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reduced parking customers' towing charges and sped the clearing of parking surfaces for maintenance and cleaning.

In his book "The Gospel According to Starbucks," Leonard Sweet speaks convincingly that "the product is no longer king; it's the experience that surrounds the product that brings people in the door." He observes that customers are not interested in just an expensive cup of coffee. They will, however, stand in line (even several times each week) for "coffee as an experience." This includes the room, the colors, the music, the smells, the people: the entire atmosphere. Customers trust, from past visits, that they will enjoy the experience each time they enter the store.

We can create this "entire atmosphere" in our "partnering" experience. We can do this by acting consistent with our contract language. We can show we respect them in our verbal and written communication. We can hold meetings in the field or in more pleasant surroundings, depending on the situation. We can ask

for their professional opinions to anticipate or solve operational or customer-service issues. We benefit as we apply their experiences to our operations. They benefit as they can take what they learn from us to their other or future operations.

Their "visits" to our "store" must encourage them to gladly return. When they do, we must continue to reinforce the "entire atmosphere" and then resolve issues together. By doing so, we have improved our services and created new ones. We have reduced costs by sharing needs they can help meet, streamlined operations, improved staff efficiencies and reduced formal paperwork.

**Richard Decker is Assistant Manager of Parking Operations at MSP International Airport. He can be reached at [Rick.Decker@mspmack.org](mailto:Rick.Decker@mspmack.org).**

*PT*

# Mayors Group Recognizes Wilmington Partnership to Catch Parking Scofflaws

A Wilmington, DE, program to catch parking scofflaws has won national attention from the U.S. Conference of Mayors. The city's Parking Enforcement Initiative was recognized with an Outstanding Achievement Award from the nonpartisan organization.

The Wilmington Department of Finance works with Affiliated Computer Services (ACS) to increase the collection of parking fines from repeat offenders through this innovative program. ACS has provided parking violation processing and collection services to the city since 1993.

"Partnering with ACS has provided the technology and best practices we need to keep pace with our city's increasing parking fine collection demands," said Mayor James Baker. "ACS helped bring an innovative, service-oriented approach to getting parking scofflaws to pay their fines, enhancing public safety and increasing city revenue."

Under the initiative, Wilmington Police Department enforcement personnel patrol the city with a vehicle equipped with Mobile License Plate Recognition technology. The license plates of parked cars are checked against the online ACS parking ticket database to identify vehicles with more than \$125 in delinquent violations. A city employee applies a self-releasing "smart" boot to identified vehicles after confirming the motorist's violations are still outstanding. After paying fines using a credit card, debit card or check-by-phone, violators are given a code to remove the boot, which they then return to designated drop-off locations.


"The award recognizes the benefits of a forward-thinking government and business working together for the public good," said Michael Huerta, ACS Managing Director, Transportation Solutions.

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Note the difference in lighting between where High Pressure Sodium and LED lighting is used.

# Nation's Largest Mall Expects Big Savings in Lighting Costs

BY KEVIN ORTH

**M**all of America (MOA), which opened in 1992, is the nation's largest retail and entertainment complex. Located in the Minneapolis suburb of Bloomington, Minn., the 4.2 million-square-foot facility is home to more than 520 shops.

As a facility committed to being eco-friendly, management is always looking for products and programs to help reduce the Mall's carbon footprint. The Mall's two nearly identical seven-story parking ramps are a case in point.

Recently, Mall of America examined the lights in a section of these ramps and teamed up with Beta LED to conduct a test project using light-emitting diodes (LEDs) luminaires. These new lights use fewer than 100 watts each, which is less than half the energy of the ramps' traditional sodium lights.

Since the two ramps have approximately 4,000 lights installed, MOA anticipates savings between \$300,000 and

\$500,000 in electricity costs if all of the lights were changed.

Anna Lewicki Long, MOA spokeswoman, said management is pleased with the project's initial results. "What we are finding is these lights are extremely bright and illuminate very well. The Mall's energy costs are being cut in half."

The project's luminaires are rated at 105,000 hours – approximately 20 years without needing to be replaced. This is compared with traditional high-pressure sodium lights that are rated to last approximately three years.

MOA will observe the lights throughout the winter to make sure they respond well during Minnesota's coldest weather. It also wants to make sure the lights provide adequate illumination, as safety is always a concern in a parking ramp.

Environmental benefits are huge, according to Long. "The Mall is designed to be eco-friendly. For example, there isn't even a heating system in the Mall, which is incredible if you think about it. The body heat of 40 million visitors each year is one of three

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Dallas Love field Airport wanted to protect pedestrians from the weather elements as they exit the baggage claim area and wanted to cover the limousine parking. FabriTec Structures designed, manufactured and installed stylish and aesthetically pleasing tensile structures. The custom arched structures give the facility a more modern look and blend perfectly with the overall design theme. S&P Construction was the GC on this expansive terminal project. With the newer, cutting edge fabrics, designers can choose from a variety of materials with varying degrees of translucency, light reflectivity, UV protection and non-combustibility. The material of choice for Dallas Love Field was white PTFE higher-end tension fabric which looks translucent as light reflects on it creating a soft glow at night and a comfortable environment during the day. Log on to [www.fabritecstructures.com](http://www.fabritecstructures.com). The tension structure manufacturer FabriTec Structures' holding Company is USA SHADE & Fabric Structures which includes Vehicle Protection Structures (VPS) specializing in covered parking at airport facilities [www.vpslp.com](http://www.vpslp.com).

## Nation's Largest Mall Expects Big Savings in Lighting Costs

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heating sources. Sunshine from the skylights, which are seven and a half acres of glass, and miles of artificial lights help too. The Mall typically is 72 degrees in the winter."

These are the types of green initiatives that made the Mall think about the lighting for the parking ramps, Long said.

Exterior lighting has three primary functions – safety, security and ambiance. Some examples where lighting form and function do not always meet are parking garages, walkways, canopies and parking lots. However, with LEDs as the light source, these applications can retain the aesthetic and performance integrity of the property, while offering savings on energy and maintenance.

"Beta LED is pleased to be a part of this test project with the Mall of America, because parking garages provide an excellent platform for LEDs, given the high cost of electricity and the demand for energy-efficient lighting, particularly in applications that operate 24/7."

The primary advantages of the new LED technology in outdoor applications are energy efficiency and light-source longevity. Orth said these benefits augment the old perception that LED lighting is primarily for aesthetic purposes. LED lighting can have a tremendous impact on the bottom line, especially in commercial applications.

The upfront cost for LED luminaires is going down, providing an excellent return on investment, Orth said. Also, through advances in technology, the efficiency and light output are increasing. The overall the performance of LED luminaires is advancing in efficiency at a rate of approximately 35% annually, with costs decreasing at a rate of 20% annually, according to the Department of Energy.

The opportunities to save energy and improve the bottom line through energy-efficient initiatives, construction design and products such as LED general exterior lighting are as numerous as there are parking facilities, Orth said.

**Kevin Orth is National Sales Manager for Beta LED. He may be reached at [Kevin\\_orth@beta-kramer.com](mailto:Kevin_orth@beta-kramer.com)**

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# Effortless Expansion – Design Foresight Keeps Garage Open During Construction

BY BRIAN LOZANO AND JACOB GONZALEZ

In summer 2005, Harris County, TX, was in the midst of constructing its \$90 million Harris County Civil Justice Center in the heart of downtown Houston at the busy corner of Congress and Austin streets. The county hired Walter P. Moore's Parking Services Group to evaluate its parking requirements. Its study showed that the new center would require about 800 additional parking spaces.

How would the county be able to provide those spaces in a section of downtown with little or no room to add another parking garage? Would it have to buy property next to the new center?

Fortunately, Harris County had considered those difficult questions during the design of its nearby 1,100-car Congress Street Garage. Because of that foresight, the garage could easily be expanded an additional five levels, with the added benefit of remaining open during construction.

Shortly after the study was completed, Harris County retained Walter P. Moore as the Prime Consultant to lead the design team in the five-level vertical expansion of the Congress Street Garage. The firm's Structural Engineering Group was Engineer-of-Record on the original project team and had designed the roof level (Level 7) with extra capacity to receive the future Level 8 shoring loads.

By carefully planning this very important design aspect during Phase I, Harris County was able to keep the existing Levels 1 through 6 fully operational and generating revenue during Phase II construction. The existing roof level was the only level entirely closed during construction.

Normally, shoring is required two to three floors below a newly poured level. Without the strengthening of the roof, shoring would have been required on Levels 5, 6 and 7 when Level 8 was poured. This would have resulted in 450 spaces being taken out of use for about three months.

The original design included garage upgrades that proved to be valuable in future expansion:

An upgraded foundation allowed the team to concentrate on the upper levels, rather than on strengthening the existing foundation system, which is a very intricate process.

The elevator system also was designed to handle the future passenger load. Phase I included an elevator shaft area planned to handle two extra elevators. With the expansion, the garage essentially has a low-rise elevator bank and a high-rise bank to handle the added levels.

The elevator bank serving the existing Basement through Level 7 has three cars. Level 7 was used as the transfer level between the two elevator banks, because the existing three-car elevator bank was a vital component in keeping the garage operational during the vertical expansion.

The garage design accommodated a future construction crane shaft inside the garage via the use of a "punchout area" in the slab.



Adding to the garage's aesthetic appeal are the reveals in the cast-in-place concrete bumper walls used to avoid the "monolithic" look of 12 levels of concrete. © Richard Payne

This area was simply blocked off when the crane was constructed inside this vertical hole. The punchout was strategically placed inside the parking area and required the loss of only three spaces on every floor.

By placing the construction crane blockouts in the parking space area and not in the drive aisle, traffic flow on all levels was unimpeded. The foundation for the future crane will accommodate the crane size required to construct a 16-level parking structure. Once the garage was constructed, the crane was dismantled and the structural slab was poured over the crane openings.


As a value engineering exercise, the original Phase I and the Phase II garage façade incorporated a "turned up" structural beam, which acts as a vehicle and pedestrian restraint and provides the look the client wanted, without the added cost of precast panels. Also adding to the garage's aesthetic appeal are the reveals in the cast-in-place concrete bumper walls used to avoid the "monolithic" look of 12 levels of concrete. The result is an architecturally pleasing structure with clean lines that fits in with the surrounding historic buildings of downtown Houston.

The expansion design team also analyzed the garage's existing parking control equipment for its ability to handle the additional load. It was determined that the garage did not need any additional lanes of equipment or even any upgrades at that time – a testament to the original design team's thorough planning.

Since many of the major concerns and challenges with vertically expanding a parking garage were solved in the Phase I portion, the expansion design team focused on a construction phasing plan that would keep the original portion of the garage fully opera-

Continued on Page 26





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## Registration Opens for IPI's 2008 Conference

**T**he International Parking Institute (IPI) has begun regular registration for its 2008 Annual Conference & Exhibition. This year's event, featuring the theme "Becoming Greener: Creating a Sustainable Future," will be June 1-4 at the Dallas Convention Center in Texas.

The keynote speaker for the gathering will be environmentalist and activist Robert F. Kennedy Jr. He was named one of Time magazine's "Heroes for the Planet" for his success in helping Riverkeeper lead the fight to restore the Hudson River. The group's achievement helped spawn more than 130 Waterkeeper organizations across the globe. A scion of a renowned political family, Kennedy serves as chief prosecuting attorney for the Hudson Riverkeeper and president of Waterkeeper Alliance.

Maurice Anderson, IPI's Interim Executive Director, noted: "The environment is on everyone's mind today, which makes the theme for this year's conference very timely and pertinent in the world we live in today. Robert F. Kennedy Jr.'s reputation as a resolute defender of the environment makes him a proper choice as our keynote speaker."

The conference will feature an information-packed educational component addressing the diverse needs of attendees' experience levels by offering knowledge "tracks" designed for Introductory-, Intermediate- and Veteran-level parking professionals. Many of this year's presentations will focus on environmental concerns in parking and transportation; others will offer insights into industry best practices and cutting-edge developments in technology.

IPI's dynamic exhibition is the largest of its kind in the parking industry; last year's featured more than 200 exhibiting companies displaying an array of products and services. In attendance each year are the key decision-makers in parking and transporta-

tion: executive directors, CEOs, senior managers, commissioners, planners, engineers and consultants. All are looking for information on how other organizations are doing business. Many are researching and sourcing future suppliers; some even purchase products and services for their organizations on the spot.

The IPI strongly encourages networking and the free exchange of ideas at the conference. Its open-discussion, roundtable ShopTalks are available by industry segments, such as airports, medical centers, universities, and many others. "Power Pitch Hours" allow vendors a unique forum to present their products and services to potential buyers.

Wrapping up the week, the "Awards of Excellence & Professional Recognition Luncheon" is an opportunity to see those facilities and programs that define the best in the industry. Additionally, attendees may meet, greet and relax with fellow professionals by participating in the annual benefit golf tournament that kicks off the conference and the closing night festivities that feature food, fun and entertainment to wrap up a successful conference experience.

The IPI anticipates that this year's conference and exhibition will be its biggest and best to date, in keeping with its stated mission to provide "leadership, information and education" to the parking industry via its vision of "leading and connecting professionals in a dynamic multi-modal world."

IPI's Anderson stated: "There are steps we can take as parking professionals that will improve our environment and contribute to a cleaner and better world in the future. The IPI's conference in Dallas is a must for anyone in our industry to attend."

Registration for attendees and exhibitors is available on the IPI website at [www.parking.org/conference](http://www.parking.org/conference).

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## Effortless Expansion – Design Foresight Keeps Garage Open During Construction

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tional during expansion construction.

Because the garage is downtown, the traffic-control plan concentrated on keeping the major traffic artery, LaBranch Street, open. Traffic was reduced by two lanes each on Austin and Franklin Streets for construction staging. All garage entrance / exit points were kept open to facilitate rapid flow to / from the garage.

Because of the foresight of the original garage design team, the owner's willingness to finance premiums in the initial design and the expansion team's hard work, the garage expansion was

constructed in record time with few change orders, and it came in under budget.

Brian Lozano, a Parking Consultant with Walter P. Moore, can be reached at [blozano@walterpmoore.com](mailto:blozano@walterpmoore.com). Jacob Gonzalez, P.E., is a Principal and Senior Parking Consultant with the firm, and can be reached at [jgonzalez@walterpmoore.com](mailto:jgonzalez@walterpmoore.com).

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# Is the Current Financial Scene Good or Bad for U.S. Manufacturers?

BY JOHN VAN HORN

This article was written for **Parking News**, the magazine of the British Parking Association, and is reprinted here by permission. Editor.

**T**he markets are going wild – up one day, down the next. The credit markets are uncertain. The pessimists are out-yelling the optimists. In this time of financial flux, how are American park-

ing equipment manufacturing companies doing? Are they debt burdened, like some in the UK? Will some or all survive the times? Is consolidation happening or going to happen?

First, let's discuss the marketplace in general. The need for parking control equipment, particularly on-street, has never been greater. Cities are raising parking fees and need new high-tech equipment that handles cards as well as cash. This market is not changing; it's getting hotter. Therefore, companies in this business should have a rosy future.

As for off-street, the conversion from pay-on-exit to pay-on-foot is in full swing. The American market usually follows the European parking market by at least a decade, and the concept of pay-on-foot – a commonplace occurrence in Europe in the 1990s – is only in the past five or so years becoming common in North America.

That means there are literally thousands of parking operations that have older systems and need upgrading. Usually the cost to do that can come from labor savings, and parking operators are looking to this technology to compete. The off-street manufacturers should be healthy.

Companies are motivated to lower their payrolls, and technology is the way to go. The rifle has been loaded – companies and municipalities for years have been toying with new ways to collect and increase revenue while lowering ongoing costs. Economic pressures will provide the catalyst for them to pull the trigger.

Cities, particularly, are feeling the pain of the burst of the housing bubble and lower property values through lower tax (rates) revenues. They are looking to other areas to raise that revenue. And parking is becoming a major revenue source in many a municipality. But they need the proper equipment to collect it.

There are not a large number of manufacturers of parking equipment in the U.S. Most are based in Europe or Japan and sell

into the U.S. market. However, the weak dollar has made this difficult, and local manufacturers, including foreign ones that assemble in America, have a distinct advantage.

There has been a bit of consolidation, with four companies (Reino, Duncan, Enforcement Technologies and Citation Management) now under the Duncan banner. This is an on-street company rolling technology, citation writing and collection all into one group. It's a soup-to-nuts solution, and the new company is wrestling with all the issues that come with trying to blend four company cultures.

McGann, a U.S. firm that provides revenue control software basically that runs on Amano equipment, has merged with Amano USA to form Amano McGann. This, too, appears to be a good match, based not so much on financial pressure as on a synergy that existed between the two companies.

Beyond that, most transactions have involved manufacturers buying their dealer or distributor operations. This has happened at least half a dozen times in the past year, indicating that manufacturers believe a direct operation will enhance their bottom line.

The question remains: How does a weaker economy affect manufacturers? In my opinion, if they are properly marketed, not much. In fact, the

pressure to decrease ongoing costs in the face of a downturn and increase revenue makes switching to newer technology all the more important.

Economic downturns, particularly in the U.S., are notoriously short-lived. Many are predicting that the bulls will be back in less than a year. Well-run companies will take advantage of the market and prosper during this uncertain time.

As for available credit, the U.S. Federal Reserve has lowered interest rates, making short-term credit more readily available to firms in need. That process, along with some tax changes made in a recent stimulus package from the government, should give most companies a breather and entice others to invest and grow.

All these factors make for a parking equipment market in the U.S. that is primed for steady growth, and for companies that treat it right to be very successful in the near and far term.

John Van Horn is editor of **Parking Today**. He can be reached at [jvh@parkingtoday.com](mailto:jvh@parkingtoday.com).



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# Denver International Airport Undergoes Garage Restoration

**P**arking garages at Denver International Airport (DIA) are undergoing a four-phase moisture-protection program. This project will extend the service life of all six parking structures and provide long-term benefits and cost savings to the City and County of Denver.

The project is aimed at significantly enhancing long-term durability for the precast concrete structures. Waterproofing and other protective systems were applied to assist in protecting the structural components from corrosion-causing mechanisms.

In 1998, DIA began to develop the program for all levels of the six parking structures to minimize the migration of water, mainly from melting snow and ice, from the top level to the levels below. Phase I began in 2000 and Phase II was completed in June 2007. Phase III is scheduled to finish this year, and Phase IV will conclude in late 2009.

“A collaborative effort between Denver International Airport and the Walker team has resulted in a smooth restoration project for all involved,” said Randal Beard, Principal for Walker Restora-

tion Consultants’ Denver office. “Taking the appropriate measures to restore structures long before potential problems could ever surface ensures patron safety and cost savings.”

DIA’s six garages provide covered parking for approximately 13,000 vehicles. The airport has more than 40,000 public parking spaces. DIA had more than 47.3 million total passengers in 2006 and was on pace to achieve a record-setting 2007 (final passenger totals for 2007 are still to be released).

Once all four phases are complete, more than 150 miles of sealant that has reached the end of its useful life will have been replaced.

Denver is within four hours flying time of every major city within the contiguous United States and Mexico, and most Canadian cities. Denver International Airport is home to more than 30 commercial airlines, including regional carriers and charters, which offer more than 140 domestic and international destinations with nonstop service.

For more information, check out the firm’s website: [www.walkerrestoration.com](http://www.walkerrestoration.com).

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Three of DIA's six garages, all undergoing moisture-protection restoration to extend the lives of the structures.

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# Vision-Based Parking Management

BY META ROTENBERG AND MIRIAM SILVA

**T**he necessity to streamline the ongoing work of parking lots has resulted in the adoption of optical technology, integrating it into sophisticated parking systems. The technology is OCR – Optical Character Recognition – the electronic translation of alphanumeric images into machine-editable text.

The unique application of OCR in the automotive sphere is LPR – License Plate

Recognition – reading the license plates on vehicles, and storing the images captured by the cameras as well as the text from the license plate.

In the first phase, the system's imaging hardware (specialized visual spectrum and infra-red spectrum cameras designed specifically for the task) captures the license plate's image. In the second phase, the system's software uses a series of proprietary image manipulation techniques to detect and enhance the number plate's image, and proprietary OCR to extract the license plate's alphanumerics.

The software runs on standard PC hardware and can interface with, or be linked to, other applications or databases. For example, the LPR system from Hi-Tech Solutions includes self-developed Recognition Engine software for simple integration into other applications, such as the computerized valet parking and Check-Point LPR systems of Computerized Valet Parking Systems, a subsidiary of Service Tracking Systems.

In recent years, LPR technology has gained popularity among many parking operators, who use it to automate billing processes, improve customer service, increase productivity and accuracy, minimize liabilities, and enhance facility security.

The LPR system is usually installed at the entrances and exits of a parking facility. The system automatically opens the gate for subscription parking (prepaid members) and calculates the parking fee for visitors. The plate string is used as a key to calculate the parking fee automatically, based on the time difference between exit and entry.

How does it work? For example, in some LPR systems, each vehicle generates one message containing a vehicle number, an optional identification name, the data and time, the lane, and an optional image file path (in .jpg or .bmp formats). Then the system shares the vehicle identifications with other processes such as billing. This can be done either by external communication (RS232) or by application-to-application messages. The latter method is implemented by Dynamic Data Exchange



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