

# Dynamic Exit Signage





## Dynamic Emergency Signage

**A new concept in emergency signage, which I call the 'Active Dynamic Signage System (ADSS)', extends the idea of smart buildings to emergency wayfinding, with a new generation of advanced emergency exit signs. Traditional emergency signs are not always noticed in an emergency and cannot adapt to the circumstances of an incident or a changing threat environment, even if they are directing people into potential danger. The ADSS is intended to save lives by addressing these shortcomings - attracting attention when signs need to be conspicuous, redirecting people during an evolving emergency, and automatically identifying, not just an exit route, but the optimal exit route.**

The ADSS combines three key safety innovations. Flashing and running green LED lights within the arrow of emergency exit signs make people more likely to notice them and hence spend less time wayfinding. A large illuminated 'red cross' through the sign can deter use of exit routes compromised by an incident. And the system can be expanded to identify optimal evacuation routes by responding 'intelligently' to an evolving emergency using up-to-the-minute situational awareness and advanced faster than real-time evacuation simulations conducted during the incident itself.

**These advances bring the humble emergency exit sign into the 21st century.**

### Prof Ed Galea

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CAA Professor of Mathematical Modelling  
Director Fire Safety Engineering Group  
University of Greenwich



## Introducing CleverEVAC

**Clevertronics is a global innovator in Exit and Emergency lighting, as well as being the market leader in Australia and New Zealand.**

Leading the product innovation has been a constant focus, with a drive to provide products and systems that improve the way Exit and Emergency lighting are designed, installed and managed.

Some of these innovations include the introduction of LEDs to emergency lights, lithium battery technology, and CleverSparky®, a mobile, cloud-based compliance management app for smartphones. Zoneworks® XT Hive is a valuable compliance tool for building owners and operators, taking the manual labour element out of the testing process for emergency and exit lighting installations, and centralising the site's full database, fault reporting, and log-booking.

CleverEVAC is a system and suite of dynamic EXIT signs that provide increased visibility, audible cues, and negative enforcement options. The work conducted by the Fire Safety Engineering Group (FSEG) at the University of Greenwich led to the development of the CleverEVAC Dynamic Signage product range. The FSEG, and also the University of Leeds have provided the required research, experience and trials of dynamic EXIT signage and locatable sound technology. CleverEVAC is a tool for Fire Safety Engineers to consider for use in fire engineered / performance solutions and also in designs where an increased visibility EXIT sign is preferred.

An extensive library of research and trial data is available relating to CleverEVAC technology for both audible technology of Sound Escape™ and visual enhancements of Dynamic Signage.



## A New Path Forward for Exit Signage

- **Dynamic EXIT signage**
- **Increased visibility of EXIT signs**
- **Locatable sound technology**
- **Negative enforcement options**
- **Zoneworks® XT Hive automatic testing**



## CleverEVAC Dynamic GREEN



Original research by the FSEG found that people often didn't notice static exit signage, whereas significantly more people noticed dynamic exit signage.

This led to the development of the CleverEVAC Dynamic GREEN exit sign to provide an increased visibility of the sign, by activating and sequencing bright green LEDs along the directional arrow or inward toward the running man symbol.

Dynamic GREEN is available with a variety of directional options based on your needs. The Dynamic GREEN mode is triggered either by a 24VDC or voltage free open/close signal from the fire detection or other building safety system.



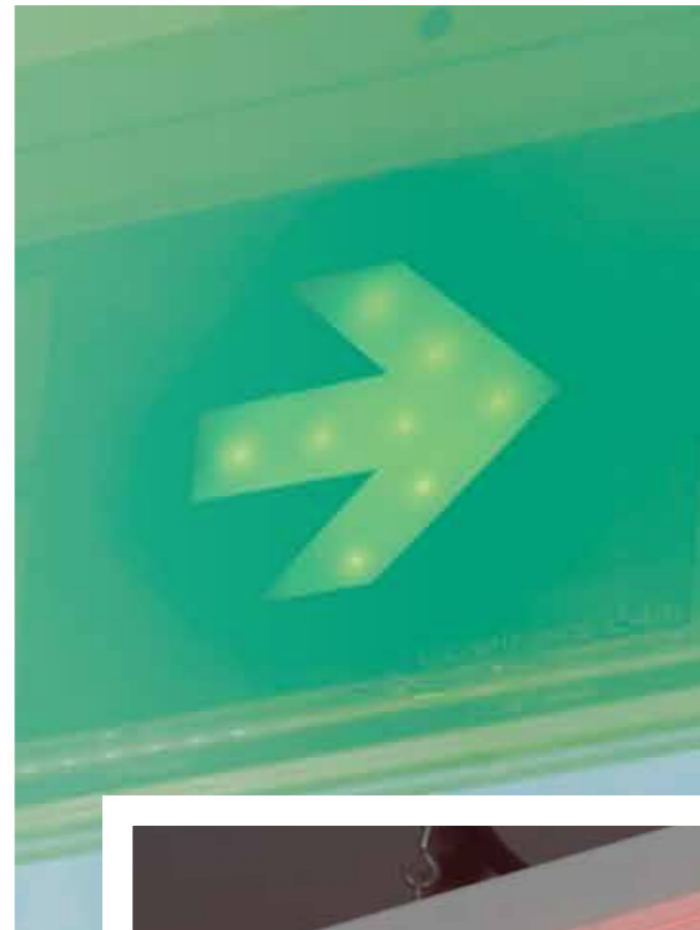
## CleverEVAC Dynamic RED X



CleverEVAC Dynamic RED X signs can be interfaced to the building's fire detection or other safety system, as designed by a fire safety engineer.

CleverEVAC Dynamic RED X sign can display a red cross, alerting those evacuating to seek an alternative exit. Using a red cross through the sign has been demonstrated by FSEG research to be effective in conveying negative enforcement.

The Dynamic RED X mode is triggered either by a 24VDC or voltage free open/close signal from the fire detection or other building safety system.



## SoundEscape™



Combining audible locatable sounds including announcements such as 'Exit Here', with the increased visibility of dynamic exit signage, can improve the evacuation outcome, especially in conditions of reduced visibility. The SoundEscape™ option is available and fits perfectly into Cleverfit PRO Dynamic signage products.

## Zoneworks® XT Hive Testing



**The future of CleverEVAC will allow for the intelligent control of fittings through advanced building management, simulation and modelling software systems.**

Zoneworks® XT Hive is a real-time, automatic monitoring & testing system for CleverEVAC Exit & Emergency luminaires to assist in meeting mandated testing and reporting requirements under AS2293.1.

Performance solutions can be designed using instruction from the Fire Safety Engineering report that determines what needs to occur within the evacuation system based on events, and the required action, including activating CleverEVAC Dynamic signage. Advanced building management systems can specifically activate a predetermined function within a CleverEVAC fitting or fittings making a "scene of events". This development can include fire and evacuation modelling systems such as SMARTFIRE® and building EXODUS® evacuation simulation software, and can determine which event and subsequent action can be executed based on inputs from the building's safety systems, and these advanced modelling systems.

Typical schematic for Central Emergency Monitoring System  
(Clevertronics Zoneworks XT Hive – wireless system)

Legend



Emergency  
Light – Hive



Emergency  
Batten – Hive



Exit Light – Hive



CleverEVAC  
Dynamic Green  
Exit Light – Hive



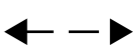
CleverEVAC  
Dynamic Red  
Exit Light – Hive



Network Cat 6



Potential RF  
communication links



Bluetooth  
communication links

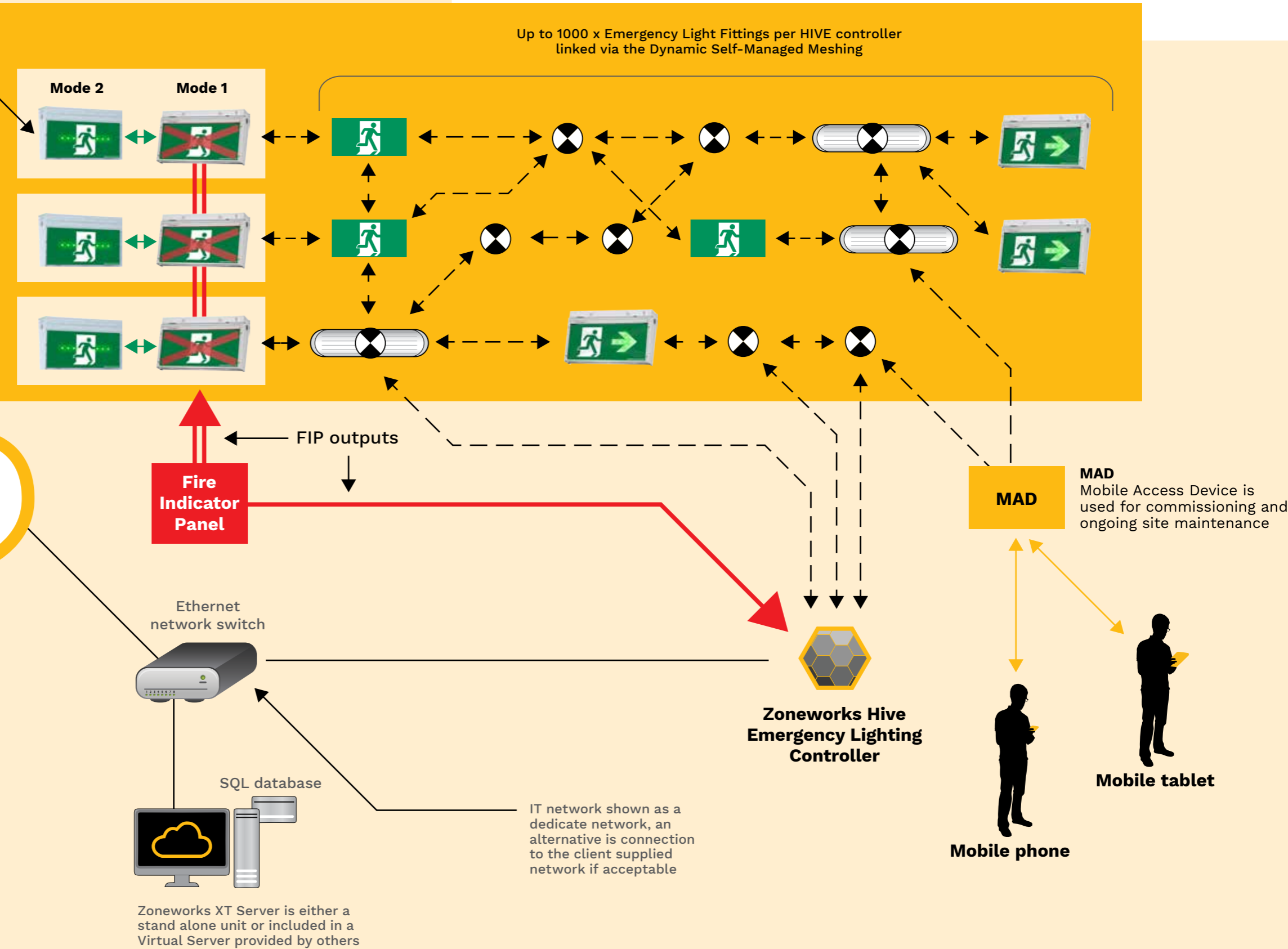


Fire Rated 2 Core Cable

CleverEVAC Dynamic RED X Exit Signs have two modes of operation:




**Mode 1:** is Dynamic Red X and is triggered by a FIP input

**Mode 2:** is Dynamic GREEN enhancement is triggered by a FIP input or Zoneworks HIVE





# CleverEVAC Products

## Cleverfit PRO Series

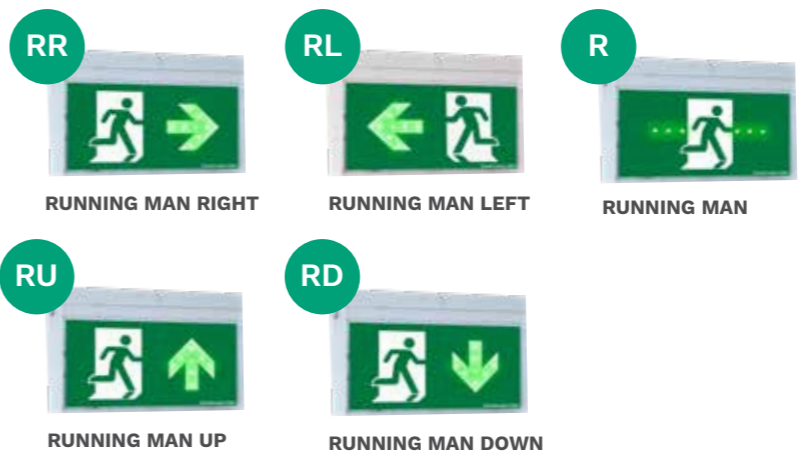
		LP	L10
Dynamic GREEN		DYGC-CP-R	DYGL-CP-R
		DYGC-CP-RR	DYGL-CP-RR
		DYGC-CP-RL	DYGL-CP-RL
		DYGC-CP-RU	DYGL-CP-RU
		DYGC-CP-RD	DYGL-CP-RD
Dynamic RED X		DYRC-CP-R	DYRL-CP-R
		DYRC-CP-RR	DYRL-CP-RR
		DYRC-CP-RL	DYRL-CP-RL
		DYRC-CP-RU	DYRL-CP-RU
		DYRC-CP-RD	DYRL-CP-RD
Dynamic Sign with SoundEscape		DYGC-CP-SND-R	DYGL-CP-SND-R
		DYGC-CP-SND-RR	DYGL-CP-SND-RR
		DYGC-CP-SND-RL	DYGL-CP-SND-RL
		DYGC-CP-SND-RU	DYGL-CP-SND-RU
		DYGC-CP-SND-RD	DYGL-CP-SND-RD

## Ultrablade PRO Series

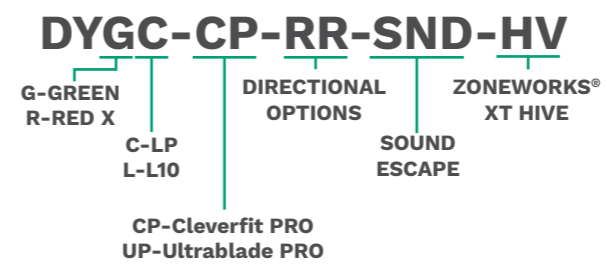
		LP	L10
Dynamic GREEN		DYGC-UP-R	DYGL-UP-R
		DYGC-UP-RR	DYGL-UP-RR
		DYGC-UP-RL	DYGL-UP-RL
		DYGC-UP-RU	DYGL-UP-RU
		DYGC-UP-RD	DYGL-UP-RD
Dynamic RED X		DYRC-UP-R	DYRL-UP-R
		DYRC-UP-RR	DYRL-UP-RR
		DYRC-UP-RL	DYRL-UP-RL
		DYRC-UP-RU	DYRL-UP-RU
		DYRC-UP-RD	DYRL-UP-RD

# Directional Options

To ensure Fire Safety Engineers can select their directional preference a variety of options have been established:



# CleverEVAC Part Numbers



# Other Configurations

Dynamic Signage also available in other variants such as Theatre style, Weatherproof enclosure (Cleverfit PRO only) and Surface Mount wall/ceiling options (for the Ultrablade PRO). Contact Clevertronics to discuss your specific project requirements.



# Glossary of Terms

24V	24VDC on/off signal output provided by the fire detection or other building safety system
AS2293	Australian Standards for Emergency & Exit Lighting for buildings covering design, installation, maintainence and fittings
L,N,E	Mains Power cables
LED	Light Emitting Diode
UPS	Uninterruptable Power Supply
VF	Volt Free open/close signal output provided by the fire detection or other building safety system
ZONWORKS® XT HIVE	Automatic testing & monitoring system for Emergency Lighting system provided by Clevertronics



- Australia’s No1 selling emergency lighting range
- Over 50% maintenance savings vs NiCd

The LP range is the proven project performer that combines Lithium Iron Phosphate battery technology with premium electronics and LED technology



- Lowest total ownership cost
- 50% longer battery life vs any other lithium product
- 60% maintenance savings vs any other lithium product
- Over 80% maintenance savings vs NiCd

Nothing else competes with L10 Nanophosphate®, due to the structure of the Nanophosphate chemistry that enables higher power, increased abuse tolerance and longer life compared to other Lithium Iron Phosphate offerings

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statutory requirements, safe practice and suitable application  
of the products.

