THE SUMMARY OF LITERATURE RESEARCH

LEAFLET FOR

INCLUSIVE SUSTAINABLE AND ACCESSIBLE PARKS PROJECT

Basic Principles of Inclusiveness.................................................................1
Main Challenges to Inclusive Design.......................................................3
Design Principles of an Urban Park with a Diversity Focus.....................4
7 Principles of Universal Design...............................................................5
Sustainable Urban Parks........................................................................6
Accessible and Inclusive Playgrounds.....................................................11
A Sample Survey for Related Internal Partners on Inclusiveness, Sustainability and Accessibility of Public Parks.........................................................12
BASIC PRINCIPLES OF INCLUSIVENESS

An inclusive environment is one that can be used by everyone, regardless of age, gender or disability. It is made up of many elements such as society's and individual's attitudes, the design of products and communications and the design of the built environment itself. It recognises and accommodates differences in the way people use the built environment and provides solutions that enable all of us to participate in mainstream activities equally, independently, with choice and with dignity.

An inclusive environment considers people's diversity and breaks down unnecessary barriers and exclusions in a manner that benefits us all. This is significant because although society and individuals have invested heavily in enabling people to manage their personal circumstances effectively (e.g. by caring for older people or providing aids and adaptations for disabled people), many people remain unnecessarily 'disabled' by ill-conceived environments. As a result many people cannot take full responsibility for themselves and are prevented from contributing to society.

This is best illustrated by looking at how the access needs of disabled people have been accommodated in recent years. Disabled people's needs are often considered separately from other groups of people and often after the design of a building has been completed. Solutions often lead to separate facilities, such as platform lifts or ramps for wheelchair users located on one side of a stepped entrance. Children's needs are often ignored altogether, for example, wash-hand basins in public toilets are usually too high. Baby changing facilities are sometimes located in the ladies toilet but not in the gents, preventing fathers from using the facility.

PRIORITY GROUPS

- Visually impaired people
- Infants and children
- Children with development related disabilities such as autism
- Expectant mothers
- Older persons
- Wheelchair users
- Ambulant disabled people
- Persons with hearing impairment
- Women
- LGBT+

ACTIONS FOR VISUALLY IMPAIRED

Most existing open spaces directly or indirectly exclude individuals with special needs due to poor planning, design and management. For example, visually impaired people, including the blind, have difficulty even approaching local open spaces that are new to them. Therefore, it is clear that not all people have access to parks. In recent years, many municipal governments have started to design and manage parks to be inclusive. Globally, some traditional parks have been reconstructed to provide barrier-free access to people with mobility disabilities.

These changes have involved the inclusion of features such as wider entrances and ramps for wheelchair users. Some newly designed parks also provide facilities for older people to undertake light daily physical exercise. However, these improvements in policy and design focus on individuals with
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mobility disabilities. The problems of those with sensory disabilities, such as visually impaired people, have rarely received attention.

The only available facilities in some modern and large-sized parks are limited tactile paving. In short, visually impaired people are directly and indirectly excluded from parks and other kinds of open spaces.

WORKSHOP OUTPUTS FOR VISUALLY IMPAIRED

Identifying and approaching parks:
- Provide convenient and accessible facilities for visually impaired people to identify/approach
- Provide clear indication of the orientations and locations of parks
- Enhance the provision of tactile paving and maintain good quality management and maintenance of tactile paving
- Prevent obstacles and traps on or along tactile paving, and provide warnings, if necessary

Overall environmental settings
- Provide and manage a comprehensive network of tactile paving in parks
- Provide Braille guides at remote and on-site locations
- Provide information at key locations and junctions in parks
- Allow independence and minimise the need of personal assistance for visually impaired people
- Provide alternative means, such as audio announcement facilities, for emergencies or on request
- Ensure that the facilities for visually impaired people do not inconvenience or cause danger to other park users, including PSNs
- Provide financial support to NGOs so they can help visually impaired people to access parks

Facilities inside parks
- Ensure that park facilities have a high degree of inclusiveness in terms of availability, location and assistance
- Provide special hints and guides to fit the particular needs and capabilities of visually impaired people
- Ensure a balance between exploration and safety
- Allow immediate and easy access to three types of essential facilities: emergency, basic needs, and information
- Provide optional portable tactile Braille guides to minimise installation costs and management

MINORITIES

The key in designing racially and ethnically inclusive partnerships is to recognize minorities as legitimate stakeholders and to invite all relevant minority-based community organizations and community leaders to participate in initial partnership formation and problem definition dialogue right from the beginning. This is because the ultimate definition of any collaborative problem establishes the ability of organizational actors to participate in subsequent collaborative conversations.
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MAIN CHALLENGES TO INCLUSIVE DESIGN

- Many development plans contain few or no requirements relating to inclusive design and inclusive design is not seen by planners to be of relevance to planning applications.
- Inadequate resources of local authorities often make it difficult to invest adequate time to promote and enforce inclusive design. Consequently, levels of awareness are low.
- Local authority officers often have little or no formal training in inclusive design.
- Local authorities may rely on local access groups who do not have regular and open lines of communication, or who themselves do not have appropriate professional skills and resources.
- Accessible public spaces are sometimes located in inaccessible places.
- Developers sometimes do not appreciate the economic benefits of maximising inclusive design, or they appoint a designer who is not familiar with the inclusive design approach.
- The core objective of delivering inclusive environments needs to be balanced against other policy considerations. F.e. preserving the character of a listed building may appear to conflict with proposals to widen a door opening. Alternatively, a proposed ramp located on the public highway might be seen to constitute an obstruction...
- The lack of appropriate national guidance on inclusive design hinders application.
DESIGN PRINCIPLES OF AN URBAN PARK WITH A DIVERSITY FOCUS

People with different ages, genders, social status, or ethnic have different preferences in recreational activities and requirements. The seniors enjoy spaces with social connections, and some prefer to be in quite spaces with connection to nature whereas teenagers strongly need a hangout area that maximizes views of and from passer-by. Significant differences in park activities among users with different ethnics are found in the requirement for social and nature-based activities. Considering diverse uses in public outdoor spaces, various types of spaces should be offered to make urban parks responsive to different groups of users.

In the context of public parks, inclusive design considers the needs of general users and groups with special needs, such as the elderly and the disabled users. It covers several issues related to accessible entrance, safe and convenient walkways, the provision of well-designed signage, the presence of facilities and amenities required by users with special needs.

Accessibility can be enhanced for pedestrians and cyclists by creating walkable and cyclable environment. Walkable environment can be developed through seven C-principles: connection, convenience, comfort, conviviality, conspicuousness, coexistence and commitment. To achieve walkability, it is therefore necessary for having the pedestrian network that connects to destinations, being conveniently accessible, providing facilities and amenities for walking, creating a convivial atmosphere for encourage social interaction, providing signs and information for pedestrian, arranging coexistence between walking and other transport modes, and having commitment from local communities and administration to create pedestrian-friendly environment. Along with pedestrian network, cycling network and facilities should be provided.

Learning about environmental sustainability is also crucial to embrace environmental stewardship as part of the community culture. In the context of urban green spaces, Low Impact Design (LID) can be applied to emphasize the importance of water resource and its role in mitigating urban flood risk. LID refers to an approach to stormwater management that is based on distributed systems across a development site (Montalto et al., 2007). Instead of using pipe systems, LID systems rely on open systems, such as rainwater harvesting, to allow water infiltration and reduce the amount of runoff. Reducing the impact on the environment contributes to the concept of a sustainable productive area.

Design principles and strategies for ISA parks:

1. Creating engaging space for people from all ages
   1.1 Provision of playful and dynamic spaces for children
   1.2 Provision of gathering spaces for adults
   1.3 Provision of peaceful space for elderly

2. Creating inclusive space for people with special needs
   2.1 Accessibility
   2.2 Comfort and convenience
   2.3 Safety

3. Creating meaningful spaces
   3.1 Symbolic meaning
   3.2 Gathering spaces for cultural events
   3.3 Environmental sustainability
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7 PRINCIPLES OF UNIVERSAL DESIGN

Principle 1: Equitable Use: The design is useful and marketable to people with diverse abilities.
Principle 2: Flexibility in Use: The design accommodates a wide range of individual preferences and abilities.
Principle 3: Simple and Intuitive Use: Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.
Principle 4: Perceptible Information: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.
Principle 5: Tolerance for Error: The design minimizes hazards and the adverse consequences of accidental or unintended actions.
Principle 6: Low Physical Effort: The design can be used efficiently and comfortably and with a minimum of fatigue.
Principle 7: Size and Space for Approach and Use: Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user’s body size, posture, or mobility.
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SUSTAINABLE URBAN PARKS

Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Therefore, sustainable design and practices not only promote environmental responsibility, but also enhance our communities and address management and costs associated with resources.

Sustainable Parks are designed, constructed and operated to address issues facing the community and surrounding region, such as stormwater management or improving air quality by promoting alternative transportation, reducing motor vehicle trips, and even planting trees.

Sustainable Parks can significantly decrease water use by reducing irrigation needs through the use of rain gardens and recycled water. Sustainable (Green) buildings typically save up to 60% in annual energy costs when compared to conventional building designs. Building operational costs are also substantially lower. Studies have also shown substantial increases in employee productivity (2-16%) in sustainable Green buildings designed with careful consideration to natural lighting and improved air circulation.

Planning, designing, constructing, and operating Sustainable Parks often includes the following elements:

- Minimizing environmental impacts from the onset through sensitive siting of a park within the landscape and careful consideration of the various uses within the park boundaries
- Protecting and enhancing habitat areas
- Educating the public about the value of natural resource stewardship
- Incorporating rain water reuse, grey water for irrigation, efficient irrigation systems, etc.
- Recycling waste products and striving to limit waste as much as possible
- Minimizing pollution impacts resulting from park features and user activities
- Utilizing Green building techniques (e.g., solar power, natural lighting) to reduce energy costs
- Promoting alternative forms of transportation (e.g., greenways, bike trails, safe routes to schools)
- Reducing maintenance and operations costs
- Involving the public as partners, customers, volunteers, participants, stakeholders, etc.
- Encouraging partnerships with various organizations

SOCIAL SUSTAINABILITY

Parks serve as valuable places for shared social activity and public interaction. For a community to enjoy a high quality of life and be sustainable, the basic needs of all residents must be met. A socially sustainable community must have the ability to build and maintain park facilities serving residents of all ages, abilities, and economic status. Social sustainability practices involve outreach to address the needs of the community, including underserved populations.

Examples of social sustainability strategies in parks and recreation include the following:

Education and Outreach

- Provide sustainability training for public park employees.
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- Provide opportunities for the public to learn about park sustainability and natural resource protection.
- Provide demonstration gardens of native plantings within local parks.

Social Interaction with the Natural Environment
- Provide outdoor spaces designed and operated to encourage social interaction.
- Enhance the public’s physical, mental, and social well-being by providing opportunities to interact with nature.
- Create volunteer opportunities for the public to be directly involved in the protection, maintenance, and enhancement of natural and open space areas.
- Provide public access to parks, recreational facilities and open space areas for all members of the community.
- Promote ecological values among Oregon residents through public education and interpretation of park and open space features.

Public Health
- Provide Community Gardens for local residents to grow edible food products and interact with other local residents.
- Provide edible landscape demonstration gardens within parks.
- Provide facilities and programs to encourage physical fitness and reduce the obesity rate among residents.

ECONOMIC SUSTAINABILITY

Economic sustainability within the field of parks and recreation is about ensuring a municipality’s capacity to maintain public infrastructure and continue to achieve its public purposes. Economic sustainability involves government spending and its impact on the economy as a whole, including the private sector and the local community.

Examples of economic sustainability strategies within parks and recreational include the following:

Park Development
- Prior to the start of construction determine annual operational costs and sources of funding for new or expanded projects.
- Incorporate sustainable practices into the design of new or renovated projects to limit resource use and reduce on-going maintenance and operation costs.

Fiscal Practices
- Ensure that funding for long-term maintenance and operations does not exceed costs of services.
- Evaluate the cost-benefit impact of sustainable practices and continue to set new benchmarks.

ENVIRONMENTAL SUSTAINABILITY
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Environmental sustainability promotes the efficient and responsible use and management of resources to provide long-term benefits to communities. To achieve environmental sustainability, the rate of renewable resource harvest, pollution, and non-renewable resource depletion must be reduced to the point of being sustainable over the long term.

A Sustainable Park should, to the fullest extent possible, function within the ecosystem and its processes rather than separately. Healthy ecosystems provide direct benefits to communities which surround and rely on these ecosystems. Examples include water purification, clean air, groundwater recharge, food production, and viewsheds.

Examples of environmental sustainability strategies within parks and recreational include the following:

**Air Quality**

- Reduce carbon emissions in equipment and vehicles.
- Increase bike trail access for communities and provide safe routes to schools and parks.
- Provide transportation alternatives to motor vehicles.
- Increase plantings of trees within appropriate areas to improve air quality.

**Erosion and Sediment Control**

- Prevent damage from erosion and siltation through stormwater management and well-designed trails and park roads.
- Develop a soil management plan and conduct regular soil testing.

**Habitat Enhancement and Restoration**

- Ensure park and recreation facilities and uses do not harm adjacent natural areas and sensitive habitats.
- Reduce vulnerability to damage from flooding, storm surge, wildfire, and drought by reducing development of hazard prone areas.
- Develop an Integrated Pest Management program to reduce the use of chemicals and to ensure proper use/disposal of chemicals.

**Native Plants**

- Develop a program to remove non-native invasive vegetation within sensitive habitats, natural areas and open space.
- Develop programs to encourage private open space enhancements.
- Develop an urban tree and forest management program.

**Recycling**

- Conduct on-site green waste/composting of park materials.
- Recycle appropriate park waste.
- Provide public recycling containers at all developed park and recreation facilities.

**Renewable Energy**
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- Replace or renovate obsolete energy or resource-inefficient infrastructure within park and recreation facilities.
- Develop demonstration projects that highlight alternative energy sources and/or reduction in resource use.
- Utilize solar roof top collecting panels.
- Utilize wind generating equipment.

Urban Design, Land Use, Green Building and Construction

- Sensitively site new parks and facilities to protect ecosystems and sensitive habitat areas.
- Locate new parks at in-fill locations within communities.
- Set a standard of LEED Silver certification for all new and renovated buildings.
- Incorporate sustainable design principles in renovated and new construction, such as:
  - Ground water recharge
  - Solar power sources
  - Composting or low-flow restrooms
  - Low-water vegetation
  - Sustainable and recycled products
  - Energy efficient materials and processes
  - Local products

Utility Reduction

- Utilize right-sizing strategies for vehicles and equipment.
- Track water, electricity, natural gas use within buildings and other facilities.
- Track fuel use for vehicles and equipment.
- Track water use through centrally controlled irrigation systems.
- Where appropriate, use treated water for irrigation of developed landscapes.
- Establish benchmarks for reduced use of utilities and fuel for vehicles
- Increase paperless electronic document storage in administrative work.
- Expand use of LED lighting.

Water Resources and Flood Protection

- Design parks to provide storm water retention.
- Partner with local flood control entities to contribute to large-scale flood protection efforts.
- Develop bioswales within and adjacent to parks.
- Use pervious surfaces, where appropriate, for parking areas, walkways and other public spaces.
- Design and install centrally located irrigation systems in all new parks.
- Use recycled water for landscape irrigation where feasible.
- Reduce turf within developed parks.
SUSTAINABILITY PERFORMANCE IMPROVEMENT

THE ONGOING PROCESS OF A SUSTAINABILITY PERFORMANCE IMPROVEMENT SYSTEM

- **Establish Objectives and Identify Indicators**
  - Establish Objectives
  - Identify Indicators
  - Determine Baseline

- **Implement Strategies**
  - Develop Action Plans
  - Identify Resource Needs
  - Implement Projects & Programs

- **Evaluate Performance**
  - Measure Indicators
  - Perform Audit
  - Assign Corrective Actions
  - Add New Design Strategies

- **Communicate Progress**
  - Conduct Management Review

**Step One**—Conduct a Self-Assessment
**Step Two**—Identify Indicators
**Step Three**—Establish a Baseline
**Step Four**—Evaluate Progress
**Step Five**—Adding New Sustainable Design Strategies
ACCESSIBLE AND INCLUSIVE PLAYGROUNDS

ACCESSIBLE PLAYGROUNDS

- Ramps and other barrier-free travel routes connecting to the playground
- A variety of accessible play options
- Appropriate safety surface beneath equipment
- Unitary Surfacing:
  - It is almost always difficult to move a mobility device across loose material
  - When not maintained it can eliminate smooth transition from one type of surfacing to another
  - Parents raising children on the Autism Spectrum report that their children will often pick up loose material and mouth it.
- Reach Ranges:
  - Place play panels, landscaping, telescopes, water tables, sand tables, etc. at varying heights to accommodate children at different heights and who may have different abilities to reach.
  - Include multiple pieces of the same equipment at different heights, for example on a deck put in two telescopes at different heights.
  - Ensure that there is a child who is using a wheelchair can access the play events by rolling under them as reaching forward is more enjoyable and doable than reaching to the side to play.
- Transfer Platforms:
  - Consider all the surfaces adjacent to the accessible route. Estimate the possibility of a playground user transferring to them from a chair.
  - Look at how a child who is using a chair might transfer to the events that don’t have a platform per se. Is there a surface or grip point that can help this child be included?
  - When considering the space a child will need when sitting: A 6 yr. old will occupy 3'-2” sitting with their legs out in front of them. A 10 yr. old will need 3’-8”.
  - Provide on-deck transfers that facilitate movement from a mobility device onto the play activity.
- Transfer Steps: Allow someone who does not have use of their legs to be able to move their body between elevation changes on the play equipment and back into a mobility device.
- Width of Route:
  - Consider the play environment as a small city. Which routes need to be arteries that connect one side of the city to another? Which ones have less priority? Which areas are the equivalent of sleepy, quiet neighborhoods where a highway would destroy the intent?
  - Entry and exit onto all accessible routes must be 60” (US ADA law). A 72” width allows two wheelchairs to pass each other.
  - The available room in front of play components should optimally allow a person in a wheelchair and their ambulatory companion to play adjacent to one another.
- Flush Transitions (Surfacing):
  - Transitions must be flush between all route surfaces and play surface access points.
  - Play surface connections must have tight seams throughout the play space. There should be no barriers or trip hazards between sections of play space that would impede a user of a mobility device.
INCLUSIVE PLAYGROUNDS

An inclusive playground is one that encourages and enables disabled and non-disabled children to engage with one another in play and discovery.

Inclusion means designing to meet the needs of children who use wheelchairs, have autism or are sight-impaired. There are no “special needs” sections because all the equipment is designed to challenge all children without segregation or stigmatization.

- A fence to protect children from running into a nearby gully;
- A path around the play area that gives children time to watch the action and adapt to a new situation until they feel ready to engage;
- Safety surfacing that makes it easy to move wheelchairs and other mobility devices.

FOR EVERYONE

- Typically developing children
- Children with neurological disabilities such as autism
- Children who have intellectual disabilities such as Down syndrome, fetal alcohol syndrome
- Children who require wheelchairs or other medical equipment
- Children with physical disabilities
- Children with social and/or emotional difficulties
- Family, siblings, parents, grand-parents etc.
- The community: friends, caregivers, teachers, etc.
- Adults with disabilities
A SAMPLE SURVEY FOR RELATED INTERNAL PARTNERS ON INCLUSIVENESS, SUSTAINABILITY AND ACCESSIBILITY OF PUBLIC PARKS

1. Has your department developed and adopted any principles that demonstrate inclusiveness, sustainability and accessibility (ISA) of public parks?
2. Do ISA appear in your policies, procedures, goal statements and/or strategy documents?
3. Is there anybody appointed to oversee the application of ISA?
4. Is the staff provided with any training on ISA?
5. Are there any budget items for the application of ISA?
6. Is there any advisory body to guide the development of ISA parks?
7. Has there been any contact from any external partner on the development of ISA parks?
8. Have ISA been used for any public or interagency communication, like marketing, promotion etc.?
9. Has there been any evaluation on the application of ISA?