

LUTW Illuminating Lives in Sri Lanka

Students from the University of Moratuwa are helping to create a brighter future for their country

In April of 2003, Light Up The World (LUTW) in collaboration with a team of engineering graduate students from the University of Moratuwa in Sri Lanka illuminated the first two villages in the Knuckles Range, and now because of the success of the project the community has requested that LUTW work to provide sufficient lighting to the entire population of around 5,000.

The Knuckles Range designated as a World Heritage Site, spreads over approximately 20,000 ha. and is a veritable storehouse of biodiversity and a host of indigenous flora and fauna. Residents in this area have little or no chance of ever being linked to the grid.



Villagers in Sri Lanka are actively involved in the planning, installation and maintenance of the lighting systems.



Children from the Knuckles Range holding their new Luxeon lamps.

Inhabitants of the numerous sparse villages are among the poorest of the poor in Sri Lanka. Their sole livelihood is small plot farming where harvests and income are vulnerable. Currently, these villages rely exclusively on the burning of kerosene and wood to provide a modicum of lighting. Typically, fuel costs and candles for the average household range upwards of \$50 USD annually, this is almost equivalent to the present one time cost of a LUTW White Light Emitting Diode lighting system (\$60 USD). The annual incomes in the area range from \$350-500 USD.

LUTW is actively seeking financial support to light the entire Knuckles Range over the next year. We would like to thank several Calgary organizations for their support: the Arthur Child Foundation, Greystone Environmental Consulting, and Sri Lankan Canadian, Don Perera. LUTW extends a special note of thanks to Kathy Allan and the students from the International Club of Oakwood Junior High in Dayton, Ohio for their interest and fundraising efforts.

Did you know?



- Accidentally overturned homemade kerosene wick lamps cause disfiguring burns or even death to thousands of people each year. Kerosene is a highly inflammable liquid that when spilt, easily ignites, and is very difficult to extinguish.
- **According to Lawrence-Berkley National Labs, the single-greatest way to reduce the greenhouse-gas emissions associated with lighting energy use in developing countries is to replace millions of kerosene lamps with white LED lighting systems.**
- A standard fluorescent lamp contains approximately 20 milligrams of mercury. The cost of properly disposing of fluorescent lamps is often more costly than the cost of manufacturing the tube.
- **Light Up The World can light an entire village with the power of one 100 Watt bulb.**

Please share your copy of The Enlightenment with as many of your friends as you wish!

President's Message

Dear Supporters of LUTW,

We have undertaken a huge responsibility to help light up the world. It is a daunting goal but that is our challenge - to facilitate the introduction of ultra efficient, inexpensive and near permanent lighting systems for the 2 Billion inhabitants of this world who have little or no prospect of electrification. We can and will do it!

Our efforts, with your support, have earned LUTW an international reputation as the premier humanitarian organization of its kind. Over the last 12 months LUTW has been awarded several prestigious international prizes including the Rolex Award for Enterprise (Geneva), the Tech Museum award for Equality (San Jose), The Saatchi & Saatchi Award for Innovation (London & New York) and the University of Calgary's President's Internationalization Award. LUTW is also the subject of a full length National Geographic Documentary that has aired several times around the globe except curiously North America.

The international accolades have been tremendous but they also carry an unmet burden of hope. LUTW continues to be approached by dozens of village organizations and NGO's around the world. With each successful project, the demands for LUTW's services multiply. Despite our global recognition, we are only a small office and laboratory generously provided by the University of Calgary. We are simply overwhelmed with demands for our services and our technology. LUTW needs financial support for research and, most importantly, for furthering our project base with local partners around the world.

LUTW has become the platform to accelerate the early adoption of advanced Solid State Lighting as a community development tool worldwide. The ability to read and study after dark has an enormous impact on the social, economic and physical lives of those with little opportunity. Not the least of these benefits is the improvement in education of children and women in areas where poverty and illiteracy walk hand in hand. The ability to operate a cottage industry by night using fixed or mobile task lighting helps people earn a modest living. It is not just about the provision of light - a very precious commodity we in the developing world may take for granted.

Our processes help reorient development strategies toward the creation of local enterprise, enhanced income and gender equity, health, safety and protection of the physical environment. This is not fanciful thinking - It has been our experience. Our aim, with some real hope, is the realization of potential for a great many underprivileged people.

Namaste,



Dave Irvine-Halliday

LUTW Around the World

PROJECTS IN PROGRESS

- ▶ **PHILIPPINES** - 1,000 homes - In partnership with the Philippine National Oil Company and World Wildlife Fund
- ▶ **INDIA** - Andra Pradesh - LUTW is establishing a partnership with Dalit Coop Federation (Dalits are the "untouchables"- number over 250 million in India)
Calcutta/Dehli - 1000 homes in 2004 LUTW partnering with Calgary and Local Indian Rotary Clubs
- ▶ **AFGHANISTAN** - Chelle Mjai - 410 homes Lamping a village of women and children
- ▶ **GALAPAGOS ISLANDS** - Lamping a turtle hatchery, home lighting in partnership with EnerGreen Foundation, Fundacion Natura of Ecuador and the World Wildlife Fund
- ▶ **MEXICO** - 1,000+ homes - In partnership with Marist Brothers
- ▶ **SRI LANKA** - 500 homes - Partnership with the Students of University of Moratuwa
- ▶ **ANGOLA** - Schoolhouses in partnership CNRL of Calgary

PARTNERSHIPS

- ▶ We are pleased to announce the formation of **LUTW (Pakistan)** established in Karachi in November.



Jan Tollefson with a friend in the Dominican Republic.

Dr. Jan Tollefson is Adding Her Light to the Dominican Republic

"Local people use kerosene lamps, some of which are like Molotov cocktails, or they are burning wood on the dirt floors of their houses, and the smoke is horrendous". Jan Tollefson 2003

One hundred and ninety of LUTW's Luxeon lamps made their way up and down mountain roads to reach the village of El Hato in the Dominican Republic this past October thanks to our affiliate, Dr. Jan Tollefson, a public health doctor, and her "Add Your Light Project".

Bringing light to the Dominican Republic is just one of the many projects that Jan has been involved in since she volunteered at an orphanage in the late 90's. Jan decided to start her own "Add Your Light Project" to provide Biosand (BSF) water filtration units (see www.davnor.com) and latrines, and eventually included WLED lamps. She also has built several classrooms in the Dominican Republic. Jan's water filter and lighting projects have involved numerous Canadian and US Rotary Clubs as well as the Peace Corps in both the Dominican Republic and Haiti.

Jan always knew she wanted to work with people struggling with what she calls "the burden of poverty", and an opportunity arose in 1998 for Jan to do some volunteer work in an orphanage in the Dominican Republic. On that first trip she met the staff and children at three orphanages, and after getting to know each one by name and hearing their stories she was hooked. Since then Jan has traveled to the D.R. every three months for 2-3 weeks on various development projects.

Jan has been working closely with Rotary clubs in both Canada, US and the D.R., to develop projects and obtain funding. Norman Myden and Harry Nazarchuk, members of the Calgary Chinook Rotary Club, joined Jan on her last trip to El Hato to install WLEDs and were very impressed with the project.

The success of the project in El Hato has been overwhelming. Jan discovered on her last trip that villagers in the area are beginning to abandon their reliance on kerosene lamps in favor of WLED lighting. Typically people were spending around \$2 Canadian a month on kerosene or were collecting wood to light their homes.

News of Jan's lamps have spread throughout the area. While traveling her group was stopped on the road several times by locals asking when they could get on the list for a lighting system. Jan recalls, "when I told them that I didn't have any more systems, they asked when I would be back and were very upset when I said not until January".

Jan is returning to the Dominican Republic in January 2004 to install 560 more LUTW Luxeon lamps, and to work on several other development projects. Jan donates her services, and her projects are supported by donations from individual sponsors and from Rotary Clubs across Canada and the US.



A woman with kerosene wick lamp and a family with newly installed Luxeon lamp.

If you would like to support Jan's development work in the Dominican Republic and Haiti, please send a tax deductible donation to:

Add Your Light
Apt. 1506, 80 Point McKay Crescent NW
Calgary, AB, T3B 4W4
Email: jetollefson@shaw.ca
www.addyourlight.org

(Jan is a medical doctor with specialist certification in Community Medicine and a Masters in Health Care & Epidemiology).

"I had two people tell me very earnestly that since the lights and 5 Watt solar panels were installed last May, they had not bought kerosene and had never had a night when the lights didn't work". Jan Tollefson 2003



Solar panels arrive in Khazerabad, Pakistan.

Canmore Trekking Company - Luxtreks, Ventures into Pakistan

A group of six intrepid souls departed from Canmore for Pakistan amidst dire written and verbal warnings from friends as to the dangers they would face visiting this forbidden country.

Their destination was the Shimshal Valley in northern Pakistan where they had arranged to install lights into 235 homes in 3 adjoining communities. For Faith and Anthony Harckham who own Luxtreks, a trekking company based in Canmore that also installs LED lighting, just getting to Pakistan was half the adventure.

The Shimshal community is comprised of three villages; Aminabad, Shimshal and Khizerabad, which are divided by gullies. The installation was carried out by five teams. Faith's team consisted of three enthusiastic young men who led the way, naming and numbering the homes with a strip of paper tape above each doorway. For several days she struggled to keep up with them as they covered the distances and leaped over walls with amazing speed and alacrity! She was thankful for the respite of drinking numerous cups of tea in many of the homes.

Anthony's team was responsible for installing the seven panels in each of the three villages. Three young men wired the lights into place in each home and another followed to put in the switches and connections.

It was in Aminabad, the poorest of the three communities, that their project made the largest impact. Funds to build a school in the village had been reallocated to complete the highway, resulting in the over ninety students being instructed in two small homes.

Faith saw the opportunity to get the school finished "I suggested that all but the poorest families could continue paying what they would normally pay for candles and kerosene into a construction fund. Luxtreks has agreed to match whatever funds they could raise in a six month period. Luxtreks is hoping to have the \$5,000 US required to finish the school in time for construction to begin in April 2004."

After the installation the party embarked upon a 7 day trek to visit the pasturing herds in the Pamir. This involved numerous steep elevation gains and losses, precipitous drops, snow, ice and temperatures down to -20C! Not for the feint of heart!

Other adventures on the trip included sightseeing at the confluence of the three greatest mountain ranges; Hindu Kush, the Karakoram and the Himalayas, and crossing through the Upper Hunza valley.

Luxtreks is a close affiliate of LUTW, but Faith and Anthony design, build and install their own LED lighting systems. They have installations in Nepal, Bolivia, and Guatemala. Their primary mission is to lead treks into rural areas which have poor or non-existent lighting, and provide economical LED lights with solar panels at no cost to the end users. Luxtreks hopes to act as a bridge, allowing those who wish to share their wealth a chance to meet the recipients of their gifts and in return gain insight into another way of life and another set of values.

Luxtreks has two treks scheduled for 2004, one to Peru, the other to Kilimanjaro in Tanzania. A portion of the trekking fee goes towards paying for the cost of the lighting systems. For more information on Luxtreks please visit: www.luxtreks.com

Luxtreks pays for the lighting systems with contributions which come primarily (and in the past exclusively) from the sale of Faith's paintings and cards. The paintings can be seen at on Faith's web site: www.faithharckham.com.



Luxtreks always takes plastic, reusable boards for the kids to write on and donations of books.



Island Lighting Program In The Philippines

Philippine National Oil Company (PNOC) Island Luxeon Lamping Project 2004

There are about 7,000 inhabited islands in the Philippines, and most are without electricity. In July 2003, Paul Aquino, a Director of the Philippine National Oil Company (PNOC), invited Dave Irvine-Halliday and his wife Jenny to the Philippines. Together they visited Balugo, the first village in the Philippines to be lit with LUTW's Luxeon lamps. While in Manila they also met with Teofisto Guingona, the Vice-President of the Philippines to discuss the potential of extending the benefits of Solid State Lighting across the country.

PNOC has committed to work with LUTW in bringing affordable lighting to 1,000 homes by March 2004. Out of the 1,000 lighting systems PNOC is purchasing from LUTW they are donating 500 systems to the World Wildlife Fund (WWF) of the Philippines. This donation will enable the WWF to continue to protect the northern island, an environmentally sensitive area containing geothermal aquifers and a vast coral reef with numerous endangered species unique to the area.



Dave demonstrating lamp in a Tarahumaran home.

In October 2003, Dave, his wife Jenny, and Dave's grad student Rodolfo Anaya Peon, who was born in Mexico, were invited to give two presentations on LUTW at the Technologic Institute of Monterrey (ITESM). To their surprise more than seven hundred students and local business people attended their lecture in Chihuahua.

The University also arranged for the LUTW team to travel to the Copper Canyon area in the Sierra Madre Mountains of northern Mexico with the Marist brothers to demonstrate LUTW's Luxeon lamps.

The Marist brothers, are a catholic based organization that started in France in 1817. Today they perform humanitarian work in 180 countries around the world. In the Sierra Madre the Marist brothers operate an orphanage and schools for the Tarahumara Indians. The Tarahumaras, a predominant tribe of this region, prefer to be called "Raramuris", which in their dialect means "Light Feet". They are renowned for their incredible ability to run for days on end.

Over several days the Brothers escorted the team to three remote villages: Kwechi, Choguita and Norogachi. Community members complained of the scarcity, expense and hazards of kerosene. The luxeon lamps generated incredible excitement

among the normally demure people. Dave and Rodolfo left several lamps with the doctor and nurses at the small hospital in Norogachi.

The highlight of the trip took place on their last night in Norogachi, when Dave and Rodolfo gave a final lighting demonstration in the local church on the night of "Nuestra Vigen del Pilar", arguably the most important festival of the year. Five, 1-Watt lamps placed near the front of the church clearly illuminated the entire central and two side alters. The church service that night was the first ever performed by electric light.

Marist Brothers have started raising money to light up around 1,000 homes starting in March 2004.

Local parishioners gathered to see their church lit up with five 1-Watt Luxeon lamps.

What is this?

Answer: the inside of a typical home in the developing world at night.



LUTW Individual Home Lighting System



\$60.00 USD

Will Provide a Home With:

- 2** - WLED Lumileds Luxeon
1-watt Lamps (40 yr life expectancy)
- 1** - 12 Volt 7 Ah Sealed Lead
Acid Battery (5 yr life expectancy)
- 1** - 5 watt Kyocera Solar Panel
(20 yr warranty)

(This system can be expanded to accommodate 4 lamps and the 5 Watt panel also allows the user to re-charge D-cell batteries for torches and small radios.)

LUMILEDS™
LIGHT FROM SILICON VALLEY

Thanks For Your Support

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- Altalux Electronics
- TIM Industries
- Saatchi & Saatchi
- PQR Limited
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(Faculty of Engineering)
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- Tides Canada
- Okanagan University
College
- Stanford University
- Massachusetts Institute
of Technology
- Hawthorne Foundation
- Blair Foundation
- Greystone Environmental
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Dr. Frank Young

Many thanks to all of our wonderful volunteers and generous donors! A special thanks goes out to Pauline Cummings, Raymond Cawaling, Don Detomasi, Amanda Affonso, Cory Bass and Seth Leon.

Our belief...

"It is a fundamental obligation for we in the developed world to assist those in the developing world to raise their standard and quality of living, by their own efforts and in a manner which they choose – it is also our privilege.

I sincerely believe that we can make a difference – we truly can.

Let us together, in this new millennium, light up the world."

*Dr. Dave Irvine-Halliday
LUTW, Founder
October 2001*



LUTW would like to thank Kathy Allan and the International Club from Oakwood Junior High in Dayton, Ohio for raising funds to support the lamping of 80 homes in the Knuckles Range in Sri Lanka.

LUTW Donations



If you would like to make a tax-deductible donation to Light Up The World please address your cheque to:

University of Calgary - Light Up The World

Mail to:

University of Calgary - Light Up The World
Dept. of Electrical & Computer Engineering
2500 University Drive NW,
Calgary, Alberta Canada T2N 1N4
Tel: (403) 220 - 4230 Fax: (403) 282 - 6855
(tax receipts are issued by the University of Calgary)

Please include this form with your cheque.

Name: _____

Address: _____

City: _____ Amount \$: _____

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- Electronic copy of the newsletter Paper copy of the newsletter by post Send me email updates

Or donate online by visiting our web site at www.lutw.org. (Please note: LUTW's donations are managed through Tides Canada on the Canada Helps web site).

GIFT TAG

Give The Gift of Light This Xmas

_____ has made a donation in your name on behalf of Light Up The World to light up the hearts and home of a family in the developing world.

www.lutw.org

