
Beneficial Design – Examples of... Designing Beyond the Norm to Meet the Needs of All People

Stanford University

23 January 2020

Peter W. Axelson, MSME, Beneficial Designs, Inc., Minden, Nevada
www.beneficialdesigns.com

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

Surface Testing

ASTM F 1951–99

Standard specification for determination of accessibility of surface systems under and around playground equipment
Testing available from BD

Rotational Penetrometer

Objective surface measurement device
Available from Beneficial Designs

Surface Stabilizers Gravelpave2

Seat Cushion Testing

ISO and RESNA standards

SKELI

Used for Standards testing

ASLI Prototype

Personal Technologies

Activity-Specific Technologies

Environmental Technologies

FlexRim Ergonomic Pushrim

Available from Spinergy

Pax Back

Back support for comfort and function

Activity-Specific Technologies

Balance Dimension

Physical

Intellectual

Spiritual

Variety of Recreational Opportunities

Arroya Sit Ski

Mono Ski

Available from several companies

Dynamic Seating Spring Assist

Cross Country Ski

Piano Pedal Pusher

Do it yourself design specifications

Manual Transmission Hand Controls

Hand Bike

HipGrip

Available from Bodypoint

Adaptive Canoe Seating

Available from Chosen Valley Canoe
Accessories

Wave Ski

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) – 1200 people trained

Key UTAP Information

Length, Grade, Width, Surface,

Cross slope, Features & Facilities

Training available from BD

High Efficiency Trail Assessment Process (HETAP)

USDA SBIR Phase II

Equipment available from BD

Developed Outdoor Recreation Assessment Process (DORAP)

Under development at BD

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

Trail Access Information

Signage available from BD

Develop Standards for Trail and Sidewalk Design

Pedestrian Right of Way Assessment Process (PROWAP)

Wireless Measurement Devices

Measuring Process

GIS Data

Mapping

Services available from BD

Universal Design of Fitness Equipment (UDFE) Standards

Accessible “mainstream” fitness equipment

Low Step-up Height Design

Grip Bars

Weight Pin Color Contrast

Weight Pin Gripability

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

Assistive Technology for Air Travel

Steep Jetways

Narrow boarding chairs

Aircraft seating issues

Bathroom size on aircraft

Damage to powered wheelchairs

Powered Mobility Devices designed for Air travel

Beneficial Designs, Inc.

Minden, Nevada

www.beneficialdesigns.com

peter@beneficialdesigns.com

775.783.8822 voice