

Easy Latrine Wins “Best in Show” at International Design Competition

PHNOM PENH, JULY 2010 - IDE Cambodia’s Easy Latrine was named “Best in Show” at the [2010 International Design Excellence Award](#) competition organized by the [Industrial Designers Society of America](#) (IDSA), the oldest and largest member society in the product design industry worldwide.

The Easy Latrine, an innovative low-cost latrine design, received one of only three “Best in Show” awards out of a field of 1,900 entries from 28 countries. The Easy Latrine was noted as being “modest on physical beauty, perhaps, but high on social responsibility.”

“Selecting a humble latrine for this award may seem surprising for a competition that usually features sleek, high-tech designs,” said Michael Roberts, Country Director of IDE Cambodia, “but it reflects an emerging trend in the design community toward the application of world-class design skills to problems that affect the world’s poor majority.”

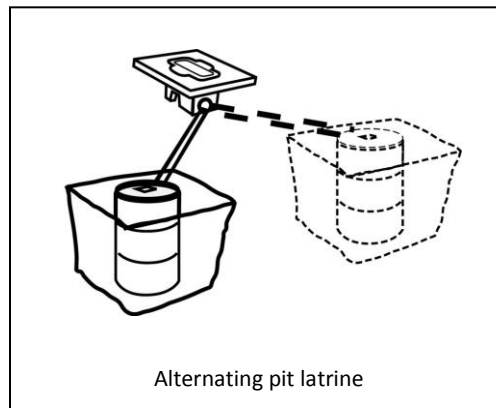
There is a growing recognition of the important role of good design in the developing world. In 2007, IDE worked with the Cooper-Hewitt National Design Museum at the Smithsonian Institution to create an exhibit entitled “[Design for the other 90%](#)”. The exhibit features design innovations that address critical needs of the world’s poor and marginalized. In the words of the exhibit’s curator:

“Designers, engineers, students and professors, architects, and social entrepreneurs from all over the globe are devising cost-effective ways to increase access to food and water, energy, education, healthcare, revenue-generating activities, and affordable transportation for those who most need them... Designers are working directly with end users of their products, emphasizing co-creation to respond to their needs.”

The Easy Latrine design was developed under the expert guidance of Jeff Chapin (on sabbatical from IDEO, a leading U.S. design firm) in collaboration with IDE Cambodia staff and partner organizations including the Ministry of Rural Development, LienAid, and Rainwater Cambodia. Funding for the design process was provided by the World Bank Water and Sanitation Program and the USAID Cambodia MSME Program.



The Easy Latrine design is based on the ingenious [alternating pit latrine](#) originally developed in India by Sulabh International. In Cambodia, this type of latrine consists of a porcelain pour-flush “squat” pan connected by a drain pipe to one of two offset pits lined with concrete rings. Solid and liquid wastes are directed to the first pit where the solids are contained as the liquids seep into the surrounding soil. After about two years, when the first pit is full, the owner switches the drain pipe to begin filling the second pit. While the second pit is filling, the solid waste in the first pit is composting so that it can be safely emptied when the second pit is full. The drain pipe is then switched back to the first pit and the cycle repeats itself.



This type of latrine is suited to areas where i) it is possible to dig a 1.5-m deep pit, ii) soil is permeable enough to allow liquid waste to seep out of the pit, and iii) the seeping liquid waste will not contaminate drinking water sources.

Easy to Buy, Easy to Build, Easy to Use

IDE made several modifications to the basic Sulabh design to reduce its cost and make it easier for people to purchase and install in Cambodia:

Firstly, the wall thickness of the concrete rings was reduced from the local standard of 5 cm to 3 cm. To compensate for the decrease in thickness, rice husk ash is added to the concrete mix to make it stronger. Rice husk ash, which consists mainly of silica, replaces 5% of the cement resulting in a stronger, less expensive concrete mix. Reducing the wall thickness of the rings reduces the overall volume of concrete required, which further reduces costs while also making the rings lighter and easier to transport and install.

Second, a prefabricated concrete chamber is used to capture the solid and liquid waste from the ceramic pan and direct it to the drain pipe. The chamber also provides support for the concrete floor slab, lifting it to the proper height above ground level to ensure good flow into the pit. Traditionally, the chamber has been constructed of brick and mortar—a time consuming and expensive task that required hiring a mason and purchasing materials from multiple locations. The prefabricated concrete chamber significantly reduces the cost and can be installed by the owner in as little as a few hours.

Third, the construction process for concrete rings was improved to make ring production faster and easier for concrete producers. Improvements include using a drier concrete mix and a removable inner mould. Immediately after pouring, the inner mould is lifted out using a portable crane (see photo at right). After about a half hour, the outer mould can also be removed. The stiff concrete mix allows the concrete to keep its shape while it hardens without the mould to support it. With one inner mould and



two outer moulds, a concrete producer can make at least nine rings per day—three times more than he could make with one inner and outer mould set using traditional methods. The increased production rate reduces the production cost and results in a lower cost for the consumer.

Fourth, the Easy Latrine is packaged as a do-it-yourself kit. All the underground latrine components can be purchased together at one location eliminating the need to shop around for materials from numerous suppliers. The basic Easy Latrine kit, which costs about US\$35, includes three rings, pit lid, chamber, slab with integrated ceramic pan, PVC drain pipe, a bag of mortar to seal the drain pipe joints, and illustrated installation instructions. The seller delivers the kit to the owner’s house and the owner installs it him or herself. A shelter (not part of the kit) can then be constructed of simple thatch or more expensive materials depending on the owner’s budget. The second pit, consisting of an additional three rings and lid, can be purchased at a later date when the first pit is near full.

Lastly, the Easy Latrine is supported by an integrated sanitation marketing program that combines i) village-level promotional activities and mass media campaigns to generate demand for sanitary latrines, ii) training and support for supply chain actors to ensure adequate supply of sanitation products and services, and iii) collaboration with authorities at all levels to ensure that Easy latrine promotion is integrated with government sanitation and hygiene activities.



Proud owner of a new Easy Latrine in Kandal province

The Easy Latrine Design Team: Jeff Chapin, Ken Savath, Ros Kimsan, Ben Clouet, Tamara Baker and Cordell Jacks of IDE Cambodia; Aun Hengly of Rainwater Cambodia; Sim Sopheak of LienAid; and Chhorn Chhoeurn of the Ministry of Rural Development (Royal Government of Cambodia).

