

# Beneficial Design

## Examples of...Designing Beyond the Norm to Meet the Needs of All People

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### Beneficial Design

#### Designing Beyond the Norm to Meet the Needs of All People

Research  
Design  
Education

### Beneficial Designs' Mission Statement

Beneficial Designs works towards universal access through research, design, and education. We believe all individuals should have access to the physical, intellectual, and spiritual aspects of life.

### Beneficial Designs' Mission Statement

We seek to enhance the quality of life for people of all abilities, and work to achieve this aim by developing and marketing technology for daily living, vocational, and leisure activities.

### The BD Team

### Facilities needed to support design and testing

### Testing

#### Wheelchair testing

Stability, Braking, Speed, Range, Obstacle climbing, Static, Impact and Fatigue Testing

#### Surface Testing

##### ASTM F 1951

Standard specification for determination of accessibility of surface systems under and around playground equipment

##### Rotational Penetrometer

Objective firmness and stability

##### Surface Stabilizers Gravelpave2

#### Seat Cushion Testing

ISO and RESNA standards

#### SKELI – adjustable cushion testing

Used for Standards testing

### Personal Technologies

#### Pax Back

Back support for comfort and function

#### FlexRim Ergonomic Pushrim

Available from Spinergy

### Activity-Specific Technologies

#### Balance Dimension

Physical  
Intellectual  
Spiritual

### Variety of Recreational Opportunities

#### Arroya Sit Ski

#### Mono Ski

##### Paralympic sport

Commercially Available

Chairlift access issues

#### Dynamic Seating Spring Assist

#### Cross Country Ski

#### Back country ski

#### Pneumatic Piano Pedal Pusher

Do it yourself design specifications

#### Manual Transmission Hand Controls

#### Hand Bike and tandem

#### Adaptive Canoe and Kayak Seating

Available from Chosen Valley Canoe

Accessories

#### Wave Ski

#### Hip Grip

#### Flying Ultralight aircraft

## Environmental Technologies

Things that do not move

### Tools and Technology for Accessible Trails

#### The standards

Architectural Barriers Act Outdoor  
Recreation Access Guidelines

#### ADA Recreation Trail standards

##### Grade

8.33% for 200 feet  
10% for 30 feet  
12.5% for 10 feet

##### Cross Slope

5% maximum

##### Rest Areas

60 inches length, 5% slope

##### Surface

firm and stable

##### Width

36 inches minimum

### Universal Trail Assessment Process

(UTAP) – Over 2000 people trained

Key UTAP Information

Length, Grade, Width, Surface,  
Cross slope, Features & Facilities  
Training available from BD

### High Efficiency Trail Assessment

#### Process

USDA SBIR Phase II  
Equipment available from BD

### Trail Access Information

Signposts  
Panel maps

### Developed Outdoor Recreation

#### Assessment Process

##### Outdoor Constructed Features

Bench, Camp Shelter, Cooking  
Surface/Grill, Fire Ring, Wood  
Stove/Fireplace, Outdoor Rinsing  
Shower, Parking Area, Picnic Table,  
Pit Toilet, Tent Pad/Platform, Toilet  
Building, Trash/Recycling  
Receptacle, Utility/Sewage  
Connection, Viewing Area at  
Overlooks, Viewing Scope, Water  
Spout

##### Campsite Access Information

### Develop Standards for Trail and Sidewalk Design

### Pedestrian Right of Way Assessment Process

Wireless Measurement Devices  
Measuring Process  
GIS Data  
GIS Mapping  
Services for sidewalk assesment

### Rest-Stop Assessment Process

Collection zones  
Compliance Check data collection  
Facility report  
Maps to illustrate the conditions

### Universal Design of Fitness Equipment Standards

Accessible “mainstream” fitness equipment  
Low Step-up Height Design  
Grip Bars  
Weight Pin Color Contrast  
Weight Pin Grip-ability  
Control Panel Contrast  
ASTM standard now published

### Amusement Park Wheelchair Access

Accommodates Wheelchair  
Accommodates Transfer  
Development of Transfer Devices  
Design services available from BD

### Current work

#### Air Travel issues

Steep Jetways  
Narrow, hard boarding chairs  
Narrow aisles  
Difficult transfers  
Aircraft seating issues  
Damage to mobility devices

### Assistive Technology for Air Travel Standards

Powered Mobility Devices designed for Air  
travel  
Air Travel Configuration Card  
Powered wheelchair lift equipment  
Wheelchair Sled – Padded Tipping Plate

### Beneficial Designs, Inc.

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