Accessible design in BC's subsidized housing: Evidence for an optimal model

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An aging population is compelling designers, researchers, and governments to consider the entire lifespan in housing policy. A growing market of people with disabilities also need accessible housing. Accessible design allows individuals with limited mobility to enter, exit, and maneuver inside a building. However, additional evidence-based research in the field of accessible design is both timely and prudent. Attributes of residences that work well can be included more often in housing projects, and features that pose challenges can be studied and improved upon in current and future structures.

This article summarizes a study completed in 2011 as part of a Mathematics of Information Technology and Complex Systems (MITACS) internship specific to the business needs of BC Housing and the Canada Mortgage and Housing Corporation. Both agencies were aware that accessible design principles and practices are not new. For years the universal design movement has aimed to accommodate the needs of older, less mobile individuals, as well as people of all ages and abilities. For example, when a person uses a wheelchair, a home designed with leg space under the sink, light switches at sitting height, and wider hallways eases day-to-day living and encourages independent behaviour.

Although the positive impacts of universal design on building occupants have been empirically supported in general, one of this study's research goals was to gather information about how current tenants of accessible subsidized housing units in British Columbia experience their homes. Participants were asked to agree or disagree about the ease of use in their unit's bathroom, kitchen, bedroom, and the unit in general (e.g., "I am satisfied with the counter height in my kitchen"). One hundred tenants participated. Their mean age was 72 years. The average length of time individuals had lived in their unit was 3 years and, on average, participants planned to stay in their unit longer than 5 years. Mean responses indicated that the tenants of both accessible and non-accessible units were mildly to strongly satisfied with their bedrooms, bathrooms, kitchens, and their unit as a whole. In fact, occupants of both unit types did not significantly differ in satisfaction with their unit, with the exception of kitchen design.

On average, tenants living in both unit types agreed most with the statement: "there is enough room to open the fridge and stove easily in my kitchen." This suggests that the space allotted for kitchens in subsidized housing is sufficient, regardless of whether the unit has been modified with accessible features. Also, occupants of accessible units agreed least with a survey item about how easy it was to reach their kitchen cabinet handles. This is something developers ought to take into account when installing accessible kitchen materials.

Another goal of the study was to interview housing industry professionals, such as

occupational therapists, executive directors, architects, planners, and researchers, to obtain a broader sense of how best to enable an accessible residence to meet the physical and social needs of occupants. Nine professionals with an average of 27 years experience working in the Canadian housing industry agreed to be interviewed. Analyses of the comments made by interviewees revealed that three factors appear to form an optimal, evidence-based model of accessible design: Community-based considerations, development considerations, and design considerations.

Community-based considerations reflect the broader surroundings in which accessible subsidized housing is planned and built. According to interviewees, accessible residences situated in socially sustainable, physically accessible, and safe neighbourhoods are preferable. Buildings that contain a mixture of accessible and non-accessible units are advantageous because of the diversity they provide a community. Building collaborative relations between municipalities, developers, and non-profit organizations was also an important part of an optimal model.

In terms of development, interviewees suggested that renovation costs should be mitigated by incorporating accessible attributes into housing units during construction. Also, finding ways to balance the popularity of compact units for affordability with the necessity of building large units for accessibility is key. This complements the community-based consideration that buildings should offer a combination of unit types to maximize financial and social gains.

Next, design considerations focused on ways to integrate accessible features into both market and subsidized units. Making accessible features as inconspicuous as possible, for those who do not yet need them, is important. This should help to minimize any stigma that exists for accessible design residences. Tenant satisfaction considerations, based on survey data (e.g., lowering kitchen cupboards and improving visibility from bedroom windows), were added as a fourth factor in the optimal model. These cupboard and visibility aspects were rated on the low side of satisfaction in this study. Maintaining exterior visitability, and the amount of space for opening kitchen appliance doors were also included in the model to ensure that design features that already work well continue to be included.

In conclusion, occupants of subsidized housing units in BC that have been modified with accessible attributes are generally satisfied with their home. In fact, very few differences exist between levels of satisfaction among tenants of accessible and non-accessible units. This study's optimal model for accessible subsidized housing will augment the evidentiary knowledge base of universal design, but it should also help to ensure efficient accessible housing for both occupants and the housing industry.