

E. MORALES, A. GUÉRETTE, C. MONTREUIL, F. ROUTHIER, J. ROUSSEAU. **Rethinking access to seniors housing in winter cities.** *Gerontechnology* 2016;15(suppl):90s; doi:10.4017/gt.2016.15.s.745.00

**Purpose** The entrance to the house is the most difficult area in the house for adults with motor disabilities<sup>1</sup>, mainly because of the entrance steps in most of the houses in winter cities such as Montreal and Quebec City. The concept of ‘visitability’ refers to newly constructed, single-family homes with at least the following minimum features: (i) A zero-step entrance at the front, back or side entrance of the house (located on an accessible route from the street); (ii) Wider doorways on all main floor doors (minimum clear door opening: 32 inch (813mm)); and (iii). A half bathroom on the main floor (sink & toilet)<sup>2-3</sup>. The purpose of this project was to: (i) Apply the concept of ‘visitability’ to new constructions in Québec – to document the costs of a zero-step entrance of houses in the Quebec context, as compared with existing solutions such as ramps and lifts, and (ii) Adapt the concept of ‘visitability’ to existing constructions in Québec – to create possible and feasible design solutions for seniors using wheelchair to pass through a 7-step stairs (maximum average of steps in Quebec) conceived for the entrance of a house for all seasons (specially winter). **Method** The cost of incorporating a zero-step entrance into a single family house was determined through a new project of a residential development in Quebec City. The original design of the project was altered to propose the zero-step entrance designed by the research team. Subsequently, an external construction estimator provided the cost analysis of the final solution compared to the original one. To address objective (ii), a qualitative co-design methodology was followed where most stakeholders were invited to participate in the design process of the solution within four main steps: (i) Conception of the design solution; (ii) Validation of the design solution (consultation with experts); (iii) Development of a prototype(s); and (iv) Testing of the prototype. **Results & Discussion** Results demonstrated that there is no additional cost for incorporating a zero-step entrance. The benefits of including the principles of ‘visitability’ in new constructions provide significant cost and functional savings in future investments for home adaptation for seniors. For objective two, the focus was given only to the entrance of existing homes. A mechanical lift (*Figure 1*) using the weight of the user or the one of the power wheelchair was developed with a small electric heat resistance to work during the winter season. There were three main design criteria for the development of the prototype: (i) To reduce significantly the cost compared to regular electric lifts; (ii) To be as discreet as possible (as it was a very important issue for users); and (iii) to be functional under winter conditions. Testing of the prototype in winter conditions will be done in the Winter of 2017.

### References

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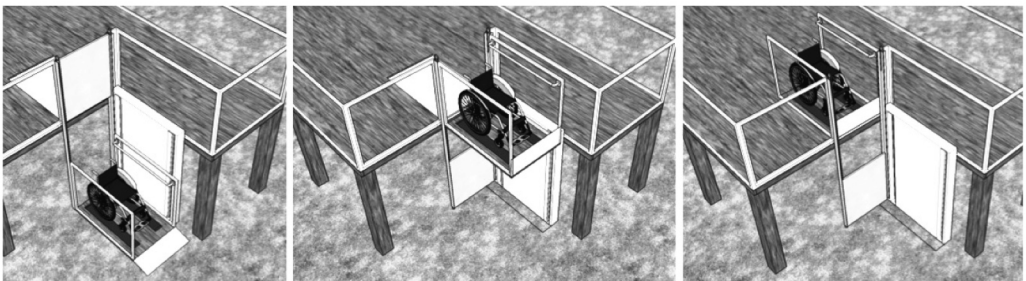


Figure 1. Mechanical lift