



Research Bulletin

Cost of Accessibility Features in Newly-Constructed Modest Houses

The Research

With the aging of the population and increasing life expectancy, the construction of sustainable homes that change with occupants' needs could have benefits for residents and communities. The majority of seniors express a preference for "aging in place". Adaptable housing could delay or eliminate the need for older residents to relocate. A longer period of independent living would retain residents' established support services, maintain their existing social links and allow continued participation in the community.

Overview of the Project

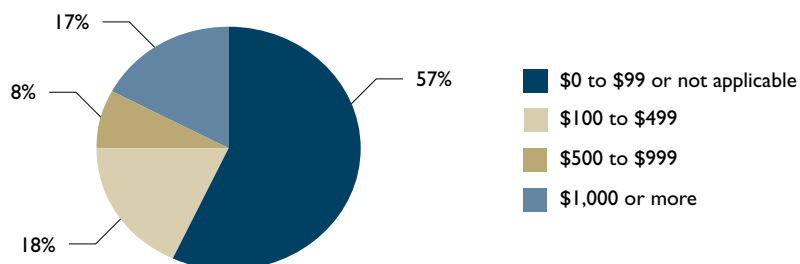
- Five benchmark **adaptable** homes were designed, which could be modified over time based on the occupants' changing needs, without any major upgrades or costs.
- A list of 60 building features, based on principles of accessibility, was used to create these accessible/adaptable floor plans.
- The cost of each added accessibility feature was estimated.
- The cost to construct each standard benchmark home, with and without accessibility features was estimated and validated using several sources and models.
- Costs were estimated for five Canadian cities and verified with the construction sector.

Key Findings

Cost of Individual Accessibility Features

The vast majority (75%) of accessibility features cost less than \$500, and more than half were no-cost or had negligible costs (see Figure 1). Features estimated to cost between \$500 and \$1,000 included kitchen cabinets with vertical storage for a future wall oven, an easily modifiable structure in the shower, and preparation for potential installation of an elevator. The most costly features were those that impacted the layout of the building, for example, added floor space in the garage and manoeuvring area in the kitchen and bathrooms; protection against the elements above the entry; and a refuge in case of fire on a second floor balcony.

Figure 1: Cost of Individual Accessibility Features



Five Modest "Benchmark" Homes:

- Bungalow – 2-bedroom, one full bathroom
- Semi-detached - 2-storey, 2-bedroom, half-bath on the entry level and full bathroom upstairs
- Detached - 2-storey, 3-bedroom, half-bath on the entry level and full bathroom upstairs
- Townhouse - 2-storey, 3-bedroom, half-bath on the entry level, 2 full bathrooms upstairs
- Apartment - 2-bedroom, full bathroom

Accessibility features addressed:

- access to the dwelling,
- building layout,
- garage dimensions and elevation difference between the garage and the house,
- mobility inside the house,
- design of the kitchen and bathroom,
- windows,
- controls and security system,
- allowances for a lift to second floor, and
- fire safety and evacuation considerations.

Size of Modified Floor Plans in Benchmark Models

Some floor plans were easier to modify for accessibility and adaptability than others, due to design complexity, layout limitations, or location of stairwells, for example. In the benchmark bungalow and the apartment, accessibility features could be integrated into the standard floor plans with no increase in the living area. The semi-detached home required the largest increase in floor space (see Table 1).

Cost of Accessibility Features in Benchmark Models

All in all, the construction of an accessible and adaptable home carried an added cost of between 6 and 12% of the cost of standard construction, depending on the model and the city in which the home would be built (see Table 2). Variations in municipal building regulations impacted which features were included in the benchmark plans and which were additional in each city.

Table 1: Increases in Area Required to Accommodate Accessibility Features

	Home (m ²)			Garage (m ²)		
	Standard Floor Plan	Modified Floor Plan	% Increase	Standard Floor Plan	Modified Floor Plan	% Increase
Bungalow	136	136	0	24	25.9	8%
Semi-detached house	121	130	7%	24	25.9	8%
Detached house	154	162	5%	24	25.9	8%
Townhouse	165	168	2%	23.8	24.3	2%
Apartment	81	81	0	Not Applicable	Not Applicable	-

Table 2: Additional Cost of Accessible Features Added to Construction of Adaptable Benchmark Homes

	Montréal (%)	Toronto (%)	Vancouver (%)	Halifax (%)	Winnipeg (%)
Bungalow	6	6	6	6	6
Semi-detached house	12	12	11	12	12
Detached house	10	10	9	10	10
Townhouse	7	7	6	7	7

Note: Costing was not available for the Benchmark Apartment.

Implications for the Housing Industry

The additional costs of including up to 60 design features to make a newly constructed home accessible or adaptable in the future, although not insignificant, are nonetheless much lower than the cost of converting an existing dwelling in order to make it accessible.

Further reading:

FULL REPORT

Study of the Cost of Including Accessibility Features in Newly-Constructed Modest Housing

RELATED RESEARCH

About Your House: Accessible Housing by Design — House Designs and Floor Plans

Sustainable Housing and Communities - Flexible Housing, Chapter 6, Canadian Housing Observer 2012

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Alternative text and data for figures

Figure 1: Cost of Individual Accessibility Features

	Percentage of Items by Cost
\$0 to \$99 or not applicable	57%
\$100 to \$499	18%
\$500 to \$999	8%
\$1,000 or more	17%
All Costs	100%