



Living In Place and Universal Design Housing

Presentation for:
Woodsworth Housing Co-op

June, 2017



Who am I? Who are we?



Thea Kurdi, Associate
Accessibility & Universal Design Specialist



Agenda Today

1. Understanding the Demographics
2. What is a disability?
3. What is Universal Design?
4. Accessibility – Legal Requirements
5. Design requirements and solutions
6. Change is Afoot!



Understanding the Demographics

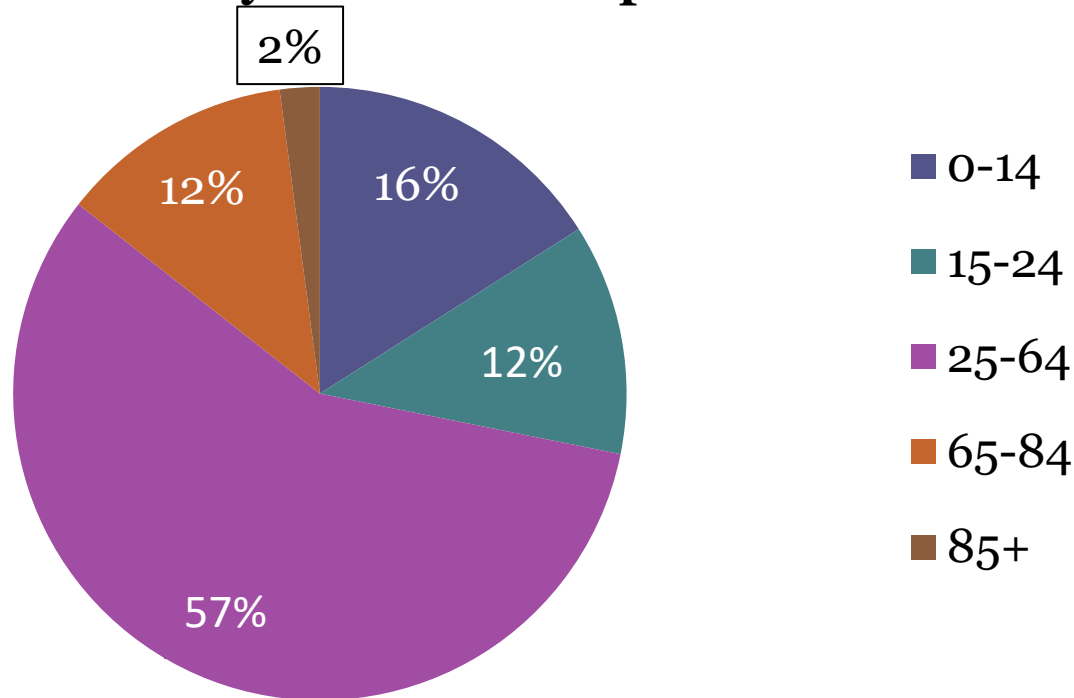


How others see you, is not important..
How you see yourself means everything.



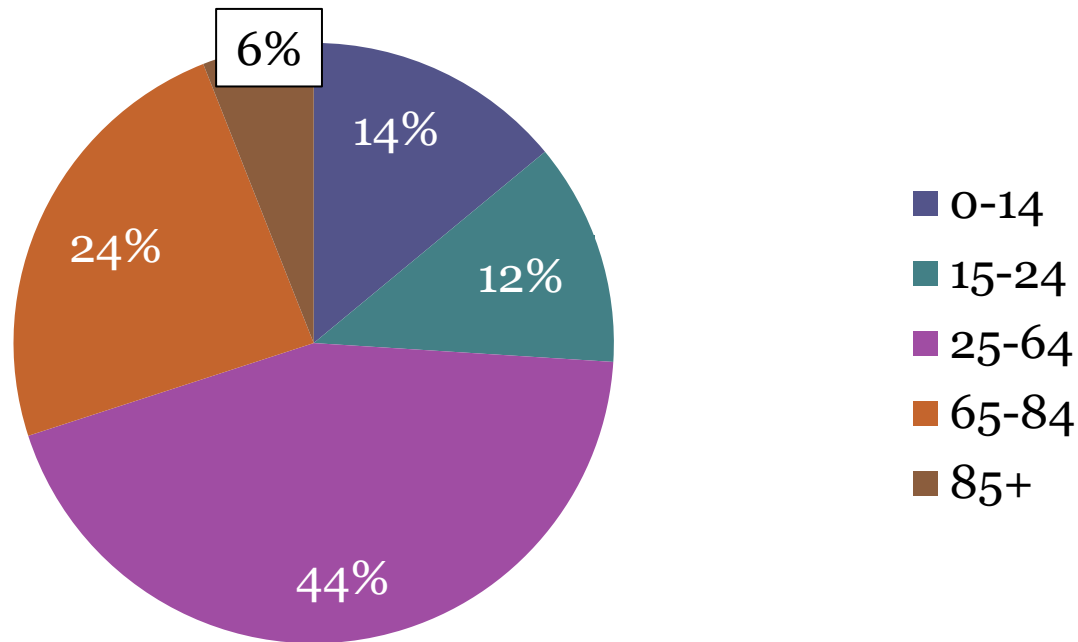
Understanding the Demographics

2011 - City of Toronto Population



Understanding the Demographics

2030 - City of Toronto Population



Understanding the Demographics

1. **Ontario:** Approx. **1.85** million people report having a disability, representing 15.5% of the population
2. **Toronto:** Apply 15.5% to Toronto's population
2.79 million people = 432,450 people with disabilities
3. **2017,** Ontarians aged 65 + will account for a larger share of the population than kids 0-14

70% of disabilities are 'invisible'



Demographics: Older Persons

Have the highest disability rate of any group

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



Understanding the Demographics

AGE
— IN —
PLACE



OR

MAKE
— A —
MOVE?



Image shows a couple and a photo of women with the question Age in Place or Make a Move?



What is a disability?



What is a disability?

1. Blindness or Low Vision
2. Brain Injuries
3. Deaf/Hard-of-Hearing
4. Learning Disabilities
5. Attention-Deficit/Hyperactivity Disorders
6. Medical Disabilities
7. Physical Disabilities
8. Psychiatric Disabilities
9. Speech and Language Disabilities

70% of disabilities in general are "invisible" - including learning disabilities, ADD, medical conditions, etc.



Changing Abilities Over a Lifetime



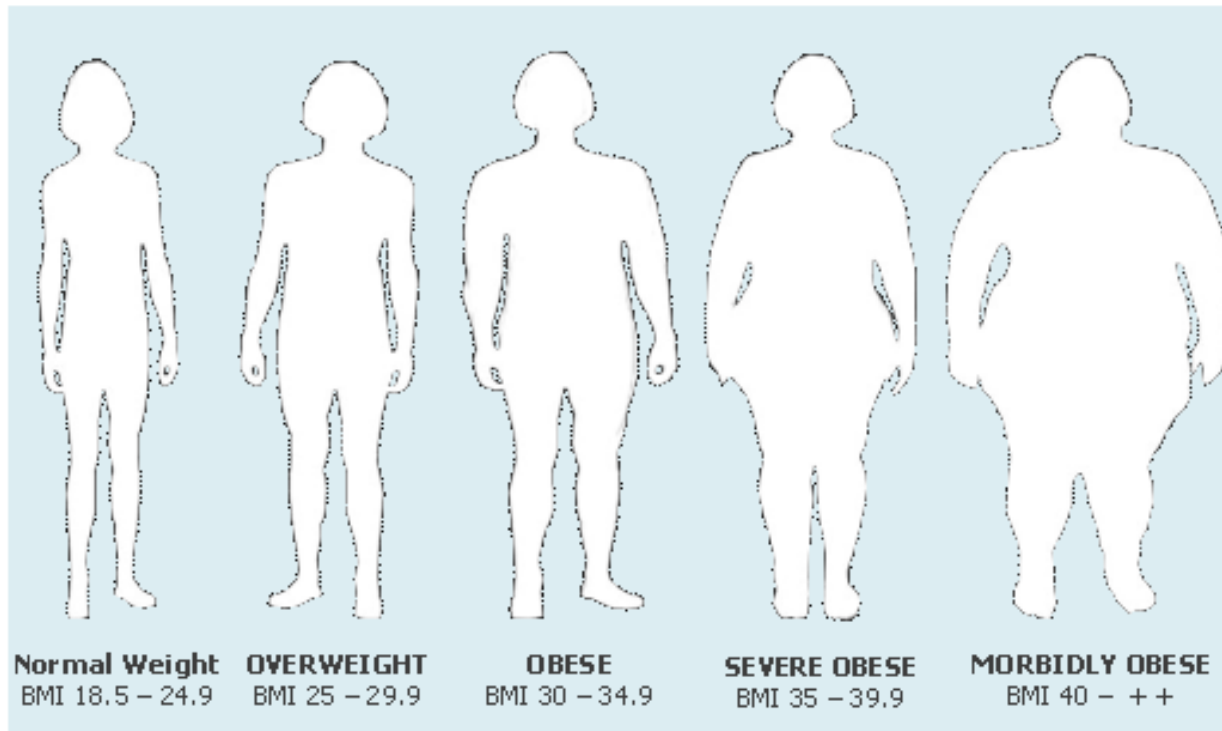
Who are we designing for?

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



Functional Abilities

“Other Disabilities”



Overweight Larger People



June, 2017



Children with Disabilities



June, 2017



Accessibility & Support Services



June, 2017



Temporary Disabilities



Eye patch



Eye shield



Functional Abilities

“Invisible Disabilities”



Functional Abilities

“Other Disabilities”



AODA Employment - now law



Universal Design?

Anthropometric requirements and needs for:

1. Women
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 speak English



The Principles of

Universal Design



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

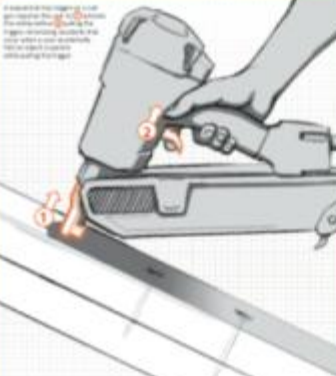
The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.



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.



5 Tolerance for Error
The design minimizes hazards and the adverse consequences of accidental or unintended actions.



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



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.



Anthropometric Considerations



- Wheelchair/Scooter - maneuvering space

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

*CSA dimensions provided as a baseline – for comparative purposes only

**Appendix note only – not a requirement of the CSA Standard

Steinfeld, Paquet and Feathers, **2005**, US

Recommended Value from Study

Inclusion?



Inclusion?



Inclusion?



Inclusion?



Inclusion?



Inclusion?



Inclusion?

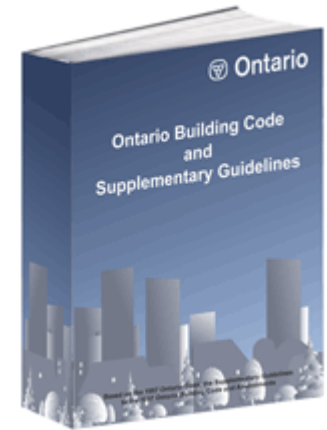


Inclusion?

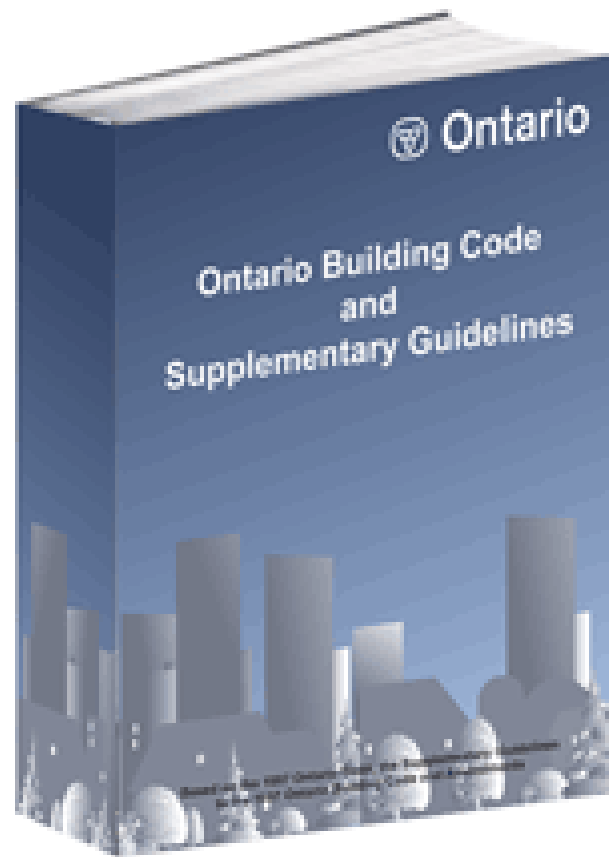


Accessibility - Legal Requirements

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



Ontario Building Code (OBC)



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).



OBC Accessibility - Apartments

3.8.2. Occupancy Requirements

3.8.2.1. Areas Requiring Barrier-Free Path of Travel

1. In the Building Code apartment building is the term used for all multi-unit residential buildings.
2. The Building Code barrier-free design requirements apply equally to all new multi-unit buildings whether the tenure is rental or condominium ownership.
3. The Building Code sets minimum construction standards for all buildings. It does not have one set of standards for rental buildings and another for condominium buildings.



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*.



OBC 2012 Accessibility Updates

Part 3 Include:

1. Barrier-free path of travel – MIN 1100 mm
2. Access to all storeys within a building
3. Visit-able suites in apartment buildings
4. Washrooms
5. Access to pools and spas
6. Accessible and adaptable seating spaces
7. Renovations



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)



AODA - *Current status:* Design of Public Spaces

12. The Regulation is amended by adding the following Part:

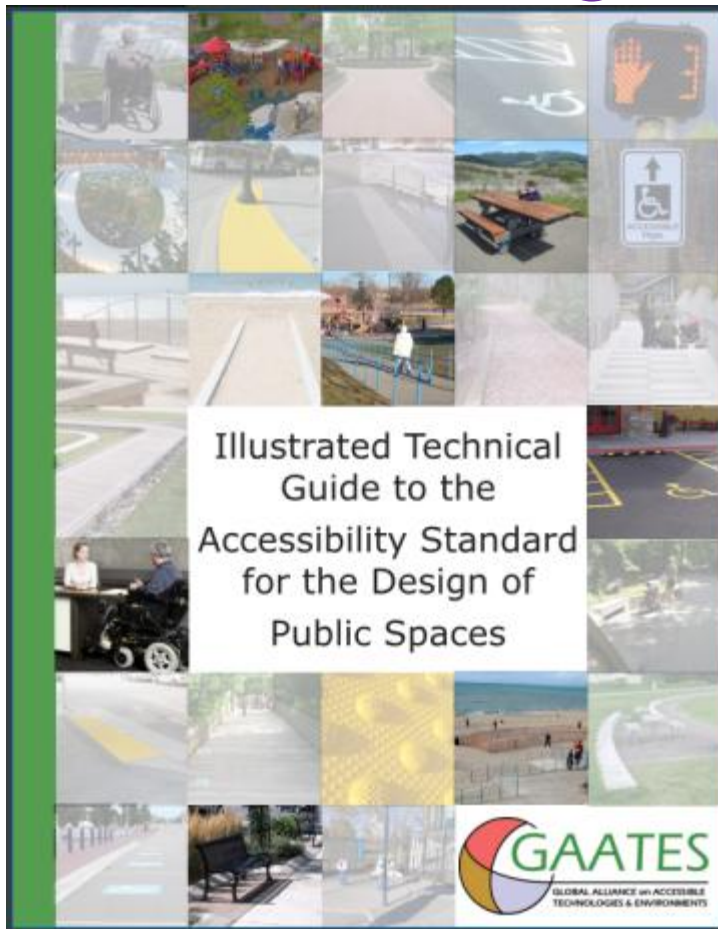
Part IV.1

Design of Public Spaces Standards (Accessibility Standards for the Built Environment)

Definitions, Application and Schedule



AODA - Design of Public Spaces



- Focuses on mostly exterior related items
- Interior requirements focus on Customer Service areas
- Resource: gaates.org/resources-build-environment/



AODA - Design of Public Spaces

1. Exterior Paths of Travel
2. Accessible Parking
 - Type A (Van size but cars allowed)
 - Type B (Car size)
3. Outdoor Public Use Eating Areas (Public consultation)
4. Outdoor Play Spaces (Public consultation)
5. Obtaining Services
 - Service counters (front approach)



Understanding the Law

1982 – 2 laws passed

1. Canadian Charter of Rights and Freedoms



2. Ontario Human Rights Code amendments

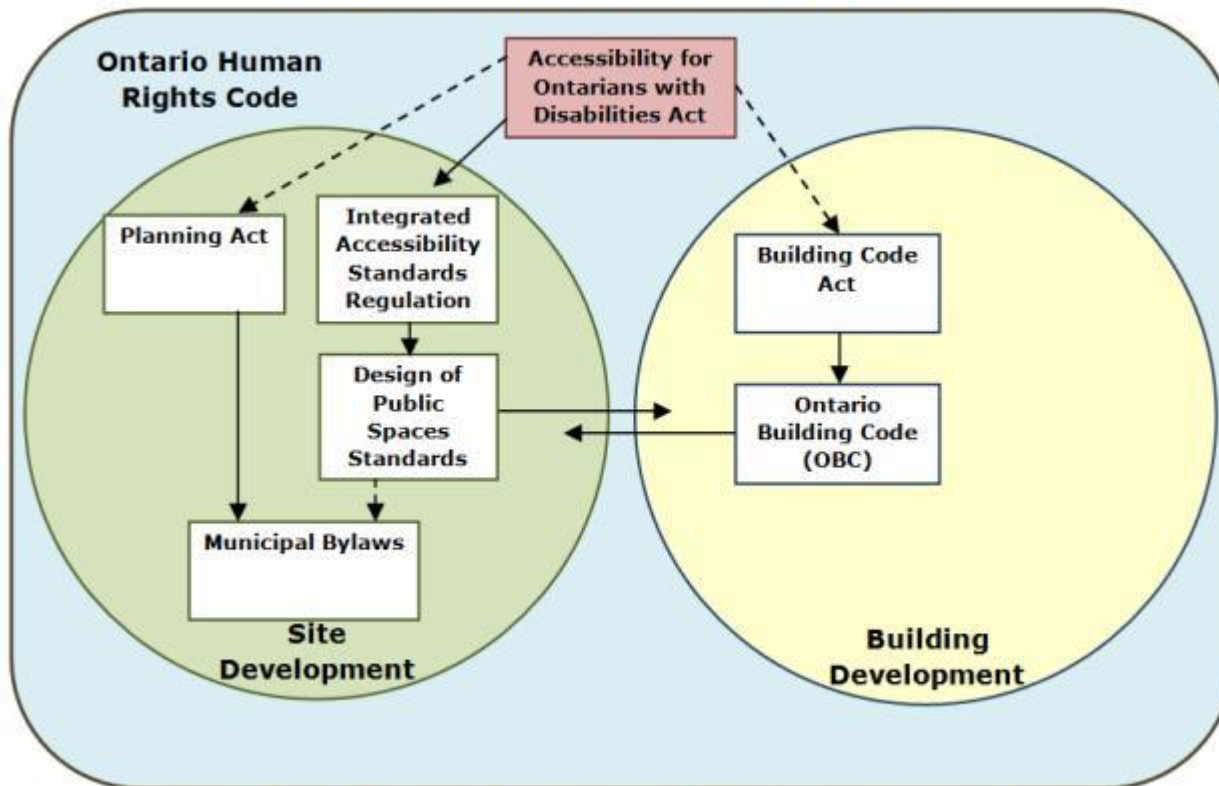


Both laws ban discrimination because of disability



Understanding the Law

- > Direct regulatory relationship dictates applicable accessibility requirements
- - - - -> Indirect regulatory relationship – where accessibility requirements differ between the regulations, the higher level of accessibility prevails



* Some site elements, including exterior routes to barrier-free entrances from municipal sidewalks, parking lots with accessible parking and passenger loading zones, are regulated by the OBC
Some building elements, including service counters, fixed line-up guides and waiting areas, are regulated by the DOPS



Spaces Overview

- Exterior Site
- Lobbies
- Stairs
- Doors
- Accessibility & Mental Health
- Barrier-free Stall Washrooms
- Uni-sex/Gender Neutral Washrooms
- Kitchens/Kitchenettes
- Waiting Rooms
- Staff Lounges
- Meeting / Classrooms
- Offices / HR / Volunteer Areas
- Staff Locker Rooms
- Dining Areas
- Storage
- Computer access
- Accessibility needs for Children
- Life Safety



Accessibility - Common Problems

1. Path of Travel - Continuity
2. Turn circles at dead ends and decision making points
3. Clear floor space at controls
4. Office accessibility
5. Staff accessibility
6. Seating access/distribution and integrated
7. Universal washrooms with adult change benches
8. Power operators
9. Detectable warning surfaces
10. Exit stairs
11. Meeting rooms/Offices
12. Baby change tables



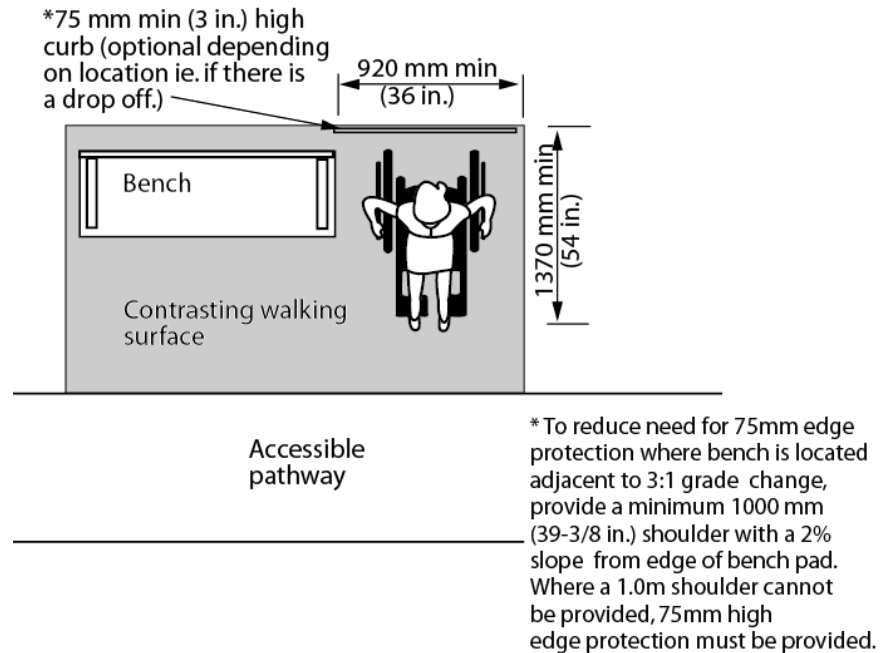
Exterior Site

- 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
- Designated snow piling areas away from all pedestrian routes
- Tactile maps

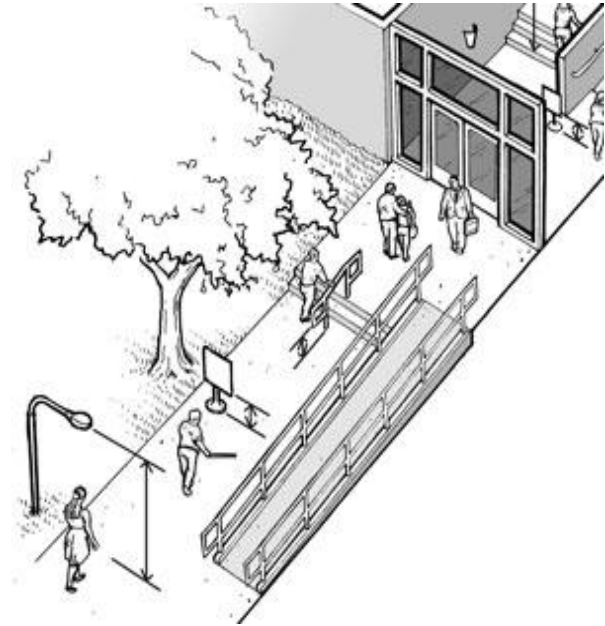
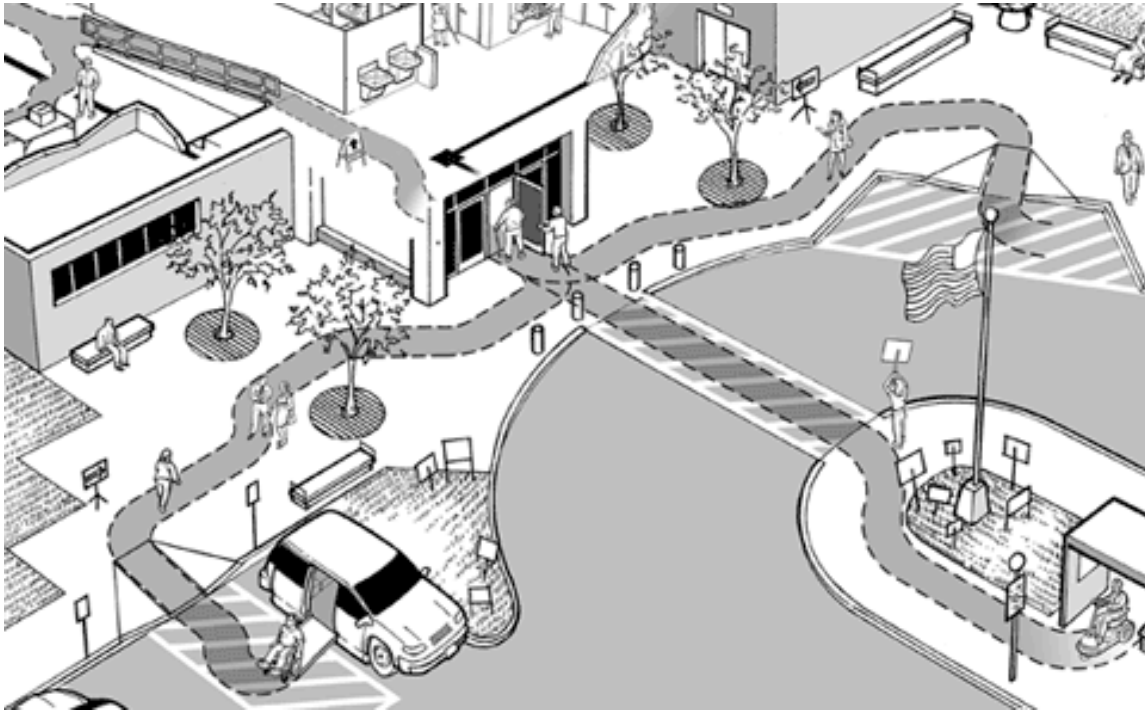


Exterior Site

- Rest areas
(AODA requires public consultation)
 - Level accessible surface
 - Every 30m
 - Accessible bench with wheelchair space immediately adjacent



Connecting the Path



Exterior Site

- Picnic tables
 - Path of travel
 - Clear floor space around tables
 - Knee-space at accessible section
 - Number of accessible sections
 - Parking/Storage for scooters
 - Level accessible surface



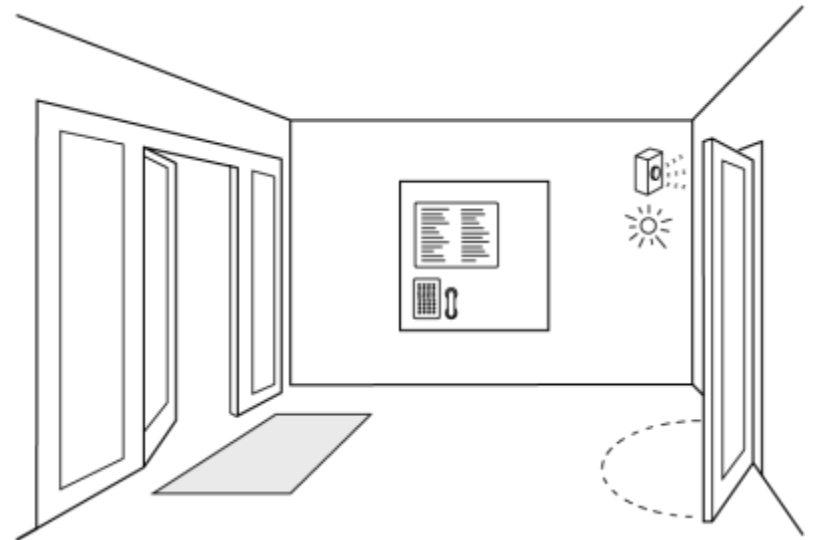
Exterior Site

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



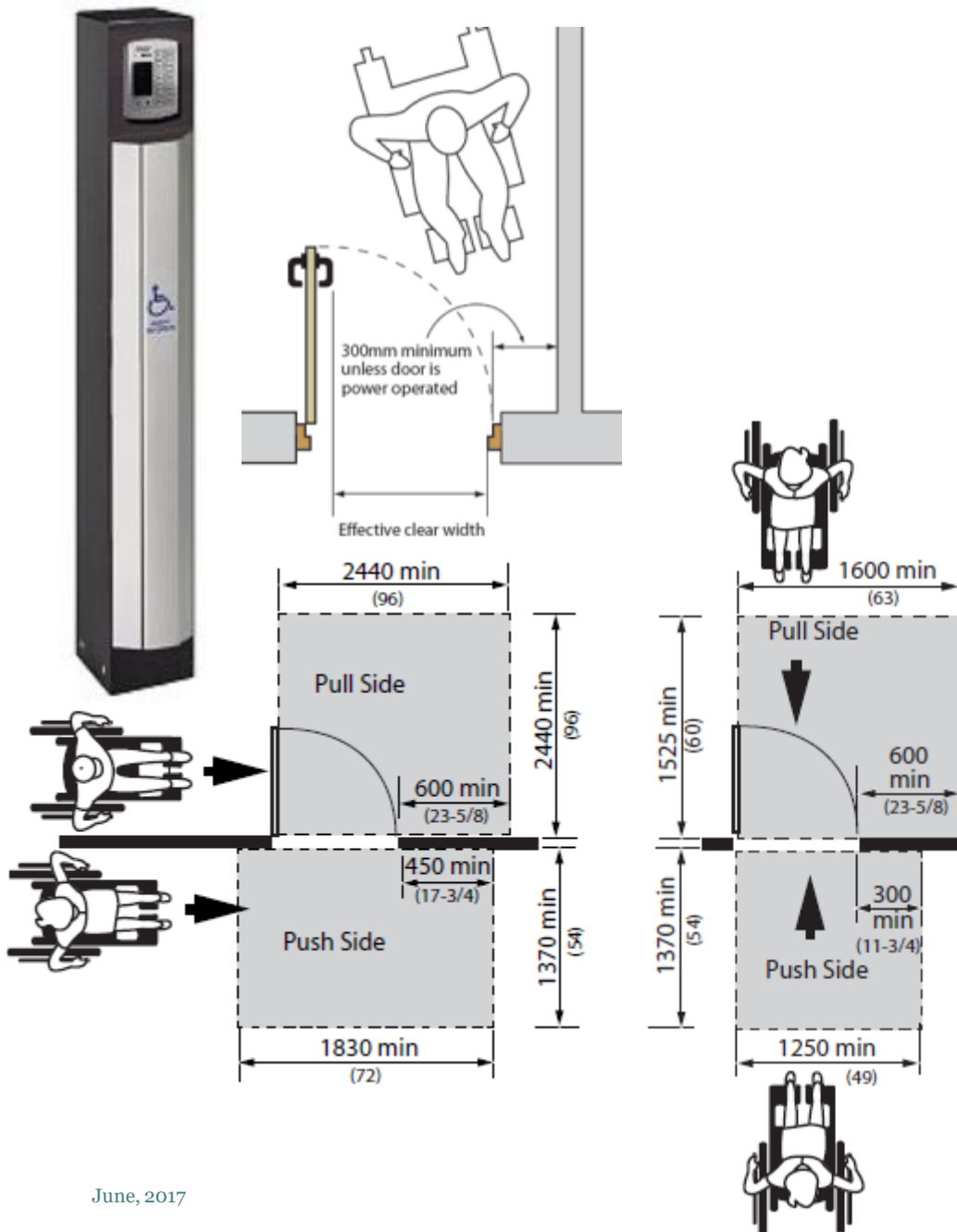
Accessible Doors

- Clear Width – Entrance 36”, otherwise 32”
- Manoeuvring clearances
- Thresholds
- Hardware - does not require tight grasping or twisting - Lever
- Opening Force - 5 pounds of force to operate



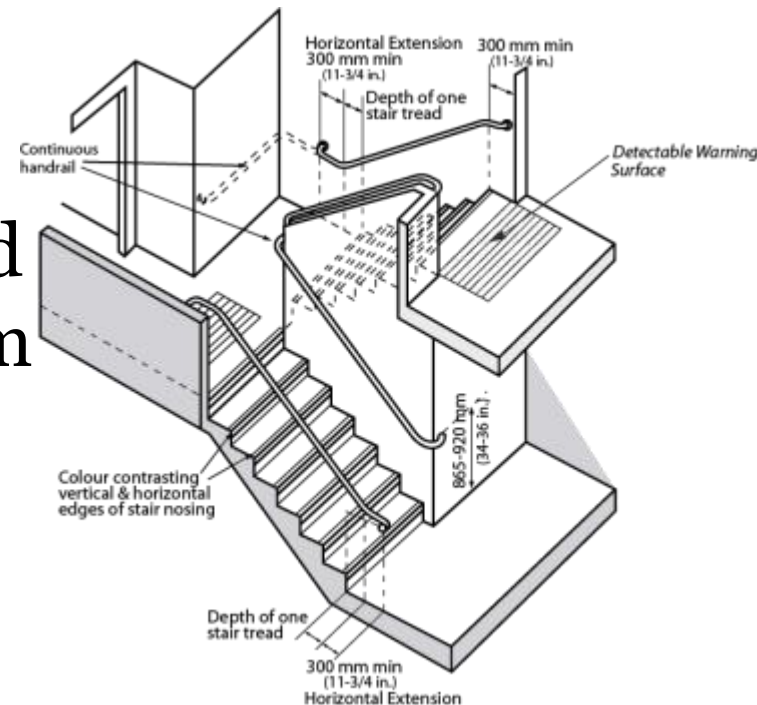
Doors

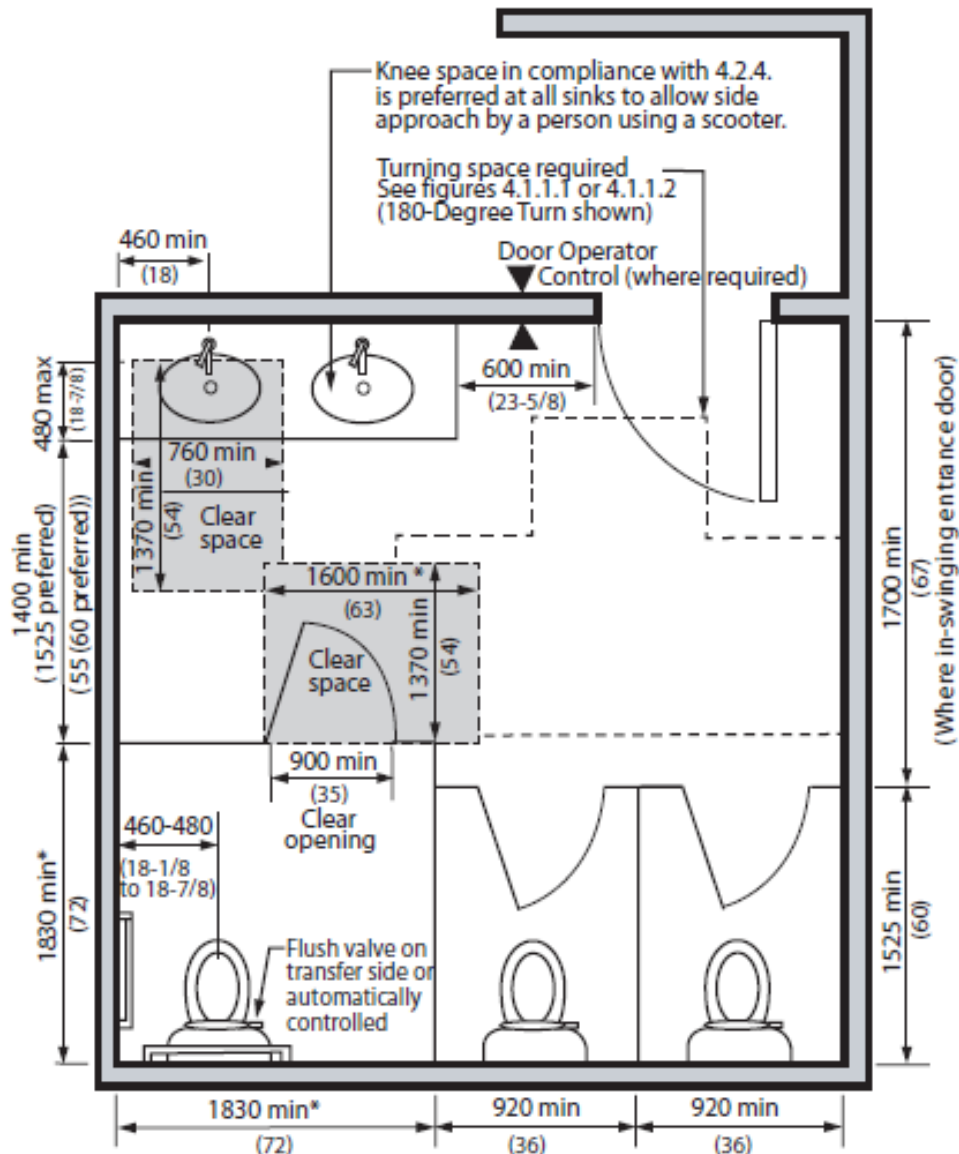
- Clear width
- Level Manoeuvring Space
- Power operators
 - with clear floor space to access
 - Location related to door
 - Which rooms
- Thresholds
- Hardware
- Colour contrast
- Security access



Stairs

- All stairs to be accessible – Exit and Circulation
- Handrails continuous around all landings on both side from top to bottom of entire flight
- Tactile Warning Surface indicators at the top of each entrance landing
- Colour contrasted nosings
- Lighting levels



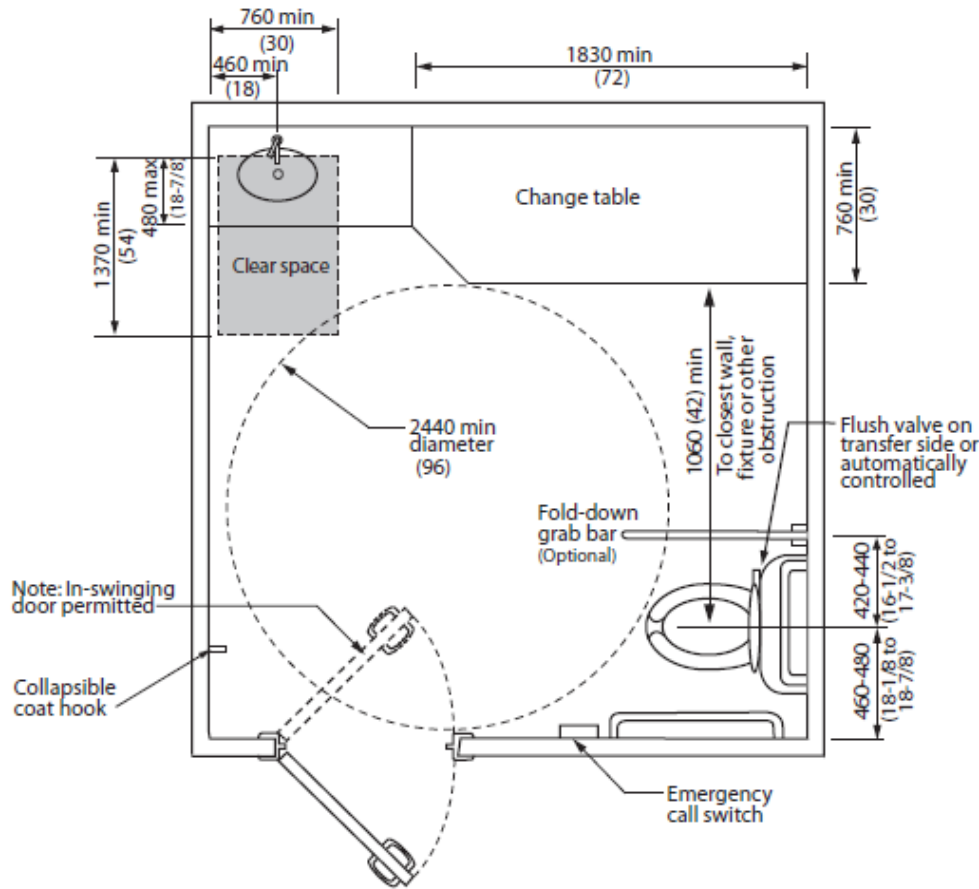


Barrier-free Washrooms

- Power operators
- Transfer space 850x1200 clear to back wall
- Baby change tables for both Men's and Women's
- 2440 turn circle
- Accessible Urinals and grab bars
- Break-away coat hooks



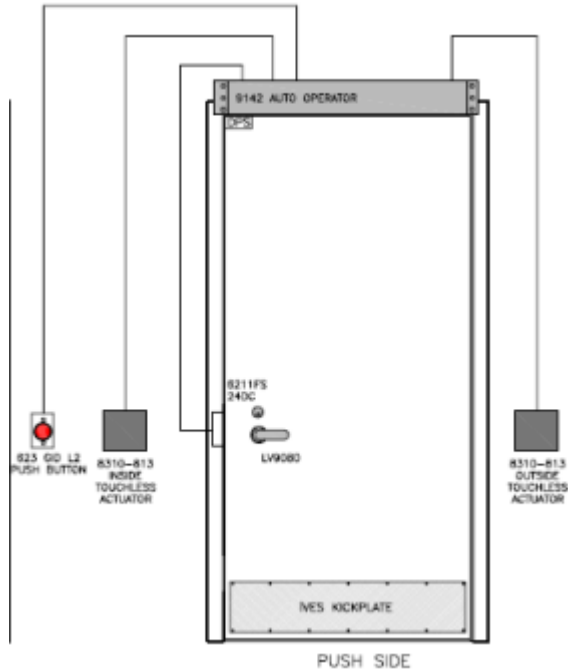
Universal Washrooms



- Accessible sink
- Side wall mounted soap dispenser
- Shelf or counter space at sink for medicines
- Accessible, break away coat hooks



Barrier-free Washrooms



- Power operators with Push-to-lock button and Occupied light
- Transfer space clear 900x1500 clear all the way to the back wall
- 1800-2100 turn circle
- Adult change table with grab bar (1 per building? or 1 per floor?)
- Directional signage
- Adult diaper disposal
- Drop-down grab bar on transfer side of toilet



Adult Change Tables



Barrier-free Washrooms

- All sinks to be accessible
- Children's sinks
- 1500 turn circle inside stall
- Uni-sex washroom immediately adjacent with 1800 dia. turn circle
- Emergency call



Bathroom



Cubix® lavatory faucet

- Source: jaclo.com



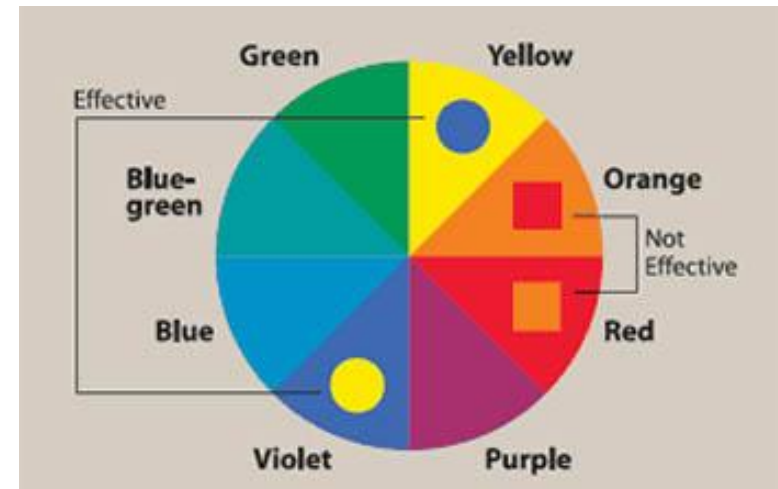
Rev-A-Shelf® Stainless Steel Pegboard

- Source: adaptmy.com



Accessibility - Colour Contrast

1. At least 50-70%
(but max 30% on floors)
2. Gates & fences, Gate hardware & gate
3. Between Tactile attention indicator surfaces & surrounding ground surface
4. Ramps – Strip on floor/group at the top and bottom of the running slope
5. Stair – Nosings from stair surfaces
6. Handrails from surrounding surfaces
7. Street furniture from surrounding surfaces
8. Controls and operating mechanisms from surrounding surfaces
9. Information on visual displays
10. Signage lettering, numerals, pictograms, and symbols from background
11. Detectable warning surfaces from surrounding surfaces at Stairs & Curb Cuts



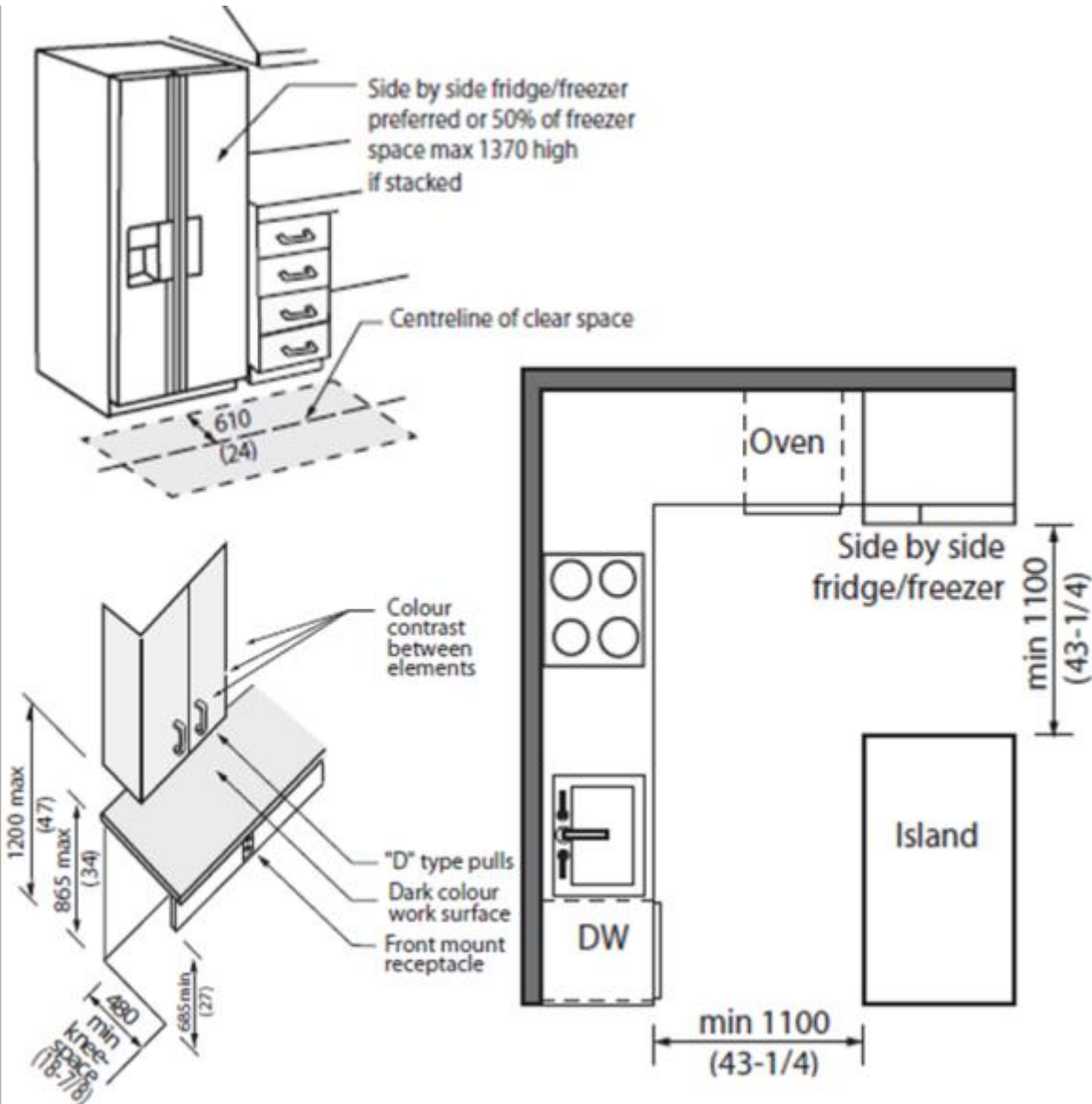
Signage/ Wayfinding

- Size to distance
- Font – Sans Sarif
- Colour Contrast
- Braille translating words not room numbers
- Height from ground or floor
- Tactile maps
- Shape

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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 1800
- Lower counter
- Controls at front of equipment
- Raised dishwasher
- Lowered upper cabinets
- Drawer and cabinet hardware
- Fridge freezer height



Bathroom



Geo Axis™ Single Handle Deck

- Source: wayfair.ca



Touch On

- Source: wayfair.ca



Kitchens



Rev-A-Shelf® Base Filler Cabinet Organizer

- Source: ovisonline.com



Rev-A-Shelf Stainless Steel Pegboard



Kitchens



Rev-A-Shelf Pull-Down Cabinet Shelving System

- Source: rev-a-shelf.com



Rev-A-Shelf® Stainless Steel Pegboard

- Source: adaptmy.com



Kitchens



Flexibility in the home

- Source: pressalit.com

Accessible kitchen

- Source: en.pressalit.com/flexible-solutions-for-kitchens-and-bathrooms/inspiration/accessible-kitchen



Kitchens



Drop-down shelving

- Source: pressalit.com



Universal Design for Aging in Place

- Source: iadvanceseniorcare.com



Kitchens

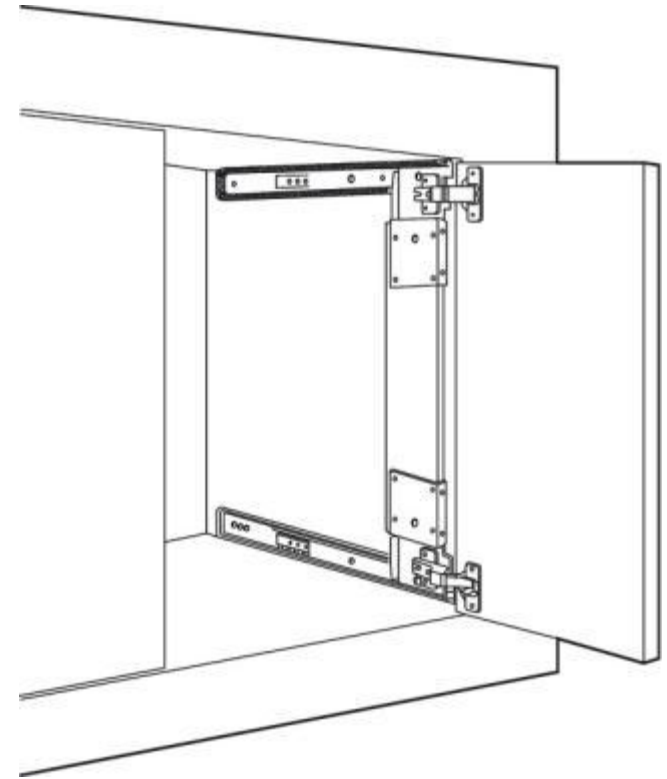


Fully accessible kitchens

- Source: <https://www.howdens.com/kitchen-collection/inclusive-kitchens/fully-accessible-kitchens/>



Kitchens



Slide back cabinets

- Source: <https://www.hafele.com/us/en/product/pocket-door-system-accuride-1234-hinges-not-included-/000000c0000368e700010023/>



Kitchens



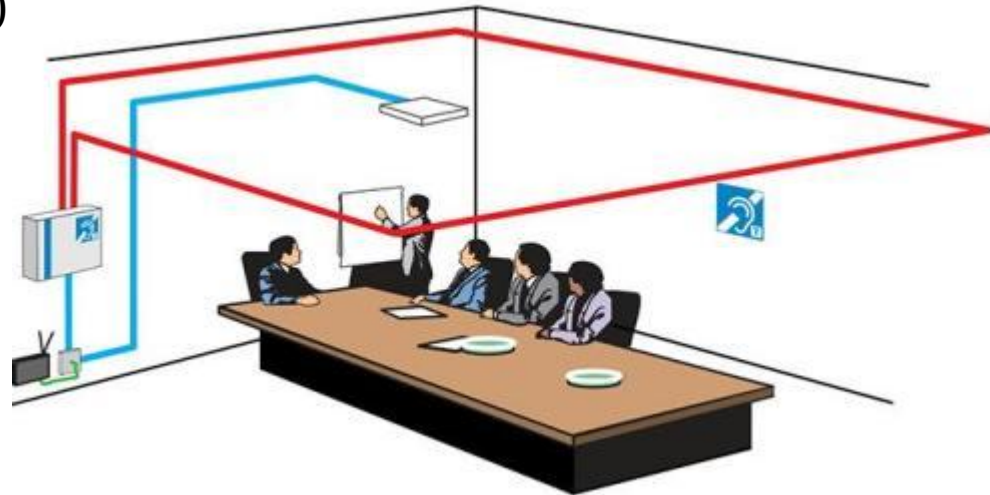
Accessible custom kitchens

- Source: <https://www.pinterest.com/MontellaDomus/cucine-living/>



Meeting Rooms

- Door
 - Clear width
 - Power operated
- Path of Travel to all user elements
- Turning spaces at decision points and dead-ends
- Assistive listening (hearing loops)
- Seating
 - Wheelchair/Scooter spaces
 - Transfer seating
 - Bariatric
 - Space for assistance animals
- Parking
 - Scooters
- Clear space at
 - Table
 - Side tables
 - Presentation podium
- Presentation podium
 - Lowered
 - Accessible AV/IT



Offices - Rental/Staff

- Accessible door
- Rough-in power for future operator
- Path of travel in the room
- Turning spaces in front of and behind the desk
- Seating – Wheelchair/Scooter clear floor space
- Parking - Scooters



Accessible Recreational Facilities

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



Accessible Trash & Recycling Facilities

- Must be on an accessible route
- E.g. Dumpsters recessed into the ground and equipped with lightweight, easy-lift lids.
- If enclosures are built around dumpsters: an accessible entrance into the enclosure leading to the 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



Accessibility needs for Children

- Washroom or change room sinks – Lower
- Seating – Lower
- Handrails – Additional at lowered height with a smaller diameter
- Playgrounds and Play areas –
Accessible Sand and Water tables, Transfer ledges, Ramps



Life Safety

- Areas of Refuge
 - Clear floor space for at least 2 wheelchairs/scooters but should be sized according to user needs
 - Smoke protected
 - Signage – Directional and Identification
 - Sight line to fire fighters elevator or in one Exit Stairs
 - 2-way communication (fire protected) to/adjacent to fire fighters panel
 - Emergency Lighting



Bathroom Grab Bars



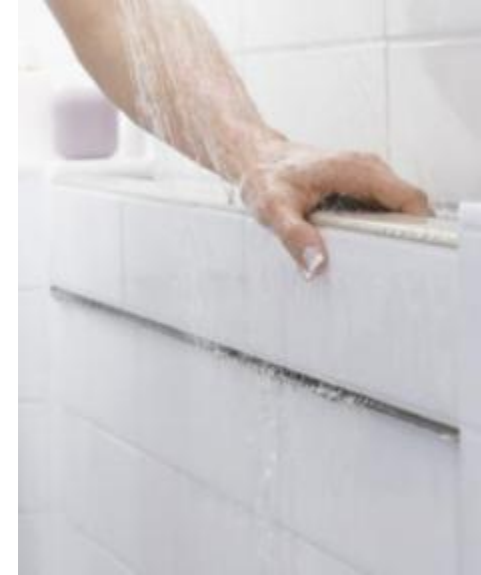
Kingsley Oil rubbed bronze

- Source: moen.com



Designer Wave Grab Bars

- Source: jaclo.com



Designer Wave Grab Bars

- Source: kohler.com



Life Safety

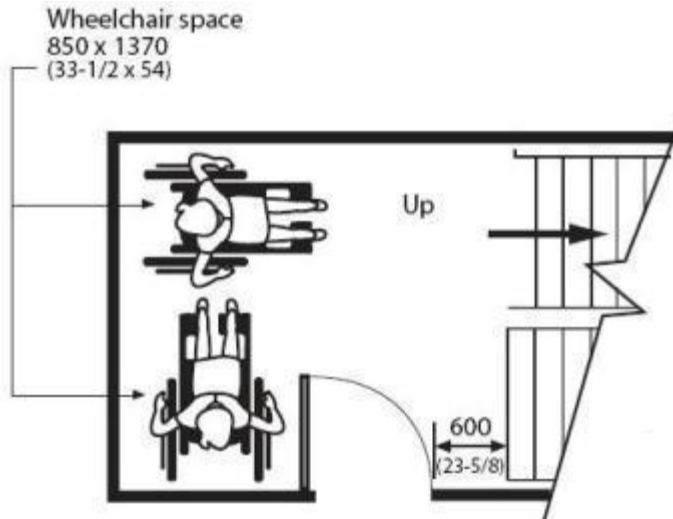
- Areas of Refuge
 - correctly sized raised planters
 - good space between planters
 - allows for knee space beneath planters
 - solid surface walkway around the planters
- Source:
renovation-headquarters.com



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Increased Life Safety Expectations



Change is Afoot



- **Canada**
Minister of Persons with Disabilities
Carla Qualtrough



- **Ontario**
Minister of Accessibility
Tracy MacCharles



Change is Afoot



AARP Livability Index- urban communities higher
“livability” score :

1. Superior public transit
2. Increased social opportunities

“Nearly 90% of people over age 65 indicate they want to stay in their home as long as possible, and four of five in that age bracket believe their current home is where they will always live,” says AARP



Change is Afoot



CARP's Vision for Age-Friendly Cities & Communities



2. Universally Accessible Built Form (public spaces and homes)

CARP recommends that every aspect of the built environment, from streets and walkways, parks and buildings, to neighbourhoods and communities, be made universally accessible to all citizens, regardless of age.



Happening Everywhere

Older Women's Network (OWN) Housing Co-op

By Erin Harris

"Decent affordable housing has a direct relationship to healthy people, and, it is in everyone's interest to have a healthy stable population". These words were uttered by Bea Levis on Sept 28, 1997, during the 10th anniversary celebration of the OWN Housing Co-op.

The project was spearheaded by the Older Women's Network Ontario, a feminist equality-seeking non-profit formed in 1988, to address issues related to poverty, related to low wages, marriage breakdown, inadequate pensions and poor housing.

Right from the beginning, the OWN Network was determined to address the severe housing plights of older women. It was the second such project in Canada. In the late '80's, Mature Women's Housing Co-op was established in Vancouver and continues to thrive.

OWN approached a female architect to draw up the plans for the 142-unit building on the Esplanade in Toronto, and



OWN Doors — door handles sculpted by Ingrid Cry

less of age, gender, cultural diversity, sta- women, and artist Kate Jackson's paint-
-ing in the back lobby.

Picture shows an article about the development of the OWN Housing Co-op



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.

- Image shows “Calculating the benefits”

Habinteg
Accessible homes
Independent lives



Happening Everywhere



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



Happening Everywhere



How Ottawa's newest affordable apartments for the vulnerable only cost \$27 a year to heat

BLAIR CRAWFORD, OTTAWA CITIZEN
More from Blair Crawford, Ottawa Citizen
Published on: November 26, 2016 | Last Updated: November 26, 2016 1:31 PM EST



Michael Backs sits in his wheelchair and looks around his new home, his dog Reggie snuggled close against his chest. ZZ Top

- 42-unit apartment building
- Run by Salus Corp.
- Non-profit focused on providing supportive, affordable housing



Happening Everywhere



Multifaith Housing Initiative (MHI)

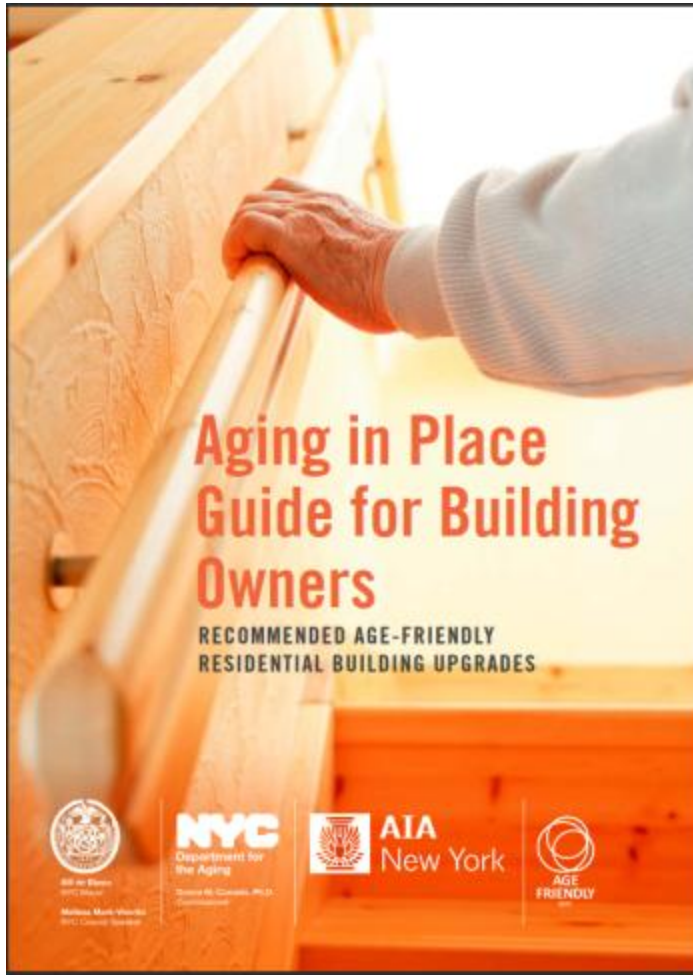
OCISO Non-Profit Housing Corporation



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



Apartments



Apartments

Apartment renovations can help improve quality of life, especially for residents who are not fully mobile, and can prevent falls in the bathroom and other areas.

LIVING AREAS AND THROUGHOUT THE APARTMENT

Install SLIP-RESISTANT surfaces

Provide **NO-STEP THRESHOLDS**

- › Use no-step or compressible rubber thresholds to reduce tripping hazards
- › Thresholds should be no more than 1/2" tall with 1:2 max bevel edges
- › Providing a threshold in a contrasting color improves visibility and can reduce falls

CLEAR PATHS

Provide clear, wide paths of travel

- › Keep hallways and pathways clear of furniture and protruding objects
- › Avoid throw rugs and clutter

GRAB BARS

Add grab bars or handrails along circulation routes

- › See *Throughout the Building*

COLORS

Add contrasting colors at material and level changes

- › Avoid strong patterns and shiny surfaces

RAMP

Provide a ramp or platform lift at level changes

DOORS

Install doors to swing into rooms

- › Bathroom doors are an exception and should swing out

Provide a **SHELF** or other surface at the front door for bags and packages

When replacing **WINDOWS**, consider awning-type units, which are easiest to operate

Provide more **ELECTRICAL OUTLETS** than required by code, at 18" to 24" above the floor

Install **SMOKE AND CARBON MONOXIDE DETECTORS** and test regularly, as required by NYC law

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What did you learn today?



Thank You



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