

DIVERSE NEEDS FOR PUBLIC SPACE & UNIVERSAL DESIGN PRINCIPLES



Range of Abilities and Needs: One billion people, or 15 percent of the worldwide population, experience some form of disability.

Aging: The global population of people over 65 years of age is expected to double, from 8.5 percent to 17 percent, by 2050, totaling 1.6 billion people. Limited mobility: The World Health Organization estimates 75 million people, or 1 percent of the global population, require a wheelchair, with nearly a third of that group unable to access them.

Lack of community access: 26.8 million, or 56 percent, of Americans over 65 live in suburbs, while 11 million, or 23 percent of Americans over 65 live in rural areas, with limited access to public transportation. Given older Americans prefer to age in place, rather than moving to a retirement community, neighborhoods must be designed for all ages and levels of mobility.

Neuro-cognitive disorders: Cognitive disabilities like Alzheimer's disease and other forms of dementia are more prevalent in older populations. Some 44 million, or 0.6% of the global population suffer from Alzheimer's. 16 million people in the U.S. alone have cognitive disabilities. Diminished sensory, cognitive, and motor skills limit people's ability to navigate public spaces.

Neurodevelopmental and/or Intellectual

Disabilities: Roughly 70 million people, or 1 percent of the world population are autistic. According to the Centers for Disease Control (CDC), 1 in 6 children in the United States had a developmental disability in 2006-2008. As of 2014, 1 in 59 children aged 8, or 70,000 8-year-olds, in the US, are autistic. Autistic people are often overwhelmed by visual stimulation, the acoustic environment, lighting, and odor present within the built environment.

Blindness and Low Vision: Worldwide, 1.3 billion people, 17 percent of the population, have some form of visual disability, 217 million people, 3 percent of the population, have a moderate to severe vision disability, and 36 million people, or 0.5 percent of the population, are blind. Intersections, poorly-lit spaces, and sudden level changes can be dangerous for people with low vision.

Deafness and Hardness of Hearing: Worldwide, there are 466 million people with a hearing disability, a number expected to grow to 900 million people by 2050. Some 70 million deaf people around the world rely on visual communication (sign language). There are over 300 documented signed languages in use around the world.



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Equitable use. The design is useful to people with diverse abilities. For example, the entry gate to a garden, or classroom door invites everyone into the space generously.

Flexibility in Use. The design accommodates a wide range of individual preferences and abilities. An example is a museum that allows visitors to choose to read or listen to the description of the contents of a display case, or a garden sign that uses both the name of the vegetable and an image.

Simple and intuitive. Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level. Intuitive symbols, color-coding, use of pattern, and clear indications of purpose put people at ease.

Perceptible information. The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities. A map of the garden or riverfront front trail at its entrance allows people to know and plan for the adventure or challenges ahead.

Tolerance for error. The design minimizes hazards and the adverse consequences of accidental or unintended actions. In the garden there might be an entry space in the chicken coop, (or at a dog park) so that one can enter without accidentally letting the birds (or dogs) out.

Low physical effort. The design can be used efficiently, comfortably, and with a minimum of fatigue. Doors that open automatically for people with a wide variety of physical characteristics demonstrate the application of this principle. Imagine being able to do the task with a closed fist and very little exertion of strength.

Size and space for approach and use. Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility. A flexible work area designed for use by employees or garden volunteers who are left- or right-handed and have a variety of other physical characteristics and abilities is an example of applying this principle.

Research prepared by: the American Society of Landscape Architects, the Center for Universal Design and Jocelyn Zanzot, Urban Design Planner, City of Montgomery, AL

Examples include: 1. CapitaGreen designed by Toyo Ito in Singapore, 2. Multipurpose sports hall in the Musholm Complex, Denmark, 3. Singapore again and lastly 4. Sweetwater Spectrum, in Sonoma CA. The site, which opened in 2013, includes four 4-bed homes for 16 young adults, a community centre, therapy pools and an urban farm – all designed by Leddy Maytum Stacy Architects according to autism-specific principles recommended by Arizona State University to promote a sense of calm.

GUIDELINES FOR ACCESSIBILITY INCLUSION IN GARDENS & PUBLIC SPACES



Accessible Features for the Garden

- At least one raised bed must be 24 to 30 inches in height and 48 inches in width
- Alternatives to raised beds include large pots, table beds and vertical gardening. Large pots offer the same opportunities for gardening, but are many times circular and have the advantage of being transportable. Table beds are elevated and offer a shallow bed of 6 to 12 in. at a raised height. Vertical gardening includes climbing plants, whose height reduces the need for bending. Many plants naturally grow upwards and if trained properly can use walls, trellises and fences to help. Hanging baskets, which can be set to any height, also provide a vertical element to gardening without the need for a bed on the ground.

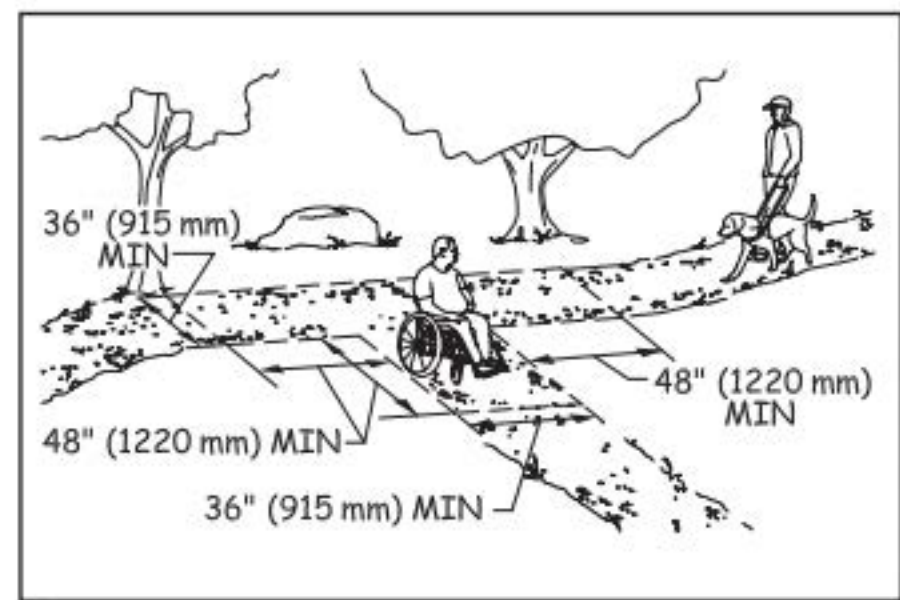


Figure 42—A T-intersection may be used as a passing space on an outdoor recreation access route or a beach access route if it has dimensions as shown, or larger.

Access Routes:

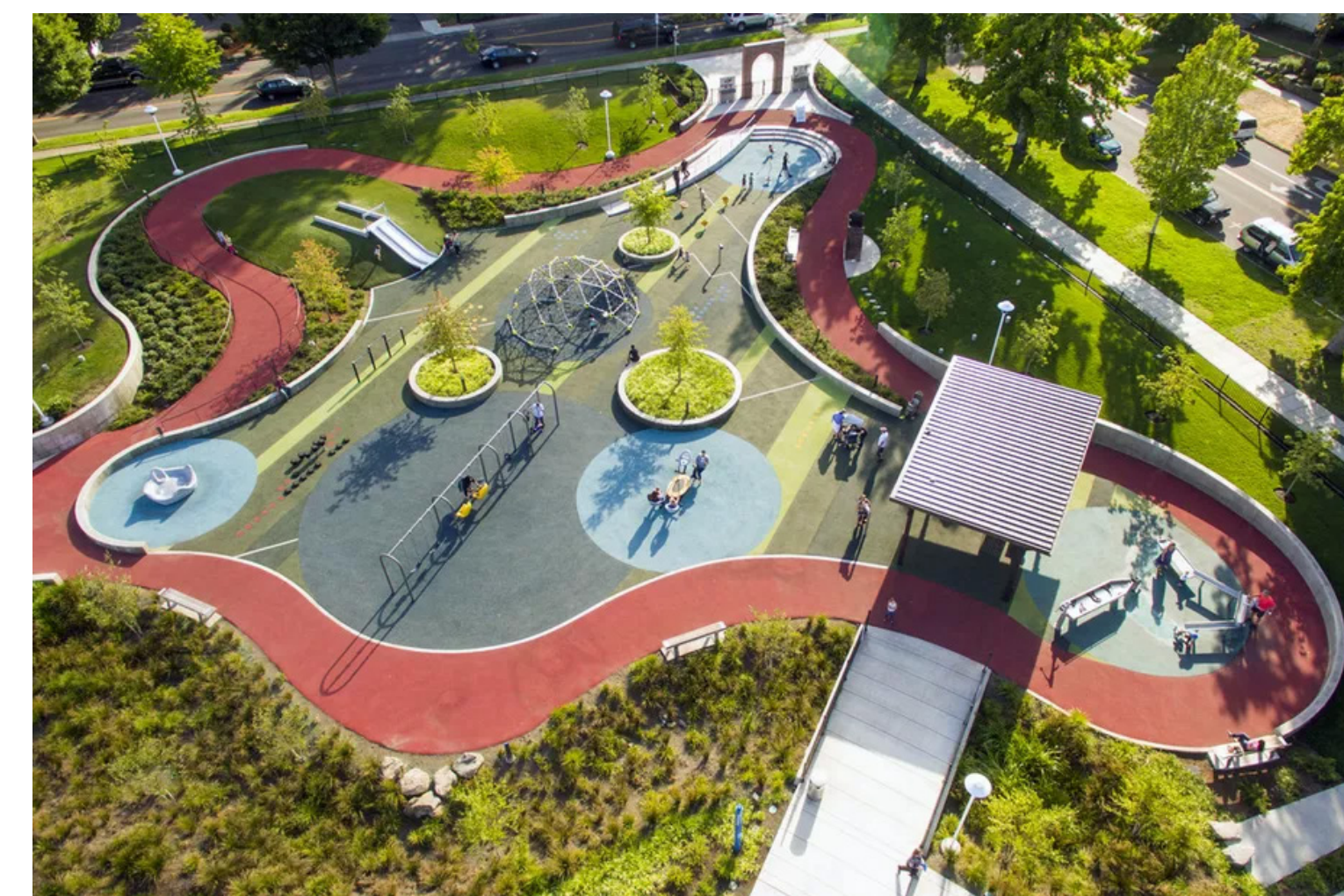
- In general walking surfaces should be firm and stable and slip-resistant.
- The clear width of an access route should be 36 “ minimum.
- However, routes can vary with the nature of the setting, sometimes a larger path is better!

Slopes:

- The running slopes of a walking surface shall not be steeper than 1:20.
- Cross slope should be no steeper than 1:48
- If accessible slope crosses a curb, there should be a curb ramp no steeper than 1:12
- Landings of 60” long should be provided at the top and bottom of ramp and at least 60” x 60 in if the ramp turns
- Hand rails and guard rails are needed.

Outdoor Furniture:

- Picnic Tables shall be accessible and connect with accessible paths.



Benches:

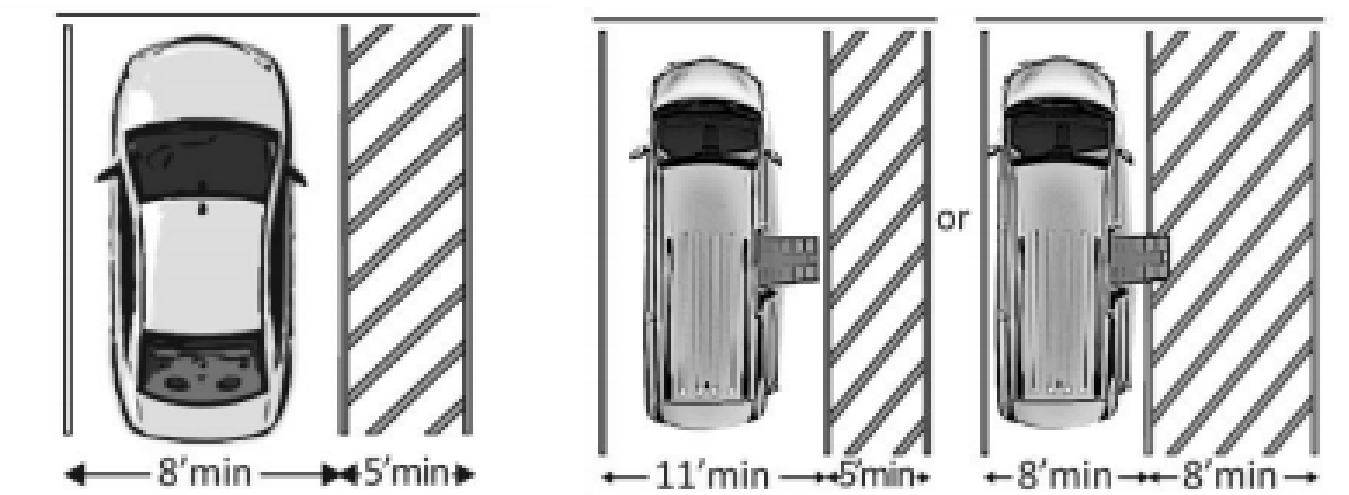
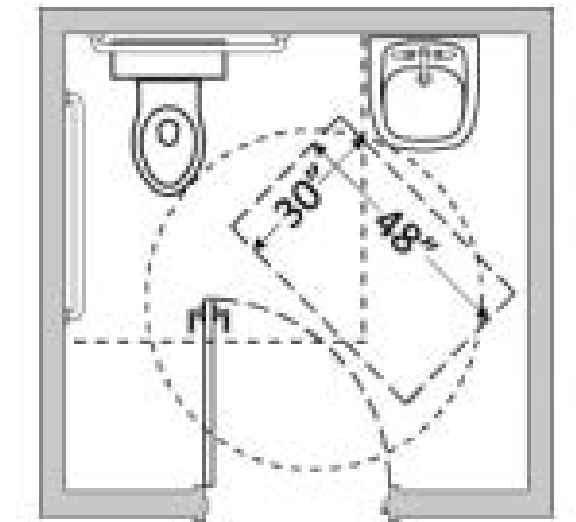
- Fixed Benches should have back support and be connected to accessible paths.

Parking and Utilities:

- Provide accessible parking spaces 1 for every 25, and at least one van accessible.
- Accessible parking spots should be identified and adjoin accessible routes.

Public Restrooms:

- Provide accessible public restrooms. --->



*Please note that these accessibility guidelines are incomplete. For more details see: https://www.ada.gov/2010ADAstandards_index.htm

and The Accessibility Guidebook for Outdoor Recreation and Trails <https://www.fs.fed.us/sites/default/files/Accessibility-Guide-Book.pdf>

1. Ontario Wood, table top indoor garden for Senior assisted living.
2. Marlborough Primary School, Macgregor Smith Landscape Architects. Situated in the bustling Royal Borough of Kensington and Chelsea, Marlborough Primary School provides a vibrant learning environment for primary school children aged 3 to 11. The new school provides increased capacity for 420 students, plus a full-time nursery and specialist autism centre. Marlborough Primary School, Macgregor Smith Landscape Architects
2. When Magical Bridge Foundation and open up an inclusive playground in 2015 the difference between ADA compliant and inclusive design was stark. As Jill Asher, co-founder and co-executive director of the Magical Bridge Foundation, says, “Just because I can access something doesn’t mean I can enjoy it.”
4. Butler Snow Sensory Trail, Red Mountain Park, Birmingham The Butler Snow Sensory Trail is designed for children and adults with developmental differences, people with low vision and/or low hearing and for those who use wheelchairs. The trail provides easy access to nature that is inclusive and welcoming to all.

UNIVERSAL DESIGN GARDENS & PUBLIC PLACES FOR ALL!



Accessible: All public spaces should be physically accessible to everyone, regardless of their physical, cognitive, or mental ability. Specific areas of public spaces shouldn't be designed for people with specific disabilities; all public spaces should work for everyone.

Comfortable: A feeling of safety is the baseline for feeling comfortable, but an inclusive sense of belonging helps everyone to feel comfortable in a space. Universal design offers options for people with a range of abilities and disabilities, fostering feelings of belonging. Comfort includes safety, temperature and shelter, views to known landmarks, places to sit, stand, lean and rest in proximity to others and or quiet.

Participatory: Landscape architects and designers should always co-design with people with disabilities. Able landscape architects and designers won't know all of the difficulties that people with disabilities experience in environments designed without them in mind. Disabled landscape architects and designers can also bring their unique experience and understanding to create more accessible spaces. Note: Some people, such as those with advanced dementia, may not be able to clearly articulate their challenges with the built environment. In these instances, landscape architects must work with healthcare providers to create solutions.

Ecological: Exposure to nature and green space is proven to provide mental, cognitive, and physical health benefits for people of all ages and abilities. Universal design should provide these benefits throughout the built environment, creating spaces people want to visit and spend time in, while fostering ecological resilience and supporting biodiversity.



Multi-Sensory: Navigation in the built environment depends almost entirely on visual cues. Incorporating design elements that can be accessed through different senses provides other systems of navigation. For example, the use of auditory, haptic, and textural cues can aid in wayfinding and enrich experiences for all. Plan for sensory delights of multiple kinds, all year round.

Legible: Clear and understandable designs, with very legible multi-sensory signage and signals, help people of all ages and abilities to understand how to move through spaces. Delineating places of movement and relaxation can help people understand how spaces are meant to function as well.

Predictable: Maintaining the same clear and understandable design cues throughout a public space creates predictable environments for people of all ages and abilities, increasing comfort and safety. Predictability can create a base from which to encounter and appreciate change the way a static raised bed invites seasonal rotation.

Walkable / Traversable: Often, people with disabilities are limited in the distances they can travel. In too many communities, walking or using a wheelchair are not options because the environment has been designed primarily for cars. Walkable / traversable communities, which feature wide sidewalks and bicycle lanes, provide amenities like shops, restaurants, and medical facilities nearby, meaning those with limited range can manage and maintain many aspects of their lives independently.



DESIGN FOR THE BELOVED COMMUNITY

URBAN DESIGN FOR ALL



Environmental Justice: Everyone has the right to clean water, clean air, clean soil, and safe shelter. When environmental toxins are imposed on poor communities, whether through industrial development, pollution, or infrastructures that disconnect or isolate people, this is environmental injustice.

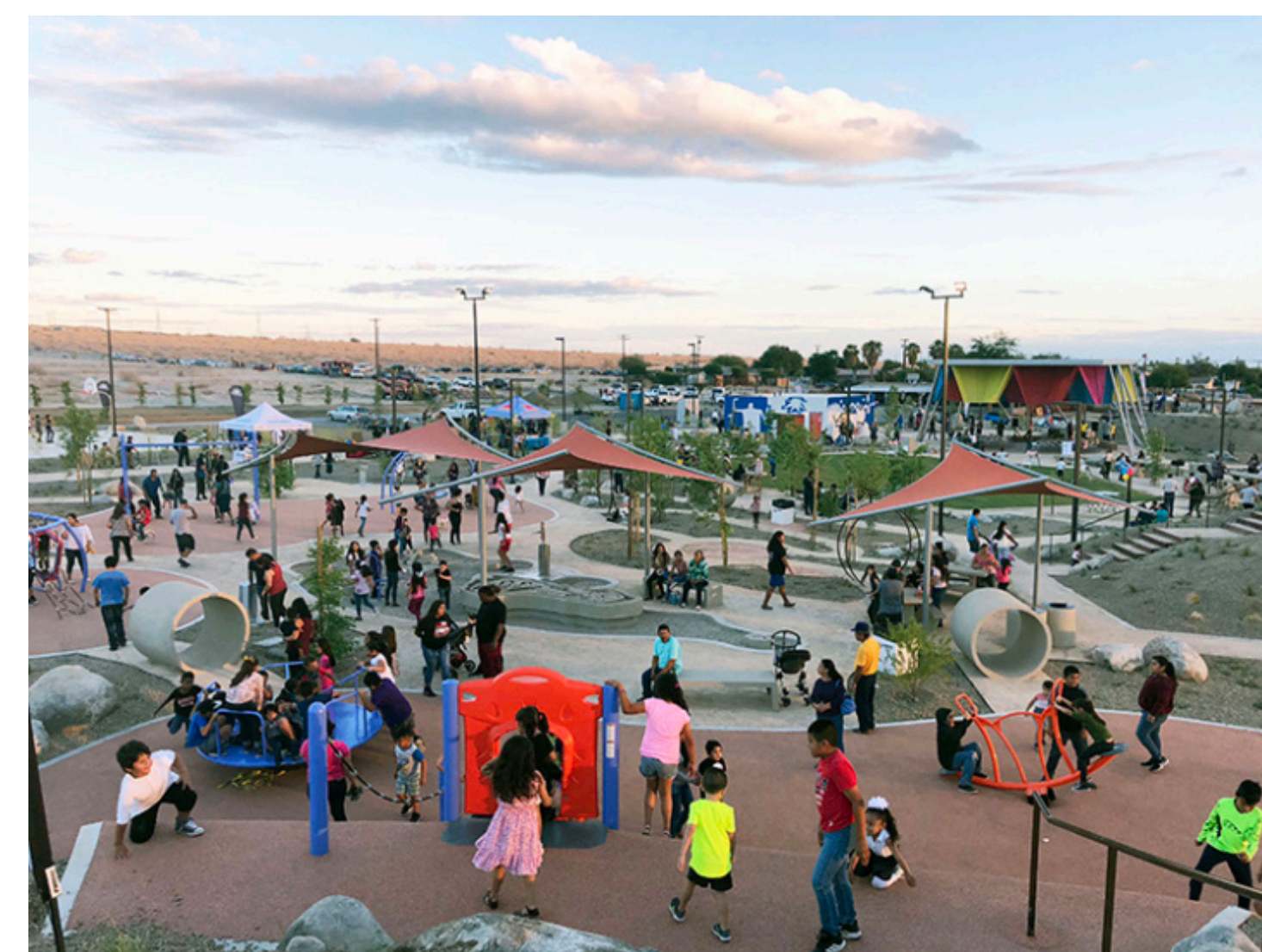
Complete Streets: Complete streets is a way of describing streets that are designed to accommodate pedestrians, bikes, public transportation, cars, natural habitat and stormwater management and vibrant flourishing neighborhood-serving residential, mixed-use and commercial life.

Livable Neighborhoods: Livable neighborhoods suggests that people should be able to safely find most of what they need within walking distance in their own neighborhood. This includes basic goods and services, social spots and public spaces, parks and recreation, and public transit options to go wherever else they need to go.

Green Infrastructure: Green infrastructure is the name for urban systems such as stormwater management or even energy and power systems that are designed to be healthy, living additions to neighborhoods and cities. Rather than bury pipes underground and run wires overhead, these essential systems can be designed to add environmental value to the public realm.

Transit-Oriented Development: This concept underscores the importance of growing cities around public transportation infrastructure to promote public transit and reduce the number of cars on the road. It encourages higher density, mixed-use, multi-family development around key public transit nodes.

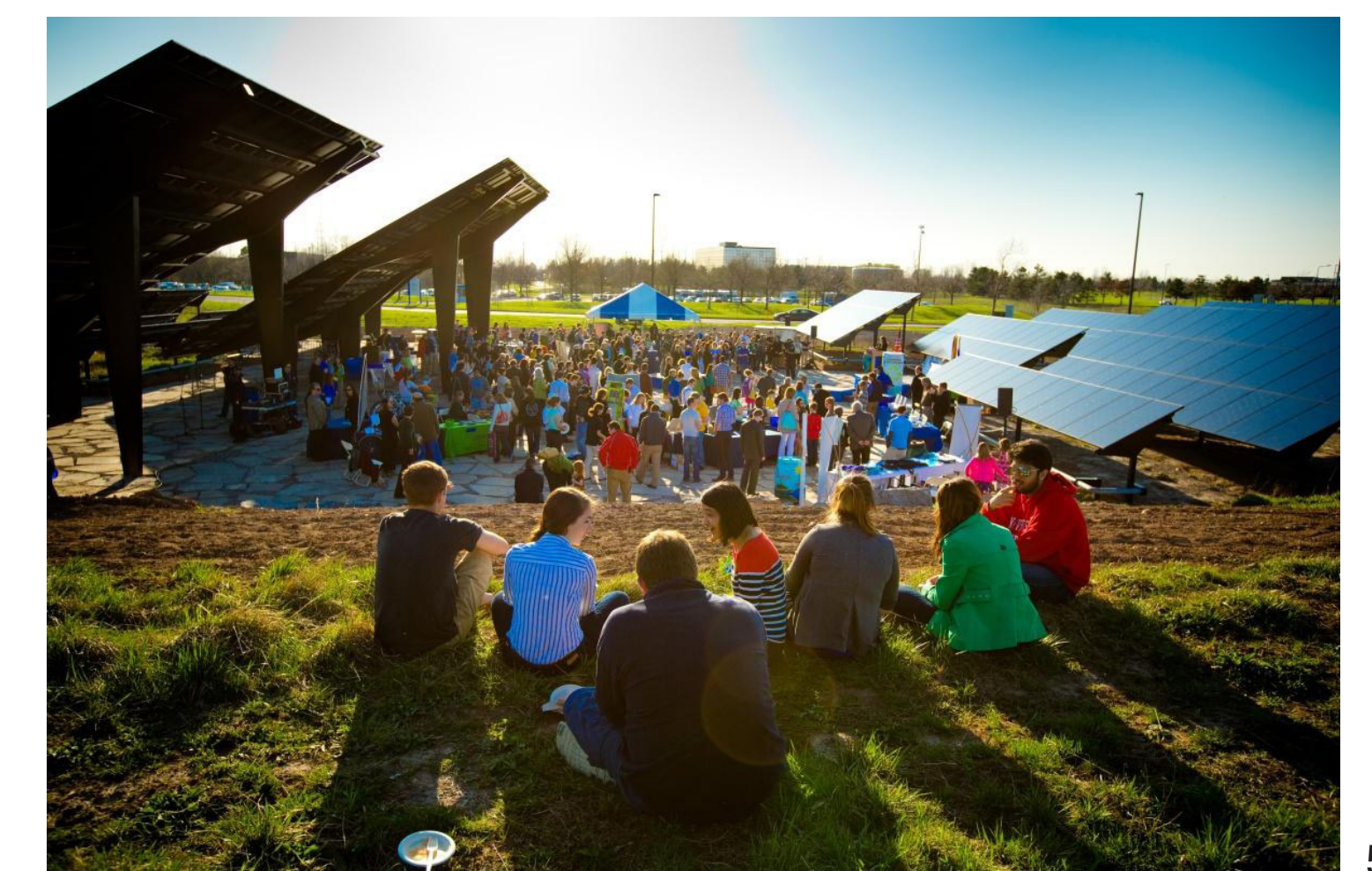
Affordable & Fair Housing: Fair housing guarantees that regardless of age, race, religion, family situation or level of ability, people have the right to choose the housing that best suits their needs -- with no outside preferences or stereotypes being imposed. Affordable housing should be provided for in neighborhoods designated for "revitalization" to ensure that new development does not result in displacement.



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A Park in Every Neighborhood: A park in every neighborhood or within a half mile walk of all people underscores the benefits we all receive from parks including access to nature and ecological diversity, to recreation and health opportunities, to socialization and play, to the environmental services provided by public greenspaces including air and water purification, green infrastructure and so much more. Investing in parks is a great way to add value overall to neighborhoods, making them safer and more desirable.

Creative Placemaking: Creative place-making acknowledges the role of artists and the creative industries in creating and sustaining meaningful, vibrant places. Redevelopment should always include and make opportunities for the arts and local artists. Creative place making is also a way of understanding that great places require a mix of things but that public art and working artists are key to the mix.

Inclusive or Co-Creative Design: Design should not be delivered by an architect expert or planning professional to a community without input. In fact places are best designed in co-creative collaboration with the people who live in the place of focus. Places should reflect the local communities' history, values, and visions for the future. Sometimes this requires updating a place name or making larger structural investments to undo past exclusions and systemic injustice.



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1. Complete Street example from the National Association to City Transportation Officials <https://nacto.org/> (sounds boring but has some great info).

2. The Nuestro Lugar park in North Shore, CA, by KDI. "My hope is that all of us can help elevate the power of public space to a more general public," Chelina Odbert of the Kounkuey Design Initiative (KDI) says, "so that the importance of public space isn't just something that's talked about in select circles of designers or city planners, but instead it's something that every resident understands the value, importance, and power of, so that all residents can become advocates for more and better public spaces."

3. A KDI public workshop session for its Somos Oasis project near the Salton Sea in Southern California.

4. From the article, "How Memphis transformed its parks named for Confederate generals into inclusive spaces. After taking down statues of Confederate president Jefferson Davis and KKK leader Nathan Bedford Forrest, the city redesigned the parks into spaces where people could create a stronger community".

5. An urban space in Oakland transformed by Landscape Architect Walter Hood, design around clean power infrastructure.