

# Toward a Zero-Fire Construction Site

By fusing **AI thermal imaging** with **wireless smoke sensing**, we create an early-warning ecosystem. This shifts fire safety from reactive response to **predictive prevention**, offering real-time visual command of site safety.

## Three-Layer System Architecture -- Smart Site Safety System +

A closed-loop sentinel system operating 24-7 with minimal human intervention.



**Heat-Source AI Cameras**

Wide-area visual detection with on-device AI analysis.

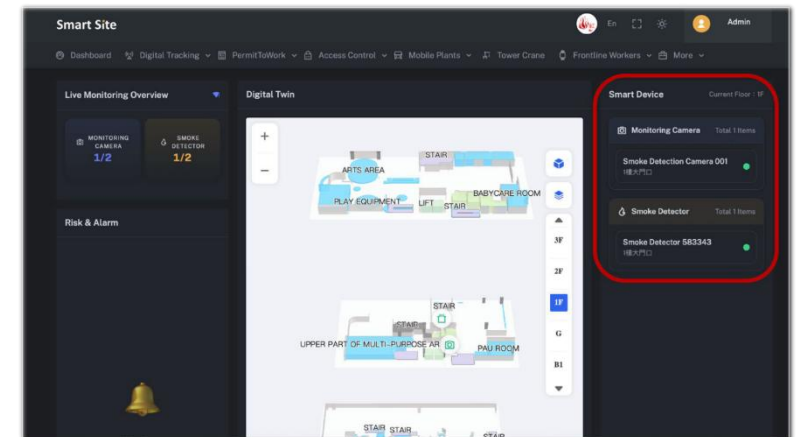
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**Smoke Sensors**

Battery-powered point detection to fill blind spots.

→



**4S Platform**

Integrates data, alarms, and remote service management.

# Recommended Deployment Plan

Flammable or explosive zones  
**Heat-Source AI  
Cameras**

Higher Cost, Wide Coverage

Using Heat-Source AI camera in key high-risk zones (e.g., material storage, electrical control)



Smart Fire Shield  
Early AI Warning



- ✓ Detects error  $\leq 2^{\circ}\text{C}$
- ✓ Onboard AI real-time analyzing danger
- ✓ Fast response time
- ✓ Non-contact, safe
- ✓ Long service life

Hybrid Detection,  
Budget Optimized

General construction areas  
**Smoke Sensors**

Low Cost, Easy Install

Using smoke sensors in other area, (e.g., rooms, corridor, scaffold, etc)



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Contact us for  
more information  
& customized  
solution

# System Architecture



Audio-visual alarm light

## Alarm Mechanisms

- ✓ **Local Alarm:** Buzzer warning
- ✓ **Remote Alarm:** Real-time alerts via mobile app and 4S management platform
- ✓ **Control Room Integration:** Sound and light indicator panel
- ✓ **AI Camera Two-Level Alerts:**
  - **Level 1:** Abnormal temperature / suspected smoke
  - **Level 2:** Confirmed flame or multiple anomaly triggers

