



Palle Stevn of MTG Engineering thinks that the limitations of photo-luminescent emergency evacuation systems means they have had their day. Dynamic low location lighting systems that automatically find the safest and fastest escape route are the way of the future.



Intelligent lighting – the future is dynamic

The benefits of intelligent low location lighting are clear, believes Stevn Palle, Sales and Marketing Director of Helsinki-based company Oy MTG Engineering; it cuts down total evacuation time; ensures all exits are utilised (preventing queuing); ensures clear access for firefighters; avoids guidance errors due to human error; and avoids “pre-movement” and “travel” behaviour – two recognised evacuation human behaviours.

“Pre-movement” behaviour refers to the time lapse between alarm activation and movement initiation. Put simply, the alarm goes off, where do I go? In many locations, evacuees will have several optional escape routes open to them, and pre-movement behaviour could just be the time taken to decide which route to take. “Travel behaviour” refers to the simple fact that people prefer to leave a building the same way they came in – they don’t like to use an unfamiliar route in an emergency, even if that is what’s required for safe evacuation.

Although MTG-Engineering has had success with its Mils-System in the marine market, it sees potential for use in off-shore accommodation facilities, or even in higher risk environments. “We don’t have ATEX yet but we have looked into it. All we would have to do to comply is add a millimetre of insulation to the lighting strip. But before doing that we want to gauge interest from this industry.”

The lighting strips are the backbone of the system: once activated, they flash in such a way they indicate the precise escape route to be followed. But the Mils-System is cleverer than that. It connects to existing fire detection systems and it is able to work out all evacuation scenarios, automatically re-routing to a secondary escape route if a primary route is blocked. Stevn explains further; “Let’s assume you have our

system installed on an oil platform, in the control safety centre, and there is a fire in the accommodation area. The safety centre will find out where the fire is located and that information goes via IP to our system. Our software then calculates the escape routes for this scenario, and it displays it as a 3D picture of the whole complex. If the firefighters decide to evacuate, then the system will activate and start leading the people to the escape routes. The signs we have developed – which are blank when inactive – will activate with green symbols.”

He explains that exit signs should not (as per SOLAS regulations) be installed on ceilings alone. “They will probably not be seen because the smoke rises to the top, so we think they should either not be on the ceilings or on both ceilings and floors or walls.”

Having a “dynamic” light exit system of signs means that they can be turned on or off depending on whether or not it is a safe escape route. It’s also possible to have separate routes for evacuees and emergency responders, ensuring there are no “blockages”.

Further safety enhancements have been added to the Mils-System. LCD displays can be installed at key central points, showing messages or symbols from the safety centre. The LCD displays can also allow two-way communication between the safety centre and an evacuee or emergency responder – useful when communication networks are busy.

As regards the purchase of such a system, Stevn admits that if compared with traditional photoluminescence, Mils-System is more expensive at the point of installation. “But you do get pay-back seven or eight years later, by which time you would have changed photoluminescence tape a couple of times. We say that a system like ours will last as long as a cruise ship.”

The 10 key components of the Mils-System

1. The stripe system
2. Symbol panels
3. Exit panels
4. Emergency light panels
5. Panel driver
6. Group driver
7. Power supply unit
8. LCD info panel
9. Control system
10. Installation system.

Left to right: Palle Stevn and Oy MTG-Engineering Managing Director Leo Hatjasalo.

Maintenance is not an issue either. The system checks itself on an hourly basis, and any problems are reported instantly and pinpointed on a 3D diagram. "Insurance companies are very interested in our products, and we have discussed the possibility of them reducing their premiums if systems like these are installed. Insurance companies could, if they wished, monitor the system remotely.

"In fact, they could follow a real-time evacuation scenario from their offices."

Next stage is the possibility of linking CCTV cameras with the evacuation system, so in addition to the 3D images the safety control centre could have live pictures. One might be tempted into thinking that the future has been glimpsed and as the saying goes; it doesn't just work – it flashes green. ■

Ecoglo receives interest from high risk facility safety managers

At the recent Industrial Fire Safety and Security Exhibition in Houston, Texas, photoluminescent safety egress system manufacturer Ecoglo received much interest from high risk facility safety managers. Is there a gap in your safety plan, too? Key to Ecoglo's technology is that it is not a novelty glow-in-the-dark solution. It is a durable system that has been designed to withstand continuous foot traffic and weathering.

The photoluminescent exit path markings are used in a variety of facilities around the world, including the Olympic Arena in the 2000 Sydney Olympics, New York's "Jazz at the Lincoln Centre", and Toronto's Eaton Centre.

Step edge safety strips are made of high grade aluminium, onto which high visibility photoluminescent rare earth powders and silicon carbide anti-slip material are heat bonded. The strips are mechanically attached to a flat surface – be it concrete or metal – with special fasteners. "Not only do they glow in the dark, but because they have an anti-slip component they make a good safety product for ladder rungs and steps," explains Dave Murray, Vice President Sales & Marketing Ecoglo (North America).

The Industrial Fire Safety and Security Exhibition in Houston, where Ecoglo was exhibiting, turned out to be an eye opener. "There are about 400 refineries in Texas, and many safety managers commented that they had a huge gap in their safety plan for their facilities and Ecoglo made them think. The fact is that this application extends beyond traditional internal evacuation and extends to outdoor industrial facilities, such as refineries, mining operations and oil rigs. More and more companies are looking for outdoor photoluminescent exit path markings, and Ecoglo has been designed to last for decades."

Ecoglo complies to the following standards:

- New York City - RS6.1(supp. emergency lighting)
- ICC AC169 (US stadia, arenas & theatres)
- IBC 2007 Supplement - Section 1027 (mandatory for buildings exceeding 75' height)
- British & ISO Standards for PL Brightness
- Tokyo Fire Department
- Fire & Disaster Management Agency (Japan)
- Engineered Solution
- Building Code of Australia
- New Zealand Building Code.



Before and after: Ecoglo in the light and in the dark.

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