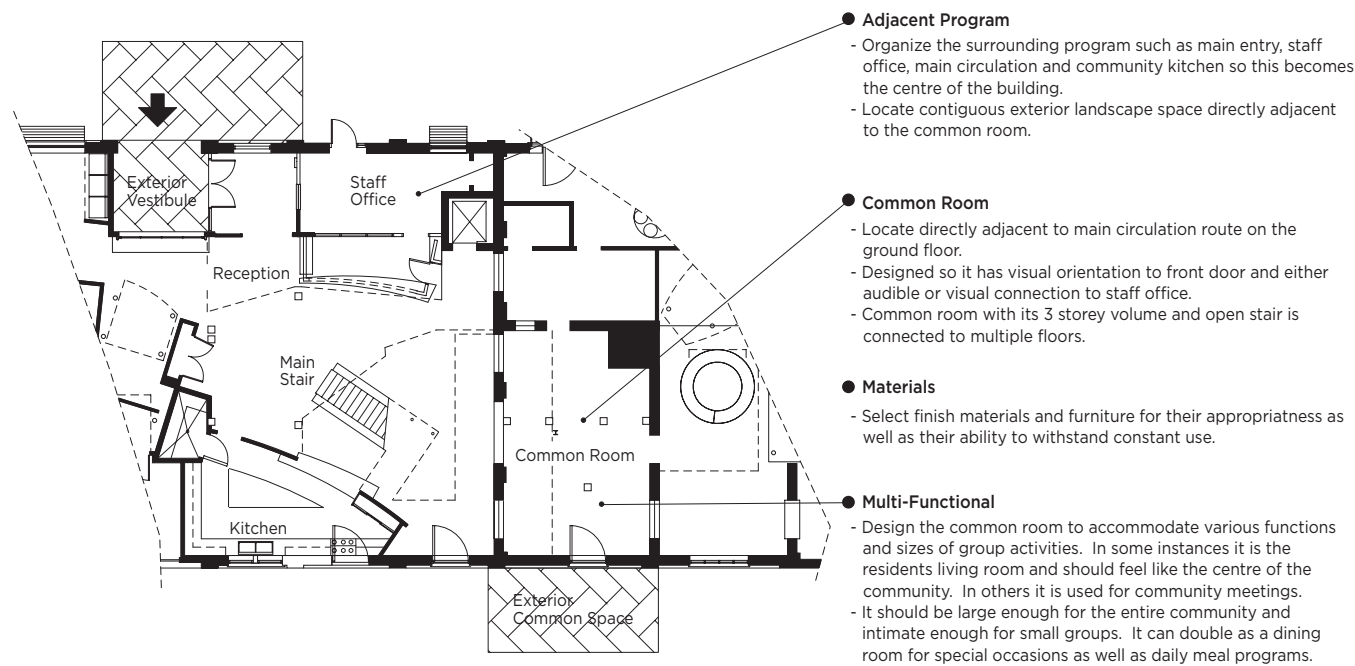


#### Front Entry Porch



Recessed entrances should be avoided (front doors should not be recessed more than the depth of a door). Card access was generally preferred over keys; they are more economical over time and are easier for disabled and elderly tenants. Keys, while cheap to replace, are easily copied.

Apartment Common Space Relationships



Indoor Spaces

Common rooms can foster a sense of community, particularly if the design permits community activities such as socializing, playing board games and watching television, as well as quieter areas for reading or computer work. A good common room is an extension of one's living space and may encourage groups of unrelated people to interact. Conversely, tenants should not feel obliged to interact with others. Varied ceiling heights, alcoves, sliding doors to subdivide space and adjustable lighting can work together to facilitate social and solitary activities. Smoking and non-smoking areas must be well ventilated.

- \* The main common room should be located on the main floor. For security reasons, it should be near (within view of) the front door and the staff office.
- \* Basement rooms do not promote a sense of security and tend to be underutilized.

- \* Front and back porches, gardens (including roof gardens), laundry rooms, front foyers, and well-designed nooks can also provide valuable common space.
- \* Comfortable, well maintained furniture enhances a room while small, informal seating arrangements encourage multiple uses.
- \* Ensure adequate storage space for games and computers is available and that washrooms are easily accessible.

In general, it is important that tenants, rather than staff, have the responsibility and the opportunity to monitor the common rooms in order to foster community development within a building.

The use of common space is often an indicator of community. In buildings where tenants have little control over access to indoor common space or have to book times to use common rooms, opportunities

for community development were significantly reduced. Conversely, in buildings where tenants were encouraged to manage/maintain public areas and assist the staff in programming community uses for these areas, stronger community participation was observed. The laundry room and front hall areas create opportunities for tenants to congregate if they are properly designed to promote socialization. Not only does this improve the safety of the whole building through intensification of use, it also creates a comfortable environment in which to strike up a conversation.

Common Kitchens

Food preparation can create important opportunities for community building. Common kitchens should be located within or adjacent to other common rooms, and should enable many people to use the facilities simultaneously. In one of the housing communities included in this study, tenants organized a small catering company, preparing meals for other tenants and staff.

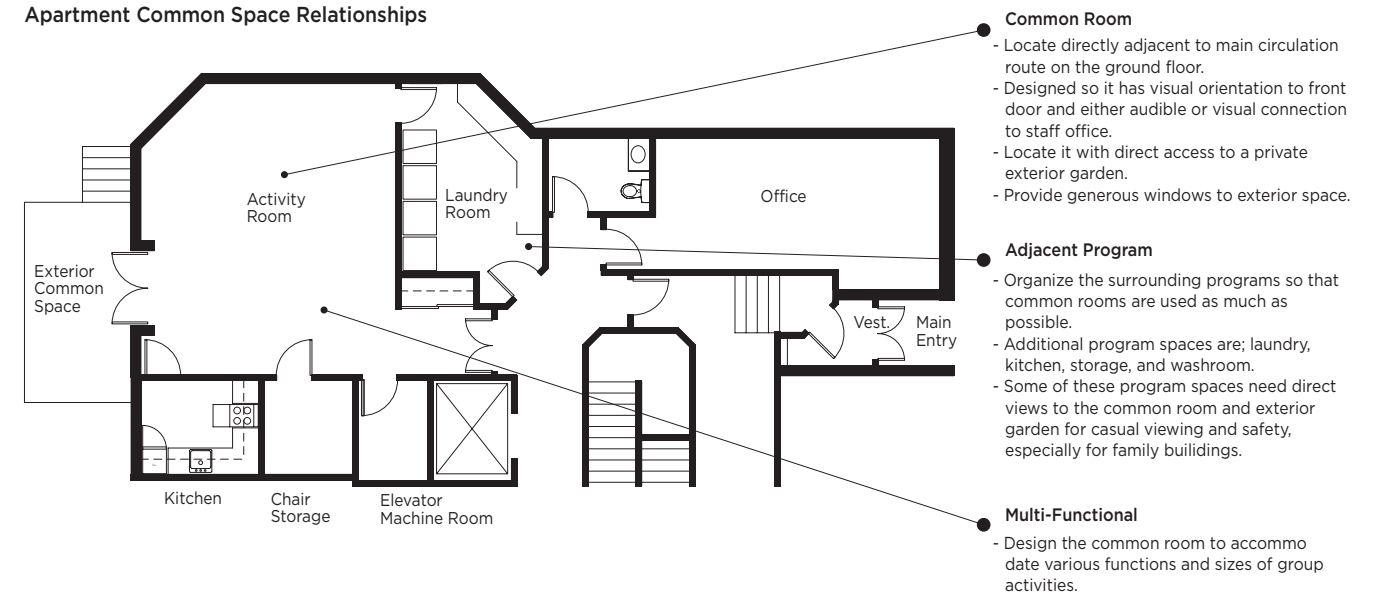
Kitchen equipment in common space needs to be sturdy to withstand multiple users, with varying degrees of cooking skills. Kitchen islands with electrical outlets provide additional counter space as well as informal space for people to socialize. For safety reasons, adequate ventilation and lighting is necessary.

Laundry Areas

The laundry room should be near a common room. Tenants can use the common space to easily monitor their laundry rather than returning to their rooms. For safety reasons, the laundry room should not be in an isolated basement area.

Staff were concerned about machine maintenance costs while tenants were frustrated when machines broke down. Regular machine maintenance programs can alleviate these issues.

Apartment Common Space Relationships



### Elevator Lobbies and Corridors

Elevator lobbies are common space for tenant interaction and information distribution on community events or tenant issues. As with entranceways, it is important to consider sightlines and adequate lighting. Avoid dead-end corridors or recessed areas, and install good quality tile or industrial-grade flooring. Avoid carpeting in hallways or common space as it wears quickly in high traffic areas.

In many buildings, the poor acoustical treatment in public corridors and private spaces was a source of irritation. Design corridor walls and elevator shafts to minimize sound and vibration. Although the Ontario Building Code (OBC) requires certain standard transmission class (the recognized standard for sound attenuation) ratings for walls that separate public corridors from apartment units, these standards are low and provide minimum sound proofing. For a minimal cost, the rating can be increased to significantly reduce noise.

### Bicycle and Stroller Storage

For many low-income tenants, a bicycle is their only form of transportation. In buildings with inadequate, secure storage, tenants are forced to bring their bicycles into their units. This not only decreases their small living areas, but damages the walls, floors and elevator interiors over time.

Providing appropriate bicycle storage in an area that is accessible 24-hours a day is preferred. Ensure sightlines between the storage facility and the office space. The space does not require heat and should be accessible from the outside of the building. Another consideration might be to design bicycle niches on each floor so tenants can secure their bicycles.

In buildings for families, stroller storage was reported as a significant issue. Strollers need to be brought into units or securely stored in corridors. Like bicycles, strollers cause wear and tear on buildings (including the cumulative affects of snow and salt pooling on floors) and it is important to consider this in the selection of building materials.



### General Storage for Tenants

The lack of general storage was reported as an on-going issue. Tenants prefer larger storage lockers with high walls that can accommodate couches and large items with adequate lighting and wire grids that allow for adequate ventilation. The storage room should be located close to an elevator and within view of a main corridor. Card access to the room is recommended. Lighting should be bright enough to view the depth of the locker area.

### Staff Storage Needs

Housing and maintenance staff require a secure room to store supplies and tools. Staff indicated that a basement storage space for donated furniture, strollers and clothing would be useful.

### Garbage Rooms

The garbage room must be well lit, accessible, preferably on the main floor with direct access to an exterior shed or unloading point. Adequate room must be left to store large rolling recycling containers. The architect should verify the minimum garbage and recycling requirements with the City's Solid Waste Management Services department early and talk with the housing provider to get a sense of how much recyclables are going to be generated. There are a variety of recycling sorting systems which work well depending on the number of units in the building. The room must have air-conditioning and a floor drain for easy cleaning.

In large buildings, the garbage requirements are more stringent and the management issues become more onerous as the volume increases. Many buildings with 30+ units prefer to use a garbage compacter.

Garbage chutes generate great debate in alternative housing. Some staff and tenants prefer to bring their garbage down as needed. Others prefer having a chute on each floor. The problems associated with garbage chutes are multi-faceted. Chutes get plugged and some tenants leave large garbage items in the small closet. As the interior of the chute becomes coated with food waste, infestations of bugs and rodents can become an issue.

### Office Space

The location of the staff office and the number of staff working at any one time and their functions (community development, administration, maintenance, security) should be considered when designing the office. Tenants and staff felt strongly that office space located near the main door provided more security for the building. In some buildings, the area near the office became a focal point where people could congregate and watch the activities of the building.

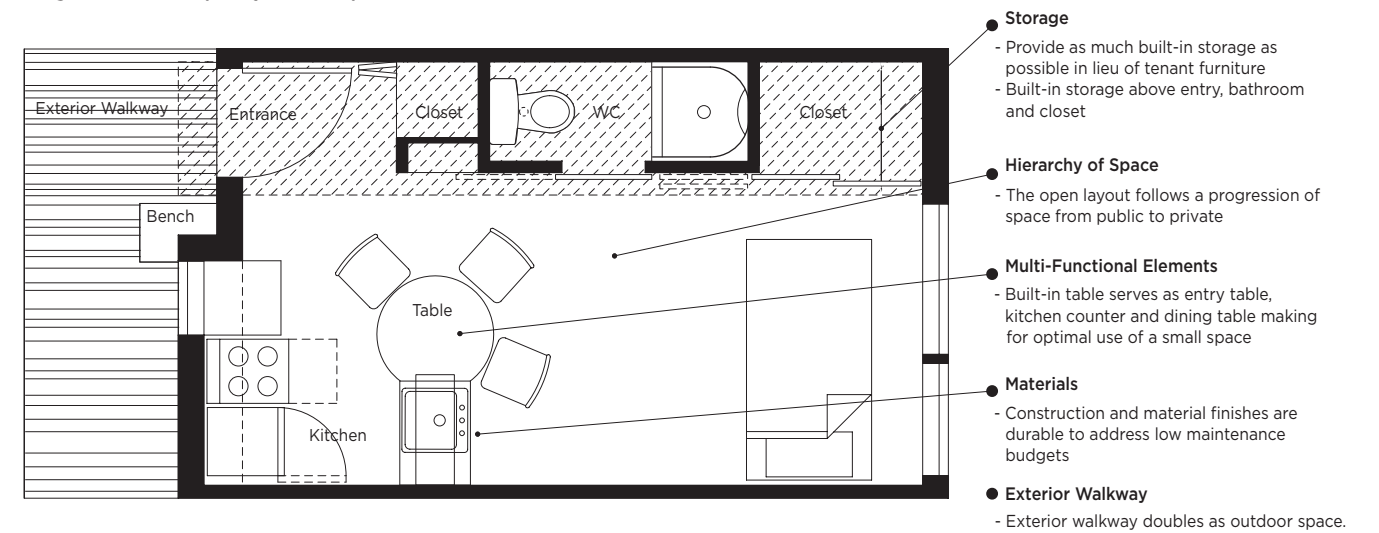
The office should have clear site lines to the entrance, the elevator lobby and the common room. Ideally, two entrances/exits to the office would provide added security and accessibility in a crisis situation.

### Individual Unit Kitchens

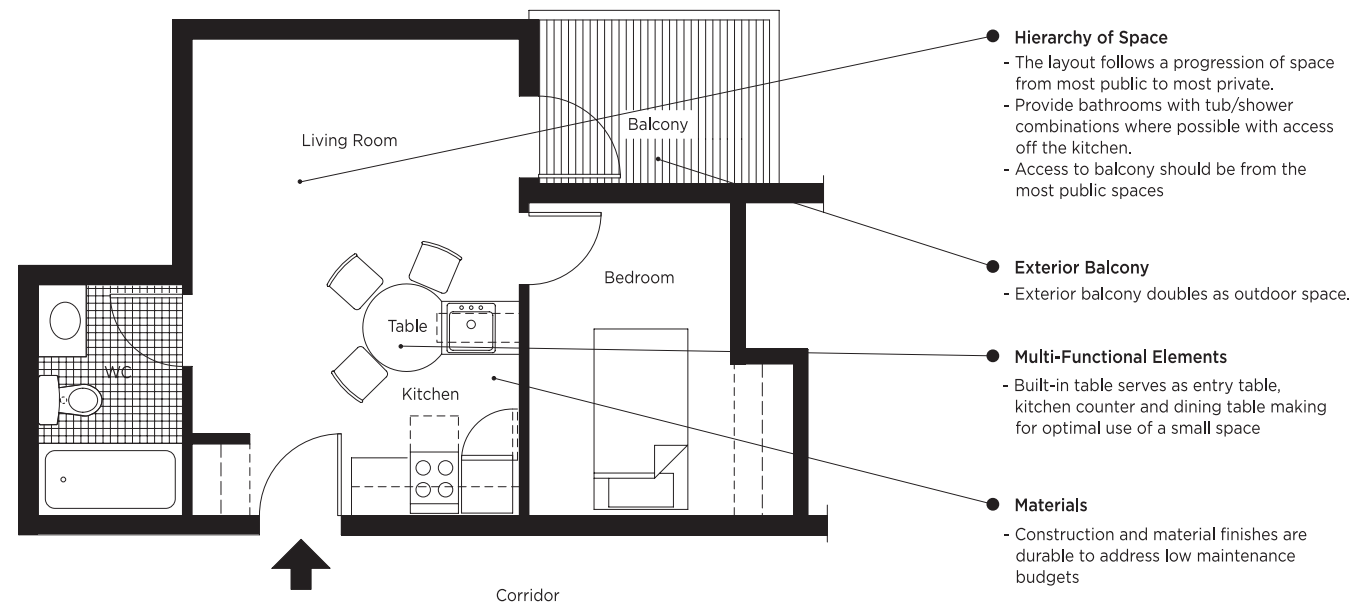
General design considerations apply to both self-contained and shared kitchens. Women were generally more concerned about kitchen design and adequate cupboard space, e.g., they emphasized the need for full-size refrigerators and noted that stoves and refrigerators should be placed so the doors fully open for cleaning.

Full-sized appliances are suggested for most kitchens. Tenants with small apartment-sized refrigerators and hotplates complained that they were unable to purchase or prepare food in a cost-effective manner. Even tenants with small rooms and shared kitchens, expressed a desire for a full-sized refrigerator in their rooms. Full-sized ovens were preferred over stovetop units for better cooking options. Double sinks and floor drains in the kitchen were also recommended.

Single Room Occupancy (SRO) Apartment - 21 m<sup>2</sup>



1 Bedroom Apartment - 315 m<sup>3</sup>



Poor kitchen ventilation often leads to odours, grime build-up (requiring frequent cleanings), and the activation of smoke alarms. Tenants sometimes dismantle smoke alarms because of repeated noise. To avoid this, good quality exhaust fans that vent directly outside (as opposed to re-circulating units) should be installed above each stove, and smoke alarms should be hard-wired.

Durable cupboards with strong hinges should be standard in all kitchens. In shared facilities, each user needs a minimum of two full-sized, lockable cupboards. When more than four people share a kitchen, it is recommended that two sets of appliances and sinks be incorporated into the design.

Small islands or built-in tables are suggested for SRO or studio units. They can provide places for tenants to sit and share a meal.

**Bathrooms**

Institutional grade materials, such as ceramic tile, rubber flooring and high-grade plastic laminate, are preferable for all bathrooms and plumbing fixtures. For maintenance reasons, shower/bath liners should be used in lieu of ceramic tiles.

As tenant populations age, mobility issues need to be addressed. Adding grab bars and assistive devices, according to OBC, are one solution. If this is not possible, another approach is to provide 2' strip of three quarter or five eighth inch plywood backing behind the drywall at approximately 2' 8" above the finished floor. This will allow for grab bars and assistive devices to be easily installed in the future, thereby allowing a resident to age with minimum expense to the housing provider and minimum interruption to the tenant's apartment.

Floor drains can prevent or limit flood damage, a chronic problem in many apartments. A large trap in the drain will also reduce maintenance issues.

In designing bathrooms for shared accommodation, a ratio of three people for every three-piece bathroom (toilet, sink, bathtub/shower) is considered sufficient. However, the provision of additional sinks and countertop areas will enhance convenience and relieve congestion. Both bathtubs and showers should be available and there should be one accessible bathroom per shared suite.

**Balconies**

Most tenants appreciated their balconies which provide improved ventilation, more living space during certain times of the year, and space for gardening or storage. In smaller units this was identified as being especially important.

However, housing providers had major safety and maintenance concerns regarding balconies, particularly in family buildings. Architects need to ensure that the design and building detailing address potential safety issues and maintenance problems in order to avoid leaks, floods, and damage to the building.

**Windows/Sliding Doors**

OBC stipulates that windows may not open more than four inches. Depending upon window design, this requirement can seriously restrict airflow. In addition, if children are going to be housed there are additional safety considerations. Some housing providers will not allow sliding glass doors to decks above grade in a family building. If casement style windows are to be used, architects should ensure that all moving parts including the handle/crank are specified for heavy use. Durable screens are needed for all windows and doors, and those located at grade should be equipped with security bars that do not inhibit the operating function or restrict emergency access.



## Part 4

# Innovations from other Jurisdictions

A brief review of new developments in North America and Europe may offer inspiration to alternative housing providers in Toronto.

### Pre-Manufactured Housing

Over the past decade, pre-manufactured (or pre-fabricated) housing has evolved as an important alternative-housing option for owners and renters. Currently in Toronto there are several alternative housing providers that are proposing to use pre-manufactured units to augment an existing building's number of units. In general however, while pre-manufactured housing might not meet Toronto's current demand for transitional housing, some components of the technology could be adapted.

In the United Kingdom, architect Arthur Collin received international recognition for his development of innovative housing typologies using components of manufactured housing technology. These new typologies are specially suited to areas where high-density low-rise housing is required such as inner cities and "brownfield" sites, achieving density while avoiding overcrowding. Each dwelling is based on the same extremely compact footprint—a simple "horseshoe form."

High densities are achieved through the compact layout of the house types, which utilize multiple party walls. Collin's C-Houses use a branded geometry while U-houses are based on a tartan grid. Both layouts allow construction from standardized pre-fabricated modules. This also simplifies circulation and service (water, electricity, sewage) runs. To avoid institutional conformity, simple variations in the layout geometry and construction materials permit flexibility, variety and individuality in design.

Each dwelling requires a minimal street frontage and has an absolute minimum of external walls. This arrangement has obvious advantages for energy conservation and for maximizing occupation density. It also results in a more active and safer streetscape, and greater internal privacy for the dwellings.

### Soft Housing

Stephanie Forsythe and Todd MacAllen of Vancouver recently won the First Step Housing Competition for their design of the interior of a New York Bowery "flophouse" hotel. Along the walls of the hotel, they proposed building a set of shelves, a desk and lockable cabinets for each resident. "Tissue-blanket" movable walls surround this home base. Walls and ceilings can be folded tightly against the wall when the space is to be used for shared activities. When tenants desire solitude, the walls and ceilings can be pulled out for both visual and acoustic privacy. The designers are in dialogue with American suppliers about developing fireproof, washable, and foldable tissue blankets for use in the project. They anticipate that there will be other potential applications of "Soft Housing". (Vancouver Sun, December 9, 2003)



### Designing Out Crime

The Metropolitan Action Committee on Violence Against Women and Children (METRAC) has developed a Women's Safety Audit process, which is based on two principles:

- \* That all the users of a space are the safety experts of that space, thus users should be involved when evaluating a space; and
- \* When a space is made safe for the most vulnerable of users, it in turn becomes safe for all users.

The Safety Audits encourage women with varying backgrounds to share their expertise and their unique safety concerns in order to generate ideas for positive anti-violence changes in design.

METRAC has used the Women's Safety Audit process with architects during the pre-building stage of new developments and with engineers and designers in the development phase. ([www.metrac.org](http://www.metrac.org))

Based on the work of Jane Jacobs and her book *The Life and Death of Great American Cities* (1961), an international group called Crime Prevention Through Environmental Design (CPTED) has developed techniques and principles for crime prevention. Its work, often referred to as "designing out crime," is being adopted by a number of cities in the U.K., Netherlands and the U.S. Members of CPTED include architects, planners, academics, researchers, police officers, local and regional authorities, and individuals interested in urban safety.

CPTED suggests that "the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life." CPTED seeks to discourage fortress-like architecture and generate designs that invite the kind of positive activity that deters crime.



CPTED applies three interrelated key concepts:

- \* Natural surveillance — the placement of physical features, activities, and people in a way that maximizes visibility;
- \* Natural access control — restricting or encouraging people to come into a space through the placement of entrances, exits, fencing, landscaping, and lighting; and
- \* Territorial reinforcement — the use of physical attributes to define ownership and separate public and private space.

The City of Los Angeles adopted "Design Out Crime" guidelines for use in evaluating housing communities for City funding. Staff in the Housing, Planning, Parks and Recreation, and Redevelopment departments, as well as Law Enforcement, have received training in CPTED techniques. Approved designs are expected to be safe and to improve the quality of life of the community. ([www.cpted.net](http://www.cpted.net))

### Common Ground

In New York, the housing organization Common Ground, purchased The Andrews, an SRO hotel, on Manhattan's Bowery. They hoped to maintain the tradition of the lodging house but upgrade the facilities to provide safe short-term accommodation to people transitioning out of homelessness.

Rather than replicate the prototypical Bowery flophouse, Common Ground plans to improve this housing type by applying architectural concepts like context, prefabrication, modularity and individualization. To do so, the organization held what may have been the first international architectural competition to rethink the SRO hotel unit. More than 180 teams responded with designs of a system for a 66 square-foot unit that would be simple and inexpensive to replicate on a large scale.

One proposal used colored plywood modules that could be brought in through the elevator and assembled with a screwdriver. A number of configurations allow flexibility in the design of each unit. Translucent panels bring light into the residence's halls and units—a practical idea, as the Andrews is known for its dark, narrow corridors. Another proposed using prefabricated parts, which are easy to assemble and reassemble, to allow tenants to customize their spaces. Three stereotypical tenants—the loner, the creator and the collector—could use the same kit to create a room suitable to their individual needs. The kit uses pre-existing materials, including light, durable and colorful items from the marine and aviation industries.

([www.commonground.org](http://www.commonground.org))

### Frauen-Werk-Stadt

In the suburbs of Vienna, a group of women architects were given the task of formulating the requirements for a women-friendly public housing community-based on the guidelines of the Viennese Housing Promotion Act and the Building Code. The objective of the model community is to make the diverse facets of a women's everyday life an essential criterion of design. The housing received the Best Practices for Human Settlements Award from the United Nations Habitat.

Frauen-Werk-Stadt is a multi-storey development with 359 subsidized housing units will be constructed in an urban expansion area. Key components of the design include the following:

- \* Links are made between the interior and exterior of the building, between flat spaces, staircases, garden type courtyards, squares, and streets.
- \* Often neglected arrangements such as rooms to store bicycles and strollers are located in easily accessible areas on the ground floor while laundry rooms are on the roof and are combined with a common roof terrace.
- \* Social space is created—on average there are only four units per storey in order to avoid anonymity and to encourage community development.
- \* Staircases are transparent and well-lit to address safety and security issues. In addition, the staircases are designed as pleasant places where tenants can spend time and communicate with each other.
- \* Attention is given to the kitchens as a central place for families. They are large, with natural light, and face the courtyards or street.
- \* Almost all flats are equipped with some individual outdoor space. ([www.unesco.org](http://www.unesco.org))

### The Jackson Street Village Project

In Saint Paul, Minneapolis, the Jackson Street Village Project is a 25-unit housing complex for families who have experienced problems with chemical dependency and/or homelessness, but who have agreed to abstain from drugs or alcohol use with the help of intensive, on-site support services.

The project is a public/private partnership involving more than 25 organizations representing business, non-profits, municipal, state and national governments.

People living in low-income urban environments have a significantly higher rate of asthma, allergies and other respiratory illnesses than other Americans. One of the key partners of the project, The American Lung Association of Minnesota, maintains that many allergy triggers are linked to the way residential buildings are designed, built and maintained. The organization is working with University of Minnesota researchers who will be examining Jackson Street Village tenants for measurable health improvements. The results will be compared to health changes among a control group of Minnesota low-income families, who live in similar buildings, but do not have an emphasis on maintaining a healthy indoor environment or added support services.

According to Bruce Nelson, senior engineer at the Minnesota State Energy Office, this construction technique is literally “thinking outside of the box” by putting insulation on the outside of the structure's frame. The building method is expected to increase energy efficiency while at the same time reducing the chances of mould and durability problems.

### Lore Krill Housing Co-op

The Lore Krill Housing Co-op in Vancouver opened in September 2002. Gregory Henriquez, of Henriquez Partners Architects, designed the Lore Krill and elevated it from a typical subsidized or non-profit housing project to an award-winning property. There are 203 units which range from studios to five-bedroom apartments. The tenants are those with “moderate” support needs.

The apartments are slightly smaller than the standard requirements. With the extra money and space, the architects created lounges with gas fireplaces and televisions, decks with barbecues, and gardens of flowers and vegetables on the various roofs. They opted for a European-style landscaped courtyard scheme with gardens, a waterfall, and a series of bridges linking two eight-storey towers. The intent is to bring the focus from the exterior to the interior in order to create a peaceful and soothing private residential space in a downtown neighbourhood. (Building Magazine, October 2003)



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