Engineers Without Borders – USA
2004 National Conference
Presents

An International Workshop on the Engineer's Role in Capacity Building for the Developing World

September 22-23, 2004
CH2MHill Headquarters, Denver, CO

Organized and Hosted by
CH2MHill
Engineers Without Borders – USA

Sponsored by
CH2MHill
The American Society of Civil Engineers (ASCE)
The American Society of Mechanical Engineers (ASME)
The World Federation of Engineering Organizations (WFEO)
United Nations Industrial Development Organization (UNIDO– ICS)
Engineers Without Borders – International (EWBI)
Water for People

Background

In the next two decades, almost 2 billion additional people are expected to populate the Earth with 95% of the growth taking place in the developing world. This growth will create unprecedented demands for additional infrastructure capacity in energy, food, land, water, transportation, materials, waste disposal, earth moving, health care, environmental cleanup, and information technology. The role of engineers will be critical in fulfilling those demands.

Creating a sustainable world that provides a safe, secure, healthy, productive, and sustainable life for all the world's people should become a priority for the engineering profession. Engineers have a collective responsibility to work toward meeting the *Millennium Development Goals* set by the United Nations General Assembly on September 18, 2000. Appropriate and sustainable solutions are needed to meet the basic needs of all humans for water, sanitation, food, health and energy while at the same time protect cultural and natural diversity. Improving the lives of the 5 billion people whose main concern is to stay alive by the end of each day on our planet is no longer an option for the engineering profession; it is an obligation.

Problems of the developing world cannot be solved by separate individuals, groups, disciplines, and institutions (big or small) or through short-term piecemeal actions. These problems must be addressed collectively by collaborations and partnerships that bridge across national and international boundaries, age groups, races, genders, cultures, and disciplines. Appropriate decisions must be made at various levels (global, regional, local, and individual) and over different time scales. It must be acknowledged that there is no such thing as one and unique solution to all the issues facing the developing world.

The engineering profession's duty to work towards meeting the needs of the developing world requires adoption of a new mindset that embraces the principles of sustainability, renewable resources, appropriate

technology, and systems thinking. Tomorrow's engineers will be asked to combine traditional "hard" (technical) skills with "soft" skills and develop the ability to work in collaboration with non-technical expertise, to communicate effectively, to appreciate different cultures and practices, to understand the global nature of engineering, and to understand the societal, economic, ethical, cultural, and environmental impact of engineering decisions.

There is a need to educate a new generation of well-rounded globally responsible engineers who better meet the challenges and needs of the developing world and offer sustainable and appropriate technology solutions to the endemic problems faced by developing communities worldwide. Engineers of the 21st century are called to become the facilitators of sustainable development and social change.

Proposed Workshop

The proposed workshop will address the role of engineers in international development and reconstruction. The overall objective of the workshop is to develop a consensus and a course of action on how to fully engage the engineering profession in capacity building in the developing world. More specifically, the workshop will be designed to provide a better definition of what represents successful capacity building for developing communities. The agenda of the workshop will be driven by several key questions:

- What partnerships need to be developed to ensure successful capacity building at the community level? What stakeholders need to be included in the decision making? What relationships need to be developed among the stakeholders?
- What represent sustainable and appropriate engineering solutions in the developing world? What metrics can be used to assure quality control and short and long-term success? How can the solutions be designed beforehand so that the implemented solutions are respectful of the communities being served, and at the same time contribute to equity, the preservation of natural and cultural capital, and be profitable to local and global economies?
- What is the interactive role of technical (hard) issues and non-technical (soft) issues in capacity building?
- How do we educate engineering students and professional engineers to address the problems that are more specific to the developing world?
- What on-going collaborations need to be created between existing engineering organizations, professional societies, volunteer organizations, and other professions (health, economic, etc.) when designing and implementing sustainable and appropriate solutions at the community level?

Capacity building will be addressed from different (but complimentary) perspectives by bringing together participants from industry, government, university, humanitarian organizations and NGOs from engineering and non-engineering disciplines. The workshop will be attended by participants from developed and developing countries and will consist of a combination of lectures and facilitated discussion periods (panel and plenary). All participants will be asked to be present during the entire length of the workshop and participate through presentation and/or discussion periods.

The workshop will take place on September 22-23, 2004 at the CH2MHill World Headquarters near Denver, Colorado and will be part of the 2004 Engineers Without Borders - USA National Conference (September 22-25). It will precede the Sustainable Resources 2004 conference to be held in Boulder, CO from September 27 – October 2.

For more information about this workshop, contact Bernard Amadei at amadei@colorado.edu, Tel: 303-492-7734, and check the conference web site: www.ewb-usa.org/news-conferences.html.