BARRIER-FREE Community *gardening* in Waterloo Region

Region of Waterloo
PUBLIC HEALTH

Community Garden Council
of WATERLOO REGION
"Growing Healthy Communities"

Opportunities
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Barrier-Free Gardens

Barrier free gardens provide an opportunity for everyone to garden. These gardens remove physical barriers that prevent people with mobility or sensory challenges from taking part. This guide takes the reader through the steps of planning and designing a "barrier free" garden. This guide is another step along the path of building an inclusive community garden movement in Waterloo Region.

Why a barrier-free community garden guide?

The way we design and build our communities may help people experience a sense of belonging and feel more secure. It also helps people get around and exercise more despite activity limitations. This improves overall health. (Paraphrased from CABE London UK)

Who may encounter barriers?

A 2011 study of garden coordinators reflects on some physical barriers experienced by participants in community gardens (Region of Waterloo Public Health, 2011):

- 47.4% have difficulty bending or limited flexibility
- 21.1% have difficulty walking in the garden
- 15.8% are unable to use regular garden tools due to physical challenges
- 10.5% may experience confusion or memory loss that limit experiences in the garden
- 5.3% have difficulties with hearing and vision

Activity limitations—Our community is changing in many ways. More and more residents are experiencing activity limitations. These limitations are imposed by a condition or a long-term physical or mental health challenge that has lasted (or is expected to last) six months or more (Canadian Community Health Survey, 2003)




How many people are impacted in Ontario and Waterloo Region?

According to Statistics Canada 15.5%, or one in seven, of Ontarians have a disability (Statistics Canada, 2006); that's about 18.5 million people. These people are active participants within our communities, contributing to local economies and accessing local services. As the population ages over the next 20 years, the number of Ontarians with Diasbilities is expected to grow to one in five people (Beer, Charles, 2005). Creating accessible services and facilities for people with disabilities is essential to meeting the needs of this significant number of Ontarians (Region of Waterloo Public Health, 2011).

The population is also experiencing a growing number of seniors, as of 2009, people 65 years or older comprised 11.7% of Waterloo Region's total population (Statistics Canada, 2010a). The fastest segment of the senior population is the 80 plus age group, reflecting a steady increase in life expectancy (Waterloo Region Community Assessment Report, 2011).

What are our responsibilities?

In 2005, Ontario passed the *Accessibility for Ontarians with Disabilities Act*. Its purpose is to implement and enforce five accessibility standards; customer service, transportation, information and communication, employment and the built environment (Beer, C, 2010).

Barrier-Free Community Gardens are in line with Region of Waterloo's accessibility strategy (Region of Waterloo Public Health, 2011): "The Regional Municipality of Waterloo will continually strive toward achieving an environment that is free of barriers for individuals with disabilities consistent with our requirements under the Ontarians with Disabilities Act, 2001 and the Accessibility for Ontarians with Disabilities Act, 2005".

Chandler-Mowat Community Garden, Gazebo & Raised Garden Concept
By: Kerri Killen, Janani Mahendran, Leif Maitland, Sam Nabi, Laine Watson and Britney Williamson
Created at University School of Planning Design Charette 2009

Before you get started

It is essential to work with your community before designing and building a barrier-free garden

1. Involve the community. Are they supportive in having a barrier-free garden?
2. Assess your neighbourhood. What are the demographics, needs and capacities?
3. Select your garden site. Is there a place to park nearby or are there accessible pathways to the garden? Will a garden grow there?
4. Involve people who want to garden, but experience physical barriers.
5. Form community partnerships with key people in the neighbourhood (businesses, neighbourhood associations, community centres, community volunteers, senior's centres or faith groups, etc.).
6. Contact the local city planning department to find out what kind of permits are needed.
7. Reconfirm the garden designs with stakeholders and determine roles and responsibilities.

For effective tools on community engagement strategies, see the following online resources:

- Tamarack Institute for Community Engagement: A Canadian Institute dedicated to the art and science of community engagement and collaborative leadership. **http://tamarackcommunity.ca**
- Citizen Engagement Toolkit — Alberta Urban Municipalities Association: **http://www.auma.ca/live/AUMA/Toolkits+%26+Initiatives/Citizen_Engagement_Toolkit**
- Tools for Community Engagement — Islands Trust, BC: **http://www.islandstrust.bc.ca/climatechange/pdf/communityengagementtools.pdf**
- International Association of Public Participation Toolkit: **http://iap2.affiniscape.com/associations/4748/files/06Dec_Toolbox.pdf**
- ICSP Toolkit — Ontario: **www.amo.on.ca/Content/NavigationMenu/SustainableMunicipalities/FederalGasTax/IntegratedCommunitySustainabilityPlan/default.htm**
- South Lanary, UK — Wheel of Participation (another model of the spectrum): **http://www.mercury.org.au/PDFs/Wheel%20of%20Participation.pdf**
- Effective Engagement: A Guide to Principles and Practice (Scotland): **www.drugmisuse.isdscotland.org/goodpractice/EIU_commeng.pdf**

Be cautious when choosing materials for water containers, pathways or garden containers—ask if it is environmentally safe to use when growing food. Avoid using materials made of polyvinyl chloride, lead, rubber tires, old railway lumber and some treated woods.
(Salamone, M.F., Westlake, G., 1998; Health)

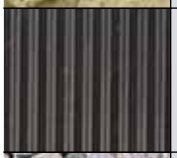
Accessible pathways

Accessible pathways and entrances are vital for easy movement throughout the garden. Garden paths must be level, firm, with little slope, slip-free with traction, and wide enough to turn a wheel chair around—a minimum of 152 cm (Larson, Hancheck, & Vollmar, 1996). All gates or doorways, ramps and walkways should be 90 cm wide for single wheelchair passage or 180 cm for two-way passage. (Shoemaker, C.A., 2005)

Pathways require a gentle slope; anything steeper than 2.5% will be difficult for most manual wheelchair users (Department for Transport UK, Retrieved 2010). Use steeper slopes sparingly for short distances; a slope more than 8% will be too difficult. A cross fall camber less than two percent is necessary to prevent slipping hazards with pathways that have poor drainage (Ferguson, M., Retrieved July 7, 2010).

Pathway surfaces are easier to use if hard surfaces are paved or, decomposed granite, or packed crushed stone/gravel is used. Grass turf surfaces and wood chips are very difficult for people with a wheelchair, walker or stroller to use. Choose porous materials and avoid using materials prone to lift with frost. (Shoemaker, C.A., 2005).

Pathway Surface Table

Paving Material		Comments
	Asphalt	• Absorbs and radiates heat and can get very hot • Can develop cracks after freezing • Develops slippery, oily sheen when wet • Can emit smell of tar/camphorated oil on hot summer day
	Brick	• Expensive and must be installed properly • Requires seasonal maintenance as brick may lift or crack in severe climate • Paving bricks are recommended over building bricks
	Concrete	• Expensive • Glare can be a problem for people with visual difficulties • Added colour and texture can help people with vision problems • Porous pavement system recommended
	Decomposed granite or crushed stone	• Is readily available • Good for wheelchair use but not for people using crutches • Comes in natural tones of tan and brown • Needs a weed barrier underneath such as weed-block fabric or plastic
	Flagstone	• Need to be even surfaced • Must set firmly in sand or mortar base with very narrow joints • Can be slippery when wet and wobbly to walk on • Encourages growth of moss and lichen
	Portable rollout mobility mats	• Portable and removable rollout • Corrugated surface provides traction • Good for wheelchair users and strollers • **Caution:** product material and risk of chemical leeching • Light weight and easy to install • Flexible and conforms to the ground • Coloured mats provide visibility markers
	Screenings	• Comes in large and small limestone pieces • Not recommended for people using canes, wheelchairs or walkers
	Tile	• Earth tones can complement garden area • Can be very slippery when wet • Used only as accent edging
	Wood decking	• Can be slippery when wet • Can be expensive • May be labour intensive to maintain
	Wood chips and turf	• Not recommended for people using canes, walkers or wheelchairs

Adapted from Woy, J. (1997), Community Action Coalition for South West Wisconsin, Inc, 2010

Accessible garden plots and pots

Raised Beds

Raised beds are garden structures built at varying heights for people with different abilities to sit or bend. Varying designs and heights can be used. Rasied beds can be rectangular, L-shaped or circular. They can be at ground level for people who prefer to garden while lying on a mat, built higher to accommodate wheelchairs, or built at waist level for gardeners who have difficulty bending.

Some gardeners may prefer to sit on the edge of the garden bed. Install a wide sturdy ledge for seating (about 20–45 cm wide)(Larson, Hancheck, & Vollmar, 1996; Rothert, G., 1994). Ledges at different levels can provide space for leaning, sitting or kneeling. A ledge also provides a space to place tools.

Raised-bed Size Guide

Raised beds can be hand-made from a variety of materials like cement blocks, wood or stone. Commercial beds are also available. Some community gardens have even adapted picnic tables for their raised beds. However, the container must be safe and able to sustain the pressure of the soil and have good drainage.

The container soil needs special attention. A good mixture is one part organic material (peat moss, compost, leaf mold, or dehydrated cow manure) to ten parts screened topsoil. Use a layer of coarse gravel, broken rock, or sharp sand beneath the soil for drainage. Raised beds with good drainage will need more watering (Woy, 1997).

A raised bed can be a simple raised rectangular or square structure filled with soil atop a layer of gravel for drainage. Alternatively, it may also have a planter box installed atop a false bottom. The planter box should be at least 21–26 cm deep and use light weight soil. The average height for a bed to accommodate a standard wheelchair is about 61 cm high.

The person in the wheelchair will garden seated along the side of the bed and will benefit from the use of specially designed garden tools. A similar structure for the gardeners unable to bend is a rectangular structure about 76–91 cm high depending on the height of the gardener in question (Larson, Hancheck and Vollmar, 1996; Rothert, G, 1994).

The recommended width for both structures is 76 cm for one-sided access and one and a half metres for access on both sides. More complex structures can be designed with ledges or planter boxes that allow for knee or armrest clearance. These structures accommodate the wheelchair better and allow the person to garden face on.

Gardener	Maximum Height (metric)	Maximum Height (imperial)	Maximum Width (metric)	Maximum Width (imperial)
Men				
Standing	99–102 cm	39–40 inches	91.5 cm	36 inches
Seated but able to stand	76 cm	30 inches	63.5 cm	25 inches
Chairbound	61 cm	24 inches	40.5 cm	16 inches
Women				
Standing	89–94 cm	35–37 inches	91.5 cm	36 inches
Seated but able to stand	68.5 cm	27 inches	53 cm	21 inches
Chairbound	61 cm	24 inches	40.5 cm	16 inches

Table Planters

Table planters are high enough to use as raised beds and are accessible for use with a wheelchair. A shallow bed on legs, allows for greater range of motion with space for wheelchairs or chairs to fit under.

Measurements for Wheelchair Accessible Table Planters

Feature	Measurement	Comments
Total Height	89–94 cm	No higher than the rib cage
Knee clearance under table top	69–76 cm	Knee clearance for a standard wheelchair is 61 cm, armrest clearance is 63 cm
Planter box depth	21–26 cm	use a lightweight soil
Width	1.5 m	If accessible from all sides
	75 cm	If accessible from only one side

(Larson, Hancheck, & Vollmar, 1996; Shoemaker, C.A., 2005)

Remember, choose materials that are safe for growing food!

This picture shows a prototype used by residents at Trinity Village Care Centre in Kitchener.

Total Height = 89 cm
Knee Clearance = 63 cm
Planter Box Depth = 27 cm
Width = 95 cm × 95 cm

Maximizing garden space

Making the garden more accessible may cut down on the amount of gardening space available. The use of intensive gardening techniques and methods to keep the soil healthy will help gardeners grow more in less space (Woy, 1997). Intensive spacing cuts down on watering and weeding by reducing the amount of bare ground around plants.

Intensive spacing to maximize garden yield

Crop	Spacing (inches)	Spacing (cm)
Beans	4–9	10–23
Beets	2–6	5–15
Broccoli	15–18	38–46
Brussel sprouts	15–18	38–46
Cabbage	15–18	38–46
Carrots	2–3	5–8
Cauliflower	15–18	38–46
Chinese cabbage	10–12	25–31
Collards	12–15	31–38
Corn	18–22	46–56
Cucumbers	18–36	46–91
Eggplant	18–24	46–61
Kale	15–18	38–46
Leeks	2–6	5–15
Lettuce	6–9	15–23

Crop	Spacing (inches)	Spacing (cm)
Melons	24–36	61–91
Okra	12–18	31–46
Onions	4–6	10–15
Parsley	4–6	10–15
Peas	2–6	5–15
Peppers	12–15	31–38
Potatoes	10–12	25–31
Pumpkins, squash	24–36	61–91
Radishes	2–3	5–8
Spinach	4–6	10–15
Sweet potatoes	10–12	25–31
Swiss chard	18–24	46–61
Tomatoes	18–24	46–61
Turnips	4–6	10–15

From: Woy, J. (2007)

Container Gardening

Container gardening can be portable and used almost anywhere. Container gardens are especially great to use where the soil quality is questionable. Gardeners can use any containers safe to grow food. The container must hold the soil and have good drainage. Use lightweight soil mixture for raised beds as recommended. Add a trellis or stake to increase gardening space in container gardens and raised beds.

Suggested Dimensions For Containers

Note about boxes and pots: The width of the container should be roughly equal to the spread of leaves on a mature plant (Woy, 1997)

Dimensions	Depth	Successful Crops
30 cm × 122 cm	20 cm deep	bush-type peas, beans, cucumbers, kale, broccoli, and lettuce
61cm × 91 cm	20 cm deep	beets, carrots, onions, lettuce, leeks, turnips, kohlrabi, corn and zucchini

(Source: Larson, Hancheck, & Vollmar, 1996)

Hanging Baskets

Hanging baskets provide space accessible at varying heights. A pulley system can raise or lower the basket as needed. These baskets can provide gardening space, where traditional ground level plots are not available or accessible. Again, use a lightweight soil mixture. (Shoemaker, C.A., 2005).

Vertical Wall Gardens

Vertical wall gardens provide a vertical surface such as a wall or a fence to garden. These walls have many different containers that hold the soil. The containers are often at right angles to the ground or straight up. Creative designs include bookcases, shelves and hanging bags.

Depending on the desired structure, plants can grow at right angles to the wall. An opening will need to be cut through the container where the plants will be inserted and the root systems positioned. Secure the plant with wire so that it will stay in place and grow out sideways (Westbrook, 2007).

The soil needs changing once a year. Usually, the soil stays moister longer due to less exposure to the air (Westbrook, 2007).

Watering is easier when drip or other irrigation systems are used. Increase safety by anchoring all freestanding planters to a wall or ground base and bolt planters attached to a wall.

Bag and Plant Vertical Garden

Try this easy-to-build and cost-effective vertical garden. The plants grow out perpendicular to the wall. Make this garden container with a Hessian-type mesh bag, rockwool and plants. Fill the mesh bag with rockwool. Cut slits into the bag and rockwool to sow the plants. The rockwool holds the water and nutrients while retaining enough air pockets for the roots to grow and thrive.

This type of garden needs to be manually watered – watch out: water will drain out. Place the bag outdoors where the water can drain freely.

Salad greens, herbs, and petunias grow very well in this type of container.

Water

Gardeners need to access water in an easy and safe manner. If a garden hose is used, be careful it does not become a tripping hazard or block pathways. Place all accessible garden plots close to a water source. Try to have a ground surface that will not get slippery or muddy when wet. Water spigots need to be easy to use. Install hand levers and snap connectors at an accessible height of 61–92 cm from the ground (Larson, Hancheck, & Vollmar, 1996).

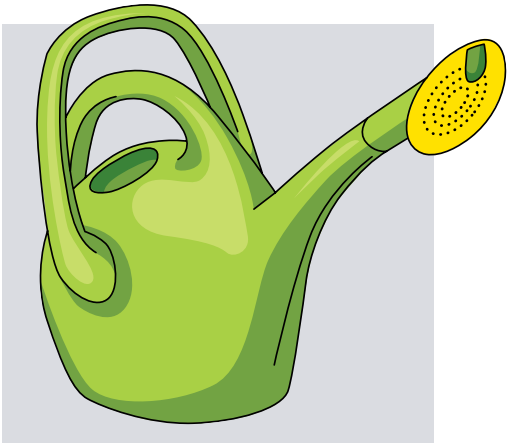
To avoid food contamination, water storage containers should be made of food grade materials that have not previously stored chemical substances (The Virtual Weber Bullet, 2010). Wash all produce thoroughly before eating.

Ways to make water readily available at accessible plots include:

- gravity barrels with an attached hose that runs along the top of the raised beds
- soaker hoses, spigots, or capillary watering systems
- use of water wands, water barrels and short tap

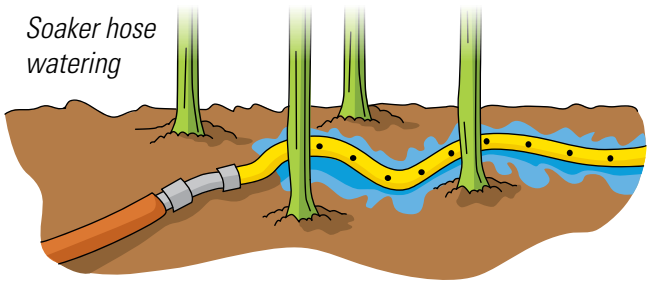
(Dowling Community Garden, 2010, One Voice- Action for Disability, 2010)

Capillary watering with rope

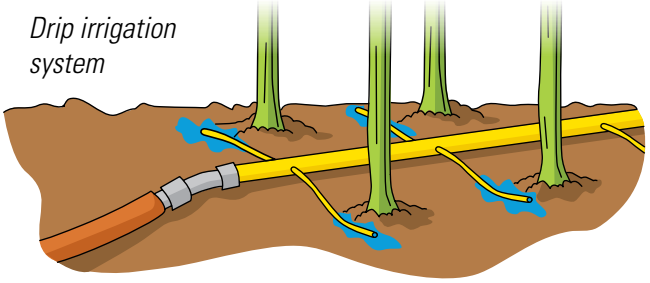


Watering can

Soaker hose watering



Drip irrigation system



More Accessible Watering Options

Water System	Characteristics
Soaker hoses	made of rubber, canvas or plastic
	ooze water all along their length
	good for watering long rows of closely spaced plants
	need no assembly
	available at most home and garden supply stores
	hand-make by poking small evenly spaced holes in a garden hose
Capillary watering	used for container gardening
	plants water themselves through absorbing water from provided source
	capillary mats are soaked with water where the pot is placed on top to absorb water
	works best with flat bottom containers with large holes
	capillary with rope—cotton rope is placed in container of water and coiled on surface of container garden
	can be found at more specialized gardening stores
Watering cans	use lap board with non-slip coating to carry water with a wheelchair
	install a paint bucket hook from a ladder onto a walker to carry a watering can
	carry only half full unless cans have leak proof lid
Drip irrigation systems	water emitters can be placed at the roots or exactly where water is wanted—less wasted water
	use for small tabletop gardens or larger ground gardens
	require dexterity for installation
	low maintenance after installed
	come in kits
	set timers for watering—easy to program

(Source: Woy, 1997, p. 79–82)

Sitting Area

Gardeners of all abilities appreciate sitting areas to relax and enjoy the tranquility of the garden. Benches with small pergolas or umbrellas overhead provide shade and a welcome spot to rest. Seating at raised beds allows people to garden longer and rest. An attractive common area with additional seating is also a welcoming attraction to the neighbourhood.

Photo courtesy of Guelph Enabling Garden

Shade

Shade is important for all gardeners. Gardeners need to limit their exposure to direct sunlight between the hours of 11 a.m. and 4 p.m. (Canadian Cancer Society, 2005). Shade structures are important features in an accessible garden. Shaded areas can greatly reduce hazards of sun exposure such as UV skin damage, dehydration, sunstroke, eye damage, and medication reactions.

Other sun safety recommendations include wearing hats, long sleeve shirts, sun block and sunglasses to protect from UV damage. Umbrellas, arbors over seated areas, and pergolas are structures that can provide shade. Shade structures can also serve as landmarks to orient people in the garden.

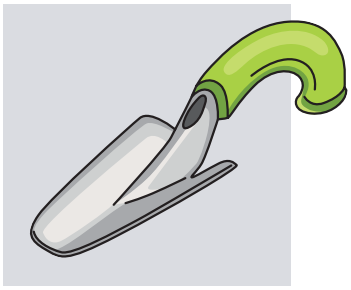
Markers/adjustments to paths and contours for those with visual impairments

Gardeners with problems seeing appreciate pathway markers or adjustments that allow them to move more freely around the garden. These features help gardeners with low vision to better see, feel the contours of the landscape and benefit from a variety of sensory features. The easiest colour to see is yellow. Use yellow paint or tape as a marker along the sides of the path, to mark changes to pathway grade, to highlight steps or lips, or other potentially dangerous features. Mark pathway boundaries with a change in texture, a curb or curved edges for extra sensory aid.

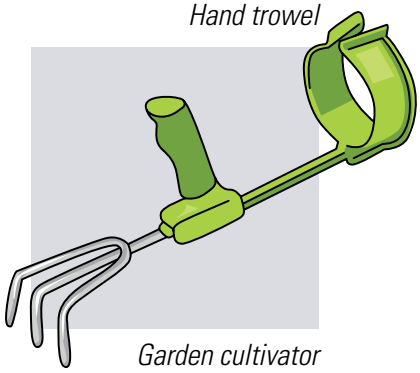
Tool design to increase accessibility

People with physical barriers may also benefit from specially designed tools or simple modifications to standard tools. A list of helpful tools and equipment includes:

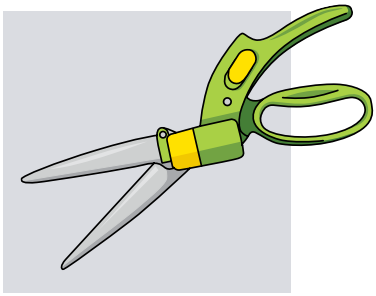
- Lightweight aluminum alloy blades for hand tools (towels, cultivators)
- Longer or extendable handle for rakes, spades and hoes
- Smaller blades and tool heads
- Large-diameter and padded/molded handle grips—thumb and index finger should just begin to overlap when gripping
- Tools that enable both hands to be used or allow for the tool to be held close to the individual's body
- Tools with springs that return to the open setting
- Grasping tools that allow for grasping, retrieving
- Long handled, cut-and-hold pruning shears
- Firm grip weed puller with a 60–90 cm handle
- Scissors with large openings
- Reinforced rubber hoses that resist kinking, extension hoses (brass snap connectors at every connection point), wall-mounted hose reels
- Garden carts or four-wheeled wagons instead of wheel barrows
- Garden aprons or tool belts
- Lapboards



Hand trowel



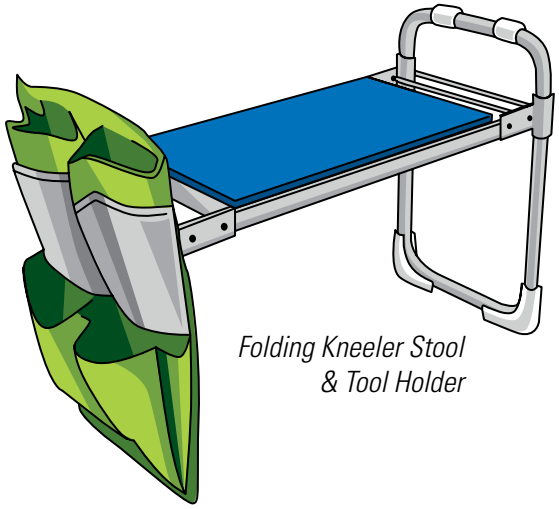
Garden cultivator



Grass shears

Add-on handles and grips are now available. For more tips on choosing the right tools, see Thrive; How to choose gardening equipment and tools:

http://www.carryongardening.org.uk/shop/how-to-choose-gardening-equipment-and-tools-46499ada/default.aspx (Thrive, 2009)



Folding Kneeler Stool & Tool Holder

(Rothert, G.,1994)

Storage

Storage areas should be accessible, allowing the gardeners easy access to tools, gloves, compost, and other materials. The location should be close to the garden with accessible pathways and entrances into the storage shed. Ramps, visual markers and appropriate signage are necessary. Storage at the raised beds is also possible. Some models of raised beds and table planters include sliding tool drawers or hooks to hang tools at the garden bed.

Signs

Signs with the International Symbol of Accessibility welcome people of all abilities to participate in the community garden. Signs are an important information source for people who have difficulty hearing. Signs provide information about the accessibility of the garden and possible hazards in the garden. Braille provides important information for people with visual difficulties. Signage may inform gardeners about changes in pathway slope, steps or stairways; or other hazards.

Photo courtesy of Guelph Enabling Garden

Multi-sensory features

Gardens that are stimulating and appeal to the sensory abilities of all gardeners are especially important for people with some sensory loss. An accessible garden provides plants and features which stimulate the senses through seeing, hearing, smelling, tasting and touching.

Sense	Feature		Examples
See	Contrast	Contrast helps people with residual sight differentiate between items	– flowers – foliage – patterns—dandelion clocks, pine cones, bark (plane, birch, eucalyptus), variegated leaves, skeleton leaves
	Colour	Plants offer a complete spectrum of colour throughout the seasons Theme-coloured areas help explore moods and atmosphere	– flowers – berries – leaves – lichens – bark – mosses
	Shape	Nature provides a variety of different shapes	– leaves (sycamore, beech, ash) – fruits (apples, currants, rose hips) – flowers (daisy, poppy, bell flowers) – stems (bamboo canes, dead nettle—square stems) – plant containers (round, square, rectangular)

Sense	Feature		Examples
See	Movement	Moving garden features placed in a breezy area stimulate interest and improve attention spans, especially if combined with sound Place these features within reach for added sensory stimulation	– trees (aspen, willow, white poplar) – grasses – wind chimes – hanging compact discs
Touch	Texture	A variety of textures provides helpful cues to people with visual impairments The outdoors is full of different textures and provide signals to interpret the environment	– rough surfaces—lichens, bark – smooth (flower petals) – ridged (textured concrete, backs of leaves) – hairy (leaves such as Stachys, buds, grass) – bumpy (twigs) – soft (mosses, fungi) – slimy (algae)
	Shapes		– circular flowers – cubic containers – oval fruits – triangular ivy leaves
	Weight		– bark – heavy clay
	Temperature		– sun-warmed water – cold shaded water – stone next to soil
	Wet and dry		– moist and dry soil/sand – freshly shed leaves and older dry ones
	Contrasting densities		– hard stone – soft moss
Hear	Natural sounds	Sounds that occur naturally	– leaves rustling in the wind – birds singing – water trickling/dripping/ splashing – rain on an overhead cover
	Activated sounds	Sounds that can be activated by people	– splashing water – striking chimes – sound sculptures – "sound fences", activated by dragging a stick along a series of lengths of tubing or piping are melodious and fun

Sense	Feature		Examples
Smell	Scents that fill the air and can be smelt without touching the plant	Plants or other materials that have distinctive and interesting scent	• mock orange (Philadelphus) • roses • winter honeysuckle • curry plant • cut grass • hay
	Intimate scents where the flowers need to be investigated		• violet • primrose • some Narcissus
	Activated scents which are released when plant parts are crushed		• basil, rosemary or other culinary herbs • scented geranium
	Familiar smells		• pond water • wood shavings • autumn leaves • cut grass
Taste			• fruits • vegetables • wild edibles • herbs

From Sensory Trust. (2009). Sensory Garden Design Advice. Retrieved April 8, 2010 from http://www.sensorytrust.org.uk/information/factsheets/sensory_ip2.html.

Other features to consider for an accessible garden

Suggestions from people with lived experience:

- locate garden on a bus route for people who do not drive
- install light for evening gardening to prevent the exhausting effects of daytime heat
- include an accessible washroom with raised toilet seats and sturdy grab bars
- incorporate a buddy system to offer assistance if needed
- install "help" buttons in the garden for those gardening by themselves. Push buttons, switches, etc, should be no less than 750 mm and no more than 1200 mm above ground level. (Department for Transport UK, Retrieved June 16, 2010)
- have key structures to orient people in the garden
- use outdoor, portable, rollout mobility mats as an alternative to permanent pathways

(Grand River Accessibility Advisory Committee, 2010)

Additional Resources

Thrive has a website, Carry on Gardening, which has many helpful tips of how to garden when faced with a physical challenge. See **http://www.carryongardening.org.uk/default.aspx**

Other online resources to consider are:

AccessON
http://www.accesson.ca/en/accesson/index.aspx

Dowling Community Gardens: Building Accessible Raised-Bed Gardens
http://www.centerforneighborhoods.org/parksandgardens/DowlingBuildingRaisedBeds.pdf

Madison's Inclusive Community Garden Guide
http://www.cacscw.org/downloads/Universal%20Design%20for%20Community%20Gardens.pdf

Region of Waterloo Accessibility Planning
www.region.waterloo.on.ca/accessibility

Straight Talk: Accessible community garden tears down barriers to growing food in Vancouver.
See the article and video
http://www.straight.com/article-332507/vancouver/accessible-garden-tears-down-barriers-growing-food-vancouver

The Enabling Garden
http://www.enablinggarden.org/location.htm

Tips to build a garden planter by Garden Guides
http://www.gardenguides.com/95502-build-garden-planter-legs-wheelchair-users.html

University of Minnesota Healing Gardens
http://www.sustland.umn.edu/design/healinggardens.html

Barrier-free gardens are an important community asset and provide all residents with an opportunity to enjoy the benefits of gardening regardless of their ability. Removal of physical barriers is possible in current community gardens with appropriate support of the public and community leaders.

Summary of Accessible Garden Features

Feature	Considerations	Tips for Implementation	Recommended Materials
Path surface	• surfaces must be level, firm, with little slope, provide traction • must be wide enough to turn a wheel chair around, 1067–1520 mm wide	• pathways needed from parking lots to garden entrance • use concrete slabs at least 10 cm thick, over a 15 cm gravel bed • use decomposed granite poured over weed-block fabric or plastic 10–15 cm thick. Water and tamp it down before use by wheelchairs	• hard surface paving (porous concrete, asphalt) • packed clay soil • decomposed granite • packed crushed stone (number nine gravel stone) **Do not use grass turf surfaces/woodchips**
Raised Beds	• larger areas of soil allow for a wider diversity of plants • warms up quicker in the spring and extends growth season • provides good drainage • use where land is not accessible (i.e. roof tops, paved areas) • use for invasive plants	• average height is 61 cm • average width from all sides is one and a half metres; from one side is 75 cm • recommended ledge size for sitting is 20–46 cm • need to water more • place close to water source • soil mix of one part organic material (peat moss, compost, leaf mold, or dehydrated cow manure) to ten parts screened topsoil is recommended	• stacked flagstone • vertically or horizontally placed landscape timbers or ties • pressure-treated lumber size 5 × 25 cm • Cedar wood or Redwood • reinforced concrete paving slabs • DO NOT USE CREOSATE OR CHROMATED COPPER ARSENIC TREATED WOOD (some stocks may still exist) **Avoid using railway ties**
Table Planters	• table planters provide space underneath for a wheelchair or chair • raises soil to desired working height	• average height is 89–94 cm • average knee clearance height is 69 cm • soil depth is at least 20–25 cm • bed width—all side access is one and a half metres • bed width—one side access is 75 cm (Larson, Hancheck & Vollmar, 1996)	• same soil mix as for raised beds • Cedar wood or Redwood

Feature	Considerations	Tips for Implementation	Recommended Materials
Containers	• portable and usable in non-garden sites • can use where land is not accessible (e.g. paved areas) • measurements for boxes/pots: • size to grow bush-type peas, beans, cucumbers, kale, broccoli, and lettuce build = 30 cm x 121 cm, 20 cm deep • size to grow beets, carrots, onions, lettuce, leeks, turnips, kohlrabi, corn and zucchini boxes and pots 61cm x 91 cm, 20 cm deep	• use stable, durable containers • smaller containers dry out quicker than larger ones • consider weight, appearance, and cost For wooden containers: • use screws instead of nails • use sealers, paint, stain to stop warping and splitting • sand all rough edges	• food grade plastics • AVOID USE OF PVC's OR PLASTICS USED TO STORE CHEMICALS • clay pots free of lead paint (porous, decorative) • whiskey barrels (good height, inexpensive, need to soak for 24 hours before using, drill drainage holes in the bottom) • line containers with stones for drainage • DO NOT USE OLD TIRES TO GROW FOOD PLANTS
Vertical Wall Gardens	• can have varying heights • visually appealing • versatile in design and materials	• containers are covered in plastic, then wire mesh, and stacked or inserted into a vertical timber frame shelves with wire-fronted boxes	• wood for shelving • plastic • wire mesh
Path Markers/ Contours	• markers help people with low vision • changes in contour helps people with no vision to feel pathway edges	• use a variety of sensory plants to provide alternate sensory features	• small stakes and yellow tags for edge markers • yellow eco-friendly exterior paint for pathway edges

From Larson, Hancheck, & Vollmar, 1996

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