

Smoke Alarms vs Fire Detection Systems: What Is the Difference?

In many buildings, the terms “smoke alarm” and “smoke detection system” are often used interchangeably.

They are not the same thing.

Understanding the difference is important for owners corporations, strata committees and building managers, especially when dealing with Fire Safety Orders, ageing fire detection systems, or projects where changes to a building's fire safety measures may involve multiple stakeholders beyond the fire contractor.

What is a smoke alarm?

A smoke alarm is usually a standalone device installed inside an apartment or residential dwelling (also known as a Sole Occupancy Unit or SOU).

Its job is to detect smoke and sound an alarm locally, warning the occupants in that dwelling.

In most cases, a smoke alarm:

- Is located inside an individual unit or apartment
- Sounds only within that apartment
- May be interconnected to other smoke alarms in the same apartment which will also sound
- Is powered by battery or mains power with battery backup
- Is not connected to a central fire indicator panel
- Does not usually alert the whole building
- Does not usually identify the alarm location to building management or firefighters

Smoke alarms are sometimes used in common areas (mostly in older buildings). In this instance, they may also be interconnected with other common area alarms.

Smoke alarms are important life safety devices, but they are mostly installed within a unit/apartment to warn the people inside.

What is a smoke detection system?

A smoke detection system in a strata building is usually part of a broader fire detection and alarm system.

It may include:

- Smoke detectors
- Heat detectors
- Manual call points
- Fire indicator panel

- Occupant warning system which may have:
 - Sounders
 - Speakers
 - Visual alarm devices
- Emergency Warning and Intercommunication System (a more advanced occupant warning system explained further in another article)
- Monitoring equipment
- Interfaces with other building systems

Unlike a standalone smoke alarm, a smoke detection system is connected to a central fire indicator panel. This allows the system to identify alarms, faults and system conditions across common areas or other parts of the building.

What is a fire indicator panel?

The fire indicator panel is the control point for the building's fire detection system.

It receives signals from detectors and other devices, displays alarm or fault information, and may activate warning systems or send signals to monitoring services.

In simple terms:

Smoke alarms warn occupants locally.

A fire detection system reports back to a fire panel and forms part of the building's fire safety infrastructure.

One of the Biggest Differences Is How They Are Powered

Although smoke alarms and smoke detection systems both detect smoke, they are very different from an electrical perspective.

Smoke Alarms

Smoke alarms installed within apartments are typically powered by:

- A 230/240V mains electrical circuit
- An internal backup battery

Each smoke alarm operates as an individual device (unless within the same SOU in which case they will be interconnected). If mains power fails, the backup battery allows the smoke alarm to continue operating.

Smoke Detection Systems

A building fire detection system operates differently.

Rather than being connected directly to the building's mains electrical wiring, smoke detectors are typically connected to the fire indicator panel using Extra Low Voltage (ELV) circuits.

The fire indicator panel provides:

- Power to the detectors
- Monitoring of detector status
- Fault monitoring
- Alarm processing
- Communication with other building systems

The fire indicator panel itself is connected to mains power and includes dedicated standby batteries designed to keep the system operating during a power failure.

As a result, the detectors throughout the building generally do not contain the same type of backup batteries found in typical apartment smoke alarms.

Why This Difference Matters

This centralised architecture is one of the key reasons a fire detection system can perform functions that a standalone smoke alarm cannot.

Because every detector is connected back to a fire indicator panel, the system can:

- Identify alarm locations
- Monitor faults
- Activate occupant warning systems
- Interface with lifts and mechanical services
- Communicate with Alarm Signalling Equipment (ASE)
- Control other fire safety systems throughout the building

A smoke alarm, by comparison, is generally designed to provide local warning to occupants rather than manage the broader fire safety functions of the building.

Common misunderstanding in strata buildings

A common misunderstanding is:

"We already have smoke alarms, so why do we need a fire detection system?"

The answer depends on the building.

Smoke alarms and fire detection systems serve different purposes. A smoke alarm generally protects the occupants of a specific dwelling. A building fire detection system can provide broader detection, warning, monitoring and response capability for the building as a whole.

This distinction becomes especially important when a council, fire engineer, building consultant or other stakeholder identifies concerns with a building's existing fire detection arrangements or recommends additional fire detection measures.

Why older buildings often face this issue

Many older apartment buildings were constructed under different requirements than those that apply today.

Over time, a building may face new fire safety expectations due to:

- A Fire Safety Order
- Building upgrade works
- Change of use
- Fire engineering review
- Insurance requirements
- Repeated fire safety defects
- Ageing or obsolete equipment

In these cases, simply installing domestic smoke alarms may not be enough.

Does every strata building need a fire panel?

It depends! The requirement depends on the building's size, classification, layout, age, fire safety schedule and applicable compliance pathway.

Some smaller buildings may only require smoke alarms. Other buildings may require a full fire detection and alarm system connected to a fire indicator panel.

This is why the correct advice should be based on the specific building, not a general assumption.

Questions strata committees should ask

If your building is being told it needs fire detection measures, ask:

1. Are we talking about smoke alarms or a building fire detection system?
2. Is there an existing fire indicator panel?
3. What areas of the building require detection?
4. Is the system connected to occupant warning equipment?
5. Is the system monitored?
6. Is the requirement coming from code, a Fire Safety Order, a fire engineer or a consultant?
7. Can the work be staged?

8. Will apartments need access, or is the work limited to common property?
9. Is the existing system obsolete?
10. What is the long-term plan for the building's fire detection system?

Final thoughts

Smoke alarms and smoke detection systems both play important roles in fire safety, but they are not the same thing.

For strata buildings, this distinction can affect compliance, project scope, cost and the type of contractor required.

If your building is reviewing its fire detection requirements, or if your existing fire panel is becoming obsolete, it is worth seeking advice from experienced fire detection professionals to better understand the available options and any broader project considerations.

Full Circle Fire specialises in fire detection and alarm systems, including the maintenance, repair and replacement of ageing and obsolete equipment, as well as fire detection system works arising from Fire Safety Orders.