



DAY 2 - 12:45PM-1:30PM PDT

ACCESSIBILITY & INCLUSIVE DESIGN:

**HUMAN FACTORS &  
ERGONOMICS IN  
ACCESSIBLE WORK**



OPC

OPTIMAL PERFORMANCE  
CONSULTANTS INC





## Accessibility and Inclusive Design: Human Factors/Ergonomics for accessible, productive and safe work & workplaces

Why the science of ergonomics/HFD is essential to move Canada towards being an accessible /Ergonomic employer

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This presentation is also available in an accessible format. Please contact me by email, phone, to let me know what is the best format for you to use.



When were you last excluded on purpose or inadvertently in the workplace? (think of jobs where women are not hired)

What excluded you?

Why do you think you were excluded?

# Where did all the good employees go?



When the science of  
Ergonomics/Human Factors  
is not used, hiring of PwD,  
older and female employees  
cannot occur

Ergonomics/HFD  
IS accessibility in  
the workplace.

With corporate  
maturity we then  
move from  
Accessibility to  
Inclusion.

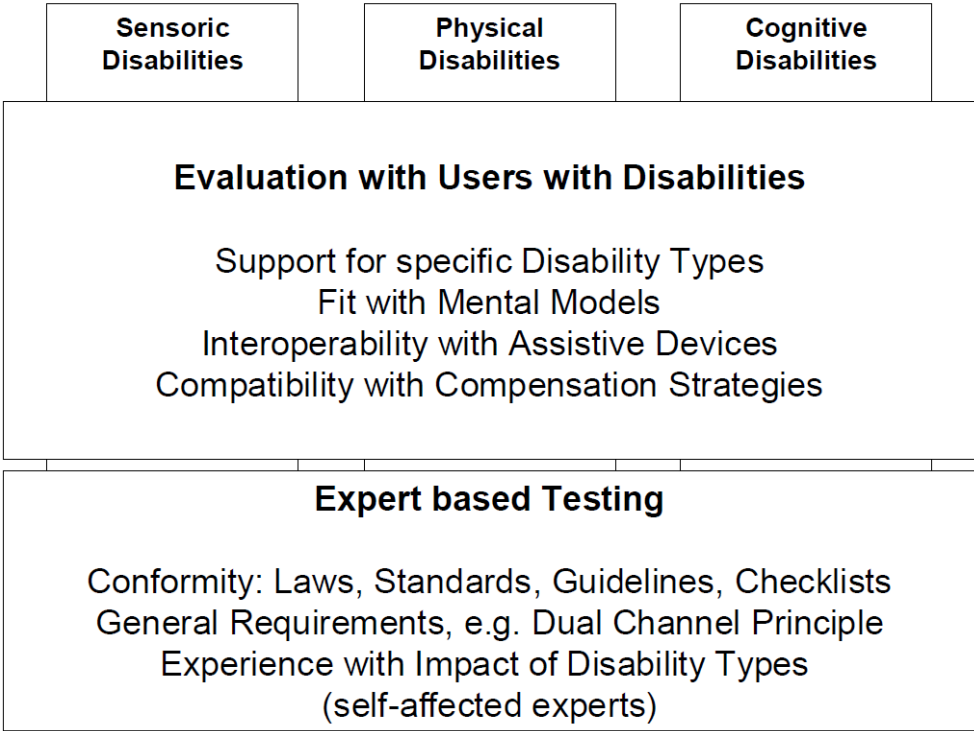
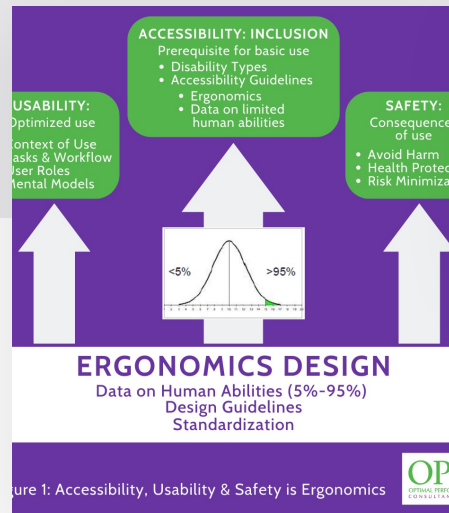


Figure 2: Accessibility Evaluation – Focus on Disability Types



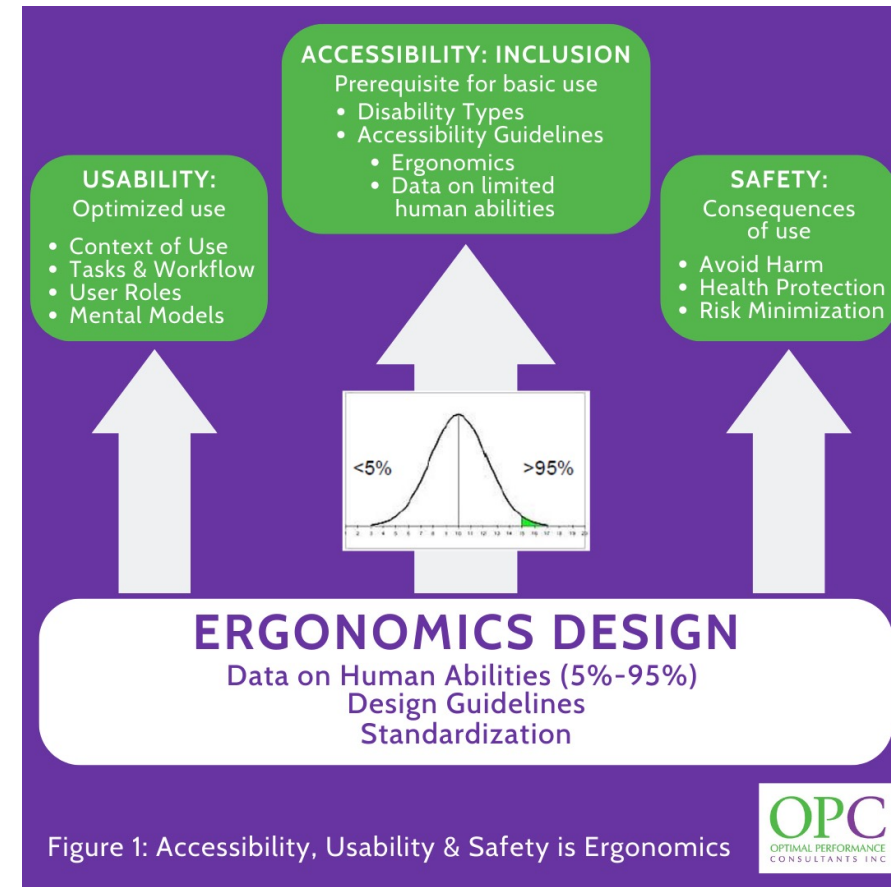
In the absence of E/HFD there cannot occur accessible, inclusive, safe and productive design in the workplace or any built environment.

**Canada** lags the rest of the world in knowing & applying E/HFD in the workplace.



## Ergonomics/Human Factors experts are Board Certified, University Graduates in HF/E

- Anatomy
- Physiology
- Psychology & cognition
- Motor Learning
- Biomechanics
- Kinesiology (how the human body moves )
- Neurology
- Anthropometrics
- Human Factors Design (environment, physical, mental)
- Space, wayfinding, signage, access & inclusion)



# ACCESSIBLE CANADA ACT

**VISION:** Proactively **ELIMINATE & PREVENT** barriers and **ENSURE** greater opportunities for persons with disabilities.

## SERVICE DESIGN & DELIVERY

Receive services that are accessible to all

## BUILT ENVIRONMENT

Move freely around buildings & public spaces

## EMPLOYMENT

Access to employment opportunities & accessible workplaces

## INFORMATION & COMMUNICATION TECHNOLOGIES

Accessible digital content & technologies

## COMMUNICATIONS

Barrier-free services & spaces for persons with communication disabilities

## TRANSPORTATION

Barrier-free federal transportation network

## PROCUREMENT

Ensure purchases of accessible goods, services & facilities

## GOALS OF THE ACCESSIBLE CANADA ACT

- Realization of a barrier-free Canada
- Culture change
- Standards development
- Proactive compliance and enforcement measures
- Monitoring & oversight

## WHERE DOES IT APPLY

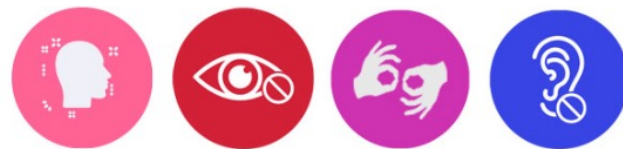
- Parliament
- Government of Canada
- Federally regulated private sector

"NOTHING WITHOUT US": the *Accessible Canada Act* will be implemented in partnership with persons with disabilities and the disability community.



- Provincial Accessibility Laws and Regulations ON, Manitoba, Nova Scotia, Quebec, **BC** and NFLD/Labrador .....

- “Access is not just about ramps or Codes” JESleeth National presentation Interior Designers of Canada
- “There is no Inclusion (DEI) in the workplace until the workplace is designed inclusively “ ©



#### Building Accessibility Handbook 2020

Learn about code accessibility requirements.

▪ [Building Accessibility Handbook 2020](#)

#### BC Housing

Read about information to develop or renovate affordable housing.

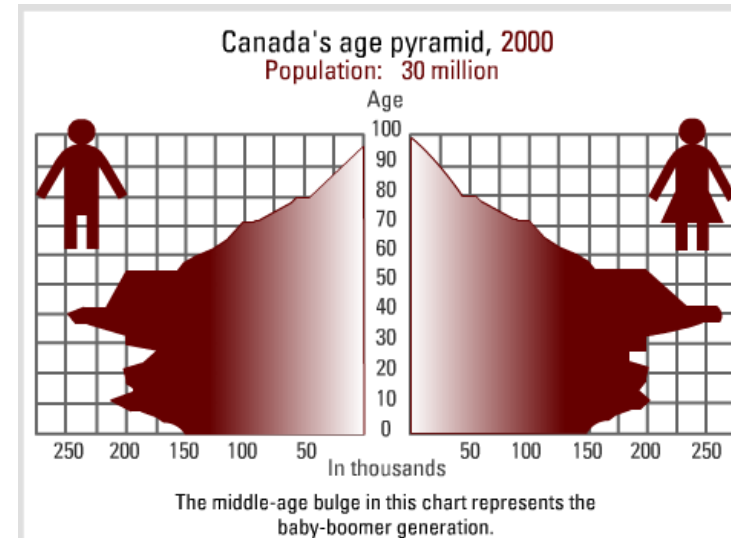
▪ [BC Housing Design Guidelines and Construction Standards](#)

#### Accessibility legislation

Read about B.C.'s new accessibility legislation.

▪ [Accessible British Columbia Act implementation](#)

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- Canadian workforce is aging -14% of Canadians are 55 or older (working age).
  - Who is designing the workplace for aging/mature workers?

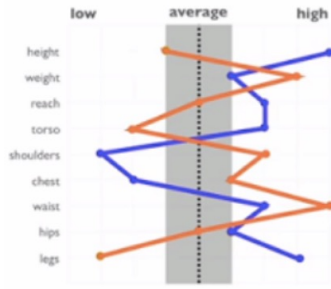


“it met Code”  
“there is a WC ramp”

Designers & Engineers  
**do not take any formal  
courses** about the  
human end user.



**Workplaces  
we designed  
for Inclusion  
of People of  
ALL Abilities,  
age, size,  
gender,  
language &  
culture  
applying  
Ergonomics/  
HFD**



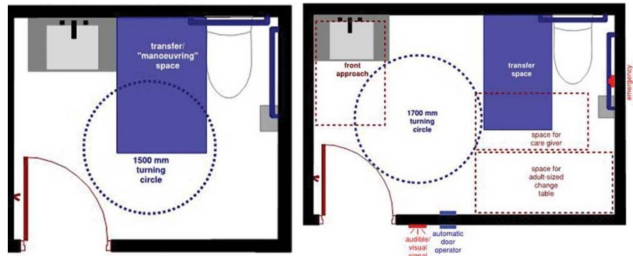
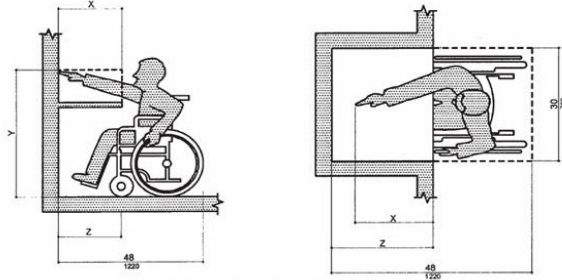
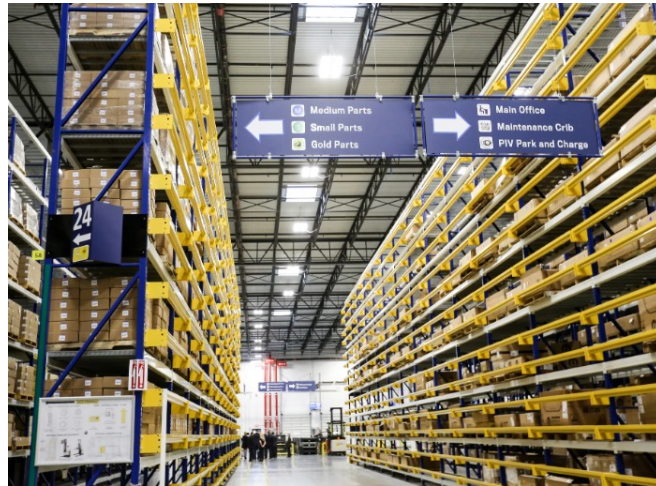


Image 1 of 2 - Figure 10: On the left, a basic universal washroom. On the right, a fully inclusive multi-purpose universal washroom.



NOTE: X SHALL BE  $\leq 25$  in. (635 mm); Z SHALL BE  $\geq X$ .  
 WHEN X < 20 in. (510 mm), THEN Y SHALL BE 48 in.  
 (1220 mm) MAXIMUM. WHEN X IS 20 TO 25 in. (510 mm TO  
 635 mm), THEN Y SHALL BE 44 in. (1120 mm) MAXIMUM.

(b)  
 Maximum Forward Reach Over an Obstruction



**Which workplaces we designed for access, productivity & decreased safety risks using E/HFD.**

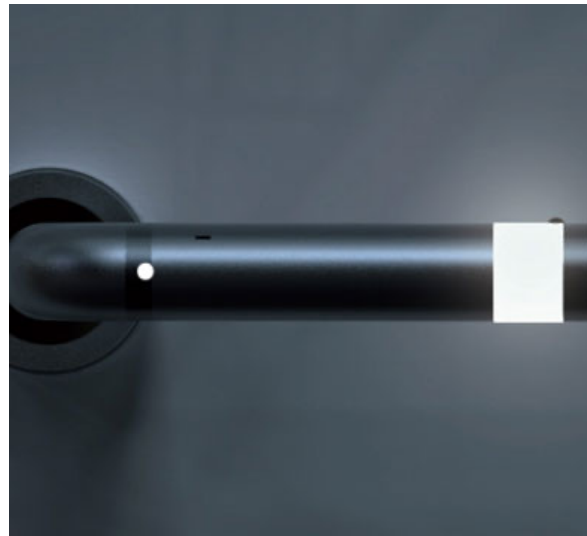


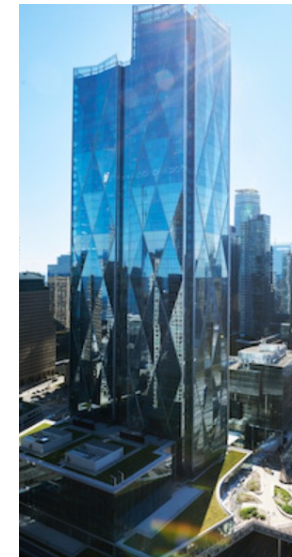
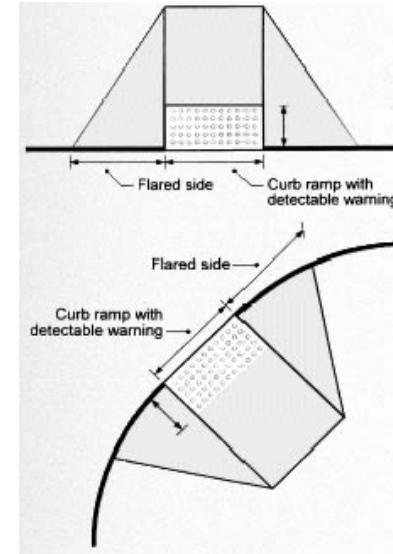
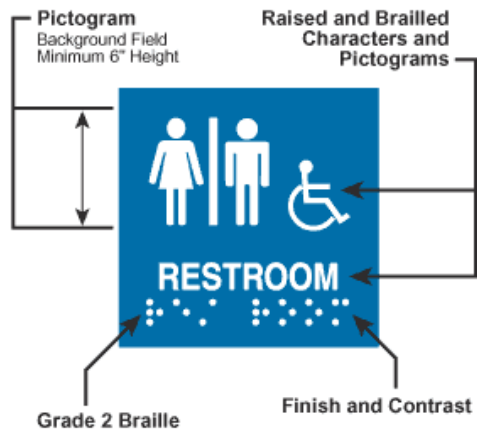
**Which workplaces we designed for access & injury prevention using HF/E.**



## Ergonomic/HFD

= lower risk for accidents; fatigue; productivity; decrease in poor design causing human error, accidents, product damage, fatigue





Inclusive Design can only succeed when HF/Ergonomic Experts work with ID, Architects, manufacturing & industrial Engineers, designers.

Legal liabilities are real if non-qualified “auditors”, designers & engineers do not apply the science of E/HFD to all designs (*see ARIDO Legal Liability Talk May 2022*)

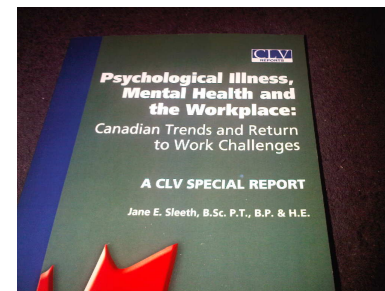
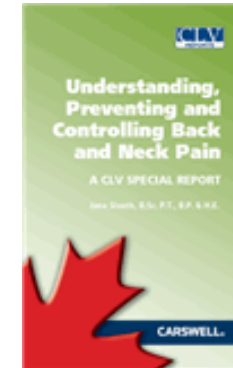


Let's move from this .....to this



Let's move from this .....to this, in the Canadian Workplace by applying the science about humans to design.

# JE Sleeth Published Author



If you have any questions about this material or would like to inquire about current Optimal Performance Consultant projects, reach out to me directly 416 860-0002 or [J.Sleeth@optimalPerformance.ca](mailto:J.Sleeth@optimalPerformance.ca)

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# Rick Hansen Foundation

## *Make it Safe*

*October 2022*





# Without an accessible built environment, the other pillars of accessibility cannot thrive.

- The urgency for accessible transportation is lessened if there are no accessible destinations.
- Even the most ardent employment equity program will fail if I can't get into the building.





But where is the little plaque that tells me what to do?



# Who Are People with Disabilities Then?



# Wheelchair Users Comprise Less Than 30% of The Community of People with Disabilities

**A Code Minimum Access Strategy Will Miss:**

**70% of the Community  
70% of the Potential  
Return On  
Investment**



A close-up photograph of a person's hands and arms as they use a silver metal walker. The person is wearing a blue and white checkered long-sleeved shirt, a dark watch on their left wrist, and a brown leather belt. The background is a blurred outdoor setting with green grass and a white fence. The text is overlaid on the left side of the image.

Disability touches  
the lives of at least  
**50%** of Canadians.

## Accessibility influences consumers



**30%**

consider accessibility  
when deciding which  
business to visit

**(that's 9 million adults!)**



**21%**

would support a  
Certified Accessible  
business more often

Source: Accessibility a source of future anxiety and significant consideration  
for Canadian consumers today, Angus Reid Institute, Jan 2019

- **A Code minimum access strategy literally holds back the entire country by not allowing people with disabilities to contribute to the GDP**
- **Code is not enough**
- **It takes a trained industry professional to develop meaningful access**

**It takes industry professionals trained to literally see the built environment differently to achieve meaningful access**

**Otherwise, even the best intentions will turn out badly**



***This is a bank in Beijing, China – ramp was installed as part of celebrating the 2008 Olympic and Paralympic Games***

***Issues include:***

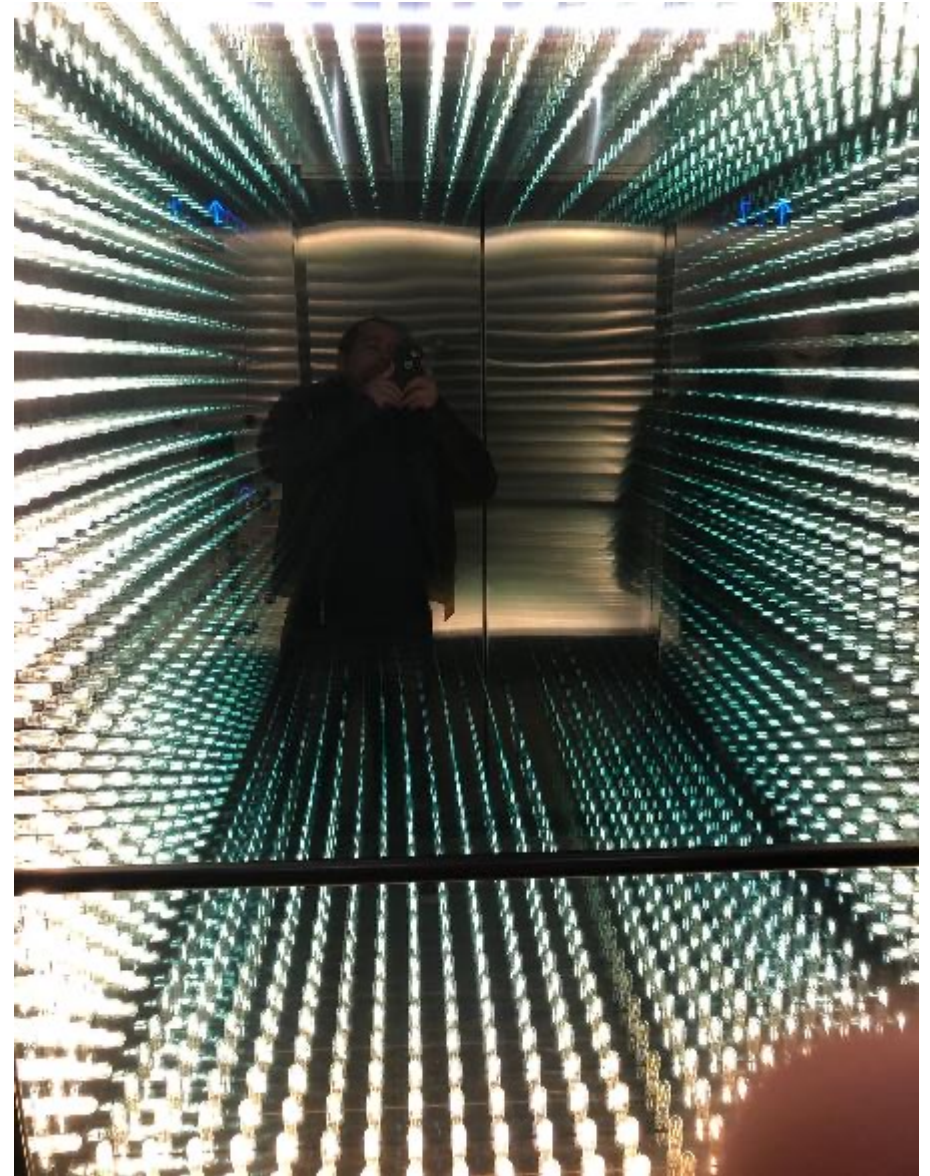
- **No landing / no power door**
- **Crazy steep ramp / Falling hazard**
- **Creates anxiety**
- **Potential liability for operator**
- **Misconception that they are 'accessible'**
- **Still not accessible**



*This is an elevator in a major hotel with mirrored surfaces.*

*Issues include:*

- **Disorientation**
- **Confusion**
- **Falling Hazard (vertigo)**
- **Creates anxiety**





***This is the 'ramp' access to a major resort. Issues include:***

- **Falling Hazard (drop off)**
- **Poor contrast/markings**
- **Creates anxiety**







**‘Access’ is NOT a *Design* Decision  
It is a *Management* Decision**



# It Takes 3 Things to Create Meaningful Access for People of All Ages and Abilities

1. Know who you are providing 'access' for  
*(spoiler alert – its not just wheelchair users)*
2. Accessibility must be moved UP the management policy food chain  
*Remember: Access is a Management design – not a Design Design*
3. Help professionalize the delivery of accessible design  
*Nothing about us without us means more than 'ask a disabled person'*



# What Can You Do?

- ✔ Take RHFAC Training as part of ongoing professional development
- ✔ Ensure any projects, procurements, renovations or new facilities include the participation of an RHFAC accredited professional or an independent professional access consultant
- ✔ Set an aspirational goal of achieving meaningful access for all projects – big and small

