



# FLEXHOUSING™ CHECKLIST

Homes that adapt to life's changes





## CMHC — HOME TO CANADIANS

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# FLEXHOUSING™ CHECKLIST

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Thinking of building or buying a FlexHouse? This FlexHouse Checklist will help you visualize, plan and realize your FlexHouse. In it you will find:

- the **Practical Planning** section, which gives you critical details and measurements for planning a successful FlexHouse; and
- the **Contact Numbers** section, which allows you to note the names and numbers of people working on your house.

Keep this Flex Housing Checklist with you at all times throughout your planning and construction phases. You'll find it a big help when building or buying your new FlexHouse.

## WHAT IS FLEXHOUSING™?

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An approach to design developed in 1995 by the people at Canada Mortgage and Housing Corporation, FlexHousing™ is a forward-thinking approach to building a home based on the principles of adaptability, accessibility, affordability and Healthy Housing™.

FlexHousing™ designs adapt to changes in a family's lifestyle with rooms that can change in size and function (adjustable) with fixtures to suit everyone's needs. Living spaces are made accessible and functional for all family members no matter what their physical abilities or requirements. FlexHouses are affordable, especially over time, since there will be no need for costly moving or renovation expenses.

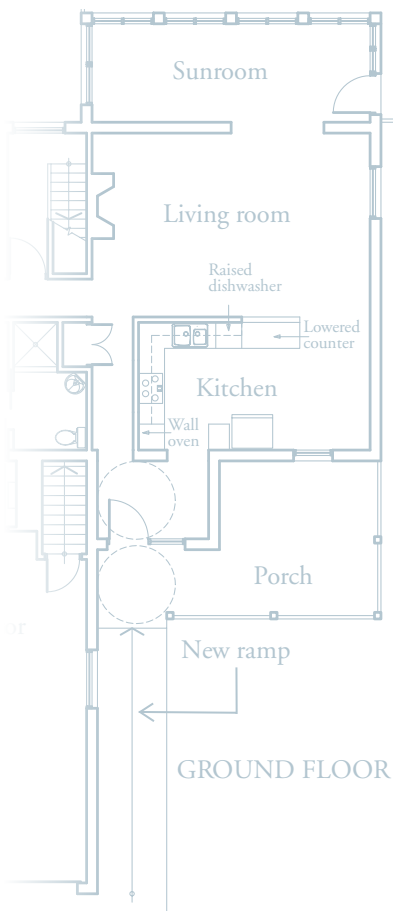
If you would like more information about FlexHousing™, go to [www.cmhc.ca](http://www.cmhc.ca).

## THE FLEXHOUSING™ CONCEPT

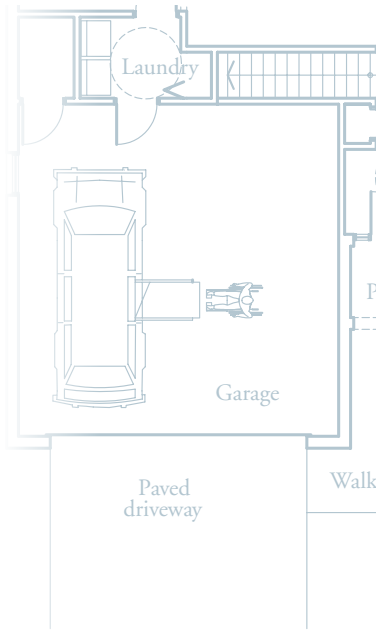
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The key to FlexHousing™ is that it is easily adapted to meet specific needs rather than relying on custom designs. Housing should continue to provide the initial and future occupants with accessibility, safety, security, ease of operation, convenience, comfort and access to in-home services, as their needs and preferences change over time.

To ensure a dwelling will be flexible enough to meet a broad range of individual needs over time, certain features should be incorporated at the time of construction. These would include features that would be difficult to retrofit, such as rooms designed to permit easy change of use, barrier-free access, space for manoeuvrability, and wide doorways. Provisions should also be made during construction to simplify the later introduction of additional features that may be required. For example, reinforcing bathroom walls to support grab bars and wiring the home to be compatible with home automation systems, etc.



## FlexCheck



### Parking

- Width at least 2,800 mm (9 ft.), preferred 3,350 mm (11 ft.)
- short, level or gently sloped pathway to entrance

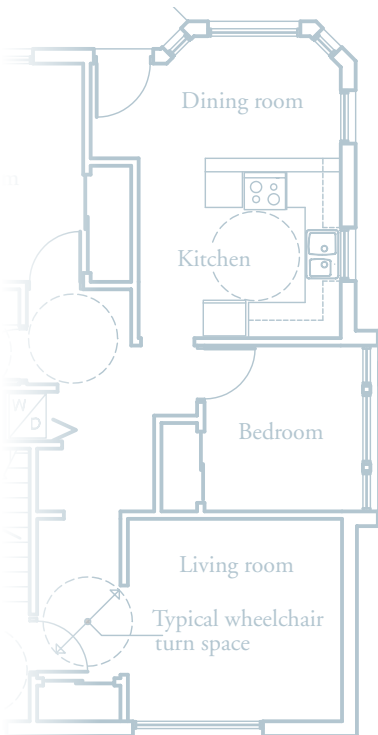
### Entrances

- All approaches are level or slope gently
- Entrances are covered, have level landing 1,500 mm<sup>2</sup> (5 sq. ft.), and adequate lighting
- Step to cross threshold is no more than 13 mm high (1/2 in.)

### Primary internal features

- Main living level contains kitchen, living room, washroom (convertible to three-piece bathroom) and has space usable as a bedroom
- Some rooms are designed to permit easy change of use
- Stairs are straight run and at least 1,000 mm (40 in.) wide, preferred 1,200 mm (48 in.) wide
- Doors provide minimum clear opening width of 810 mm (32 in.) and halls are 1,500 mm (60 in.) wide to provide adequate manoeuvring room, particularly at doorways and landings
- Windows have sills no higher than 750 mm (30 in.) and easily operated hardware\*
- Doors have easily operated opening and locking hardware\*
- Cabinets and counters permit easy height adjustment
- Electrical outlets are at 450 mm height (18 in.), controls and switches are at 1,050 mm (42 in.)

\* "easily operated" = without the use of tight grasping, pinching or twisting of the wrist.



# Practical Planning

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Your house project is broken down here according to the steps taken in construction:

## Shell and site plan

## Room by room

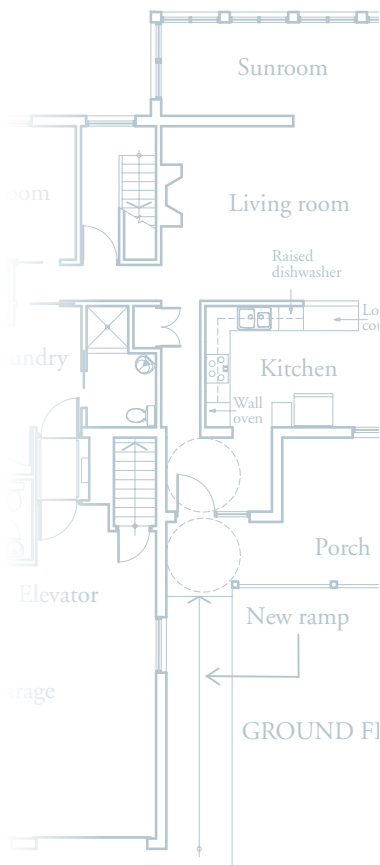
## Finishing touches

Follow these FlexHousing™ guidelines, discuss every item with your architect or general contractor and decide which items are important and affordable for you.

Remember, FlexHousing™ is an approach to building homes that are adaptable, accessible and affordable.

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### SHELL AND SITE PLAN



There are two main considerations when designing the structural shell of a FlexHouse and situating it on your property: adaptability and accessibility.

A FlexHouse is designed to adapt to meet your changing lifestyle. This can mean expanding from two to three bedrooms, changing the floor plan to include an office, or making other alterations to your living space. Therefore, the main structure, wiring and plumbing should facilitate these changes. In the ideal FlexHouse, some of the partition walls should be simple to move or remove and, therefore, should not be load-bearing.

As for accessibility, a FlexHouse is meant to serve the needs of all members of your family. If you, or a relative, have mobility difficulties or are in a wheelchair, it is important to consider how to enter and exit your home with ease. Driveways and sidewalks should be gently sloped, if at all, and a garage should be large enough for a wheelchair to move easily around a parked vehicle.

#### Shell and site plan checklist

- Shell with open floor plan
- Ground-floor entry, grade-level access
- Stair structure with reinforced wall (straight run to allow for future installation of a platform lift)
- Easily moveable or removable partition walls
- Entry easily accessible from garage or driveway (no stairs)
- Garage wide enough to accommodate a wheelchair
- Paved driveway and walk at same level or on gentle slope
- Low window position; sill at a maximum of 750 mm (30 in.) from floor level

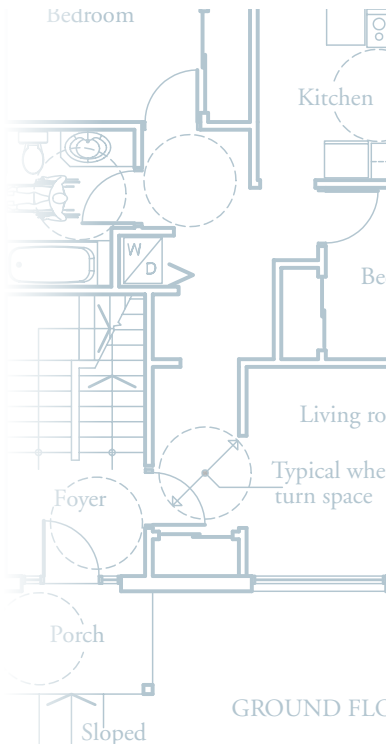
## ROOM BY ROOM

### Entrance

Make your entrance way inviting and comfortable with adequate manoeuvring space. Design the porch to protect the entrance and provide sufficient width and depth for strollers and wheelchairs.

#### Checklist

- Easy-to-operate door locks and lever handles
- Window or peepholes on exterior doors; height considerations for both children and adults
- Good lighting both inside and outside the entrance
- Bevelled no-step, no-trip, exterior thresholds not exceeding 13 mm (1/2 in.) in height
- Porches protect the entrance and provide sufficient width and depth to open door and accommodate a child's stroller or an adult's wheelchair or walker
- 1,500 mm (60 in.) Diameter turning space in front of letter box
- On the pull side of the door there should be 600 mm (24 in.) clearance along wall at handle edge of door
- On the push side there should be 300 mm (12 in.) clearance along wall at handle edge of door



### Corridors, doorways and stairs

Corridor and door widths are important to the FlexHouse concept. Make them spacious and wide. A roomy corridor gives the home a relaxed feel, makes the moving of large pieces of furniture easier and gives people using a wheelchair or walker the room to manoeuvre. In multi-level houses, provision should be made for the future installation of either an inclined stairlift or a vertical lift.

#### Checklist

- Corridors' minimum width should be 1,500 mm (60 in.)
- Straight-run stairway
- Easy-to-grasp continuous stair handrails
- Reinforced stairway walls to allow future installation of a platform lift
- Vertically aligned closets and appropriate framing to allow future installation of a vertical lift
- Easy-to-grasp door levers
- Easy-to-use door locks

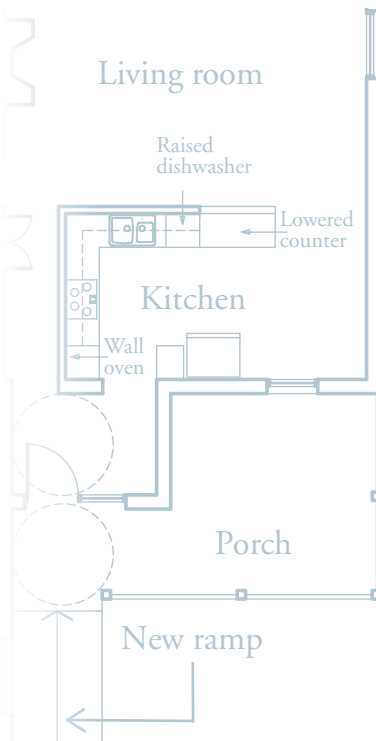
- Doors 860 mm (34 in.) wide provide clear minimum opening of 810 mm (32 in.)
- Exterior sliding doors 1,800 mm (72 in.) wide provide clear minimum opening of 810 mm (32 in.)
- Bevelled interior thresholds with maximum height of 13 mm (1/2 in.)
- In multi-unit buildings, provision for automatic door openers on entrance and vestibule doors

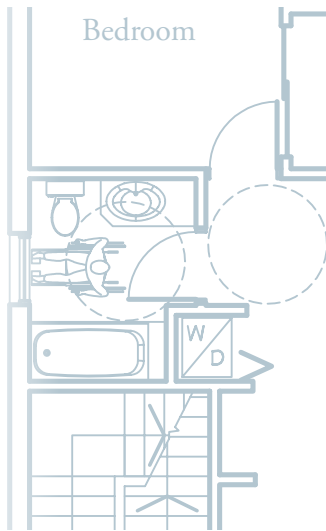
## Kitchen

Because of the range of activities carried out in the kitchen, careful planning is important. Consider accessibility, safety convenience, and ease of use for all family members.

### Checklist

- In a parallel kitchen, plan a minimum width of 1,200 mm (48 in.), In a u-shaped kitchen, 1,500 mm (60 in.)
- Non-slip flooring
- Task lighting over sink, stove and work surfaces
- Pull-out work boards, one close to a side-opening, wall-mounted oven that can sustain the heat and weight of a heavy roasting pan
- Some electrical switches and outlets at front of counters
- Pressure-balanced, temperature-regulating faucets
- Easy-to-use faucets (for example, lever type)
- Plumbing installed to allow easy change of counter height
- Counters and sink in modules that can be adjusted separately in height; or work surfaces at various heights
- Rounded corners on counters provide safety
- Create or plan for open space under sink and cooktop to permit use while seated—680 mm high by 750 mm wide by 250 mm deep (27.2 in. X 30 in. X 10 in.)
- Optional roll-out cabinet to provide additional storage and workspace
- Accessible shelves in upper cabinets (for example, through adjustable height cabinets or pull-down shelving)
- Use colour contrast in cabinets and counters for people with poor vision
- Tactile and colour-contrasted controls that are within easy reach





## Bathroom

Consider safety features, which will benefit all family members. A large bathroom is attractive, easier to clean, functional for your children (who tend to use the room in twos and threes) and wheelchair-accessible. Be sure to provide adequate manoeuvring space and easy access to the toilet, sink, bathtub and shower.

### Checklist

- Non-slip flooring
- Outward opening door or pocket door
- Free space in front of bathtub along its entire length
- Wheel-in shower with no threshold
- Wall reinforcement to provide grab bars surrounding the walls of the toilet as well as the bath and shower
- Pressure-balanced, temperature-regulating faucets
- Easy-to-use faucets (for example, lever type)
- Modular vanity that permits height changes
- Rounded corners on counters provide safety
- Toilet height between 430 mm and 480 mm high (17 in. And 19 in.)
- Adjustable-height shower head
- Mirror usable when standing or sitting
- Knee clearance under basin when sitting
- Good-quality non-glare lighting

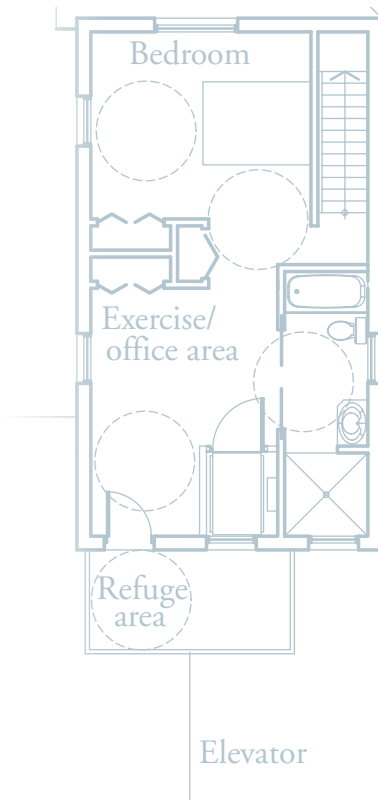
## Living and dining areas

Living and dining areas should be large enough to accommodate furniture while still providing adequate space for traffic. If space is limited, consider combining the living room and dining areas. As food and drink are often carried to these rooms, there should be no changes in floor level or texture.

### Checklist

- Easy passage from kitchen to dining area
- Level floor with uniform surface texture
- Extra electrical outlets to accommodate changing technology





## Bedrooms

At least one bedroom should have enough space to accommodate a double bed and usual furnishings while providing room for traffic flow and turning space for a person who would use a wheelchair or other wheeled mobility device. The bedrooms should be located to allow convenient access to a bathroom. Space on ground entry level may be used as a bedroom if necessary.

### Checklist

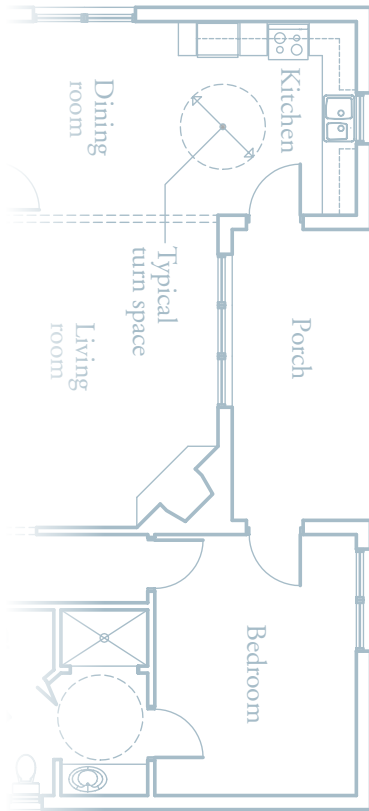
- Minimum 1,500 mm (60 in.) On two sides of a double bed
- Switches and outlets for light control located within easy reach from the bed
- Telephone jack near bed
- Closet rods usable from seated or standing position  
—1,200 mm (48 in.)

## Laundry facilities

In a house with more than one level, the laundry area should be located on the same floor as, and close to, the bathroom and bedrooms. If the laundry is to be initially located in the basement, provisions should be made for its future relocation to the main floor by providing easily adaptable space and electrical and plumbing connections.

### Checklist

- Laundry facilities on main or upper floor
- Clear floor space of 750 mm (30 in.) By 1,200 mm (48 in.) in front of each laundry appliance
- Appropriate task lighting
- Front-loading washer and dryer
- Controls easy to reach and operate
- Plumbing and electrical provisions for relocating laundry facilities to main floor



## Balcony

In most multi-unit buildings, the balcony is the only outdoor living area directly available for private use. Make it accessible to people using walkers, wheelchairs or other wheeled mobility device. Ensure that the balcony floor is level with the adjoining room.

### Checklist

- Bevelled, no-step, no-trip, exterior threshold no higher than 13 mm (1/2 in.)
- Exterior sliding doors are 1,800 mm (72 in.) wide to ensure a minimum opening of 810 mm (32 in.) opening
- Minimum balcony clear width of 1,500 mm (60 in.)
- Balcony enclosure should not unduly restrict view from seated position
- Adequate lighting switches inside located at a maximum of 1,050 mm (42 in.) from the floor
- Exterior electrical outlet located at 450 mm (18 in.) from the floor

## Storage space

Inadequate storage space is the bane of many homeowners. How much storage space do you use currently? Is it sufficient for your lifestyle? These are important questions to resolve.

### Checklist

- Storage spaces and closets easily accessible by all family members
- 200-lux light in general storage
- Switch located on outside of storage area at 1,050 mm (42 in.) from the floor
- Electrical outlet in general storage located at 450 mm (18 in.) from the floor
- Shelving and hanger rods with adjustable heights to suit those who would be using the space

## FINISHING TOUCHES

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### Windows

Place windows at a height that allows outdoor views from a seated position. To take full advantage of the sun in winter, place the majority of window openings on the south wall. Also, shop for energy-efficient windows.

#### Checklist

- Easily operated windows
- Opening mechanisms that are easy to grasp and operate
- Locking mechanisms that are accessible and easy to operate
- Sills not higher than 750 mm (30 in.) above floor level
- Window-opening mechanism at 1,050 mm (42 in.) from floor level and at a minimum of 300 mm (12 in.) From wall corner

### Electrical outlets and controls

Electrical and mechanical system controls, such as breaker panels, should be in easily accessible locations. This may mean locating the panel on the main level rather than the basement. They should also be easy to operate and reachable from both sitting and standing positions.

#### Checklist

- Light switches at 1,050 mm (42 in.) from floor level
- Electrical outlets at 450 mm (18 in.) from floor level
- Control panels, thermostat controls at 1,200 mm (48 in.) from floor level
- Telephone and cable jacks at 450 mm (18 in.) from floor, close to electrical outlet

### Heating and air conditioning

The ability to control indoor air temperature, humidity and fresh air distribution in every room is important for the comfort and health of the occupants. It can be particularly important for older people and those who are sensitive to their environment.

#### Checklist

- Heating system with easy access to main unit and controls
- Ventilating system or heat recovery ventilator (hrv)
- Air filtering system
- Air movement and humidity control system
- Temperature control by room or zone

## Home automation

Many current and emerging technologies can give you greater control over your home environment in the areas of safety, security, convenience and comfort. It is more cost-efficient to install wiring while the house framing is open, eliminating costs and trouble at a later date.

### Checklist

- Full wiring for current or future automation
- Telephone jacks and electrical outlets for computers in rooms that may later serve as an office
- Security systems for fire and theft

## Healthy housing features

As a FlexHouse addresses issues of occupant health (mobility, air quality, brightness and accessibility), it is only natural that considerations extend to choices of healthy materials. Consult your contractor on the following choice of materials and appliances.

### Checklist

- Materials (wood, insulation, drywall, paint and sealants)
- Low-flow toilets and faucets
- Energy-efficient appliances
- Energy-efficient windows
- Energy-efficient building envelope
- Rainwater cisterns for domestic water and garden use

## Garden

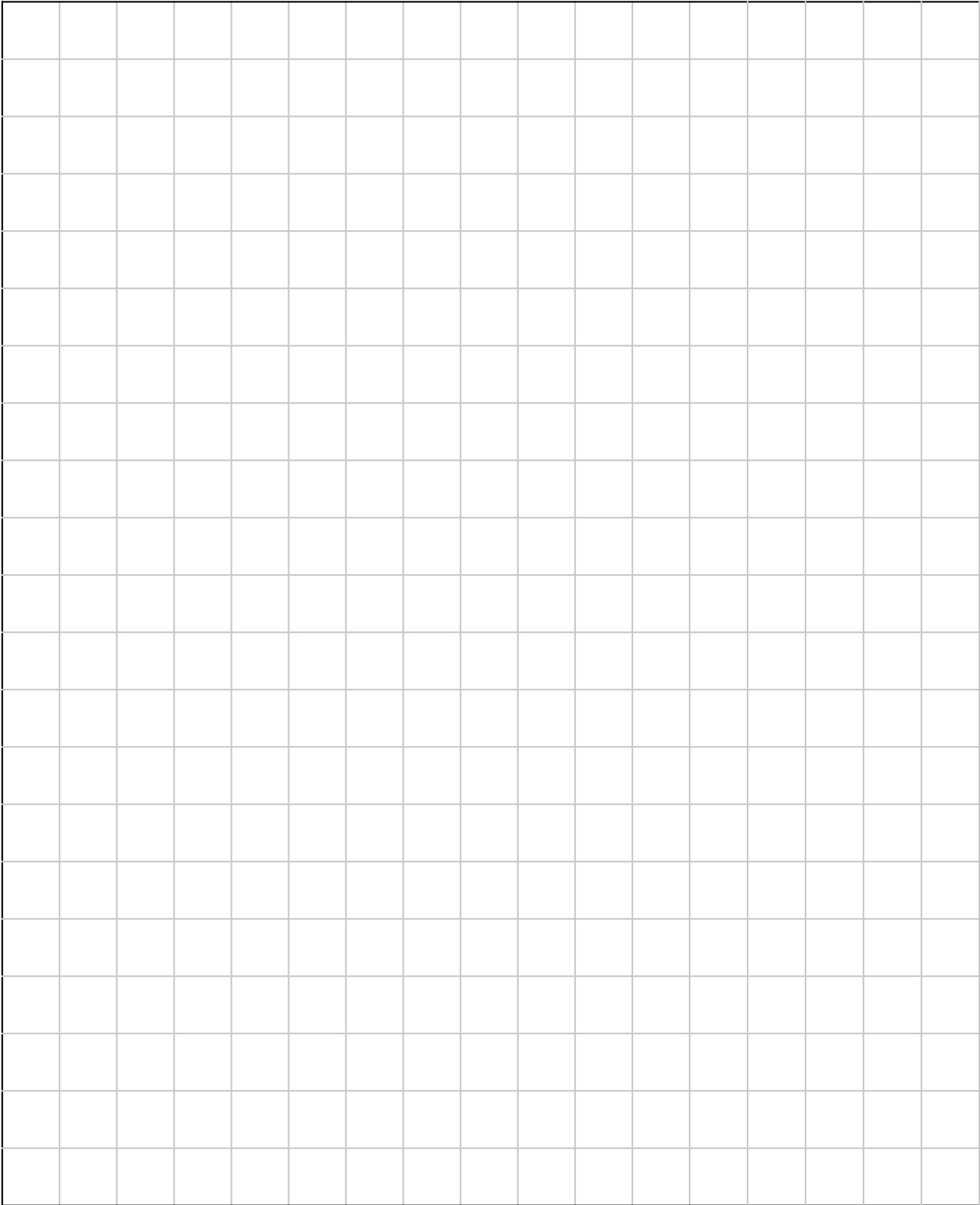
Paths, sidewalks and decks should be clear of obstructions, have non-slip surfaces and be easily accessible from the house. Some family members will appreciate planters at various locations and several heights.

### Checklist

- Easy access to house; bevelled, no-step, no-trip, threshold
- Non-slip paths and decks
- Level walkways with little or no slope
- Planters at various and accessible heights
- Ample clear space for patio furniture and traffic



**Design**



# Contact Numbers

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**CMHC – regional office** \_\_\_\_\_

Architect \_\_\_\_\_

Banker \_\_\_\_\_

City engineer/planner \_\_\_\_\_

City building inspector \_\_\_\_\_

Surveyor \_\_\_\_\_

Developer \_\_\_\_\_

General contractor \_\_\_\_\_

Subtrades \_\_\_\_\_

    Foundation \_\_\_\_\_

    Carpenter \_\_\_\_\_

    Electrician \_\_\_\_\_

    Plumber \_\_\_\_\_

    Roofer \_\_\_\_\_

    Other \_\_\_\_\_

Building materials supplier \_\_\_\_\_

Equipment rental \_\_\_\_\_

Insurance company \_\_\_\_\_

Neighbours \_\_\_\_\_

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