**Fire Research & Investigation Unit** 

Heads

## BACKGROUND

Security alarm monitoring companies frequently offer fire alarm monitoring as an extra service to their clients. These fire alarm systems can be rudimentary, consisting of non-addressable smoke or heat detectors, often on a single loop.

Such systems, even if non-compliant with the relevant fire alarm standards, can provide significant benefit outside occupied hours. However, fires at several buildings that use this form of monitoring have led to significant delays in calling the fire service. Due to the rapid growth of fires once they become established early intervention and suppression is critical to avoid large losses and fire damage.



Warehouse fire 03/02/2014

## **INCIDENT DETAILS**

The following outlines a few fires in 2014 and 2015 where there were protracted delays in notifying the fire service. This list is not exhaustive.

Incident Details	Alarm and Notification Sequence	Outcome
12/01/2014	Monitoring Company Notification	Total loss of toilet
Fire started on the outside of a school	05.45 hrs	block, significant
toilet block, spreading to an adjacent	111 Call (passer-by)	damage to a three
classroom block. The monitoring company	05.51 hrs	classroom block.
notified the key holder who elected to		
attend first before calling the fire service.	Delay 6 minutes	
03/02/2014	Monitoring Company Notification	Total building loss.
Fire in a warehouse. All four detection	22.40 hrs	;
zones activated in sequence. The	111 Call (key holder)	
monitoring company informed the key	22.46 hrs	;
holder, who called the fire service passing		
on second-hand information, excluding	Delay 6 min	
multiple activations.		
05/03/2015	Monitoring Company Notification	Limited fire damage in
A small fire broke out in a warehouse. The	04.12 hrs	the area of origin.
monitoring company received notification	111 Call (security guard)	Extensive smoke
of smoke detection and PIR activation.	04.35 hrs	damage to all areas of
They informed the key holder who		the building and stock
requested a security guard respond.	Delay 23 min	in the warehouse.
27/04/2015	Monitoring Company Notification	Extensive damage to
Fire in a school classroom block.	01.14 hrs	a classroom.
Monitoring company dispatched a security	111 Call (passer-by)	
guard who arrived on scene after the fire	01.18 hrs	
service arrived.		
	Delay 4 min	



For more information, or to contribute to 'Heads Up' e-mail fireinvestigation@fire.org.nz

## FURTHER INFORMATION

The incidents listed above indicate that the potential benefits of monitored fire alarm systems can be undermined if the information is not used to notify the fire service in a timely manner. For two of these incidents, the fire service was notified by members of the public, nullifying the possible benefits of early detection of a developing fire by the fire alarm system.

In the other two examples, investigation by the key holders eventually resulted in a fire service callout, albeit delayed. Critical information available to the monitoring centre was not passed on, which affected the initial fire service response and the delay enabled the fire to cause extensive damage.



School Fire 24/01/2014

In an effort to avoid false alarms, building owners sometimes elect to have their premises inspected prior to calling the fire service. Rudimentary fire detection systems can also make it difficult to identify remotely whether one or several devices have activated.



However, there are a few indications that can be used to help alarm monitoring companies and building owners make informed decisions remotely.

For more advanced systems (addressable or including several detection zones), multiple activations tend to indicate a real fire rather than a false alarm. This is particularly true if the activations are sequential, progressing through the building.

Typical PIR device

Some security devices, such as Passive Infrared Sensors (PIR) can also react to fires. Therefore, the activation of smoke detection and security sensors in short succession may indicate a developing fire. This information should be passed to the fire service.

## LESSONS LEARNED/RECOMMENDATIONS

The lessons learned are applicable to building owners, security alarm providers and monitoring companies;

- Building owners should consider the intended objective in installing a monitored fire alarm system and discuss with their alarm provider an appropriate fire service notification process to minimize delays and protect their buildings.
- Fire detection systems provided as an "add-on" to security systems should, where possible, be designed to allow the fire alarm panel to identify individual detectors. This informs the monitoring company of multiple detector activations suggesting a growing fire.
- Alarm monitoring company staff should be trained and empowered to make critical decisions based on the information available, including directly notifying the fire service if there is strong evidence to suggest a fire is developing.
- All available information should be passed on to the fire service to ensure the most appropriate response.
- Where property or business protection is critical, a detection and alarm system designed to NZS 4512 and directly connected to the fire service may be a more appropriate solution.

