



An Investment





PARKING GUIDANCE SYSTEMS (PGS) have become common on American campuses in the past decade. The ability of PGS to guide students, staff, and visitors directly to open parking spaces is attractive to campus parking directors because it makes parking so much more convenient and safe. Some universities, including Colorado State University, have even added parking guidance to promote sustainability because reducing queuing and the number of drivers aimlessly circling garages looking for parking reduces emissions.

Typically the focus of PGS enthusiasts is on driver convenience, and there's no reason for it not to be. However, the management benefits to the university itself are equally important. In fact, at the University of Oklahoma (OU), those benefits were the determining factor in convincing university administrators to take the plunge and install parking guidance on campus.

Pays Off

A new parking guidance system offers multiple benefits at the University of Oklahoma.

By Kris Glenn and Dale Fowler

The OU Approach

Last summer, the University of Oklahoma installed a new parking guidance system in the campus' Jenkins Garage, which provides parking to students, staff, and—on game days—football fans. What sets the OU program apart from many other university PGS systems is that it uses camera-based guidance equipment above every space in the garage. Camera-based systems are popular because of their accuracy, but they typically use a single light to manage a group of spaces rather than an individual light over every space. This is sometimes confusing to drivers who respond to a green light indicating that a space is open but then find that they still have to find the specific open space when they arrive at that sensor.

OU's parking team felt that it was important to make the system as simple and intuitive as possible, so the university took the extra step of installing camera-based sensors over each space. Those sensors are connected to a system of LED matrix lights located at the garage's entrance and the entrances of each floor. The signage at the entry tells drivers how many spaces are available throughout the garage, and the signs on each floor of the structure announce how many spaces are open on every floor and which user (permit) group can use them. When the driver gets to his or her assigned floor, a series of lights in each sensor indicates whether that space is open or occupied. In this way, the system guides drivers directly to available spaces once they enter the garage.

The payoff came quickly. Although the system has been operational for just about seven months, the university has already experienced significant reductions in the amount of time it takes for parkers to find an open space, and congestion has been significantly reduced in both the garage and surrounding roadways.

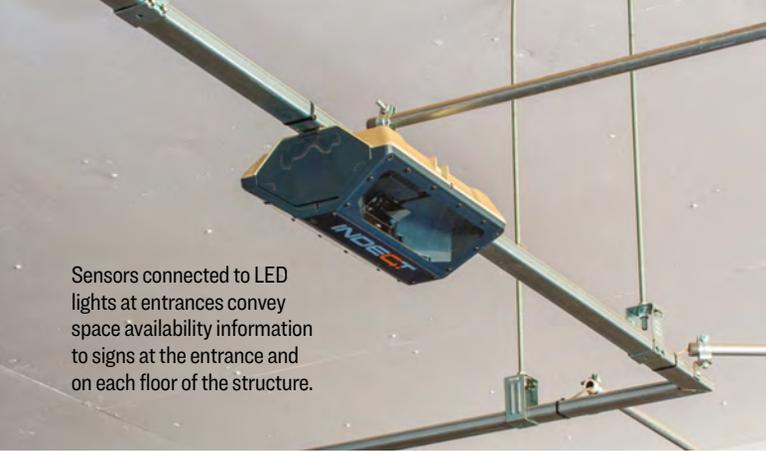
The Jewel of the System

The real jewel of the system is the management software that runs the network. In fact, the primary factor in the university's decision to install the PGS was the ability it gave campus parking administrators to right-size the garage in real time. In essence, the software allows parking administrators to do what previously could only be done in modeling applications: reallocate parking resources in real time, as the need arises. This can be done semester to semester, month to month, week to week, or day to day.

How does this work? The garage serves four different user groups:

- Commuters.
- Residential underclassmen (identified by the university as housing parkers).
- Residential upperclassmen (identified as priority housing parkers).
- Faculty and staff.

Each group has its own distinct parking area. When they enter, commuters are directed to one area within the garage, housing parkers another, priority housing another, and finally, faculty and



Sensors connected to LED lights at entrances convey space availability information to signs at the entrance and on each floor of the structure.

staff to their own section. Throughout the day, the system records data about which spaces are occupied and during which hours. These data are collected and constantly analyzed, allowing parking administrators to determine how much of each type of parking is needed and to reallocate parking resources accordingly.

Game Day

Anyone who follows college football knows that the University of Oklahoma has a strong tradition as one of the nation's premier college football programs. Just last season, the university advanced to the NCAA College Football playoff, which is essentially the football equivalent of the basketball's NCAA Final Four. The flexibility of Oklahoma's parking guidance system is particularly useful during the football season because it permits the university to set aside two levels just for game-day parking. As you might expect, this was a popular amenity among OU fans attending games.

Solving Challenges

This system has been in place since last August. Going into the semester, the university parking team knew that there hadn't been enough commuter spaces allocated in the previous semester. However, analysis of the day-to-day user data showed that throughout the first term this year, there was also a clear shortage of housing parking. The team was able to make necessary adjustments and add additional housing spaces for the current winter session.

Another important benefit of the management program is that it will permit the university to implement a shared parking strategy that could more than triple the effective capacity of the garage. When the university's parking team analyzed the use data provided by the parking guidance system, they found that approximately two-thirds of the spaces were going unused for at least part of the typical day. Having this data will allow parking administrators to reallocate parking spaces to maximize their utilization. So, for instance, if more resident parking is typically needed at night, staff/faculty spaces and commuter spaces can be reallocated for overnight use by resident students.

Through this reallocation strategy, the university's parking team anticipates that they could more than triple the amount of parking permits they sell from 900 to about 3,000. This strategy could essentially expand parking capacity within the garage by more than 300 percent without having to spend a dime on new parking development. In addition to better serving students and

staff, this strategy will generate additional revenue through permit sales by maximizing the use of the spaces in the Jenkins Garage.

Expandability

The parking guidance program is also expandable. As the university parking technology program expands, it's important for the parking guidance system to grow with it. The University of Oklahoma parking guidance system has a number of useful capabilities that the parking team plans to take advantage of in the future.

For instance, the camera-based sensors have the ability to record whether a particular parker is parked in an appropriate space. When someone parks in an inappropriate parking area, the system can recognize the irregularity and notify parking enforcement personnel. The university plans to take advantage of this capability in the future.

New systems like this one can also manage a Find My Car program to help parkers find their vehicles. If a driver forgets where he or she parked, they could just go to a special kiosk and punch in their information to see where the car is located.

Camera-based sensors could also provide additional security by monitoring activity around vehicles. If a car is hit by another vehicle or if someone within the garage is a victim of crime, the cameras could be used to determine what happened.

Going Campus-Wide

The university parking guidance program has been extremely well-received by university administrators, students, and staff and will soon be expanded to include four additional garages on campus. Installation of the parking guidance system in the Cross garage will be completed in August, in time for this year's fall semester.

The University of Oklahoma's system has offered numerous benefits. In addition to the obvious advantages of making it easier and more convenient to park, it's allowed parking assets on campus to be better managed, has made shared parking a simple reality, and has maximized use of the garage. Perhaps most importantly, PGS can often increase parking capacity without forcing the university to spend money developing new parking facilities. Not everyone was sold on installing such a big system, but it's been a great move at the University of Oklahoma. 



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