

# PREVENTING A PAIN IN THE GLASS

By Mark Wright

Avoiding vehicle-into-building crashes is all about parking lot use and design

**P**icture a red-smearred tile floor covered in broken shards of glass. Then, imagine me, sitting in the middle of it all, yelling like a two-year-old. It's not a pretty picture.

A driver pulled into a parking space in front of the convenience store I was about to walk out of, but her car didn't stop. It popped right over the shallow car stop and equally shallow curb that separated the parking area from the store's windows and glass doors, and then crashed into me at the moment I was pushing those doors open to leave.

That 2008 event changed my view of parking spaces and the vehicles they're supposed to contain. Now, when I see a row of parking spots in front of a building, my attitude is best expressed by a line from the late Allen Funt's "Candid Camera" television show sign-off: "Don't be surprised if sometime, somewhere, someplace when you least expect it...!"

## Common Occurrences

Sadly, vehicle-into-building accidents happen all the time—often while drivers are navigating into or out of parking spots. From June 1, 2010 through May 16, 2011, I found online news media accounts of 642 such incidents, 58 of which were outside the U.S.—most commonly Canada, Australia, and the U.K. (with a couple of exceptions, that number does not include vehicle-into-residence crashes).

No central database exists into which all of these incidents are uniformly and reliably reported, which, unfortunately, prevents accurate tracking and quantification of their frequency and related details. The National Highway Traffic Safety Administration (NHTSA) collects coded data files from state police accident reports, but only 32 states participate. The online news reports I track down—sometimes weekly, sometimes monthly—to post on [www.storefrontcrashes.com](http://www.storefrontcrashes.com) represent just an anecdotal sample of the incidents that occur.

## Causes Vary

Each vehicle-into-building incident is unique and the causes vary, but certain patterns stand out. Drivers of all ages manage to mistake their gas pedals for their brakes. They confuse "drive" with "park" on their automatic transmissions. They get distracted or suffer medical emergencies and fail to brake in time—or at all—when entering parking areas.

Generally, accidental lapses appear to outnumber criminal causes (driving under the influence, fleeing from police pursuits, recreational speeding, or intentional smash-and-grab burglary attempts). The mix changes from month to month in the news accounts.

## No Place is Immune

Locations of these incidents range from small towns to major metro areas. The most common scenario involves a retail store or other storefront business in a strip center that positions its parking spaces so that drivers have to pull straight in toward the building.

The businesses on the receiving ends of these crashes are as varied as your local chamber of commerce membership list. They include real estate offices, insurance offices, salons, daycare centers, pet stores, florists, greeting card shops, electronics and cell phone purveyors, and dental and medical clinics. Name brand establishments, such as Starbucks, Dunkin' Donuts, or McDonald's, take it in the glass right alongside of little mom-and-pop independents. Larger retailers with their own dedicated parking, notably chain drugstores and grocery stores, see plenty of mishaps, too.

Commercial retail isn't the only type of environment affected. While storefronts seem to take the brunt of these

incidents, hospitals, long-term care facilities, and educational campuses are far from immune. From a driver crashing a truck into a campus medical building last October in Bellingham, Wash., for example, to the campus coffee shop at Biola University in La Mirada, Calif., that needed a new door after a driver hit the gas instead of her brake while attempting to pull out of a parking space in April, these accidents can happen anywhere.

### Serious Consequences

While I made a good recovery from the injuries sustained in my own accident, others are not always so fortunate. The results of these crashes range from miraculously minor to mind-numbingly tragic. Best-case scenarios leave the people involved mildly shaken and their property slightly stirred. But rarely does a vehicle intrusion into a building leave no damage in its wake. Simply replacing plate glass windows or doors can run into the thousands of dollars.

On the other end of the spectrum are worst-case scenarios, which kill people and destroy businesses. Due to the lack of official stats on these crashes, there is no way to determine a trustworthy percentage of injuries and fatalities, but they appear with alarming frequency in news accounts.

The fatalities are, obviously, heartbreaking. Two mothers on opposite sides of the U.S. died within days of one another last November. One was killed in Chicopee, Mass., when an 81-year-old driver came crashing into the convenience store where she was buying coffee for her morning commute. The other was killed in Highland Park, Calif., eating hamburgers with her husband and son when a 19-year-old driver slammed through the wall of a restaurant and into their booth.

In Garretson, S.D., an 18-year-old driver was revving her engine outside a nursing home last June. According to news source KSFY, “She thought she was in park, but then accidentally shifted into reverse, causing her to slam right through the wall.” On the other side of that wall was a 101-year-old resident who later died as a result of her injuries. Another nursing home, this one in Sioux City, Iowa, faced a similar tragedy this past April, when an 84-year-old visitor lost control of his car, crashed through the entrance, and struck a resident. The victim died three days later in the hospital, on her 92nd birthday.

As terrible as these crashes can be for the individuals involved, they also create significant costs and survival challenges for the owners and employees of the places that are hit. The owner of a deli in Cortlandt, N.Y., finally threw in the towel after the fifth crash into his store. A salon in Kingston, Tenn., was virtually destroyed when a driver with a medical condition plowed inside, injuring 10 people—including the owner—and threatening the livelihoods of the shop’s employees. And the owner of a restaurant near Los Angeles told me the cost of repairing his place after a crash was close to \$100,000, not including lost business during the entire month he was closed.

### Recognizing Reality

Putting moving vehicles and pedestrians together creates a combustible mix for parking professionals. My own local government, Montgomery County, Md., found that 22 percent of pedestrian-related collisions in the county over the past few years occurred in parking lots. And as just about any pedestrian safety expert will say, the pedestrian always loses in a car-versus-human collision. So the stakes are high.

Some readers might shout, “Don’t blame parking lots! Blame the drivers who mess up!” Good point. Drivers are responsible for their actions. That’s the law. Unfortunately, drivers will never be perfect. Failing to recognize that fact dooms anyone who happens to be in the way at the wrong time to injury or worse.

Parking spaces in close proximity to buildings are like primitive cannons. Roll in a big chunk of steel, insert a driver possessing average human fallibility, and stand back. Maybe it goes off. Maybe it doesn’t. Either way, why would anyone point a row of them at people and multi-million-dollar buildings?

Michelle Wendler, principal/architect at Watry Design, Inc., Redwood City, Calif., explains that owner preference guides architects and civil engineers who design parking patterns. Lines of sight, tenant agreements, zoning requirements, building codes, and cost versus leasability issues all affect parking design and traffic flow.

“There are some tenants who say, ‘We want an open view of our building so we can display through our window,’” she says. “For the most part, they’re designing for the pedestrian experience,” which is what people perceive as they proceed on foot through a development.

### Prevention Strategies

What can be done to prevent vehicle-into-building crashes, particularly those involving parking areas? Just as importantly, what can be done to prevent, or at least mitigate, their ability to harm people and property? Here are five steps to consider:

**Channelize Pedestrians.** Keeping pedestrians and moving vehicles separated is vital, says Jerry Marcus, executive director for parking at Houston-based Walter P. Moore. “We try to ‘channelize’ those two activities as part of the functional design—where you direct vehicles to go, flow patterns, but also with devices. For example, U-bollards are used a lot at airports. That channelizes people to walk in predictable areas. It helps drivers and pedestrians alike,” he says.

**Reduce Vehicle Speeds.** Slowing vehicles down serves everyone’s interests. Drivers have more time to see and react to pedestrians, other vehicles, and signage. Pedestrians have more time to get out of the way. And when a crash is unavoidable, the slower a vehicle’s speed, the better the chances of minimizing damage.

“If people can get up their speed, they will,” says Wendler. She suggests shortening the distances drivers





Decorative planting boxes along storefronts and lots that turn parked cars away from buildings can help prevent crashes.

can travel on service lanes and using other traffic-calming techniques to keep vehicle speeds down.

**Shield People and Property.** “The types of barriers that can be erected to prevent these accidents include bollard posts, large planters, or other architectural items that actually enhance appearance while offering a layer of protection,” says Erica Eischeid, marketing coordinator for Detroit, Mich.-based Ideal Group. Her company manufactures bollards, guardrails, and related products.

Bollards and other barrier technologies have been around for a long time, but the range of available types and variations has expanded significantly in recent years, driven in part by post-9/11 perimeter security concerns. Today’s bollards may be removable, retractable, or fixed. It’s critical to use only those that really will stop a vehicle, however. They also need to be tall and obvious enough for drivers to see, adds Eischeid. Optional lighting, a range of colors and finishes, and customized slipcovers can help design-sensitive customers achieve the look they prefer.

“Designing bollards into a construction project is the holy grail of what we want architects to do,” says Joe Pederson, vice president of marketing and sales at Downey, Calif.-based Calpipe Security Bollards. “But we get calls all the time saying, ‘We forgot about the bollards!’”

Matthew J. Jobin, A.I.A., associate/project manager with Rich & Associates, Southfield, Mich., likes planters “because you can green them up. With bollards you have to space them right” to make sure vehicles can’t fit between them.

The Whole Building Design Guide, a program of the National Institute of Building Sciences, offers a helpful primer on bollards written and updated by Charles G. Oakes, Ph.D. ([www.wbdg.org/resources/bollard.php](http://www.wbdg.org/resources/bollard.php)).

**Point Cars into Safety Zones.** Orient parking spaces

so they’re pointed away from people and buildings. Arrange parking so vehicles pull in toward a planted berm or other pedestrian-free zone.

**Avoid False Solutions.** Avoiding the wrong thing might sound like an odd strategy, but a lack of safety measures is alarmingly prevalent. Instead of bollards or aesthetic planter security barriers, many parking areas offer a simple car stop at the head of each space. Bad idea.

“We never recommend car stops for any reason,” warns Marcus. “They’re a trip hazard. And they make really good launching pads for cars to go into buildings.”

The same can be said for just depending on a curb to stop a vehicle. Once the wheels roll up over the curb’s edge, there’s nothing to impede the vehicle’s momentum. That makes sitting ducks out of people, windows, walls, and furnishings.

Nevertheless, says Jobin, some developers, especially in retail projects, stick with six- or eight-inch raised curbs because they don’t want to impede the flow of people.

## Be Prepared

It’s easy to believe that this kind of accident would never happen to us or to someone we know. The chances must be somewhere below whatever the odds are for, say, getting hit by lightning—just a freak occurrence, right?

According to the National Weather Service, 241 people in the U.S. report being injured by lightning strikes every year (based on 2001-2010 averages). On the other hand, as I explained earlier, I managed to identify 584 vehicle-into-building crashes that occurred in the U.S. over the course of about a year, simply by using the admittedly-Mickey Mouse process of searching through online news reports until my patience ran out.

You do the math. And be careful out there. **P**



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