e-engineering: web-based solutions for the developing world

Forum on Sustainable Communities

A Rio+20 Side Event

Rio de Janeiro, Brazil

June 16, 2012

Victoria Rockwell
ASME President 2011-2012
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Why are 90 % of the world's products

designed for 10% *of the* world's population?

20,000,000

Low birth rate and premature babies are born each year

450

of them die each hour.

In the US,
one infant incubator
costs

$20,000

embrace

=

$25

NATIONAL GEOGRAPHIC

d. HASSO PLATTNER Institute of Design at Stanford

Entrepreneurial Design for Extreme Affordability

An environment that enables collaboration

for:

content generation

solutions to complex problems

e Engineering

through:

Multi-disciplinary Approaches

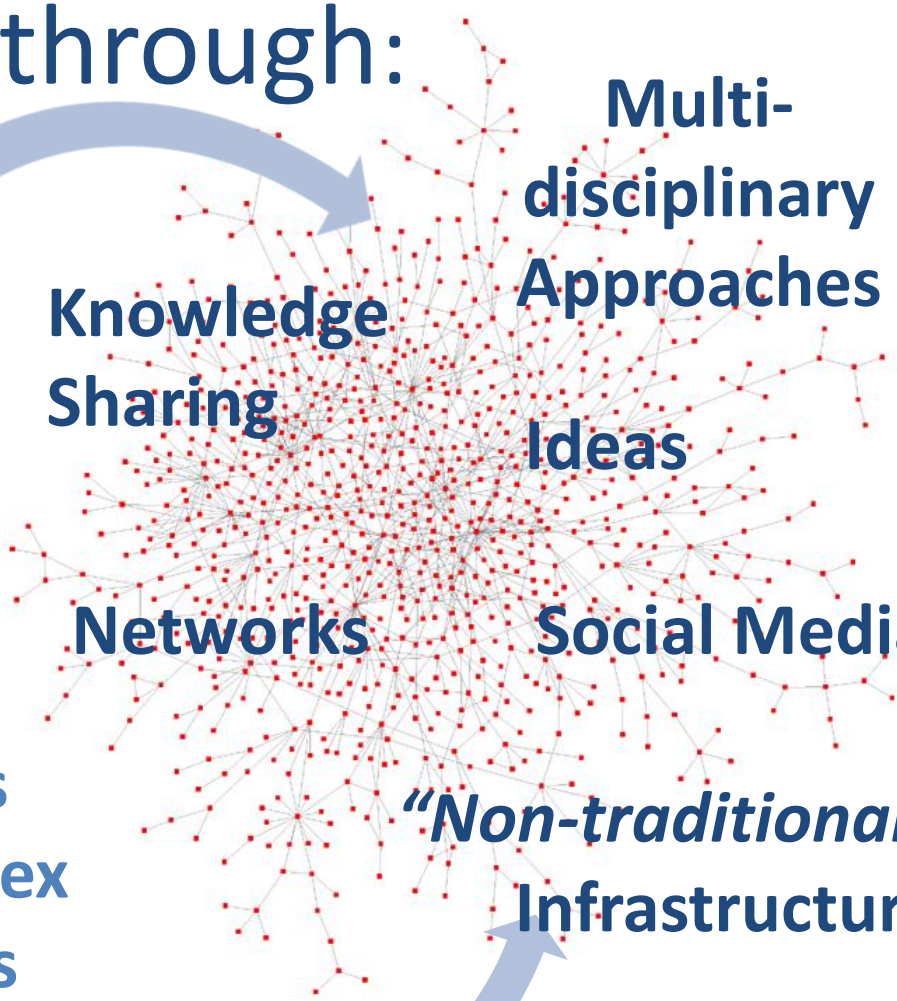
Knowledge Sharing

Ideas

Networks

Social Media

"Non-traditional" Infrastructure



engineering FOR CHANGE

Bringing together Engineers, Scientists, NGOs and communities

creating and sharing appropriate solutions

Community Collaboration Content

Addressing inequities in communities around the globe

Founding Organizations

ASME SETTING THE STANDARD

IEEE Advancing Technology for Humanity

ENGINEERS WITHOUT BORDERS USA

engineering FOR CHANGE

"Development Areas"

Waterborne disease is the worlds leading killer.

Shelter is a basic human right and scarcity of resources continues to be a barrier.

1 in 4 people live without electricity. Energy poverty is the biggest limitation to improving living conditions

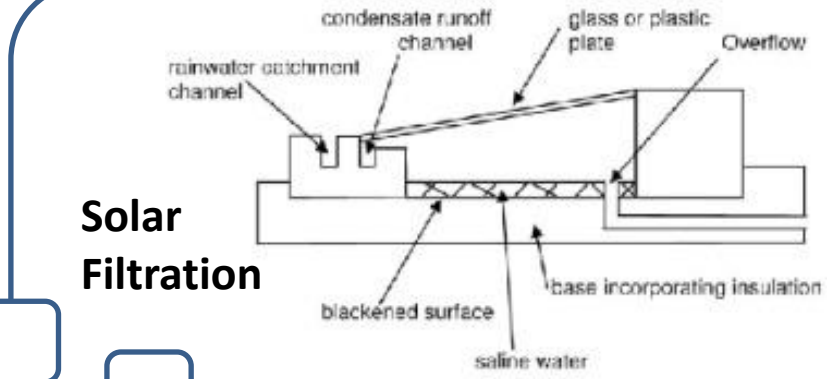
Over a billion people are undernourished and 40% of the agricultural land is degraded.

Curable diseases kill millions in the developing world. Cures need to reach communities

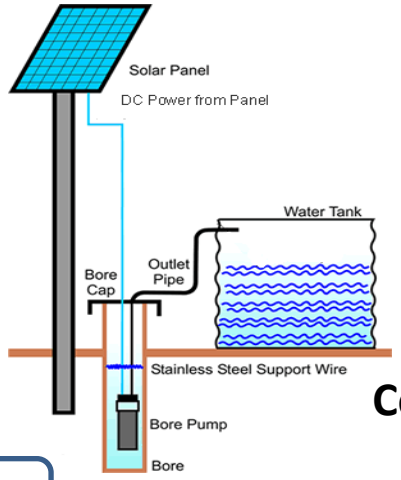
Insufficient sanitation is the most common cause of infection worldwide.

Information access leads to empowerment

Water



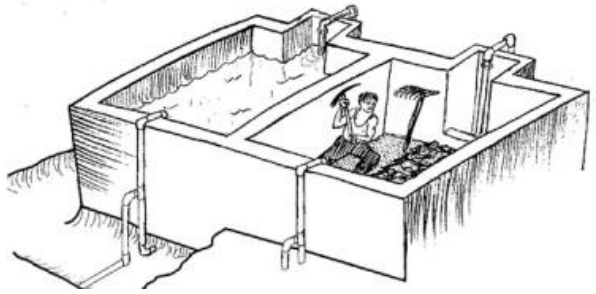
Solar Filtration



Solar Water Pump for Communities

Solutions

Simple & Affordable



Public Use Slow Sand Filtration

Home Based Slow Sand Filtration

Why Now?

"The **engineering** of affordable, appropriate and sustainable products and technologies —combined with local capacity building— **has more potential** to improve the human condition worldwide than virtually any other development approach."

Solutions Library

Browse the E4C Solutions Library, a growing collection of cataloged solutions and related information from organizations throughout the world. Adapt these solutions where appropriate or innovate to create your own.

MIT's D-Lab low cost Charcoal Press allows users to make Briquettes easily. The open-source Build-It Kit provides step by step instructions to make your own. See the solution

Photo: MIT D-Lab

1 2 3

The E4C Solutions library represents a collection of solutions that have been implemented by various organizations. The ones selected for inclusion contain supporting documentation and many are open source. Selected solutions in no way constitute E4C's endorsement. To find out more about the vetting process of any solution in the Library, please contact the contributing organization directly.

Terms of Use

Water | Energy | Health | Structures | Agriculture | Sanitation | Info Systems

< Prev 1 2 Next >

Gravity Fed Drinking Water

Contributed by: Engineers Without Borders California Polytechnic State University - San Luis Obispo (EWB-CP) (Lead); Faith International

The goal of the Engineers Without Borders project in Mae Nam Khun, Thailand is to provide clean drinking water

Workspace

The E4C Workspace is where members can come together to collaborate and solve challenges. This is a great place to share your projects, brainstorm new ideas and invite the E4C community to join your discussions.

Find out how

Filter By: All | Water | Energy | Health | Structures | Agriculture | Sanitation | InfoSystems

Status: All

Sort: Least Recent | Most Members

< Prev 2 3 4 5 6 Next >

27 Workspaces

Create a New Workspace

Climate Healers: Stored Energy Solar Cook Stove

Owner : climatehealers | Created on : Nov 19, 2010

About 800 million people in India are using some form of biomass for cooking. The pollution from indoor cooking fires has been likened to that from smoking two packs of cigarettes a day and it is one of the major sources of premature deaths among women. The challenge is to design a low cost stored energy solar cook stove that can store solar energy without requiring manual interventions from the user. The energy should be stored for at least an 18 hour period and should then be delivered at the users' control to cook their traditional meals at the times that they choose, which may not necessarily be when the sun is out. The goals of this challenge are to meet the main cooking energy needs of rural households in India using solar energy, without forcing them to alter their current daily routines or their current dietary intake,to reduce the pressure on the forests of India from biomass removal thus allowing them to recover, and to improve the health of the women, children and men in rural households, while mitigating climate change.

Learn more

Date Due:	*Jun 25, 2011*
Budget:	*no*
Area:	*India*
Specific Location:	*India*
# of Members:	*21*
Problem Type:	*Energy*

Open

Launched in January 2011

10,000+ Members *(and growing)*

marquezt
Timo Marquez
Temuco, Chile
ASME

I am interested in projects related to energy efficiency. My work at the moment is related to education and the built environment. Also look

Founding Organizations

ASME · IEEE Advancing Technology for Humanity

ghobashy
Noha El-Ghobashy
NY, NY, US
ASME

Welcome to the E4C community!

lee.hite
Leland (Lee) Hite
Loveland, Ohio, USA
EWB Cincinnati

Biomass Briquette Technology including compound lever press, grinders, choppers and formulations

hans.roosli
Hans Roosli
cape town, south africa
IEEE

Sustainable energy sources, would also b
interested to share my industrial experienc
R&D and marketing with students

MAYDAY1959
Timothy Yosef KIIVA-
Kitui District, Kenya
IEEE
FEANI, MENAC

I am involved, at village level in community endevours to use simple, green and readily available technology to alleviate poverty and

vivek1v
Vivek Seshan
Chennai
ASME

I'm a Mechanical Engineer and issues related to power crisis at rural areas concern me a lot. Also lack of machinery in agriculture concerns

Learning Center

Welcome to the E4C Learning Center. Here you'll find insights on appropriate technology development from some of the leading thinkers and practitioners. See how this collective wisdom can be put into action on E4C.

Design Principles | FAQs | How to Use E4C | Education

Design Principles

Appropriate technology development involves co-creating solutions that are sustainable, affordable and reliable.

1. Develop appropriate solutions, not technologies
2. Consider the context
3. Create transparent technology
4. Embrace the market
5. Design for DIY (Do It Yourself)

> "...engineering in the developing world must be done with a systemic approach. It is small-scale engineering - with a human face - but requires the same quality assurance and quality control as any other."

Bernard Amadei
Founder, EWB-USA

&e engineering

- Create Networks
- Build Capacity
- Spur Innovation
- Develop Infrastructure

and Accelerate Development

How to Help!

- Connect the Last Mile
- Expand the Network
- Sponsor Research
- Encourage Participation
- Engage local Communities

www.ENGINEERINGforCHANGE.org

join now!

Thank You

For more information visit:

www.EngineeringForChange.org

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