



# Beneficial Designs

research/design/education

Designing beyond the norm to meet the needs of all people.

Rehabilitation Technologies

by Peter Axelson

Beneficial Designs, Inc.

Minden, NV

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Founder and Director of R&D,  
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meetings and present our work. He's also a  
pilot and avid mono-skier.**

# Tools for Life

Connecting the World with Assistive  
Technology

# Tools for Life

To provide information on people and organizations that facilitate the provision of adaptive seating and mobility equipment to persons with disabilities throughout the world where these technologies are not readily available

# Tools for Life

world / global / assistive technology

people / network / information source

database / information / connecting

working together / helping / empower

sharing / giving / mobility

# Leg for Lenna Benefit

Prosthetic Leg for Lenna Fagan  
Community event at St. Gall's  
Church with

Silent Auction and Raffle Prizes  
raised \$20,000 toward a new leg

# Database Project

Objective: To develop a database of people and organizations that provide assistive technology to people with disabilities in developing countries

# Appropriate Technology for Developing Countries

Special Interest Group within RESNA

Beneficial Designs managed the  
RESNA Sore Butts Cushion  
Contest for several years

Facilitated interaction between  
Wheeled Mobility Providers



# Wheelchair Distribution Issues

Appropriate Wheelchair for the  
Environment

Provision of a Seat Cushion

Assessment, fitting and training

Follow up and repair

# **Consensus Conference on Wheelchairs for Developing Countries**

6-11 November 2006, in Bangalore,  
India.

# Wheelchair Provision in Developing Countries

Local Wheelchair Manufacture

Vs.

Distribution of Charity Wheelchairs

# Appropriate Wheelchair Development Manufacturing and Distribution

Whirlwind Wheelchair International

Motivation - Worldmade

Hope Haven International

ROC Wheels

# Wheelchair Distribution by Charities

Wheels for the World

The Wheelchair Foundation 560k

Hope Haven International

The Free Wheelchair Mission 150k

Wheels for Humanity

## ***Definition of an appropriate***

***wheelchair:*** A wheelchair is appropriate when it meets the individual's needs and environmental conditions; provides proper fit and postural support based on sound biomechanical principles; is safe and durable; is available and can be accessed, maintained and sustained in the country at the most economical and affordable price.

***User involvement:*** “It is about the user, not just about the wheelchair”. Wheelchair users should be involved in all aspects of wheelchair provision

***Services:*** The aim of wheelchair services is to ensure that the person in need of a wheelchair receives it together with the necessary information and support. The wheelchair should meet the individual's needs in terms of mobility, comfort and ability to carry out activities of daily living and to exercise basic human rights.



***Acquiring wheelchairs:*** When determining whether to acquire wheelchairs via import or local production, decision makers are advised to balance a variety of factors. These include needs of the local population, quality and variety of wheelchair models, purchase price, cost of repair and replacement, effect on local employment and wheelchair production, and national policies

***Distribution:*** Wheelchairs are to be provided following a provision process that meets or exceeds internationally agreed minimum requirements for service provision, including requirements for assessment, fitting, user training and follow-up; and that wheelchairs are repairable in the region of the country where they are provided

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***Production Standards and guidelines:*** All wheelchairs, whether locally produced or imported, and whether made in small, medium or large scale enterprises should meet or exceed ISO standards.

# **RESNA Technical Standards Board**

Wheelchairs

Wheelchair Related Seating and  
Transportation

Adaptive Sports Equipment

Personalized Golf Cars

# **RESNA American National Wheelchair Standards Committee**

Testing of Manual and Powered  
Wheelchairs

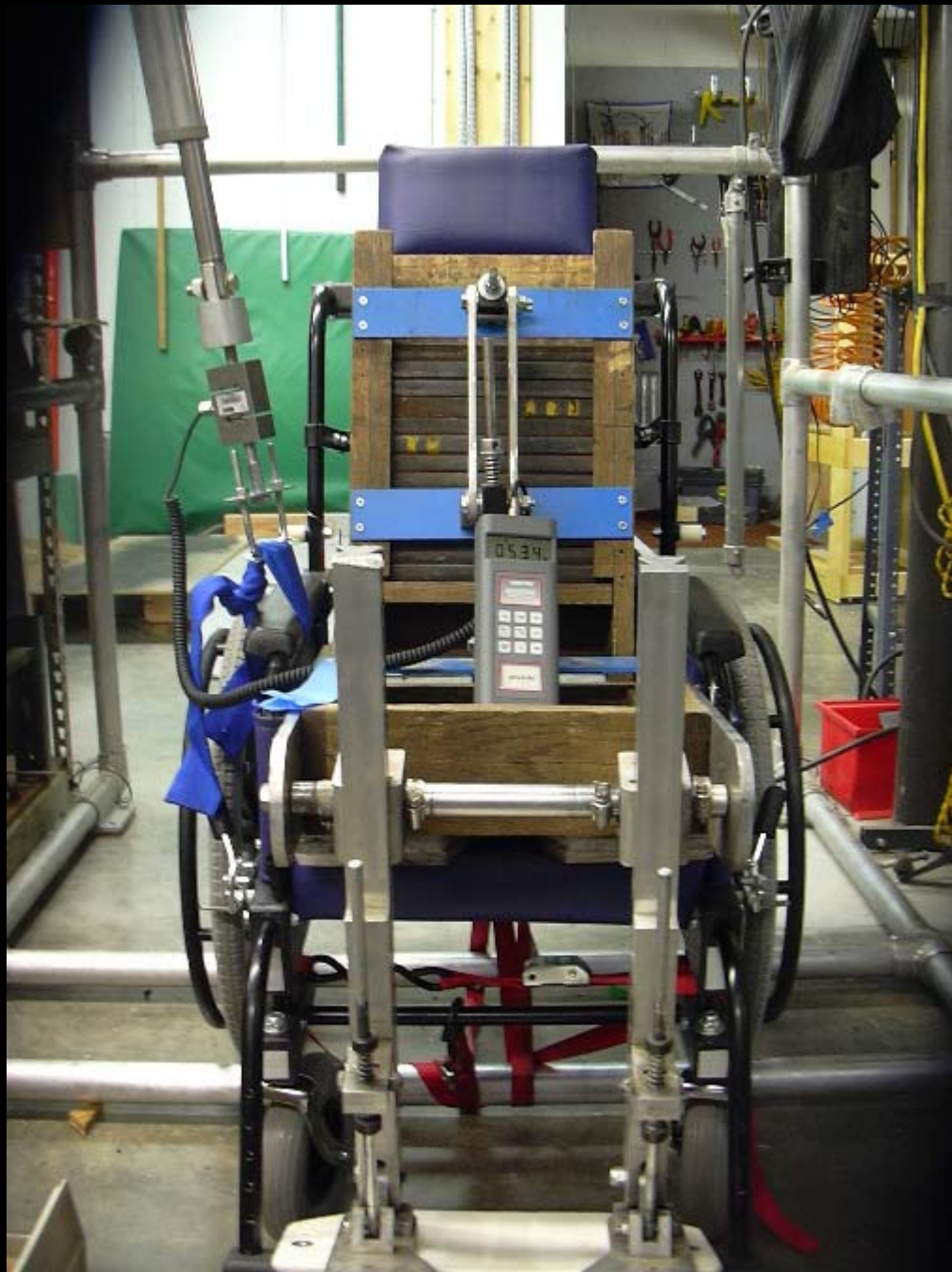
Testing of Playground Surface  
Materials – ASTM Standard







































# Hope Haven International

Hope Haven International and Children's Medical Ministries bring used wheelchairs to Guatemala, as well as to various other countries around the world, where volunteers refurbish and build wheelchairs and then distribute them

# Guatemala

In rural and poverty-stricken Guatemala, many of the Mayan people believe that a disability is a curse from God

Adults are shunned. Children are abandoned. An already poor health care system offers no help at all





“It’s real important to position children correctly, so they can grow upright and can breathe right and function.”



Students from the College of Health and Human Sciences were in Guatemala from Aug. 2 to Aug. 10 2007, fitting children for wheelchairs and other assistive devices.



Developing nations have a higher percentage of children with disabilities than North America.







Inmates from the South Dakota State Penitentiary Manufacturing the ROC Wheelchair.

# Hope Haven Kids Chair

Sioux Falls South Dakota Inmates provide  
Community Services support for  
sewing, upholstery and carpentry

Haywarden Iowa production facility  
donated and staffed by local retired  
farmers provides fabrication, bending,  
assembly





































































































# Refurbish and Distribute a Wheelchair

Used wheelchairs are cleaned and refurbished, you can sponsor a life changing gift of dignity and hope for \$50 to \$75

Sponsor a Wheelchair –  
Transform a life



# Build and Deliver a Hope Haven Kids Chair

Designed to provide customized seating  
and support for children and adults with  
mild to moderate seating issues

Fabricated with volunteer labor in the U.S.

Plans for fabrication in country

Made and delivered with innovative  
materials using no welds for \$150

# Wheelchair Distribution needed in Guatemala City

Project team typically includes 10-12  
Rotarians, Physical Therapists,  
Occupational Therapist, Rehabilitation  
Technology Suppliers

Distribution length is typically 7-9 days  
with 4 to 5 working days

# Typical Hope Haven Wheelchair Distribution

25% Kids Chairs

25% refurbished tilt chairs

50% Adult chairs

200 wheelchairs distributed

Distribution every 2 months in Guatemala



# Beneficial Designs, Inc.

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Thank you Sue Mohling – Wells  
Fargo Bank for today invitation

*Working toward universal access  
through research, design & education*