

Accessibility . . . 150 Years Later . . . to where from here?

2008 INTERMUNICIPAL ACCESSIBILITY SYMPOSIUM

Presented by
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DESIGNABLE ENVIRONMENTS Inc.

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CITY OF WELLAND
ACCESSIBILITY
ADVISORY COMMITTEE



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Presentation Overview

- The Evolution of Accessibility
- Emerging Accessibility Issues
- What does the future hold?



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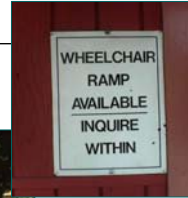
The Evolution of Accessibility Pre 1960's – The Medical Model



The Evolution of Accessibility 60's and 70's – Designing for *the Disabled*



The Evolution of Accessibility 70's on – Barrier Free Design



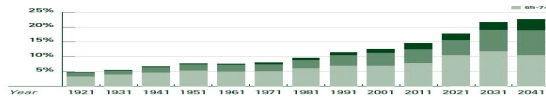
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The Evolution of Accessibility 90's on – Universal Design



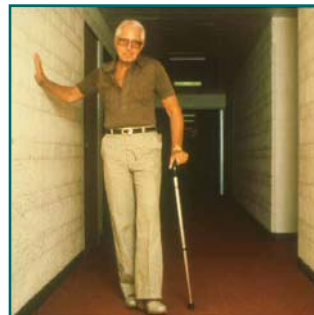
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Emerging Accessibility Issues

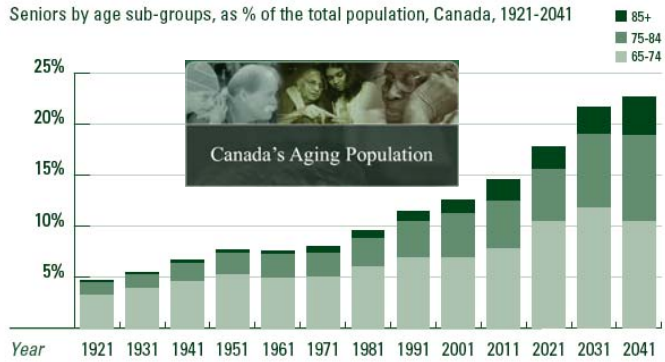


Emerging Accessibility Issues

- An aging population

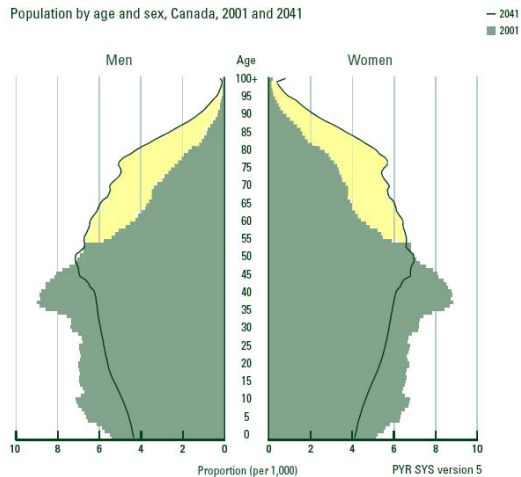


An Aging Population



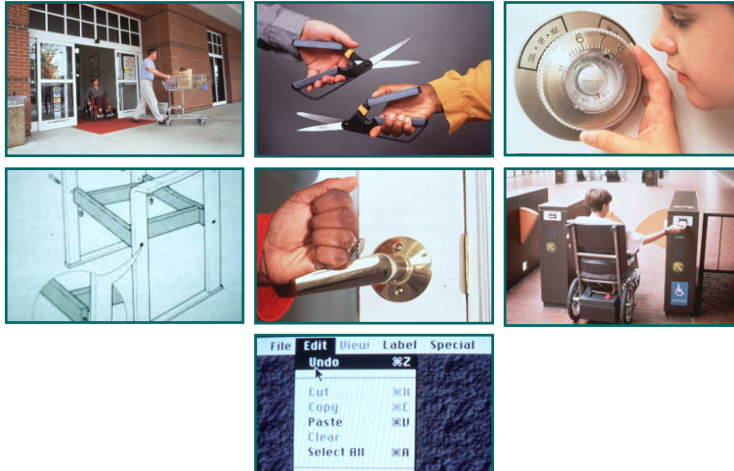
* Please note that in this document, the terms "senior" and "older Canadian" refer to adults 65 years of age or more.

An Aging Population



Emerging Accessibility Issues

- o Emergence of Universal Design



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Emerging of Universal Design

DEFINITION:

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.


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THE PRINCIPLES OF UNIVERSAL DESIGN

Version 2.0 (2010)

1. EQUITABLE USE

The design is useful and marketable to people with diverse abilities.



GUIDELINES


- 1a. Provide the same means of use for all users: identical whenever possible, equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Make provisions for privacy, security, and safety equally available to all users.
- 1d. Make the design appealing to all users.

EXAMPLES

- Power doors with sensors at entrances that are convenient for all users.
- Integrated, dispersed, and adaptable seating in assembly areas such as sports arenas and theaters.

2. FLEXIBILITY IN USE

The design accommodates a wide range of individual preferences and abilities.



GUIDELINES


- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

EXAMPLES

- Scissors designed for right- or left-handed users.
- An automated teller machine (ATM) that has visual, tactile, and audible feedback, a tapered card opening, and a pain rest.

3. SIMPLE AND INTUITIVE USE

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.



GUIDELINES


- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

EXAMPLES

- A moving sidewalk or escalator in a public space.
- An instruction manual with drawings and no text.

4. PERCEPTIBLE INFORMATION

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.



GUIDELINES


- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Maximize "legibility" of essential information.
- 4c. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4d. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

EXAMPLES

- Tactile, visual, and audible cues and instructions on a thermostat.
- Redundant coding (e.g., voice communications and signals in airports, train stations, and subway cars).

5. TOLERANCE FOR ERROR

The design minimizes hazards and the adverse consequences of accidental or unintended actions.



GUIDELINES


- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements minimized, isolated, or shielded.
- 5b. Provide warnings of hazards and errors.
- 5c. Provide fail-safe features.
- 5d. Discourage unconscious action in tasks that require vigilance.

EXAMPLES

- A duplicate car key easily inserted into a recessed keyhole in either of two ways.
- An "undo" feature in computer software that allows the user to correct mistakes without penalty.

6. LOW PHYSICAL EFFORT

The design can be used efficiently and comfortably and with a minimum of fatigue.



GUIDELINES


- 6a. Allow user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

EXAMPLES

- Lever or loop handles on doors and faucets.
- Touch lamps operated without a switch.

7. SIZE AND SPACE FOR APPROACH AND USE

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.



GUIDELINES

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip sizes.
- 7d. Provide adequate space for the use of assistive devices or personal assistance.

EXAMPLES

- Controls on the front and clear floor space around appliances, mailboxes, dumpsters, and other elements.
- Wide gates at subway stations that accommodate all users.

THE PRINCIPLES WERE COMPILED BY AUTHORS OF UNIVERSAL DESIGN, IN ALPHABETICAL ORDER:

Betty Rose Coanell, Mike Jones,
Ron Mace, Jim Mueller,
Abir Mullick, Elaine Ostroff,
Jon Sanford,
Erl Steinfield, Molly Story,
and Gregg Vanderheiden.

NOTE:
The Principles of Universal Design are not intended to constitute all criteria for good design, only universally usable design. Certainly, other factors are important, such as aesthetics, cost, safety, gender and cultural appropriateness, and these aspects must also be taken into consideration when designing.

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Emerging Accessibility Issues

- Recognition that wheelchairs and scooters need more space



Wheelchairs/Scooters need more space

- Standards and Anthropometry for Wheeled Mobility, Steinfeld, E., Maisel, J., Feathers, D., Center for Inclusive Design and Environmental Access, University of Buffalo, 2005



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Wheelchairs/Scooters need more space

- Footprint - WIDTH

Occupied Width in millimeters	CSA Standard	5 th Percentile	50 th Percentile	95 th Percentile
All Devices	750	596	669	800
Manual wheelchair		591	667	796
Power wheelchair		592	752	801
Scooter		625	714	810

Steinfeld, Paquet and Feathers, 2005, US

Recommended Value from Study

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Wheelchairs/Scooters need more space

○ Footprint - LENGTH

Occupied Length in millimeters	CSA Standard	5 th Percentile	50 th Percentile	95 th Percentile
All Devices	1200	1009	1166	1336
Manual wheelchair		875	1170	1299
Power wheelchair		1100	1253	1361
Scooter		1110	1248	1373

Steinfeld, Paquet and Feathers, 2005, US

Recommended Value from Study

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Wheelchairs/Scooters need more space

○ Maneuvering width

90 degree turn (L-turn) in millimeters	CSA Standard	5 th Percentile	50 th Percentile	95 th Percentile
All Devices	920			
Manual wheelchair		788	900	1000
Power wheelchair		800	875	1000
Scooter		950	1000	1000

Steinfeld, Paquet and Feathers, 2005, US

Recommended Value from Study

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Wheelchairs/Scooters need more space

- Turning circle

180 degree turn (U-turn) in millimeters	CSA Standard	5 th Percentile	50 th Percentile	95 th Percentile
All Devices	1500			
Manual wheelchair	1500	1300	1500	2020
Power wheelchair	2250**	1300	1700	2130
Scooter	3150**	1950	2300	2500

Steinfeld, Paquet and Feathers, 2005, US

Recommended Value from Study

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Emerging Accessibility Issues

- Move towards a more extensive use of colour and texture to assist with wayfinding and orientation



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More extensive use of colour and texture



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Emerging Accessibility Issues

- Greater recognition of less evident disabilities (e.g. environmental sensitivities)



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Recognition of less evident disabilities



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Emerging Accessibility Issues

- Increased expectations for Life Safety Planning



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Increased Life Safety Expectations



Wheelchair space
850 x 1370
(33-1/2 x 54)



600
(23-5/8)

Up

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Emerging Accessibility Issues

- Increased demand for accessible features in housing



Demand for accessible housing

ADAPTABLE HOUSING- MANDATORY AND VOLUNTARY

In November 2003, Saanich Council passed an amendment to the Zoning Bylaw that requires most newly-constructed apartment buildings and seniors' congregate care facilities be built to include Basic Adaptable Housing standards. Building permits issued for **apartment buildings** with an elevator and common corridor must comply with the new regulations.

Those applying for rezoning, subdivision and development permit applications are also encouraged to incorporate features from the voluntary design guidelines for apartment buildings, townhouses, and single-family homes.



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Demand for accessible housing

BASIC ADAPTABLE HOUSING

The mandatory Basic Adaptable Housing features include barrier-free access to all suites and amenity areas, wider doorways, manoeuvring room at suite entries and corridors, access to a main-floor bathroom, reinforcement of bathroom walls for future installation of grab bars, and accessible door handles, switches, and outlets.

Basic Adaptable Housing is required for newly-constructed residential buildings serviced by an elevator containing apartment or congregate housing uses.



Demand for accessible housing

ENHANCED ADAPTABLE HOUSING

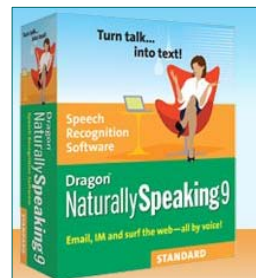


The voluntary Enhanced Adaptable Housing Design Guidelines apply to apartment buildings. They provide a higher level of accessible and adaptable features than Basic Adaptable and are appropriate, for example, for seniors housing. Those applying for rezoning and development permit applications for apartment buildings are encouraged to incorporate as many of these features as possible.

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Emerging Accessibility Issues

- Emerging technologies



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Emerging Technologies



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Emerging Accessibility Issues

- 2007 UN Convention on the Rights of People with Disabilities



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What does the future hold?

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Thank you!

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