Assorted Barrier Busters

IN & OUT

Moving in and out of spaces

Group: 1 assorted any space.

STEP ONE (10 minutes)

As a group list the thresholds you encounter when entering or exiting buildings:
(E.g. transitioning between indoor/outdoor, public/private, open/restricted access)

1. steps
2. construction
3. TTC subway doors - difficulty in exiting
4. narrow door widths
5. Poor signage for accessible routes
6. Accessible "thresholds" are locked, blocked & open a mobility device
7. ~~Hard~~ ~~Tight~~ Turning radius is too tight
8. * AODA compliant ramps -
9. no hand rail on ramps.
9. * wide doors with automated well positioned buttons
10. slow down buttons or revolving doors
11. misinformation
12. * - tactile/visual marks blocked & impossible
13. - Integrated into environment.
14. * Beach mobi for access from walk to sand.

STEP TWO (15 minutes)

As a group think about the negative experiences you have had transitioning in and out of spaces: (Times you felt confused, lost, had to ask for help, denied access, had to change plans, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

1. step out in front of doors. → prevents a person from entering. Any weight is a barrier. Any push. Change in height. Like a step ramp. is a barrier.
2. ~~Having~~ Uneven surfaces & grates - (frustrated, uses up my time & energy in planning - stress of uncertainty of the reliability of assistance - moving from parking into ~~the~~ building.
3. ~~3~~ Crossing the street & run into wall of people standing there & therefore can't get off curb into sidewalk.
   - width of sidewalk, curb, people crossing.
4. From ~~out~~ in to out - extreme light & temperature & noise changes can be difficult to adjust to
5. Elevators that don't have Braille & tactile markings - timing of the doors,
   - At a bank of elevators - the far one comes & there is not enough.
   - Sensors on the door caused the cane to get stuck in the closed door.

IN & OUT

Moving in and out of spaces

Group: 1 assorted barrier busters

STEP THREE (10 minutes)

As a group think about the positive experiences you have had transitioning in and out of spaces: (Times you felt independent, well-informed, given enough time, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

① Elevators with Braille & raised print, announce floors, wide enough & sensitive doors -> promotes independence + saves time & energy (don't have to wait for help.)
② Complicated buildings with good signage (information about distance)
③ Seating for rest periods
④ Accessible, well positioned large access buttons.
⑤ Wide aisles - uncluttered, passageway.
⑥ People who listen to what we're saying & act to make a change - ex restaurant that added an access button.

STEP FOUR (30 minutes)

Imagine a better experience in the future for moving in and out of an office building. (Come up with as many ideas as possible)

1. ~~Au~~ Automatic door is activated by when you swipe.
2. Building identification tracks your preferred assistance & ~~also~~ provides the level of assistance you predetermine.
3. ~~Easy ways to ask for help through technology - or help button to broadcast & alert systems.~~ help is needed.

The Building supports ease of movement & assistance through technology according to each personal parameters
- all doors open to you
- sending texts for assistance
- setting for each building

4. - Commitment to accessibility support with strong ~~ac~~ action
5. Developing systems & procedures for all tenants during an emergency including people with disabilities

PROTOTYPE CHALLENGE

In & Out: Moving between in and out of spaces

STEP FIVE (1 hour)

Group: _____

Select one idea from step four and explore how you can make it possible.
(Think of what you would need, how technology can help, and who else is involved)

Here are some of the things to keep in mind when developing your idea:

- **Is it accessible?**
- **Is it safe?**
- **Does it support independence?**

FEATURES OF OUR ACCESS APP

- Set accessibility preferences for environments: what the individual needs?

- INTERNAL:
  - manage the temperature range
  - ~~[illegible]~~ activate doors
  - Provide directions (light)
  - Help button - broadcast messages
  - identify accessible building features
  - voice activate the elevator

- EXTERNAL:
  - call accessibility vehicle (come to curb to bring person into building)
  - identify accessible pathways
  - activate voice directions
  - weather forecasts.
  - turn
  - Help button

- THRESHOLDS:
  - open/close doors — manage settings - timing.
  -

- Generic
  - language settings

STEP SIX (10 minutes)

Group #1. displays to show when elevator arriving, beeps so can hear which one is coming.

Describe your idea here:

- Igor goes for interview - Access app set up preferences for accessibility - internal/external threshold setting (temp, voice activation / external internal environment of building, weather) set up timings of doors he needs to cross
- Call for Help setting - volunteer to ~~help~~ help when needed
- External → with service dog → satellite vehicle summoned via app, takes him into building lobby → elevator. Elevator is accessible + arches to turn around inside, buttons on (L) or (R) side of elevator, Ø turning around needed. Also voice activated, buttons lower to ground. screens provide information about where you are going. Number are raised/Braille.

STEP SEVEN (30 minutes)

Things to consider:

- Is it accessible?
- Is it safe?
- Does it support independence?

Who do you think is excluded by this idea?

- anyone not good with apps
- anyone without smartphone
- ~~ass~~ cognitive difficulties
- deaf? → screens + lights + buttons

What are the advantages of this idea?

- nice elevator :)
- complete journey sequence
- safe, independence, accessible

What are the disadvantages of this idea?

- user interface of app ?
- smartphone only
- just this building?
- new system one building

STEP EIGHT (30 minutes)

Describe your revised idea here:

- For low-tech/cog impairments, have someone assist person via 1 time set-up of preferences and program to ~~fob~~ app
- Iterate app design + beta test with different ~~ability~~ levels/types of ability
- Potential to create a key-fob instead of phone for lower cost option
- As the new building = office building, employer to provide corporate phones
- For public building (e.g. malls) you could sign out fobs/tablets with a deposit?
- New system → can use this 1 building as a case test to gather data/evidence for more widespread adoption.

Group#2

UP & DOWN

Moving between different levels of a space

Group: #2

STEP ONE (10 minutes)

As a group list the thresholds you encounter when trying to move between different levels: (different heights, raised platforms, floors, etc.)

- elavators
- lifts
- stairs
- ramps
- escalators
- entrances w steps
- steps
- curbs / curb cuts
- uneven pavement
- streetcar tracks
- hills
- natural landscape
- surface transitions
- stair lifts
- stairclimber
- hospital bed.
- walker (?)

STEP TWO (15 minutes)

As a group think about the negative experiences you have had moving between different levels: (Times you felt confused, had to ask for help, denied access, etc.)

- lack of awareness, advocacy, sensitivity, education

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

- lack of adequate indicators (for stairs, floor #, elevator) etc.
- step between platform & subway
- streetcar stairs / subway station stairs
- lack of accessible TTC services.
- elevator: size of cab, location of buttons, unclear indication of floor, timing of doors closing, uneven entrances, lack of emergency communication,
- stairs: lack of indication of transition into stairs, finishings (too slippery), unusual design can be disorienting, (high glare), inaccessible, tiring, steps too narrow, poorly maintained.
- steps: tight corners

UP & DOWN

Moving between different levels of a space

Group: #2

STEP THREE (10 minutes)

As a group think about the positive experiences you have had moving between different levels: (Times you felt independent, well-informed, given enough time, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

- friendly voice in elevator
- call outs at subway stations, streetcar, etc.
- elevator sensor detecting ppl & adjusting door
- adjustable countertop (Sweden!)
- bathroom to shower transitions (elegant, seamless)
- elevator buttons at foot-level.
-

STEP FOUR (30 minutes)

Imagine a better experience in the future for moving between different levels:
(Come up with as many ideas as possible)

- clear wayfinders w multi-sensory technology.
- co-design with ppl. w lived-experience
- direct access from transit to buildings
- textured finishes (for railings, staircases, sidewalks, ramps, curb-edges)
- sensitivity training for employees [security personnel
- automatic ramps in all public vehicles.
- equal access apportunties (stairs → elevator)
  - ↳ close by!!!
- Internet of Things – beacons, sensors, voice commands (indiv. application that is uptodate) – for elevators, escalators, stairs, ramps, etc.) ↳ has immediate responses.
- CONSISTANT Monitoring to make sure everything to code, IoT uptodate; make adjustments if changes/construction. "
  - ↳ adaptability for future; "can evolve with us"
- Proper ~~maintenance~~ seasonal maitenance
- contrast strips for surface transitions (colours no good!) – ortactile. auditory.
  - ↳ lights on edges of stairs

PROTOTYPE CHALLENGE

Up & Down: Moving between different levels of a space

Group: #2

STEP FIVE (1 hour)

Select one idea from step four and explore how you can make it possible.
(Think of what you would need, how technology can help, and who else is involved)

Here are some of the things to keep in mind when developing your idea:

STOP

→ auditory announcement CLEAR, LOUD, SLOW
- written in clear words.
- phone vibrates in hand at stop (if using app.)(wifi not data.)

"Seascape, Toronto"

~~A~~ * — ~~"Remember to see if anyone help someone if they need it"~~ ✓ Be mindful & don't be afraid to offer your assistance

Getting off

→ Ramp extended for a smooth transition (vehicle → surface)
- elevated platform (long slope) └(no barriers, no running into anyone, no gaps/drops)
- properly illuminated, braille(le)

sidewalk to elevator

→ "100ft that are straight & clear (wide enough for two-wheeled)
- Braille strip, w beacon system (w app.)
- distance to elevator
- Button on streetcar, app., an sidewalk → can choose to use
  └activates sound indication, visual indicator (illuminated)
  - illuminated.
  - Braille change.
  - app. distances

elevator doors

→ Clearly visible, tactile & auditory indications.
- well-light
- spacious.
- buttons lower, em. contact also lower./and higher.
- sensors to adjust timing of doors
- voice command.
- button for emerg. contact.
- Guidelines for helping someone panicking
- Mirrors convex, to see others around corner.

going up elevator

Group #2

STEP SIX (10 minutes)

Describe your idea here:

- focused on getting from street car, cross street on to the elevator — ~~end~~
- phone vibrates (free wife / Ø data)
- TTC - be mindful - encourage people to help
- platform off streetcar have braille, illuminated beacon.
- move across sidewalk safely. — button activate light system/beeping or use an app → safe passageway 100feet to elevator.
- at Elevator → buttons inside that are lower/higher + easily reached → voice activated.

STEP SEVEN (30 minutes)

Things to consider:

- Is it accessible?
- Is it safe?
- Does it support independence?

Who do you think is excluded by this idea?

- people who don't have smart phones / phone is dead
- ~~what if elevator is broken? backup?~~

What are the advantages of this idea?

- doesn't require you to cross a bike path.
- garden space
- multi-sensory information.
- free wifi / no data.

What are the disadvantages of this idea?

- no physical barrier (if you can't see or hear well).
- what if elevator is broken?
- what if elevator is not in the middle of the building?
- how do you scale this? path for every building?
- what happens when it snows?

STEP EIGHT (30 minutes)

Describe your revised idea here:

- Path is distinguished by braille, lighting and beeping noise (all pedestrian) *want path to blend (not be seperate)
- If elevator is broken, app. will notify users, also have free phone for info. an alternative routes or assisstance.
- Network of paths branching off from TTC stops & major sites
- Sustainable heating system for snow removal (solar?)

Challenging Hedgehog

(Merged Groups)

GETTING AROUND

Transitioning between different modes of transportation Challeng

Group: 6

STEP ONE (10 minutes)

As a group list the thresholds you encounter when traveling to different places in the city: (E.g. transitioning between walking, rolling, biking, driving, street car, etc.)

- Sidewalk cracks
- Construction site navigation x2
- Benches at bus stops in the way of the curb (preventing using the curb for navigation)
- Restaurant boards
- Stairs in the sidewalk (esp w/o marking)
- Hanging baskets from patios.
- TTC steps
- Hidden elevators
- Curb cuts
- Bike lanes (to get to streetcars)
- Parking lanes.
- Inconsistent control height/ placement
- Hailing a taxi (Finding the Uber/Lyft)
- Bins on subway platforms
- cobblestones!
- narrow doors
- tied up dogs.
- street signs

STEP TWO (15 minutes)

As a group think about the negative experiences you have had moving between different modes of transportation: (Times you felt frustrated, in danger, rushed, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

- Hitting people from a scooter by accident
- Fell down subway steps
  - ↳ missed first step
  - ↳ elevator would have been good!
  - ↳ bumpy transition
- Inconsistent / aesthetic curb cuts
  - ↳ need to be placed not just at the apex of the corner.
- Crossing bike or parking lanes
  - ↳ can't get to street car.
  - ↳
- Getting off transit and knowing where you are.
  - ↳ better announcements
  - ↳ lights which stop traffic if you're in the street.
  - ↳ finer resolution on personal GPS.
- crossing subway doors - close too fast.
- Movable bus stops + constructions.
- Inconsistency of sidewalk surfaces makes scooters + wheelchairs miserable
- Feeling rushed getting off the subway → get up a stop early. or bus
- Bus designs lead to chokepoints
  - ↳ wheel wells
- Getting across an intersection.
  - ↳ more time for six lanes!
- navigating different levels/ floors
- elevator signage ∅ the best - for braille readers
- inconsistencies in elevator signage.
- subway doors closing too fast.

GETTING AROUND

Transitioning between different modes of transportation

Group: Hedgehog

STEP ONE (10 minutes)

As a group list the thresholds you encounter when traveling to different places in the city: (E.g. transitioning between walking, rolling, biking, driving, street car, etc.)

- Streetcar → music Garden → union → deep step
  ↳ get on → have to cross walking path (hard to differentiate from bike path)
- Bay & wellesley → streetcar in middle of road → hard to navigate
- Ashbridges → to boardwalk → need to wander parking lot → need to cross bikepath
  ↳ then hit strip of grass hard to tell b/w grass/path etc..
  ↳ need to pave path to cross grass
- new street parking by bike lanes → van → ramp → right into bike lane → no curbcut
- street parking → bikestands too close to roads → bike parked in the way/planters/garbage bins
- wheeltrans → can't put ramp down b/c bike lane in the way
- noise & awareness about getting off van
- building is locked & no indication about how to get in/contact
- guide dog → no little grass places to relieve them & garbage can
- paid parking → w/c spots aren't wide enough (space & ramp & get out)
- transitioning through transit → signage → elevators (knowing which ones to take)
- appreciate washrooms w/o doors & not have to touch buttons
- walking into city hall → no direct path/indicators/ramps

- sun & ~~heat~~ pay meter
  ↳ can't see
- lake & dock too high
- new board walk (unfinished)
  ↳ no way to get on

STEP TWO (15 minutes)

As a group think about the negative experiences you have had moving between different modes of transportation: (Times you felt frustrated, in danger, rushed, etc.)

- Train → need to travel across tracks
  ↳ need to go under tracks
  ↳ ends up being a bottleneck
  ↳ crowded, claustrophobic
  ↳ stairs, waiting to get off platform
- davisville platform/station → very narrow → shelters too wide → unsafe → not much space b/w tracks & shelter
- exit elevator → ramp goes into line of buses → elevator out into the sidewalk
- union station → bike → Queen's Quay (bikelane & pedestrian space) → pedestrians wander into bike lane → "don't know there's a lane" → "you're in my space" by both parties
  ↳ high volume cycling routes (either reroute & or build better indicators
- nervewracking → waiting to cross but scared biker
- out of towners → wander ~~at that~~ into the space → harbour front square
- "people will offer to give you a hand" → ramps are pretty steep → "figure if you make it you can do it."
- ferries → don't announce which dock you're at
- spacing / things in the way / indicators
- wheel trans → hard to try to book for 3 people together
- roundabouts → no straight crossing → hard to navigate → have to walk around
  ↳ no indicators for low vision → terrifying → alert city → ~~make~~ accessible
- Timing → time of day impacts

- feel terrified esp around bike lanes
- seating places

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

GETTING AROUND

Transitioning between different modes of transportation

Group: 6

STEP THREE (10 minutes)

As a group think about the positive experiences you have had moving between different modes of transportation: (Times you felt independent, well-informed, given enough time, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

- Elevators are great in subways
  - ↳ talking elevators!
- Announcements for stops
  - ↳ automated announcements are great
- Wide doors on a double-decker bus → easy to get in
- Kneeling buses.
- "Next bus" app
-
- People are helpful with navigation
  - ↳ want voice-over on everything!
- CNIB website is really ~~access~~ accessible and great
- Blind Screen and GPS work well
- Be My Eyes helps w/ navigation.
- Yonge + Bloor intersection → good audio!
- TTC is giving wheelchairs to blind people.

STEP FOUR (30 minutes)

Imagine a better experience in the future for switching between modes of transportation. (Come up with as many ideas as possible)

- Finer detail in navigation apps.
- Obvious audio announcements when exiting public transit
  - ↳ for wayfinding as well.
- Standardize everything
  - ↳ bus stops
  - ↳ curb cuts
  - ↳ sidewalk material
  - ↳ accessibility standards for public transit
  - ↳ consistency in bus stops
  - ↳ getting on / getting off
  - ↳ audio announcement frequency
  - ↳ placement of controls
  - ↳ ramps!
  - ↳ Voiceover support.
- Be My Eyes for transit / transportation
- Ubiquitous data connections for GPS + Be My Eyes
- Wider Sidewalks!! (2 wheelchairs)
- Airport.
- Navigation app for wheelchairs / or blind people.
- Move pedestrian streets.
- Street Furniture which encourages use! → but put it where it won't obstruct peds.
- Dedicated pickup/dropoff areas for taxis.
- Easier thresholds for cars/taxis
- Accessible / audio meters in taxis.
- Integration w/ transit apps to inform service providers of blindness
- Contain construction w/in the site.
- Construction site boundaries which are solid (for canes) → audio warnings
- Updates to wayfinding apps for construction
- Crossing parking lots →
  - ↳ wayfinding for parking.
  - ↳
- Automatic TTC payment.
- TTC takes Apple Pay!
- More phone integration
  - ↳ ID (student ID)
  - ↳ payment

unlimited data for people with disabilities

GETTING AROUND

Transitioning between different modes of transportation

Group: Hedgehog

STEP THREE (10 minutes)

As a group think about the positive experiences you have had moving between different modes of transportation: (Times you felt independent, well-informed, given enough time, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

Cycling → segregated bike lanes
↳ no cars & people → comfortable
↳ not at risk or be a risk

Board or leave train → not rushed by others b/c less people → if more openings = less crowded
↳ late at night or early → "my space & I can move when/how I want"

- bike rack on bus → pain to get on but otherwise good experience b/c convenient
- integrate changes of transportation
- bike rental is convenient & good because not your bike to be stolen / not have to carry
- cross walk with audio indicator with amount of time
- rumble strips throughout city & indication at forks/transition
- crossing dundas/yonge → All way cross → sense of Joy → freedom → cars are waiting for me
- mall washrooms → no doors → work when it's clearly indicated
  ↳ have lots of space
- sliding doors → better b/c not scared if door will hit you (come out vs in)
- automatic doors even better b/c don't have to navigate to button
  ↳ how to do it for narrow spaces.

STEP FOUR (30 minutes)

Imagine a better experience in the future for switching between modes of transportation. (Come up with as many ideas as possible)

consistent garbage bin placement (always left recycle → always right garbage)
↗ bike lane & sidewalk for everyone to use
↗ V shaped container → openings on both sides

- foot rest (for bikes ie similar to curb but more ^ @ appropriate height
  ↳ such as in copenhagen
- green space for humans & dogs w/ appropriate (frequent) for relief & waste disposal
  (service animals)
- rumble strip throughout city
- path through grass for way finding
- speed bump cut for bikes & wheelchair
- public emergency phones
- board walks → indication on curb to buses & cutoffs for boardwalk
  ↳ walking on the boardwalk → where to get off to go back
  ↳ know where to cross
  - path to road/restaurant bus stop
  - where bike lanes are
  - guide dogs are so smart that they if they're doing something they love, they will keep doing it if you don't
- Automatic train control → always stops in the same spot → hongkong
  ↳ same w/ street car stops ↳ barriers ↳ doors @ same spot — don't feel as nervous @ edge
- street car stops need islands
  ↳ street car is so long → hard to navigate once getting off
  ↳ old automatic indicators → city used to have → don't have to find post w/ button → inconsistent
  ↳ whitehorse → automatic ↳ toronto buttons → don't work ↳ not consistent
  ↳ no feedback
- option to give priority to automatic sliding door → power → batteries & generators
  ↳ timing ↳ beam to activate → height
  ↳ too fast ↳ service dog → be careful of tail

PROTOTYPE CHALLENGE

Getting Around: Transitioning between different modes of transportation

Group: 3 Challenging Hedgehogs.

STEP FIVE (1 hour)

Select one idea from step four and explore how you can make it possible.
(Think of what you would need, how technology can help, and who else is involved)

Here are some of the things to keep in mind when developing your idea:
- **Is it accessible?**
- **Is it safe?**
- **Does it support independence?**

- Mobile App that provides information to users when transitioning between modes of transportation
- Simple, easy to use app that provides info about surroundings when getting off a bus/subway and transitioning to another mode (TTC → streetcar, walking)
- 311 and GPS information systems in 1 app. (support from google, microsoft, apple to get funding)
- integrate Be by Eyes, IRA → guidance to navigate env. by sighted individual.
- Options: construction/road closures + info to navigate these situations.

APP NAME

INSTRUCT

enter address → destination and home → app will chart the route for you & map out alternative route
call 311 through phone, app, website.
→ information about (regular) width of sidewalks for ppl in WC—
→ Provide details about the route (i.e width of sidewalk, construction/closure, ~~curbs~~ curbs cuts)
→ attach social media to inform about city wide emergencies.
→ integrate InTime Newsfeed (receive updates from people about events in the city (people using WCs) real time info that all people can access)
Radio updates.
→ Crowd sourcing/social media component ~~driven by~~
→ Real-time data (receive info about changes throughout the city & input data to update others about the ongoing events in the city that may impact them)

Challenging Hedgehog group #3

STEP SIX (10 minutes)

Describe your idea here:

"Instruct"

put together an app to help people move between different modes of transportation.
put location in app. Navigate between different routes, provide real time data, e.g. accidents weather. you can also input data into the app to be available for others.
you have a pass protected profile, so even if your phone dies you can access it from stations or stops.
gives you info about accidents, crime, weather and info about your interests, ramps, snow removal info about the route e.g. width of sidewalk, an accident like fallen trees, and it links to 311

STEP SEVEN (30 minutes)

Things to consider:

- Is it accessible?
- Is it safe?
- Does it support independence?

Who do you think is excluded by this idea?

- People who don't have/want access to technology — can't afford / lack of dexterity / ppl. w intellectual disability
- ppl. w Reading difficulties.

What are the advantages of this idea?

- convenience
- safety & security (especially the updates)
- time efficient
- bring umbrella!

What are the disadvantages of this idea?

- staring at phone (can you think of multi-modal notifications)
- too reliant & connected w technology.
- possible problems w wifi (data too much money)
- privacy! (on location & movements) $ (who owns the data?)
- If phone dies, how are you guided to access point?

STEP EIGHT (30 minutes)

Describe your revised idea here:

- Could have charging stations at subway stations or bus shelters at major intersections to address phone dying issues
- make it multimodal and multilingual ie. accessible to people whom speak different languages
- keep it simple and easy to use, mainly just GPS functionality, emergencies, potholes, construction, where's accessible, has curbcuts, etc.
- maintain links to contact 311, TTC

Cats & Dogs

IN & OUT

Moving in and out of spaces

Group: 4

STEP ONE (10 minutes)

As a group list the thresholds you encounter when entering or exiting buildings:
(E.g. transitioning between indoor/outdoor, public/private, open/restricted access)

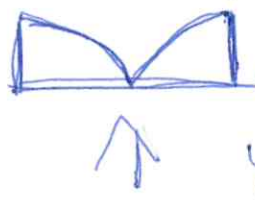
- multiple sets of doors can be confusing
  - not enough space in between sets of doors
  - not wide enough doors
  - which side does the door open on?
  - lack of consistency
  - which way do they open?
- glass walls are confusing for dogs - look like doors.
- subway platforms
- revolving doors - variable
- ~~inconsistency~~ -
- handles cue push vs pull but sometimes incorrect
- separating moving vehicles from people - need a surface to distinguish
- access buttons
- sliding doors (not intuitive) easy
  - multiple sets of doors far enough apart
- automatic doors don't stay open for long enough - esp. on dog's tail
- elevator doors - if there's a wheelchair coming out, not long enough. Now, there's a wheelchair button to hold it longer.

STEP TWO (15 minutes)

As a group think about the negative experiences you have had transitioning in and out of spaces: (Times you felt confused, lost, had to ask for help, denied access, had to change plans, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

- front of train or back of train are diff
- push/vs. pull doors - using reflex actions.
- access buttons - long ones that go all the way to the floor not a press button are better
  - motion detection is better than button push
  - button placement & right height not too close to the door
- inconsistent aspect "I rarely use the buttons because I'm not sure where they are. "My dog can find them if they're consistent, but often they're not.
- surfaces - some dogs are scared to walk on (like metal gratings)
- having hands full and having to badge in, badge reader is inconveniently placed.
- good experiences - Shoppers ⇐ sliding ⇒



- having to hold a door (esp. elevator doors) if there's a stroller or a wheelchair, always closes.
- after going through a threshold, where do you go? → like at the Y YZ wayfinding particular surfaces to indicate which way to go. Direct people away from the threshold.
- curb cuts only at the end of the street, not in the middle of the street. (the landing where car was letting me off - would be helpful to have more)
- "keep the crease clear" - keep walking.
- enough space on
- Key2Access ★ for opening door + accessible pedestrian signals.
- doors hinged 1/4 of the way down street ramps
- Eaton Center - such heavy doors. Now they're sliding doors

IN & OUT

Moving in and out of spaces

Group: 4

STEP THREE (10 minutes)

As a group think about the positive experiences you have had transitioning in and out of spaces: (Times you felt independent, well-informed, given enough time, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

- Shoppers drug mart - motion detectors, enough time, sound alert (that the door has opened).
- elevator - press wheelchair button, then key in floor and it instructs you which elevator to go, then elevator stays open longer.
- clear signage / markings for wayfinding for where to go next.
- each floor is painted on the wall opposite each elevator
- BlindSquare app used w/ iphone · GPS app · Beacons + bluetooth wayfinding. e.g. TD Bank - to your right are the ATMs. at 12 o'clock you'll encounter the 2nd set of doors - in St. Clair subway station. mostly useful coming from outside to inside. downside: not everyone has an app / smartphone.
  All public buildings should have them.

- shoe insoles could lookup the layout for buildings online + direct you to where you're going.

STEP FOUR (30 minutes)

Imagine a better experience in the future for moving in and out of an office building. (Come up with as many ideas as possible)

- beacons → useful for finding the door + inside.
  - occupancy sensor for door that works w/ large non human device non button.
- 2 sets of doors (both sliding not hinged) straight path
  - long enough open
  - ~~with panel~~
  - enough space between doors
  - indicator sound
  - open automatically
  - space between doors flooring of tactile strip (several parallel lines) once inside building leading to elevator
  - nonslip rubber, carpet
- smart phone verified entrance/access controls
  - contactless / touchless
  - of card / keychain
- lobby w/ seating area → good for community
- Aira - free service area. $120/mo for limited minutes OR have available a building enabled system and AI can tell you now you're approaching (preferable)
- alert you to which elevator is approaching. OR always offer the same elevator.
- elevators announce floors.
- heated pavement for snow & ice start inside first set of doors.
- if elevation change leading to building, build covered ramp.
- front desk person
  - to direct where to go
  - if doors are not working
  - if people can't find elevator
  - know ASL
- water bowl for service animals.
- provide a designated spot for service animals to do their business
- phone charger, AV help
- Verbal descriptions of a lobby, building plan online
  + easy to use keyword that could give you the description of the building + give you useful info
- sound of elevator stairs be for users to be audible order
  + sound + texture you can pick up regardless of shoes you're wearing
  + audio description devices, with enhanced position
- enable wayfinders wallets
- bracelets speak to your bracelets
- single use = easier, public washrooms in lobby, easily accessible. similar public washrooms. consistent. self cleaning
- braille signage for door numbers
- smart enabled phone building mapping app tell you where the heated points are, where bathrooms, elevators.

PROTOTYPE CHALLENGE

In & Out: Moving between in and out of spaces

STEP FIVE (1 hour)

Group: ____________

Select one idea from step four and explore how you can make it possible.
(Think of what you would need, how technology can help, and who else is involved)

Here are some of the things to keep in mind when developing your idea:
- Is it accessible?
- Is it safe?
- Does it support independence?

INDOOR ACCESSIBLE MAPPER

privacy

separate 2 spaces

security

weather insulation

navigational

DOORS ARE USEFUL FOR

drums as doorbell
foam blocks as seating on other side of the door (seating near all doors)
walls of water kept apart by air pressure (easy to go thru, separate + airtight proof)

- wider turning radius on sidewalks
- ground floor units so in an emergency you don't have to rely on an elevator to get out.

Cats & Dogs

STEP SIX (10 minutes)

Describe your idea here:

Solve the problem of wayfinding entering a building
a little bot, with screen and light, to direct you to where to go, shows to assistive road you can program it on a card at home, you can sign to it. at the end of the day it folds down.
Having a vending machine for these bots.
when you get to your destination you can ask your bot to wait for you or to ask them to come back. always stays 3 ft from the body

STEP SEVEN (30 minutes)

Things to consider:
- Is it accessible? Needs to have audio component
- Is it safe?
- Does it support independence?

Who do you think is excluded by this idea?

- ~~Blind or visually impaired people~~
  People with visual impairment, blind or partially sighted because "they don't see the light". Questions arising are how do they see the vending machine, is it the correct one, etc.
- could hit it with a cane walk into it, guide dog might interfere with it, risk of it falling down stairs
- How do you keep track of it? Possible theft concerns, child might think it's a toy and play with it.

What are the advantages of this idea?

- could help carry parcels, items
- not sure?

Suggestions:
→ carry items for person.

Questions
→ How much weight it can carry?
→ How big is it?
→ Where would it be stored (home, TTC, taxi).

What are the disadvantages

- Expense (robots
- Could trip/fall o
- Storage (at home, in

Suggest
→ army s
follows the group w
supplies. (medic).
→ Informs / alarms when individual in distress; calls 911

STEP EIGHT (30 minutes)

Describe your revised idea here:

- auditory output provided with a bluetooth earpiece / headphones.
- does not require your personal info just where you're going.
- stored on site. (collapses onto itself)
- not intended to carry anything.
- works on a supply / demand system.
- 3 feet tall.
- battery powered
- in emergency guide people to exit.
- cost efficient by reducing infrastructure cost

The A Team

— 5/6 September —
1/6

UP & DOWN

Moving between different levels of a space

Group: The A Team.

STEP ONE (10 minutes)

As a group list the thresholds you encounter when trying to move between different levels: (different heights, raised platforms, floors, etc.)

Stairs
Ramps
Elevator
Escalator
[sloped ramp conveyer]
sloped floor
curb cuts
depressed curb
fixed ladder
slides
scaffolding
sidewalks + exterior paths (sloped)
[Stop Gap Ramp Gurney]
Kneeling bus

STEP TWO (15 minutes)

As a group think about the negative experiences you have had moving between different levels: (Times you felt confused, had to ask for help, denied access, etc.)

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

(I) fell off a balcony once - railing too bore high

(II) Lack of tonal contrast → no depth information → end of the stairs. → stairs + slopes

(III) having to be alert all the time.

(IV) Loose nosing on stairs

(V) crowded stairs —

(VI) treads too shallow too steep

(VII) Ramps - balance, ankles, knees

(IX) Steepness

(X) Escalators - directions → not right next to each other!

(XI) Stairs - handrail extensions Continuous

(XII) Getting off bus - pole in the way.

(XIII) Change in level = safety but then it changes.

(XIV) Curb cuts - missing or bad

(XV) Sidewalks inconsistent.

XVI escalators ↑↓ next 2 each other

SPEED BUMPS

UP & DOWN

Moving between different levels of a space

Group: The A Team

STEP THREE (10 minutes)

As a group think about the positive experiences you have had moving between different levels: (Times you felt independent, well-informed, given enough time, etc.)

1, audio alert about floors reached in elevators

Discuss what aspects of the threshold led to that experience, such as materials, dimensions, timing

2, contrasting step demarking ends of staircase

3, ramp placement alerts to ends of ramp

4) Sturdy handrails

5) Info people -

6) Tactile indicators
- dots - warnings
- directional

7) Illumination (flashing is noticeable)

8) Audio info (parking lot example)
conveyer belt

9) Arrows on train

10)

STEP FOUR (30 minutes)

Imagine a better experience in the future for moving between different levels:
(Come up with as many ideas as possible)

- good handrails - extensions
  - sturdy, graspable
- announcements - multimodal (audible + visual)
- tactile directional wayfinding
- tactile warning surfaces → audible feature.
- snow removal/melting!
- be able to tell escalors apart
- accessible elevators
- build wide

- clear + easy to find accessible route
- light at night
- good tonal contrast in the right places.
- gentler ramps
- crowd flow / control
- ~~Consistent~~
- Standard approaches for changes in level.
- maintenance
-

3/6

PROTOTYPE CHALLENGE

Up & Down: Moving between different levels of a space

Group: The A Team

STEP FIVE (1 hour)

Select one idea from step four and explore how you can make it possible.
(Think of what you would need, how technology can help, and who else is involved)

Here are some of the things to keep in mind when developing your idea:
- **Is it accessible?**
- **Is it safe?**
- **Does it support independence?**

- CURB CUT - TACTILE INDICATOR + +
  - audible
  - colourful
  - ~~light~~ illuminated
  - ? aromatic
  - vibro / ~~sensatile~~ / haptic

- on the ground
- digital + analogue
- multi-sensory
- continuous with other conventions

Sheet - size sheet.
- hollow noise
- micro circuitry - heated
- still tactile
- Redundacy power.

1.3m
directional groove.

TACTILE INDICATOR AT CHANGES OF LEVEL
- ~~domes~~ multi modal message.

1. traditional domes
   + bigger surface ($1.3\ m^2$)
   + hollow noise

(Group 5) A Team 6/6

STEP SIX (10 minutes)

Describe your idea here:

- tell people about changes in level in multipmodal
: street crossing, made of plasticine. (intersections). Heating elements underneath (shown in diff colours & high color constract). Depression in ground halts cane sinking in. For cane users, walk center of ramp.
- tactile plate installed — circuitry in middle, tactile on the outside.

STEP SEVEN (30 minutes)

Things to consider:

- Is it accessible?
- Is it safe?
- Does it support independence?

Who do you think is excluded by this idea?

- the multimodal (lights / vibration) may make inaccessible for ppl w particular mental health (?anxiety?) ~~iss~~ conditions.
- people who have difficulty lifting feet may be at ↑risk.

What are the advantages of this idea?

- groove idea is great!
- multisensory cues are a good way to ~~include~~ make accessible for more people.

What are the disadvantages of this idea?

- rumble area is rough on mobility device users
- haptic vibrations may be an issue for ppl w balance issues, anxiety?
- lights flashing may be an issue for ppl w epilepsy/seizures/migraines?

STEP EIGHT(30 minutes)

Describe your revised idea here:

① Lights: not flashing. Just a lit-up platform (not too bright // illuminated Keyboard)
② Tip plate still but bumps only half (leave groove) (small small perforations)
③ Remove the haptic feature ↳ audio texture change. by metal.
(something similar in the pedestrian signal)