



IRMCA News

Autumn 2012 Vol. 31, No. 3

Illinois Ready Mixed Concrete Association

THE **concrete** **parking lot** **PROMOTION** **ISSUE**

CHEMSTATION

Our System Is *Your* Solution



CHEMSTATION OFFERS A FULL LINE OF PRODUCTS TO SERVICE THE CONCRETE INDUSTRY INCLUDING:

- REMOVAL OF CONCRETE, ROAD FILM, RUST, AND OXIDIZED DEPOSITS
- CONCRETE REMOVAL ON TRUCK BARRELS AND TRUCK BODIES
- CORROSION INHIBITION
- SAFE ALTERNATIVES TO HYDROCHLORIC ACID
- CUSTOMIZED EQUIPMENT AND FOAMING APPLICATORS

THE CHEMSTATION SYSTEM OFFERS CUSTOM-FORMULATED CONCRETE CLEANING CHEMICALS, DELIVERED TO ENVIRONMENTALLY-FRIENDLY REFILLABLE CONTAINERS.

For more information please contact:

Andy Lasker
Vice President
(Mobile) 773.414.5544



ChemStation of Chicago
50 Frontier Way
Bensenville, IL 60106
630.227.9737



Content

Autumn 2012

5

Director's Letter

7

Parking Lots in Illinois

NRMCA's National Clients, 8
Government Projects, 9
Schools Choose Concrete, 10
Business Projects, 12
Automobile Dealerships, 16

19

Promotion Advice

Show Me, 20
Capping, 22
Concrete for Parking Lots, 24
What Comes First?, 26

27

Promotion Resources

Equivalency Chart, 31

33

Sustainability

Sustainable Concrete Facts, 34
Case Study, 37
Concrete & LEED, 38

On the cover is a photo of John A. Logan Junior College in Carterville.

"I've got a parking lot that I placed in 1981 and only about 3% of the lot has been removed and replaced. An asphalt lot that old is called subbase."

Greg Scurto, Selling
Concrete Parking Lots,
concreteconstruction.net

IRMCA NEWS

Volume 31, Number 3 • Autumn 2012

Illinois Ready Mixed Concrete Association



303 Landmark Dr., Ste. 1-A
Normal, IL 61761

Phone: 309-862-2144
800-235-4055

Fax: 309-862-3404

E-mail: irmca@irmca.org

Web: www.irmca.org

*Working together to create value,
teach excellence, and produce quality.*

Officers

George Mobarak, President
Scott Maberry, Vice President
Carol Hustedde, Secretary/Treasurer

Directors

Jim Amelung, Mike Blunier, Kyle
Cain, Chad Groff, Cheryl Moeller,
Justin Ozinga, Dan Stevens

Staff

Bruce Grohne, Executive Director

Jennifer Bedell,
IRMCA News Editor
Special Projects Coordinator

JoAnn McKeown, Office Manager

John Albinger, Technical Consultant

Jim Randolph, Government Relations

Dick Plimpton, P.E., Consultant

Mission

To be the voice for the ready mixed
concrete industry in Illinois. To promote
the use of quality ready mixed concrete
through innovative educational programs.

To accomplish common goals as an
organization that cannot be done individually.

Call John Geyston to see how together, we can build something great!
217-793-6000
John.geyston@insurewithsnyder.com

Insurewithsnyder.com
2131 West White Oaks Drive, Springfield

SNYDER
Insurance


Retail Parking Lot—Concrete provided by IRMCA
Member and Snyder Insurance Client, Capitol
Ready Mix, Inc.

...the foundation of a great
insurance plan!

ISL
Industrial Systems, Ltd.

STEVE ADLER
Concrete Reinforcement Fiber
Dura**fiber** **BEKAERT**
BUCKEYE

112 West Route 120
Lakemoor, IL 60051
Phone: 815-344-5566
Fax: 815-344-5588
Cell: 815-276-3964
e-mail: steve@isltd.us

 **Admixtures**
Liquid, Flake & Pellet CaCl₂

When it comes to reliability and long
life, you better have a RexCon!

RexCon has a full line of
Central or Transit Mix
Concrete Batch Plants,
Portable or Stationary,
to meet your needs.



Call us at 262-539-4050
Or visit www.rexcon.com
2841 Whiting Road Burlington, WI 53105

Director's Letter

We have dedicated our 2012 Fall IRMCA Newsletter to Concrete Parking Lots. We've even printed it in color!

This publication highlights just a few successful lot placements – new and old – in Illinois and also provides guidance for accessing many of the promotion aids available for selling concrete parking lots. Make no mistake – the choice of concrete for new and refurbished parking areas is on the rise – big time! As more and more studies support the sustainable superiority of concrete and as the “first cost” of concrete has become competitive, opportunities abound. There has never been a more favorable time to increase the use of ready mix concrete in the parking lot market of Illinois. We hope this newsletter will help.

Concrete lots in Illinois are everywhere! As I visit members, one of the questions I like to ask is “Have you and your contractors placed any parking lots lately?” Increasingly, the answer is “yes, we have” or “we’re doing one soon” or even “we’re doing a lot of them.” This is great news for many reasons but perhaps mostly because one new concrete placement seems to inspire nearby owners/developers to also choose concrete. Success begets success, and once one business has chosen concrete, others nearby want to follow.

Much has been written about promoting and placing concrete parking lots. In this publication we have gathered a lot of helpful information. You will find resources, facts, tips, many project photos, and articles by Randell Riley and John Albinger. We have also included information on the sustainability and life-cycle durability advantages of concrete. All are effective tools for selling concrete parking lots.

Please take time to consider intensifying your concrete parking lot promotion efforts. As we analyze areas with potential for increasing our piece of the pie, concrete lots, along with concrete streets and roads, top the list. Educate and encourage your contractors, use the many aids available, and if needed, call IRMCA. Our goals are the same – more quality, long-lasting full depth, whitetopped, pervious and roller compacted concrete parking lots in Illinois!

Thank you,

Bruce A. Grohne



BUTTERFIELD
COLOR 

*Take the **GRAY AREAS** out of your colored concrete projects.*



Project Location: Oakbrook Terrace Corporate Center, Oakbrook, IL Featured Product: Uni-Mix® Integral Concrete Colorant

Uni-Mix® and Select Grade™ Integral Colorants' large batch blends are quality controlled before they go into the truck **NOT** after they come out.

BACKED BY THE BEST CUSTOMER SERVICE IN THE INDUSTRY
TO HELP YOU WITH ALL YOUR COLOR NEEDS!

Manufacturing

INTEGRAL CONCRETE COLOR

along with a complete line of Decorative Concrete Products

Engineered Concrete Performance
BUTTERFIELD
COLOR 

Decorative Concrete Products



1-800-282-3388 | www.butterfieldcolor.com

Parking Lots in Illinois

Helping you and your contractors sell concrete parking lots

IRMCA members have placed hundreds of parking lots in that last few years. A small sampling is highlighted on the following pages, including examples of full depth lots, whitetopped lots, pervious lots and roller compacted lots. Most of you remember that we used to have to convert lots from specified asphalt to concrete. We had to explain the long range advantages of concrete and hope that the buyer would be willing to listen. Seemed like we started from behind! Know what? It's a New Day! Concrete contractors have learned how to compete. The initial cost of a concrete lot is now competitive. And it is really exciting to see concrete being regularly specified!



NRMCA's National Clients

National Resource Directors

The NRMCA National Resources Directors (NRDs) are charged with bringing ACI 330-based specifications to a select group of national clients who have current or projected growth plans. As one might realize, this is a revolving list that the state of the economy dictates. In recent years, retail value driven companies have had more aggressive growth plans than high end retailers. Some examples of national clients are Walmart, Lowes, and based here in Illinois, McDonald's. Below are pictures of a few McDonald's in Illinois who have chosen concrete pavement.

Promotion Hint

If a new McDonald's is coming to your area or if a local McDonald's is being renovated, call IRMCA. We have locations and pictures of similar projects to help you promote, and we'll contact a NRMCA NRD for help.



Due to concern over the “softness” and “darkness” of his former asphalt parking lot, the owner of this McDonald's in Salem chose concrete when remodeling the store.



The whitetopped McDonald's in Pana has been in service for several years, and despite the heavy McDonald's traffic, remains in remarkable condition.



Citing the constant state of repair of his past asphalt lots as a motivating factor, the owner of the two above McDonald's restaurants (Decatur, left, and Forsyth) chose full depth concrete.



Livingston County Courthouse

Concrete promoters successfully competed with asphalt to build this concrete parking lot serving the Livingston County Courthouse in Pontiac.

government projects



IDOT District One

During placement of this large whiteopped parking lot at IDOT District One in Schaumburg, data was accumulated for a new design procedure specification.



Robinson Park

Citing ecologic and stormwater management concerns, the Peoria Park District chose pervious concrete for the new parking lot at Robinson Park.



The elementary school in Sullivan received a new full depth parking lot.

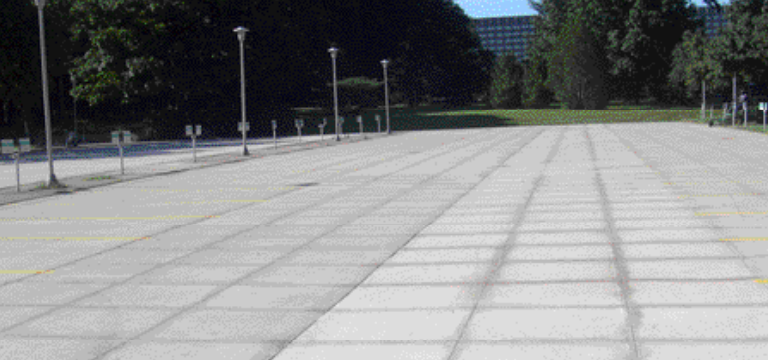
Schools Choose Concrete



The Bismarck School District made the decision to fund new concrete parking and driving areas for the Bismarck-Henning Junior High School.

The new North Clay Elementary / Junior High School in Louisville has a full depth concrete lot.

Illinois State University in Normal has vowed to “brighten and make more safe” their entire campus, so dark asphalt lots are being whitetopped. Full depth and pervious are also being utilized. All new lots are concrete.



Clockwise from right:

Responding to college leaders' directive to go green, John A. Logan Junior College in Carterville constructed its first concrete parking lot and incorporated pervious concrete to help control stormwater runoff.

Garden Hills Elementary in Champaign redesigned and replaced its parking areas and its drives and walks. They chose a combination of pervious and full depth concrete, much of which is colored.

The New Berlin High School added much needed parking space with a new concrete lot.

Years after the original whitetopping was done at the McKinley Health Center in Urbana the lot continues to service heavy parking loads with no signs of deterioration.

In response to the academic community's concern for the environment, school decision makers are increasingly choosing concrete for their new or renovated parking lots. In complying with the Energy Efficient School Construction Act (SB0505) schools are choosing concrete for its reflectivity, safety, durability, versatility, attractiveness and low heat absorption.



Business Projects

Private companies choose concrete parking lots

From top:

Concerned about lighting and maintenance, the new Bass Pro Shops in East Peoria chose full depth concrete.

CenterPoint intermodal in Joliet chose concrete pavement for its massive lots, which handle heavy loads and turning trucks.

Roller Compacted Concrete is being utilized as part of a composite placement at CSX in Chicago.

Anticipating heavy and constant truck traffic at the new FedEx Freight complex in Effingham, concrete was the logical parking lot choice.





The Holiday Inn of Decatur (now the Decatur Conference Center and Hotel) whitetopped its entire lot in 1994. The concrete has performed perfectly and has required virtually no maintenance during its 18 years.



The brand new Kirby Medical Center in Monticello chose concrete not only for their parking lot but also for the entire complex. Concrete is also specified for all future development.



When Scheels, the giant sporting goods store, was built in Springfield, concrete was chosen not only for the huge parking area, but also for future businesses in the development.

CVS/pharmacy in
Bloomington was one
of the first CVS stores
to choose concrete for
their parking area. And
others are following its
lead!



Comcast Chicago chose
pervious concrete for its
new 2 acre lot on 112th
street in Chicago.



The brand new Wendy's
in Decatur is paved with
full depth concrete – a
choice that the manager
deemed “a no brainer.”





Concrete was chosen as the paving and parking lot material for the new Sherman Community Center and Illini Bank branch in Sherman.



The parking lot at the new Casey's in Mowequa is concrete, but that's not unusual. ALL Casey's lots are specified concrete. Hint: if you hear of a Casey's coming your way, hurry over. The hard part is already done.



Once again, the Dollar General store chain chose concrete, this time in Petersburg! The NRMCA National Resource Directors have worked with the home office to encourage the specification of concrete.

Automobile Dealerships

Concrete lots are brighter, cooler, more durable and more attractive than asphalt lots

Clockwise from right:

When Bill Walsh Toyota of Ottawa built a new dealership, concrete parking was specified.

After remodeling the front of the showroom, Bob Grimm Chevrolet in Morton chose to whitetop the entire lot to continue the upgrading process.

Several years ago, facing a 6 year old asphalt lot badly in need of repair, Roanoke Motors of Roanoke chose a thin whitetopping option that looks good to this day.



Ottawa



Roanoke



Morton



Peoria



Bloomington



Taylorville



Bloomington

It's a trend! Success leads to success! The number of concrete parking lots for automobile dealers is growing! Dealers are remodeling, and as they do they are realizing that their showroom is not just the little building that holds 5-6 cars, it's the huge lot outside that holds over a hundred. They are also realizing that the brighter and more durable the lot, the better for them!

Promotion hint – talk to your auto dealers and find out if they are considering redoing their lot. If there is any interest, contact IRMCA and we'll get you locations and names of those who have chosen concrete. They are all well pleased with their choice.

From top:

Tired of the constant sealing and rutting of their asphalt lot, Mike Miller Hyundai of Peoria chose to overlay the lot with concrete, a more durable and maintenance free pavement.

Barker GMC in Bloomington removed the asphalt in front of their showroom and replaced it with concrete in an effort to reduce parking lot maintenance.

After much comparison shopping, Bob Ridings Ford in Taylorville chose to overlay its lot with concrete.

Leman's Chevrolet City in Bloomington chose a full depth concrete placement for their entire parking lot and driving lanes.



CHICAGO • EVANSTON • MOKENA

CHICAGO HEIGHTS • ALSIP • MONEE

MANTENO • PLAINFIELD • LEMONT

JOLIET • MONTGOMERY • ELGIN

SYCAMORE • HAMPSHIRE • HUNTLEY

The Leader in Decorative Concrete

CALL 708-479-9050



www.OZINGA.com

Promotion Advice

From the experts at IRMCA and IL Chapter-ACPA

Randell Riley is the executive director of the Illinois Chapter - American Concrete Pavement Association. He is a well-known concrete pavement expert and has authored or co-authored several industry technical publications. He is particularly proficient in promoting and engineering whitetopping and other concrete overlays. IRMCA is fortunate to have Randy as a contributing writer for its quarterly *IRMCA News*; in fact, IRMCA archives Randy's articles on its website. Go to www.irmca.org and locate the catalog at the bottom of the home page. Also located with Randy's information is a link to *Whitetopping Projects in Detail*

John Albinger is a concrete technical consultant who contracts with IRMCA on a year to year basis. John has almost 50 years of experience in our industry and is sufficiently qualified to interact with the top engineers in our industry in the morning and to teach a class to a company's truck drivers in the afternoon. John also contributes meaningful articles to the *IRMCA News*. IRMCA archives John's articles on its website. Go to www.irmca.org and you will find his Concrete Basics in the resources section.



SHOW ME

Using project photographs to persuade decision makers

By Randell C. Riley

Missouri is the “_____ - ____” state. You know the answer, right? Do you know the story? According to the Missouri Secretary of State’s Office, “The most widely known legend attributes the phrase to Missouri’s U.S. Congressman Willard Duncan Vandiver, who served in the United States House of Representatives from 1897 to 1903. While a member of the U.S. House Committee on Naval Affairs, Vandiver attended an 1899 naval banquet in Philadelphia. In a speech there, he declared, ‘I come from a state that raises corn and cotton and cockleburs and Democrats, and frothy eloquence neither convinces nor satisfies me. I am from Missouri. You have got to show me.’”

Willard Duncan Vandiver sounds a lot like an engineer! No matter how many words I use or how much I elaborate on proven equations I put up on a presentation screen detailing pavement behavior, nothing is as effective as a picture of one of your projects built just down the street or in the next town. Indeed, the most effective tool I have for promoting concrete parking lot and street overlays is a photo album of our Illinois Concrete Industry Alliance database, which includes photos of more than 70 Illinois projects. The database is available at www.ilacpa.com/Whitetopping%20Links/Project_List.pdf.

Jimie Wheeler and I usually leave behind a copy of the album at every seminar we do that involves paving. Do you have photo albums of your projects or at the very least a couple of shots of each? You should. Given today’s technology practically every cell phone has a camera, so it should be easy to take a picture when you visit a job site. In fact, there are a lot of reasons to do so besides promotion. Construction site pictures of improperly stored cylinders

baking in the sun in black cylinder molds could have been particularly useful this year, but I digress.

Contractors too are frequently like Congressman Vandiver. As a producer you would not be in business without them, but they need to be shown how and where a process they have never seen can be used. You have to be able to overcome the old line, “I’ve been doing this for thirty years and...” They are your customers and providing them with a new opportunity in an untapped niche without ticking them off is always a challenge. Help is on the way for the concrete overlay parking lot market.

Utilizing funding provided by Ready Mixed Concrete Research & Education Foundation and technical assistance by National Ready Mixed Concrete Association and many others, the National Concrete Pavement Technology Center is releasing its brand new Guide to Concrete Overlays of Asphalt Parking Lots (*Figure 2*). It should answer many of your questions about which parking lots can be overlaid. It puts heavy emphasis on describing with pictures the problems you and the contractor will encounter and the tested and proven solutions to those problems. Some of those solutions evolved from our work in Illinois. It should be available by the time you read this. Contact IRMCA at 800.235.4055 for more details.

Finally, you have to close the deal with one other person: the owner. The Guide will also help you demonstrate to the owner that he is not a guinea pig. They too are like the good congressman! They like to be shown that what you propose is doable and they are not the first.

You have all the tools: the industry’s best guide for successfully promoting concrete overlays; a print out of the concrete overlay database; and your collection of pictures of overlay projects close to you. Now it is time for you to show me what you can do!

The most effective tool I have for promoting concrete parking lot and street overlays is a photo album.

Randell Riley is the Executive Director/Engineer for Illinois Chapter – ACPA, and a consultant to IRMCA. He can be reached at 217-793-4933 or on the internet at pccman@ilacpa.com.



Figure 2

Hot off the presses, this new guide for concrete overlays of asphalt parking lots has most of what you need to convince your contractors that he can successfully build concrete parking lot overlays on existing asphalt. Some of the tips are from Illinois.

Guide to _____ **CONCRETE OVERLAYS** _____ of Asphalt Parking Lots



Capping

Curb and Gutter Solutions

By Randell C. Riley

In promoting overlays of existing asphalt parking lots, one of the big items encountered that a contractor must deal with is existing curb and gutter. In parking applications, curb and gutter is used for a variety of things besides drainage. It is used to separate parking zones, create decorative medians complete with trees and plants, act as vehicle “bumper blocks,” and delineate the perimeter of a facility.

Removal and replacement of the curb and gutter is often thought to be the most expedient solution, but it is very expensive and can do damage to the existing asphalt in the areas immediately adjacent to the curb section. It can also make the difference between a concrete overlay job and an asphalt job if bottom-dollar considerations of costs are required. Wouldn't it be nice if you could just overlay the curb and gutter in a manner similar to that used for the parking lot? It turns out you can, with some minor changes in your operations, using the process we call “capping.” Capping is very simply providing a bonded concrete overlay of the existing curb and gutter to create a new section over the top of the existing curb.

Capping does require that the contractor consider the necessary adjustments to be compliant with

adjacent American with Disabilities Act ramps and sidewalks, as well as think about the impact on drainage. Frequently for parking lot overlays for cars more thought is required for handling and adjusting these fixed elevation points than for any other element in the project. For cars in particular structural capacity is rarely an issue for the overlay thicknesses used, typically 2 inches and greater. But these changes in elevation do affect drainage, so the contractor must consider how he will deal with that issue in his bid.

Since capping is a bonded concrete on concrete solution, it is important that the curb and gutter be clean. A simple water blasting, or in rare instances sand blasting, is adequate to remove dirt and present a clean surface so that the new concrete can bond to it. Occasional paint stripes on the curb are not an issue, but a completely painted curb should be sand blasted as there is occasionally difficulty bonding the concrete to the paint depending on the type of paint used and its age.

The new cap is frequently placed by hand to accommodate local anomalies and irregularities, but there is no reason that small paving machines cannot also be employed to do the job if sufficient quantities of curb and

gutter exist to warrant their use. The existing curb could be used for grade and elevation control under the right circumstances if the contractor's equipment is capable of doing so.

The ends of the cap can be feathered to near zero thickness or short full-depth end sections may be recast depending upon the grades and other controlling elevation points that may exist.

Frequently there is the assumption that some type of bonding agent is required. Extensive testing over many years has revealed that the best bond is usually obtained on a surface that is clean and effectively dry. Ideally, a surface that is *just* dry of saturated surface dry would be optimum, but that is difficult to establish for typical field operations. There is sufficient free mortar in typical ready mix concrete to ensure that the curb will adhere to the existing curb without further preparation.

The mixture itself can be the same as that used for the parking lot or it can be a mixture using a smaller aggregate top size if better finishing characteristics are desired; this may be the case given the relatively small volume of concrete being used per lineal foot of curb.

Also, since the volume of the concrete is relatively low compared to the perimeter surface area, a good curing compound should be used on the front face and back of curb where exposed fresh concrete is present, especially at the bond plane. Normal application rates are fine, but some care should be taken to minimize overspray onto adjacent curb sections that will have later application of the technique. Care should also be taken to avoid overspray on the adjacent asphalt section to be overlaid lest bond be inhibited between the new concrete and existing asphalt.

Since placements of this type are bonded concrete on concrete systems, a few other jointing details are important that are not important on the asphalt. Joints in the existing curb and gutter must be matched full-depth through the cap to the width of the underlying joint. Whether the joint is sawcut or tooled full-depth is a matter of esthetics and costs, but should be agreed to prior to the time of placement by the owner and the contractor. Sawed joints will normally look a better, but sawcut timing and costs may preclude this.

Existing cracks which are tight may be overlaid with the understanding that those cracks will eventually reflect through the capped section. Rarely does this present a problem, but it should also be understood between the owner and the contractor that this will occur. If the owner wants straight joints, it will be necessary to cut out a portion of the existing curb and replace it monolithically at the time of the capping or separately prior to or afterwards. If the replacement section is placed monolithically, the underlying joints at each end must be matched through the cap to prevent problems.

These simple procedures are cost-effective solutions that may mean the difference between you getting that next parking lot overlay.

Clockwise from left. Finishers are shown "capping" an existing curb and gutter. The form line is the edge of the asphalt and existing curb. Another form is used at the back of curb. End view of completed curb section prior to applying final finish and curing compound. Completed curb section ready for placement of overlay. (Photos courtesy of Jim Amundsen, Grace Construction Products.)



Concrete for Parking Lots

By John Albinger

A normal mix design includes cementitious materials (cement, and if appropriate, fly ash and or slag), fine aggregate, coarse aggregate, air entraining agents, admixtures and sometimes synthetic fibers. For the most part mix designs for parking lots, new or whitetopping, are designed using the same criteria as for conventional pavement, or any exterior concrete, for that matter. Developing a mix that properly accounts for the interaction between the selected design and the environmental conditions during construction is essential in as much as these conditions greatly influence rate of strength gain and shrinkage (cracking), plastic and drying. The mix design must also take into consideration when the parking lot will be open to traffic (what strength at what age) and what kind of vehicles (e.g., just cars, light commercial vehicles, garbage trucks) will use the lot, although slab and base thickness are probably more important when it comes to loads.

Economics should also be considered although performance should never be sacrificed for the sake of submitting the lowest price. Submitting a mix merely based on its 28 day strength very well may not provide the performance and sustainability that the owner expects. Which mix is ultimately purchased and placed should be the result of all the considerations that we have previously noted. As always, a conversation with the contractor, and possibly the owner, is a good idea and gives you the supplier the opportunity to show off your technical expertise. You may also want, at the bidding stage, to ask a supplier or a representative of IRMCA or ILACPA for technical support.

Following is a list of factors to be considered when designing and submitting a mix.

- 1** The compressive, or flexural, strength required – at what age
- 2** The thickness of the slab
- 3** The kinds of loads
- 4** The environment during placement
- 5** The time of year the concrete is placed
- 6** How the concrete is cured
- 7** How the concrete is placed
- 8** Economics

“Developing a mix that properly accounts for the interaction between the selected design and the environmental conditions during construction is essential.”

If the job's condition or specifications are unique or require a mix that you may not be familiar with, you may want to run trial batches to better know the performance of the mix you are thinking of proposing. Trial batches are always a good idea, but if time is an issue you may once again seek technical help. To assume your normal exterior 4000PSI mix will suffice may not be a safe assumption.

Choosing the right amount of cementitious materials

The amount of cement, fly ash and/or slag will primarily be dictated by the strength required at a specific age. Obviously the earlier the strength is required the lower the w/c+fa+s ratio must be. In order to achieve a lower w/c+fa+s ratio you may increase the amount of cement or use an admixture (mid or high range water reducer) to reduce the water content. In making this decision you should consider that increasing the amount of cement typically increases the potential for greater plastic and drying shrinkage and will probably adversely affect the economics of the mix. On the other hand using too much fly ash or slag as a cement replacement will slow the rate of strength gain and increase set times. If the concrete remains plastic too long and is exposed to wind and low humidity it would be more susceptible to plastic shrinkage. If extreme weather conditions (90+°F, -40°F, wind and humidity creating evaporation rates of over .2lbs/hr/sf) are encountered the mix may have to be adjusted. If the specified strength is at 28 days, then many mix designs may perform, therefore, making the use of higher amounts of supplementary cementitious materials more practical. Fly ash and slag should also be considered if the concrete is going to be pumped.

Aggregates

There is typically no reason to use anything other than local aggregates. Aggregates that meet ASTM and or IDOT specifications should perform adequately.

Air Entrainment

Using a ¾" – 1" coarse aggregate, the amount of air, as placed, should be 5% - 7%. Anytime the concrete is to be pumped it is recommended that air tests be run before and after the pump.

Admixtures

In any concrete the use of a water reducer is always beneficial. Whether a normal, mid range, or high range water reducer is

used, as well as the dosage rate of each, is determined by the specified maximum w/c+fa+s ratio (if the w/c+fa+s ratio is not specified it will be determined by what compressive strength is specified at what age) and the slump desired to facilitate placement or pumping. A retarder may be considered if excessive delivery or placement times are a concern. It's strongly suggested that you consult with your admixture provider when making these decisions.

Fibers

Fibers always increase the flexural strength and help minimize cracking. The thinner the slab the more benefit the fibers provide. There are several types and sizes of fibers available. Which fiber is appropriate and how many pounds to use should be a decision supported by your supplier. In as much as fibers provide added value they also increase cost. Fibers should always be considered at 4"+ thickness and may become necessary below 4". The cost/benefit ratio should definitely be discussed with the contractor and owner at the bidding stage of the job.

Water

At no time should a w/c+fa+s ratio of .45 be exceeded.

Too often the specified 28 day strength is the only thing we use to decide which mix we submit for a job, thinking that curing and the achievement of that strength in the field is the contractor's responsibility. Technically that's true, but we all know if that concrete cracks or scales and doesn't reach the expectations of the contractor or owner, the quality of the concrete is questioned. Parking lots are exposed to a great deal of salt, deposited by cars or applied as deicing agents creating the best opportunity for scaling. Concrete with the proper w/c+fa+s ratio, properly finished and cured, and having over 4000PSI before being exposed to freeze thaw cycles is imperative to minimize that possibility. Talk about all of these issues before you submit a mix and make your concerns a matter of record in case there is a problem in the future.

Do not rely on tests conducted on the job by others to accurately depict the quality of the concrete you provide. Check the air at your plant, ideally every day concrete is being shipped to the parking lot, and make a set of cylinders for every 100 cys that are delivered. Periodically visit the job and make sure everyone else is doing what they do properly. If not, say something to the contractor. Protect your interest.

What Comes First?

By John Albinger

All my life I've been around sales men and women. In fact, when I owned my own company I was a salesman, and I must say it's not an easy job. We say that anybody who has contact with a customer is a salesperson, but it's different when you're the person quoting the job and asking for the sale. A salesperson (from now on that means the person who asks for the sale) hopefully has a lot to sell: price, quality, service, support, response, reliability, confidence, trust and more. Many polls have been taken, and invariably, price, quality and service come to the forefront, not necessarily in that order. I'm not sure which would be most important in your mind, but I think if you asked a salesperson, price might win most often. Most contractors appreciate the value of quality and service, but quality and service have become expected and therefore price once again comes to the top. We know there's a difference between you and your competitor's quality and service, but for much of the concrete we supply, who cares? So, are we back to price? Is that what comes first?

Believe it or not, I don't think it's all about price or quality or service. What then is #1? What's important to a customer? I think it's the salesperson. To the customer your salesperson is the window to the company and a reflection of the quality and service that he expects. If your salesperson sells himself first, then all the things I mentioned earlier are assumed and the customer has a degree of comfort in doing business with your company. And your company is now different from your competitors.

Still, most of you if not all would say, "Yeah, but you still have to have the lowest price." Is that always true? We know it's really not because there will be a job that has a special need where the salesperson has convinced the contractor that your company can do a better job and is worth more money. Can your competitors come in and "buy" the job? Maybe. Maybe not.

I know one thing: if the customer respects your salesperson you've got a good chance of getting a job where price isn't #1. Who's to say how much extra your company is worth. I suppose it's a matter of how good you are compared to your competitors.

These are just my thoughts. I'm interested in your thoughts and ask you to rank price, quality, service and salesperson in the order of most important to least important. Assume that the company behind the salesperson supports him and that in some companies the salesperson wears other hats. Respond by email or call me, Bruce or JoAnn. I'll let you know the results in the next newsletter.

Princeton Redi-Mix, Inc

**533 East Railroad Avenue
Princeton, IL 61356
Phone: 815.875.3359
Fax: 815.875.6007
Email: prmcrete@ivnet.com**

BIGFOOT SYSTEMS® The Original.

- Fits both models BF24 & BF28 Bigfoot Footing Forms
- Does not break down from rain or groundwater
- Can be backfilled prior to pouring concrete
- Uses less concrete than comparable systems
- Saves time, money & aggravation
- Meets national building codes

**New
The Bigfoot
Tube 10"**



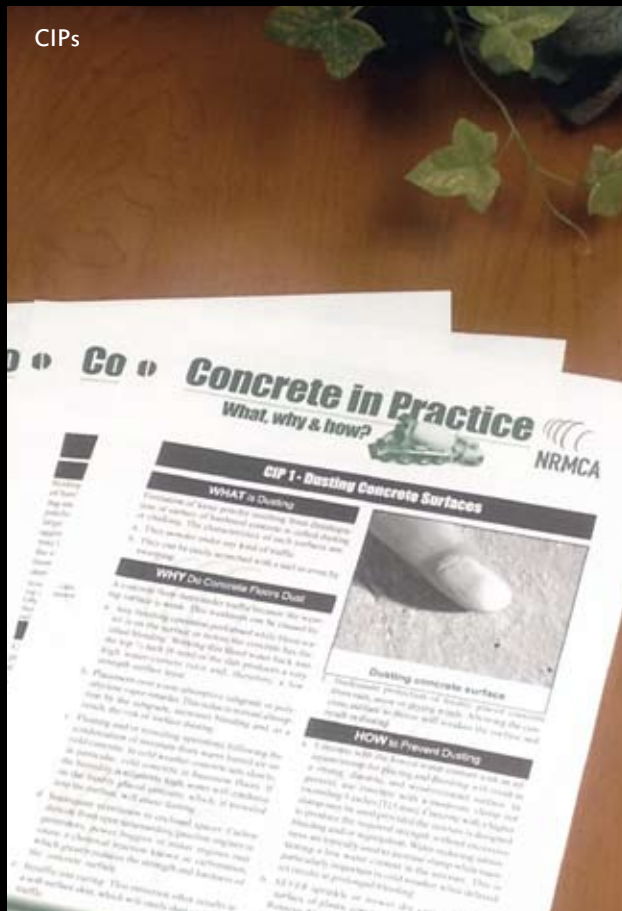
**www.bigfootsystems.com
800-934-0393**

Promotion Resources

Publications, programs, websites and more

This section is a compilation of concrete parking lot promotion aids. You will find help from the National Ready Mixed Concrete Association, the American Concrete Pavement Association, the Portland Cement Association, the American Concrete Institute and others. In most cases we provide a description of the resource and how you can obtain it. On pages 31 and 32, however, you will find a complete copy of ACPA's Equivalency Chart. IRMCA can help you obtain any of the resources listed in this section. And - good news! - we can usually obtain them at the lowest cost possible. We can obtain all NRMCA publications at a cost lower than can members; we belong to ACI and therefore qualify for their lowest prices; and we have good contacts within ACPA and PCA. Refer to this section for concrete parking lot promotion assistance, and let us know if we can help.

CIPs



Flip Chart



► *ACI 330R – 08. The Guide to Design and Construction of Concrete Parking Lots* includes information on site investigation, thickness determination, design of joints and other details, durability considerations, paving operations, and quality-assurance procedures during construction. Maintenance and repair are also discussed. A 10 minute video summarization is available at http://www.youtube.com/watch?v=Tod_5z8gHPQ. All producers should have a copy of this document on their shelves. It can be ordered through IRMCA.

► *Sustainable Concrete Pavements – A Manual of Practice* from the National Concrete Pavement Technology Center is a paving document, but it also contains information on the sustainable advantages of concrete. It can be downloaded at http://www.cptechcenter.org/publications/Sustainable_Concrete_Pavement_508concrete.pdf, or you can contact IRMCA for a copy.

► *Parking Lot Design Assistance Program (DAP)*. The National Ready Mixed Concrete Association (NRMCA) is providing concrete parking lot design recommendations for designers and specifiers, and for NRMCA partners and member companies. The detailed pavement design and CAD jointing recommendations increase the likelihood for more successful quality concrete parking lot projects. It is available at <http://concretepromotion.org/promotion/dap.html>.



Sika's Full Range of Admixtures: The Solution For *All* Your Concreting Needs.

- ▲ Water Reducers ▲ Mid-Range Water Reducers ▲ High Range Water Reducers
- ▲ Self-Consolidating Concrete ▲ Water Reducers & Retarders ▲ Set Accelerators
- ▲ Hardening Accelerators ▲ Air Entrainers ▲ Corrosion Inhibitors
- ▲ Microsilica ▲ Dry Cast Admixtures ▲ Specialty Admixtures
- ▲ Specialty Concrete Products ▲ Concrete Fibers
- ▲ Tunneling & Shotcrete Applications



Sika...
One Name.
One Source.
Worldwide.

Regional Sales Contacts: Vince Maniscalco
Pat O'Brien & James Fiala
Sika Corporation
1515 Titanium Drive
Ottawa, IL 61350
Phone: 815-431-1080
Fax: 815-431-1099
Nationwide: 1-800-933-SIKA (7452)
www.sikaconstruction.com

►NRMCA's *Concrete Parking Lot Flip Chart*. This flip chart can be used effectively one-on-one with a decision maker. The side seen by the promoter is filled with facts and descriptions as the target looks at just a few phrases or pictures. It is inexpensive and available from NRMCA thru IRMCA.

►NRMCA's *Concrete Pavement Analyst (CPA)* is a powerful concrete parking area design and costing software tool that quickly and accurately quantifies the differences between concrete and asphalt pavements. Using ACI and Asphalt Institute data, CPA compares total ownership costs and provides specifiers the information needed to make sound pavement decisions. IRMCA has a few copies or it is available at <http://concretepromotion.org/promotion/cpa.html>.

►The Massachusetts Institute of Technology's (MIT) *Life-Cycle Assessment Report* of ongoing research through the MIT Concrete Sustainability Hub has set a new standard in life-cycle assessment (LCA) modeling. The three reports published in August 2011 discuss initial findings on the life-cycle environmental and economic costs of pavement (including parking lot pavements), commercial buildings and residential buildings. The results provide a rigorous means of testing the relative environmental impact of paving and building materials and design alternatives. It is available at <http://concretepromotion.org/mit/index.html>.



Keeping you compliant

CONCRETE WASHOUT SOLUTIONS, INC.



Compliant · Affordable · Easy

Wastewater from cement and cementitious products (mortar, grout, stucco, plaster and tile-cutting slurry) is highly toxic. Concrete Washout Solutions, Inc. provides a versatile, portable and durable method of disposal at your construction site while ensuring that you are EPA compliant. The quick set-up is compatible for mixers, pump trucks and wheel barrow clean out. Keep your business environmentally friendly!



Product No.	Description	Capacity	No. of uses	Weight Each
4414	4'X4'X14" WASHOUT	.68 cu yds	10-15	10 lbs.
6612	6'X6'X12" WASHOUT	1.33 cu yds	15-20	16 lbs.

www.concretewashoutsolutionsinc.com

Phone: 630-804-9577, Fax: 630-530-0149

- ▶ NRMCA offers MANY free downloads (e.g., a pdf on reflectivity, several PowerPoint presentations on parking lots, and much more) on their website. All are excellent promotional materials. You can find them at <http://concretepromotion.org/downloads/index.html>.
- ▶ *Concrete In Practice (CIP's)* are a MUST for anyone involved in the promotion or production of ready mixed concrete. *Concrete in Practice* is a series of 42 information sheets about important technical topics, yet written in a non-technical *what, why and how?* format. If you do not already have the 42 sheets, contact IRMCA and we'll get them ordered for you. It's an ABSOLUTE MUST!
- ▶ All concrete promoters should be aware of the concrete parking website at <http://www.concreteparking.org/>. It is another NRMCA site that can direct a promoter to dozens of helpful links and downloads.
- ▶ The Concrete Network is a website that has many concrete parking lot links and downloads. It is at <http://www.concretenetwork.com/concrete-parking-lots>.



 **Hanson**
Material Service

**AGGREGATES FOR
THE CONSTRUCTION
INDUSTRY**

470 West 172nd Street
Thornton, IL 60476
(800) 642-8936
Fax (708) 874-5040

Equivalency Chart

For Concrete and Asphalt Pavements

Concrete and asphalt pavements are not only made of different materials, but they also carry traffic loads in entirely different ways. This means that the thickness design procedures for concrete and asphalt pavements are also different. The structural number concept has, however, been used to estimate concrete and asphalt pavement sections.

The structural number of a particular pavement section is simply the summation of the layer thicknesses multiplied by their respective layer coefficient, as shown in Figure 1.

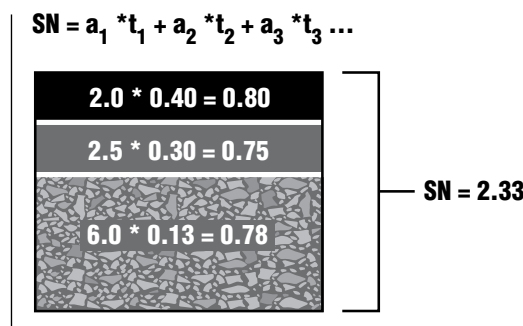


Figure 1: Calculation of the structural number for a proposed asphalt section.

The concept of layer coefficients was developed during the road test conducted by the American Association of State Highway Officials (AASHO), to account for all of the materials and layers in an asphalt pavement structure.

In the 1960's, shortly after the AASHO Road Test was complete, satellite studies in Louisiana proposed that deteriorated existing concrete pavement that is overlaid with asphalt has a structural coefficient of approximately 0.50. This value has since been often cited in some older design manuals. In reality, this is a conservative value, which can be used to estimate comparable pavement sections.

The following table lists layer coefficients for various materials:

Material	Layer Coefficient
Concrete*	0.50
Asphalt Surface	
Plantmix (high stability)	0.30 - 0.44
Roadmix (low stability)	0.10 - 0.20
Sand Asphalt	0.20 - 0.40
Bituminous-Treated Base	
Coarse-Graded Base	0.10 - 0.34
Sand Asphalt	0.10 - 0.30
Cement-Treated Base	
(by compressive strength)	
> 650 psi	0.23
400 - 650 psi	0.20
< 400 psi	0.15
Non-Stabilized Base	
Lime Treated	0.10 - 0.15
Crushed Stone	0.10 - 0.14
Sandy Gravel	0.07

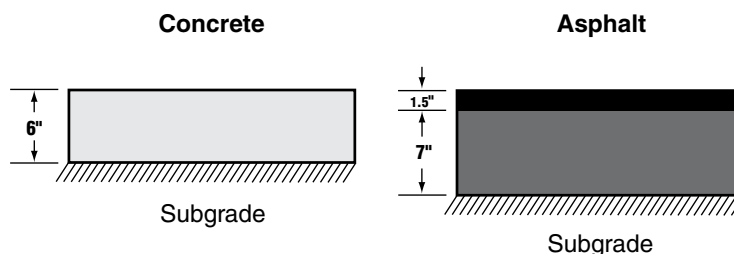
* Used for estimating purposes only.

Residential

Design variables: $k = 100$, $ADTT = 5$,
Light axle load category, 30 year design life,
unreinforced, 600 psi concrete flexural strength

Concrete: Design thickness = 6.0 inches
($SN_{ESTIMATE} = 6 \times 0.50 = 3.0$)

Asphalt: 1.5 inches of high stability asphalt on
a coarse-graded bituminous base of 7.0 inches
($SN = 1.5 \times 0.44 + 7.0 \times 0.34 = 3.0$)

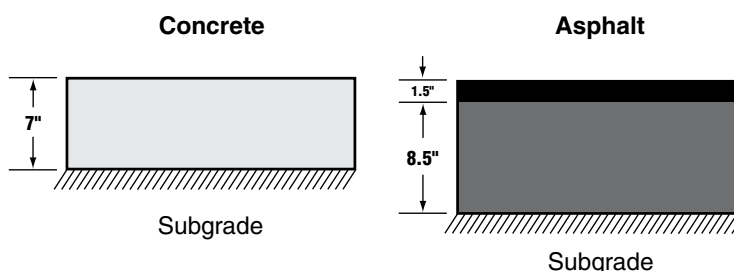


Collector

Design variables: $k = 100$, $ADTT = 50$,
Medium axle load category, 30 year design life,
unreinforced, 600 psi concrete flexural strength

Concrete: Design thickness = 7.0 inches
($SN_{ESTIMATE} = 7 \times 0.50 = 3.5$)

Asphalt: 1.5 inches high stability asphalt on a
coarse-graded bituminous base of 8.4 inches
($SN = 1.5 \times 0.44 + 8.4 \times 0.34 = 3.5$)

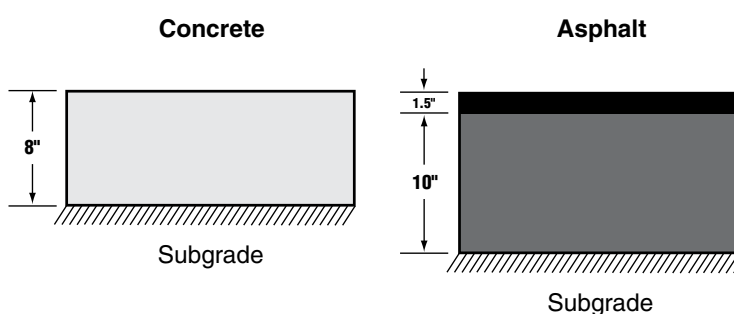


Minor Arterial

Design variables: $k = 200$, $ADTT = 500$,
Heavy axle load category, 30 year design life,
doweled, unreinforced, 600 psi concrete
flexural strength

Concrete: Design thickness = 8.0 inches
($SN_{ESTIMATE} = 8.0 \times 0.50 = 4.0$)

Asphalt: 1.5 inches high stability asphalt on a
coarse-graded bituminous base of 10 inches
($SN = 1.5 \times 0.44 + 10 \times 0.34 = 4.0$)

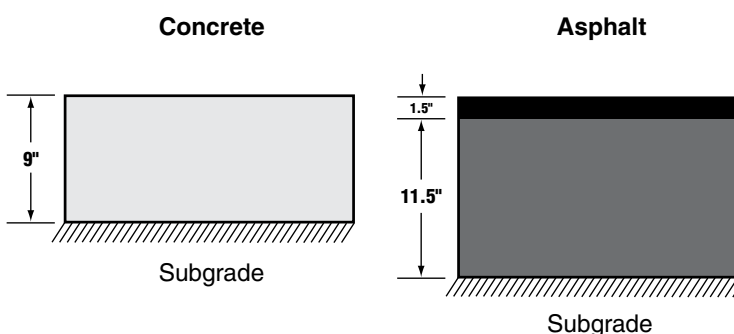


Major Arterial

Design variables: $k = 200$, $ADTT = 1500$, Very
Heavy axle load category, 30 year design life,
doweled, unreinforced, 600 psi concrete
flexural strength

Concrete: Design thickness = 9.0 inches
($SN_{ESTIMATE} = 9.0 \times 0.50 = 4.5$)

Asphalt: 1.5 inches high stability asphalt on a
coarse-graded bituminous base of 11.5 inches
($SN = 1.5 \times 0.44 + 11.5 \times 0.34 = 4.6$)



5420 Old Orchard Road, Suite A100
Skokie, Illinois 60077-1059

Phone: 847.966.2272
Fax: 847.966.9970
Web: www.pavement.com

1010 Massachusetts Avenue NW, Suite 200
Washington, DC 20001

Phone: 202.842.1010
Fax: 202.842.2022
Web: www.pavement.com

Sustainability

Building green parking lots with concrete

We are finding that more and more decision makers are consciously insisting on building decisions that are favorable to the environment. Builders want to be green and Ready Mixed Concrete is definitely the right product for these folks.

In this section is information that will help promoters understand the sustainable advantages of concrete as a parking lot material. You will find easy-to-reference facts, a case study funded by a grant from a branch of the Environmental Protection Agency, and a list of how concrete can help earn LEED points. Promoters should make themselves familiar with the basic sustainable advantages of using concrete - that knowledge just might help sell a job.



FACTS

Materials used to make concrete are in abundant supply and are easily extracted. Most quarries are reclaimed for recreational use or returned to their natural state.

Materials are almost always available locally and there is very little waste

Manufacturing concrete requires very low energy input.

Concrete is produced locally, so transportation costs are kept to a minimum.

Concrete is produced as-needed and any left over is recycled or reused.

Concrete pavements can carry heavy loads without rutting or developing potholes. With concrete's rigidity and high strength it takes only a 5-inch thick pavement to provide the same load-carrying capacity as 8 inches of asphalt.
concretenetwork.com

With the use of pervious concrete, stormwater retention areas may be reduced or eliminated, allowing increased land use.

perviouspavement.org

Concrete parking lots are green—runoff is low toxicity and cooler than from asphalt surfaces and the concrete can contain recycled materials (fly ash, slag, recycled concrete aggregate). All this can yield LEED credits.

concretenetwork.com

Pervious concrete collects rainfall and allows it to infiltrate, thus groundwater and aquifer recharge is increased, peak water flow through drainage channels is reduced, and flooding is minimized.

perviouspavement.org

Concrete's rigidity means that vehicles consume less fuel than when on asphalt.

Pervious concrete captures the first flush of rainfall and allows it to percolate into the ground; soil chemistry and biology can then “treat” the polluted water naturally.

perviouspavement.org

Concrete surfaces are much lighter colored, meaning that lighting costs can be reduced—you can eliminate 3 of 10 light fixtures and still have the same level of lighting, according to Vance Pool [formerly] of the National Ready Mixed Concrete Association. This creates a safer parking lot and also reduces energy costs.
concretenetwork.com

Concrete is an ideal medium for recycled waste or industrial by-products. 100% of concrete can be recycled.

Concrete is strong and durable, resistant to deterioration and damage.
sustainableconcrete.org

Maintenance costs for concrete are nearly zero—only some joint sealing and annual cleaning. Asphalt parking lots need to be coated with liquid asphalt every few years and be completely resurfaced every 10 years or less. This means no business interruptions with concrete parking.
concretenetwork.com

The lighter color also results in a lower temperature for the parking area during the summer, reducing the heat-island effect and lowering cooling costs for adjacent buildings. According to Vance Pool, ambient air temperatures above a concrete parking lot can be as much as 10° cooler than an asphalt lot.
concretenetwork.com

Sustainable Concrete

"Concrete uses fewer raw materials for manufacture than other pavement materials. With its rigidity and durability, concrete pavement has a much longer service life than flexible pavements. And at the end of its service life, concrete is 100% recyclable. The crushed can be re-used as aggregate for new concrete or utilized as a base material."

Phillip Kresege, NRMCA National Resource Director



8668 Olive Blvd
St. Louis, MO 63132
800-283-1336
www.cmw-equip.com

Readymix Equipment Experts

**New - Used - Rehabs
Over 50 Years of Experience**

Let CMW help you with new equipment, used equipment, parts and service to lower and control you costs.

- Conveyors and bins to lower your material handling costs
- Additional bins or silos to maximize your mix designs
- Dust collection equipment to keep your equipment clean & recycle powders
- Hot water heaters that lower your winter costs
- Chillers to meet water temperature specifications
- Computer controls to ensure your mix
- New concrete plants to make your operation more efficient

Call your CMW salesman or Larry Glynn at 314-993-1336.

Case Study

Heifer Parking Lot May 2007

The Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response (OSWER) began pilot projects to develop innovative ways to integrate green parking lots and urban wetland. Among their priorities were environmental improvements and public health protection.

The environmental impacts of parking lots are many. Water quality is affected by parking lot runoff when it carries surface pollutants to the surface and ground water. Impervious surfaces prevent the infiltration of water into the soil and, thus, groundwater recharge. Impervious surfaces also increase stormwater runoff and can overwhelm sewer systems, enabling raw sewage to enter waterways.

Air quality is affected by particulates that are emitted during manufacturing. Heat Island Effect (HIE) raises the air and surface temperatures and causes a slower rate of nighttime cooling.

Habitat and ecology disturbances include a decreased water supply, increased pollutants due to runoff, and the loss of habitat and biodiversity.

Urban sprawl and low-density development encourage dependence on automobiles and make it challenging to utilize alternate forms of transportation (e.g., walking, bicycling).

In June of 2003 OSWER awarded an Innovations grant to Heifer International, Inc. in Little Rock, Arkansas, so that the non-profit sustainable community development organization could design an environmentally-friendly parking plaza for its new headquarters.

The Heifer parking lot design utilized many green techniques. Impervious surface was minimized by using bioswales and a gravel pave system. The aisles and driveways are paved with concrete rather than asphalt, which allowed for use of local materials, reduced lighting cost and surface temperatures. Stormwater management was achieved with a closed loop water collection system that guides stormwater into open space medians and bioswales and constructed wetlands.

The people and environment of Heifer are benefiting from their green parking lot. Water quality is protected by the stormwater system, and water is conserved due to the use of recycled water. Constructed wetland has attracted a wide range of species. The Heat Island Effect is reduced through the use of concrete and tree/vegetation cover. Additionally, the use of concrete allowed for reduced lighting requirements.

The EPA referenced the Heifer parking lot project, and Heat Island Effect (HIE) in particular, in its February 2008 *Green Parking Lot Resource Guide*. Below is an excerpt.

Parking lots contribute significantly to HIE. Asphalt, one of the most common paving materials used in parking lots, is a dark, heat absorbing material. When asphalt cools at night, all the heat it has absorbed during the day is released into the air, slowing the rate of nighttime cooling. This hot surface combined with stormwater runoff from the parking lot also affects surrounding water bodies. When water is forced to flow quickly off the lot's surface, not enough time is allowed for evaporation to occur, again limiting natural cooling of the air. The environmental impacts of the HIE are varied. Hotter temperatures can lead to more CO₂ emissions due to increased energy demand to cool neighboring buildings. HIE can also increase smog, and subsequently exacerbate pulmonary and cardiovascular health problems. During rain events, paved surfaced can transfer heat to runoff, increasing the temperature of receiving waters. This warmer water can be detrimental to the natural habitats of fish and other aquatic life.

This case study was developed by Industrial Economics, Incorporated (IEC)

Concrete & LEED

The use of concrete products can earn LEED points in many categories.

SS Credit 2: Development Density and Community Connectivity
SS Credit 3: Brownfield Redevelopment
SS Credit 5.1: Site Development - Protect or Restore Habitat
SS Credit 5.2: Site Development - Maximize Open Space
SS Credit 6.1: Stormwater Design - Quantity Control
SS Credit 6.2: Stormwater Design - Quality Control
SS Credit 7.1: Heat Island Effect - Non-Roof
SS Credit 7.2: Heat Island Effect - Roof
WE Credit 1: Water Efficient Landscaping
WE Credit 2: Innovative Wastewater Technologies
WE Credit 3: Water Use Reduction
EA Prerequisite 2: Minimum Energy Performance
EA Credit 1: Optimize Energy Performance
MR Credit 1.1: Building Reuse - Maintain Existing Walls, Floors and Roof
MR Credit 2: Construction Waste Management
MR Credit 4: Recycled Content
MR Credit 5: Regional Materials
IEQ Credit 8.1: Daylight & Views - Daylight
IEQ Credit 8.2: Daylight & Views - Views
ID Credit 1: Innovation In Design
ID Credit 2: LEED Accredited Professional
RP Credit 1: Regional Priority

Information as found in the March 2010 NRMCA Concrete Sustainability Report.

We're the Concrete Construction Experts.



Providing the best mix for the job:

- Custom Performance Mixes
- PureColor™ Decorative Concrete
- Storm Handler™ Pervious Concrete
- Fiber Max™ Products

**Your Construction Partner
From the Ground Up.**



- Redi-Fill™ Flowable Fill
- Roller Compacted Concrete
- Green Building Mixes
- Mobile Plants
- Prairie Wind Resources™
- Aggregates

Corporate Headquarters
7601 W. 79th Street
Bridgeview, IL 60455
708-458-0400

Ready Mix Order Board
Chicagoland
800-649-3690

Aggregate Division
Order Board
877-815-3671

Central Illinois Regional Office
100 West Cass Street
Peoria, IL 61602
309-676-0576

Illinois Ready Mixed Concrete Association
303 Landmark Drive, Suite 1-A
Normal, IL 61761

**ELMHURST
STONE**



**CHICAGO
COMPANY**

400 West First Street
Elmhurst, IL 60126
TEL: (630) 832-4000
FAX: (630) 832-0140
PIPE PLANT (847) 742-5311

Plants located at:
*Elmhurst, Bartlett, Barbers
Corners, Belvidere, Elgin,
Kaneville, Plainfield, Marengo*

**Crushed Stone - Paving Aggregates
Washed Sand - Gravel
Ready-Mix Concrete - Concrete Pipe**

Introducing -

Riverlite™

by Big River Industries, Inc.

Lightweight Aggregates for:

- Structural lightweight concrete
- Lightweight concrete products
- Internal curing of low w/cm concrete
- **Q-LITE®** Concrete Masonry

Contact John Katlen - Garick LLC
Cell Phone #: 216-410-6773
Office Phone #: 800-242-7425 x132
Email: john.katlen@garick.com