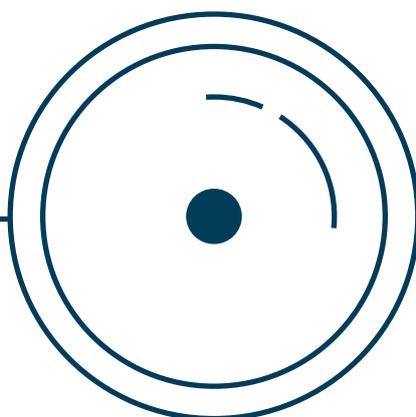


**Guidance
Note**



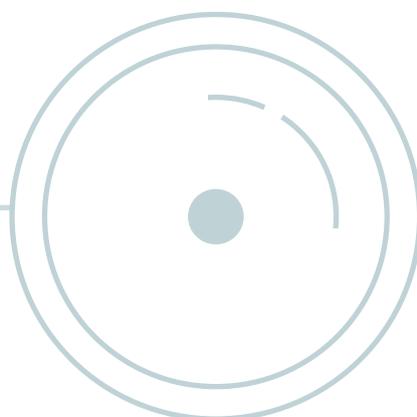
Fire Industry Association



**Use of fire alarm systems for lockdown
(specifically in schools)**

FIA Guidance document – Use of fire alarm systems for lockdown (specifically in schools)

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1. INTRODUCTION

For those of us in the Fire Detection & Alarm industry, evacuation of buildings is a recognised and understandable objective. It is borne out of the need to keep building users safe in case of fire moving them away from danger or out to an ultimate place of safety. Dependant on the risk to users and systems available to them, the premises management can employ varying degrees of controlled evacuation such as staged, phased or full evacuation.

Premises management also have a responsibility to consider the safety of users in other situations ranging from warning of slippery floors; through operating safe systems of work (e.g. permit-to-work procedures) to providing emergency lighting. Some buildings have unique situations due to their location, particular usage, inherent value or social importance. This has led to management considering risks that users may be exposed to immediately outside their building. For example a local chemical release incident may require the users of a nearby building(s) which could be affected by the pollution (or explosion) to remain inside with windows and doors closed. Similarly, a school may receive a report of a dangerous animal in the vicinity and may consider keeping children inside the school at break-times until it is safe for them to use the grounds. The need to stay in or return to a building for safety is known as an invacuation. As with evacuations there are several degrees of invacuation. The most demanding is to immediately lockdown the area preventing circulation movement within, egress from or access to the building (to frustrate attackers gaining entry). The invacuation alarm is generally short term/momentary to prevent panic and to enable further & ongoing communications. There could be a different alarm in order to signal the all clear.

Generally these two safety functions are achieved by two separate and distinct systems but more recently it is being requested that the FD&A provide both evacuation and invacuation facilities. This is usually based on a perceived cost saving (one system rather than two). The unseen benefit is that the FD&A systems are installed to a standard which limit the probability of impairments thus making an invacuation system more reliable than using less dependable communications systems.

2. SCOPE

This document discusses the possibility of utilising the infrastructure of a Fire Detection & Alarm System to fulfil both safety functions.

Outside the scope of this document is the need for the Premises Management to have a procedure discussed and agreed with their interested parties of what should be done in the unlikely event of both alarms operating.

Excerpt from BS 5839: If a building contains alarm systems associated with hazards other than fire, the various hazard alarms need to be properly coordinated and be distinct from each other. In these buildings, the relative priorities need to be carefully assessed, and the system arranged so that a higher priority alarm cannot be prevented or obscured by one of a lower priority. Although, in general, fire has the highest priority, there are buildings in which other hazards can have higher priorities than fire.

3. REGULATIONS/GUIDANCE

There are no official regulations covering invacuations however, premises management are obliged to carry out a risk assessment and take appropriate measures to keep building users safe.

Invacuation guidance has mostly been produced by the education sector who historically have experience in protecting students from unwelcomed or unwanted visitors (court restricted, intoxicated, and violent or aggrieved parent or student etc). Although it is believed that the department for education doesn't compel schools to have a lockdown plan.

Teaching union the NASUWT called for all schools to have a concrete protocol to be used in the event of a dangerous event happening on or near the premises.

The government's National Counter Terrorism Security Office (NaCTSO) has produced a document called Developing Dynamic Lockdown Procedures which is specifically for fast moving weapons attack either directly or in the vicinity of any building. This dynamic lockdown enables quick restriction of access and egress to a premise. The aim is to prevent persons moving in to danger and to prevent or frustrate attackers accessing the site. There is a note in the document advising that the use of fire alarms should be avoided.

This document is not intended to provide guidance on creating a lockdown plan or procedure.

4. PROCEDURES

Different agencies have developed their own procedures.

NaCTSO uses 3 major points and some general ways of letting people know what's happening.

1. Training of staff: understands roles, regularly test and exercise, refresh.
2. "Stay safe" principles: Run, Hide, Tell.
3. What to expect: from armed police.

For more information see final section of this document.

Schools tend to adopt Lockdown levels, for example:

- Full lockdown alarm – for most serious instances – threat on the premises
 - take immediate action.
 - Lock doors and windows. Remain in class, move away from windows & doors remain quiet.
- Partial lockdown alarm – for disturbances outside – threat nearby – move inside the building.
 - Close doors and windows. Remain in class, class room activity can continue as normal.
- A lesser used Third lockdown alarm – used for site specific issues – e.g. alert certain staff to an issue.
 - School & class room activity can continue as normal with stand-in teacher(s).

An alternative single level lockdown procedure:

- An Alarm distinct from all others on site – e.g. an air horn.
- Key staff members with specific roles – communication etc.
- Bring everyone inside.
- Shut all external doors and windows, close blinds.
- If possible account for everyone.
- Stay away from windows and doors and if applicable remain silent.
- Await instructions from senior staff, police or the 'all clear'.

An excerpt from a health, safety and wellbeing site:

- Invacuation is the opposite to evacuation. You find refuge inside a building during an emergency.
- Invacuation may be required when there is an environmental hazard, (such as a smoke cloud or suspected chemical leak), or a security related incident.
- The invacuation siren sounds different to the evacuation siren, and is instantly recognisable. When there is an invacuation emergency, the alarm will sound for 30 seconds.
- When the emergency is over a second steady tone siren will be sounded to demonstrate the all clear. This will be accompanied by an emergency message giving information about the all clear.

What seems to be omitted from Lockdown procedures is what to do if there is a fire alarm during the lockdown incident. Such an alarm may be false due to being instigated by the intruder to disrupt the lockdown, but could also be real due to the intruder setting a fire or a situation developing due to the lack of manual intervention i.e. a kitchen cooker not being switched off due to the urgency of the lockdown procedure.

5. POSSIBILITIES

Dependant of size of premises, budget and speed of requirement/implementation:

- Some premises may be able to rely on word of mouth or utilise an air horn etc.
- Others can utilise internal messaging systems such as IP phones, text, email, staff phones, etc.
- Public Address (PA) system – including pre-recorded messages including tones.
- Intelligent digital signage (augmented with CCTV).
- Dedicated “Lockdown” alarm tone from a dedicated LDA system.
- Dedicated school wide audible system incorporating; zonal messaging, class change, wet play, lockdown level(s).
- Dedicated “Lockdown” alarm tone from a carefully designed and capable fire alarm system.
- Some say no to systems utilising Wi-Fi/wireless due to the potential unreliability (cyber blocking).
- Some systems utilise the fire alarm and voice alarm system.

6. FIRE DETECTION & ALARM SYSTEM

BS 5839 clearly states in clause 16.2.1 k) that: Fire alarm sounders should not be used for purposes other than warning of fire; it then goes on to clarify, unless the response required is identical to that required in the event of fire. i.e. evacuation using escape routes and exits.

Obviously an 'invacuation/lockdown' alarm demands the opposite situation from a fire alarm so the FD&A sounders should not be used.

However, this does not mean don't use the fire alarm system. It is likely that an addressable fire alarm system would be capable of handling, controlling and managing an Invacuation/Lockdown facility, providing that 'alternative' sounders were also installed so as not to conflict with BS 5839. These would have to be audibly different to the FA sounders (and any others in use on site) and it would make sense for them to be a different colour (clearly labelled) & installed away from the fire alarm device; and possibly enhanced with flashing beacon (VID) which must be of a different colour to any Fire Alarm VADs in use within the property.

Such an Invacuation/Lockdown system would benefit from the monitoring, integrity & reliability provided by the fire alarm standard BS 5839.

7. CONCLUSION

Sharing the fire alarm system's infrastructure doesn't contradict the standards but if interested parties were unsure then a precautionary variation could be agreed.

Providing the Invacuation/Lockdown system elements are installed to the same standard as the fire alarm, and perhaps segregated by loop isolation units, then in theory an addressable system utilising different and dedicated sounder beacons triggered by dedicated and separate inputs not impinging on the fire alarm operation (i.e. programmed using C&E to work independently of the fire detection and alarm system) could provide a reliable, fully monitored and prioritised lockdown alarm including 'all-clear' messaging. (Any additional equipment will have to be installed to BS 5839).

Before embarking on the design of such a system for a particular building, the user (and interested parties) should produce and communicate a design specification taking in to account priorities, potentials and operational requirements; including what actions should be taken in the unlikely event of a fire alarm during a lockdown alarm. (This is no different to the procedure which would need to be considered if there were two totally separate systems in place i.e. an air horn and a fire alarm system.) Also to be considered is the effect on the Lockdown system when routine maintenance to the FD&A is being carried out.

It is feasible that a risk assessment of a large complex building with differing situations could result in a simultaneous part invacuation and part evacuation for ultimate safety; so the combined FD&A and LDA should be capable of simultaneous operation.

8. FURTHER READING/INFORMATION

NaCTSO document:

<https://www.gov.uk/government/publications/developing-dynamic-lockdown-procedures>

Lockdown in primary schools:

<https://www.theschoolrun.com/primary-school-lockdown-procedures>

A councils guide to Invacuation: (it downloads in Word)

<https://www.bradford.gov.uk/hands/documents/Schools%20Information/WYSSF%20-%20Guidance%20Document%20and%20Template%20-%20Invacuation%20including%20Lockdown.docx>

DISCLAIMER

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