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Forging a partnership where the poor really matter

by Charles Morris

Eco Catholic

For Saul of Tarsus, it was traveling the road to Damascus. For John Barrie, it was a trip to Ecuador in 2004.

John, a well-known and successful green architect and industrial designer, was looking out of the window of a bus.

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<https://www.ncronline.org/sites/default/files/stories/images/oldimgs/John%20Barrie.thumbnail.jpg>



"I do solar design," John said. Looking out at the homes, "I realized that if

you rearranged the materials [wall and windows] you could make buildings that were much more comfortable in which to live. You could be comfortable during hot days and cold nights.

"My training put me in a position where I could do something. No one was designing things for poor

people. I can do this."

Thus was born the Appropriate Technology Collaborative.

Appropriate Technology Collaborative's mission and history

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The Appropriate Technology Collaborative mission is to create "new sustainable technologies that promote economic growth and improve the quality of life for low income people worldwide."

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Since 2007, ATC has worked in Guatemala and other developing countries to build relationships with clients in communities in the developing world. With the assistance of architectural and engineering students at U.S. universities, ATC designs solutions based on inexpensive, locally available material.

Students at schools like Michigan State University and Rutgers University help create designs the local community will implement. These solutions are made available without charge to the local community.

ATC makes a five-year commitment to its client, and it takes on projects for which there is a high degree of success. The client can take the product to the market. Micro-businesses are formed and income for the local community is generated.

Some of the projects include:

- \$10 solar panel -- Based on available material, this solar home heater is locally made in Guatemala. The No. 1 problem for many folks in the mountain areas is lung disease because of the cold. People in the community are being trained to manufacture and sell the solar panels.
- Bio-Medical Project -- ATC is partnering with Dr. Aldo Castañada, who was head of cardiac surgery at Harvard for 15 years and who now lives in Guatemala City. About 1,300 children are born every year in Guatemala with a congenital heart defect and need an operation. But doctors in the rural areas aren't trained to diagnose the condition. ATC has developed a cellphone app that couples with a special stethoscope to record infant heart sounds and transfers the data back to the clinic in Guatemala City. The result is that those young children can be identified and their lives are saved.
- Refrigeration -- ATC has developed a low-cost solar refrigeration unit that keeps vaccines chilled for weeks in sub-Saharan Africa.

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- Foot pump -- The ATC designed a treadle pump that can be used to pump fresh ground water in semi-arid areas such as Tanzania.
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- Lighting for slums -- ATC uses recycled cellphone parts to make inexpensive lights for slum dwellers. The material cost for one LED light is 80 cents. Since power is at best intermittent in most slums, the advantage of this system will be that the battery can be recharged when power is available, and one can use the light when it is needed. This replaces kerosene lamps. Payback is about 10 weeks.
- Cheap electricity -- One exciting project in which ATC is currently engaged is the development of a thermo-acoustic engine. This is a piece of pipe that can be used to generate electricity. As with many of the technical innovations of ATC, this can be made on site.
- Woven wind turbines
-- Engineering students at the University of Michigan are partnering with a village in Guatemala to

utilize the weaving skills of the women in the village to make blades for small wind turbines.

Gift to the world

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Appropriate Technology Collaborative is based on four principles:

1. Build long-term mutual relationships between the student teams and the clients. Commit to a relationship of mutual respect based on listening and collaboration. This is based on a peer-to-peer partnership.
2. Provide opportunity for clients to discover solutions within themselves to harness human creativity and enhance dignity. A consensus model is employed throughout the entire process. For example, when the ATC produces new technology, the following year it is a Guatemalan engineer who will be doing the teaching among her/his peers. Real entrepreneurial energy is unleashed.
3. Make the collaborative process as transparent as possible by documentation and replication. In that way, other NGOs can learn from ATC's successes and avoid its failures.
4. Make the technologies open to the world without charge. With the exception of bio-medical technology, all of the technology generated by ATC is given away. Technologies are available free on the ATC website. One of the exciting next steps is to apply that technology in the United States in communities such as Detroit.

Theological model

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John Barrie and Alternative Technology Collaborative put a vision of a sustainable future into action. It is one thing to say that all of God's children are worthy of dignity and contain great potential, but ATC makes that vision a reality.

By reliance on available material, by full partnership with the people whose lives will be impacted, and by a model of transparency and openness, ATC embodies a vision of the reign of God. It is attempting to answer the questions: What would the world look like if we really believe in the dignity of all humanity? What would the world look like if we treated the poor of the world as real partners? That every child being made in the image and likeness of God isn't just a nice slogan?

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