

COMPARATIVE ANALYSES OF ACCESSIBILITY GUIDELINES AND STANDARDS CARRIED OUT IN ROUNDTABLE #1 (2022) AT UdeM

As part of the SSHRC partnership "Quality in the Built Environment in Canada: Roadmaps to Equity, Social Value and Sustainability", the Université de Montréal research site organized an invitational roundtable on Wednesday, November 16, 2022 from 1:30 to 4:00 pm. This meeting was part of the theme of the research site coordinated by the Université de Montréal: "The problem of material innovation in spaces for people with special needs".

The specific issues that were addressed during this 2.5 hour meeting were as follows:

- 1. What are the strengths (orientations, principles) and limitations (assumptions, grey areas, omissions) of accessibility standards and guides in the Quebec context generally and in the municipal context of Montreal?**
- 2. Which documents are most problematic in inclusive design processes?**
- 3. What accessibility reference books do you think are successful in providing an approach to improving quality overall?**

The meeting began with a short presentation by student researchers (future professionals in the built environment) on Quebec and Canadian universal accessibility design guides (see unofficial translation of Rick Hansen Foundation documents).

The meeting was attended by the following people:

Researchers:

- Virginie LaSalle (Design)
- Bechara Helal (Architecture)
- Izabel Amaral (Architecture)
- Anne Cormier (Architecture)
- Jean-Pierre Chupin (Architecture)

Citizen groups :

- Alexis Beauchamp-Chatel (University Institute in Mental Health of Montreal)
- Sarah Huxley (Véro et Louis Foundation)
- Isabelle Cardinal (Société Logique)

City of Montreal :

- Myriam Turcotte (Building Management and Planning Department)
- Christine Deschamps (Building Management and Planning Department)
- Patrick Marmen (Design Office)
- Jeanne Leblanc-Trudeau (Design Office)

Student researchers:

- Catherine Meunier, M.Arch.
- Paloma Castonguay-Rufino, PhD student Arch.
- Victorian Thibault-Malo, Master's Degree in Design Theory
- Jonathan Haxhe, Master of Communication
- Achraf Alaoui Mdaghri, PhD student Arch.
- Shantanu Biswas-Linkon, Ph.

Useful links :

- Logical Company :
<https://societelogique.org/publications/#@guides-and-criteres>
- Rick Hansen Foundation:
<https://www.rickhansen.com>



STRENGTHS &

ACCESSIBILITY GUIDELINES AND STANDARDS IN THE MONTREAL, QUEBEC AND CANADIAN CONTEXTS

Victorian THIBAUT-MALO in the Master of Design Theories program, School of design Achraf ALAOUI

MDAGHRI _Individualized PhD in architecture, School of Architecture



Catherine

MEUNIER_Student in the Master of Architecture program, School of Architecture

1

2017

Universal accessibility of municipal buildings

A Guide to Universal Accessibility for new buildings and for the expansion, renovation and maintenance of existing municipal buildings



Publication

- City of Montreal Social Diversity and Sports Department

Writing, research and illustrations

- Ernesto Dueñas, Logical Company
- Isabelle Cardinal, Société Logique
- Mylène Loïsselle, Société Logique
- Sophie Lanctôt, Société Logique

Collaboration

- Gaëtan Bélisle, Architect, Real Estate Planning Branch, IPMS;
- Gaëtan Larochelle, Property Manager, Real Estate Project Management, SGPI;
- Guy Lafontaine, Architect, Real Estate Planning Branch, IPMS;
- Olivier Beausoleil, Community Development, Social Diversity and Sports
- Paul de Vreeze, Property Manager, Property Planning Branch, IPMS;

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2012

Museum Facilities Support Services

Guide to developing a museography universally accessible



Writing, research and illustrations

- Susanne Kreis, Logical Society
- Sophie Lanctôt, Société Logique
- Ted Alain Michel, Société Logique

Coordination

- Jacqueline Caron, Service de soutien aux institutions muséales, Direction du patrimoine et de la muséologie, Ministère de la Culture, Communications et Condition féminine

Advisory Committee

- Louise Bélanger, Musée de la civilisation du Québec
- Luc Guillemette, Musée d'art contemporain de Montréal
- Christelle Montreuil, Laval University
- Yvon Noël, Musée national des beaux-arts de Québec
- Pierrette Dionne, Editor

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Presentation

Universal accessibility of
municipal buildings

*A Guide to Universal Accessibility for
new buildings and for the expansion, renovation
and maintenance of existing municipal buildings*

"This guide is intended for building managers, property managers, project managers and all development stakeholders employed by the City of Montreal, as well as all external professionals involved in projects involving municipal buildings.

"It is intended to serve as a benchmark and to validate the universal accessibility performance of all existing municipal buildings and municipal real estate projects, regardless of the size of the building or project." p.9

- Guide distributed by the **City of Montreal**
- Derived from the **Municipal Universal Accessibility Policy (2011)** and the **2015-2018 Action Plan**
- Established according to **10 main themes**
- Explains the **characteristics** of people with **disabilities** and **suggests accommodation solutions**
- Provides **approaches** and **tools** to identify **barriers**, prioritize and schedule **interventions**

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[Foreword Introduction](#)

- Who does universal accessibility answer to?
- Universal Accessibility Topics for Municipal Buildings
- Who this guide is for and how to use it

[Theme 1: Concept and implementation](#)

- 1.1 Regulation
- 1.2 Municipal Vision
- 1.3 Performance objectives
- 1.4 Technical criteria
- 1.5 Contents
- 1.6 Complementary themes

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[Fire Safety](#)

- 1.1 Regulation
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- 1.1 Regulation
- 1.2 Municipal Vision
- 1.3 Performance objectives
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- 1.5 Summary
- 1.6 Additional topics

[Appendix i - "The City's Universal Accessibility Policy"](#)

	<h2>Force</h2>	<h2>Uniform structure</h2>
<p><u>Theme X:</u></p> <ul style="list-style-type: none">1.1 Regulation1.2 Municipal Vision1.3 Performance objectives1.4 Technical criteria1.5 Contents1.6 Additional topics		<ul style="list-style-type: none">• Facilitates navigation through the guide
	<h2>Force</h2>	<h2>Limitations and solutions</h2>
<p><i>"A person with an intellectual limitation has difficulty understanding the organization of a place and orienting themselves:</i></p> <ul style="list-style-type: none">• <i>A simple organization of the spaces, a reception desk and an elevator visible from the entrance as well as signage with pictograms are real estate solutions that help;</i>• <i>A visitor [...] who does not know how to read French will also benefit from these real estate solutions which facilitate the understanding of space."</i> p.6		<ul style="list-style-type: none">• Consideration of several limitations and solutions to facilitate accessibility• Better building for all



Force

Definition of universal accessibility

"Universal accessibility is the result of attention to users and their needs. It is a matter of giving importance to the functional aspects of the places with, in the background, the needs of people with functional limitations as revealing the difficulties experienced by all." p.5

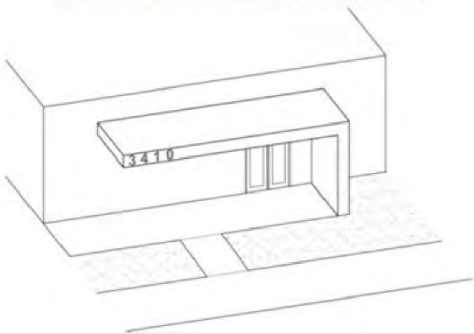
- Better understanding of what the guide considers to be universal accessibility
- Not all guides take the trouble to define



Force

Principles illustrated by examples

Croquis 3.1 : Repérage facile de l'entrée principale



- Ensure understanding of the principle through textual and pictorial explanation

Limit

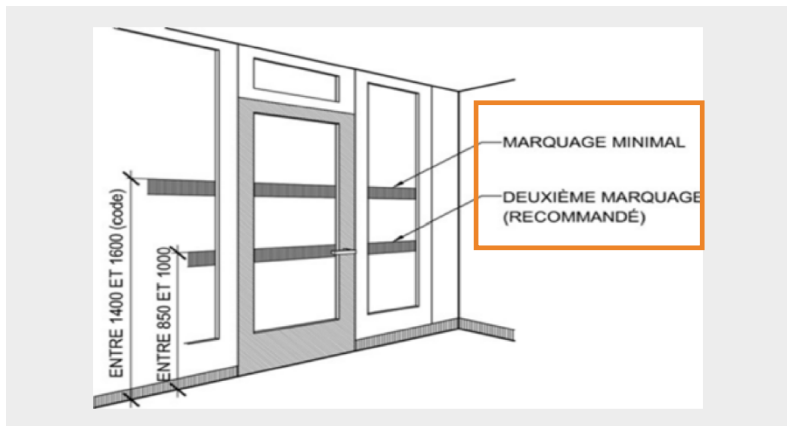
Vision 4-B - Permettre l'utilisation des circulations horizontales par l'ensemble des usagers

Objectifs de performance	Critères techniques	
4-B.1 Prévoir des parcours horizontaux ayant les caractéristiques nécessaires pour être utilisables par l'ensemble des utilisateurs	Tous les parcours : croisement ou circulation côte à côte	✓
	Dans les endroits où le public circule, dimensions suffisantes pour la manœuvre d'un quadriporteur (1800 mm de diamètre minimum) aux changements de direction, minimalement jusque dans les locaux et de préférence, jusque dans les aménagements situés dans les locaux.	
	Dans les endroits semi-publics et ceux à l'usage du personnel, dimensions suffisantes pour la manœuvre d'un quadriporteur (1800 mm de diamètre minimum) jusqu'à la porte des locaux et dimensions suffisantes pour la manœuvre d'un fauteuil roulant (1500 mm de diamètre minimum) à l'intérieur des locaux.	
	Si requis, espaces de rangement pour quadriporteur dans le corridor	
	Présence d'aires de repos avec banc, en retrait des parcours, pour les longs parcours et aux croisements des parcours principaux et/ou à proximité des circulations verticales	
	Espaces vastes de superficie limitée, avec parcours bien délimités, de préférence le long des murs	

List of steps to follow

- Force: tool
- Boundary: consideration of the user experience (grocery list)

Limit



Minimum points / recommended points

- Why not impose the ideal layout?

2

Presentation

Museum Facilities Support Services
*Guide to developing a museography
universally accessible*

"This guide suggests that you better understand the needs of people with different disabilities in order to include them in a museography designed for all. It is about making the basic service offering more inclusive, and then adding specialized products where necessary to meet unmet needs" p.8

- Guide distributed by the **Government of Quebec**
- Ministère de la **Culture, des Communications et de la Condition féminine**: Service de soutien aux institutions muséales (SSIM)
- Based on **5 themes**: circulation in the exhibition, works and artifacts, information, audiovisual and interactive modules, and the museum's staff
- For all those who are concerned with **museography** and also for all the **staff of the museum institution**

Foreword

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Force

Section explaining the use

2. Comment utiliser le guide

Ce guide s'adresse à tous ceux et celles qui sont concernés par la muséographie et également à tout le personnel de l'institution muséale. En effet, si les intervenants en muséographie doivent être sensibilisés afin de mettre en place une muséographie facilement utilisable par tous, ils doivent aussi prendre des décisions et agir selon les situations.

Qu'il s'agisse des visiteurs, du personnel de base ou du site Internet, il est important d'organiser des ateliers de formation et d'embaucher du personnel, approuver les budgets, tout en jouant dans la mesure de la nécessité universelle de l'institution.

IMAGE 1

Chacun devrait être en mesure de comprendre les besoins des personnes handicapées, au même titre que ceux des aînés ou des groupes scolaires et devrait, dans ses domaines de compétences, s'interroger sur les obstacles à l'insertion au travail, à la mise en œuvre de solutions d'accessibilité universelle, au bénéfice de tous les usagers.

- Facilites navigation through the guide



Force

Understanding of universal accessibility

3.3 Les sept grands principes d'accessibilité universelle

Il s'agit de (Story, 2001) :

1. L'utilisation équitable : usages similaires pour tous, au même endroit, au même moment, de la même façon.
2. L'utilisation flexible : aménagements, services et communications variés, facilité d'adaptation.
3. L'utilisation simple et intuitive : compréhension et orientation aisées, simplification, cohérence avec les attentes des utilisateurs, rétroaction rapide.
4. L'accès à toute l'information : mode visuel, mode sonore, médias substitués, interprétation, simplicité, pictogrammes, couleurs, éclairage.
5. La tolérance à l'erreur et l'utilisation sécuritaire : possibilité d'éviter et de corriger les erreurs, avertir, mettre en évidence les éléments utilisés fréquemment, les consignes importantes.
6. L'utilisation exigeant peu d'effort : efficacité, confort, maintien d'une position confortable, facilité d'entretien, gestes non répétitifs.
7. L'aire de manœuvre et des dimensions suffisantes pour l'approche et l'utilisation, en fonction des différentes aides techniques à la mobilité (fauteuil roulant, quadriporteur, déambulateur), poussette, etc., permettant d'entrer, de circuler et d'utiliser tous les équipements.

- Accessibility: "act minimally through specific measures Against
- Universal accessibility: "acting for the benefit of all" p.14



Force

Consideration and explanation of limitations

Tableau 2 : Taux d'incapacité, selon le type d'incapacité et l'âge, population de 15 ans et plus, Québec, 2006

Type d'incapacité	15-64 ans (%)	65 ans et plus (%)	Total (%)
Mobilité	5,3	25,6	8,5
Agilité	5,0	24,7	8,2
Douleur	5,4	19,9	7,8
Audition	1,5	1,2	1,4
Vision	3,3	7,2	4,2
Apprentissage	0,6	0,9	0,8
Parole	0,6	2,8	1,7
Psychologique	1,1	0,7	1,0
Mémoire	0,7	3,0	1,1
Déficience intellectuelle ou trouble du développement	n. d.	n. d.	0,4
Indéterminée	0,3	0,7	0,3

Source : Vivre avec une incapacité au Québec, Institut de la statistique du Québec, 2010.


IMAGE 1

- Not all guides take the trouble to define
- More than motor limitations



Force

Consideration of needs and experience

 **Pour aider les personnes ayant un trouble grave de santé mentale, les solutions ne relèvent pas de la muséographie, mais plutôt de l'interaction avec le personnel qui peut notamment :**

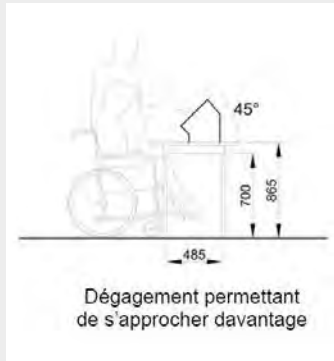
- Considérer ces personnes comme des visiteurs à part entière, sans préjugés, et ce notamment à la suite d'un épisode de crise.
- Comprendre qu'un état de crise, les réactions et les raisonnements inappropriés d'une personne ne relèvent pas d'une mauvaise volonté de sa part, mais plutôt d'une déficience.
- Écouter et prendre en compte leur avis dans une situation de crise.
- Demeurer calme et respectueux et demander de l'aide si nécessaire lorsque se présente un état de crise.

IMAGE 2

- Consideration of several limitations and solutions to facilitate accessibility
- Better building for all

-

Limit



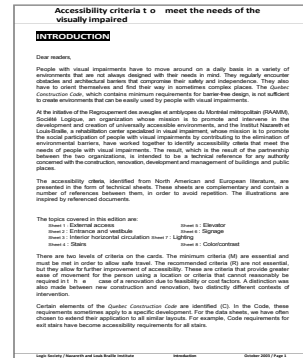
Target audience for the guide

- Limitation: explicitly addressed to museum professionals/staff
- Strength: draw on the principles and apply them to all types of development

3

2003

Accessibility criteria to meet the needs of the visually impaired Interior design



Authors

- Agathe Ratelle and Line Lemay, Orientation and mobility specialists
Institut Nazareth et Louis-Braille
- Susanne Kreis, Planning Consultant Société Logique

Initiative

- Regroupement des Aveugles et Amblyopes du Montréal Métropolitain (RAAMM)

4

2014

Universal accessibility criteria: visual impairment Exterior layout



Authors

- Agathe Ratelle, Orientation and Mobility Specialist Program Officer
- Line Lemay and Carole Zabihaylo, specialists in orientation and mobility Institut Nazareth et Louis-Braille
- Isabelle Cardinal, Architect, Director of Consulting Services
- Sophie Lanctôt, General Manager Société Logique

Sponsor

- Office des personnes handicapées du Québec



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Presentation

Accessibility criteria to meet the needs
of the visually impaired
Interior design

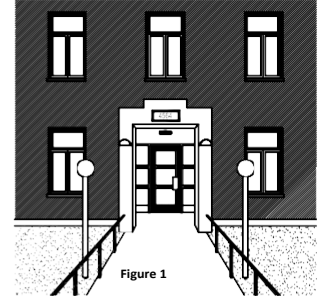
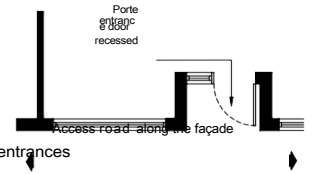
"a technical reference for any jurisdiction concerned with the construction, renovation, development and management of public buildings and places."

- Accessibility criteria, identified from North American and European literature
- Data sheet collection
- illustrations inspired by reference
- Allows for safe travel
- Allows for even greater accessibility
- Distinguishes between new construction and renovation,
- Extend the accessibility criteria to all buildings whether or not they are subject to the *Quebec Construction Code*.

New construction Renovation	<h3>Accessibility criteria to meet the needs of the visually impaired</h3>		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Institut Nazareth & Louis Braille Tel: (450) 463-1710 </div> <div style="text-align: center;">  <small>consultation en aménagement et promotion du concept d'accessibilité universelle</small> Tel: (514) 522-8284 </div> </div>			
M Minimum requirement	R Recommended	(C) Quebec Construction Code	No. 1: Exterior Access / page 4
Société Logique / Nazareth and Louis Braille Institute			October 2003

Available files :

- No. 1 Exterior access No.
- 2 Entrance and vestibule
- No. 3 Interior horizontal circulation No. 4 Stairs
- No. 5 Elevator
- No. 6 Signage
- No. 7 Lighting
- No. 8 Color/Contrast

New construction Renovation	<h3>Accessibility criteria to meet the needs of the visually impaired</h3>		
<h2>1 EXTERNAL ACCESS</h2>			
<p>1.1 Basic concept</p> <ul style="list-style-type: none"> <input type="checkbox"/> Locate the building so that the entrances and access roads are on the same level (level). <input type="checkbox"/> Facilitate orientation by avoiding large, uniform spaces. <input type="checkbox"/> To be easy to locate, the main entrance to the building should (Illustration 1): <ul style="list-style-type: none"> - be recessed or projecting; - be neither at an angle nor too close to the corner of the building; - be delimited by columns, plants or surmounted by an eaves, all of which do not constitute an obstacle to the safe movement of persons (Sheet 3: Interior horizontal circulation); - have a separate access path with a visually contrasting floor covering and tactically with the environment. <input type="checkbox"/> The entrance should be set back when the access road runs along the building and should not be an obstacle (Figure 2). <input type="checkbox"/> Place the civic number and the name of the building (Sheet 6: Signage): <ul style="list-style-type: none"> - in a predictable location, visible from the public highway; - preferably add a second number civic sign, placed next to the front door centered at 1500 mm from the main door, lock side ground, in order to allow a close reading. <input type="checkbox"/> Locate architectural and environmental features (such as eaves, trees, etc.) so as not to create areas excessive shade. <input type="checkbox"/> Provide adequate lighting for access roads, building entrances and signage (Sheet 7: Lighting). 	 <p style="text-align: center;">Figure 1</p>  <p style="text-align: center;">Figure 2</p>		
M Minimum requirement	R Recommended	(C) Quebec Construction Code	No. 1: Exterior Access / page 1
Société Logique / Nazareth and Louis Braille Institute			October 2003



Force

Use of consultants



RAAMM
Regroupement des aveugles et
amblyopes du Montréal Métropolitain

"The content of the data sheets was the subject of a broad consultation with a working group, the Groupe d'accessibilité en déficience visuelle (GADV), made up of a representative of users and orientation and mobility workers from several vision rehabilitation centers in Quebec."



Force

Glossary

GLOSSARY

Accessibility Criteria:

Quebec Construction Code (C): Requirements from the *Quebec Construction Code*, which came into effect on November 7, 2000. In the Code, these requirements sometimes apply to a specific development. For the data sheets, we have often chosen to extend their application to all similar developments. For example, the Code requirements for exit stairs have become accessibility criteria for all stairs.

Minimum Criteria (M): Essential accessibility criteria that must be met in order to allow safe travel.

Recommended Criteria (R): Suggested accessibility criteria to further improve accessibility. These are criteria that provide greater comfort to the person using a location or criteria that cannot reasonably be required for a renovation due to feasibility or cost factors.

- Stratification of eligibility criteria
- Instructions for use and terminology

- Limit

Sheet 1 : Exterior access
 Sheet 2 : Entrance and vestibule
 Sheet 3 : Interior horizontal circulation
 Sheet 4 : Stairs
 Sheet 5 : Elevator
 Sheet 6 : Signage
 Sheet 7 : Lighting
 Sheet 8 : Color/contrast

- Limit

	Beige	White	Grey	Black	Brown	Pink	Purple	Green	Orange	Blue	Yellow	Red
Red	78	84	32	38	7	57	28	24	62	13	82	0
Yellow	14	16	73	89	80	58	75	76	52	79	0	
Blue	75	82	21	47	7	50	17	12	56	0		
Orange	44	60	44	76	59	12	47	50	0			
Green	72	80	11	53	18	43	6	0				
Purple	70	79	5	56	22	40	0					
Pink	51	65	37	73	53	0						
Brown	77	84	26	43	0							
Black	87	91	58	0								
Grey	69	78	0									
White	28	0										
Whit	0											

do not use
 acceptable
 borderline

From Arthur, P. (1988). *Orientations and Landmarks in Public Buildings, Overview*. p. 84

Navigation

- Table of contents
- Pagination
- Production Guide

Color

- Shades of grey
- Reference system (HEX ; RAL ; CMN)

4

Presentation

Universal accessibility criteria: visual
impairment
Exterior layout

"It follows a first publication presenting accessibility criteria for interior design (Ratelle, Lemay and Kreis, 2003)" p.7

"clearer recommendations for outdoor amenities that will allow for independent, safe and easy travel for people with DV." p.10

- Collection of **cards**
- **Universal accessibility** criteria
- Focuses on the needs of people with **visual impairments** (VD)
- Respect the needs of **other** users of the premises.
- Avoid creation of environmental **barriers**, reduce existing **barriers**
- Autonomy, safety and ease.

"We now want to promote it to as many actors involved in the public domain as possible."

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Glossary

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- 1.6 Carriage entrance
- 1.7 Objects along the public sidewalk
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- 2.2 Street corner with narrow sidewalk (without street furniture/planting area)
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- 2.4 Street corner with wide radius
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- 2.8 Crosswalk
- 2.9 Unaligned street corners
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- 2.11 Repair/Maintenance

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Sheet 6 : Large spaces

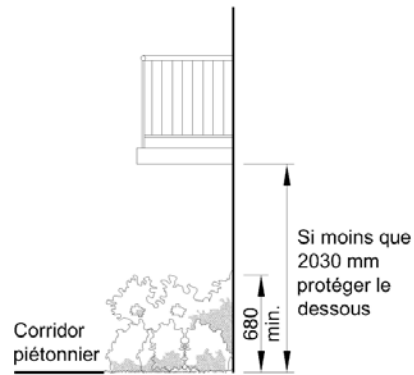
- 6.1 Basic concept
- 6.2 Public square
- 6.3 Terrace
- 6.4 Pedestrian street
- 6.5 Parking
- 6.6 Guidance line



1.1 Basic concept (continued)

There shall be no undetectable objects (sign, tree branch, hanging plant, projecting balcony, guy wires, etc.) protruding into the pedestrian corridor or adjacent spaces (ref: **Photo 3**).

- Protect the space where a protruding object may be encountered by providing a feature that can be detected by the white cane (ref: **Sketch 2**).



Sketch 2: Obstacle-free pedestrian corridor



Photo 3: Barriers in spaces adjacent to the pedestrian corridor



4.6 Intersections with special geometry (continued)

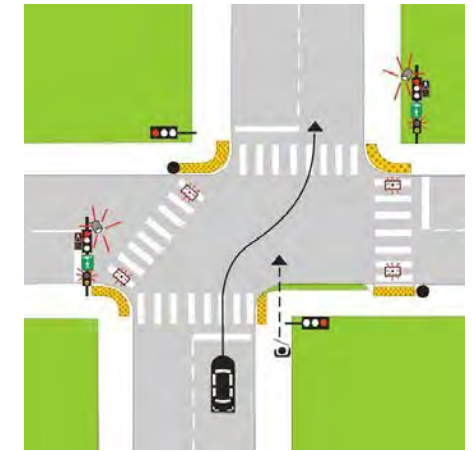
4.6.1 Off-center intersections (continued)

Crossings at off-center intersections present high risks to the person with a DV, regardless of the configuration.

4.6.1.1 Crossing locations maintained at street corners

The person with a DV who uses traffic sounds will not be able to establish an accurate alignment and will not be able to maintain their trajectory inside the crosswalk. It will be at high risk of veering into the parallel street.

In order to be accessible, the diagonal passage should be equipped with an audible signal. The alternating sound signals and the transmitters centered inside the passageway allow alignment before and during the crossing (ref.: **Sheet 3: Sound signal**).



Sketch 13: Paved boat away from the corner, straight passage





Force

- sheet 1
- sheet 2
- card 3
- sheet 4
- card 5
- sheet 6

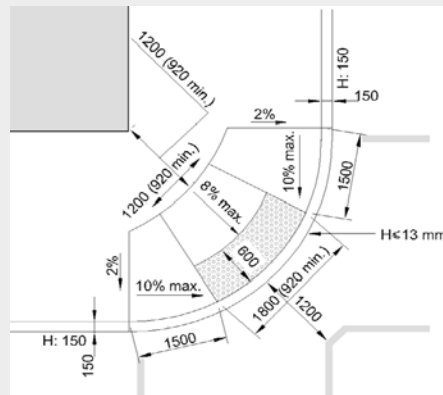


Updates

- Terminology: Universal Accessibility
- Detailed color cards
- Table of contents



Force



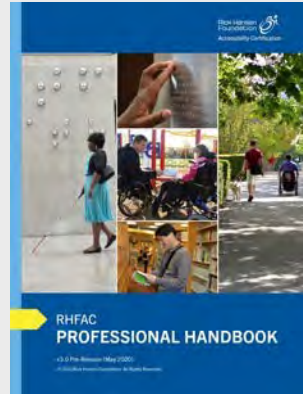
Illustrations

- Photos
- Diagrams
- Technical Drawings

1

2020

RHFAC
Professional Handbook
(v3.0 Pre-Release)



Author

- Rick Hansen Foundation

2

2021

A **Guide** to
Creating Accessible
Play Spaces



Author

- Rick Hansen Foundation

1

Presentation

RHFAC Professional Handbook (v3.0 Pre-Release)

"This document was developed to guide the reader through the specific application of the Rick Hansen Foundation Accessibility Certification™ (RHFAC) program.

This is not a design manual.

Advice on how to rate a specific site is not included in this document."

- Manual for navigating the Rick Hansen Accessibility Certification™ (RHFAC) rating survey.
- Provides guidance on important elements of the evaluation.
- The manual includes: certification levels and requirements, assessment survey and annexes

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3.1.2 Categories of rating surveys

3.1.3 Evaluation Summary

3.2 Evaluation criteria by category

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3. Interior Circulation

The table below displays the Site elements used to measure accessibility for this category, the corresponding maximum score available for each, and the category total.

Site Element	Maximum Score
3.1 Interior Doors and Doorways (not including Washrooms)	63
3.2 Path of Travel	22
3.3 Corridors and Hallways	31
3.4 Interior Ramps	35
3.5 Elevators	71
3.6 Interior Stairs	41
3.7 Escalators and Moving Walkways	19
3.8 Platform Lifts	30
Innovation	31
Total Maximum Score	343

Description

The interior circulation refers to all the elements allowing people to move throughout a Site and access its key facilities. Circulation routes are designed to optimize the flow of people within and between floors—horizontally and vertically. Interior circulation consists of the walkways, hallways, and doors connecting the facilities on each level as well as the various structures and devices people use to move between levels such as ramps, stairways, elevators, escalators, and platform lifts.

In terms of accessibility, the layout of these elements should be logical, clear, and as direct as possible. Travel distances should be minimized and level changes within a storey should be avoided where possible. Access routes should be well-maintained and free of any obstructions.

In some situations, incorporating handrails and regular seating may be helpful. Seating may be provided in adjacent spaces along the path of travel, if it is visible and near the path of travel. Seating should be located within areas where users are likely to be standing for longer periods of time.

3.1. Interior Doors and Doorways (not including Washrooms) (Maximum Score: 63 Points)

Doors, by their very nature, act as barriers and can have a significant influence on accessibility. In some situations, conventional doors may not be necessary at all. Instead, privacy may be achieved through the careful placement of walls and screens.

Doors come in various shapes, sizes, types, modes of operation, and configurations. The main types of doors are sliding, swinging, revolving, and folding. There are two modes of operation: manual and power assisted. Power-assisted doors can be automatically activated or manually activated. The most suitable type of door arrangement will depend on the nature of the Site, the frequency of use, the available space, and security requirements.

The easiest way to access a facility is through power-assisted doors. These types of doors are typically used at an entrance or in high-traffic areas within a Site. Power-assisted doors should ideally slide aside rather than swing in or out, as door swing creates a barrier and requires the need for additional manoeuvring space on either side of the door.

Doors may be single and stand-alone or, depending on the nature and size of the Site, they may be configured in series.

Revolving doors should be avoided, as they are not accessible for many and can be hazardous. Wherever revolving doors exist, there should always be a fully accessible alternative available.

3.1.1. Power-operated door or open entry (Maximum Points: 5)

N/A only if there is no expected requirement for a power-operated door

Minimum Points:

- Provides power-operated door where there is limited clearance on the latch side of the door on the pull side
- Provides power-operated door at main circulation doors, high-traffic areas and rooms, if required for easy circulation
- Provides power-operated doors with manually-activated controls, or are controlled with a motion-detector actuator, or other hands-free device, where applicable

Maximum Points:

- Provides open entry, where possible
- Ensures door edges are marked in high-contrast colour
- Ensures sensors are responsive to all users at different height, where door sensors are used

3.1.2. Sufficient opening, hold-open, and closing time for power-operated doors (Maximum Points: 4)

N/A only if there is no power-operated door or open entry

Minimum/Maximum Points:

- Ensures sufficient time for people who are slow moving
- Takes at least three seconds to move from a closed to a fully open position
- Ensures door remains fully open for a sufficient length of time to allow all Site users to manoeuvre in and out of door safely—at least five seconds

3.1.3. Controls for manually activated power-operated doors (Maximum Points: 4)

N/A only if motion sensor present or not power operated or open entry

Minimum Points:

- Ensures controls for power-operated doors are located at accessible height and location
- Ensures controls are located on latch side of door and outside of door swing
- Ensures people do not have to manoeuvre backwards or clear of the door swing after activation of the door control device
- Ensures controls are easy to use and operable with one hand and without tight grasping, pinching, or twisting
- Provides clear space for approach in front of controls
- Ensures controls are clearly identified and contrast visually with surrounding surfaces

Maximum Points:

- Ensures controls are operable at multiple heights; an elongated or second control that can be foot-activated allows people with restricted hand functions to open doors
- Uses International Symbol of Access to identify control

Ideas for innovation:

- Use of universal “Open Door” text accompanied by recognized symbol and pictogram, instead of International Symbol of Access, does not segregate and label users



Figure 8: Elongated power-operated door control usable at multiple heights

3.1.4. Emergency power or fail-safe systems for power-operated doors (if on an emergency exit route) (Maximum Points: 2)

Applies only to interior power-operated doors along emergency exit routes that are expected to be used in emergency situations

Minimum Points:

- Ensures that power-operated doors can be pushed open with minimal force and release latch can be easily identified and operated

Maximum Points:

- Provides emergency power source for power-operated door, so that they can be used in emergency situations



Force

Variety of topics covered

Evaluation criteria by category
(236 pages)

1. Vehicle access
2. External approach and entry
3. Interior circulation
4. Interior services and environment
5. Sanitary installations

6. Orientation and signage
7. Emergency systems
8. Additional use of space
9. Residential units
10. Trails and paths

Appendix A. Basic Specifications
(Diagrams and explanatory drawings, 10)

- A.1 Space and clearance
- A.2 Range
- A.3 Countertops, worktops and sinks
- A.4 Signage
- A.5 Color contrast



Force

Structure

X.X.X. Characteristic

Minimum points:

- Criteria

Maximum points:

- Criteria

Ideas for innovation:

- Ideas (sometimes with photos)

- Minimum points = "fair" level of accessibility
- Maximum points = "ideal" level of accessibility
- Ideas for innovation: examples or inspirations for application in practice
- Photos : help to understand. 39 photos for 236 pages

-	Limit	Application to practice
	<p>Appendix A.5 Color Contrast</p> <p><i>"The minimum color contrast shall be:</i></p> <p>50% <i>to be visible to most visually impaired people</i></p> <p>70% <i>for signage and hazards"</i>.</p>	<ul style="list-style-type: none">- Further explanations could be provided, for example: formula for calculating % contrast <p>Example of a formula: Contrast in % = $(B1 - B2 \times 100) / B1$</p> <p>B1 = light reflection index of the light color B2 = light reflection index of the dark color</p> <p><i>Formula from: City of Montreal (2017). Universal accessibility of municipal buildings. p.113.</i></p>

2

Presentation

A Guide to Creating
Accessible Play
Spaces

"The Accessible Play Space Toolkit is a practical guide to creating accessible play spaces for children of all abilities. Whether you are developing a new play space or renovating an existing one, this guide provides a general set of guiding principles for designing an accessible and inclusive play space in which all children, including those with disabilities, can have fun."

Allows you to:

- Discover inclusive play
- Understanding inclusive, accessible and universal design for play spaces
- Recognize the needs of children and caregivers of various abilities
- Discover different play experiences
- Learn best practices and common problems
- Learn to assess the accessibility and inclusion of an existing play space
- Design a new play space using the sample plan provided

2

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2.3 How accessible is your current play space?

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Hearing Disabilities

Visual Disabilities

Color blindness and the use of color

Autism spectrum disorder and other sensory disabilities

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3.3 Consider a wide range of play experiences

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- 4 steps

Phase 2 - Project Planning

- 6 steps Phase 3 - Doing it

- 5 steps

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7.1 Case Studies

7.2 Questionnaire for the evaluation of an existing play space

7.3 Project Planning Checklist

7.4 Glossary of terms

8. External references

2.2. What Is Universal Design?

The purpose of Universal Design is to make products, communications, and environments usable to as many people as possible without the need for adaptations or specialized designs (Center for Universal Design, 2008).

Accessibility and inclusion are naturally incorporated into Universal Design.

Seven Principles of Universal 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 effectively and comfortably with a minimum of fatigue.
- 7 Size and Space for Approach and Use**
Appropriate size and space is provided for approach, reach and manipulation, and use regardless of user's body size, posture, or mobility.

- Posts that people might walk into
- Railings that contrast with the supports to make them easier to find
- Tripping hazards that may exist in an older playground
- Safe zones around swings, slide exits, and other play areas that might not be noticed when people are moving around the playground
- Changes in levels and hazardous areas, identified by tactile warning features and colour contrast
- Hand railings that need to be seen by children with vision loss who gain a sense of security when using the railings to navigate the play space

Colour-Blindness and the Use of Colour



Approximately 10% of males and 0.5% of females are colour-blind. The inability to distinguish red and green is the most common form of colour-blindness followed by the inability to distinguish green and blue.

To make your design more inclusive, avoid the use of red and green or green and blue components adjacent to each other.

Autism Spectrum Disorder and Other Sensory Disabilities

Outdoor play, especially play in natural settings, has been shown to have a soothing effect on children with autism spectrum disorder. Activities that involve natural settings, motion, visual interest, and water play can be good choices. As mentioned above, care must be taken if selecting noise-making equipment. Play space committee members should research this subject with specialists, school board staff, and parents before selecting equipment and designs.

Note: Shiny surfaces should be avoided, as they can produce a disturbing glare that can inhibit the ability of people with vision loss to orient themselves.



5. Tips About Slides

- Double slides (side by side) allow caregivers to accompany and, if needed, support the child.
- Slide exits should not be directed into busy play areas.
- Transfer platforms at the base of slide exits will allow for a space where sliders who use assistive equipment can transfer off the slide while they wait for mobility devices to be retrieved.



Metal Versus Plastic Slides

As mentioned above in the hearing disabilities section, when children slide down plastic slides, static electricity is generated and under some circumstances cochlear implants can be damaged. The use of metal slides can avoid this problem. However, sun exposure can leave metal slides hot enough to burn skin. Where only plastic slides are provided, children may need to remove the exterior portions of their cochlear implants or may avoid the slides.

More about slides:

- Roller slides are another new item showing up in product catalogues. These are usually gentler in slope and provide both a tactile and a sliding experience.
- In addition to ramps, stairs with handrails are easier to use.
- Inclusive slides are wider at the bottom to allow sliders to get out of the way, and those with mobility devices have a transfer bench to transition back into their mobility assistive equipment.



8. Children Using Assistive Devices

To accommodate the needs of children and caregivers who use assistive devices, your play space design should:

- Provide a reachable safe place for children and caregivers to leave canes and other assistive devices to help prevent devices from being misplaced or obstructing play areas
- Provide a transfer platform at the bottom of each slide that's sufficient in size to give children a place to wait for their wheelchair or other assistive device without blocking others from using the slide



5. Best Practice Ideas and Solutions to Common Issues



5.1. Best Practice Ideas

Keep in mind the overall principles of play space design when selecting the individual elements for your play space. The design should engage children, parents, and caregivers with a rich variety of activities to stimulate the senses, and foster rich and imaginative opportunities for shared play. For more information and updates, please visit the Rick Hansen Foundation website: www.rickhansen.com.



1. Location

Ensure the playground is near parking and walking paths and preferably near washrooms.



2. Surfacing Materials

The play space surface is one of the most important components in designing safe, accessible play spaces. Too many existing play spaces use non-accessible surfacing materials (pea gravel and sand) that unfortunately exclude most people with mobility challenges.

Here are five play space surface options to consider, listed from most to least expensive:

1. Pour-in-place rubber surfacing wears well overall and is installed much like concrete, with a resilient layer (the buffings) trowelled into place, and then the wear course (the EPDM) added on top. This surface is quite smooth and known for having few if any trip points as the rubber changes size with changes in weather. Be aware that, if not prepared properly during installation, over time shrinkage will be noticed at the edge of the pad. More excessive wear may occur if the rubber surfacing is used around spinning elements. Check your local jurisdiction for grants associated with using recycled rubber such as the Tire Stewardship BC grant.
2. Rubber tile is softer underfoot and more even to walk on than other choices, but site preparation is key. A concrete slab or compacted road base that provides a firm, flat surface is required under the tiles. Without a properly prepared base, the finish will have dips and rises on the surface that can create tripping points in the tile. As rubber will expand and contract with changes in weather, the perimeter needs to be installed with care to ensure proper fitting.



Case Study 2: An Accessible Playground for a School and Its Local Community

Our Lady of the Assumption School, Lethbridge, AB

Challenge: Creating a Bigger, Better, More Inclusive Playground

Our Lady of the Assumption School had a functional playground, but one that didn't fit the needs of all students.

After school hours and on weekends, the playground is also open to the entire community of Lethbridge and needs to be a fun, accessible space for children of all ages and abilities. With these factors in mind, the school took on the challenge of building a bigger, better, and more inclusive playground that would reflect the principles of Universal Design and allow everyone to play.

Collaboration Across Communities

“It truly takes a community to build a project like a new playground.” – Mr. Kostiuk

Led by a Parent Fundraising Committee (PFRC), and two parents who tackled the challenge of grant writing, the school raised a total of \$350,000 toward the playground's construction. The PFRC not only raised funds for the playground, but also helped build a community around the project at the school.

A group of volunteers rallied to dismantle the old playground, which was then donated to an organization that is moving it to a developing country for repurposing and reassembling.

The Volunteer Challenge

Finding enough volunteers with time to help during the playground's four-day construction was one of the biggest challenges. The school knew they needed a lot of volunteers but underestimated how many they would actually require.

While the construction company was responsible for the actual build, 40 adult volunteers were needed each day over the entire build period. Some of the work was highly physical, carrying and putting playground pieces together; other jobs included attending the first aid station, helping at the water station, or being part of the clean-up crew.

To grow the volunteer base, Mr. Kostiuk connected with people online through his blog, requesting additional help and demonstrating the need to provide a safe, happy space for all children.

Up and Running!

In September 2015, the school year opened with a blessing for the newly constructed playground. It is now in use, with several accessible features. The base is made from rubber tiles and can be accessed from all points around the playground. A portion of the equipment is accessible from a ramp.





Force

A deep understanding of universal design

2. About accessible play spaces

2.1 What are the benefits of an accessible play space?

2.2 What is universal design?

2.3 How accessible is your current play space?

- The guide aims at a global understanding of universal design allowing us to conceive projects in a global vision of accessibility.



Force

Consideration of different disabilities



- Mobility Disabilities
- Hearing impairments
- Visual disabilities
- Color blindness and the use of color
- Autism spectrum disorder and other sensory disabilities



Force

[4. Building your accessible play space](#)

[5. Best practice ideas and solutions to common problems](#)

[6. A sample plan for creating your accessible play space](#)

The explanation of the practice

- Explanation of the accessible play space design process
- Source of ideas for practice and solutions to common problems
- Provides a sample design plan for an accessible play space with the different phases of the project and the steps to be completed



Force

Case Studies

- The case studies provide an opportunity to see an application of the principles in practice and the journey of the accessible play space design process.

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Force

Layout and visual support

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- In addition to ramps, stairs with handrails are easier to use.
- Inclusive slides are either at the bottom to allow slides to get out of the way, and those with mobility devices have a transfer switch to transition back into their mobility assistive equipment.

- Diagrams, schematics, notepads, photos, etc...
- Makes information easier to understand and more accessible