

# WAREHOUSE .....

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She added: “Many other build-ings in our area are built with the same method as the Amazon warehouse and we should be proactive to prevent fur-ther tragedies by examining the building codes and how they are being enforced. We may need to implement tornado shelters or safe rooms in such buildings when they have a larger workforce.”

Building construction is only one part of the problem. Workers may need to be trained on disaster safety. At the least, they should be confident about where they are asked to go when a tornado strikes.

“We will be looking into the fre-quency and quality of disaster safety training in these warehouses,” Stuart said. “Additionally, we need to estab-lish that our emergency services have the training and resources they need to address disasters like this tornado.”

Several experts have weighed in, and the federal Occupational Safety and Health Administration is investigating the Dec. 10 events, which destroyed an Amazon fulfillment center at Gateway Commerce Center along Illinois 255.

“The testimony we heard from experts in the hearing will guide me and my fellow legislators as we con-tinue to research what actions the General Assembly can take to pro-tect Illinois workers,” Stuart said.

Edwardsville Fire Chief James Whiteford, in a written recap of the disaster, said the EF3 tornado was 300-yards wide and traveled for 4.3 miles, across the area. The tornado hit Edwardsville approximately 8:27 p.m.

The most significant damage was at the Amazon building, where nine people were trapped by debris, two of them basically unharmed, one seriously injured and the six who were killed.

A large section of the roof gave way, causing the roofing structures to collapse and many of the 40-foot-tall, tilt-up wall panels to fall inward. A significant part of the 1.1 million-square-foot facility was destroyed.

Each wall panel weighed approximate-ly 55,000 to 65,000 pounds, the chief said.

Some 85 employees and an un-known number of truck drivers were inside the building when the storm struck, he said in the report.

By the time responders could get there, about 45 were accounted for and out of the building. The scramble was on to find the others, and resources had to be pulled from great distances to eventually locate those who were either trapped or killed.

No single fire department has the capability for such a re-sponse by itself, Whiteford said.

“This issue has brought to light concerns about safety and warehouse construction,” Whiteford said. “As fire representatives, we hold the re-sponsibility to enforce minimum standards and advocate for best prac-tices in terms of fire and life safety.

“The reality is most fire codes are based on tragedies or near misses,” he said.

The International Code Council — or ICC — is the single organization that can get to the bottom of the correct minimum construction standards, Whit-eford said. A broad spectrum of parties has input into those standards, he said.

“This tornado highlights the need to review – and likely change — build-ing requirements for large ware-houses,” Whiteford concluded.

Madison County alone has 30-mil-lion-square-feet of warehouses, many built to the same standard as the one that toppled in December. Most of them are in the neighboring communities of

Edwardsville and Pontoon Beach.

Jim Bell, director of operations for the National Storm Shelter Association, said the formulation of what are called the ICC 500 codes started in 2008. Construction of storm shelters should follow the ICC 500 code, but the Amazon building had only refuge areas, which are not the same thing.

“Those are not hardened spaces; they are just areas within the building away from outside walls,” he said.

To date, no storm shelter built to the standards has ever failed, Bell said.

Ideally, tilt-up construction, de-pending on how it is anchored, is how most such local warehouses are built and features a continuous load path that runs from the foundation to the wall, up through the roof.

“It becomes one building that can’t come apart very well,” Bell said.

Most older buildings are built to a 90-mph wind load, he said, and that is improving. The storm at Edwardsville was estimated at 136 to 165 mph.

The door to a tornado shelter is the shelter’s weakest link, he said. Yet, many times, the door is left out of the con-struction because of the cost or substi-tuted with a regular-strength door.

There are multiple alternatives for shelters, including installing a modu-lar building inside of a larger ware-house, Bell said. Modularity can shelter from 10 to 600 people. That solution is cheaper than trying to retrofit a build-ing constructed without a shelter.

“It’s nearly impossible to take an existing building and try-ing to harden it,” he said.

The buildings in Gateway Com-merce Center do not have basements because of the high-water tables.

Marc Levitan, a research wind engi-neer for the National Institute of Standards and Technology (NIST), part of the U.S. Department of Commerce, has a long history of studying disasters. He said the U.S. has more than 1,250 tornados a year and many more that go unreported.

“Most tornado fatalities oc-curred inside buildings. They are a buildings’ problem,” he said.

For warehouses, there are no fed-eral design requirements to withstand tornadoes except as they pertain to doors, Levitan said. But there is a grow-ing movement in that direction.

He said NIST strongly encour-ages state and local jurisdictions to adopt and enforce the latest build-ing codes for such construction.

State Rep. Jay Hoffman noted that warehousing is competitive, and some companies consider whether to build in an area based on construction re-quirements. By making requirements stronger, Illinois might put itself on unequal footing with other states, nota-bly Missouri, which has a strong logis-tics presence in the St. Louis area.

Both Missouri and Illinois have adopted the ICC standards pertaining to shelters, Bell said. It’s more an issue of whether the standards are enforced. And, whether companies are willing to build shelters at all vs. simply hav-ing refuge areas inside warehouses.

Every six years there is a new ver-sion of the ICC 500, and every state has adopted at least some version of the code.

Rarely, though, do local inspectors have the time to inspect buildings look-ing for ICC requirements, Bell said.

“They are so busy inspecting electri-cal, plumbing and roofs they don’t have the time or the knowledge to inspect tornado shelters. There is a lot of work to be done nationwide as to who is go-ing to be inspecting those,” he said.

Additionally, in Illinois, warehouses don’t fit into the same risk categories as, say, schools and public buildings, when it comes to construction concerns.

Rep. Stuart noted there is noth-ing that prevents the state from spe-cifically addressing warehouses.

Several labor representatives ad-dressed the implications for the workforce.

Randy Harris, director of the Mid-west Region for Laborers-Employers Cooperation and Education Trust, said the building in question was built with union workers, meaning a “a high qual-ity of construction.” Some \$2 billion a year is spent nationally on training.

“That’s a massive amount of money spent getting folks the train-ing to build these types of structures. A union workforce is more cognizant of what’s being done,” Harris said.

Tilt-up buildings or precast struc-tures, generally speaking, are not designed to withstand tornados.

“However, it’s not on the construc-tion contractor, certainly not on the construction workforce, when the disaster happens the way it did,” Harris said.

Tim Drea, president of the Il-linois AFL-CIO, spoke similarly.

“I am not an expert like the oth-ers, but I agree with them on the safety measures. You could have the safest chambers ever, but if the workers don’t know to go there, it won’t do any good.”

Much has been reported, challeng-ing company supervisors’ response during the minutes before the storm smashed into the structure, and Amazon has defended its handling of events.

Amazon officials have said the facil-ity met all local building codes and that workers correctly followed safety proce-dures to shelter away from windows in the north and south sides of the building.

One lawsuit is known to have been filed on behalf of one of the victims.

Employment at such warehouses is often short-term, Drea said, and work-ers don’t have the consistent train-

ing they need in safety measures.

“Workers are not trained enough and not good enough to know what to do when disaster strikes,” he said.

Along with improving the struc-tural integrity of the building, I think we should also improve the train-ing that goes into the workforce.”

Stuart expanded on that point, say-ing warehouse workers should be made to feel that they won’t suffer retribu-tion for questioning safety protocols.

Gavin Stoddard, representing the International Warehouse and Logistics As-sociation, said third-party logistics provid-ers have a stake in the outcome of future legislation. Proper movement of goods via the supply chain is “essential to maintain-ing a healthy, robust economy,” he said.

3PL (or third-party logistics) ware-houses that he represents differ from those hosted by Amazon. 3PL warehouses serve mainly to store and move goods, while Amazon’s are designed to fill customer orders and doing it as quickly as possible.

“It’s this obsession with speed that can dramatically decrease worker safety,” Stoddard said.

He said his association is all for worker safety but “cautions against any standards that would be applied too broadly or overreach its intended goals.”

Alec Laird from the Illinois Retail Merchants Association also testified and said every industry that uses ware-housing is happy to help with input on the issue of construction standards.

Stuart said she welcomes the input so that the issue can be looked at “from every angle.”

She added: “We can’t stop tor-nadoes, but we should do what we can to stop loss of human life.”

Following the deadly tornado, members of the Illinois House Moderate Caucus joined together to donate \$5,000 to the Edwardsville Community Founda-tion Relief Fund to help with community recovery efforts and those impacted, including the families of the six killed.

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