

# Concrete Hearts Program comes to Mongolia

by Luke M. Snell and Billie G. Snell

**M**ongolia has been using concrete for a long time. The country has two cement plants and over 170 concrete batch plants. With Mongolia's great mineral wealth, and its friendly relationships with the neighboring countries, it is enjoying a building boom. Reinforced concrete is the building material of choice.

Most people in Mongolia think of concrete as a simple material, always gray and having only structural use. Students in Mongolia (as in the rest of the world) are taught how to design with concrete to meet building code requirements. Students seldom see concrete as an attractive material nor do they see the potential of using concrete as a symbol of hope.

But that changed for the better when students from Arizona State University made small, pink, lightweight heart-shaped necklaces for the fall 2013 ACI Convention in Phoenix, AZ. This was a fundraising effort for the Concrete Cares campaign that draws attention to cancer awareness, described in an article in the September 2013 issue of *Concrete International*.

Before this year's Mongolian Concrete Conference and Mongolia Chapter – ACI meeting, civil engineering students

from the Mongolia University of Science and Technology (MUST), Ulaanbaatar, made over 100 concrete heart necklaces. Khishgee Radnaabazar, Professor at MUST, organized this activity. Mike Murray, FACI; Donna Murray; Luke Snell, FACI; and ACI member Billie Snell assisted the students in making the concrete hearts.

In Mongolia, pink does not have the significance of cancer awareness. So the students were encouraged to use any color they wanted for their concrete heart necklaces. Many students went a step further and painted the concrete hearts with bright fingernail polish.

This was a 2-day project. On the first day, students made the concrete hearts. The heart-shaped forms were ice-cube molds purchased on the Internet. White cement and perlite aggregates were mixed by volume (1:3 ratio). Water was added to achieve a placeable mixture. The mixture was made in a disposable drinking cup and mixed with a plastic spoon. Color was then added (color is available at many material supply stores—you can also use food coloring). The mixture was then placed in the forms—a craft stick was used to finish the concrete.



Placing the mixture into the form



Students applied a finish coat of nail polish to the concrete hearts



Concrete heart necklaces were gifted to patients at the Ulaanbaatar Cancer Center



Students from the Mongolia University of Science and Technology in Ulaanbaatar with professors Luke Snell and Khishgee Radnaabazar

On the second day (2 to 4 days after casting), the concrete hearts were removed from the forms, a small eye screw was inserted in the top of the heart pendant and a cord or a ribbon is threaded through the eye screw to make the concrete necklace. The students could then add paint or fingernail polish to decorate the necklaces as desired.

The last step, and perhaps the most important one, is for the students to give the concrete heart necklaces to their local cancer hospital and hospice program. A staff doctor in Ulaanbaatar stated that the hearts will be given to all new cancer patients as a symbol of hope and to let them know that someone cares for their well-being.

The students had enthusiastic reactions to this program. They enjoyed the “craft part” of making the necklaces. They saw, in a fun way, that concrete can be multicolored and can be used in unusual ways. They were also surprised that concrete can be made light enough so that these necklaces are not a burdensome weight around the neck.

And as important, the program helped the students become socially conscious, finding that their developing engineering skills can be used right now to impact our world.

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Selected for reader interest by the editors.



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