

Canadian Centre for Housing Technology

FlexHouse™ Guided Tour

Original Text by: Canada Mortgage and Housing Corporation

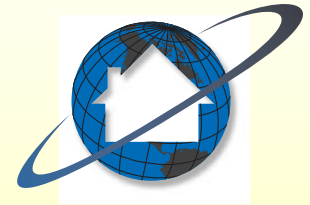
Presentation Prepared by: Marianne Manning



HOME TO CANADIANS
Canada 



Introduction

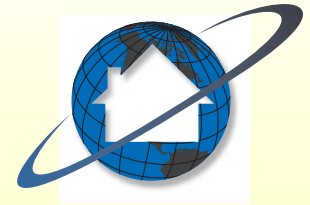


This FlexHouse™ unit, CMHC's National Competition Winning Design, will adapt to meet your changing lifestyle. It can change from two to three bedrooms, the floor plan can also change to include an office, and completion of the Attic can increase your living space. The main building structure, wiring and plumbing facilitates these changes, and in some locations partition walls are simple to install as the design has planned for their addition.

As for accessibility, this 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, your needs are easily met by the inexpensive provisions built in.

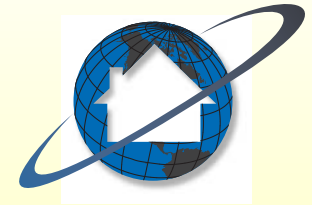


Entrance



The entrance-way is inviting and comfortable with adequate manoeuvring space. In Canada, many homes have screen doors that open outward. Therefore, in designing the porch to protect the entrance from weather, be sure to provide sufficient width and depth for strollers and wheelchairs clear of the screen door swing.



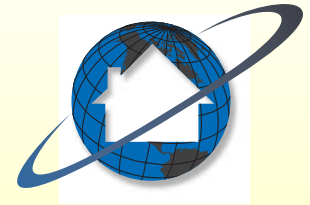


Entrance Features

- easy-to-operate door locks and lever handles
- side-windows or peepholes on exterior doors; at height convenient for both children and adults
- good lighting both inside and outside the entrance
- bevelled, no step, no trip, thresholds not exceeding 19 mm (3/4 in.) in height
- porches protect the entrance and provide sufficient width and depth to open door and will accommodate a child's stroller or an adult's wheelchair or walker
- 1500 mm (60 in.) diameter turning space in front of letter box
- on the pull side there is 600 mm (24 in.) clearance along wall at handle edge of door
- on the push side there is 300 mm (12 in.) clearance along wall at handle edge of door



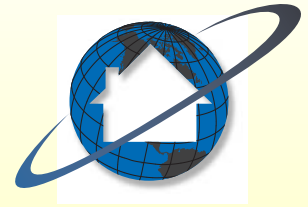
Corridors, Doorways and Stairs



Wide corridor and door widths are important to the FlexHouse™ concept. A roomy corridor gives the home a relaxed feel, makes the moving of large pieces of furniture easier and gives persons using an infants stroller, or a walker room to manoeuvre. Provision has been made for the future installation of either an inclined stair-lift or a vertical lift.



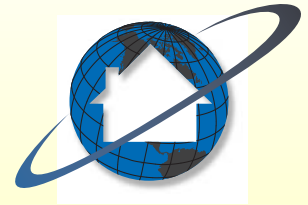
Corridors, Doorways and Stairs Features



- corridors' minimum width should be 1500 mm (60 in.)
- straight-run stairway are safer and reinforced walls allow easy installation of a chair lift
- easy-to-grasp continuous stair handrails are a very important safety feature
- vertically aligned closets and appropriate framing allow future installation of a vertical lift
- “easily operated” door levers, and door locks (without the use of tight grasping, pinching or twisting of the wrist)
- doors 860 mm (34 in.) wide provide clear door width, minimum opening of 810 mm (32 .5 in.)
- bevelled thresholds with maximum height of 13 mm (1/2 in.)
- provision has been made for future automatic door openers on entrance door



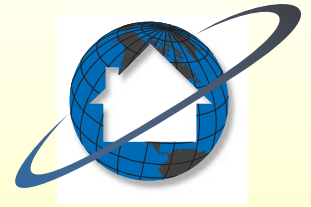
Bedrooms



This bedroom has enough space to accommodate a double bed and normal furnishings while providing room for manoeuvring. The bedrooms in this house are designed to permit easy subdivision into two spaces with the insertion of a wall panel, this can create more sleeping rooms or perhaps a home office. The bedroom is located to allow convenient access to a bathroom.



Bedroom Checklist



- minimum 1500 mm (60 in.) on two sides of a double bed
- switched outlets for light control
- telephone jack near bed
- ceiling light fixtures



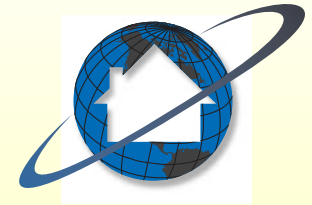
Bathroom



Includes 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 is wheelchair accessible. Adequate manoeuvring space and easy access to the toilet, sink, bathtub / shower is provided.



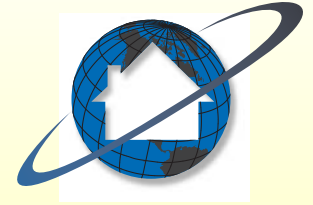


Bathroom Checklist

- non-slip flooring
- wall reinforcement in shower stall and near toilet for easy installation of safety grab bars
- water-temperature regulator to prevent scalds
- easy-to-use faucets (e.g., lever type)
- standard-height toilet
- vanity and washbasin which permit height changes
- adjustable-height shower head
- mirror usable when standing or sitting
- smooth entry shower provides access to everyone and could accommodate a bathtub or washer dryer
- sitting knee clearance under basin
- good-quality non-glare lighting
- energy efficient quiet exhaust fan



Living and Dining Areas

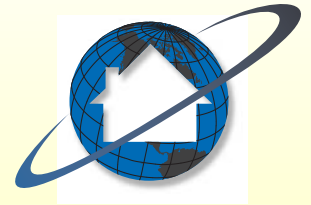


Living and dining areas should be large enough to accommodate normal furnishings and provide adequate space for traffic. If space is limited, consider combining living room and dining areas. As food and drink are often carried to these rooms, there should be no changes in floor level or texture.

Upstairs living room has electrical and plumbing service available to permit easy creation of a full kitchen if double occupancy is required in this house.



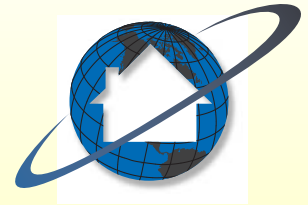
Living and Dining Area Checklist



- easy passage from kitchen to dining area
- level floor with uniform surface texture
- extra electrical outlets to accommodate changing technology
- window sills no higher than 750 mm (30 in)

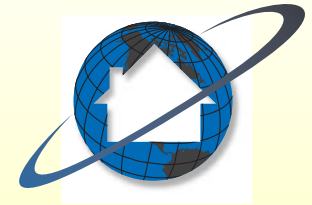


Kitchen



Because of the range of activities carried out in the kitchen, careful planning is important. Safety, convenience, efficiency and accessibility ensure easy use by all family members, young and old.



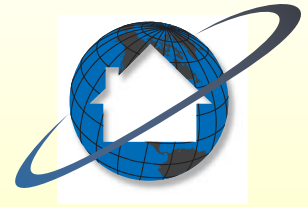


Kitchen Features

- non-slip flooring
- task lighting over stove and work surfaces
- pull-out work board, under side opening wall oven
- some electrical switches at front of counters
- water-temperature regulators prevent scalds
- easy-to-use faucets (e.g., lever type)
- work surfaces at various heights
- open space under sink and cook-top to permit use while seated - 680mm high by 750mm wide by 250mm deep.
- optional roll-out cabinet could provide additional storage and workspace
- colour-contrast in cabinets and counters for people with poor vision



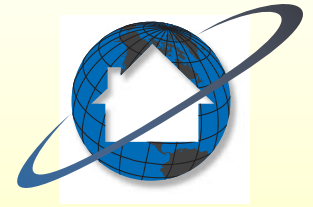
Laundry Facilities



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. Because of the easily adaptable space and electrical and plumbing connections the laundry in this home can be accommodated in the main floor bathroom or the upstairs hall closet.



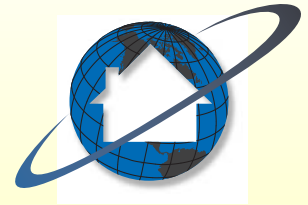
Laundry Facilities Check List



- energy efficient, economical laundry facilities on main or upper floor
- clear floor space of 750 mm by 1200 mm in front of each laundry appliance
- front-loading washer and dryer
- controls easy to reach and operate
- plumbing and electrical provisions for relocating laundry facilities to main floor



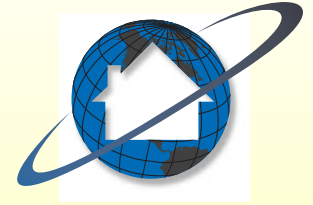
Balcony



In most multiunit dwellings, the balcony is the only outdoor living area directly available for private use. It can be made accessible to persons using walkers or wheelchairs by ensuring that the balcony floor is level with the adjoining room.



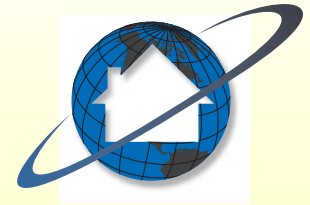
Balcony Checklist



- sloped no step, no trip, threshold no higher than 19 mm (3/4 in.)
- minimum balcony clear width of 1500 mm (60 in.)
- balcony enclosure should not unduly restrict view from seated position
- adequate lighting switches inside
- exterior electrical outlet



Attic



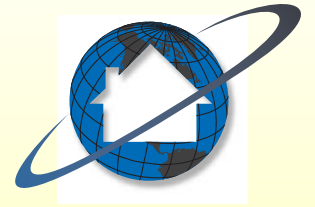
The FlexHouse™ concept includes spaces planned for future living area - in this house we have a roughed-in custom designed attic. The illustrations on the walls show the typical truss systems recommended to provide economical usable attic space. By looking through the door to the other section of the attic space



you see the most common roof truss design which are a little cheaper to build but obviously provide no usable living space. The recommended truss designs do cost slightly more to build install and insulate but give the occupant the chance to finish the attic when required.



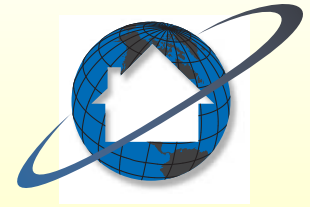
Attic Features



- open truss provides usable space
- rough-in electrical and plumbing allows easy completion to living space
- windows, skylights and dormers provide a variety of lighting options.



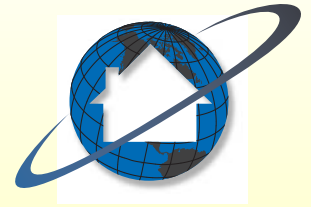
Windows



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; the house should be appropriately positioned on the site's north-south axis. Also, shop for energy-efficient windows.



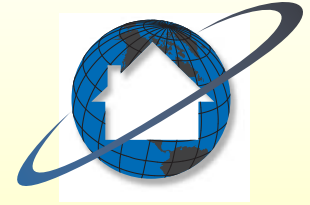
Window Checklist



- 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 1050 mm (42 in.) from floor level and at a minimum of 300 mm (12 in.) from wall corner



Electrical Outlets and Controls

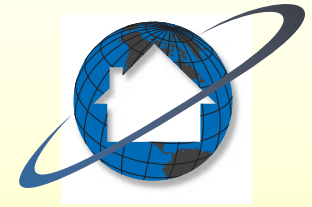


Electrical outlets and mechanical system controls, such as breaker panels, should be in easily accessible locations. They should also be easy to operate and reachable from both sitting and standing positions.

Electrical Outlets and Controls Checklist

- light switches at 1050 mm (42 in.) from floor level
- electrical outlets at 450 mm (18 in.) from floor level
- control panels, thermostat controls at 1200 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, movement and freshness 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.

Heating and Air Conditioning Checklist

- heating system with easy access to main unit and controls
- ventilating system or air-to-air heat exchanger
- air-filtering system
- air movement and humidity control system
- control of temperature by room or zone



Home Automation

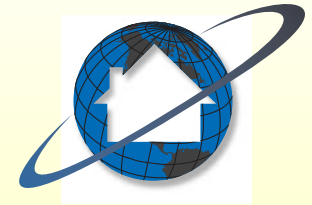


Many current and emerging technologies can give you greater control over your home environment in the areas of safety, security, convenience and comfort. It is more cost efficient to install wiring while the house framing is open, eliminating costs and trouble at a later date.

Home Automation 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.

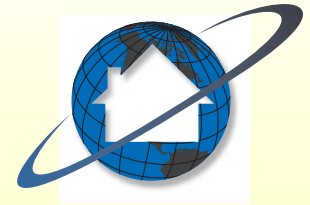
(SEE CMHC's pamphlet -- NHA/LNH 6736)

Healthy Housing™ Features Checklist

- materials (wood, insulation, drywall, paint and sealants)
- low-volume toilets and faucets
- energy-efficient appliances
- energy-efficient windows
- solar energy and heating
- rigid board insulation
- 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. Elderly family members will appreciate planters at various and accessible heights.

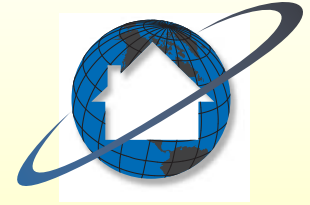
Garden Checklist

- easy access to house, beveled, 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



FlexCheck

(The short check list of FlexHousing™ features)



Parking:

- width at least 2800 mm, preferred 3350 mm.
- short, level or gently sloped pathway to entrance

Entrances:

- all approaches are level or slope gently
- entrances are covered, have level landing 1500 mm square, and adequate lighting
- step to cross threshold is no more than 19 mm high

Primary internal features:

- main living level contains kitchen, living room, washroom (convertible to 3 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 1000 mm, preferred 1200 mm wide
- doors provide min. clear opening width 810 mm and halls are 1500 mm wide to provide adequate maneuvering room, particularly at doorways and landings
- windows have sills no higher than 750 mm, 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, controls and switches are at 1050 mm

* “easily operated“ = without the use of tight grasping, pinching or twisting of the wrist

