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SITELINES

Landscape Architecture in British Columbia



UNIVERSAL DESIGN – Intuitive, Elegant, and Inclusive

The Power of Inclusion | Creating a Universal Accessibility Implementation Plan for Metro Vancouver | Whistler's Road to Accessibility | Enabling Play for All | The People's Paradigm in Landscape Architecture | Streets for All People | Social Topography – A Model for Advancing Accessibility and Inclusion



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The purpose of Sitelines is to provide an open forum for the exchange of ideas and information pertaining to the profession of landscape architecture. Individual opinions expressed are those of the writers and not necessarily of those of the BCSLA.

By Shira Standfield, MRM, MBCSLA



UNIVERSAL DESIGN

– Simply Good Design for All

Universal Design is not “accessible design” for “people with disabilities” but rather it’s about good design for all of people. Landscape architects are trained to consider site context, sustainability, ecological, and economic considerations, so why are the wide range of users’ needs often considered as an afterthought? Too often accessibility is considered from a compliance perspective. Instead, Universal Design can be a driver for creating beautiful, functional, easy to use, and inclusive places. This issue is full of great designs and successful spaces that focus on users’ needs first.

Karen L. Braitmayer, FAIA’s article outlines the principles behind Universal Design and its application to parks and outdoor spaces, as well to the latest Americans with Disabilities Act (ADA) standards in the United States. In order to create a more inclusive parks system, Metro Vancouver has been applying a universal design approach to physical sites as well as to communication and outreach efforts. The intent of the region’s Universal Accessibility Implementation Plan, described in this issue, is to reach the wide range of users of all abilities and interests encouraging more people to experience regional parks. The Resort Municipality of Whistler (RMOW) has also been working at incremental transformation to a more accessible and inclusive community and resort destination through deliberate universal design. Sarah Tipler, Measuring Up Coordinator, describes some of the opportunities and challenges of creating an accessible 2010 Winter Olympic and Paralympic Games as well as a lasting legacy of an inclusive community.

Landscape architects have a unique opportunity to promote inclusion through creativity and innovation. Susan Herrington’s article outlines principles for enabling inclusive play – access, activity, and variability. She emphasizes the role of designers in creating innovative playspaces using topography and planting design to create great places for all kids. The design of garden spaces, which take into account people’s needs is described in the article by Donna Rodman, MBCSLA. ▶



Universal beach path, Roberts Creek, BC. Image courtesy of Shira Standfield.

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The design of streets and linkages between places is crucial in providing accessible and inclusive communities. Heather McCain, Executive Director of Citizens for Accessible Neighbourhoods, considers the wide range of needs of different pedestrians in designing accessible, safe, and comfortable streetscapes. Mike Prescott, CEO, everyone included strategies inc., looks at social topography as a new way of evaluating community design. He writes about using a network perspective in terms of evaluating the overall inclusiveness of a community.

Universal Design can offer a holistic and integrated approach to design and as designers we need to remember that, “good design enables, bad design disables, irrespective of the user’s abilities. That in essence is what design for all is about.”¹ SL

1. Jim Sandhu, University of Northumbria Newcastle upon Tyne, UK.

Principles of UNIVERSAL DESIGN for Site Design¹

1. **EQUITABLE USE** – Places are accessible to all users, provide the same means for all users, identical where possible, equivalent when not.
2. **FLEXIBILITY IN USE** – Places accommodate a wide range of individual preferences and abilities, provide choice for all.
3. **SIMPLE AND INTUITIVE** – Understanding a site and context should be easy, regardless of the user’s experience, knowledge, language, or skill.
4. **PERCEPTIBLE INFORMATION** – Information is communicated effectively to the user regardless of ambient conditions or the user’s sensory abilities.
5. **TOLERANCE FOR ERROR** – Hazards and the adverse consequences of accidents are minimized (most used elements are the most accessible, hazardous elements are isolated or eliminated, warnings are provided).
6. **LOW PHYSICAL EFFORT** – The space can be used efficiently and comfortably with a minimum of fatigue.
7. **SIZE AND SPACE FOR APPROACH AND USE** – Appropriate size and space is provided for approach, reach, manipulation, regardless of user’s body size, posture, or mobility.

1. Adapted from NC State University, The Center for Universal Design.



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The Power of Inclusion: UPDATES ON UNIVERSAL DESIGN IN LANDSCAPE

By Karen L. Braitmayer, FAIA



Left: Seattle Children's Playgarden accessible play areas with garden and playground in background. Image courtesy of Seattle Children's Playgarden.

Right: Camping and picnic sites with accessible fire ring, parking space, picnic table (designated with blue sign) across from accessible parking at restroom building. Image courtesy of Rory Calhoun.

“Design is powerful and profoundly influences our daily lives and our sense of confidence, comfort, and control...Variation in ability is ordinary, not special, and affects most of us for some part of our lives.” Valerie Fletcher, Institute for Human Centered Design

These messages changed my whole mindset about design when I first read them. The human lifespan creates a wide range of strength and agility, from non-ambulatory (infants) to ambulatory (childhood) to our athletic peak (20s) to less-than-steady-on-your-feet (seniors). This bell curve represents the natural arc of our abilities over the lifespan. Design for all abilities is not about designing for “those disabled people” but for all of us. Encouraging our design teams to incorporate the principals of Universal Design goes a long way to ensure that all users are equally included in our community spaces.

Architect Ron Mace coined the term Universal Design (UD) to refer to the process of designing products, buildings, and environments to be used by people regardless of their age or ability without the use of specialized equipment. In the built environment this is often incorrectly equated with “accessibility”, a term used in building codes and standards to

identify features that accommodate people with disabilities. Almost without exception, features that are universally designed go beyond just accommodating people with disabilities and benefit the general population as well. The lever door handle is an example of a product that may make opening doors possible by those with painful hands or limited grip but it equally accommodates the person carrying an armload of groceries who need to use an elbow to open the door. Utilizing the UD process results in a building or environment that is greatly enhanced and aesthetically pleasing for all.

Universal Access to Recreation and Outdoor Spaces

The application of accessibility and Universal Design has been effective in the realm of buildings and facilities. The 1991 Americans

with Disabilities Act (ADA) Standards changed the face of buildings and communities by increasing access for all. Applying the 1991 ADA standards to recreation and outdoor spaces has been less effective because we have lacked clear regulations around recreation and the range of outdoor spaces – from urban to natural.

One step forward has been made. On March 15, 2012, the 2010 Americans with Disabilities Standards for Accessible Design (2010 ADA) became mandatory for all new construction in the United States. This revision of the original 1991 standards includes new rules establishing minimum standards for recreational facilities such as boating docks, fishing piers, golf and mini-golf facilities, play areas, swimming pools, spas, and amusement rides. Finally, physical barriers to these sports, recreation, and fitness pursuits in newly constructed facilities covered by the ADA will be removed.

Accessible Routes in Urban and Rural Settings

Still in development by the US Access Board are guidelines addressing Public Rights of Way, Outdoor Developed Spaces, and ▶



Seattle Children's Playgarden - one of the accessible play areas with water play area, play "hill", and community kitchen building. Image courtesy of Seattle Children's Playgarden.



Arial view of Millennium Park, Chicago, IL. Image courtesy of Edward K. Uhler.



Shallow slope bridge in Millennium Park, Chicago, IL. Image courtesy of Edward K. Uhler.

Shared Use Paths. The US Access Board is formalizing guidelines for eventual adoption into Standards in these three areas. These documents will move forward the ultimate inclusion of people of all abilities into the enjoyment of the outdoor environment. Each recognizes that the environment and its use will dictate the amount of intervention that is reasonable to enable everyone to experience the outdoors at their level.

The Public Rights of Way guidelines acknowledge the need to align roads and sidewalks with natural contours of cities and towns while providing accessible sidewalks,

pedestrian crossings, signals, and parking. This document will provide minimum standards for how to remodel sidewalks/curb ramps to meet existing conditions with an accessible solution. Related to Public Rights-of-Way is the Shared Use Path language, also being drafted. Shared use paths are designed for both transportation and recreation purposes and are used by pedestrians, bicyclists, skaters, equestrians, and other users. These are typically separated from vehicular traffic by a median or barrier. This language is just at the beginning stages of development. Draft Final Guidelines for

Outdoor Developed Areas encourage the development of outdoor recreation areas for people of all abilities while still maintaining the natural environment for camping areas, picnic areas, beaches, and trails.

One component of the outdoor developed spaces language that I find most appealing is the effort to provide signage to inform users of the nature of the outdoor space they might encounter. This allows people to make decisions about their preferred experience. People with and without disabilities and their families may vary in their strength and adventurous nature. Some wheelchair users,

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for example are looking for an extreme path to test their mettle (just like more able hikers) and some are more interested in a gentle walk through a garden. Providing trail details such as slope, cross slope, and potential trail surface interruptions would allow users to gauge if this is the outdoor experience for them.

Universal Design in Outdoor Spaces

Increasingly, UD processes and features are being used in public spaces to great acclaim. One shining example is Millennium Park, a new 24.5 acre park in downtown Chicago created through an unprecedented public-private partnership. This “lid” park was developed over what had been a wasteland of train tracks and parking lots, resulting in a world-class public park atop a newly renewed train station. The entire park has been designed with a high level of accessibility, using Universal Design principles.

Some of the features that make this park so enjoyable include:

- The Jay Pritzker Pavilion, an outdoor performance venue, has accessible wheelchair spaces distributed throughout the fixed seating areas.
- The Great Lawn, a gently sloping lawn for picnicking and watching performances,

was designed with the crush point of the grass aligned with the sidewalk for easy transition onto the grass. Wheelchair users can roll right onto the lawn to join their family and friends.

- The grand staircases from Michigan Avenue to the Great Lawn have ramps that start and stop at the top/bottom landings of the stair runs so that wheelers may join the same path as their stair-climbing companions. The slope of the ramps is less than code maximums to reduce effort and fatigue along the way.
- The Crown Fountain has a level transition from the surrounding sidewalk to the fountain floor so that anyone can join in the fountain water play fun.
- The BP Bridge has a maximum slope of 1:20 along the entire route. 1:20 is the maximum slope allowable without the use of handrails and requires reduced effort from that of a ramp. The boards of the walkway are spaced with a gap a maximum of ¼” wide to prevent wheels or walker tips from catching on the gap.

The combined effort of meeting or exceeding the standards when possible creates a community amenity that welcomes everyone, allows all ages, abilities, and backgrounds to participate equally and actively. Seeing children using mobility devices rolling in and out of the fountain water spray, chasing



Millennium Park – The Crown Fountain. Image courtesy of LCM Architects.

their friends and getting soaked, like everyone else is a joy. Diverse families with members of all ages can sit on the lawn and listen to concerts together. I am encouraged that more outdoor, recreational environment of this sort will be available in the future.

“Design is only one part of the solution to a more inclusive world in which all people have equal opportunity for independence, autonomy, and participation. But design matters.”¹ SL

Karen Braitmayer, FAIA is the principal and founder of Studio Pacifica, Ltd. an architectural consulting practice that focuses on accessibility and accessible design.

¹ Institute for Human Centered Design.

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Park audits included communications and directional information located on park kiosks. Surfacing around the kiosk, font size used in posters, placement of key information such as maps were all considered.



Trails widths and cross slopes were measured during the audit process.

All images courtesy of Metro Vancouver.



Staff training included the use of wheel chairs to allow staff to examine accessibility from a different point of view.

Creating a

Universal Accessibility Implementation Plan for Metro Vancouver

By Jamie Vala, MBCSLA and Adam Vasilevich, MBCSLA

One million new residents are anticipated to join the Metro Vancouver Region in the near future. A 2011 Metro Vancouver Outdoor Recreation Opportunities Survey showed that there is no typical profile of a recreationist in the region. People who enjoy and use parks span the spectrum of age, ethnicities, and abilities, affirming the need to design parks for all users.

In order to work towards its goal of increasing regional park visitation, Metro Vancouver Regional Parks is actively improving accessible facilities and experiences in parks to meet the demand. Recently, staff and a consultant team have developed a series of plans and action strategies to make efficient and effective changes in parks.

A Universal Accessibility Implementation Plan was developed in response to the need identified in the Regional Parks Plan. The plan identified short and long-term goals including:

- Expanding park facility capacity.
- Increasing universal access.
- Increasing park visitation numbers.
- Enhancing inclusiveness of park facilities.
- Providing facilities to meet the needs of an aging population.

- Supporting health and wellness of more residents.

In 2010, staff developed a policy statement modeled after the one used by the Capital Regional District:

“Metro Vancouver Parks is actively committed to accessibility and universal design, considering the needs of as many visitors as possible, and incorporating those needs into facilities, signs, and visitors services wherever feasible and finances allow. This commitment places the emphasis on accessible experiences in regional parks and trails.”

Metro Vancouver Parks will provide:

- Accessible recreational opportunities that promote independence for the visitor, while respecting the natural and visual integrity of the park and its features.

- Universal access to representative natural landscapes and recreational experiences so that facilities are planned in conjunction with an accessible recreation experience.
- Accessibility and Universal Design as primary considerations in any new development project or retrofit (signs, facilities, and trails).

In order to further develop the policy statement into a Universal Accessibility Implementation Plan, a consultant team reviewed accessibility and inclusion efforts in other jurisdictions and developed accessibility audit templates for Metro Vancouver’s parks. The team also provided staff training on undertaking park site and program accessibility audits.

Parks staff completed accessibility audits, and a thorough list of potential site retrofits was developed with the aim to increase accessibility for all park users. This audit process greatly raised awareness with Metro’s Park Operations staff, produced a list of “quick fixes” and more extensive issues to be addressed at a later date.

The list of “quick fixes” included items that required little investment in funds or time, and could be undertaken by parks ▶

operations staff in the course of their usual maintenance work. Examples included: lowering the height of soap dispensers in washrooms, fixing small grade changes and tripping points around picnic tables, and signing and marking accessible parking stalls. Although these may seem like small changes, they can thoroughly enhance the park experience for a variety of visitors.

Staff included regional priorities in order to develop the Universal Accessibility Implementation Plan with a 30-year outlook for more extensive access issues. The plan will be reviewed regularly to meet changing visitor needs over time. As part of the plan, staff also developed standards and guidelines for site furniture, trails, buildings, and other facilities. These standards incorporated Universal Design features as “the norm”, helping to raise awareness on improving existing and developing new facilities that are more inclusive.

Communication efforts were also included

in the implementation plan and staff updated Metro Vancouver’s website with existing accessibility information for each park. The enhanced pages provide more detailed information on facilities, trail surfaces, conditions, and major barriers. This small website upgrade has greatly helped in providing useful pre-trip planning information for park users. By having access to accurate and trusted information from home, visitors are more likely to actually visit parks in person.

The Accessibility Implementation Plan process also identified the challenge to improve communications with park visitors as demographics and technologies rapidly change. Metro Vancouver Regional parks will explore approaches to a communication strategy to include public programs and techniques to reach non-English speaking populations and use innovative, non-traditional delivery methods to increase access to the information required to enjoy regional parks to an audience of varying ability.

The Regional Parks 10 year Capital Plan has identified funding to execute the Accessibility Implementation Plan. The funds will focus on improving existing facilities, developing new features, improving programming and communications all of which will allow more people to utilize existing facilities in regional parks. The process has greatly increased awareness with staff who continue to develop parks to be inclusive to all regardless of age or ability. **SL**

Video links:

Accessibility Audit In Parks – <http://goo.gl/fHZlp>

Accessible Playground - <http://goo.gl/tH2mH>

Adam Vasilevich, MBCSLA is a landscape architect and planner with the Planning, Resource Management and Development group at Metro Vancouver.

Jamie Vala, MBCSLA is the park planner for Metro Vancouver’s Central Area parks.

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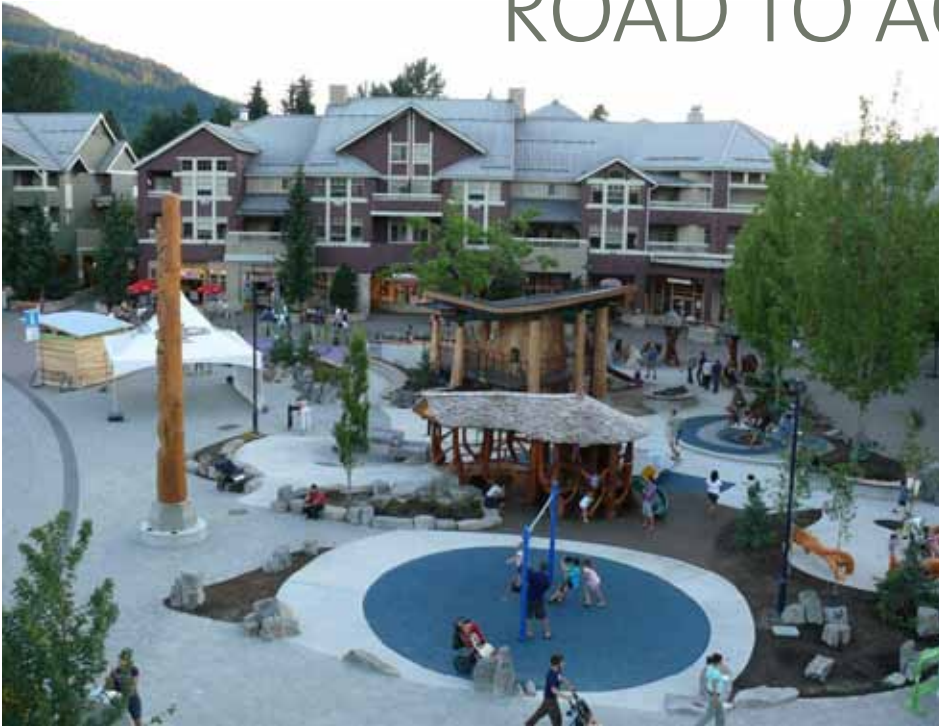


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WHISTLER'S

ROAD TO ACCESSIBILITY

By Sarah Tipler, Measuring Up Coordinator



Left: Children's Inclusive Play Area.
Right: Path leading to the lawn in front of the pavilion at Whistler Olympic Plaza.



Nestled in the Coast Mountains, Whistler has the unique advantage of being the first master-planned resort municipality within the province of British Columbia. It has received accolades for its successful urban design and has become a model for other ski resorts. Eldon Beck, a landscape architect from San Francisco, had a vision for Whistler Village to be a “village in the forest”- one that would offer an urban experience through the availability of services, merchandise, and people interaction, yet, “remain mountain-like in materials, scale, and mood.”

Top to bottom:
High Performance Centre at night.
Path leading to lawn and pavilion at Whistler Olympic Plaza.
Lobby in the High Performance Centre.

All images courtesy of RMOW.

Unfortunately in 1978, accessibility was one of the few considerations not fully taken into account. Universal Design wasn't yet in its infancy; it had only just been conceived.

Five years prior to Beck's vision for Whistler, architect Ronald Mace challenged the conventional approach of designing for the average user and provided a design foundation for more accessible and usable products and environments, known today as Universal Design. He was responsible for the first accessible building code in America and was instrumental in the passage of national legislation prohibiting discrimination against people with disabilities.

According to the Institute for Human Centered Design, “Universal design is human centered design of everything with everyone in mind.” For Whistlerites, Universal Design empowers freedom of participation; fosters inclusion regardless of ability; and eliminates the need to label users.

As a small, mountain community, Whistler Village is nestled between Whistler and ▶



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Blackcomb Mountains and is subject to a large amount of precipitation. Carefully designed dikes throughout the Village contain much of this runoff. As a result, many of the physical barriers in the Village are the result of mitigating flood risks. The municipality has addressed these barriers with signage to direct pedestrians towards ramps or more accessible routes.

Whistler's major strides towards universal access resulted from being one of the host mountain resorts for the 2010 Winter Olympic and Paralympic Games. Whistler is fortunate to have an entire neighbourhood and a large public plaza, including an inclusive children's play area, created with Universal Design principles as a key driver. From the beginning, the design brief had a mandate to accommodate all athletes and spectators during and after the Games.

Following the Games, the Whistler Athlete's Village transitioned into non-market residential housing, with a portion remaining adaptable for seniors' housing.

The Athletes' Village includes a High Performance Sports Center and an Athlete's Lodge. A park is being developed directly on the landfill site and will include an accessible outdoor multi-sport court, tennis courts, accessible playground, and an accessible community garden.

Whistler Olympic Plaza is positioned to take full advantage of the sightlines to Whistler and Blackcomb Mountains while offering an array of gathering areas, including two outdoor fireplaces designed to provide a warming spot after ice-skating, and a lawn for summer picnics. The inclusive play area offers children a unique and beautifully crafted accessible tree house with numerous play activities including swinging discs and a water table with movable elements. While staying true to Eldon's vision of a "village in the forest", various animals' prints interspersed on the edges of the playground's rubberized surfacing mimic various natural elements while providing safety and mobility.

In 1978, Whistler's designers and developers did not consider people with disabilities in their plans. However, we now know that approximately 15 percent of British Columbians have a disability and in approximately 20 years there will be between 4.6 and 5.1 million seniors living with a disability in Canada. As Whistler is faced with more revitalization projects, opportunities will arise to incrementally reduce barriers. Dr. Edward Steinfeld, from the Center for Inclusive Design and Environmental Access, agrees. "Universal design updates can be done incrementally — do it within your means. You don't need to do it all at once," he says. "It's a philosophy of practice, not a set of rules." [SL](#)

Since a backcountry accident left her with a cervical spinal cord injury, Sarah Tipler has been an advocate for accessibility. She has spearheaded Legacies Now's Measuring Up program in Squamish and Whistler and has been involved with the District of Squamish's Advisory Design Panel since 2005.

Enabling Play FOR ALL

By Susan Herrington

For all children, play can provide opportunities to make friends, build self-esteem and confidence, and develop physically and cognitively. Early childhood educators have identified three key features of inclusive play environments for children of varying abilities: access, activity, and variability. In many play landscapes, however, these features could be explored more to maximize play opportunities for all children.

Access

Access typically refers to a child's ability to physically engage in a desirable experience. In the guidelines available to most landscape architects, access is often considered in regards to movement on a play structure or a piece of play equipment. A seamless ground surface, the width of access points, the slope of ramps, and a transfer system of platforms, steps, and supports are specified.

Transfer systems are an interesting case in point. They enable children in a mobility device, such as a wheelchair, to move onto an elevated play component without the device. For children who have this capability (and this varies, some may need assistance) this is the desirable goal: to get out of the chair. So landscape architects could consider the range of landscapes that children might transfer to, in addition to the play structure. These could be sand areas where children can manipulate materials together in a non-standing position or climbing slopes, where all children are challenged to use their upper-body strength.

Activity

Activity involves the ability of all children to participate in the same play actions when access is established. These activities will change and diversify, as children grow older. For example, children participate in increased social interaction as they develop from infancy to school age. Something as basic as leaving a paved open space directly next to a bench, or removing a bench at a fixed eating arrangement, can

enable more inclusive socialization. Likewise, activities that children can do together will further opportunities for all children to take part in play. Basket seat swings, for example, are good for children with a range of abilities because the size and shape of the seat provides more stability than a standard sling swing. Also, groups of children can swing in these baskets together.

Play structure manufacturers will often have their own section dedicated to inclusive play products. Play panels are often featured in this section, and components like tic-tac-toe boards are installed with the good intention that all children will enjoy them. Unfortunately, children regardless of their abilities, rarely play with these panels. Moreover, play equipment is not always the main focus of children's play. In a study of young children playing in the outdoor play spaces at child care centres in Vancouver, we found that 87 percent of the time the equipment was unoccupied. This suggests that landscape architects could look to the environment in general as a source of play. For example, the ground plane is often the focus of creating accessible playground. Resilient poured-in place surfaces, rubber tiles, and engineered wood fibre products



Top: Chiswick Park by West 8 has large surfaced open space. Varying the paving type not only adds visual interest but it also creates different vibrations as children cross over it.

Bottom: A playground in South London has poured-in-place rubber surfacing that has been designed as a series of mounds. With the addition of climbing handles, children of varying abilities could use their upper-body strength to ascend and descend the mounds.

are typically specified to maintain maximum access for children. These, surfaces could vary in colour or pattern, and some poured-in-place can be given topographic features, which provide challenges for all children.

Variability

Limited play variability may be a reason why play equipment, particularly play components that are overly prescribed like the tic-tac-toe panels, have inadequate usage by children. Also, the play structures have little to do with playing outdoors. The third consideration in creating an inclusive play space is variability, which means offering a range of opportunities for children to interact and play. Natural elements, such as water and plants, contribute variability to the play environment. Because many ▶



Above: Mazes that are wide enough to accommodate a range of mobility devices can provide play for both children and adults. The hedge material could also be lowered in height so that children can't see over the top, but adults can.

natural elements are animat — changing in size, colour, and texture with time—they provide sensory experiences. For children who may have limited perceptual abilities, such as blindness, play environments that contain things they can feel, or hear, or smell, will contribute to their sensorial engagement with the play space.

Plants also provide highly variable imaginative elements in outdoor play spaces. Com-

monly referred to as “play props,” they provide loose parts, such as seeds, flowers, and leaves, which can be used for dramatic play activities. Consider the bigleaf maple tree. Its large leaves can become a floppy hat or a dinner plate, and its sticky winged seeds can be stuck on noses to create different characters. Lastly, natural elements can be designed to form unique spaces. Many children enjoy exploring space, first as they put objects in and out of a pail as an infant and later with their entire bodies. Hedge mazes are an example where a common plant material could be used to create mysterious spaces where children, whether walking or using a mobility device, can explore and play. Landscape architects are specifically trained in their knowledge of plants, so this is where they can contribute greatly to children’s play environments.

When designing inclusive play environments we should explore innovative design solutions that tap the basic inclinations of all children and satisfy their need to play. There are numerous codes and regulations that stipulate design parameters to ensure accessibility, but it is up to landscape architects to go beyond these codes to make play spaces that will truly inspire all children. [SL](#)

Susan Herrington is a professor in the School of Architecture and Landscape Architecture at UBC. Her forthcoming book is Cornelia Hahn Oberlander: Making the Modern Landscape.

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The Princess Diana Memorial Fountain by Kathryn Gustafson has paved areas along portions of the fountain to allow access, but a transfer platform could enable a child to enter the shallow water as well.

All images courtesy of Susan Herrington.

Universal Design: The People's Paradigm in Landscape Architecture

By Donna M. Rodman, MBCSLA, CSLA, Dipl. Nursing, B.A., CTech, M.L.A.



Top to bottom:

Circle of Friends:

Shaded back patio.

VRS Circle of Friends at installation.

VRS Group Home front garden.

Images courtesy of Donna M. Rodman.

Thomas Church argued in his book *Gardens are for People* (1983), the garden, “must go to work for us, solving our living problems while it also pleases our eyes and our emotional physiological needs. . . it evolved naturally and inevitably from people’s requirements...it is as if landscape architects were composing an abstract painting for people to live within.”

People visit a garden or a park to seek relief or satisfy curiosity. If the experience is a positive one, people will continue to revisit a space or seek a similar pleasant experience in similar environments. Consideration of all people accessing a natural or garden space is fundamentally one of the most important steps in good design. Universal Design is a people’s paradigm shift as it goes beyond simply providing equitable physical access to nature, it involves the exploration and experience of nature with senses and perceptions, facilitating a person to heal body and mind, soul, and spirit. The simple language of the principles of Universal Design, allows a landscape architect to address the complexity of everyone’s requirements holistically and elegantly and with flexibility and legibility. When thoughtful consideration is also given to human factors and aesthetic quality is incorporated with colour, shape, texture, and aroma, designers can create a perpetual human bonding to nature.

Universal Design is becoming increasingly a paradigm from which mainstream landscape architects can draw inspiration and direction. It subtly influences all aspects of landscape architecture including private residential gardens, multifamily housing developments, courtyard spaces within institutions, green roof spaces, and even pocket parks punctuating dreary commercial and industrial landscapes.

One focus of Universal Design is to influence, at the very start, the positioning of a building in the landscape. The intent is to work with the “lay of the land”, allowing for ease of approach and seamless accessibility to a building, without stairs. Good designers can still create a “grand entrance” to give a building street appeal or drama in a garden or park space, but may use stairs as a secondary mechanism

and not as the primary access route. Providing people with choices is a very important fundamental and ethical attribute of Universal Design.

Concept 1 – A restorative/healing garden project which is still in the planning/design stage, considers the needs of all visitors to the designed space. Visitors may be an elder, a child, or a person with a physical impairment. As designers, it is important to remember that it is impossible to fully design how a green space will be used and by whom. Users with varying needs will have their own ways of using the space.

Concept 2: Circle of Friends – This was a completed project for the Vancouver Resource Society (VRS). This design was commissioned for a two-story group home, nestled in a single-family residential neighbourhood. The bottom floor is dedicated for independent living and the upper floor holds the common living space for residents requiring 24 hour nursing care. The front of the home was designed to create an accessible street presence so that a ramp was not required from the sidewalk to the front door and those living independently on the ground floor could easily access the street.

The Circle of Friends feature, created in the front lawn of this home, holds particular meaning to the community as a social space to promote connection and conversation. The space was designed to accommodate residents using wheelchairs to face each other as well as for ambulatory friends and visitors to sit on the retaining wall surrounding the circle. The plant palette had a high percentage of native plants with selected ornamental, aromatic plants strategically placed, creating a blend of west coast and aromatic English garden. The space was designed to encourage exploration and participation in gardening activities. [SL](#)

Formerly a registered nurse, Donna Rodman, MBCSLA has written and presented on the benefits of gardening locally and internationally. Donna has been a proponent of Universal Design and accessibility in outdoor spaces for over 20 years.

STREETS for All People – Implementing Universal Design

By Heather McCain, Executive Director of
Citizens for Accessible Neighbourhoods

Pedestrians are like snowflakes, and no two are the same. Pedestrians include families, children, older adults, people using mobility devices including scooters, wheelchairs, walkers and canes, people with guide dogs and assistance dogs, and people with wheeled luggage and strollers. The endurance, travel speed, strength, and ability of all of these pedestrians vary widely.

Incorporating Universal Design principles in streetscape design increases usability for the one in seven Canadians with disabilities, and improves safety and ease of use for those with strollers, age related health issues, and more. Universal Design is vital to freedom of movement, which is fundamental to enhancing the quality of life and the ability to live independently. Well-designed streets and communities play a fundamental role in enabling people to be full, equal, and productive participants in society.

The following are four key components to Universal Design in streetscapes:

1 SAFETY

People with visual disabilities rely on memorization and orientation skills. The consistency and uniformity of design elements, such as spaces with straight lines and consistent right angles, increase a person's ability to maintain their orientation. Tactile surfaces, visual cues, and painted crosswalks add beneficial wayfinding information. Wayfinding can also benefit people with cognitive disabilities as well as people who do not read English. Pictures or symbols in signage can convey a message to a broader range of people.

Lighting is an extremely important tool for safety as it reveals features including signage, stairs, grade changes, and uneven sidewalks. Lighting should be directed to avoid glare and reflection and to maintain a consistent pattern and level of light. Good lighting is also helpful for people



A straight, clear, path of travel with an even concrete surface. The landscaping offers wayfinding cues and acts as a buffer between pedestrians and motor vehicles. Image courtesy of Heather McCain. Please see insert for more images.

in the deaf community and those with hearing loss who communicate with sign language or by reading lips.

Trees are not often associated with safety but in addition to adding to the attractiveness of streetscapes, they act as a safety measure, creating a buffer between pedestrians and automobiles. The selection of trees is important to ensure that the root system of the tree will not become a tripping hazard or affect the stability of the surface. It is also important to consider the tree form and whether branches will interfere with the path of travel. Many mobility aids have air filled tires and therefore any plant or tree with thorns should be avoided.

Landscaping can offer directional cues for people with vision loss. Grassy areas are also essential for people who rely on guide, service, or therapy dogs as the dogs require areas to relieve themselves.

2 Straight Line of Travel

Another key element is a straight line of travel free and clear of obstructions, hazards, or obstacles wide enough to allow two people in wheelchairs to travel in opposite directions. Street furniture including light poles, benches, newspaper vending machines, sandwich boards, tables, and bike racks add to street experience but should be carefully placed close to the edge of the travel path but out of the main flow of pedestrian traffic.

3 Surfaces

The surface of a sidewalk is the one of the most important factors for a usable, safe,

and comfortable sidewalk. Paving stones and/or bricks cause difficulty and pain for people using mobility aids. Tooled joints instead of saw cut joints also create bumpy and uncomfortable wheeling surfaces. As a result, pedestrians often bypass the sidewalk and go onto the road, creating a hazard for cyclists and drivers. An even, non-slip concrete surface is the ideal path of travel for all pedestrians, ensuring their safety away from busy roadways.

To better understand the vital importance of a smooth surface for a wheelchair user, imagine a continuous highway rumble strip. The analogy equates the strips used to jolt drivers and alert them back into their lanes to a bumpy sidewalk for a wheelchair user. This experience is similar to the discomfort and pain that people with mobility devices may experience on sidewalks on a daily basis.

4 Signals

Accessible pedestrian signals provide auditory, visual, and tactile information so that people with visual disabilities can orient themselves on a straight path of travel and know when it is safe to cross. The push button should be located away from the curb on clear, level ground and it should be parallel with the direction of travel of that particular button. [SL](#)

Heather McCain is Executive Director of Citizens for Accessible Neighbourhoods, a non-profit society she founded in 2005 as a way to support full inclusion in communities. For more information about CAN visit www.canbc.org.

A VERY BRIEF INTRODUCTION TO SOCIAL TOPOGRAPHY

– A Model for Advancing Accessibility and Inclusion

By Mike Prescott, CEO,
everyoneincluded strategies inc.

Absolute Accessibility: Measures set down in policies that define the parameters of design.

Relative Accessibility: Quantifies the conditions that influence the level of effort required to leverage a resource.

Seniors and people with disabilities make up a significant proportion of Canada's population (16% with disability + 15% over 65 (and growing) X friends and family¹ = greater than 40% of Canadians). However, their needs and preferences continue to be an afterthought in the design of livable communities.

The structure and dynamics of the physical, social, and economic environment influences accessibility and inclusion and are key determinants of livability for seniors and disabilities.² For instance:

- Building codes ensure new and renovated public spaces comply with minimum standards.
- Federal legislation makes it a human rights issue to discriminate based on age or ability.
- Programs for healthy communities and walkable neighbourhoods promote active living.

However, with limited resources, each investment needs to fit into a broader strategy for meeting the needs of all citizens. Current approaches have focused on serving the average (median) citizen. This approach does not embody the rich diversity of citizens' needs or the physical and socio-economic environment they live in.

As a means of meeting the needs of seniors and people with disabilities, a number of design standards have been developed such as maximum ramp slopes, door widths, and counter heights. These are examples of *absolute accessibility* standards that focus on minimizing barriers. They are usually limited to addressing physical disabilities, and are marginally enforced.

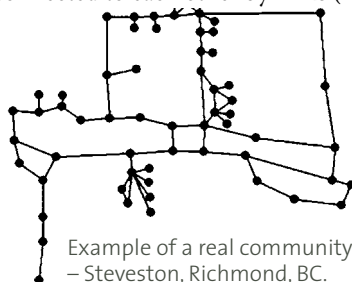
Relative accessibility, in contrast, objectively quantifies the conditional factors that impact the effort required for people to participate.

A path up a 5 percent slope is considered "accessible" according to most design standards, but may be difficult for some people using manual wheelchairs. Someone using a motorized scooter, however may easily negotiate a steeper slope, but an uneven surface may cause debilitating pain for that user. Access, therefore, is a consequence of the environment's ability to meet the needs and preferences of the individual.

Physical access is just one component of an accessible community. Participation in recreation and cultural activities is equally as important. Easy access to a recreation centre that offers no seniors programming does little for that population. The implication for designers is the need to better understand the person-environment connection.

Universal Design principles offer a framework for going beyond the standards of "absolute accessibility," but do not provide metrics for evaluating planning or design decisions. The "social topography" model can be used as a tool to better reflect how people live, work, shop, and recreate, across physical space and over time. This model reflects how people actually interact with physical and social environments and provides objective measures for assessing it.

In the social topography model, the community network is made up of *nodes* and *links*. Nodes are simply places (for example, a restaurant or library) or features (for example, a park bench or mailbox). They are connected to each other by links (for exam-



Example of a real community network – Steveston, Richmond, BC.

ple, sidewalks, trails, and public transit lines). As nodes link to each other, networks emerge.

Nodes and links have measurable attributes. Node attributes may include physical measures (for example, door width, knee clearance under a table, or lighting levels) or service quality (for example, staff orientation, communications training, or emergency preparedness). Links have path conditions (for example, slope, surfacing, or width) that exist over a unit of distance.

To evaluate the design of a community or neighbourhood, a network analysis of the social topography is required (something for a future article). Standard measures such as density and diversity need to be re-evaluated based on relative accessibility and inclusion measures. This review often highlights the gaps and barriers in a design that should be addressed early in the process to maximize access and inclusion of a community. Without a social topography evaluation, individual nodes may be "accessible" in isolation, but may not be accessible to all from a network perspective. For example, a coffee shop may have an automatic door opener and accessible washroom, but the adjacent sidewalk may be too narrow without a curb cut at the closest intersection.

The social topography model is intended to provide a clearer perspective and offer flexible tools for visualizing a community. This article just touches upon some of the fundamentals. The full potential lies in its ability to inform all aspects of planning – communication, design, development, delivery, and management. **SL**

1. "X family and friends" refers to the multiplier effect. Seniors and people with disabilities will engage in activities with 1 to 4 other people. Although these people don't require accessibility accommodations themselves, they do when they are out and about.

2. Evans, G. (2009). Accessibility, Urban Design and the Whole Journey Environment. *Built Environment*, 35(3), 366-385.

Mike is an accessibility and inclusion strategist helping organizations meet their clients' needs. He was the Manager of Accessible Tourism at 2010 Legacies Now and writes about social topography and accessible tourism.

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