NORTH SHORE RECREATION AREA EASTER LAKE PARK

UNIVERSAL PARK DESIGN SERIES

- TOOLS
 - 1. PROGRAMMING
 - 2. PARKING & ENTRY
 - 3. INTERIOR SPACES
 - 4. PLAYGROUNDS, TRAILS, & GREEN SPACES
 - 5. BEACHES & WATER ACTIVITIES

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Led By:







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Disclaimer: This toolkit is a joint effort between Polk County Conservation, Shive-Hattery, and Uncurbed ("Parties"). This toolkit provides main summary and technical criteria of universal design considerations related to park design; however, the Parties do not warrant or guarantee the accuracy, completeness, adequacy, or currency of any information referenced or linked within this document. In no event, shall the Parties be liable for any direct, indirect, or incidental damages, injuries, losses, costs, or expenses, howsoever caused, arising out of, or resulting from access to, possession of, or use of this toolkit. The detailed guidance provided here does not represent the only possible solution. Clients or designers may develop additional solutions to meet a diversity of users. New materials and technologies that emerge may present further possibilities for accommodating the diversity of users. Each project should engage the services of a qualified and professional access consultant to ensure that project anomalies or other factors do not adversely affect the design intent.

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COVER PAGE

UNIVERSAL PARK DESIGN TOOL – PARKING & ENTRY

This tool is a compilation of academic, user, and practical research intended for use during the park design process to help list key universal design (UD) considerations needed to support design decision-making for the design of **parking and entry**. It is recommended that this tool be prioritized last, if necessary. This tool is not a one-size-fits-all. It is one component of the universally designed process used during the design of Athene's Easter Lake North Shore Renovation Project. Each project should incorporate the practice of co-design, engaging active participation from diverse end-users and subject matter experts in universal design and/or other related fields and methodologies (i.e., human-centered design, design thinking, inclusive design, co-design, accessible design, occupational science, etc.) to ensure that project anomalies or other factors do not adversely affect the design intent. UD considerations are provided throughout the tool and while they provide a summary of main considerations and technical criteria, they should not be regarded as an exhaustive list. The detailed guidance provided here does not represent the only possible solution. Members of a co-design team may come up with other ways to meet a diversity of users. New materials and technologies that emerge may open up further possibilities for accommodating the diversity of the population.

Each tool is organized into **5** Categories for Universal Park Design, expanding on the original 7 Principles of Universal Design¹ and 8 Goals of Universal Design¹⁰ to include an effort toward sustainability² (see Figure 1). These categories were selected based on project initiatives and themes collected from academic, user, and practical research. Variation exists in the categories of **parking and entry** design due to differences in operations, organizational goals between different clients and designers, and user perspectives. The priorities you have set in place for your particular project, the UD categories, user input, and the key questions that you must ask yourself as clients and designers, are the foundation of this tool. Before using the tool, please first go to the <u>Home Page</u> to learn more about the UD goals, categories, and how to communicate project priorities.



Figure 1. Crosswalk (between the 7 Principles of Universal Design¹, 8 Goals of Universal Design¹⁰, and 5 Categories for Universal Park Design based on project initiatives and themes collected from academic, user, and practical research for Athene's Easter Lake North Shore Renovation Project.



The <u>Tool Page</u> lists key questions relevant to the 5 specific UD categories for consideration. Below each question, a detailed design feature list is provided and serves as a menu item for clients to choose from and share with the design team at the onset of any park project based on the foundations of UD mentioned above. Designers can refer to the selected menu items throughout the design process and use the tool to validate their design choices. The design considerations and features are based on a review of research literature, best practices, and expert opinions. Clients and/or designers can add new design features based on their literature review, experiences, or user input. There may be instances of trade-offs between the UD categories, and there may be instances where you use some, but not all of the features, depending on the evaluation of value vs. cost by the client (see important notes).

Notes:

Each tool is not meant to be an exhaustive list of minimal standards already covered in available design guidelines. Rather, it provides a structured way for clients and designers to consciously focus on key evidence-based design considerations to optimize design decision-making resulting in the best value for the investment.

Gathering user input is one important step in decision-making. This is referred to as codesign. As a design tool, this is not meant to be a one-size-fits-all prescription for design. In many cases, no prescriptive numbers (e.g., space size or length of headwall) are provided because the optimized numbers depend on a thorough understanding of the needs of those affected by the project and the constraints of the project (e.g., operations and costs). Clients and designers should use the key design considerations and design features included in the tool as a basis to determine what are "adequate" or "sufficient" numbers or sizes. Likewise, the client and future users should be consulted regarding subjective aspects (e.g., attractive design). Environmental simulation (e.g., mock-ups, and renderings) may be used in gathering input on these issues.

Disclaimer: The tool is based on currently available research evidence and expert opinions therefore may not exhaustively cover all design aspects impacting outcomes. The results produced by using the tool may vary depending on conditions/users.



HOME PAGE

UNIVERSAL PARK DESIGN TOOL - PARKING & ENTRY

To begin, please complete the following information:

Client Name:

Project Name:

Client Contact Person:

Lead Designer:

Tool Completion Date:

On the next page is a list of each universal design goal and category, in addition to the category of sustainability. Some goals and categories may be more important for a particular park project. If you are the client, please confirm or change priority ratings based on their relevance to **parking and entry** design by selecting a rating (High, Medium, or Low) from the dropdown list in each cell of Column C. It is recommended to limit the 'High' priority rating to 4 UD goals and categories.



8 Universal Design Goals ¹	5 Universal Park Design Categories ^{1, 2, 10}	Priorities (Insert High, Medium, Low)
 Body Fit Comfort 	 1.1. Physiological & Motor Capabilities 1.2. Physiological & Motor Capabilities 	
 Awareness Understanding 	2.1. Processing Skills 2.2. Processing Skills	
5. Health & Wellness	3. Health & Safety	
 Social Integration Personalization Cultural Appropriation 	4.1. Contextual Factors4.1. Contextual Factors4.1. Contextual Factors	
	5. Sustainability	

TOOL PAGE

UNIVERSAL PARK DESIGN TOOL - PARKING & ENTRY

The below tool is more than a tick box. It is a menu list and communication tool for potential UD considerations relevant to **parking and entry** design for clients and designers. Marked boxes should be reviewed by both clients and designers to determine whether a UD consideration is applicable, relevant, and achievable for your park project.

Complete the following steps at the onset of a project:

If you are the client:

- Place an X in the Client column to indicate which design features should be considered for the project. Items selected should be consistent with project goals, user and expert input, and prioritized based on budget. The Notes column can be used to elaborate on each UD consideration as needed. Please include the date when inserting a note. It is recommended that clients engage in user and professional input when determining a UD consideration.
- 2. If a UD consideration is not relevant to the project, clients should leave the UD consideration in the Client column unmarked.
- 3. Share the completed tool with the Lead Designer by the agreed-upon completion date.

If you are a designer:

1. Discuss each marked UD consideration with the client and add to the Notes column to further elaborate on specifications (please include the date).

In general:

1. If you are the client or a designer and wish to add additional design features to the tool, you can add them in the cell beginning with "other:" under each UD category. Please enter only UD considerations supported by academic (newly published or existing unpublished research conducted by design firms, and others), user, and practical research.

Complete the following steps throughout the project as needed:

If you are a designer:

- 1. Place an **X** in the Designer column to indicate whether a UD consideration is included in the current design.
- If during the design process, a UD consideration is no longer achievable due to unknown or unforeseeable circumstances, designers can flag a UD consideration by placing an R in the Designer column to indicate that the UD consideration requires further review with the client.
- 3. If a UD consideration can only be partially met, place a **P** in the Designer column, and explain in the Note column (please include the date). This explanation may include an alternative option.

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UNIVERS	SAL PARK	DESIGN TOOL – PARKING AND ENTRY
Client	Designer	LEGEND X in the Client column indicates that a UD consideration has been requested X in the Designer column indicates that a UD consideration has been met R in the Designer column indicates that a UD consideration requires review P in the Designer column indicates that a UD consideration was partially met Reminder: UD considerations left unmarked indicate that they are not relevant to the project



PARKING	& ENTRY		NOTES
Client	Designer		
PARKING LOT CONSIDERATIONS			
1.1. How	should or w	vill the parking lot provide accessible parking beyond ADA	requirements?
		Number of accessible spaces meets or exceeds minimum	
		required by ADA (see 2010 ADA Standards for Accessible	
	-	Design - 208.2).	
		Accessible parking spaces for vans or other larger vehicles	
		available (see 2010 ADA Standards for Accessible Design	
		- 200.2.4).	
		Ensure accessible spaces are close to the building or	
		activity.	
		Other:	
4.3. What	variety of p	parking spaces should or will be available for cultural consi	derations (i.e.,
lower SES	5, family size	e, disability, etc.)?	• •
		Provide designated parent and child spaces.	
		Provide designated veteran parking spaces.	
		Provide designated electrical car stall and charging	
		station.	
		Separate bus and R.V. parking provided with required	
		minimum stall width to be $13' \times 15'$. ²	
		Other:	
3. What a	ppropriate r	naterials should or will be used to ensure safety in the park	ing lot and main
uccess pe		All surfaces are firm, hard and slip-resistant (see 2010	
		ADA Standards for Accessible Design - 302.1).	
		Avoid uneven and loose surfaces.	
		Liso firm smooth and even surface on access route with	
		minimum gradient of 1 in 50.4	
		Other:	
2.2. What	appropriate	materials should or will be used to avoid visual confusion	in the parking lot
and main	access poin	its?	
		Avoid signage or surfaces with strong patterns or	
		contrasting lines that may be visually confusing. ⁴	
		Avoid potential glare from surfaces.	
		Add street trees to reduce glare in parking lot area.	
		Other:	
5. What appropriate materials should or will be used to ensure durability in the parking lot and			
main acc	ess points?	Consider cost and error of future repair	
		Consider durability in barsh weather conditions	
		Other:	
2.2. How should or will signage be clear and universally understood in the parking lot and main access points?			

	Accessible parking signage uses universal symbols.	
	Overhead signs provide minimum clearance of 90".	
	Signage uses universal symbols.	
	Wall mount signs, when possible, to provide clear walking path.	
	Roadway markings and wall or post mounted signs for designated parking.	
	Other:	
1.1. How should or w	rill the parking lot account for commuter vehicles physical ne	eds?
	Parking lot provides a bus stop that is close to main	
	entrance.	
	Bus stop has a canopy with height clearance of at least 8'-6".	
	Bus stops avoid dished gullies, grilles, and manhole covers.	
	Avoid indentation for a catch basin at the loading area of a bus stop. ²	
	Design for alternative transportation including bicycle	
	storage, changing rooms and plug-in facilities for electric vehicles. ⁵	
	Other:	
4.2. How should or w	rill the parking lot provide pick up and drop off areas?	
	Parking lot provides a drop off area close to building entrance and accessible route.	
	Drop-off/pick-up areas provide shaded or covered seating area with waiting pad beside. ²	
	Drop off area avoids dished gullies, grilles, and manhole covers. ²	
	Drop-off and pick-up areas do not interfere with other vehicular flow. ²	
	Passenger car drop-off/pick-up areas are 4.5 14' 10" wide x 32' 10" long with appropriate curb radii for easy ingress/egress. ²	
	Avoid indentation for a catch basin at the loading area of a bus stop. ²	
	Other:	
2.1. How should or w	fill the parking lot account for commuter vehicle havigation h	needs?
	drivers to find setting down point (drop off).	
	Other:	
3. How should or will	I the parking lot address commuter needs?	
	Provide well-lit and covered queuing areas with accessible seating for commuters.	
	Drop off for main building to include a setting down point where the path/pavement is flush with the road.	

	Setting down point to include a canopy to guard from	
	weather.	
	Other:	
3. What safety measu	res should or will be put in place in the parking lot?	
	Addition of security cameras.	
	Blue light emergency phones/call boxes installed with text option.	
	Speed of traffic is controlled in the parking lot using one or more features: medians with and/or without curb cuts depending on pedestrian paths; pinch points; speed humps; designated bike, car, bus lanes using trees, bollards.	
	buffers (i.e., vegetative or reflective wands), parked cars, or curbs wherever possible.	
	Access points and drive-ins should be located to minimize conflicts between vehicles and pedestrians.	
	Other:	
3. How should or will	I traffic islands be used within the parking lot space?	
	Traffic islands that form part of the vehicular circulation pattern shall be cut through level with the street or have curb ramps at both sides and a level area 1220 mm [4'] long between the curb ramps in the part of the island intersected by the crossings ²	
	Traffic islands have tactile warning strips and directional guides to assist people with visual impairments move across the island, or direct them toward light or signal standards so they are to be able to continue to cross the street safely. ²	
	Other:	
	ACCESS ROUTE CONSIDERATIONS	
1.1. How should or v mobility?	vill access routes provide adequate clear width for all body	types and
	Provide access routes that are recommended clear width of 8', when possible, 6' in lower traffic areas.	
	Provide passing places where access route clear width is less than 6'.4	
	Ensure width is never less than 48" at the most constricted points of access route.	
	Provide wider pavement in front of buildings and bus stop locations.	
	Other:	
1.2. How should or w	Provide section at regular intervals, sway from line of	
	 rovide searing at regular intervals, away from line of travel; Recommended max distances without rest: Ambulatory without walking aids: 326' Use of mobility aids: 164'.⁴ 	

	The distance between pedestrian crossings is reduced (e.g.,
	medians with curb cuts, pedestrian safety islands with
	signal push box).
	Seating areas or green spaces are available along the
	access route but outside of the direct travel path (e.g.,
	pinch points or outlets) and at grade with the access route.
	Other:
3. How should a	or will access routes be clear and well lit?
	Parking lot provides sufficient light at night.
	Surfaces are designed to drain water effectively keep
	paths clear in all weather.
	Other:
3. How should a	or will access routes use proper gradients and leveling?
	Ensure access route is flush and level.
	Avoid gaps and vertical deviations between paving slabs greater than 0.25".4
	Keep any break in surface or gap such as drainage gulley no greater than 0.375" and perpendicular to line of travel. ⁴
	Provide inclined routes with a gradient between 1 in 33 and 1 in 25 with level landings are regular intervals -
	access route gradient must exceed 1 in 25 as a ramp. ⁴
	Ensure maximum gradient of ramp is 1 in 20, maximum rise 18" and maximum length 36". ⁴
	Ensure the cross-fall gradient is not greater than 1 in 50.4
	Exterior walkways shall have adequate 2% positive drainage. ⁴
	Other:
1.1. How should	d or will access route ramps & stairs account for different body fit and mobility
	Ramp width to match expected level of use but no less than 48".4
	Ramp top and bottom landings to be 5' in length and intermediate landings to be 3' 7" in length (by width of ramp). ⁴
	Locate ramp handrails continuously along ramp and intermediate landings.
	Recommended two handrails for ramps & stairs: one located between 34"-38", one location at a max of 28" for children.
	Prevent accidents at changes in level to side of access route with curb upstands, barriers or guard rails. ⁴
	Provide curb upstand or guarding to the side of ramp where adjacent ground is at lower level. ⁴
	Design does not include curved ramps.



	Step rise and tread to be consistent and follow IBC	
	Stair width of 4 - 11 minimum for 2-way frattic.	
	Stairs shall have anti-slip strips on all nosings. Nosings	
	should be rounded or chamtered and should not project	
	The more man 1.5 with a contrast value of at least at least $70\%^2$	
	When arade changes must be addressed, integrate the	
	ramp with the stairs.	
	Avoid single steps in an access route. ⁴	
	Clear landings at top and bottom on the step to be in line with ADA guidance. ⁴	
	Provide continuous handrails at both sides of steps and	
	intermediate landings. ⁴	
	12" horizontal extension of the handrail required at both	
	the top and bottom of the stairs or ramp. ²	
	Treads should be sloped forward a maximum of 1% to 2%	
	prevent accumulation of water. ²	
	Provide center handrail where steps are more than 87"	
	wide. ⁴	
	Protect any area below steps with had headroom less than	
	No glaro or shadows on ramps	
	Ather:	
2.1. How should or w	ill access route ramps & stairs be well-lit with visual and ta	ctile cues?
	Illuminate stairs and landing at 150 lux.	
	Illuminate ramp and landing at 150 lux.	
	Illuminate ramp and landing at 150 lux. Create tactile hazard warning surface at top and bottom	
	Illuminate ramp and landing at 150 lux. Create tactile hazard warning surface at top and bottom of flight (see ADA guidance for more). ⁴	
	Illuminate ramp and landing at 150 lux. Create tactile hazard warning surface at top and bottom of flight (see ADA guidance for more). ⁴ Ensure ramps and stairs are clearly visible and well signed.	
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5. How should or will	Illuminate ramp and landing at 150 lux. Create tactile hazard warning surface at top and bottom of flight (see ADA guidance for more). ⁴ Ensure ramps and stairs are clearly visible and well signed. Visually highlight every step edge. Other: access routes be winterized?	
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5. How should or will 4.2. What opportunitie	Illuminate ramp and landing at 150 lux. Create tactile hazard warning surface at top and bottom of flight (see ADA guidance for more). ⁴ Ensure ramps and stairs are clearly visible and well signed. Visually highlight every step edge. Other: access routes be winterized? Where reasonable, provide a cover or sub-surface heating system to keep ramps free of snow, ice and freezing rain. ² Other: S for personalization or personal choice should or will be a	available?
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5. How should or will 4.2. What opportunitie	Illuminate ramp and landing at 150 lux. Create tactile hazard warning surface at top and bottom of flight (see ADA guidance for more). ⁴ Ensure ramps and stairs are clearly visible and well signed. Visually highlight every step edge. Other: access routes be winterized? Where reasonable, provide a cover or sub-surface heating system to keep ramps free of snow, ice and freezing rain. ² Other: s for personalization or personal choice should or will be a Design provides a variety of pedestrian access routes from the parking lot to the main buildings. Provide low traffic parking areas. Provide secure locations for parking other types of	available?
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	Overhead clearance dimensions should be a minimum of 6' 7" (CSA standard) or 6' 6" (BCBC).	
	Design does not link parking bollards with chains or ropes.	
	Easy operation and clearance for any gates.	
	Catch basins and manhole covers should be located outside of the walkways and upstream from the intersection. ²	
	Manhole covers should be flush with adjoining surfaces, and be bicycle proof. ²	
	Area drains are preferred outside of walkways, but if required to place within, shall have maximum openings of 0.5" perpendicular to the direction of travel. ²	
	Other:	
2.1. How should or w	ill street turniture provide visual cues?	
	All street furniture or features mounted above height of 27" includes tapping rail for cane detection.	
	Visually contrasting band around all free-standing posts and columns. ⁴	
	All street furniture or features mounted above height of 27" includes tapping rail for cane detection.	
	Other:	
3. How should or will	the pedestrian crossing points be accessible?	ſ
	All crossing points are located where they are safe and convenient for all users. ⁴	
	Provide level crossing points at all controlled crossing point, junctions at the side of the road, and other access points. ⁴	
	Ensure crossing points incorporating dropped curbs that comply with ADA (page 76-77). ⁴	
	Ensure crossing points are well drained with maximum of cross-fall gradient of 1 in 50.4	
	Ensure recommended 48" width of level surface to rear of pavement at crossing point. ⁴	
	Curb ramps are provided at all pedestrian crossings, are perpendicular to the crosswalk, and align directly across the street.	
	Curb ramps are perpendicular to a sidewalk with a minimum distance of 3' from the top of the curb ramp to the edge of the building. There is to be an adjoining slope surface at the top of the curb ramp not exceeding 8.0%. ²	
	The width of the curb ramps, exclusive of flared sides, shall be a minimum of 6' 6". Same width as crosswalks is best practice. ²	
	[12"] tactile warning strips are to be located at both the top and bottom of the curb ramp. ²	



	Accessible pedestrian signals should be installed at all corners of an intersection and they would total eight in	
	Curb ramps are provided at all pedestrian crossings, are perpendicular to the crosswalk, and align directly across the street.	
	Other:	
2.1. What factule surfa	aces should or will be used to increase awareness?	
	Tactile paving surfaces used sparingly. ⁴	
	Use tactile paving surfaces consistently and strictly in accordance with ADA. ⁴	
	Consulted groups representing people with visual disabilities. ⁴	
	Color contrasted tactile warning strips and directional guiding strips are to be used with discretion, especially at the approaches to intersections, transition areas to ramps, stairs, and around and before obstructions that are in the direct line of travel. ²	
	Contrast value should be at least 70%.	
	Directional guiding strips are not to impede use of the curb ramp by people using wheelchairs or scooters. ²	
	The tactile warning strip edge shall be 6" to 12 " away from the back of the curb. ²	
	Color contrasting tactile warning strip covers the lower 24" of the ramp and not the entire ramp. The truncated domes are to be placed at a setback of 6" to 12" from roll down curb as space allows. ²	
	The truncated domes of the tactile warning strip must be aligned on a square grid in the predominant direction of travel to permit wheels to roll between the domes. ²	
	Where directional tactile strips are used and there is a change of direction toward a crosswalk, a tactile hazard warning strip shall be placed at the vertex of the two directional strips to indicate a stop and possible change of direction. ²	
2.2 What way finding	Other:	
2.2. What wayfinding	should of will be used as harural visual and sound cues?	
	Placing a sound mark or a visual mark at two or three corners of an entrance will help a person to recognize the direction they came from, and therefore which direction they want to go in. ²	
	Avoid abrupt changes in direction on access route.	
	Other:	
3. How should or will	the mechanical systems focus on noise reduction?	



	Mechanical systems located outside are quiet.
	Other:
3. What opportun	ities to sanitize before entering the building should or will be available?
	Alcohol gel dispensers in visible and accessible locations.
	Other:
3. What opportun	ities to throw out trash and keep pathways clear should or will be available?
	Trash cans provided at regular intervals.
	Sidewalk outlets for trash cans are provided to keep pathways clear in parking lot area and along access route.
	Other:
3. What hands-fre	ee mechanisms should or will be used to ensure clean hands are not re-
contaminated?	
	Sensory alcohol gel dispensers, etc.
	Other hands-free mechanisms (e.g., wrist blades) for faucets, towel dispensers, alcohol gel dispensers, soap dispensers etc.
	Other:
5. What approprie	ate environmentally sustainable measures should or will be taken?
	Use durable products and building materials which have a record of longer life and reduced maintenance costs. ⁵
	Design for alternative transportation such as bicycle storage and plug-in facilities for electric vehicles. ⁵
	Install high efficiency lights.
	Focus exterior lighting down, provide adequate pedestrian lighting and prevent light pollution. ⁶
	Integrate "No Smoking" signage into building and site signage packages where applicable. Restrict smoking to areas more than 25 ft from entries, outdoor air intakes and operable windows.
	Maximize lot permeability with landscaping, permeable pavement and other surfaces, directing impervious to infiltration areas). ⁶
	Design landscaping first utilizing native plants and then considering other appropriate drought resistant species. ⁵
	Design to encourage and permit the collection of recyclables. ⁵
	Locate trees and shrubs to support passive heating and to complement cooling in outdoor spaces and buildings and to create seasonal heat-sinks and natural ventilation corridors. ⁷
	Along roads, drives, and sidewalks, consider salt resistant species.

	All walkways, paths, curbs, entrances, etc. should be high albedo material (SRI > 29). Streets, driveways and other paved surfaces should be high albedo materials or, where required, asphaltic concrete pavement. Optimize shading of paved surfaces with planted trees. Where possible purchase locally produced building	
	materials.	
E What are seen into	Other:	
5. What appropriate	Design for alternative transportation including bicycle	
	storage and plug-in facilities for electric vehicles. ⁵	
	Consider the installation of bike racks to enhance access where needed, in context of the broader campus.	
	Integrate "No Smoking" signage into building and site signage packages where applicable. Restrict smoking to areas more than 25 ft from entries, outdoor air intakes and operable windows.	
	Design to encourage and permit the collection of recyclables. ⁵	
	Design the site to reconnect fragmented landscapes and establish contiguous networks with other natural systems both within the site and adjacent systems beyond its boundaries. ⁷	
	Where possible purchase locally produced building materials.	
E Wilson and a state	Other:	
5. What appropriate	Use durable products and building materials which have a record of longer life and reduced maintenance costs. ⁵	
	Install high efficiency lights.	
	Maximize lot permeability with landscaping, permeable pavement and other surfaces, directing impervious to infiltration areas). ⁶	
	Design landscaping first utilizing native plants and then considering other appropriate drought resistant species. ⁶	
	Design to encourage and permit the collection of recyclables. ⁶	
	Locate trees and shrubs to support passive heating and to complement cooling in outdoor spaces and buildings and to create seasonal heat-sinks and natural ventilation corridors. ⁷	
	Along roads, drives, and sidewalks, consider salt resistant species.	
	Where possible purchase locally produced building materials.	
	Other:	

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Source:

2010 ADA Standards for Accessible Design

<u>CSA Standards</u>

British Columbia Building Codes (BCBC)

