

# Airport Improvement

Home | News | Archives | Contact Us | Subscribe | Advertising | White Papers | Webinars | Search | 

Over 261 articles covering: [Airside](#) [Baggage](#) [Cargo](#) [Concessions/Retail](#) [Emergency Operations](#) [Environmental](#) [Fuel Operations](#) [General Aviation](#) [Ground Support](#) [Hangars](#) [IT/Communications](#) [Landside Development](#) [Operations](#) [Parking](#) [Passenger Transport](#) [Runway/Ramp](#) [Security](#) [Terminals](#)

## Project Nominations

Know of a project that should be covered in a future issue of Airport Improvement?

[Submit Nomination](#)

## Sponsors



## Publisher's Blog

### A Sticky Wicket

A checked bag fee of \$20 is a harder pill to swallow than a \$7 PFC, right? Not true. [\[more\]](#)

### The Virtues of Spending Wisely

From personal splurges on that perfect holiday gift to multi-billion infrastructure projects, spending makes the economy go 'round. Yet there seems to be a chorus of demands on the political front to curb governmental spending. [\[more\]](#)

### Verdict in Search

## Runway/Ramp

### Nashville Int'l Reconstructs One Runway, Rehabs Another

By Robert Nordstrom

As published in: [Airport Improvement Magazine - March-April 2011](#)



In August 2009, Nashville International Airport (BNA) shut down runway 2L-20R for reconstruction. A 2007 evaluation of the 35-year-old pavement found accelerated deterioration resulting from an alkali-silica reaction. The pavement was cracking and showing structural deficiencies; within five years, the evaluation concluded, the runway would fall below minimal service levels.

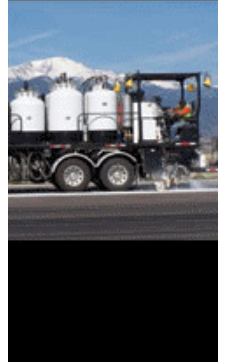
"The pavement had come to the end of its useful life, which mandated a full-depth reconstruction," relates BNA's construction director, Christine Vitt.

In anticipation of the major reconstruction

## Sponsor



We don't just make glass beads...



## Sponsors



**of Evidence**

No matter what the economy, there are always companies that belie current conditions - successes during recessions and failures in boom times. [\[more\]](#)



[All Publisher's Blogs](#)

**Industry Insider**

**Don't Forget About Landside**

Without a doubt, the last two years have seen extraordinary changes in every aspect of our lives. No matter where you turn or whom you speak to, there are major economic, social and political changes happening almost daily that have directly impacted our industry and the traveling public we work to serve. [\[more\]](#)

**Aerotropolis or Multi-Modal Hub - There Is a Difference**

Globalization of the economy has made every metropolitan area a competitor in the world economy. Strengthening access to world markets has consequently become a primary issue because areas with greater access have a distinct advantage over those with less access. [\[more\]](#)

**Sustainable Sustainability**



Removal of runway markings was an important step in recent reconstruction and rehab work at Nashville Int'l.

Hoshall for the north.

**Two Firms, One Set of Drawings**

Two engineering firms designing a single runway reconstruction project is unusual, to say the least. But both firms understood immediately that open and frequent communication between the two companies would be critical to the project's success.



"I could imagine the project going sideways with two consultants who regularly compete for work at the same airport working on the same project," says Ryan Sisemore, project manager for Garver. "Harry and I worked very hard to build a relationship - and a friendship - to ensure we delivered a great project to the airport."

Harry Pratt, vice president of Allen & Hoshall, concurs: "We got together very early in the project and established how we would work together. We decided that we would share design and engineering details, most of which were compatible for both ends of the project."

The two firms consolidated their designs into a single set of drawings/specifications, and the seals of both companies were affixed to the documents. "We wanted to make sure the general contractor would remain somewhat oblivious as to who the designer was," recalls Pratt. "We didn't want the contractor to worry about north end/south (division). We knew he could build it better and cheaper if he didn't have to fight his way through two sets of everything."



project, the airport reconstructed the intersection of runways 2L-20R and 13-31 in 2007 to avoid closing two runways during the year long reconstruction of 2L-20R. The runway project was divided into two distinct portions, with crosswind runway 13-31 serving as the dividing line.

"Geotechnical investigations revealed two very different substrates north and south of the intersection, which would likely require a different pavement design for each section," Vitt explains.



Christine Vitt

The airport was also unsure whether available funding would cover the cost of reconstructing the entire runway. As a result, the airport hired two engineering and design firms: Garver, LLC for the south section and Allen &

**Sponsor**



**Sponsors**



**Sponsor**

Airports around the world are "going green" with grass roofs, recycling programs, alternative energy sources, and more. In fact, it would be hard to find an airport conference where sustainability is not an integral part of the program. [\[more\]](#)

[All Industry Insiders](#)

### FREE E-newsletter

Subscribe to our FREE monthly e-newsletter and stay current with all the latest and greatest facilities construction and renovation news!

E: Email Address

F: First Name

L: Last Name

C: Company

Subscribe Me!

"We brought in two batch plants for the north end, where we started," recalls Jim Thomas, vice president of operations for The Harper Company. "When the north end was nearly finished, we moved one of the batch plants over to the south end, then brought in another one for the south end. We had to leave one on the north end because we had a little more work to complete. Running two batch plants at a time, we had a couple of 6,000-cubic-yard days."

### factsfigures

#### Runway: 2L-20R

Project: Runway Reconstruction

Location: Nashville International Airport

Cost: \$28.5 million

Funding: FAA (57%), state funds (12.5%), passenger facility charges (30.5%)

#### Key Contractors

Engineering & Design: Garver, LLC; Allen & Hoshall

General Contractor: The Harper Co.

Asphalt: Lojac Enterprises

Grading: Division 2 Constructors

Electrical/Lighting: Hypower

Geotechnical: K.S. Ware & Assoc.

Pavement Markings: Peek Pavement Markings

Lighting & Signage: [ADB Airfield Solutions](#)

Project: Runway Rehabilitation

Location: Nashville International Airport

#### Runway: 2C-20C

Cost: \$600,000

Funding: State (90%), Metropolitan Nashville Airport Authority (10%)

#### Key Contractors

General Contractor: Lojac Enterprises

Electrical/lighting: Stansell Electric

Seal Coat & Pavement Marking: Kerr Brothers & Assoc.

Due to line-of-sight issues, the runway had to be raised as much as 15 inches in some places.

Approximately 66,000 cubic yards of new concrete, 90,000 tons of asphalt, 90,000 tons of recycled concrete, 27,000 tons of recycled asphalt and 9 miles of cable were used to construct the new runway. Thirty-five-foot asphalt shoulders were added to improve the safety and integrity of the runway, and a new lighting and signage system from [ADB Airfield Solutions](#) was installed.

According to airport officials, the \$28.5 million project sustained about 300 jobs over the course of the year.

#### Saving Money the Green Way



Early in the planning phase, Sisemore requested a contract amendment to add testing that would determine whether the old concrete could be converted into usable aggregate. Core samples taken by K.S. Ware & Associates indicated that the concrete, indeed, met the required strength and durability for use as base aggregate.

When the runway closed, construction crews demolished the pavement with a guillotine breaker/rubblizer. The concrete was then hauled to the onsite crushing and screening plant, where it was pugmilled to the appropriate size and moisture conditions before returning to the project.



Harry Pratt

Nearly 90,000 tons of aggregate were produced from the 7,700-foot runway. In addition, 27,000 tons of asphalt were recycled. Steel dowel and reinforcing bars were separated during the recycling process and transported to a steel recycling company in Nashville.

"Going green" on the project saved the airport roughly \$2 million, dropping the cost of aggregate placement from \$26.91 per ton for virgin material to \$4.87 per ton for the recycled concrete aggregate. It also earned the project distinction as one of three finalists in Bentley Systems' 2010 "Be Inspired Award" for innovative installations.

"Though we did not win first place," Sisemore reflects, "being a finalist and presenting the project to an international audience in Amsterdam was, in itself, a



Sponsor

Security Fencing: Prime Security

Rubber & Marking Removal/Runway Marking: Peek Pavement Markings, Waterblasting Technologies

Concrete Patch Supplier: [DS Brown](#)

very nice recognition."

In retrospect, Thomas identifies teamwork between the owners and engineers as the key to its success.

"There were many opportunities for failure," he notes. "But because of the cooperation among all parties, there was no butting heads, no arguments. The project went very smoothly, and everyone gets credit for that. I'd take one of these jobs every year if I could get it."

No Need to Wait

When 2L-20R opened for business in August 2010, BNA wasted no time before starting its next runway project. Runway 2C-20C shutdown in early September for rehab and reopened on December 29.

"We decided to take possession of the entire runway to do all the required maintenance rather than shut it down numerous times to work on different areas of the runway," relates Vitt. "It made the work much more efficient."



Ryan Sisemore

While the bulk of the work entailed cleaning and resealing the pavement joints with silicone, general contractor Lojac Enterprises also performed some full-depth and partial-depth patching with Delcrete(tm), a concrete patching material manufactured by [DS Brown](#).

Lojac contracted Peek Pavement Markings to perform rubber removal and re-stripe the runway.

"The rehab was actually finished in October," Vitt explains, "but we kept the runway closed through December to complete work on adjacent taxiways. Closing the runway one time meant fewer interruptions for our airline tenants."

[Airport Improvement Magazine - March-April 2011](#)

Share this article:

<< return to All Articles

**Airport Cities**  
WORLD CONFERENCE & EXHIBITION

Memphis Tennessee  
April 11 - 13 2011

GOLD SPONSOR  
ARCHITECTURAL ALLIANCE INTERNATIONAL

ENDORSED BY  
AIRPORTS COUNCIL INTERNATIONAL

OFFICIAL AIRLINE CARRIER  
DELTA

VENUE HOSTED BY  
The Peabody  
HOTEL  
AT  
MEMPHIS  
INTERNATIONAL  
AIRPORT

**Supplier Sponsors**

**Five Star Airport Alliance**  
Your Complete Source for Baggage Handling Systems and Airport Services



**NAC**  
NEUBERT AEROCORP  
MEMPHIS, TENNESSEE  
(727) 538-8744  
www.airportnac.com

**FIGHT HEART DISEASE**  
American Heart Association  
Learn and Live.

**ACC**  
AIRPORT CONSULTANTS COUNCIL



ADB has the most SwitchGear Regulator System (SGRS) experience in the industry. Our first SGRS installation was in February 1995, and we currently have 37 installations with 86 lineups and 973 regulators. To find out more, click on this ad.