



Living In Place and Universal Design Housing

Presented by:

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Accessibility & Universal Design
Specialist

Sept, 2018



Design**ABLE**
Environments
Inc.



Agenda

1. Who am I?
2. Why bother?
3. Who are we designing for?
4. The Alternative?
5. Understanding the Law
6. Happening Everywhere



Who am I?



Thea Kurdi, Design**ABLE** Environments Inc.

www.designable.ca | @tkurdi



Why Bother?



Understanding the Statistics

1. **Ontario:** Approx. **1.9** million people report having a disability, representing 15.5% of the population
2. **GTA:** 6.054 million people would be
1% = 60,500 people with disabilities
10% = 605,400 pwd
But 15.5% = 938,370 pwd
3. By **2017**, Ontarians aged 65 + will account for a larger share of the population than kids 0-14



Understanding the Statistics



Image shows a woman in a wheelchair looking at her shadow on the wall. She sees instead a young lady dancing.

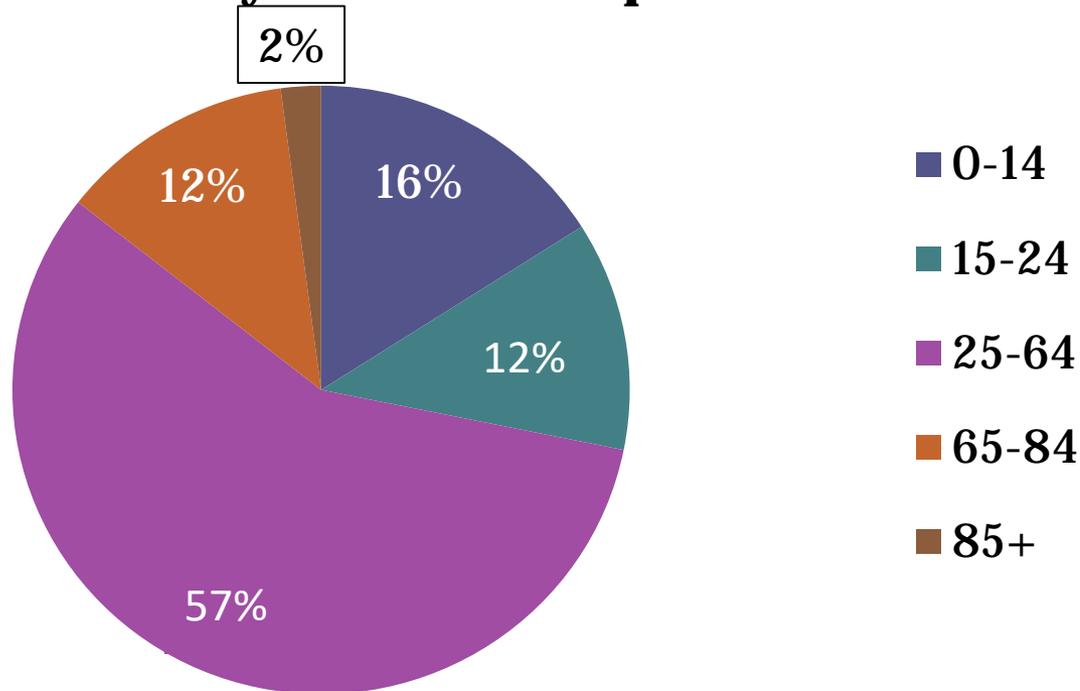
“How others see you, is not important...
How you see yourself means everything.”

How others see you, is not important..
How you see yourself means everything.



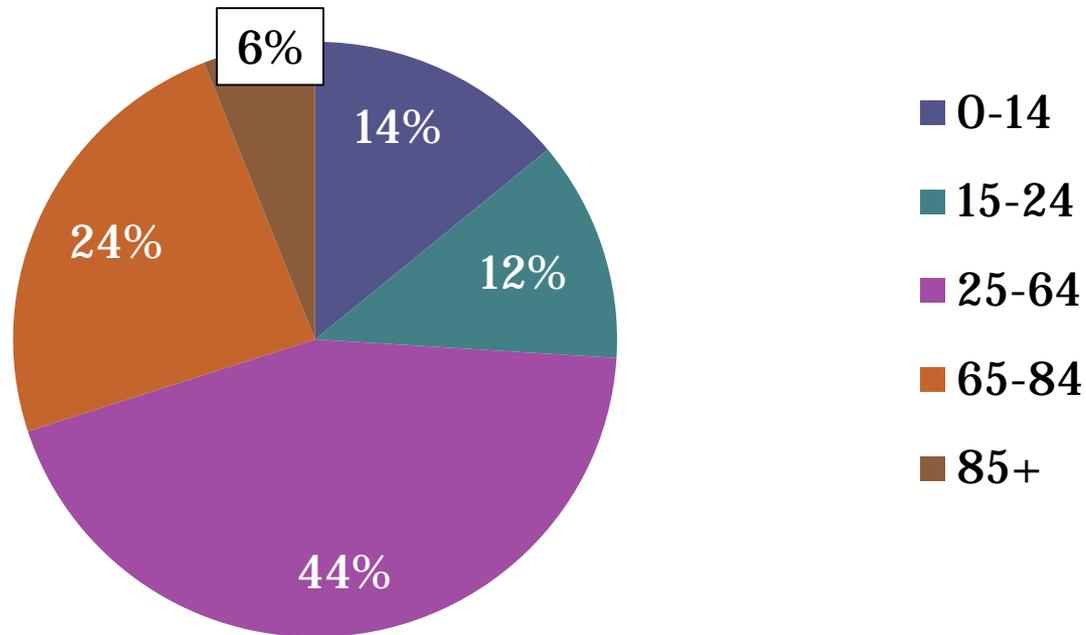
Understanding the Demographics

2011 - City of Toronto Population



Understanding the Demographics

2030 - City of Toronto Population



What is a disability?

1. Mobility Impairment
2. Visual Impairment
3. Hearing Impairment
4. Cognitive Impairment
5. Learning Disability
6. Deaf-Blind
7. Speech and Language Impairment
8. Dexterity Impairment (Arms/Hands/Fingers)
9. Older persons???



70% of disabilities in general are "invisible" –
e.g. learning disabilities, ADD, medical conditions, etc.



Older Persons

Have the highest disability rate of any group

- 55-64: 23%
- 65+: 43.4%
(15.6 M Canadians)
- 85+: rate triples to 73%



Homeless with Disabilities



Overweight Larger People



Children with Disabilities



Accessibility & Support Services



Temporary Disabilities



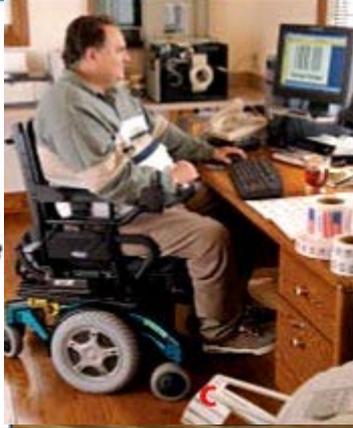
Eye patch



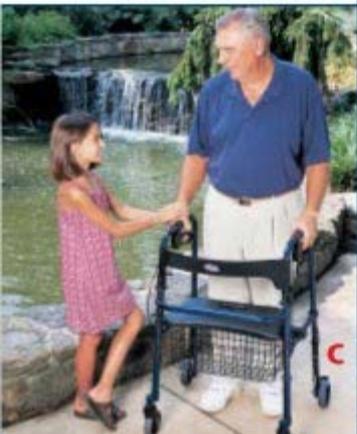
Eye shield



Functional Abilities



Functional Abilities



Functional Abilities



Functional Abilities



Regulatory Advocacy

What is a dis-ability?



Author/Copyright holder: Ruby Zheng and [Interaction Design](#) Foundation. Copyright terms and licence: CC BY-NC-ND



Regulatory Advocacy

What is a dis-ability?



Author/Copyright holder: Ruby Zheng and [Interaction Design Foundation](#). Copyright terms and licence: CC BY-NC-ND



Who are we designing for?



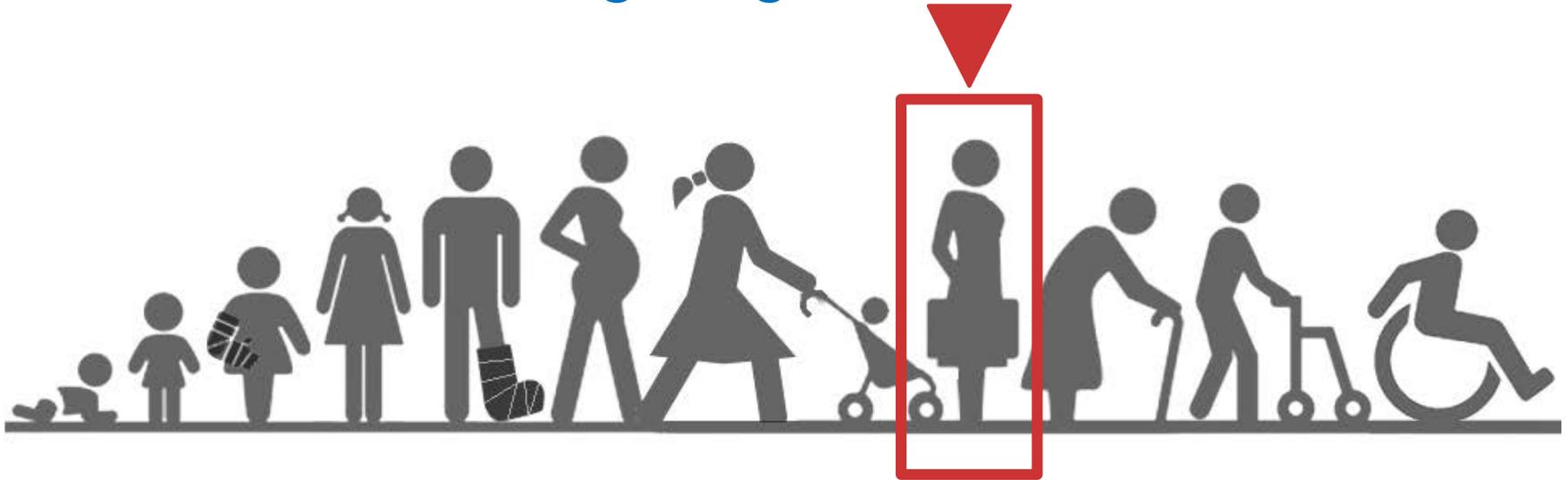
Changing Abilities Over a Lifetime



Image shows the silhouettes of a woman at the different ages over her life span. Includes changing size and ability from a crawling infant to using a wheelchair



Who are we designing for?



Rookie mistake...
to design for able-bodied only



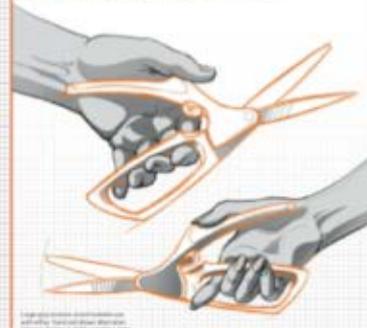
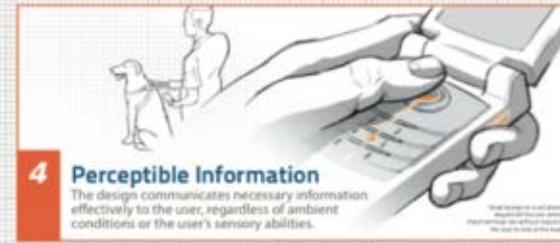
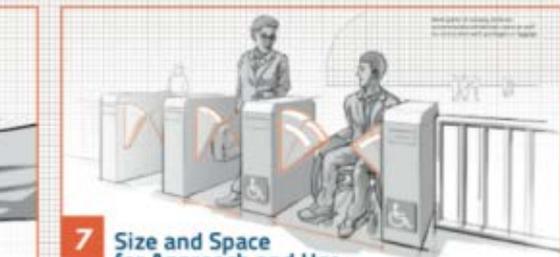
“I am not disabled,
the environment
around me creates
my disability”

Rookie mistake...
to creating expensive barriers



The Principles of Universal Design

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.

- 1 Equitable Use**
 The design is useful and marketable to people with diverse abilities.
 
- 2 Flexibility in Use**
 The design accommodates a wide range of individual preferences and abilities.
 
- 3 Simple and Intuitive Use**
 Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or education level.
 
- 4 Perceptible Information**
 The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
 
- 5 Tolerance for Error**
 The design minimizes hazards and the adverse consequences of accidental or unintended actions.
 
- 6 Low Physical Effort**
 The design can be used efficiently and comfortably and with a minimum of fatigue.
 
- 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.
 

Center for Universal Design at the University of Illinois

Image shows the 7 principals of Universal Design



Universal Design does?

Addresses anthropometric requirements and needs for:

1. Women and shorter people
2. Seniors
3. Children with disabilities
4. Families - Dad with young daughter or baby
5. People with Mental disabilities
6. People who are short or little people
7. People who do not read or speak the language



Now or Later?

Life Cycle Costing

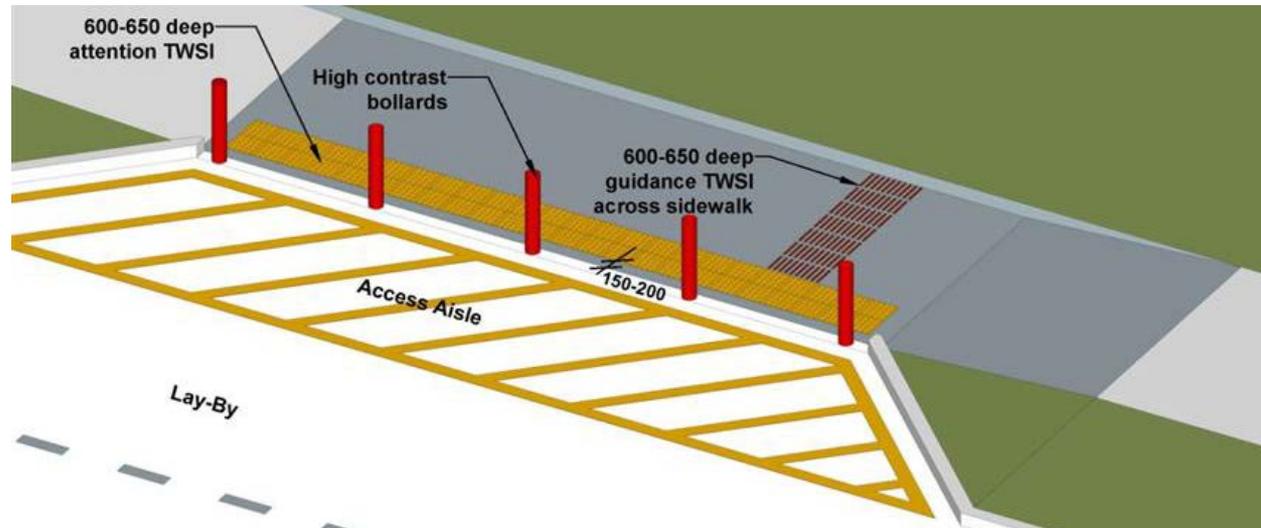
- important economic analysis
- used in the selection of alternatives that impact both pending and future costs
- compares initial investment options
- identifies the least cost alternatives for a 20 year period



The Alternative?



Drop-off



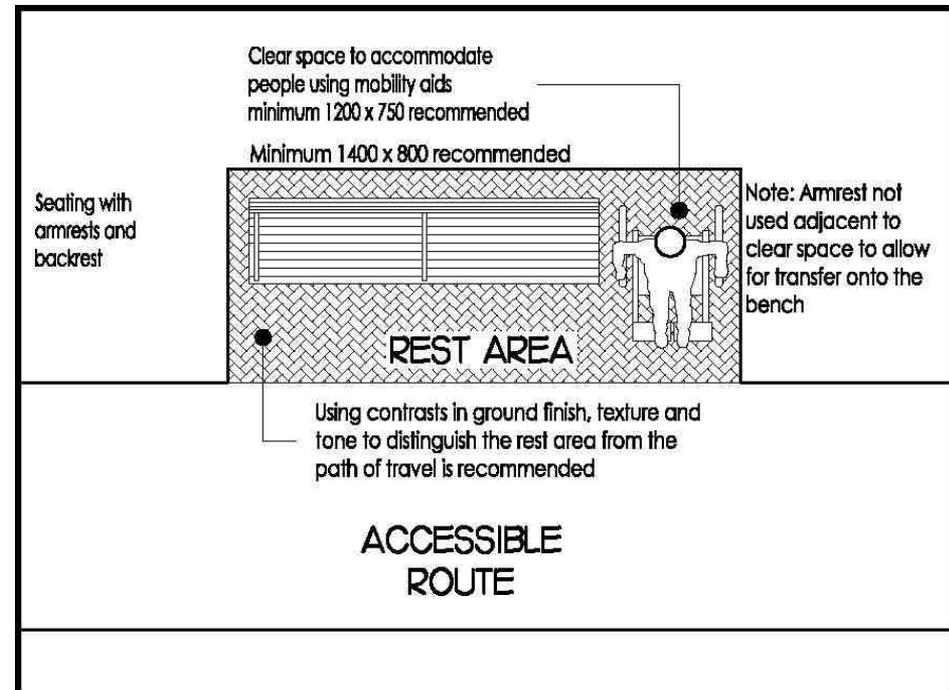
- Lay-by + Access aisle level that does not interfere with pedestrian travel + Pedestrian route
- Detectable warning surface at edge of pedestrian route
- Covered with roof overhang



Rest areas

(AODA requires public consultation)

1. Accessible bench with wheelchair space immediately adjacent
2. Level accessible surface
3. Every 30m



Animal Relief Areas

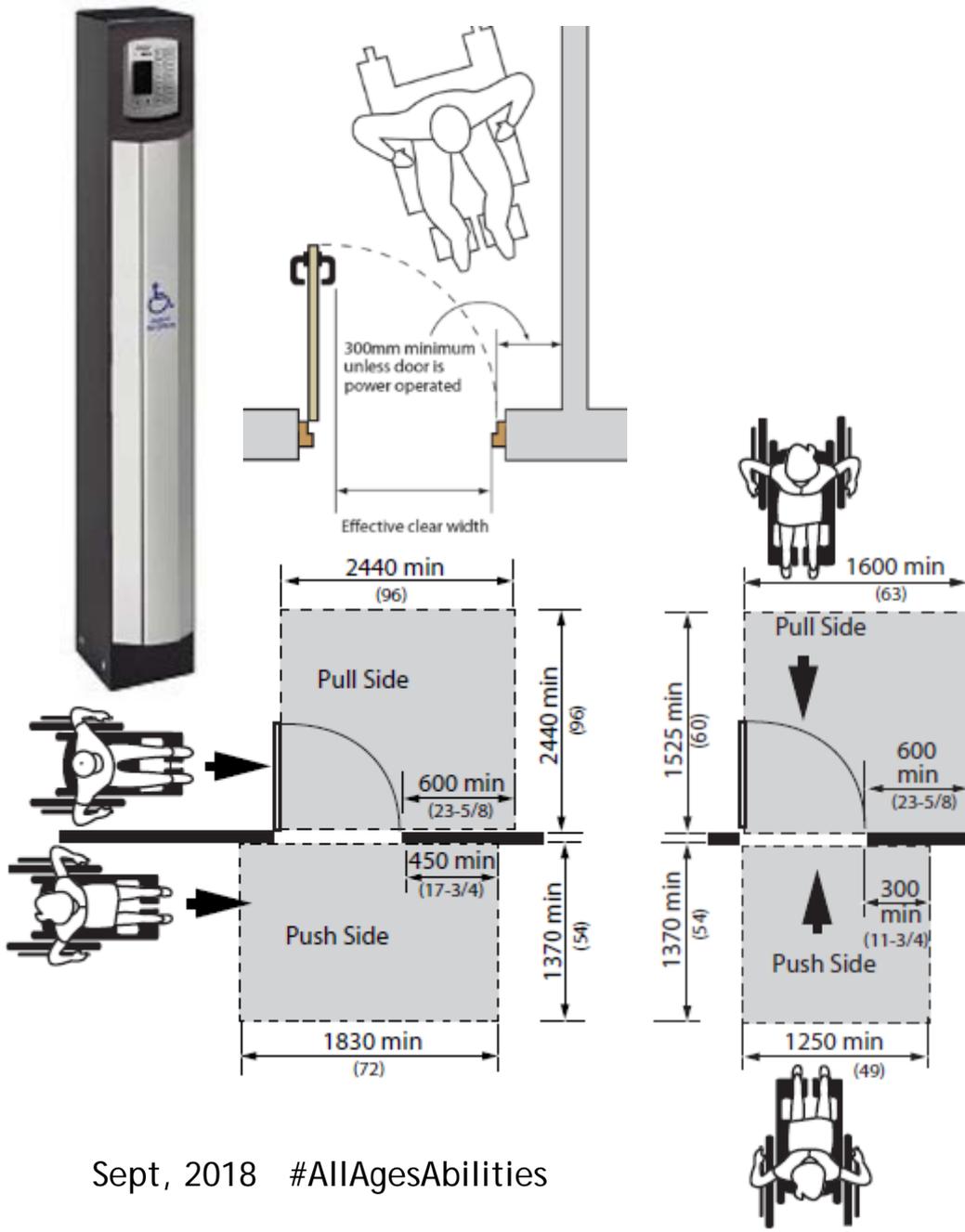
- Path of travel
- Level & Stable accessible surface
- Accessible garbage
- Signage

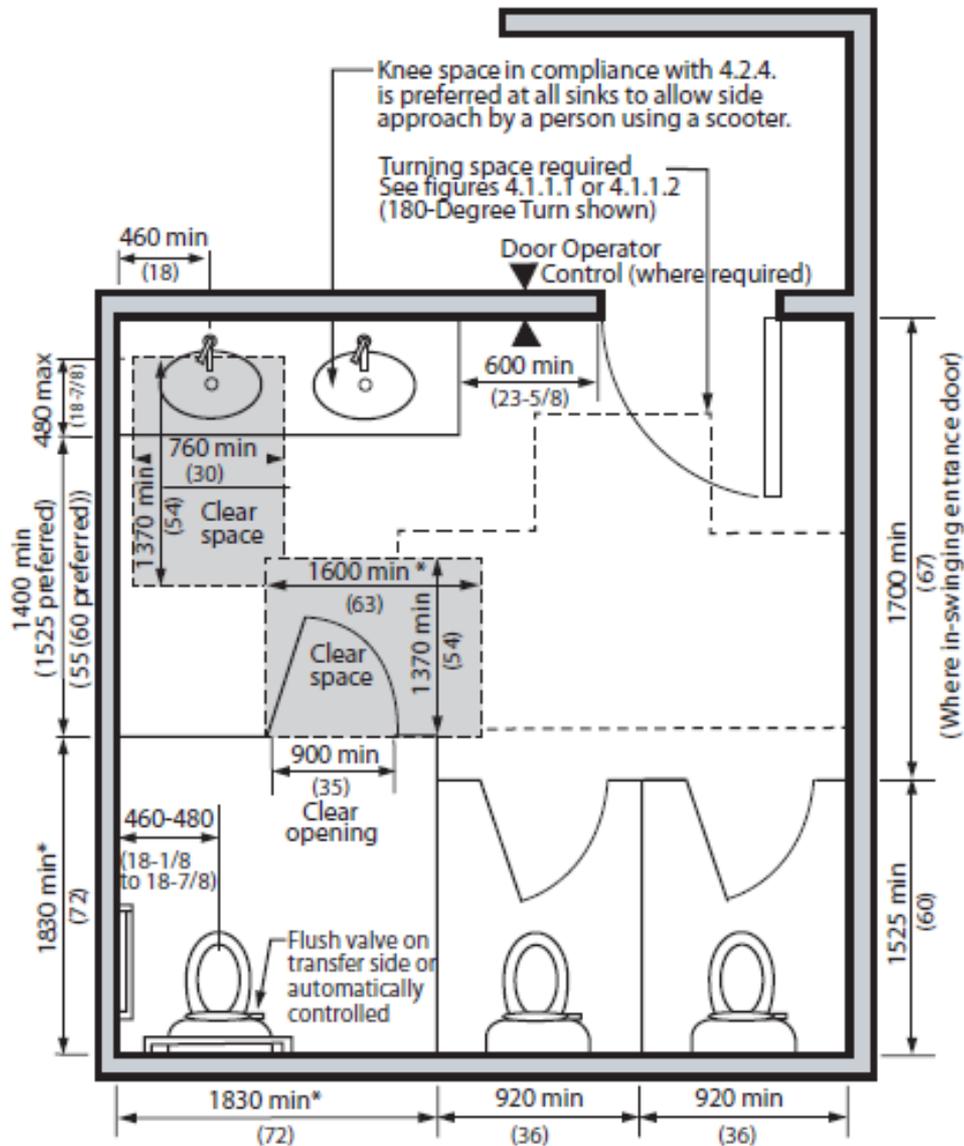


Doors

- Clear width
- Level Manoeuvring Space
- Power operators
 - with clear floor space to access
 - Location related to door
 - Which rooms
- Thresholds
- Hardware
- Colour contrast
- Security access

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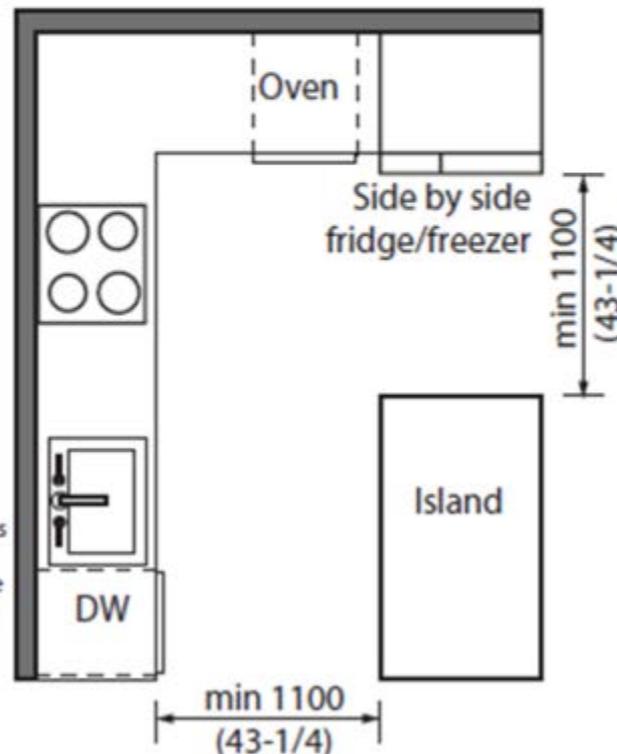
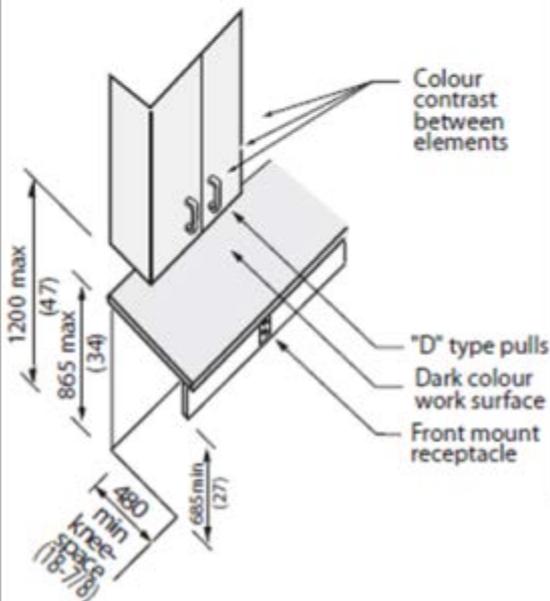
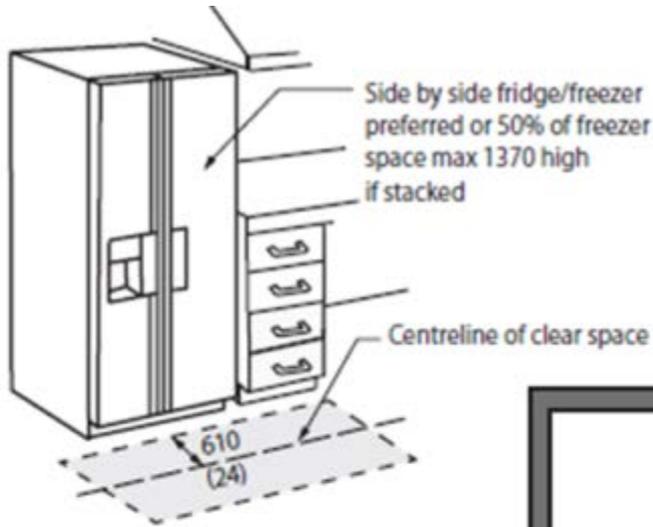
Barrier-free Washrooms

- Power operators
- Transfer space clear to back wall
- Baby change tables for both Men's and Women's
- Turn circle
- Accessible Urinals and grab bars
- Break-away coat hooks



Kitchens

- Path of travel and clear floor space to common-use elements
- Knee space for Sink and Microwaves
- Accessible control heights
- Bariatric size
- Turn circle
- Lower counter
- Controls at front of equipment
- Raised dishwasher
- Lowered upper cabinets
- Drawer and cabinet hardware
- Fridge freezer height



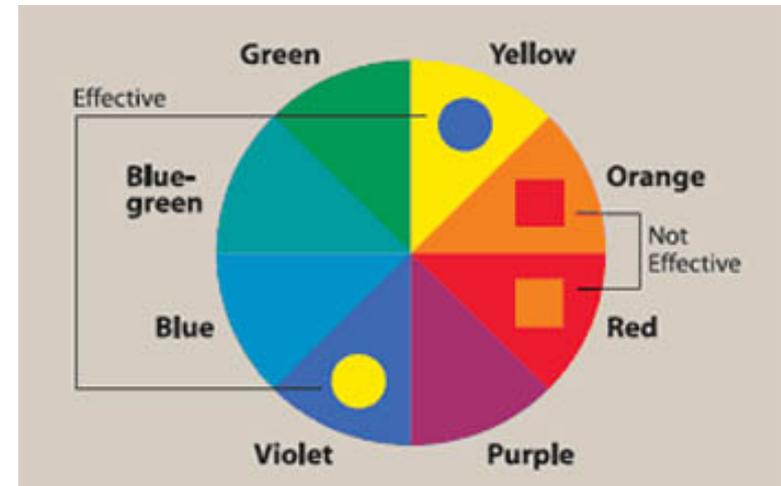
Accessible Recreational Facilities

- Access to pool or workout areas
- Accessible route (ramp or lift) into the water at pools
- OBC access into pools



Accessibility - Colour Contrast

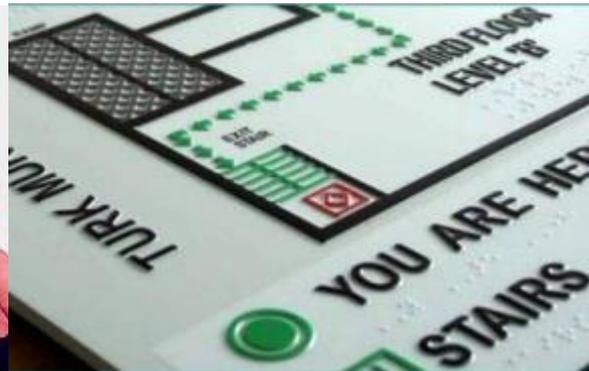
1. At least 50-70%
(but max 30% on patterns)
2. Gates & fences – hardware & gate
3. Between Tactile attention indicator surfaces & surrounding ground
4. Ramps – at the top and bottom
5. Stair – nosings from tread depth
6. Handrails - from wall
7. Street furniture – from surroundings
8. Controls and operating mechanisms - from walls or surfaces
9. Information on visual displays
10. Signage - lettering, numerals, pictograms, and symbols from background
11. Detectable warning surfaces - at Stairs & Curb Cuts



Signage/ Wayfinding

- Size to distance
- Font – Sans Sarif
- Colour Contrast
- Braille translating words not room numbers

Height from ground or floor
Tactile maps
Shape



ities

Easier Than You Think Track & Recycling

1. On an accessible route
2. Dumpsters recessed into the ground and equipped with lightweight, easy-lift lids
3. If enclosures: an accessible entrance into the enclosure leading to door of the dumpster



http://www.fairhousingfirst.org/documents/TECHNICAL_OVERVIEW.pdf



Easier Than You Think Laundry



Picture shows front load machines with colour contrasted controls on front edge



Easier Than You Think Cooking

1. Stove top
2. Wall oven
3. Pull-out shelves
4. Clear floor space
5. Counter heights



Easier Than You Think Kitchens



Easier Than You Think Kitchen Cabinetry



Easier Than You Think Toilets



Easier Than You Think Bathroom Grab Bars

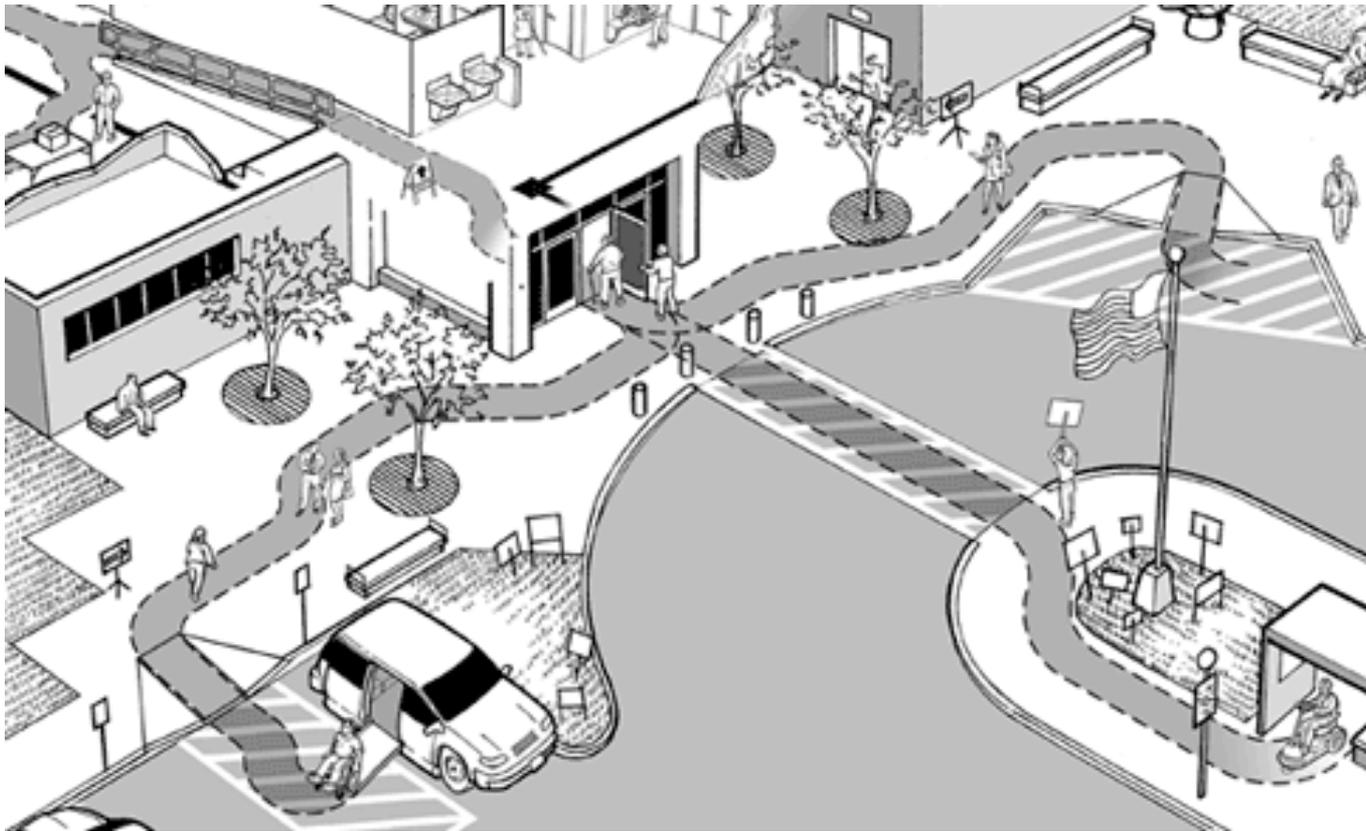


Easier Than You Think Gardens

- Correctly sized raised planters
 - Good space between planters
 - Knee space beneath planters
 - Solid surface walkway around the planters
-
- Source:
renovation-headquarters.com



Connecting the Path

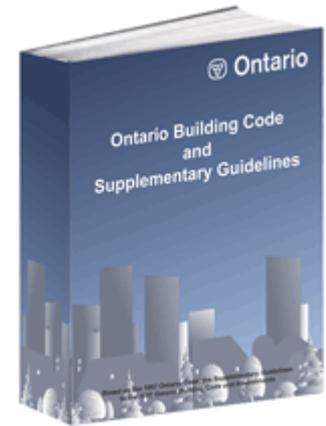


Understanding the Law



Accessibility - Legal Requirements

1. Ontario Building Code (OBC) 2012 (Accessibility Updates)
2. Accessibility for Ontarians with Disabilities Act (AODA) - Part IV Design of Public Spaces



OBC Accessibility

Part 3 – Commercial and Institutional Bldgs Section 3.8

3.3.4.9. Stud Wall Reinforcement

(1) If wood wall studs or sheet steel wall studs enclose the main bathroom in a *dwelling unit*, reinforcement shall be installed to permit the future installation of the following:

- (a) for a water closet, a grab bar described in Clauses 3.8.3.8.(3)(a) and a grab bar described in Clause 3.8.3.8.(3)(c),
- (b) for a shower, a grab bar described in Clause 3.8.3.13.(2)(f), and
- (c) for a bathtub, a grab bar described in Clause 3.8.3.13.(4)(c).

Missing?

1. In ceilings for lifts
2. In corridor for handrails



OBC Accessibility - Apartments

3.8.2. Occupancy Requirements

3.8.2.1. Areas Requiring Barrier-Free Path of Travel

(5) In a Group C *major occupancy* apartment *building*, not less than **15%** *suites* of residential occupancy shall be provided with a *barrier-free* path of travel from the *suite* entrance door into the following rooms and spaces that shall be located at the same level as the *barrier-free* path of travel:

- (a) at least one bedroom,
- (b) at least one bathroom conforming to Sentence (6),
- (c) a kitchen or kitchen space, and
- (d) a living room or space.

(6) Bathrooms required by Clause (5)(b) shall,

- (a) contain a lavatory,
- (b) contain a water closet,
- (c) contain a bathtub or a shower,
- (d) have wall reinforcement installed in conformance with Sentence 3.3.4.9.(1), and
- (e) be designed to permit a wheelchair to turn in an open space not less than 1 500 mm in diameter.

(7) The number of *suites* described in Sentence (5) having 1, 2 or 3 or more bedrooms shall be in proportion to the number of *suites* of residential occupancy having 1, 2 or 3 or more bedrooms in the remainder of the *building*.

(8) The *suites* described in Sentence (5) shall be distributed among *storeys* that are required by Article 3.8.2.1. to have a *barrier-free* path of travel, having regard to the height of the *suite* above *grade*.

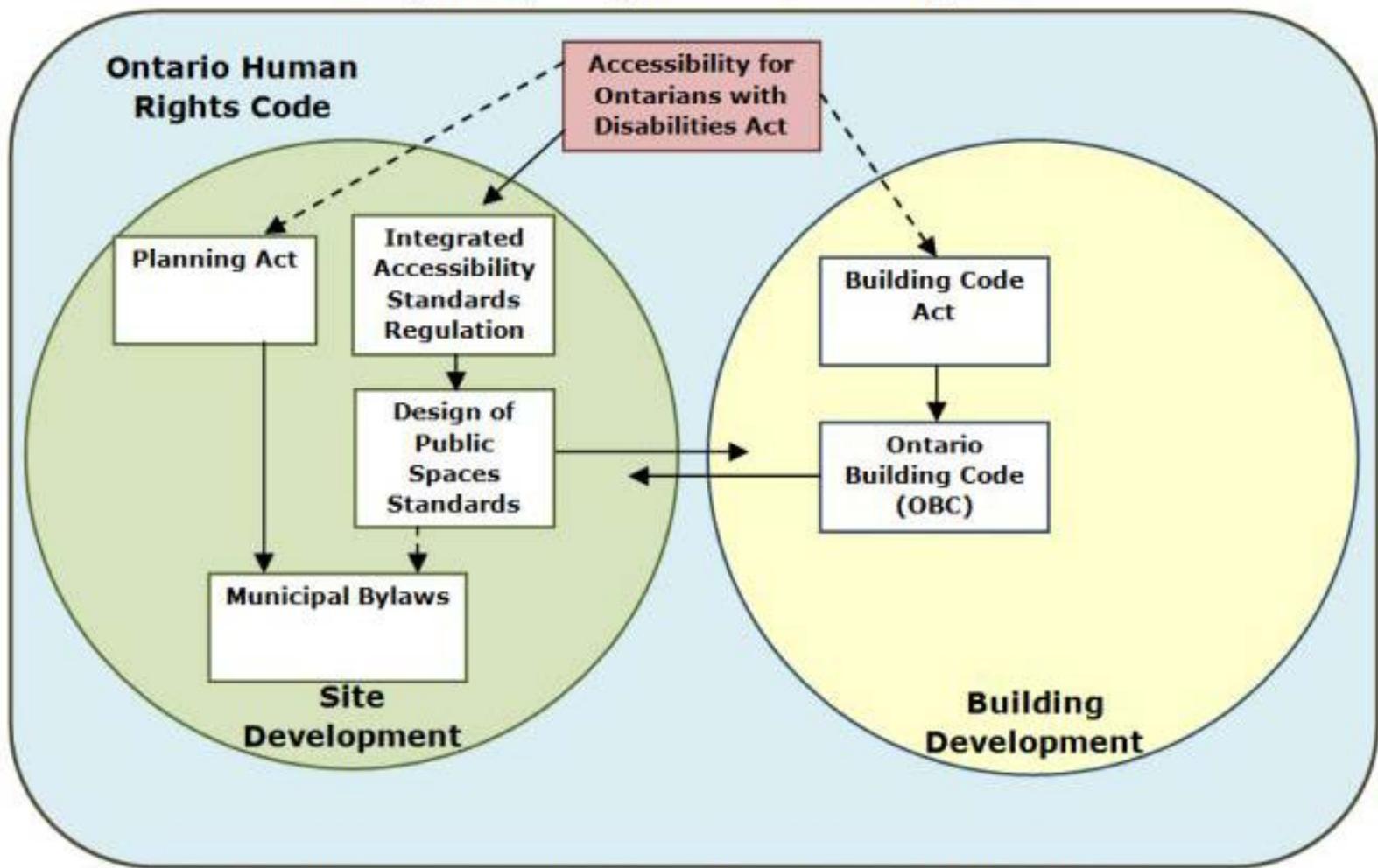


AODA - What is it?

1. Customer Service Standard
2. Integrated Accessibility Standards:
 - a) Information and Communication
 - b) Employment
 - c) Transportation
 - d) **Design of Public Spaces (Jan 1, 2013)**



Ontario Law



Understanding the Law

1982 - 2 laws passed

1. Canadian Charter of Rights and Freedoms



2. Ontario Human Rights Code amendments



Both laws ban discrimination because of disability



Change is Afoot



Canada

Minister of Persons with Disabilities

Carla Qualtrough

➤ **Accessible
Canada Act**



Ontario

Minister of Accessibility

Raymond Cho



Happening Everywhere



Canadian RAIC

Age-Friendly Housing Options Task Force

1. Member Resources: Professional Education
2. Member Resources: Practice Resources
3. Advocacy and Outreach:
Government Advocacy
4. Advocacy and Outreach :
Regulatory Advocacy
5. Advocacy and Outreach :
Public Outreach



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Happening Everywhere

4. Calculating the benefits

These are wide-ranging and include:

- the avoidable cost of residential care
- avoidable additional levels of social care
- negative impacts on independent living, employment and social life all of which have human, social and economic significance
- falls and other accidents and the health and care costs triggered
- mental health impacts and impacts on general health
- avoidable hospital admissions
- increased stays in hospital due to lack of accessible housing to return to.

Just one night in hospital costs the NHS around £273⁹ whilst one week's residential care averages £550¹⁰. These costs outstrip the cost of building a home to an accessible standard by a massive scale: each week that residential care can be avoided (an option that is often forced upon disabled and/or older people) would more than cover the government's estimated additional build cost¹¹.

The cost-benefit case for all new housing to be built to Lifetime Homes standard or equivalent plus a proportion as wheelchair accessible is compelling. Awareness of this case is a large part of why accessible housing has been required by policy in London for more than a decade and why accessible standards have been adopted in a growing number of other areas.

Habinteg
Accessible homes
Independent lives

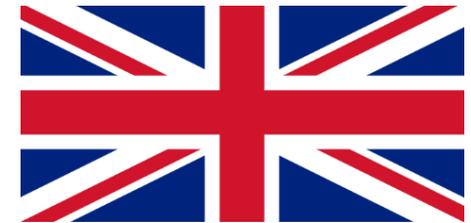


Image shows "Calculating the benefits" about new standard



Happening Everywhere

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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Image shows Adaptable Housing in Saanich, BC

Sept, 2018 #AllAgesAbilities



District of Saanich, BC

Visitable and 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.



Happening Everywhere



Multifaith Housing Initiative (MHI)

OCISO Non-Profit Housing Corporation



Image shows Ottawa developments with 100% visitable units Multifaith Housing Initiative (MHI), OCISO Non-Profit Housing Corporation

Sept, 2018 #AllAgesAbilities



Happening Everywhere



Image shows Salus Clementine project, Ottawa -
42 single-occupancy units, LEED Homes Platinum

Sept, 2018 #AllAgesAbilities



Happening Everywhere



Image Daniel's Corp. Accessible
Design Program

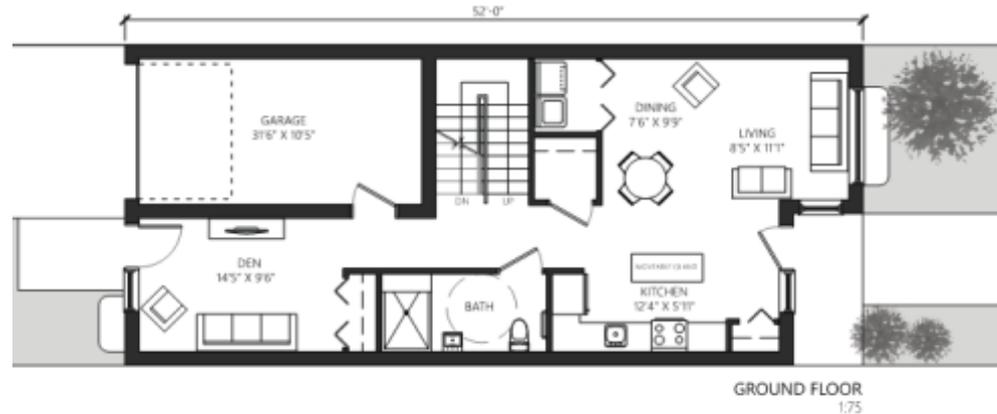
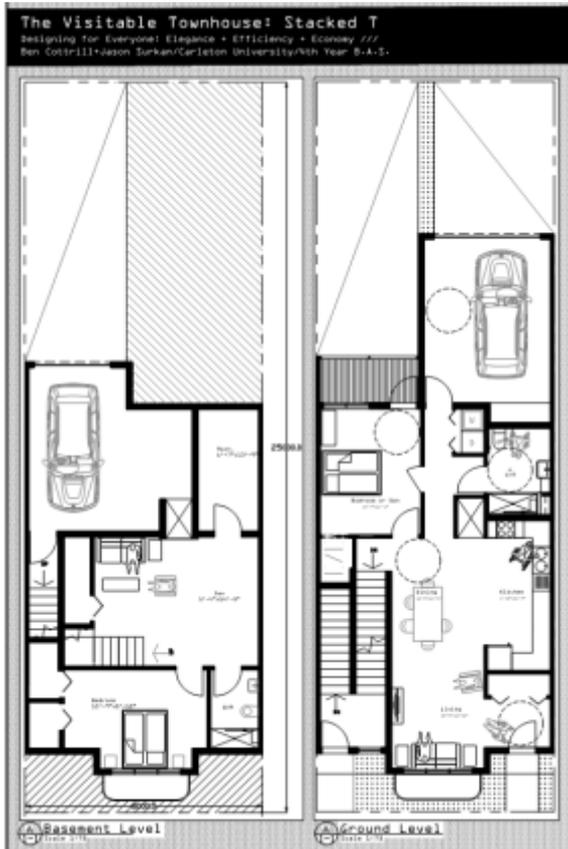
Sept, 2018 #AllAgesAbilities



Happening Everywhere



Happening Everywhere



SARAH MCINTOSH
CARLETON UNIVERSITY
4TH YEAR

Sample universal design residential projects from Canadian students

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Happening Everywhere



In the future
every home will
be designed for
everyone at
every age.
That future
starts *here*.



What is BLD™?

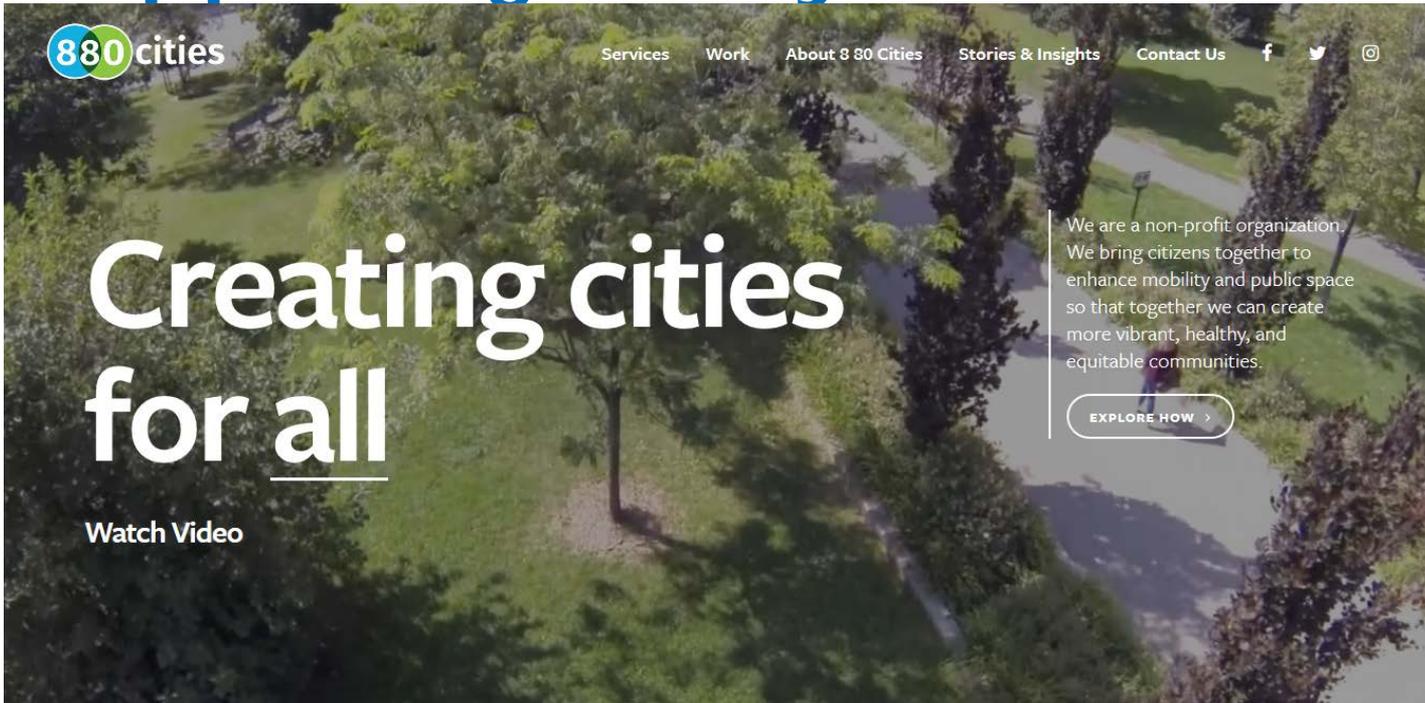
Better Living Design is a sensible design approach to improve how homes are designed, built and remodeled in America. The BLD Institute promotes, educates and encourages wide adoption of Better Living Design practices.

[Learn More](#)

- Designers, Builders & Remodelers
- Homeowners
- Products, Manufacturers & Retailers



Happening Everywhere



880 cities

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Creating cities for all

We are a non-profit organization. We bring citizens together to enhance mobility and public space so that together we can create more vibrant, healthy, and equitable communities.

EXPLORE HOW >

Watch Video

WHAT IS 8 80 CITIES?

We believe that if everything we do in our cities is great for an 8 year old and an 80



International



Division for Social Policy and Development
Disability

HOME ABOUT US IN FOCUS ISSUES RESOURCES NEWS CALENDAR CONTACT US

Convention on the Rights of Persons with Disabilities (CRPD)

Convention

- Ratifications/Accessions: 177
- Signatories*: 161

Optional Protocol

- Ratifications/Accessions: 92
- Signatories*: 92

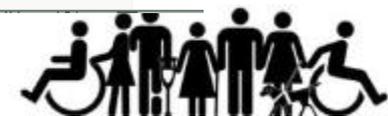
(* Signatories include countries or regional integration organizations that have signed the Convention and its Optional Protocol)

- **10th Anniversary of the adoption of CRPD: 2006 to 2016**
- Infographic on the CRPD and the COSP (prepared October 2016: [Word](#), [PDF](#))
- Status of Ratifications to the CRPD (prepared May 2016) ([JPG](#), [PDF](#)) (also available at the UN Enable Facebook page)
- Support UNiversal ratification of the CRPD
- Full text of the Convention
- The Convention in Brief

[Guiding Principles of the Convention](#)



- The CRPD
- CRPD Homepage
 - Conference of States Parties to the CRPD
 - Committee on the Rights of Persons with Disabilities
 - Ratifications and Signatures of the CRPD and Optional Protocol
 - Map of Signatures and Ratifications
 - Status of Ratification Interactive Dashboard
 - Monitoring of Implementation
 - Civil Society
 - Convention in Brief
 - Timeline of Convention Events
 - Frequently Asked Questions on the Convention
 - Negotiation Archives



International



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Disability

HOME

ABOUT US

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ISSUES

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CALENDAR

Sustainable Development Goals (SDGs) and Disability

- [#Envision2030](#): 17 goals to transform the world for persons with disabilities
Imagine the world in 2030, fully inclusive of persons with disabilities!
- [Infographic Disability-inclusive SDGs \(JPG\)](#) (Image that graphically shows disability-inclusion in the SDGs)
- [Transforming our world: The 2030 Agenda for sustainable Development \(A/RES/70/1\)](#)
- [Sustainable Development Goals \(SDGs\) UN website](#)
- [Monitoring and Evaluation of Disability-Inclusive Development: Data and Statistics](#)



Disability-related events, statements and media:

- [2030 Agenda Introductory Toolkit and Comprehensive Guide for persons with disabilities \(IDA/IDDC\)](#)



International

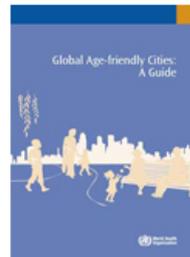



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Ageing and life-course

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- [Health systems that meet the needs of older people](#)
- [Long-term-care systems](#)
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Global age-friendly cities: a guide



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Downloads

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"Global age-friendly cities: a guide" in other languages

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pdf, 2.94Mb
- [Czech](#)
pdf, 2.48Mb
- [Italian \[pdf 335kb\]](#)
- [Korean \[pdf 1.8Mb\]](#)
- [Portuguese \[pdf 1Mb\]](#)

Overview

The purpose of this guide is to engage cities to become more age-friendly so as to tap the potential that older people represent for humanity. It describes the converging trends of rapid growth of the population over 60 years of age and of urbanization, outlines the challenge facing cities, and summarizes the research process that led to identifying the core features of an age-friendly city.

Related links

- [WHO Age-friendly Environments Programme](#)
- [WHO Global Network of Age-friendly Cities and Communities](#)



Happening Everywhere

Living in Place and Liveability Outcomes

What do Ireland, Norway and Singapore have that Canada does not? Universal Design principles.

- ✓ Norway is working toward raising awareness and achieving universal design by 2025.
- ✓ The Singapore government's Accessibility Fund supports public departments by modifying existing structures to make them accessible.
- ✓ Ireland's Centre for Excellence in Universal Design supports professional development by integrating universal design principles into curricula. Source: *World Report on Aging and Health 2016*



Review:

Why 100% visitable & adaptable?

1. Statistics
2. Demographics
3. International agreements, Federal and Provincial Laws
4. Safer -
Falls are leading cause of injury-related visits to emergency room in the U.S. and primary cause of accidental deaths (75 %) in people over 65
5. Make the home easier to use by all family members and visitors
6. Increases ability to live independently for longer
7. Provides flexibility to adapt to changing needs of family members as necessary making future renovations less expensive
8. **Market advantage!**



Thank You

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Helping design create great architecture...
which is also fully accessible

