

A BRILLIANT NEW APPROACH TO OCCUPANT EVACUATION.

HOW SOFTDEL HELPED A GLOBAL ELEVATOR COMPANY GET IN ON THE GROUND FLOOR.



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Our story starts at a high level; a conceptual level. The "top floor," so to speak.

It ends on the "ground floor," where well-executed concepts turn real.

Let's start at the top...

Apparently, we all had it backwards...

Elevators, not stairs, offer the safest means of evacuating tall buildings in a fire or other emergency. Hatched after 9/11, which revealed the fatal flaws of relying on stairwells as the sole means of escape, the concept behind this change is called OEO. It stands for Occupant Evacuation Operation.

OEO is a collective automated system used to evacuate the "elevator evacuation zone," which consists of the floor with an active alarm and the two floors immediately above and below it. Here's how it works:

Imagine being on the 70th floor of a high-rise when you hear the fire alarm. Instead of taking 70 flights of stairs to exit, OEO enables you to simply walk to the lobby of your floor, catch the designated elevator to the discharge level – usually the main exit floor – and there make an efficient exit, freeing up the elevator for other occupants.

The process continues until all calls from the active alarm floor are answered. Then, the elevators repeat the process for the other four floors of the elevator evacuation zone until all zone occupants are evacuated.



That's what OEO does. But what makes it work? What enables this seamless, life-saving operation?

The "middle floors" of this story hold the answers...

When a fire alarm is activated...

... the same high-powered algorithms that normally dispatch elevators are used to calculate the most efficient evacuation pattern – and a signal is sent indicating what floors should be evacuated. All landing calls for floors outside the evacuation zone are cancelled unless the entire building must be evacuated – in which case, elevator cars are sent to all floors with priority given to those farthest from the discharge level.

There's a counterintuitive boldness to this masterful operation, and nothing captures it better than this: In a fire, OEO elevator cars travel automatically to a floor within the evacuation zone, park with their doors closed, and await further instructions; it's from there that they are dispatched. Once occupied by passengers, they travel down toward the discharge level with the ability to stop at other floors in the evacuation zone.

What makes this high-stakes orchestration possible?

In a word: communication – between the building systems, elevator system, occupants, and emergency response personnel. The most critical links in this chain: tight interfaces between the elevator system and both the fire-alarm system and Building Management System (BMS).

Which floors are on fire, and which are likely to catch fire? For elevator controls to receive this real-time information, it must be tightly integrated with the fire-alarm system and other systems comprising of the BMS.



Today, a top European-based elevator manufacturer is ready to equip buildings worldwide with OEO elevators – an initiative it calls "the first step of our journey towards an integrated system that will allow our customers to operate, manage, and maintain their smart buildings in the best way possible."

How did Softdel help make this happen?

Welcome to the ground floor!

Wanted: experts in automation and BACnet technologies who will challenge us to innovate and help us do it.

This is what our client sought and found In Softdel: an enabler of next-generation smart building technology to help it become the first maker of BACnet-compatible elevators. And not just the first to implement BACnet, but the first to equip elevators with native BACnet; that is, BACnet as the exclusive means of communications and elevator specific.

With native BACnet, our client's elevators boast those tight interfaces with the fire-alarm, lighting, security, and other systems that are the crucial links in the OEO chain; interfaces so reliable, you can count on them in an emergency.

More, equipping these elevators with native BACnet has made them 15X more efficient; 15X faster to install, commission, monitor, and maintain. How? By reducing the multitude of objects that require monitoring. At one site, for instance, 20 elevators mapped to 300 objects through a traditional BACnet implementation saw those objects drop to just 20 once native BACnet simplified system configuration and the commissioning process.

Take the stairs to escape a raging fire? No more. Call us to discuss how we can help you transform your elevators and reach the top!

