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Children's Environments: Accessibility Consultation for Safety, Independence, and Learning

Instructor:

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As a result of this course, participants will be able to:

- 1. Identify the issues involved in assessment and design of environments for children and adults with disabilities in a variety of educational, play and community based settings.
- 2. Recognize solutions to some of the challenges in programming, technology, and environmental design to remove barriers for specialized populations in both private and public facilities.
- 3. List unusual problems and solutions using actual case studies of projects where cross-disciplinary team building between medical and design/build professionals was successfully implemented.
- 4. Identify a wish list of priorities using a needs assessment and team building approach including environmental design and specialized products for children and adults to promote learning, working, safety, and independence.
- 5. Recognize technical assistance and funding resources on design guidelines, funding of modifications, equipment, and new construction design guidelines.

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The Interdisciplinary Team

Accessibility Consultation Professionals

- Medical rehabilitation professionals
OTR/OTAs, RPT/PTAs, rehab nurses, social workers, case managers, vocational counselors, rehab engineers
- Building professionals and designers
architects, interior designers, landscape architects, building contractors, civil and mechanical engineers, building inspectors
- Miscellaneous
disability advocates, lawyers, independent living center advocates, housing agency personnel

Philosophical Basis

- Independent Living Movement (ILM)
- Maslow's Hierarchy of Needs
- Model of Human Occupation (MOHO)

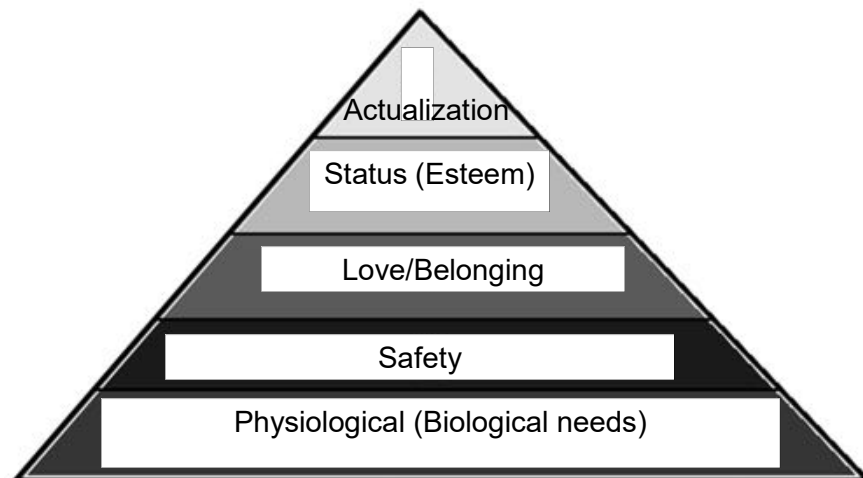
Independent Living Movement

Focus of ILM	<ul style="list-style-type: none"> Consumer oriented and directed Modification for safety independence and quality of life
Definition	"control over one's life based on the choice of acceptable options that minimize reliance on others in making decisions and performing everyday activities. This includes ...minimization of physical and psychological dependency on others" (Frieden and Cole, 1985).
Solutions to the Problem	<ul style="list-style-type: none"> Civil rights & advocacy Consumer control over options & services Peer role models & peer support Barrier removal
Who Controls	"consumer" or "individual"
Desired Outcomes	Independence through control over ACCEPTABLE options for every day living in an integrated community
Occupational therapy's role	Provide consultation, advocacy, case management, traditional OT services in the home and community to assist client to obtain their goals.

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Maslow's Hierarchy of Needs



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Needs Satisfaction Through Occupational Theoretical Practice Model (NSTO)

Work Self-Care Play/Leisure

- **Self Actualization Needs**
Optimizing one's potential
- **Mastery Needs**
Feeling of control over one's environment for personal satisfaction and benefit of others
- **Love and Belonging Needs**
Need to develop and sustain meaningful relationships with others and too feel apart of a group and society at large
- **Safety Needs**
Need for shelter to protect one from harm (physical and emotional)
- **Physiological Needs**
Need for food, warmth, water, air, sex, need for elements to maintain homeostasis

Model of Human Occupation

- Occupation is defined as roles related to daily living, including: home, work, job and community
- A individual can become disengaged from occupations
- Understand the relationship between environment and engagement in daily life activities
- Formulate solutions to problems where environmental demands are greater than the individual's functional ability
- Generate solutions based on all of the above

Do the spaces in which this individual performs his or her occupations represent physical barriers or supports that impact performance?

Qualified Individuals with Disabilities

- Any individual who:
 - Has a physical or mental impairment which substantially limits one or more major life activities
 - Has a record of such an impairment
 - Is regarded as having an impairment

Physical or Mental Impairment		Major Life Activities	Record of Impairment	Regarded as Impaired
Physiological disorder, contagious disease, cosmetic disfigurement or anatomical loss in one or more system:	Mental or psychological disorder including:	Major life activities include:	The individual has:	The individual has:
<ul style="list-style-type: none"> ▪ Neurological ▪ Musculoskeletal ▪ Respiratory ▪ Cardiovascular ▪ Reproductive ▪ Digestive ▪ Genito-urinary ▪ Hemic ▪ Lymphatic ▪ Skin ▪ Endocrine 	<ul style="list-style-type: none"> ▪ Mental retardation ▪ Organic brain syndrome ▪ Emotional or mental illness ▪ Specific learning disability 	<ul style="list-style-type: none"> ▪ Self-care ▪ Manual tasks ▪ Walking ▪ Seeing ▪ Hearing ▪ Speaking ▪ Breathing ▪ Learning ▪ Working 	<ul style="list-style-type: none"> ▪ A history or impairment <p style="text-align: center;">or</p> <ul style="list-style-type: none"> ▪ A record of having been misclassified as having an impairment 	<ul style="list-style-type: none"> ▪ An impairment not limiting major life activity, but treated as limiting by the agency ▪ An impairment limiting major life activity only as a result of attitudes <p style="text-align: center;">or</p> <ul style="list-style-type: none"> ▪ No impairment, but treated by the agency as having one.
<ul style="list-style-type: none"> ▪ Substance abuse 				

NOTE: The FHA definition excludes from coverage anyone involved in current illegal use of or addiction to a controlled substance.

Standards for Accessibility

- ANSI
- MGRAD/ABA
- UFAS
- FHAAG
- ADAAG
- Local building codes



Legislation Concerning Individuals with Disabilities

1968

Architectural Barriers Act
(PL 90-480)

All new federally constructed, leased or financed buildings and facilities, as well as buildings assigned for public use, must be designed, constructed and altered so as to be accessible to and usable by individuals with physical disabilities.

1973
(1978, 1986)

Rehabilitation Act
(PL 93-112)

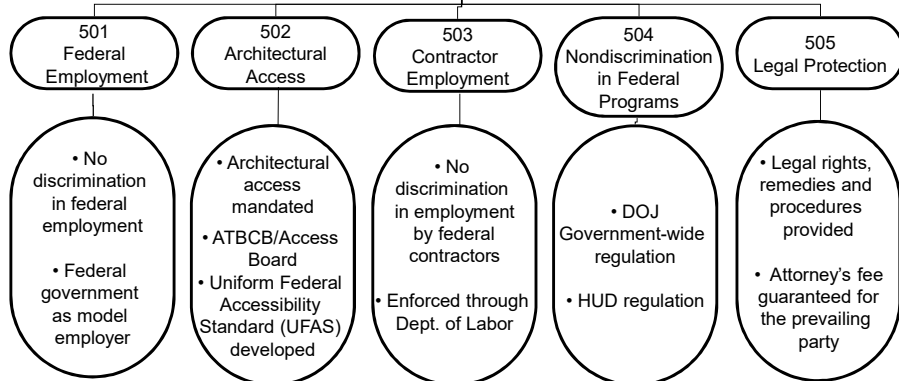
No otherwise qualified individual with disabilities in the United States...shall, solely by reason of his/her disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance or under any program or activity conducted by any Executive Agency or by the United States Postal Service.

1988

Fair Housing Amendment Act
(PL 100-430)

Title VIII of the Civil Rights Act of 1968 (the Federal Fair Housing Law) was extended to cover individuals with disabilities. HUD has authority to initiate enforcement actions and to penalize those who discriminate in the sale, rental, or financing of housing.

Rehabilitation Act (1973) Amended (1978, 1986)



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Americans With Disabilities Act (ADA)

- Eliminates discrimination on basis of a disability in employment, environments, transportation, and telecommunications
- “Reasonable accommodations” must be provided for individuals with disabilities
- Ensures access to all private establishments/facilities considered “public accommodations”
- ADA coverage includes:
 - Title I: Employment
 - Title II: State and Local Governments/Transportation
 - Title III: Public Accommodations
 - Title IV: Telecommunications



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ADA Coverage Includes:

- Title I: Employment
- Title II: State and Local Governments and Transportation
- Title III: Public Accommodations
- Title IV: Telecommunications

Consultation in Relation to ADA Title II: State and Local Government and Transportation

- Provide access to buses, railways, airplanes and subways, utilizing knowledge of:
 - Accessibility requirements
 - Adaptive equipment
 - Mobility limitations
 - Communication requirements
- Provide consultation to state and local government funded libraries, educational programs, public and private agencies

Assess the Following Elements for Barriers

- Parking the car and accessing the exterior entrance
- Walking, stepping, climbing walkways and stairs
- Opening/closing handles/doors
- Lock/unlock doors
- Operate light switches/electrical plugs
- Type and degree of lighting
- Open/close curtains, windows
- Move from one area to another and through each area without obstructions
- Access/use toilet
- Walk up/down the stairs
- Mobility on floor surfaces
- Access and use environmental controls-- thermostat, breaker boxes, security system, emergency call system, intercoms, entertainments systems
- Safety: unobstructed access/location and use fire extinguishers, understand and post fire escape plan, use/location of carbon monoxide detectors & smoke alarms

Skills of an Accessibility Consultant

- Ergonomic analysis and measurements
- Injuries, illnesses, and conditions impacting physical, cognitive, emotional needs.
- Progressive illness
- Specialized products and equipment
- Knowledge of accommodations and adaptations to existing work areas, equipment, and tasks
- Evaluation tools and documentation guidelines, processes, and procedures
- Injury prevention and interventions to maximize safety, function, and independence
- Analysis and monitoring of effectiveness of interventions and future needs
- Knowledge of developmental and educational goals and age appropriate challenges and skills

Major Issues to Consider in Children's Environments



- Varying grasp strengths, types of handles for grasping, and hand sizes for different age levels
- Functional issues of strength, manipulation, and motor control

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Major Issues to Consider in Children's Environments

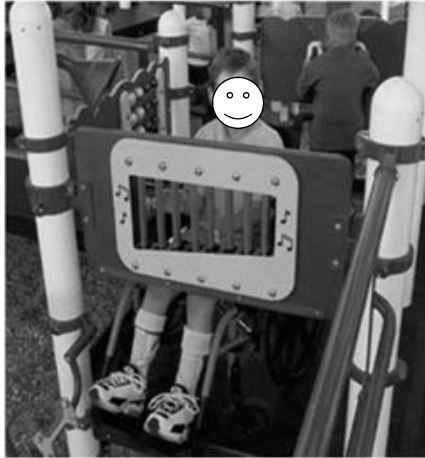
- Varying heights of work surfaces for varying age levels
- Creating at least one accessible route throughout each exhibit
- Cognitive issues of directions, mapping, and understanding goals of activities



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Major Issues to Consider in Children's Environments



- Sensory deficit accommodations for visual and hearing impaired
 - auditory and visual cues, large print and Braille, alternative media, wayfinding
- Parent and child issues for supervision and accommodation
- Alternative means of participation-reasonable accommodations

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Issues for Park and Playground Play

- Child Cognitive Development Objectives
- Child Physical Development Objectives
- Physical Activity Goals
- Programming Goals
- Environmental Factors
- Site Design Program
- The Physical Environment

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Child Cognitive Development Objectives

- Develop concepts of
 - In, out, through, across, over, under, up, down, high and low
 - Shapes and colors
 - Conservation of materials, volume and measurement
- Improve orientation and develop special concepts
- Stimulate
 - Auditory discrimination
 - Visual awareness
 - Tactile awareness
 - Reading and math functions
- Develop
 - Interactive / communication skills
 - Tasks and role performance
 - Understanding consequences of own actions

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Child Physical Development Objectives

- Improve upper body strength
- Improve lower body strength
- Improve eye hand coordination
- Improve gross and fine motor skills
- Improve balance

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Physical Activity Goals

- Vertical and horizontal circulation
- Climbing
- Sliding
- Rocking
- Spiraling
- Transferring, transitioning
- Cognitive activities



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Programming Goals

- Needs assessment / audience
- Safety and accessibility guidelines
- Evaluate emotional risk factors
- Evaluate passive recreational needs
- Understanding site constraints and opportunities
- Neighboring social environment
- Establishing Budget
- Maintenance considerations
- Physical amenities



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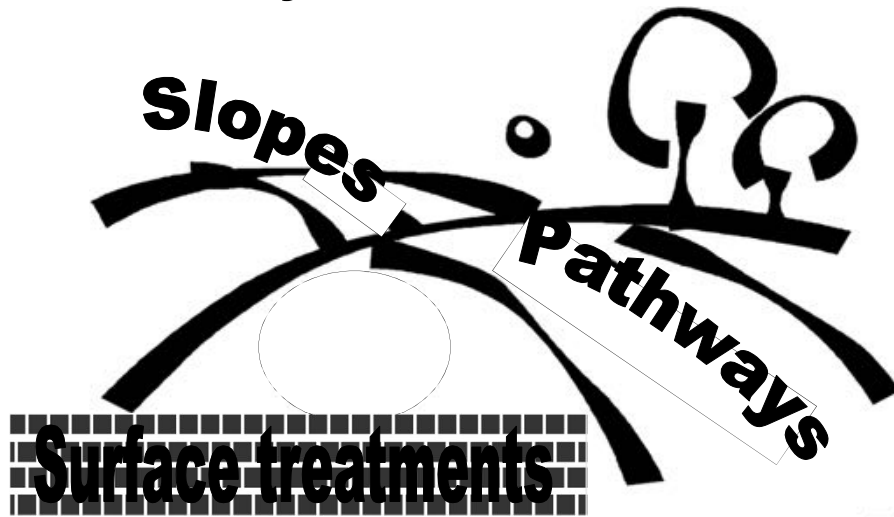
Environmental Factors

- Entrances, pathways
- Signage
- Enclosures
- Equipment, multipurpose
- Games and settings
- Surface treatments
- Safety, aesthetics
- Topography
- Vegetation
- Manipulative settings, props
- Gardens and integrative activities

Site Design Program

- **Accessibility**
 - Visible Entry
 - Minimize interaction between children and traffic
 - Clear pathway routes between play area and adjacent use areas
 - Create clear borders and edges for all use areas
 - Create 10 ft wide path for maintenance vehicles
 - Transition hard through soft surfaces
 - Scale furniture to children's size
- **Safe Challenges**
- **Balance Challenges and Risks**
- **Diversity and Clarity**
- **Environmental Familiarity**
- **Graduated Changes**
- **Flexibility**
- **Defensible Space**
- **Multi-Sensorial Stimulation**

The Physical Environment



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Surface Treatments

- Firm and Stable:
Material that does not
shift when subjected
to normal pressures

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Pathways

- Width between 44"-88" wide and headroom of 80"
- Thresholds not to exceed 1/4"
- 1/2 thresholds with 1:2 beveled slope.
- Narrow paths should have a passing lane every 100'
- Bridges and curves provide excellent solutions for path diversity
- Transparent mazes and intersecting loops to promote continuity of movement and exploration

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Slopes

- 0-1% is considered level,
 - 1% cross-slope is necessary for drainage.
- 2-4% is considered optimal
 - 0-4.9% is not considered a ramp.
- 5% or greater is considered a ramp (ADA) and must have
 - edging
 - handrails
 - a maximum run of 30' and then a landing with a 60" radius.
- Ramps over 8% slope must be covered.
- Surfaces of slopes areas must be made of non-slip surfaces.

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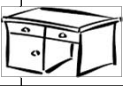
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Related Websites

- The ADA Checklist for Readily Achievable Barrier Removal
<http://www.usdoj.gov/crt/ada/checkweb.htm>
- For the long form, for new construction or renovation, the ADAAG Checklist
<http://www.access-board.gov/adaag/checklist/a16.html>
- National Clearing House for Educational Facilities
<http://www.edfacilities.org/ir/playgrounds.cfm>
- Adaptive Environments Center
www.adaptenv.org

Ergonomics

Ages 5 – 11 Years Old

	Child Height	Eye-Level (Standing)	Overhead Reach (Standing)	Eye-Level (Sitting)	Overhead Reach (Sitting)	Desk Height	Chair Height
Small Child	40" – 45"	39.1"	46.6"	30.9"		17.5"	10.5"
Average Child	46" – 48"	43"	51.6"	33.5"		19.4"	11.5"
Large Child	49" – 54"	48"	57.5"	36.9"			13"
Child in a WC				40.8"	48.7"		19.5"

Video to view after course

- <https://www.youtube.com/watch?v=oytDRrHdM6Q&feature=youtu.be>

Questions?

- Email: shoshana@aotss.com