



Case Study of Kentucky Ready Mixed Concrete Association

Keys to Success

-  **Project Description**
-  **Economic Value**
-  **Challenges & Advice**
-  **Benefits**
-  **Stewardship Meaning**

 When a May 2012 news article reported that Louisville had the worst Urban Heat Island in the country, with the fastest growing temperature, outpacing even Atlanta and Phoenix, the Kentucky Ready Mixed Concrete Association (KRMCA) decided to do something about it. Working with other interested and aligned organizations, KRMCA developed an educational campaign about urban heat island effects to begin in Louisville and to be expanded to the rest of the Commonwealth. The campaign, entitled “Keep Louisville Cool” and “Keep Kentucky Cool,” included bumper stickers, websites, informational literature, radio advertisements and billboards.

A heat island is a metropolitan area that is significantly warmer than surrounding rural areas. It can be created by too many dark roofs and pavements and not enough trees, pervious concrete and manmade reflective surfaces, such as roofs, parking lots and streets.

The Center for Disease Control and Prevention says excessive heat claims more lives in the U.S. each year than hurricanes, lightning, floods, tornadoes and earthquakes combined. Compared to rural areas, residents of cities experience higher rates of heat-related illness, such as heat stroke, organ damage, physical discomfort and death.

“Don’t think about your own payback,” Ruffing says. “Think about the betterment of the community. Each little bit you do counts.”

Besides the health issue, heat islands use greater amounts of energy. Concrete is naturally brighter and more reflective than other pavement surfaces, requiring less energy to illuminate comparable areas. With more trees, reflective

surfaces and pervious concrete, less energy is needed to heat and cool the buildings and less light is needed to illuminate the pavements.

While reflective pavements keep areas cooler, they also provide for cooler stormwater runoff. Through the use of pervious concrete, filtered stormwater will percolate back into the ground recharging the aquifer with fewer



pollutants. This can reduce the size or need for a stormwater pond since water is absorbed into the ground rather than running off.

The campaign suggested using native, canopy-producing trees and plants. Green roofs and cool roofs are also beneficial in mitigating the heat island effect.

\$ “Since this project is for public education, no payback is anticipated,” says Brett Ruffing, KRMCA Technology and Education Specialist. “An infrared gun was purchased for school demonstrations to show the difference in temperature between various pavement materials.”

Billboard ads and radio spots in Louisville, Lexington, northern Kentucky and Bowling Green for the campaign cost approximately \$15,000 and reached 70 percent



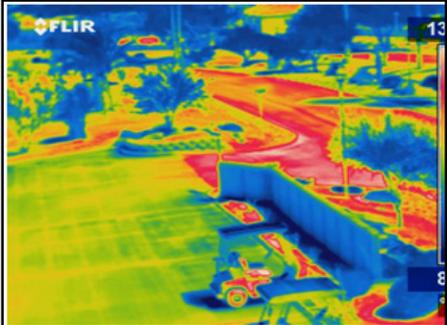
An infrared gun records the surface temperature of a pavement.

of the state’s population. Other participating organizations provided input to the website, which has received over 100,000 visits. See www.KeepKYCool.com.

? “We felt this campaign was important because it concerned the environment and public health,” says Ruffing. “But one of the challenges was being sure there were enough funds available to do the educating.”

Ruffing suggests planning ahead before starting a project. Have an idea of the amount of money that will be required and the best way to reach your target audience.

+ The campaign goal was achieved by creating a greater awareness and understanding of the urban heat island effect. It provided ideas about how to change the phenomenon, leading to better city planning to keep cities cooler. City planners can map out proposed areas and include the use of trees, grass and other elements that minimize the urban heat island effect. Using materials, such as concrete, reflect light; minimize rapid temperature growth; and reduce the amount of overhead



An infrared map shows temperature differences in pavement surfaces.

lighting required, all of which save on energy and provide cooler stormwater runoff. Concrete is also a recyclable material.

🌿 Do things for the environment because they’re the right things to do—for the health of the population and community and to conserve resources for future generations, Ruffing says.

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Helpful Hint: To encourage a positive change or awareness, educate the public about the need for and benefits of the change.