



Chapter News

Concrete Benefits the Environment

Portland Cement Association

www.cement.org

As owners, planners, and designers contemplate the form and function of new or expanding transit systems, the superiority of concrete as a construction material becomes evident. The many historic benefits of concrete are familiar to us all: low first cost and maintenance costs result in economical projects; high strength produces engineered elements that can handle loads effectively and efficiently; versatility is the tool for limitless creativity and aesthetic possibility; and durability leads to enduring structures that stand the test of time. These factors in themselves are steadfast reasons for making concrete the first-choice material. As issues continue to arise concerning the environment, however, and as transit systems proliferate, environmentally friendly construction materials are even more desired. Many environmental attributes of concrete have been documented and are itemized below.

- Concrete is composed of naturally abundant materials, including water, stone, sand, and portland cement. Portland cement itself is manufactured from natural materials including various combinations of limestone, shale, clay, sand, and iron ore.



- Concrete uses waste products from other industries that would eventually end up in landfills. Coal burning power plants generated 63 million tons of fly ash in 1998—with over 10 million tons used in concrete products. The use of fly ash decreases the leachability, porosity, and permeability of concrete. It also decreases the potential for thermal cracking by lowering the peak temperatures during hydration, and greatly reduces expansion and subsequent deterioration associated with alkali-silica reactivity. Bottom ash, also a waste product from coal burning power plants, totaled 17 million tons, of which 5

million tons was used by the concrete industry. Blast furnace slag is a byproduct of the steel industry. Concrete uses about 2 million of the 3 million tons of slag produced each year.¹

- Concrete is recyclable. Crushed concrete can be used as aggregate in new concrete mixes or as a base material for new pavement, thereby saving energy and valuable landfill space. The Portland Cement Association estimates that over 100 million tons of concrete is currently being recycled each year.²
- The cement industry has reduced the amount of energy needed in cement production by almost 30% since the early 1970s by closing inefficient plants and modernizing and automating the remaining plants.³ The cement industry has also reduced the use of fossil fuels in cement production by over 25% since 1971.⁴
- The cement industry uses fossil fuel in its high temperature kilns; however, according to the U.S. Department of Commerce, the cement industry invests 1.8% of its value of shipments into pollution abatement, compared with 0.23% for manufacturing as a whole. When the comparison considers total pollution abatement capital expenditures versus over all new capital expenditures, manufacturing as a whole invests about 7%, while the portland cement industry invests over 20% of its capital expenditure dollars in pollution abatement equipment.⁵



As issues continue to arise concerning the environment, and as transit systems proliferate, environmentally friendly construction materials are even more desired.

President's Message

By Bruce Cody

I was recently writing the description for a session at an upcoming PACA workshop. I started with the description of the Chemistry of Concrete with: "Concrete is made up of Aggregates and Paste."

That prompted to me think about those ingredients, and the issues we have had regarding them in Western PA. The ingredients we need to make the product, that we all depend on, to make a living. Pretty deep thinking!

AGGREGATES: There is an ongoing battle to keep river dredging, which provides Allegheny county with the best source of PennDOT approved aggregates for Concrete. We have seen dredging operations shut down.

PASTE: I grew up in Western PA., sandwiched between two Portland Cement plants. My grandfather worked at one of those for 52 years. He started in the early 1920's at 14 years old. At that time, they didn't check how old someone was. They needed workers. As a child in the late 1960's to early 1970's, my father washed his car with toilet bowl cleaner to remove the cement dust that billowed out of the

stack. Occasionally, he would have business dealings in the town 15 miles up the road that also had a cement plant. I remember looking out of the windows of the car, and it felt like we were inside the cement plant, driving down the main street of the town. The plant was ride beside the road, and there were trucks of all shapes and sizes everywhere you looked.

Over the next 30 - 40 years, the regulations came into place to clean everything up. Those plants were thriving without the dust and dirt, due to technology.

Today, those places are, or will soon be ghost towns. All of the sudden, I am feeling old, and I still have another twenty years to work in the industry. I'm sure it isn't necessary for me to remind you, that these products enable us to make a living. Maybe it is too late already, but we need to make choices to keep our economy alive in Western PA.

Sincerely,

Bruce Cody
President



BOARD OF DIRECTORS

Doug Hopkins

J.J. Kennedy, Inc.
Past President

Bruce Cody

PACA
President

Matt Manning

J.J Kennedy, Inc.
Vice President

Beth Rader

Secretary / Treasurer

Directors

<i>Ron Bennett</i>	Euclid Chemical Company
<i>Justin Bryan</i>	Frank Bryan, Inc.
<i>Craig Bolinger</i>	A & A Consultants, Inc.
<i>Tom Hunt</i>	CEMEX
<i>Dave MacArthur</i>	Harsco Minerals
<i>Tony DeMaio</i>	Admixture Products, Inc.
<i>Mike Perdeu</i>	W.R. Grace & Company
<i>Mike Moore</i>	Civil & Environmental Consultants
<i>Russ Smith, Jr.,</i>	Kiefer Coal & Supply Company
<i>Wayne Frankenstein</i>	Frankenstein Builders Supply

Chapter News is published by the American Concrete Institute, Pittsburgh Area Chapter for the purpose of informing members and others about issues of concern to the concrete industry. If you have information to include in this publication or any comments, contact ACI Pittsburgh Chapter at 724-452-1468



TINK BRYAN AWARD – TRIBUTE TO: THOMAS “TINK” BRYAN

The Tink Bryan Award was created in honor of an outstanding individual who dedicated himself to his family, business and the concrete industry. For several years now, the Chapter has honored one individual each year with this award. The Pittsburgh Chapter Board of Directors is requesting nominations for the 2010 recipient to be announced at the April meeting. The candidate should demonstrate an exceptional commitment and achievement of service to the concrete industry. Please forward a letter with your candidate(s) name and reasons for nomination to:

ACI, Pittsburgh Area Chapter
PO Box 86
Zelienople, PA 16063

Please be reminded to submit your nomination for board review.

Continued from first page

- The cement industry has steadily increased its use of waste materials to fuel cement kilns and currently relies on the burning of waste materials to satisfy about 8% of its total energy needs.³ Cement plants now burn many household and industrial wastes that would otherwise go into landfills or have to be handled as toxic wastes, including scrap tires, spent motor oil, surplus printing inks, dry-cleaning solvents, paint thinners, petroleum industry sludge, and agricultural wastes.

Printed with permission from the
Portland Cement Association.
www.cement.org
All rights reserved.



References

- 1 Kalyoncu, Rustu, Coal Combustion Products, 1998.
- 2 Portland Cement Association market research, 1998.
- 3 1998 U.S. and Canadian Labor-Energy Input Survey, Economic Research department, Portland Cement Association, October 1999.
- 4 Portland Cement, Concrete, & PCA, MS330, Portland Cement Association.
- 5 1994 Annual Survey of Manufacturers: Statistics for Industry Groups and Industries, Bureau of the Census, U.S. Department of Commerce, Washington, D.C., 1996.

Selected PCA publications and other resources concerning environmental issues associated with concrete and the transit industry:

- Environmental Life-Cycle Assessment of Portland Cement Concrete, PCA Serial No. 2167, 1998.
- Building a Cleaner Environment, PCA SP337, 1999.
- Cement and Concrete in the Global Environment, PCA SP114, 1993.
- The Environmental Council of Concrete Organizations (ECCO), 5420 Old Orchard Road, Skokie, IL 60077-1083.

2010 Pittsburgh Area Chapter Upcoming Events

Awards Banquet

April 9, 2010
at *The Camelot Banquet Hall,*
Warrendale, PA

Social Night

May 15, 2010
at *Wheeling Island Racetrack & Casino,*
Wheeling, WV

• R E M I N D E R •

Mark your Calendars for our
Fall Convention! Sunday, October
24th - Thursday, October 28th is quickly
approaching. We still need Volunteers
to help out with this event. If you are
interested, call (724) 452-1468 or email
bethaci@verizon.net.



PITTSBURGH
AREA
CHAPTER



“Progress Through Knowledge”

American Concrete Institute
Pittsburgh Area Chapter
P.O. Box 86
Zellinople, PA 16063

