2016 ONPHA Conference and Trade Show

505

Are you developing affordable housing? Learn the A-Zs with CMHC

PRESENTED BY:
Jamie Shipley, Consultant, Knowledge Transfer and Outreach, CMHC Ontario Region
Janet Sikiric, Consultant, Affordable Housing Centre, CMHC

ONPhA

AGENDA

- What is affordable housing
- Program details
- Tools and Resources available

WHAT IS AFFORDABLE HOUSING?

THE HOUSING CONTINUUM

SEED FUNDING FOR AFFORDABLE HOUSING

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CRITERIA

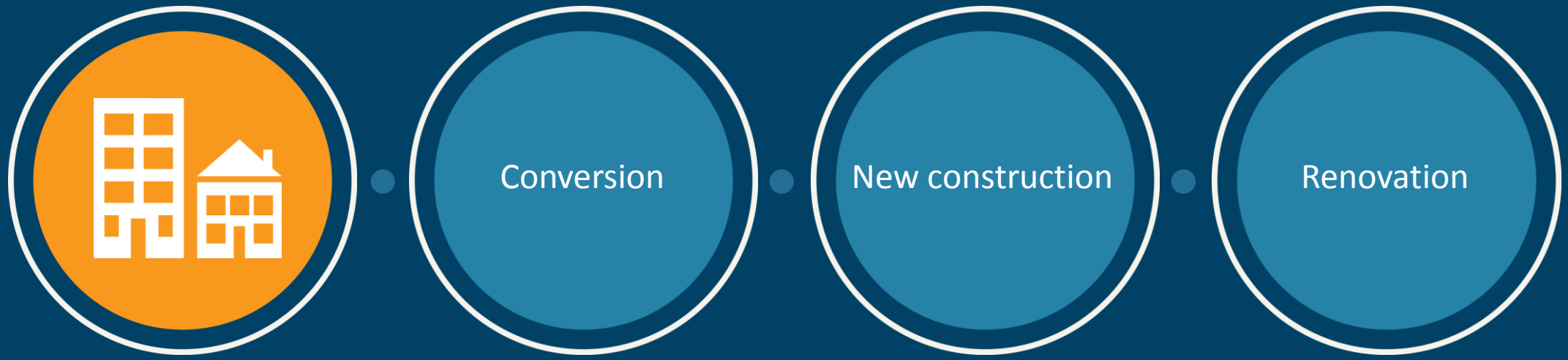
- Meet affordable needs
- 5 affordable units minimum
- Modest size and design
- Not requiring long term federal assistance

AMOUNT

Up to 50K fully forgivable contribution
Activities completed within 2 years - 50% invoiced in first 12 months

Up to 200k fully repayable, interest-free loan
Activities completed within 5 years

ELIGIBILITY - PROJECTS



PROJECT CRITERIA

ELIGIBILITY - ACTIVITIES

SOFT COSTS • For example:

- Incorporation
- Developing a business plan
- Preliminary design
- Professional fees

SEED FUNDING IN ACTION

RENTAL INNOVATION FUND

- **Innovation** is defined as solutions and financing models customized to overcome barriers and lower the costs and risks of rental housing projects (without on going subsidy)

$200M

fund for

innovative + unique ideas

for affordable rental housing

CRITERIA

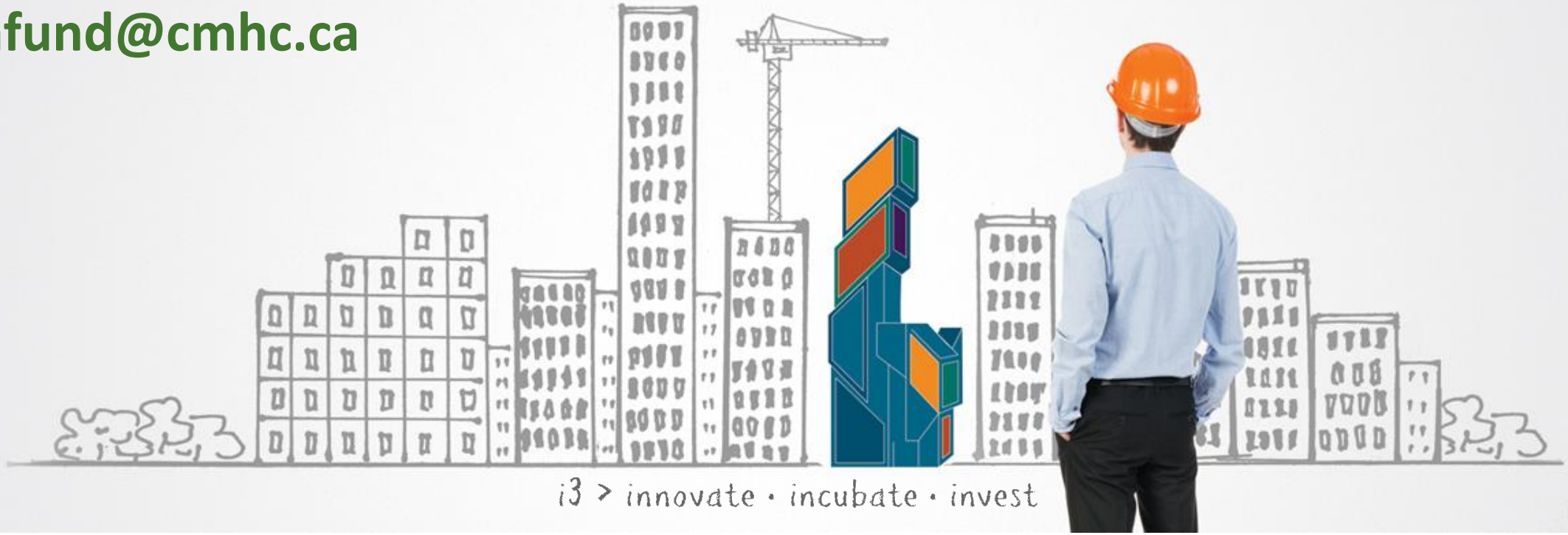
- Minimum of 5 new affordable rental units
- Innovative + unique models of design or financing models
- Maintain affordability for minimum of 10 years
- Must include measures for resource efficiency
- Must include accessibility features
- Must have access to public transit (some exceptions apply)
- Financially viable without on-going government subsidy

APPLICATION AND APPROVAL PROCESS

- Online applications reviewed regularly, funding announcements every quarter.
  - Proposals that meet all criteria will be referred to the i3 Committee
- Proposals that do not meet all criteria but show potential will be referred to the Innovation Lab for further refinement.
  - Proposals declined for not meeting criteria will be invited to resubmit
- The Fund is available for 5 years or until all funds are assigned, whichever comes first.
  - CMHC has final decision-making authority on the selection of all proposals.

cmhc.ca/innovationfund

innovationfund@cmhc.ca



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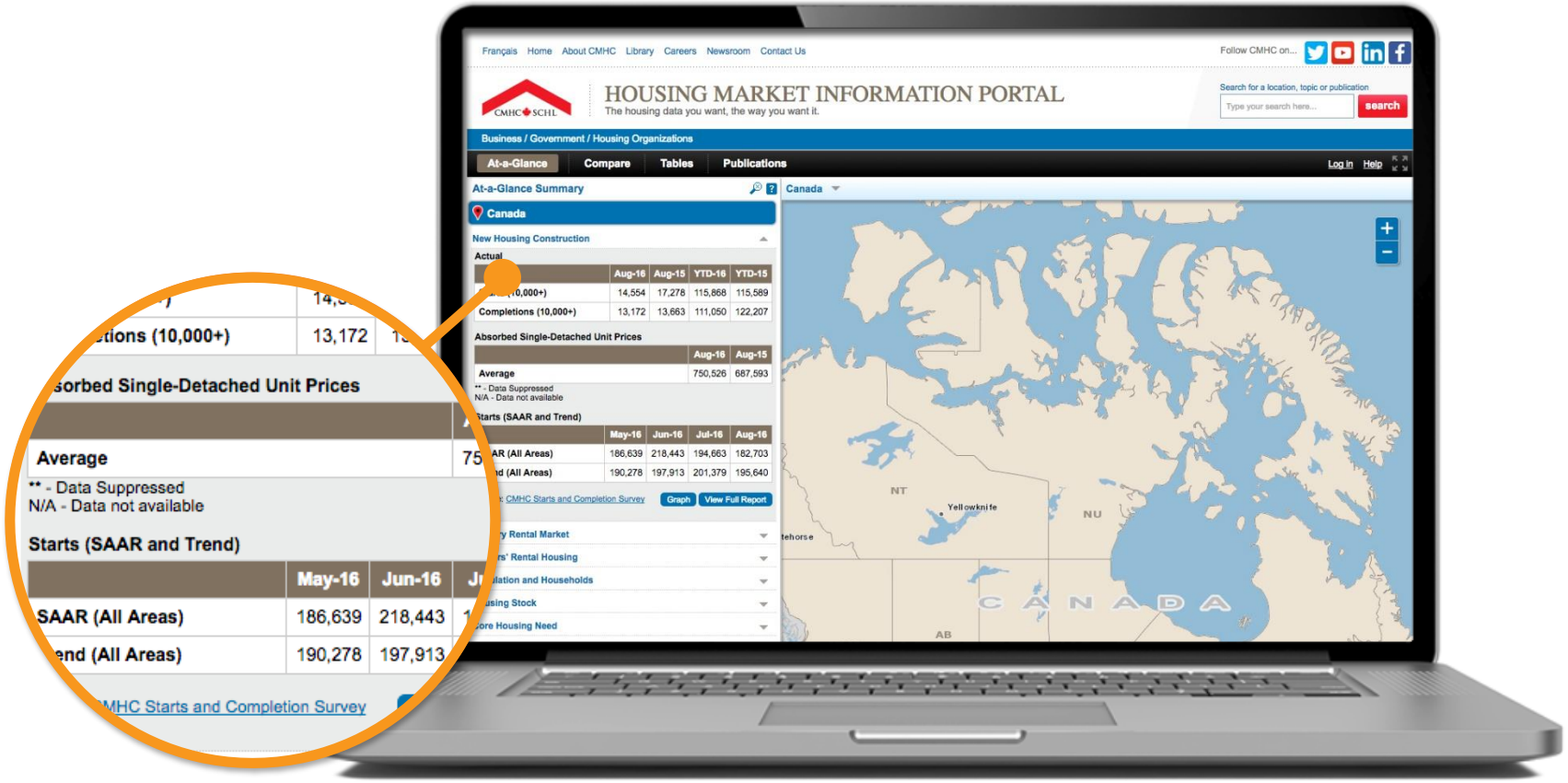
RESOURCES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New Housing Construction
Actual
Aug-16 Aug-15 YTD-16 YTD-15
Completions (10,000+) 13,172 13,663 111,050 122,207
Absorbed Single-Detached Unit Prices
Aug-16 Aug-15
Average 750,526 687,593
** - Data Suppressed
N/A - Data not available
Starts (SAAR and Trend)
May-16 Jun-16 Jul-16 Aug-16
Graph
View Full Report
NT
Yellowknife
NU
CANADA
AB
Average
** - Data Suppressed
N/A - Data not available
Starts (SAAR and Trend)
May-16 Jun-16
SAAR (All Areas) 186,639 218,443
190,278 197,913

FEDERAL BUDGET 2016

- **Affordable Housing Investments 2016-2018**
  $2.3 billion
- **Affordable Rental Housing Financing Initiative**
  $2.5 billion

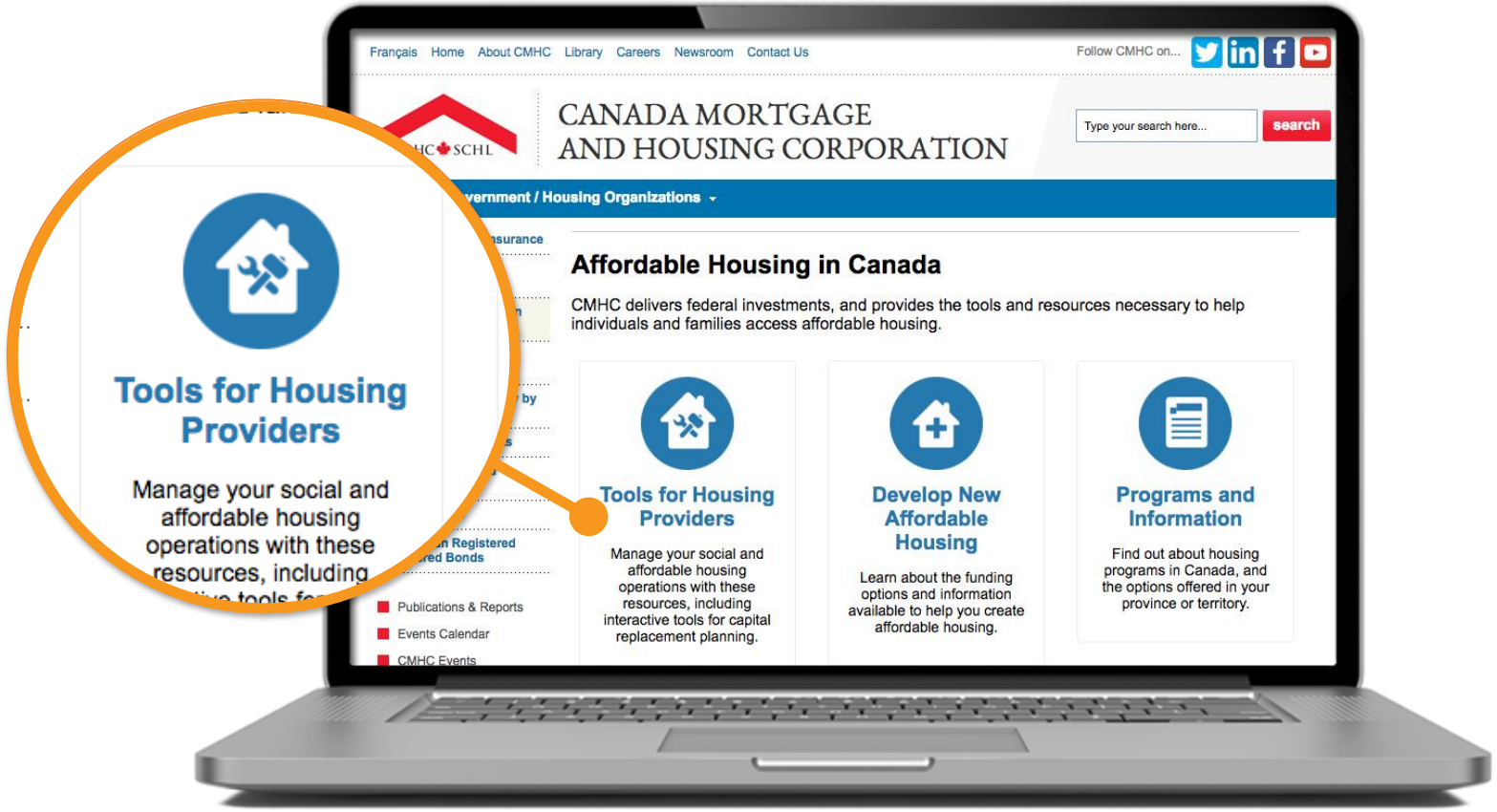
MLI FLEXIBILITIES IN ACTION

For Rental Housing:

- Loan-to-value up to 95%
- Premium reduction
- Amortization up to 40 years
- No rental achievement holdback
- May qualify for lower debt coverage ratio

Flexibilities are also available for affordable homeownership projects

TOOLS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Affordable Housing in Canada
CMHC delivers federal investments, and provides the tools and resources necessary to help individuals and families access affordable housing.
Tools for Housing Providers
Manage your social and affordable housing operations with these resources, including interactive tools for capital replacement planning.
Develop New Affordable Housing
Learn about the funding options and information available to help you create affordable housing.
Programs and Information
Find out about housing programs in Canada, and the options offered in your province or territory.
Publications & Reports
Events Calendar
CMHC Events
Tools for Housing Providers
Manage your social and affordable housing operations with these resources, including

DEVELOPING NEW AFFORDABLE HOUSING

- **Interactive Tools**

- Project Viability Assessment Calculator

CMHC has developed a tool to help developers assess proposed affordable housing projects and determine the financial requirements to ensure their viability.

- Development Checklist for Affordable Housing

Focusing on housing groups with limited experience, the Housing Development Checklist identifies key milestones in the development process, supported by additional detail in a series of Fact Sheets.

- Housing in Canada Online (HiCO)

This interactive tool can provide you with custom tables to help you analyze data on household, such as household count, average household income and average shelter costs.

TOOLS FOR HOUSING PROVIDERS

- Governance and Finance Information Series

Fact sheets on the governance and financial management of housing portfolios.

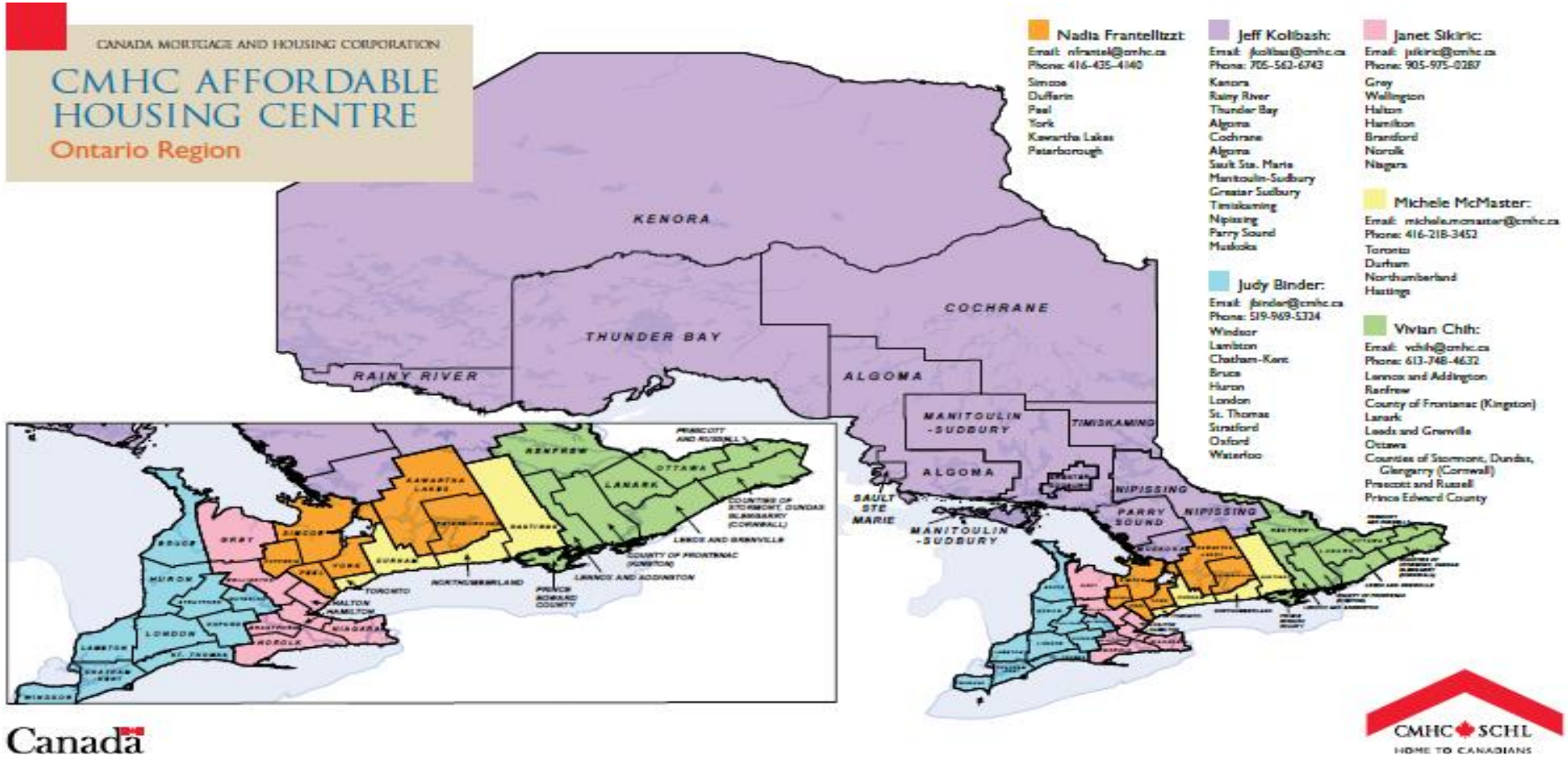
- Capital Replacement Planning

Tools to help housing providers plan their capital reserve funds to pay for major replacements and repairs as their buildings age.

- Highrises and Multiples

CMHC research on highrise construction, operation, maintenance and repair.

CONTACT A CONSULTANT IN YOUR AREA



MY CONTACT INFORMATION

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CMHC Resources for Innovation

- Knowledge Transfer and Outreach Themes
  - Housing Affordability by Design
  - Accessible, Adaptable, Aging in Place
- Costs & Benefits
- CMHC Website

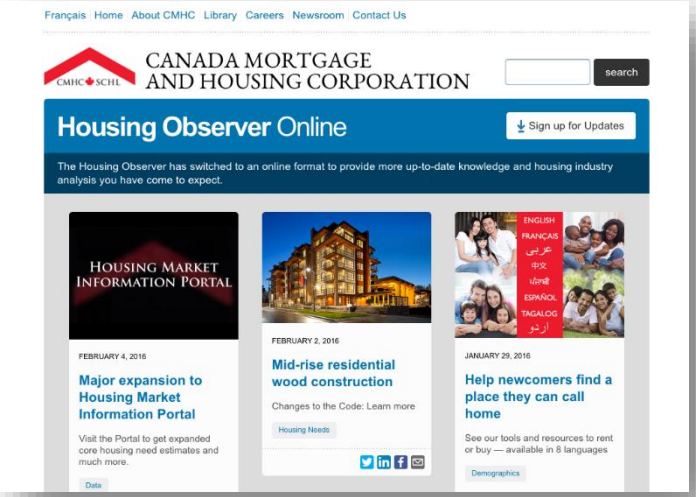

Photo courtesy of the Manitoba government

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- Housing Market Information
- Affordable Housing in Canada
- Accessible and Adaptable Homes
- Housing Affordability by Design
- Research Highlights
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Housing Observer Online

Housing Affordability by Design

Housing Affordability by Design is about designing, building and renovating housing to be adaptable, durable, functional, resource-efficient and cost-effective.

Adaptable Homes

can easily be modified to meet our changing needs and reduce future renovation costs.

Durable Homes

built or renovated with materials that promote longer life, reducing capital replacement costs.

High-rises and Multiples

research concerning highrises and multiples construction, operation, maintenance and repair.

Resource-efficient Homes

use less energy and resources, reducing operating and municipal infrastructure costs.

Functional Homes

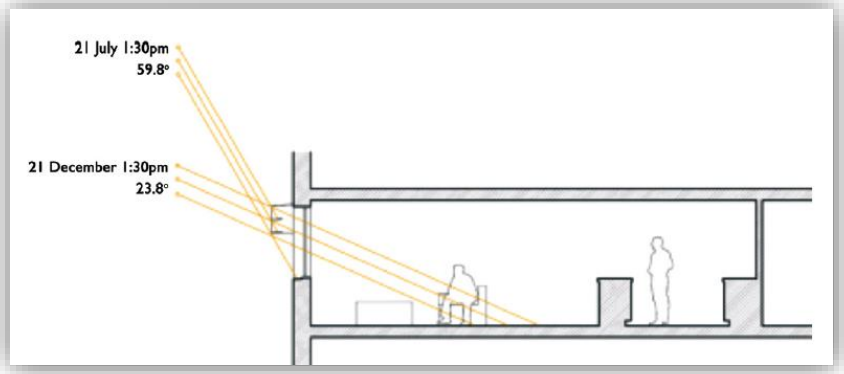
provide quality living conditions while keeping costs down through wiser use of space.

Affordable Housing Design Concepts

1. Efficient space layout
2. Energy conservation
   i. Building envelope
   ii. Passive solar design
   iii. Reduce peak electricity
   iv. Reduce hot water
3. Recover energy
   i. HRV
   ii. Drainwater heat recovery

Affordable Housing Design Concepts

4. Healthy
   i. Ventilation strategies
   ii. Material selection
5. Resource conservation
6. Environment responsibility
   i. Water
   ii. Waste management
   iii. Local sourcing of material
   iv. Recycle reuse repurpose



Performance Related Labels

	Energy Performance	Other Metrics	Pros
EnerGuide Rating	Any	GHG	Codifiable
Energy Star	~20% better than code	Only energy	Simple, low cost, recognized
R-2000	~50% better than code	Water, IAQ, environmental	Government & industry endorsed
Passive House	~80% better than code	Thermal comfort	Premium "European" approach, simplicity
Net-Zero Energy	100% better than code	Only energy	Simple marketing message, use of PV
LEED for Homes	0% to 100% better than code	Multiple	Beyond energy, gaining recognition
Living Building Challenge	100% better than code	Multiple	Ultimate approach to show commitment

Passive Approaches to Low-Energy Affordable Housing

CMHC Project Manager: Thomas Green
Consultant: Remi Charron, Certified Passive House Designer
Remi Charron Consulting Services

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Canadian Project Examples

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Salus Clementine project, Ottawa, ON

- 42-unit project to provide housing for individuals living with mental illnesses.
  - 1st social housing project in Canada targeting Passive House
  - 12” SIPS panels attached to light steel structure (R-65) & wood roof I-joists (R-75)
  - A high efficiency, 120 gal capacity, gas boiler provides heating for space and domestic hot water.
- Modelled space heating energy demand of only 12 $kWh/m^2/yr$.

HNS Passive House Pilot Duplex, Truro, Nova Scotia

- Each unit is 2,030 ft^2 and features three bedrooms,
- Global Construction awarded contract to build with \$125/ft^2 approximate construction costs.
- ICF basement, and 2x6 above grade walls with rockwool exterior insulation.
- Estimated annual heating costs of \$350, to be paid by HNS.

Vancouver Coastal Health Authority Staff Housing, Bella Bella, BC

- Six two-storey attached townhomes.
- First modular multi-unit residential project to achieve Passive House certification.
  - Modular construction used given remoteness of site achieving ~$500K saving for $2.6 million project
- On the coldest day of the year, each unit in will have a peak heating load of about 600 watts.

Project profiles

- Canadian Projects
  - Thirteen
- American Projects
  - Eleven

Key design elements

- **Five key design elements that need to be included for passive design according to Passive House Institute:**

1. High level of thermal insulation.
2. Thermally insulated window frames with high quality glazing and external shading to limit overheating.
3. Careful design to eliminate thermal bridging.
4. An airtight building envelope using an uninterrupted and continuous airtight layer.
5. Mechanical ventilation with heat recovery to ensure continuous supply of filtered fresh air.

Cost benefit studies

- Reported incremental cost vary from 2% to over 40% with many reported in the 5% to 10% range
  - Incremental costs depend on assumptions on base case
  - Higher incremental costs for affordable housing providers that start with a low-cost base case building
- Life Cycle Assessment (LCA) needed to justify increased cost
  - Most studies report modelled results making assumptions on energy savings, financing costs, maintenance cost savings, utility escalation rates.

Life Cycle Assessment							
Capital			Operational		End of life		Externalities
Land purchase	Construction	Finance	Energy & utilities	Maintenance Management	Residual value	Disposal	Impact to society & environment

Affordability of Passive House

- Instead of focusing on incremental cost, look at it on a project affordability basis
  - Housing Nova Scotia's first Passive House duplex cost ~$130/ft^2, second project contractor bid just over $100/ft^2

Affordability of Passive House

- Pennsylvania added 10 points for Passive House (out of 130) in project proposal evaluation criteria.
  - 85 Multi-family project applications received by Feb 2015
  - 39 projects awarded funding in June 2015.
  - 32 Passive House projects had average cost = **$169/ft²**
  - 53 NON-PH projects had average cost = **$165/ft²**

Conclusions

- Rapid rise of Passive House and other ultra-low energy housing projects in the past few years.
- Past experience has led many people to passive approaches to reducing energy use, namely super-insulated and airtight building envelopes with high performance triple glazed windows.
  - Approach leads to low energy consumption coupled with reduced maintenance costs.
- Sufficient knowledge and technologies currently exist for affordable housing providers to adopt passive design approaches
- Research needs geared towards accelerating the adoption of these types of projects, as well as to ensure that potential risks associated with a drastic shift in building practices are mitigated

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Housing Affordability by Design > Resource-efficient Homes > Energy Efficiency

Energy Efficiency

Research-based ideas for improving energy efficiency in housing:

Energy Efficiency Building Envelope Retrofits
Targeted energy savings, technical and general considerations when planning your project.

Renovator's Green Guide
"Green" projects make homes more energy efficient, comfortable and affordablreducing environmental impact.

Sustainable Features Profiles
Innovative technologies used to make housing more energy and water efficient and to reduce the environmental footprint.

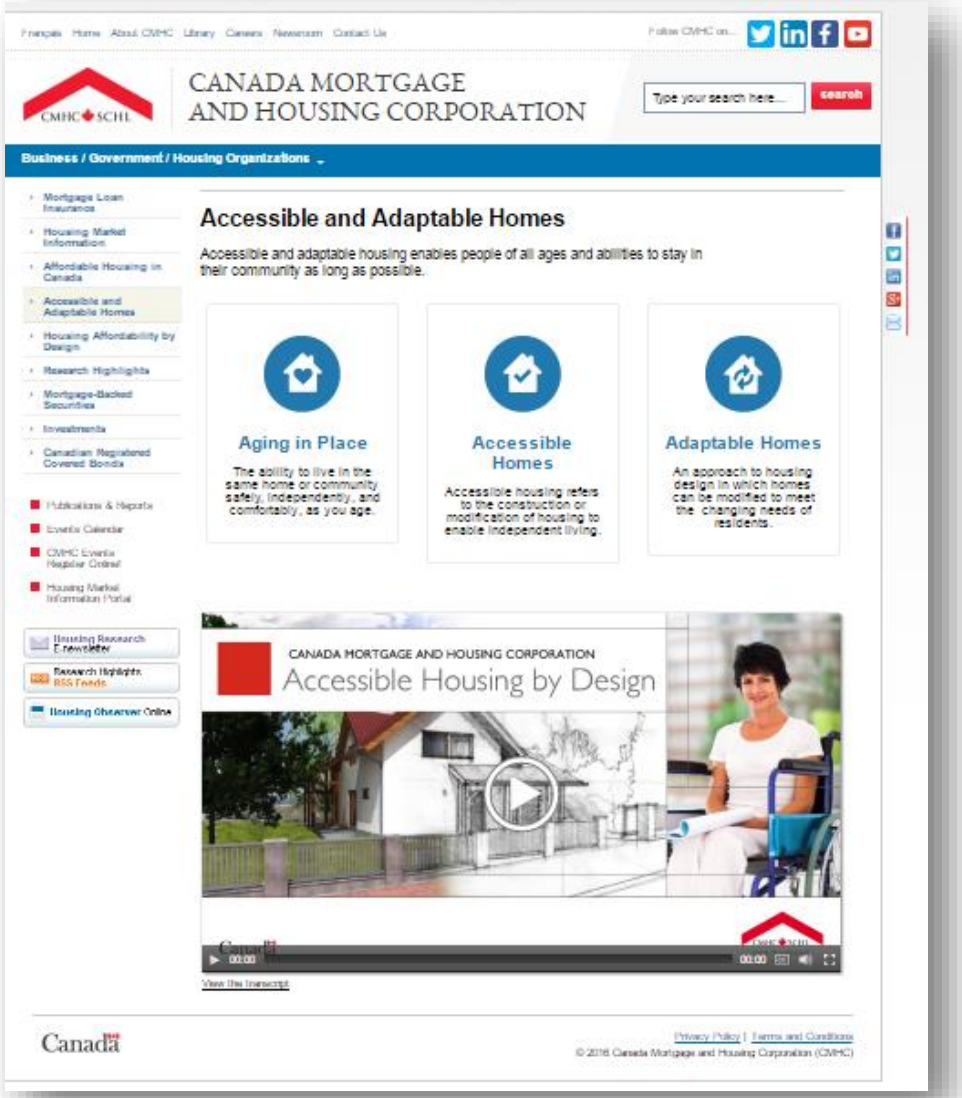
Advancing Sustainable and Affordable Housing in Canada
Tactics, technologies, and practices that can improve housing performance and can help consumers make their homes more energy efficient.

EQuilibrium™ Housing
Brings private and public sectors together to develop homes that combine energy-efficient, renewable technologies in order to reduce environmental impact.

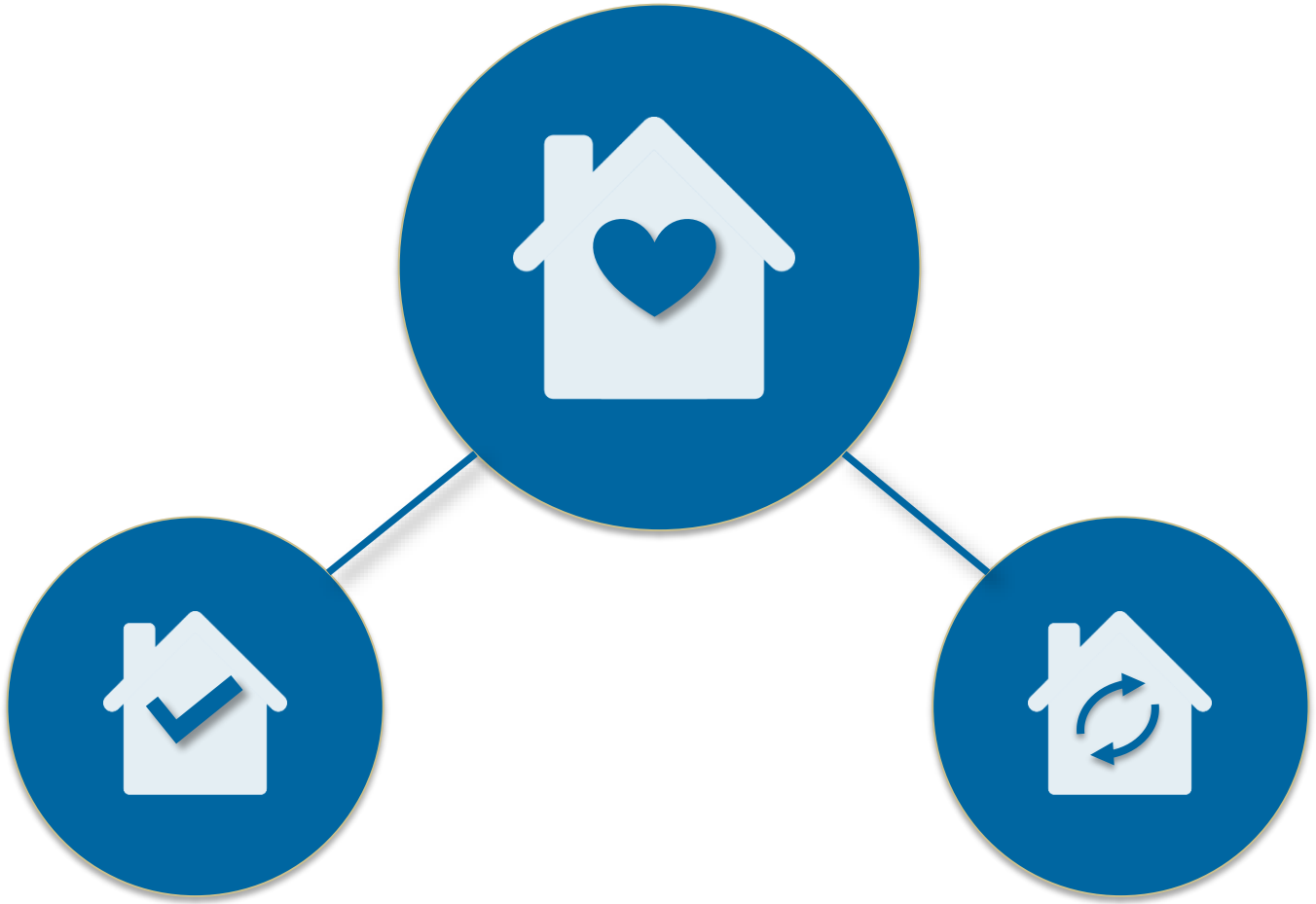
EQuilibrium™ Housing Forums
Learn from project designers and builders, and participate in guided tours of net-zero energy, low environmental impact homes with the teams.

EQuilibrium™ Communities Initiative
Funding was provided to developers of sustainable community projects to improve, monitor and showcase sustainability performance.

Accessible & Adaptable Homes



Older Canadian – Opting to Age in Place



Accessible Homes

Adaptable Homes

SENIORS' FALLS IN CANADA

FALLS are the LEADING CAUSE OF INJURY among older Canadians

20-30% of seniors experience **1+** falls each year.

FALLS CAUSE:

85% of seniors' injury-related hospitalizations

95% of all hip fractures

$2Billion a year in direct healthcare costs

over **1/3** of seniors are admitted to **LONG-TERM CARE** following hospitalization for a fall

The average Canadian senior stays in hospital **10 DAYS longer** for falls than for any other cause

Falls ***can result*** in chronic pain, reduced mobility, loss of independence and even death

50% of all falls causing hospitalization HAPPEN AT HOME

Preventing Falls on Stairs

Preventing Falls on Stairs

ACCESSIBILITY

Accessible housing refers to homes that are designed or modified to enable independent living for all residents, including seniors or persons with disabilities. Accessibility can be achieved through architectural design and also by integrating accessibility features, such as lowered light switches, grab bars, walk-in bathtubs, lowered shelves and cupboards, modified furniture or by installing electronic devices in the home.

Stairs in the home can be dangerous and can be a barrier to accessibility unless they are designed or modified to reduce the risk of falls. If residents have limited mobility, it may be necessary to install ramps, home elevators or stairlifts to make the home safe and accessible.

A high percentage of Canadians who visit hospitals after a fall on or from stairs or steps in their homes are seniors (men and women 65 years or older). When seniors fall, the consequences can be severe and long-lasting.

Most falls on stairs can be prevented. Prevention starts by keeping in mind that there are risks in using stairs. Good planning and simple strategies can help prevent falls and injuries.

This document describes some of the ways to reduce the risk of falling on stairs.

WHERE CAN PEOPLE FALL?

People can fall anywhere in the house where there are stairs, including entry stairs, stairs leading to another floor, the back doorstep or steps leading to another room. Falls resulting in serious injuries can occur even with a single step.

WHY DO PEOPLE FALL?

Professionals who study why people fall on or from stairs have identified three main contributing factors:

Environmental factors including poor design, construction and maintenance of stairs, non-existent or dysfunctional handrails, poor lighting and other features such as poor tread surfaces.

Health factors including reduced vision, weakness, drowsiness, loss of balance or an inactive lifestyle.

Behavioural factors including lack of concentration, carrying something while using stairs, running, unsuitable footwear, unfamiliarity with the stairs (although most stair-related injuries occur on stairs that are familiar to the fall victim) and decisions whether or not (and how) to modify or maintain the stairway environment.

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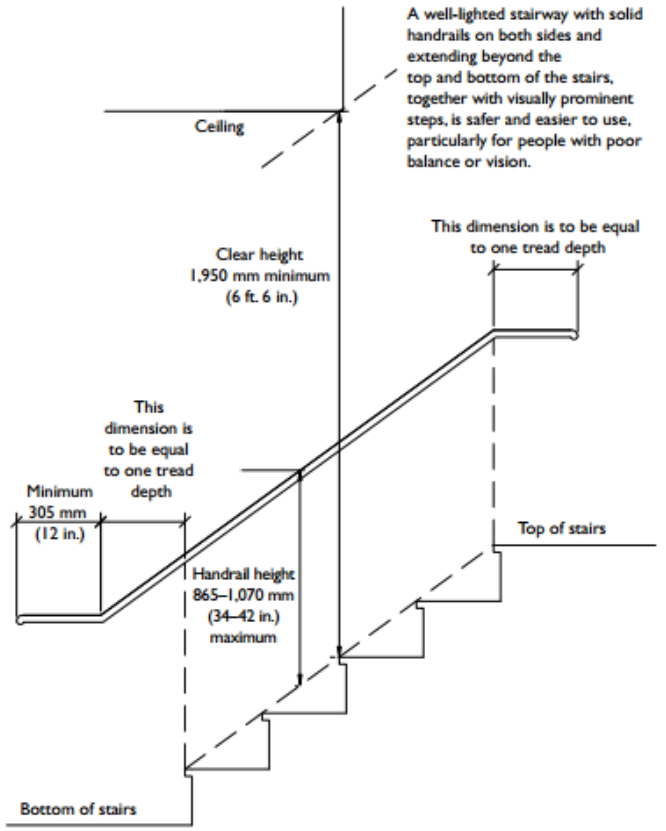
Preventing Falls on Stairs Canada Mortgage and Housing Corporation



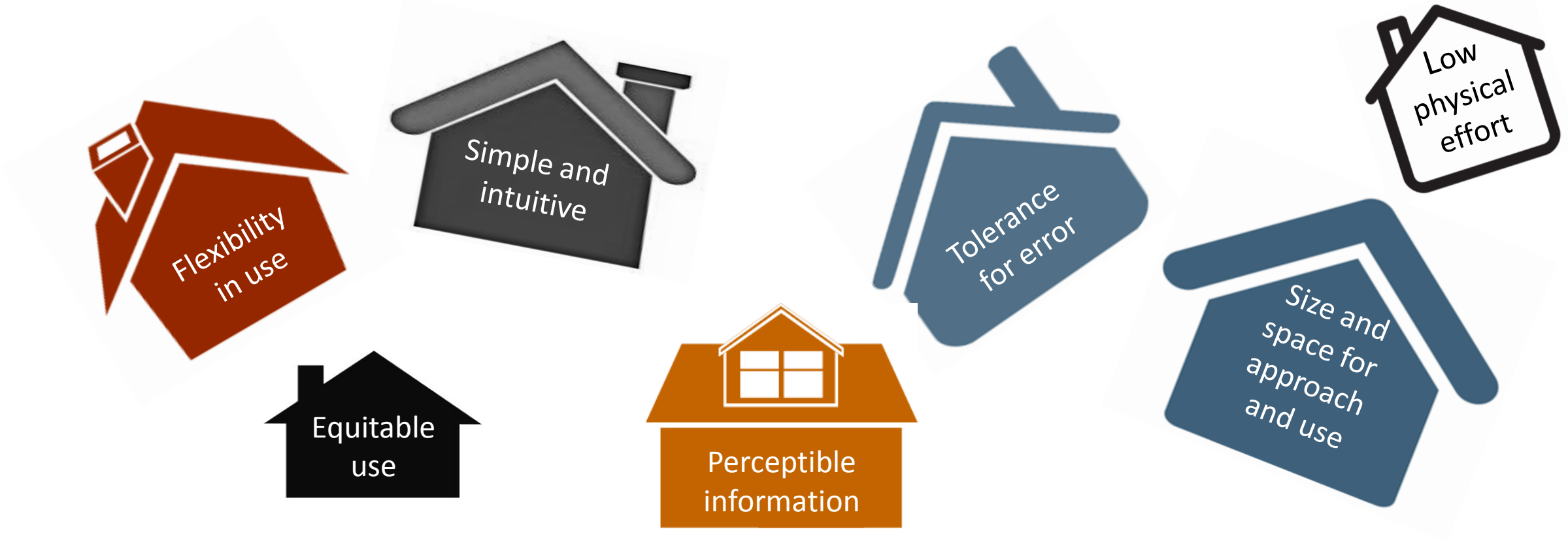
Universal Design

“The intent of Universal Design is to simplify life for everyone”

Aging in Place - Principles of Universal Design

"Universal design benefits people of all ages and abilities."

Ronald L. Mace, Design Pioneer and Visionary of Universal Design



Accessible Housing by Design Series

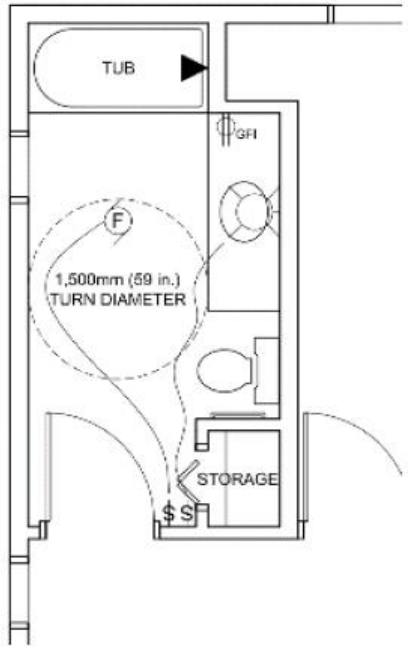


Diagram by: Ron Wickman Architect

Figure 2 A small accessible bathroom

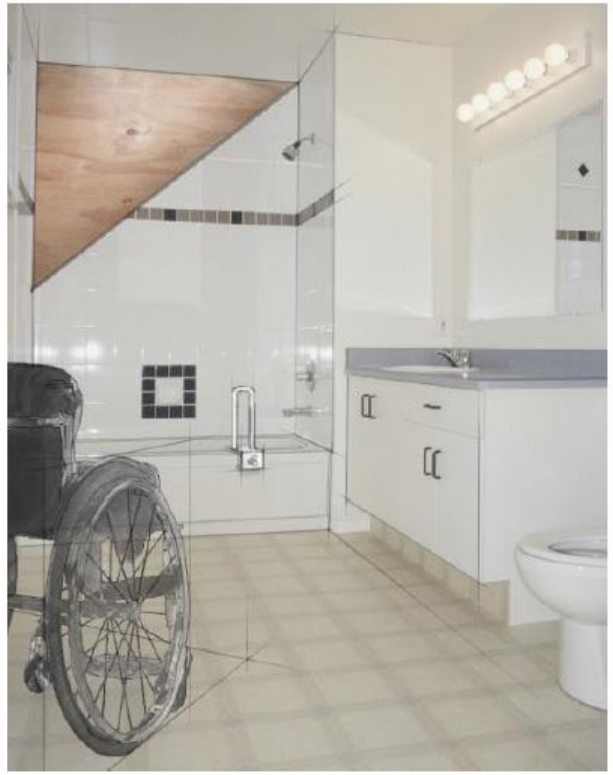


Photo by: Ron Wickman

Figure 3 A FlexHousing™ approach complete with a 1,500mm (59 in.) turning circle and plywood backing on all bathroom walls.

- House Designs and Floor Plans
- Living Spaces
- Kitchens
- Bathrooms
- Appliances
- Exterior Spaces

Accessible Housing by Design Series

Photo courtesy of the Manitoba government

Accessible Housing by Design Visitability

Other factors that make visitable housing important include the following:

- Visitable features easy to incorporate and conceptualize.
- Easy access to the house for friends and family visiting and people with mobility difficulties, those with young children in strollers, those carrying large and heavy shopping items, furniture or equipment.
- Housing becomes age-friendly for more homeowners.
- Community participation and social integration.
- Reduced costs for home renovations at a time of mobility changes.
- Reduced risks of fall or injuries.
- Homeowners can easily return to their home following a sudden change in mobility.
- Prevention of premature institutionalization of older adults.
- Visitable homes can be purchased by and sold to a wider demographic.
- Visitable housing needs to be beautiful and invisible so that everyone uses the home in the same way and so that the visitable features blend in with the architectural style of the home.
- Visitable features can easily be incorporated with other building innovations, such as affordable design, green architecture and energy efficiency.

Figure 3: Single-family home with visitable entrance at the side
Photo by Ron Wickman

Figure 4: Visitable home, on left, with sloping sidewalk and no-step entrance located at the back of home
Photo by Ron Wickman

Visitability ensures that a basic level of accessibility will be provided in all housing and it opens opportunities for participation in community life. For this to happen, visitable homes must themselves become part of the neighbourhood fabric, a commonplace addition to the catalogue of housing types that comprises our communities and an appealing choice for able-bodied consumers.

When visitability features are planned at the outset, additional costs are minimal. There are several ways in which a site may be graded depending on where the no-step entrance is located. The grade can slope between the street and the home to provide an accessible entry on any side of the home (see figure 3). The grade can slope from an alley to the house to provide a no-step entrance at the rear (see figure 4). Figure 4 shows that there is little difference between a visitable home with a no-step level entrance at the back door and a home with steps leading to the back door. A combination of front and rear grade slope can also provide no-step access to a side door from both street and/or alley.

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4

- Ramps
- Lifts and Residential Elevators
- Residential Hoists and Ceiling Lifts
- Fire Safety for you and your Home
- Home Automation
- Visitability

CMHC Resources

THE COST OF INCLUDING ACCESSIBILITY FEATURES IN NEW HOMES AND APARTMENTS

What you – and your clients – need to know

Canada's population is aging at a faster rate than ever before. According to Employment and Social Development Canada, seniors now make up the fastest-growing age group in the country. By the year 2051, it is estimated that as many as one in four Canadians will be over the age of 65.

For builders, this means that more Canadians are looking for homes that can be easily and cost-effectively adapted to keep pace with their changing needs.

To help builders and developers meet this growing demand, CMHC carried out an in-depth study to estimate the incremental cost of adding accessibility features to the design and construction of new homes and apartment buildings, which would allow occupants to live comfortably and independently in those homes as they age – and which could be adapted over time without the need for any major upgrades or costly renovations.

The Study: Universal Accessibility Features

To estimate those costs, first, a list was compiled of 60 universal features that would have a significant impact in making a home or apartment more accessible. These ranged from simple changes like adding lever-style faucets to more substantial alterations in the dimensions, design and layout.

Then, a variety of pricing guides and industry experts were consulted to estimate how much it would cost to integrate each of those features into five typical new homes:

- a two-bedroom bungalow with one full bathroom;
- a two-storey, semi-detached, two-bedroom house with one and a half baths;
- a two-storey, detached, three-bedroom home with one and a half baths;
- a two-storey, three-bedroom townhouse with two and a half baths; and
- a two-bedroom apartment with one bathroom and an area of 81 square metres (871.9 square feet).

The estimated costs were indexed to the current cost of construction in five Canadian cities:

- ***Vancouver;***
- ***Winnipeg;***
- ***Toronto;***
- ***Montréal; and***
- ***Halifax.***

Regulatory bodies for each city were consulted to identify whether any of the accessibility features were already required as part of standard construction, and therefore wouldn't have any impact on the incremental accessibility costs.

In addition, builders, contractors and homebuilders' associat ions were consulted in each of the target cities to confirm the cost estimates, and ensure the floor plans were accurate and representative models for their regions.

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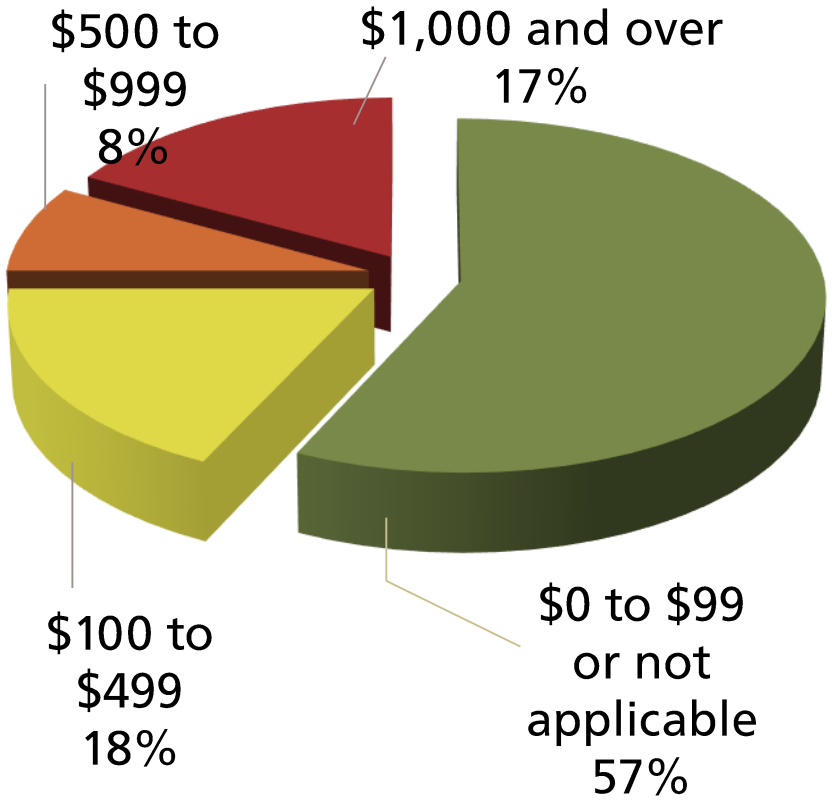
Including Accessibility Features in New Homes



The Results:

- 57% of accessibility features added no extra cost, or cost less than $100
- 75% of the features cost less than $500
- Several features cost less than non-accessible features
- Only 25% of the features cost more than $500

Flexhousing Checklist

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

Thank You

Adaptability Durability Functional Efficient

cmhc.ca/housingaffordabilitybydesign

Jamie Shipley C.E.T.

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