DYNAMIC EMERGENCY EXIT SIGNAGE

WE NEED TO CHANGE OUR APPROACH TO THE GUEST EXPERIENCE.

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2023: WHY THE TIME IS NOW FOR THE HOTEL SECTOR

EVACLITE

DYNAMIC EMERGENCY EXIT SIGNAGE: HOTELS

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CONSIDER THIS

Fire safety in hotels is not just about compliance to standards and acceptable evacuation times. Non-compliance is serious and should never be underestimated - people's lives are at risk.

The hotel sector has gone way beyond this and the implications of getting it wrong can be catastrophic - even when there is a false alarm. The very recent Hotels fires in Perth, Kensington, Leicester Square and Les Deux Alps have once again brought the issue to front of mind.

People want to feel safe, they want to feel looked after and they want to know they can be relaxed and confident during their stay.

Larger and older hotels will have multiple exits, and so the nearest, quickest and safest route to get out of the building could be in the opposite direction to the way someone chooses to go.

Newer big hotels can have 1000 rooms, and corridors in excess of 100m long.
When a fire alarm sounds, they come out of their room and either retrace their steps or follow others even though the nearest exit may be a few metres behind them.

Hotels need to think about better stewardship of the customer experience and how they handle safe and speedy evacuation during a fire alarm.

In the King's Cross Underground Fire disaster on 18th November 1987, most of the people who died, did so because they took the wrong escape route leading them into the path of the fire.

More than three decades later, with technology advancements including adaptive, dynamic, intelligent emergency exit signage, is it still acceptable to be using passive, standard exit signs? Should we be reviewing how we help people safely and confidently evacuate during a fire alarm and steer people away from danger?

CHAPTER ONE:

STRUCTURAL PROBLEM

WHY NOW?

The rate of change in fire safety and fire protection is much like any other sector - fast and furious. With contributors such as: new technologies, the increased use and development of BIM systems, smart buildings, the Internet of Things and connected products means that everything can be connected to everything in some way.

So, let's kick off with a question: Why is this the perfect time to stop using passive emergency exit signs and start using dynamic and adaptive signage?

Below, we'll discuss the 7 challenges that together answer this question.

Challenge #1: Hotels are in the firing line - and reputation is everything

Let's take this scenario. It's often about 2 a.m. in the morning, once every week or so, the fire alarm is set off in the hotel. Staff numbers at the hotel are at a minimum, guests are in their rooms, and you need to marshall an evacuation and try to establish if it's a false alarm.

Now, it's rarely the fault of the hotel and it's staff, but as people rouse themselves and make their way to stairwells one item they made sure they didn't leave behind is their mobile phone, holding their precious access to Twitter, Facebook, Instagram and other social media platforms.

What happens next is a running commentary of guests who've been woken from their sleep and are now ravaging the hotel's reputation online with anyone who cares to listen.

We are in an age of social media and hotels are often in the firing line. You can't defend yourself at this time as the priority is establishing if there is a fire and getting people out of the building.

A big challenge is avoiding reputational damage on social media during and after a fire alarm activation, but the real challenge and the one that we should care most about is having a smooth and fast evacuation with no bottlenecks on stairwells and exits.

Challenge #2: Hotels need to deliver on customer service promises to unfamiliar guests

When it comes to 4-Star and 5-Star hotels and large hotel chains, it's easy to see customer service excellence as a fundamental component of a great guest experience. And it's not just good staff, comfortable and clean rooms that creates that great customer experience.

How you look after people and go beyond the bare minimum requirements and regulations is a fundamental part of how you can demonstrate your commitment.

It could be the first time the guest has been to the hotel and they are likely to be unfamiliar with the layout and configuration of the hotel.

While guests may know not to use the lift in the event of a fire, they may also be blissfully unaware of the evacuation routes that are nearest them, or that provide the quickest exit.

Challenge #3: Hotels need to improve on evacuation times

We were recently approached by a leading London hotel brand when it realised evacuation times were woeful. The 1000 bed hotel suffered the fate of many.

Even though there are multiple exit stairwells in this labyrinth of a building, the guests were all trying to use the stairwell next to the lift - retracing their steps to the way they come to the bedroom.

But it's not just guests that will berate you on social media. There is a more serious side. The Fire Service inspection requires a review of the evacuation and may step in to make recommendations.

Do what's right for the customer and not just the bare minimum.

Challenge #4: Hotels have uniquely unusual issues and challenges

At night, guests are often asleep in their rooms. They could be heavy sleepers and may have even taken medication, some may be inebriated with alcohol, some may have visual impairments or physical disabilities - or they may just assume like so many, that the fire alarm being sounded is a false alarm.

Challenge #5: Hotel staff - right people, right place, right time

At night staff levels are typically skeleton. Staff should be aware of the guests who need extra assistance during an evacuation. They should have a list of names where possible. During an evacuation, guests can often be split from their group and it is essential to prevent guests trying to go back into the building to try and find loved ones and friends.

But staff have double duties and are often overworked. Before calling the Fire and Emergency Services (if not automated), staff may be instructed to try and establish if a fire is active, or just a false alarm.

Staff need to get slow-to-move guests out of other rooms and out of the building quickly and efficiently. Guests will often be under-dressed and staff can try and help with space blankets and other useful emergency supplies. If appropriate and safe to do so, staff may be instructed to shut down plant rooms, such as ventilation systems that may otherwise spread smoke and fire around the hotel.

The more help guests can get to direct them to the quickest exit route, the better. In a fire situation, time is of the essence. Automated voice announcements and direction from on site staff can be helpful, as can dynamic emergency exit signs, with better affordance for evacuees.

Challenge #6 Hotels need to cope with how people behave - we're programmed badly

People are programmed to retrace their steps. Unless otherwise guided, guests will tend to head back towards the lift area - the place they arrived on their floor by lift earlier in the day or the evening.

However, just like we hear on the safety demonstration before takeoff on an

aeroplane, “the nearest exit may be behind you.”

Yes, people need to be jolted out of retracing their steps. One way is to use dynamic signage with high-affordance pulsing directional arrow LEDs, which can be directly connected to the fire panels and show guests which direction to head for the exits.

People should read the fire exit plans on the back of the room doors and in corridors, they should make themselves aware of the nearest exit doors and stairwells. They should. And most often they don’t.The more help guests can get to direct them to the quickest exit route, the better. In a fire situation, time is of the essence.

Challenge #7 Your nearest exit may not be viable, or your quickest exit

When there is a fire, you may go to your nearest exit. There is smoke in the corridor or stairwell and it’s not safe to use.

Using adaptive emergency exit signage, the exit signs would start to display a red cross to warn against using this exit or evacuation route.

The viable route is then marked with a dynamic green arrow on the exit direction arrow on the emergency exit signs.

Similarly, an exit may be viable, however, it may offer a slower way to exit. At this point you wouldn’t close the exit sign with a red cross, as people are already using the exit and it’s still viable, just maybe not the best choice for people on their way to an exit. However, you might use the adaptive component of the signs to redirect people to faster exits using the green pulsing arrows. You’d need the right evacuation software to manage this situation fully, but it’s good to know, this is absolutely possible today.

Think of it a bit like ‘Directions’ on Google Maps: It says 3 routes, and marks the times for each route - each is viable, just one is quickest, and this might change and so you are redirected: “Recalculating your route, due to traffic information.”

What does the legislation say?

Rules within the fire safety industry are there to improve customer safety. If you fail to comply with the regulations, this not only results in large fines, but reputational damage too. It is possible to design a building to comply with the standard legislation, as set out in Approved Document B (ADB) of the Building Regulations and the Regulatory Reform (Fire Safety) Order 2005 (or RRO). But while the regulations provide a minimum standard of fire safety, for many building owners, it is not simply about complying with the regulations, it's about doing the very best to exceed and go above the minimum to ensure the highest level of safety.

While the regulations provide a minimum standard of fire safety, the events of recent years have demonstrated the importance of going beyond the minimum to optimise the safety of building occupants.

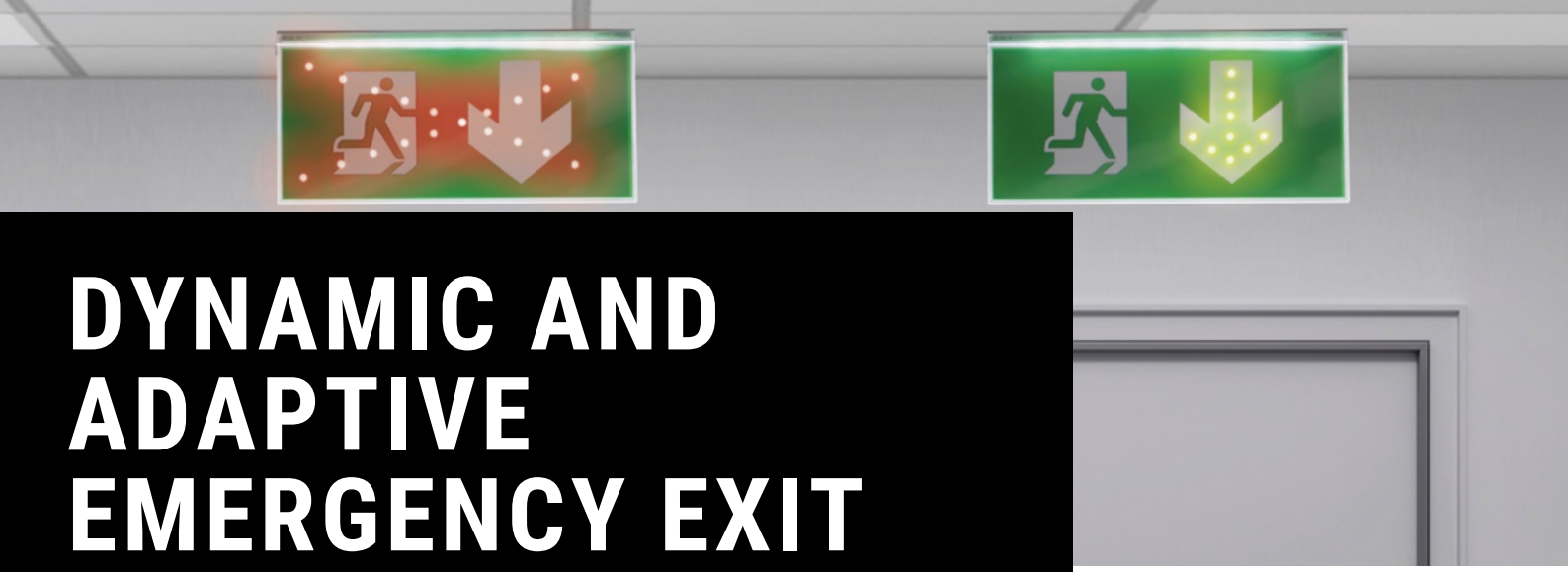
So having set out the issues and challenges, we're moving on to the solution part now. In the next chapter, we'll explore some real-life examples of how dynamic and adaptive signage really works, particularly within the hotel industry.

Triggers to drive action by the Hotel Owner

- Some hotels are built with a maze of corridors and multiple exits off them - guests are unfamiliar with layouts and escape routes
- Slow evacuation times are deemed unacceptable by guests and/or the Fire Service
- Reputation is damaged by negative reviews and comments online, in the news and by word of mouth, which leads to lower occupancy
- A chaotic evacuation experience is not the service levels a good hotel should hold
- Multiple stairwells and exits give you an opportunity to better manage people movement during an evacuation
- Evacuating a large hotel with only night staff can be stressful and chaotic - educate staff and get better, more impactful signage to assist a safe and fast evacuation
- Not knowing where the exits are - It's quite confusing when you go to a new hotel where you've not been before to know where the best or nearest exit is.
- People behaviour - they go back out the way they came in

CHAPTER TWO:

DYNAMIC AND ADAPTIVE EMERGENCY EXIT SIGNAGE EXPLAINED



DYNAMIC AND ADAPTIVE EMERGENCY EXIT SIGNAGE EXPLAINED

The previous chapter made it clear that striving beyond simple fire regulation compliance is something the hotel sector needs to address. So, you're probably wondering by this point: What is dynamic and adaptive emergency exit signage and can it really help?

What is dynamic and adaptive signage?

Dynamic and adaptive signage is a very recent development. Even though it's new, its usefulness and various applications is already starting to be revealed.

There's a huge variety of terminologies around 'dynamic' signage. It's been referred to as: dynamic, intelligent, adaptive, smart and even dissuasive signage. All of these terms essentially mean the same thing and they all lead to one unique selling point of the product: Instead of being 'passive' like the other fire exit signs on the market, they are both 'dynamic' and 'adapt to their surroundings and what's happening - in real-time - guiding people with confidence to their best available, quickest and safest evacuation route.

Before now, when the alarm is sounded and activated in most buildings, emergency exit signs do nothing. Their state stays the same; illuminated. They show you to an exit - but what they don't tell you is where the nearest, quickest, least congested exit is. They don't tell you if the exit is still viable - smoke free and uninhibited by fire.

The arrow could be pointing you towards the fire and not away from it. It's a serious downside of passive signs and one dynamic and adaptive signage is able to solve.

"Dynamic is more like the signage used on smart motorways. It adapts and indicates based on the road and driving conditions surrounding it."

How dynamic signs work

The signs have been made both adaptive and dynamic at the same time. The emergency exit sign is mounted on the ceiling, wall or is recessed and connected to a fire panel. When the fire alarm is triggered the fire panel can sense the activity around nearby smoke detectors to understand the unfolding situation. This is one of the triggers for the sign to activate into ‘adaptive’ mode.

The fire panel is programmed by the fire installer or fire engineer. The cause and effect programming for example, helps determine if smoke is detected in a specific zone and will acknowledge, as a result, that we don’t want people going out of that specific exit - in this case, a red cross appears on the sign.

The sign displays a red cross. It’s telling people clearly, not to use this direction or exit. At the same time a safer or less congested route is shown by a pulsing green arrow.

The adaptive nature of the signs comes more obvious should a situation change. If a second door becomes unviable due to smoke or fire, the route can be further adjusted. However, if the smoke dies away, an exit can be reopened.

During testing, including the much acclaimed EU funded Getaway Project, at which Evaclite was a major contributor to tests carried out at a train station in Barcelona. The signs were designed to pulse rather than just continuously flash. Flashing seemed to suggest the light was faulty rather than working fine and just directing people safely.

Why use LED pulses?

To try and combat any confusion that could be caused by a flashing X (cross), dynamic and adaptive signage use LED lights that pulsate at the outer corners; the cross is static yet eye-catching with the pulsating corners.

It’s important to note that the lights aren’t just there for purely practical reasons, there is a psychological reason for the pulses. It’s designed to be intuitive so people understand the message without stopping to think about its meaning. The 3-pulse array only activates when

the alarm is activated by the fire panel. It's all too easy for people to become so used seeing passive signs they simply end up ignoring them or rather stop seeing them (learned irrelevance). Dynamic signs remove this familiarity and become very effective - affordance is the term used, which means it's very visible.

The flashes in the corner pulse from left to right. If you follow the flashes with your eyes from side to side, the action reflects the side to side motion of saying 'no' by shaking your head. It sounds a little simple, but psychologically it's an effective deterrent.

In the same way, the LEDs for the arrow pulse in the intended direction of travel or escape/exit - from left to right or right to left and then down for through and up for along.

How do we know dynamic and adaptive signage works?

Evaclite has conducted a number of trials on dynamic signs. It discovered over 60% of people don't actually notice passive signs (standard emergency exit signs) during an evacuation. They may be visible but they can't be easily seen. Sounds odd, but when you suddenly add a pulsating LED light they become more visible - or to use the correct term, they have better affordance.

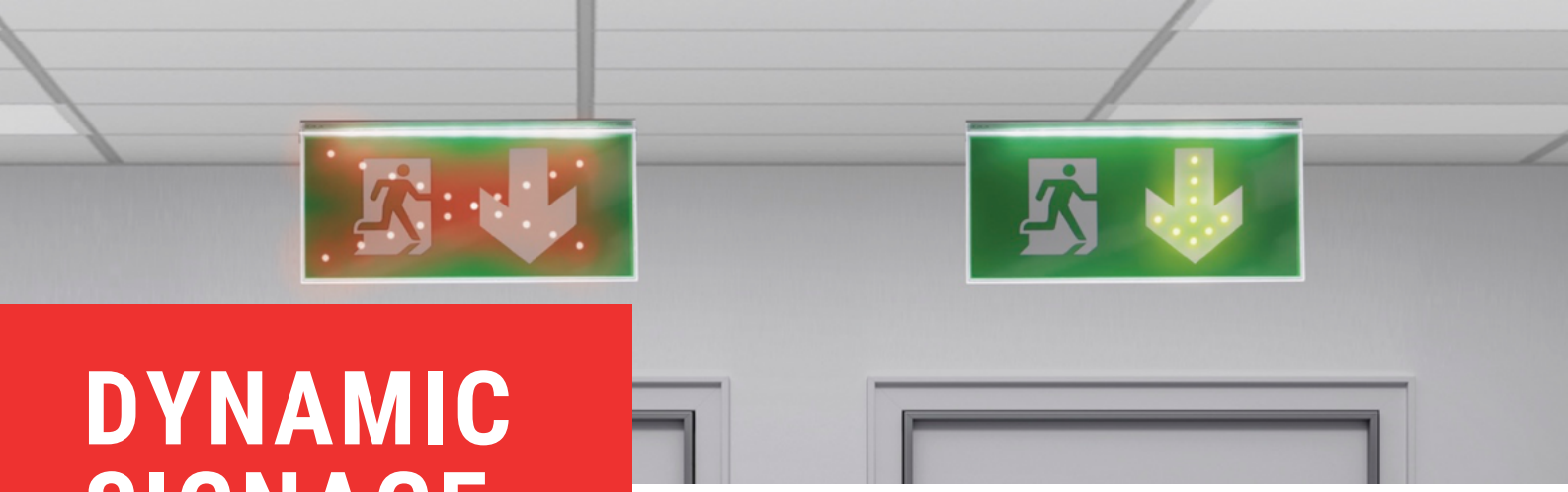
During a trial conducted by the University of Greenwich, participants were asked to run down a corridor with the passive signs present and the majority of people didn't notice them, and if they did, they didn't follow the way that the sign recommended.

Using Evaclite dynamic signs, the trial was repeated, and the results showed twice the rate of detection by participants. The majority of the people not only noticed the dynamic signs, but also verbally acknowledged them.

The key factor in the trial was the time it took to make the decision. In the first trial participants were spending an average of 6-seconds deciding which way to go. However, when presented with the dynamic signs they were shown not to stop to think but just acted. These precious few seconds could be vital in the event of a real fire and as we now know for hotels even in the event of a false alarm - every second counts.

CHAPTER THREE:

HOW DOES ADAPTIVE AND DYNAMIC SIGNAGE SOLVE THE PROBLEM?



DYNAMIC SIGNAGE

It's true. A passive sign gives you regulatory compliance, but faced with a fire alarm activation, whether it's a real fire or not, dynamic and adaptive signs come into their own.

Here are some of the benefits some customers of Evaclite have shared:

- Showing people the best routes to use during an evacuation makes people happier and more confident during a stressful time
- Improved affordance for emergency exit signs makes for a quicker evacuation
- Dynamic signs help reduce evacuation times with greater affordance for guests and a better reaction to false alarms
- People can be directed away from the fire and smoke ladened exits automatically and in real time
- Reducing bottlenecks and congestion during an evacuation at door exits and in stairwells by showing people better more viable and quicker/easier routes away from the fire or out of the building
- Happier customers have confidence in staying in one of your hotels, in preference and hopefully more often
- Your hotel brand gets to show guests you really care about their experience, service excellence and their overall well-being
- Occupancy rates might increase with better reviews and greater confidence
- Reduce or avoid negative feedback and reviews

In a fire, relying on our human instinct isn't enough. Dynamic signs help you see signs quicker, you are given clear instruction and you can make your decision with confidence. It speeds up the evacuation process and, in a large hotel with multiple corridors and exits, it can reduce bottlenecks. People will be more likely to evacuate using their nearest exit, as guided by the signs, instead of returning to the first exit they think of.

Real life application - large scale hotel

We were contacted by one of London's busiest large hotels. It had received poor reviews from dissatisfied and disgruntled customers after a series of (false) fire alarms. The Fire Service also agreed the evacuations at this hotel were slow and crowded.

The 4-Star hotel who approached us for advice, has over 1000 beds across more than 10 floors.

They had a commitment to great customer service, but it was being ruined by strongly voiced comments on social media platforms from guests.
With the implementation of dynamic and adaptive emergency exit signs, hotels now have a solution to what could quickly become a dangerous evacuation problem.

Evaclite is working with many hotels, but the biggest problem is in the biggest hotels. New hotels, with more than 5 storeys and with 300+ bedrooms often have 3 exits per floor, with one next to the lift.

Checklist: Do you need to consider Dynamic Exit Signs?

Here are some situations you may be facing in your hotel, or your hotel new build or refurb project. If you answer yes to any of the following it could viable or necessary to consider Dynamic Emergency Exit Signage.

Checklist:

- [ ] Multiple stairwells
- [ ] Multiple emergency exit points
- [ ] Floors and rooms are considered a maze for those unfamiliar with the layout
- [ ] They have a fire panel (any manufacturer of fire panel can be catered for)
- [ ] Over multiple floors
- [ ] Chain hotel protecting its group reputation
- [ ] A recent incident found your evacuation process to be lacking and slow
- [ ] Criticism from guests following a poorly performing evacuation
- [ ] Your project needs fire engineer sign off to meet the architects design
- [ ] You need a refit of your fire system and are looking for positive improvements

CHAPTER FOUR - SUMMARY

Successful modern hotel businesses put the guest experience at the forefront of everything they do. They do a lot of good work hiring and training great people, providing state of the art facilities, making rooms clean and comfortable and serving quality food.

Visible, helpful safety is also being added to the of successful hotels checklist as a must have, and dynamic and adaptive signs can be a significant contributor towards your success.

Want to know more about how we can help your emergency evacuation process? Get in touch to talk to an expert!

Contact a Product Solutions Expert

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