



VRMCA Revisits “Extreme Makeover” Home

By Bob Nablo,
Director of Industry Services

Remember the winter of 2005? The inhabitants of Southwest Virginia certainly do, and Virginia Tech students of that era particularly remember working on the new Crawford-Smith home in miserably cold, snowy, December weather for the “Extreme Makeover – Home Edition” television show.

VRMCA recently visited the home, still occupied by Carol Crawford-Smith, a former ballet dancer with the Dance Theatre of Harlem who was stricken with multiple sclerosis about 15 years ago. Fans who remember the show know that a deserving person was secretly selected to receive a new home, and their old home would be demolished and the new structure built, and occupied, in seven days. Local volunteers were selected – in this case Virginia Tech students – a home builder chosen, and donated materials gathered. In 2005 Building Specialists Inc. was chosen as the builder and VRMCA member Marshall Concrete of Christiansburg (now Chandler Concrete) donated much of the building material and the concrete for the building slab, patio, sidewalks and the architecturally-stained concrete driveway. Another VRMCA member, Roanoke Cement, helped ease the cost of donated materials. The new home was specially designed to accom-



modate Ms. Crawford-Smith and her younger sons, and although the original specification from the show was for driveway and patio pavers, George Kuhn (the Southwest Virginia Council Chairman and VP of Ready-Mix Operations for Marshall Concrete) convinced the show producers that colored concrete was the better choice.

The home has “grown up” in the intervening years and the landscaping has matured. Ms. Crawford-Smith continues to teach dance, and while her sons have grown also and are leaving for their own lives, the house still serves her purposes very well. The exterior concrete looks good and is performing well. The participants and spectators have interesting

– if not fond – memories of demolishing one home and building a new one in 107 hours, and those of us in the ready-mix industry certainly remember placing concrete in late-night hours with below-freezing temperatures! 🚚

in the mix ...

Resiliency and Sustainability are Synonymous	3
VRMCA Pervious Concrete Certification Course & Demo.....	7
New Tilt-Up Theatre Complex in Blacksburg	7
VRMCA Board Visits VA Tech Concrete Lab.....	8
Kirchain Named Co-director of Sustainability Hub	9
90 Year Old Concrete Road Presentation.....	9
Coastal Virginia Welcomes AIA National President	10
Architects On-Site for Ready Mix Production.....	11
Concrete Concerns in Cold Weather	12
OBAMACARE UPDATE	14
Construction Site Concrete Washout Requirements	15
Calendar of Upcoming Events.....	15



SAVE THE DATE

2015
Virginia Ready-Mixed Concrete Association

SPRING CONVENTION

May 17-19, 2015

The Greenbrier
White Sulphur Springs, West Virginia

www.VRMCA.com

2014 VRMCA Officers & Directors

PRESIDENT

Jay McNeely
Eagle Corporation

VICE PRESIDENT

Stephen Render
Vulcan Materials

SECRETARY/TREASURER

Robert O'Brian
Lynchburg Ready-Mix

EXECUTIVE DIRECTOR

Douglas Easter
Easter Associates, Inc.

PAST PRESIDENT

Bob Chandler
Chandler Concrete of Virginia Inc.

DIRECTORS

Mark Bundy
Branscome

Billy Chenault
Luck Stone Corp.

Morgan Nelson
S.B. Cox Ready-Mix

Robert Sells
Titan Virginia

Jim Simons
Capital Concrete Inc.

Jeff Slagle
Chaney Enterprises

Genevieve Walker Switzer
T&W Block Inc.

Tony Wilt
Superior Concrete

Virginia Ready-Mixed Concrete Association
250 West Main Street, Suite 100 • Charlottesville, VA 22902
Phone: (434) 977-3716 • Fax: (434) 979-2439
easter@easterassociates.com • www.vrmca.com



Concrete Field Testing Technician Certification Program

Register Now! ... Space is limited to the first 35 registrants!

**ONLINE
REGISTRATION
AVAILABLE AT**
www.vrmca.com

Upcoming ACI classes:

Roanoke	January 13, 14 & 15
Virginia Beach	January 27, 28 & 29
Richmond	February 10, 11 & 12
Harrisonburg	February 24, 25 & 26
Fredericksburg	March 3, 4 & 5
Roanoke	March 24, 25 & 26
Virginia Beach	April 7, 8 & 9
Warrenton	April 21, 22 & 23
Richmond	April 28, 29 & 30

Questions? Contact George Boykin at (434) 906-2186
or email george.boykin@easterassociates.com.

2014 VRMCA Advisory Council Regions

Jay McNeely
VRMCA Advisory Council Chairman
Eagle Corporation
Charlottesville, VA
Phone: (434) 971-2686
pjm@eagle-corp.com

BLUE RIDGE

Buddy Murtaugh Jr.
Chairman
Rockingham Redi-Mix
Harrisonburg, VA
Phone: (540) 433-9128
buddy.murtaugh@conmatgroup.com

Scott Boshart

Secretary/Treasurer
Superior Concrete
Harrisonburg, VA
Phone: (540) 433-2482
sboshart@superiorconcreteinc.com

HAMPTON ROADS

Barb Nelson
Chairman
Titan Virginia Ready-Mix
Norfolk, VA
Phone: (757) 533-7130
bnelson@titanamerica.com

Lee Flemming

Secretary/Treasurer
Essroc
Chesapeake, VA
Phone: (757) 647-9409
edward.flemming@essroc.com

NORTHERN VIRGINIA

Dave Snider
Chairman
Vulcan Materials Company
Springfield, VA
Phone: (703) 354-7100
sniderd@vmcmail.com

Marc Granahan

Secretary/Treasurer
Lehigh Cement
Stone Ridge, VA
Phone: (703) 618-0735
mgranahan@lehighcement.com

RICHMOND/CENTRAL VIRGINIA

Todd Miller
Chairman
Vulcan Materials
Chester, VA
Phone: (804) 751-2666
millerto@vmcmail.com

Brad Meyers

Secretary/Treasurer
Swope and Associates
Richmond, VA
Phone: (804) 4690-5016
bradmeyers55@gmail.com

SOUTHWEST

Sam Woolwine
Chairman
Boxley
Roanoke, VA
Phone: (540) 777-7623
swoolwine@boxley.com

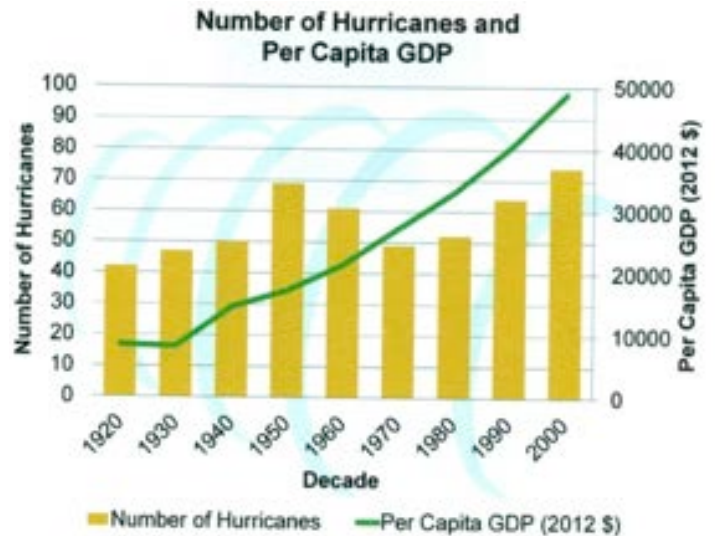
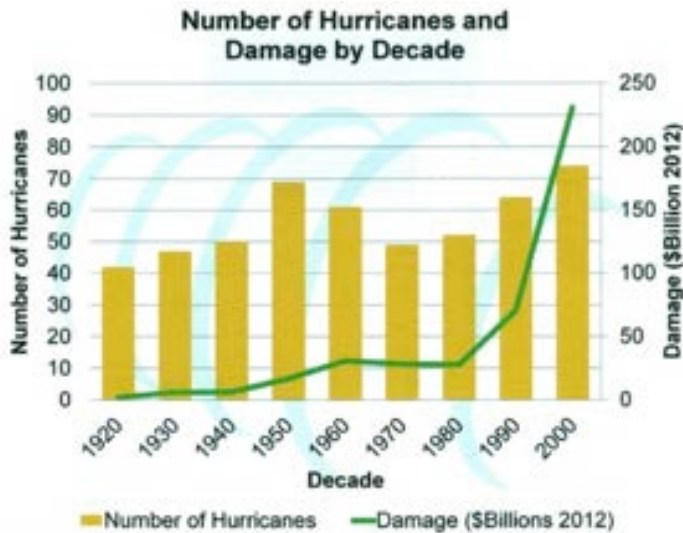
George Kuhn

Secretary/Treasurer
Chandler Concrete
Christiansburg, VA
Phone: (540) 382-1734
george.kuhn@chandlerconcrete.com

Resiliency and Sustainability are Synonymous

Resiliency is the Inherent Attribute of Concrete Systems

Recently at the VRMCA Board Meeting, board members discussed that the focus should be on Construction Resiliency. Currently MIT Concrete Sustainable Hub (CSHUB) is working on resiliency research.



What is Resiliency? It is the ability to co-exist with natural disasters and their consequences through adaptation, resistance and recovery.

In 2010, natural disasters affected more than 200 million people, killed nearly 270,000 and caused \$110 billion of damage around the world.

Disaster Can Happen Anywhere and Anytime

Wind could be severe and cause massive damage to an area. In an average year in the U.S., there are 10 tropical storms, 6 of which become hurricanes, and over 800 tornadoes touch down.

Flooding is the most common natural disaster in the U.S. A tremendous amount of growth and development has drastically changed the drainage and run off patterns across the country, and it has created flood risks in many areas. Flooding is a natural process along streams, rivers, and coastal areas, where water spreads out and distributes soils and organic matter across a wide area.

Fires kill more people than all other natural disasters combined— 3,438 in 2008, including 118 firefighters, and there were over 5 times as many injuries. The

US Fire Administration estimates property loss at \$15.5 billion. These statistics are among the highest in the world.

Although the frequency of natural disasters has not increased in the last 40 years, their economic costs are rising dramatically.

Human conflicts, terrorist or military attack could also happen at any time. Being less vulnerable is an important consideration if our cities become potential targets.

A growing share of our population and economic activity is being concentrated in disaster-prone places: along seismic zones and coastal areas. Critical infrastructures and other essential services have enabled us to thrive and grow and become increasingly interconnected to global economies. Unfortunately, a disruption at one location can have cascading consequences impacting business, health, and security. A wealthier world has more wealth at risk.

We are very vulnerable; whether in large disasters like natural forces and human conflict or personal disasters like fire. Everything we do depends on



continued on page 4

Resiliency *continued from page 3*

transportation infrastructure, and buildings performing as they are intended.

Recognizing the connection between disaster resiliency and sustainability is the key, and disaster mitigation and management are central to a sustainable future.

The question is: *Why in the US, which is the most powerful and technologically advanced country in the world, have homes and buildings not been designed and built to withstand widespread and lasting damage caused by hurricanes, tornadoes, floods and fire?* One reason is that, although 70% of the world lives in concrete structures; in the US that figure is around 15%. But the main reason could be attributed to the changes to the building codes and development patterns which cause higher damage costs.

According to Donn Thompson, Director of Market Development, for the Portland Cement Association (PCA), in looking at the National Weather Service; since 1970 the number of strong tornadoes has declined while the cost of damage has increased by 1700% in the same time frame. He believes that building code changes have contributed more to the problem. Recent codes permit the use of much cheaper materials and less sturdy construction systems, often resulting in excessive structural damage and losses in a natural disaster or fire".

A study conducted in 2004 by the Brookings Institution reported that "if we continue with national trends of development, by 2030 we will have demolished and rebuilt nearly one-third of our entire building stock – a staggering total of 82 billion square feet".

This is just because they weren't designed to last longer - to be disposable. It is fascinating to know that most of them were built to code during the last several



decades. Consolidating the model codes into the International Building Code (IBC) beginning in 1997 have served to reduce the resilience of buildings subjected to natural forces, and has also resulted in focusing on life safety rather than

property protection in the event of fire by using sprinkler systems.

For a building to be truly sustainable it should be resilient. It should consider potential for future use and re-use and have a long service life with low maintenance costs. In addition, a sustainable building should be designed to sustain minimal damage due to natural disasters such as hurricanes, tornadoes, earthquakes,

flooding and fire.

Roads, bridges, ports, and utility infrastructure are essential for us to function safely and efficiently.

Resilient buildings and infrastructure form the base on which we connect as communities, as families, as a society, which make us feel safe and protected.



What is the solution?

The solution may fall under adopting high performance building standards and buildings with stronger and more robust materials. Robust building materials should be durable, non-combustible, water resistant, energy efficient, versatile and strong.

Concrete systems offer all of these benefits, and in every case can help to mitigate the impact of the disasters

continued on page 6



PROVIDING HIGH QUALITY
REFINED POZZOLAN
TO THE MID-ATLANTIC REGION

MARKETING

MANUFACTURING

TRANSPORTATION

ENGINEERING



Available in bulk tanker deliveries, 2000-lb (0.9 Metric Ton) Bulker Bags, or easy to handle 50-lb (22.7kg) bags palletized on 2000 – 3000-lb skids.

For transportation/dispatch: Brannon McGiboney (301) 259-2179

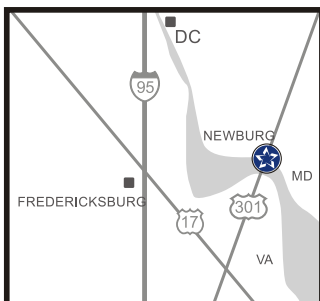
Let one of our Technical Sales Representatives show you how STAR® Refined Pozzolan can improve the quality of your concrete.

Hank Keiper, P.E. 804.380.8078

Tom Wahl, P.E. 540.525.9331

www.sefagroup.com


MORGANTOWN STAR®
Newburg, MD

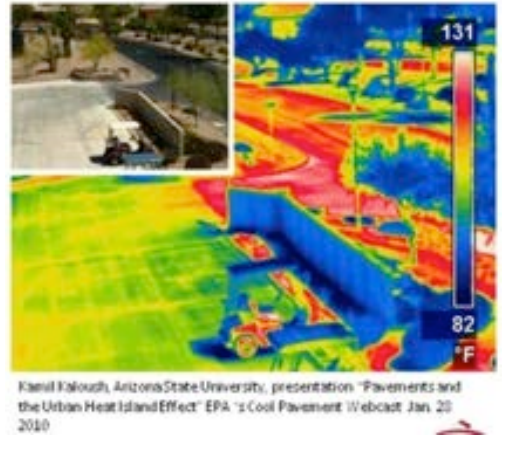


Resiliency *continued from page 4*

offering a sense of safety, stability and permanence. A variety of ways exists to use concrete to make buildings more disaster resistant, durable and energy efficient. Concrete wall (ICF or tilt-up), floor, and roof systems offer structures that can resist wind, fire flood and manmade conflicts. Concrete roads last longer, requiring less maintenance, rehabilitation and reconstruction. Pervious concrete can help to reduce the risk of flooding.

In addition, concrete buildings using thermal mass, moderates temperature swings resulting in much higher energy performance and thermal comfort. Concrete pavement and cool roofs also provide a reflective surface which reduces the urban heat island effect. According to USGBC, cities and urban areas are on the average 10 degrees higher in temperature than the surrounding areas.

“Resiliency and Sustainability are the Inherent Attributes of Concrete Systems”. 



**THE BENCHMARK*
IN CRYSTALLINE
WATERPROOFING.**

Just pour it in your mixer; it's that easy.
We provide:

- Step-by-step instruction
- Batch customization
- Field support

Only Kryton protects your concrete *and* profitability permanently.

**Most Specified.
Most Trusted.
Be Sure. Be Kryton.**

*The inventor of the crystalline admixture and the only true Permeability Reducing Admixture for Hydrostatic Conditions (PRAH) according to the American Concrete Institute (ACI). Refer to: ACI 212.3R-10 Chapter 15.

www.kryton.com
1.800.267.8280



BE SURE. BE KRYTON.

NVCAC Sponsored NRMCA Pervious Concrete Certification Course & Hands-On Demonstration

By Hessam Nabavi,
Director of Industry Services

NVCAC/VRMCA sponsored a NRMCA Pervious Concrete Contractor Certification Course (Pervious Concrete Technician) and Hands-On Demonstration in November. Participants in the course consisted of county engineers, contractors, inspectors and ready mix concrete quality control personnel.

William Rafferty with Swope & Associates, Inc. was the instructor for the review session of the course, and NRMCA Pervious Concrete Craftsman, Matt Cockerham with North Star Foundations conducted the demonstration and hands-on training. Throughout the placement, Matt was answering questions and pointing out specific details.

We also had Robb Jolly with Revision Strategy and Design to participate in the event and to shoot stills and video of the demonstration which will be used for training for EPA Region 3 Water Protection Division.



In conclusion, we want to thank the following members whose effort is responsible for the success of this event.

Lewis Lee with Luck Stone Corporation for taking care of the logistics, Lewis Murphy, Plant Manager at Luck Stone Leesburg Quarry for providing before and during the event, William Rafferty

with Swope & Associates, Inc. for teaching the course, Dave Snider, NVCAC Chairman with Vulcan Materials for providing pervious concrete, Matt Cockerham with North Star Foundations for partnering with NVCAC in promoting concrete and for teaching the placement process. 🚚

New Tilt-Up Theatre Complex in Blacksburg



The First & Main Shopping Center in downtown Blacksburg is about to have a new anchor store. Frank Theatre's CineBowl and Grille is taking shape and should open in early 2015. The shopping center has awaited a major tenant since new ownership took over in 2012, and the 60,000 sq. ft. facility that will house ten "regular" and 3-D movie screens, an IMAX theatre, a 12-lane bowling alley, a bar and a grille, is a tilt-up structure of more than 100 separate panels. The Jupiter, Florida-based company hired Stewart Perry, a Birmingham based construction giant, to build the facility – similar to five others that Frank Theatres is building or has built in locations from New York to Florida. The 100 year old company operates 25 theatres in five states,

and agreed to the project after the Town of Blacksburg rejected the proposal of the former owners to build a WalMart on the site.

The structure will stand almost 60 feet tall at its highest point. Inside, patrons can order meals, have them delivered to the theatre or the bowling alley, be entertained in the arcade or enjoy any, or all, of the options. Online ticket ordering is available, resulting in reserved seats in the stadium seating style.

The new owners of First & Main, Blacksburg APF Partners, were committed to building a construction slab even before the theatre group was signed. After Stewart Perry was on board, tilt-up exterior work began. "It was a long process," said ConMat Group VP Eddie Harris about the time it took to get from slab to erected walls, but many months and several thousand cubic yards of concrete later, the shell of the building is almost complete. Concrete contractors included Southeastern Concrete of North Carolina and T&M Tilt-Up from Georgia. The electrical, plumbing and interior painting work continues while the floors for the bowling alley and theatres are installed. An early 2015 opening may be optimistic, but Blacksburg citizens will soon have a spectacular new outdoor mall in which to shop, eat and be entertained. 🚚

VRMCA Board Visits VA Tech Concrete Lab

By Bob Nablo,
Director of Industry Services

It had been a number of years since the Association's Board of Directors had visited the VRMCA-sponsored concrete lab at Virginia Tech, so in early November Executive Director Doug Easter and Board members did just that, in conjunction with their annual Board Retreat. Many VRMCA members will recall the construction of Bishop-Favrao Hall for the Tech Building Construction Department in 2007, but a number of the faculty and administrative staff have changed over the years. The Building Construction Department, once again headed by Dr. Yvan Beliveau, is under the Myers-Lawson School of Construction, led by Dr. Brian Kleiner, and the VRMCA Concrete Lab is available to students in the building. Dr. Christine Fiori has been the VRMCA contact for several years, but she will be relocating to the northeast at the end of this academic year, and Dr. David Goldsmith will be taking her place.

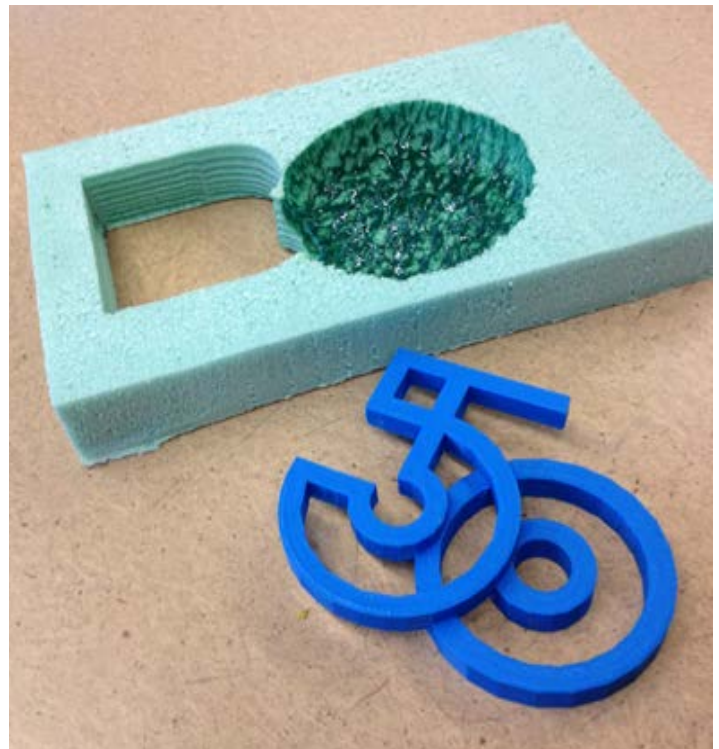
VRMCA's visit to the lab began with a very fine presentation on recent projects by two Building Construction students, Matt Harrington and Rex Holmes, both



of whom expressed interest in working in Virginia in the construction industry after graduation. After the presentation the group was joined by Dr. Goldsmith and toured the lab, stopping for detailed explanations about ongoing projects or specific pieces of equipment along the way. Board members peppered Dr. Goldsmith and the students with questions about projects and possible research ideas. Members also discussed possible internships for students, the need for additional pieces of equipment and the

possibility of having VRMCA members give classroom presentations.

In the spring semester VRMCA will likely take the compressed air operated "air cannon" to Va. Tech for one or more demonstrations. The Building Construction Department has expressed interest in using the cannon for testing, and certainly has the facilities and the space for it to be used. This is always a good opportunity to demonstrate the strength of concrete structures and related products, and is always a popular show. 🚚



Kirchain Named Co-director of Sustainability Hub

Randolph Kirchain — an engineer who researches the environmental and economic implications of materials selection in the manufacture and lifespan of products from electronics to pavements — has been named co-director of the MIT Concrete Sustainability Hub (CSHub). Professor Franz-Josef Ulm, faculty director of the research center, announced the appointment Oct. 15.

“Randy has done important work that sheds light on how design, materials, and process work together over the lifespan of a product,” says Ulm. “His expertise, informed by strong connections with industry, has guided the CSHub’s findings about concrete’s impact on infrastructure.”

Kirchain is a principal research scientist in the Materials Systems Laboratory, part of MIT’s Engineering Systems Division. As a member of the CSHub, he has conducted studies on the economics of different types of pavements in varied climate and traffic scenarios over decades of use, and on how to estimate the cost of damage from hazards such as hurricanes over the life cycle of a house or building.

The CSHub is a research center established in 2009 in the Department of

Civil and Environmental Engineering with grants from the Portland Cement Association and Ready Mixed Concrete Research & Education Foundation. Its aim is to accelerate emerging breakthroughs in concrete-related research and swiftly transfer those advances into industry.

Concrete is the most widely-used building material on Earth. One goal of the research center is to find ways of reducing the carbon footprint of concrete’s basic building block, cement, through manipulation of the material at the nanoscale and through more sustainable practices in use of cement. Another goal is to quantify the ways in which building and infrastructure materials — including concrete — affect environmental and economic costs over a structure’s entire lifespan, including its decades of use.

“There is a lot of discussion in the U.S. and worldwide about efficient and effective



ways to manage infrastructure and sustainable cities — and our ongoing work in the CSHub aims to provide the tools needed to address that challenge,” says Kirchain, who received a PhD in materials science and engineering from MIT in 1999.

Scientists and engineers from the departments of Civil and Environmental Engineering, Chemical Engineering, Materials Science and Engineering, Nuclear Science and Engineering and the Engineering Systems

Division participate in CSHub research. The center recently began a new five-year phase in which it will:

- build on its breakthroughs regarding the composition of concrete in order to optimize the material's durability while minimizing its carbon footprint;
- integrate life-cycle thinking into building design; and
- implement the CSHub’s findings into the engineering of infrastructure. 🚚

90 Year Old Concrete Road Presentation



Dr. Nancy Dye of Roanoke recently entertained the Southwest Virginia Council with her presentation on the original paved road up Mill Mountain in the city. In the early days of the 20th century Roanoke was searching for ways to distinguish itself, having already erected an inclined railcar attraction — also called a funicular — up the side of the mountain in 1909. To attract visitors the owners built walking paths, benches, a gift shop and telescopes on the summit. The operation saw a profit in its first year, but losses followed every year after that. In 1919 the investors sold the property to a local real estate magnate, William Henritze. In 1922 he would construct a toll road to the top of the mountain and to the home — called Rockledge Mansion — he had built near the summit using \$90,000 of his own money. This nearly two-mile, 6 degree

inclined road was constructed of concrete, wide enough for cars to pass and banked correctly on the ever-climbing, serpentine path. It even included a “pigtail” — an over-and-under bridge that circled back on itself and continued the upward climb. Most of the labor was, of course, by hand and the concrete was made of local materials and mixed on-site in a steam powered drum. At the time of its construction it was reported to be the longest continuously paved concrete road in the world. The road became nationally well known, and even received publicity overseas. At one point hill-climb races were held on the road. Portions of the original road, including the toll booth and the bridge, still exist, although the road is no longer open to vehicular traffic and the original concrete has been mostly overlaid with asphalt.

Dr. Dye and her husband are the current owners of the home and have made extensive renovations and repairs. She says that many of the tools to build the road still lay about the property, and waste materials can still be found. She enjoys giving her presentation to civic groups and interested parties, with a “pie-in-the-sky” hope that some group could be put together to reconstruct the concrete road to its original glory. Dr. Dye has also announced her intentions to run for the Virginia State Senate in 2015. 🚚

Coastal Virginia Welcomes AIA National President: Outreach, Architecture & Resiliency

By Ann-Germaine Danz,
Director of Industry Services

In partnership with AIA Hampton Roads and Women in Design, native-Virginian and AIA National President Helene Combs Dreiling was invited to share her thoughts on the state of the architecture profession. Hampton Roads was one of three AIA chapters in the country to host Mrs. Dreiling. Around eighty architects, interior designers, and consultants attended the happy hour and presentation on the fourteenth floor of Clark Nexsen's newly-constructed office tower in Town Center. Much of her work during her tenure has been concentrated on overseas outreach to establish new chapters serving architects practicing throughout the Middle East, Hong Kong, and Africa. The event billed as "A Conversation with our AIA President" sought to chart the path the evolving role of architects in society and present outreach to the broader community. A few themes materialized as central to the AIA mission for the next year: social outreach, advocacy, emerging architects, and designing for resiliency.

Social media presence and outreach to the design, construction and engineering community is central to the focus of the AIA. Ms. Dreiling announced a three-year effort to revamp the website. In addition, an advertising professional out of Texas has volunteered to manage the AIA campaign with radio, print and social media outreach. One attendee suggested marketing the broader role of architects and their ability to make places out of spaces. He had for many years written a column in the Homes section of the Norfolk newspaper sharing ideas on the custom work architects do to design a home for a specific family versus a speculative building for occupants. Advocacy has been a part of the AIA at the national policy level, but is only recently entering the priorities of local chapters. One project was mentioned with a large Richmond-area developer where members of AIA Richmond joined together to encourage the project to move forward.

Emerging architects and the Young Architects Forum were discussed in terms of encouraging professionals to seek their initial license. Helene shared that when she graduated from Virginia Tech, although a great student she was not among one of the top core designers in her class. It took her about fifteen years of practice to feel the confidence that she could make a difference with her design work. Attendees asked questions about being a "re-emerging" professional, or the path of entering the workforce after raising children. Women in Design initially invited Mrs. Dreiling to Virginia Beach to attend the wrap-up of a series of monthly mentorship circles comprised of interns, mid-career professionals, and established



leaders in the Hampton Roads design community.

Designing for a more resilient community is the AIA objective that stands out as an opportunity for the concrete industry and has also been expressed as a promotional objective for VRMCA. Resiliency addresses the ability of a structure to withstand a storm or major weather event. Since 1972, the AIA has trained and encouraged members to voluntary damage assessments for homes and small businesses after a disaster. It is a public service to collect data and improve the timeframe for rebuilding. Insurance companies encourage resilient construction methods because structures built with these methods often do not need to be rebuilt. This saves money for the insurance customer, reduces the inconvenience of being displaced, and is a sustainable solution that keeps building materials out of the landfill. At the request of local stakeholders, the AIA Disaster Assistance and Resilience Program conducted a community assessment of the Tidewater area in 2009. In addition, the Hampton Roads Planning District Commission in partnership with NOAA, Virginia Coastal Zone Management Program, and Virginia Sea Grant conducted a series of studies on resilience for the Tidewater region resulting in a 2013 report documenting their findings. The combined efforts of these interest groups support planning for sea level rise, climate change and coastal resiliency.

Organizations beyond the American Institute of Architects have engaged in urban resiliency campaigns. The Rockefeller Foundation's "100 Resilient Cities," addresses the capacity for individuals, communities, institutions, and businesses to

thrive, grow and adapt in a city no matter what stresses they collectively experience. In response to Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee, New York convened the NYS 2100 Commission to develop strategies and design redundancies in the system that would allow residents to bounce back after natural disaster. The photograph below from Concrete Homes Magazine shows the rubble foundation from where the neighbor's traditional home once stood and the fully-intact ICF house that survived the winds, rain, and debris of Sandy.

Central to the NYS 2100 report is a call to rebuild smarter by ensuring replacement of structures with better options and green infrastructure. MIT's Concrete Sustainability Hub and NRMCA both have studies quantifying the benefits of resilient concrete construction over stick built or steel frame structures. FEMA and the National Institute of Building Sciences have reported that for every dollar spent on mitigation saves at

least four dollars on response and recovery. Architecture for Humanity has been engaged in both disaster preparedness and community resilience to improve the build environment and technical awareness to help avoid preventable tragedies. AFH's National Resilience Program is based in five U.S. metropolitan areas: Pacific Coast (earthquakes and tsunamis), Gulf Coast (hurricanes and climate change), Midwest (tornadoes and seasonal flooding), Mid-Atlantic (hurricanes), and Northeast (northern storms and urban threats).

Hurricanes and local flooding are a concern for the Coastal Virginia communities in Hampton Roads and the Eastern Shore. Severe storms that hit the coast also effect inland regions, albeit at a lower intensity. Investment in resilient communities provides a safety net for residents to lessen the disruption from daily lives, lowers the financial impact on insurance companies in charge of replacing damaged structures, and offers a more sustainable material solutions for coastal construction.. 🚚

Architects On-Site for Ready Mix Production

Architects from the Virginia Beach office of Clark Nexsen joined the Hampton Roads Concrete Advisory Council for a field experience observing ready mixed concrete production. Designers working under architect Paul Battaglia have been making an effort to get out of the office and into spaces of production to get a better understanding of the entire process of making a building. They were excited to hear about the many ways that ready mixed concrete can be customized for a specific application. Equally as important as the process of quality concrete production is testing for concrete quality.

Pat Lane and Alan Tuck from Froehling and Robertson joined us for an AIA continuing education presentation on Special Inspections and updates to the International Building Code 2012. Alan shared the importance of taking a sample of fresh concrete from the truck for quality control purposes. He also covered how to fill out the statement of special inspections with regards to project-specific needs. The architects were interested in the process of developing and approving mix designs. They wondered if it was a continuously evolving process or something that you develop and are set for years. As new chemical admixtures are developed and supplementary cementitious materials like slag and fly ash are less available due to environmental regulations and production constraints, things are changing constantly. Similarly, the technical committee has been discussing mix design approval for use of manufactured sand where supply of natural sand is limited in areas of our state. Mr. Tuck covered the care of concrete test samples and Jim Simons discussed the preferred ways of carrying cylinders. The designers saw both the photographs of approved and unapproved methods found on jobsites as well as the backup samples that many producers create in their own labs for verification.

Capital Concrete's Sarah Beasley offered her mixer truck driver training room for the seminar, President Boo Twohy greeted the architects and Vice President Jim Simons guided us all on a tour of concrete production. Lee Flemming of Essroc Cement was on hand as well to direct our guests on site. Dispatch and batching provided a great view into the logistics of the ready-mix operation for an outsider. We were shown the process of scheduling, tracking trucks and communicating with drivers. The designers were interested in the many colored concrete options available from just a few pigments. This reinforced the custom options of ready-mixed concrete for design possibilities. 🚚



Concrete Concerns in Cold Weather

By Ann-Germaine Danz,
Director of Industry Services

As temperatures shift from mild to crisp to frigid this time of year, concerns for ready mix concrete producers also adjust to ensure the quality of their product. Technical committee members were invited to speak at our regional councils on the topic of cold weather concrete. The Hampton Roads Advisory Council hosted Bill Denison, Concrete Technologist with Titan America. Central Virginia Advisory Council hosted Bob Neal, Technical Services Engineer with Lehigh Cement Company. Both presentations proved informative for attendees and are available on the VRMCA website to those that were unable to be present. Of primary concern when considering whether or not to switch over to cold weather concreting is three day forecast for air temperature. For more detailed information reference NRMCA's Concrete In Practice document, **CIP 27 – Cold Weather Concreting**. Priorities for producers to keep in mind for cold weather concrete are delivering quality concrete at adequate temperatures, curing in favorable conditions, and protection of jobsite specimens.

Cold weather is when the average temperature shifts below 40 degrees Fahr-

enheit for three consecutive days and never jumps above 50 degrees for more than a half day. A day is considered to be a 24-hour period (not an eight or twelve hour work day). Under freezing conditions less than 25 degrees, concrete will freeze and will not set. Low temperatures can slow or stop the rate of hydration of cement paste, so crystals do not form and strength does not increase. For a given concrete section **ACI 306R, Table 3.1** lists minimum concrete temperatures as mixed for a given ambient air temperature. The table also indicates the minimum concrete temperature that must be maintained by section size and maximum gradual temperature drop in the first 24 hours. When placing concrete in cold weather conditions, temperatures should not exceed the given range by more than 20 degrees. Conditions above the prescribed range can result in increased water demand, increased slump loss, elevated thermal differentials, and increased thermal cracking. On the surface of the placed concrete one may see cracking, blistering or crusting.

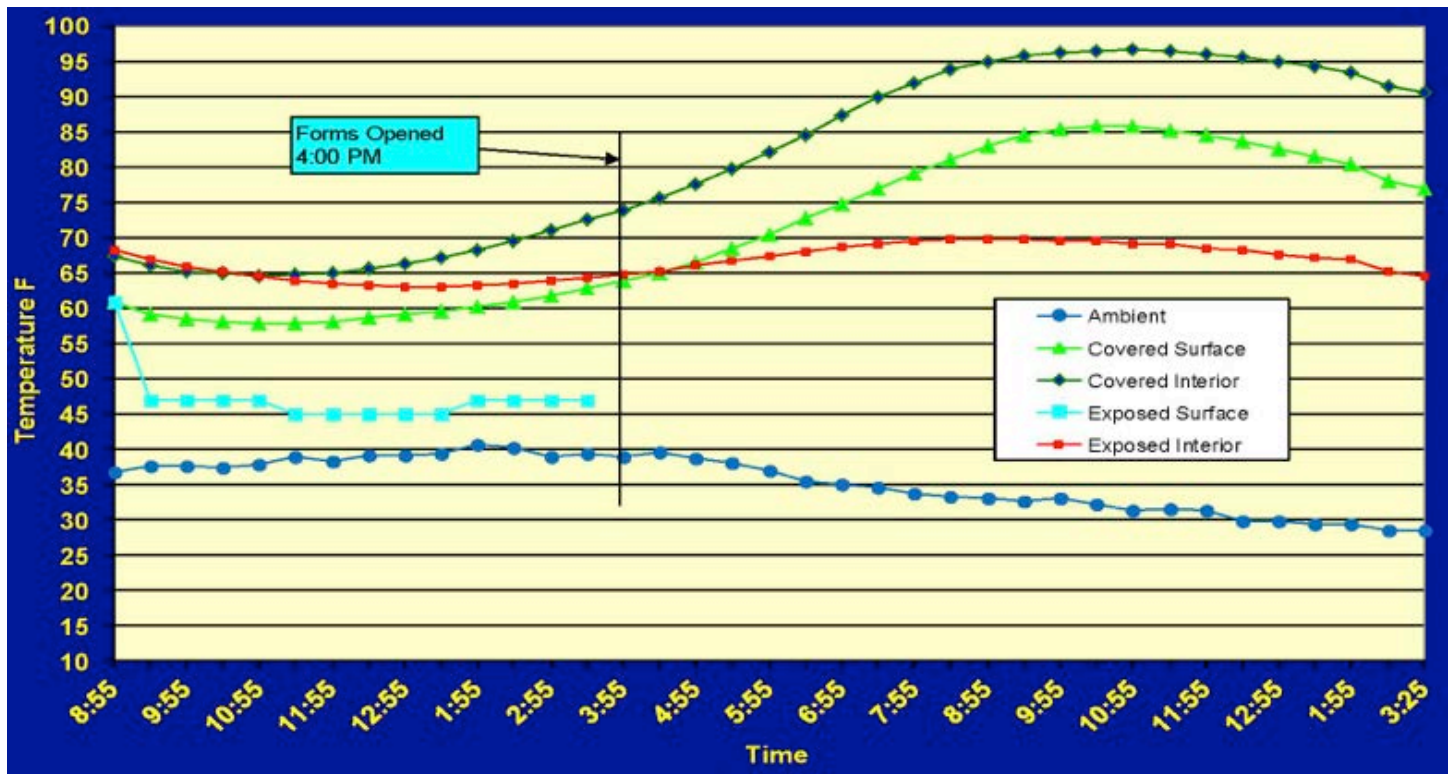
Protection of freshly mixed concrete from freezing during curing is especially important until the degree of saturation of has been reduced by the hydration process.

Saturation is considered to be 91.7%. The first few hours after placement are critical for concrete to reach 500 psi and obtain final set.

Preventative measures may be taken at the jobsite to protect fresh concrete from early age freezing. Before placement, make sure that:

- Surfaces are at least 35°F
- Subgrade is not frozen
- All ice and snow is removed
- Construction of wind breaks or barriers
- Insulating blankets are provided
- Provide heating units if necessary

After placement of concrete in cold weather, it is important to protect the concrete from freezing during curing. Moist curing and insulating blankets can be used to trap heat from the heat of hydration. Reference **ACI 306R Tables 5.1 or 5.3** to determine the length of time for protection. Table 5.1 covers the length of time for protection to prevent damage from early age freezing of air-entrained concrete. Table 5.3 addresses the length of time for protection depending on service category (loaded, partial load or unloaded). Prior to the freeze-thaw cycle in a saturated condition, concrete strength should exceed 3500 psi. In-place strength,



rather than time, is used as the indicator for when to remove forms. Options for gauging strength of cold weather concrete in-place include:

- Field cured cylinders (ASTM C 31 and CIP 34)
- Cast in place cylinders (tested per ASTM C 873-04, ASTM C 42)
- Pull-out testing (per ASTM C 900-06)
- Maturity method (ASTM C 1074-04)

Forms provide an additional level of insulation on concrete work in cold weather to protect the slab from freezing. Standard cured specimens used for acceptance must be protected from the elements to best represent the mix design. Reference ASTM C 31 and ACI 318 for additional information on making and curing test specimens. Leave specimens protected for at least 8 hours after final set and not more than 48 hours in the field. Beyond the standard rules of thumb for cold weather concrete, Bob Neal presented a few theories of how the care of fresh concrete in cold weather can impact quality.

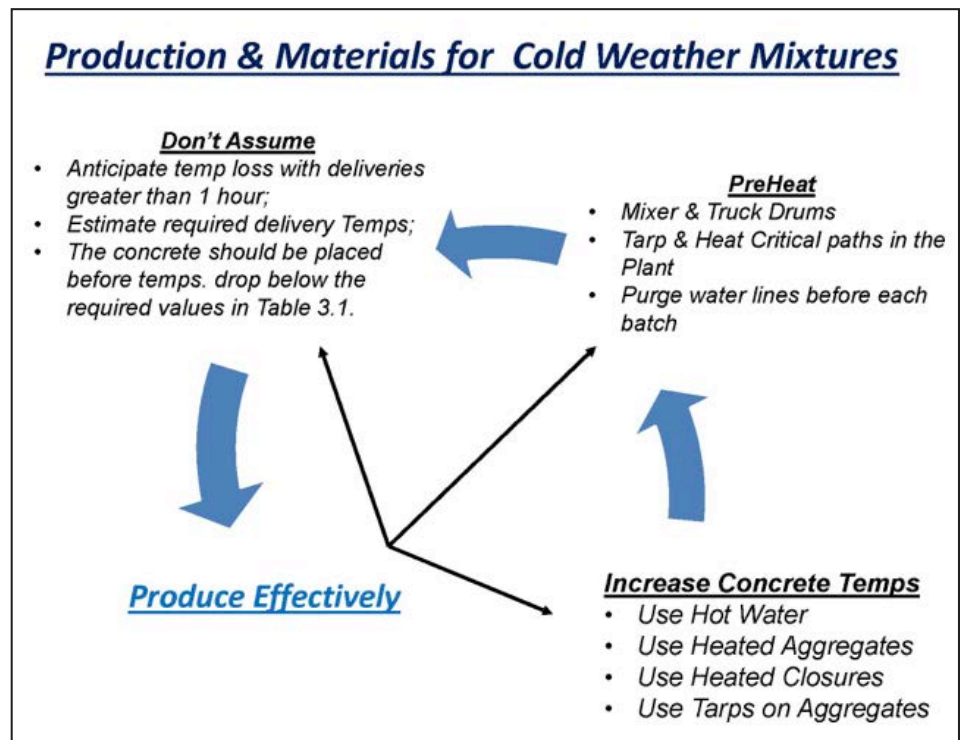
Wind chill is one factor that is added onto weather forecasts during winter months to describe the perceived “feel” of the air temperature. Mr. Neal asked whether concrete would also be impacted by wind chill. In a test, two precast concrete units were monitored in an open, drafty curing area, one control unit was left exposed while another was covered in plastic and protected from wind. Readings taken every hour on both units revealed that wind has a significant impact on interior and surface temperatures and the simple act of shielding curing concrete from wind can be very effective.

Improperly prepared subgrade can impact concrete in cold weather as well. As was stated previously, concrete should never be placed on frozen subgrade. Cold subgrade can cause heat flux, or the transfer of colder temperatures to fresh concrete much like heat leaving a warm body. John Hellyer of Luck Stone offered the examples of subgrade materials that might act like insulating Styrofoam (dry subgrade with air space) or conductive marble (cold, dense). In the table of thermal properties, one can see that moist clay (3.12) performs very similarly to ice (3.8).

Soil conditions can lower concrete

Table 1: Thermal Properties of Various Materials

Material	Specific Heat Capacity Btu/lb °F	Thermal Conductivity Btu/ft hr °F
Air	0.24	0.041
Water	1.0	1.0
Ice	0.50	3.8
Clay – dry	0.19	0.26
Clay – moist	0.35	3.12



temperatures 8°F-10°F and increase set time by 3-5 hours. Protective measures to insulate freshly placed concrete can have unintended consequences for concrete quality. One example is carbonation. Heated enclosures come with the risk of carbon dioxide exposure, which is odorless, heavier than air, and increases solubility as temperature decreases. Concrete quality is damaged at concentrations of 0.15%, while most humans get sick at 3%. Carbonation from carbon dioxide and water forming carbonic acid impacts the top 1/16 to 1/2 inch of concrete resulting in dusting of the surface.

Ready mixed concrete producers should examine their production facilities to opti-

mize success in cold weather conditions. Pre-heat mixer trucks so concrete is not batched into a cold drum. Hot water lines should be run to get cold water out prior to mixing. Commonly used paths within the facility can be covered in tarps and heated to insulate the work area at the plant. In addition, aggregate piles can be heated or tarped to increase concrete temperature. When placing concrete in cold weather, take precautions to protect the work area from wind exposure to minimize wind chill. Unexpected results can occur when the weather reaches extremes, so it is important to monitor air temperatures and concrete temperatures to ensure a quality product. 🚚

OBAMACARE UPDATE:

Hospitalization Services Required for Plan to Meet Minimum Value

On November 4, 2014, the Internal Revenue Service (IRS) released guidance (Notice 2014-69) clarifying that certain group health plans that do not provide for hospitalization services or physician services or both will fail to satisfy the minimum value requirements for purposes of the employer mandate of the Affordable Care Act (ACA). This means employers that do not qualify for transition relief and offer such health plans will not be considered to meet the requirements of the employer mandate and may be subject to a penalty.

Limited transition relief is provided for employers that, prior to November 4, 2014, have entered into a binding written commitment to adopt, or have begun enrolling employees in, a group health plan that does not provide for hospitalization or physician services. In addition, employees who otherwise qualify for a premium tax credit at a state or federally-run health insurance exchange will still qualify for such credit if offered coverage that does not provide for hospitalization or physician services.

Background

The employer mandate requires employers to, among other things, provide minimum essential coverage that provides minimum value and is affordable to their full-time employees or pay a penalty if an employee not offered such coverage goes to a state- or federally-run health insurance exchange and qualifies for a premium tax credit under section 36B of the Internal Revenue Code (Code). ACA regulations require plans to determine "minimum value" by using a safe harbor or a calculator issued by the Department of Health and Human Services (HHS). Previously, the calculator allowed a plan to meet "minimum value" even if it did not provide for hospitalization or physician services.



Notice 2014-69 provides that HHS and the IRS intend to promptly amend regulations to provide that a plan will not provide "minimum value" if it excludes "substantial coverage" for in-patient hospitalization services or physician services or both. The IRS has stated that it expects to issue final regulations in 2015, and that the rules will be effective on the date final regulations are issued – not at the end of the plan year.

Limited Transition Relief Available

Limited transition relief is provided to employers that, prior to November 4, 2014, have entered into a binding written commitment to adopt, or have begun enrolling employees in, a group health plan that does not provide for hospitalization or physician services or both. The transition relief applies only to employers that start their 2015 plan year before March 1, 2015. The transition relief will last until the end of the employer's 2015 plan year.

Employees with Non-Hospitalization/Non-Physician Plans Eligible for Subsidies

Pending final regulations, employees who are otherwise eligible for premium

tax credits at a state- or federally-run health insurance exchange under section 36B of the Code will still be eligible for such subsidies if offered a group health plan that does not provide for hospitalization or physician services.

An employer that provides a group health plan that does not include coverage for hospitalization or physician services (including employers that qualify for transition relief):

- Must not state or imply in any disclosure that the offer of coverage under the plan precludes an employee from obtaining a premium tax credit at a health insurance exchange if the employee is otherwise eligible; and
- Must timely correct any prior disclosures that state or imply that the plan would preclude an employee from obtaining a premium tax credit at a health insurance exchange if the employee is otherwise eligible.

An employer that also offers an employee another plan that is not a non-hospital/non-physician services plan that is affordable and provides minimum value is permitted to advise the employee that the offer of this other plan will or may preclude the employee from obtaining a premium tax credit.

Takeaway for Employers

Employers should take steps now to ensure the group health plans they offer meet the IRS guidance requirements on hospitalization and physician services and, if they do not, should determine whether they meet the transition relief rules. Employers whose group health plans do not meet the requirements also should revise their employee disclosures as discussed above. 🚚

©2014 FordHarrison, PLC

Article courtesy of John G. Kruchko, and Kevin B. McCoy of FordHarrison LLP.

John G. Kruchko is a Partner with the Labor & Employment Law Firm of FordHarrison, LLP in Tysons Corner, Virginia; Kevin B. McCoy is also a Partner with the Firm. An original version of this article was prepared by, Timothy L. Williams, a Partner in the Firm's Atlanta office. For more information, please contact Mr. Kruchko or Mr. McCoy at (703) 734-0554 or by e-mail at jkruchko@fordharrison.com, or kmccoy@fordharrison.com. This article is published for general information purposes, and does not constitute legal advice.

Construction Site Concrete Washout Requirements



Previously we reported to you that new Department of Environment quality regulations, effective July 1, 2014 require jobsite washout facilities. These requirements are buried in the 2014 Construction GP Stormwater Pollution Prevention Plan (SWPPP) and the washout requirements are located within this document but are detailed as follows in Part II D 4 e(5):

“(5) Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters”

The question has arisen regarding which sites require these wash water containers. In our discussions with DEQ it has been stated that in any subdivision wash water containment is required, but it is not required on every lot. A central facility can be used as long as it is convenient to all lots and is used accordingly.


Outside of a subdivision no washout basin is required unless an acre of land is disturbed by the building project. Disturbed land includes driveways and any other excavated land.

In any case, it is illegal to put washout into a stream or storm drain. Washout facilities can vary and are required by the permit issued to the general contractor or developer. Some contractors supply a pit made from a couple of backhoe scoops lined with a leak proof plastic tarp. Others form a pit by placing square hay or straw bales in a square and drape a tarp over them.

Once the water has evaporated, the hardened concrete should be disposed of with other solid construction trash.

As of July 1, 2014, localities and DEQ are charged with enforcing these regulations and it is expected that inspections will be frequent. The construction site superintendent should make ready mixed concrete truck drivers aware of washout facility locations and be watchful of improper dumping of cementitious material.

These regulations pertain to construction sites, and do not pertain to your plant sites, but there are requirements in these regulations if you install a portable plant on a jobsite.

To comply with these requirements, it will be advisable to work closely with your customers. 

On the Horizon Calendar of Upcoming Events

DECEMBER 3, 2014

**Henrico Business Council
Networking Breakfast**

7:00 AM - 9:00 AM

Reynolds Community College
Goochland, VA

DECEMBER 5, 2014

NRMCA Webinar

12:00 PM - 1:00 PM

DECEMBER 9, 2014

HRCAC Business Meeting

11:30 AM - 1:00 PM

Crazy Buffet & Grill
Chesapeake, VA

DECEMBER 11, 2014

**NVCAC Council Meeting &
Holiday Luncheon**

11:30 AM - 2:00 PM

DECEMBER 12, 2014

NRMCA Webinar

12:00 PM - 1:00 PM

DECEMBER 15, 2014

**NOVA/DC Pervious Concrete
Training**

1:00 PM - 3:00 PM

Washington, DC

DECEMBER 16, 2014

CVCAC Holiday Happy Hour

3:00 PM - 5:00 PM

American Tap Room
Richmond, VA

MAY 17-19, 2015

VRMCA Spring Convention

The Greenbrier

White Sulphur Springs, WV

Please visit the online calendar
for an up-to-date list of events.
www.VRMCA.com/calendar



WHEN SO MUCH IS RIDING ON
YOUR CHOICE OF CEMENT,
MAKE THE **RIGHT** CHOICE

THE **RIGHT** PRODUCT & SERVICE
IN THE **RIGHT** PLACE
AT THE **RIGHT** TIME

Roanoke Cement has supplied ready-mix producers and the construction industry with consistent, dependable, high quality cement for over 50 years.

A superior product, backed by excellent customer service, the latest technology, and reliable distribution shows our commitment to serve our customers.

When so much depends on your cement, choose Roanoke Cement. Call 800-782-7622 or 540-992-1501 today.

The Smart Road bridge, at 175 feet tall, is Virginia's tallest bridge. Approximately 9,647 cubic yards of high-strength concrete were used to construct the 2,000-foot long bridge.

ROANOKECEMENT™

A TITAN AMERICA BUSINESS