

# STA Advice notes

## Fire risk mitigation - site security



No. 8 - June 2015

## Part 1 - Thermal imaging cameras

### Who is this for?

Contractors and developers to provide enhanced site security.



### Background

The use of thermal imaging cameras is part of the STA Site Safe initiative and security packages noted in the STA 16 Steps.

Thermal imaging camera technology has advanced to create reliable and flexible security provisions on construction sites.

Using strategically placed cameras, it has been shown that surveillance of construction sites from off-site command centres (with on-site response times) has provided successful deterrents to trespassers onto construction sites.

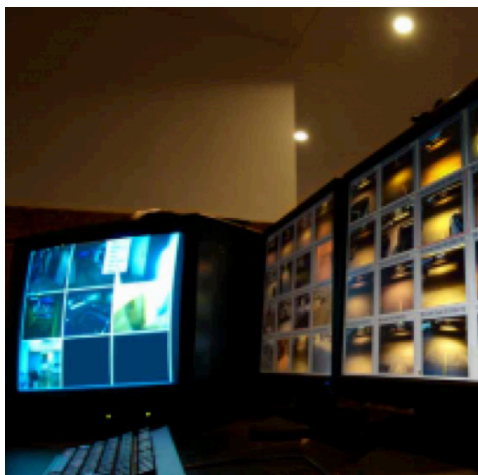
## Thermal imaging camera security

A camera that is capable of both daytime and thermal imaging to pick up movement of humans (and animals) and heat sources even through smoke and flame. The camera will pick up the heat source and track it, recording this on a headquarter screen.

Cameras are positioned through power cabling routes and internet access together with a loud speaker.

Full instructions and guidance is given to the site management team on installing the software required to remotely view the cameras. Cameras can be remotely viewed from any desktop/laptop computer - and also many smartphone and tablet devices.

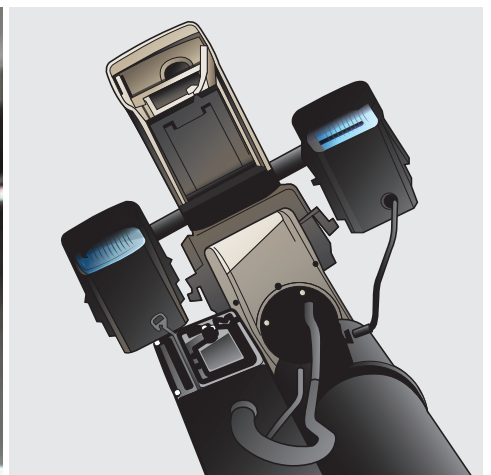
When logged in remotely the user has the option to toggle between different cameras, record the view of any camera, zoom in/out and pan the cameras.



**Camera monitoring at a security company headquarters**



**Thermal image of person walking across a car park**



**Typical thermal imaging camera**



**Typical pictures from thermal imaging**

The cameras are remotely monitored at times discussed and agreed with the main contractor. This would typically be evening/night time and weekends, but could include any other time of the day or week as necessary.

The thermal imaging company require an emergency contact to be nominated by the main contractor; this person will be called at any time of the day or night should an incident occur on site that needs their attention.

## Camera position

Cameras should be strategically located at a height that cannot be reached by intruders to disarm them; typically towers are provided.

## Flexibility of changing position during construction

The site will change as the building progresses. The tower can be moved around the site by the installation team, but is subject to pre-planned changes and not spontaneous changes by the main contractor, as it affects the video positioning.

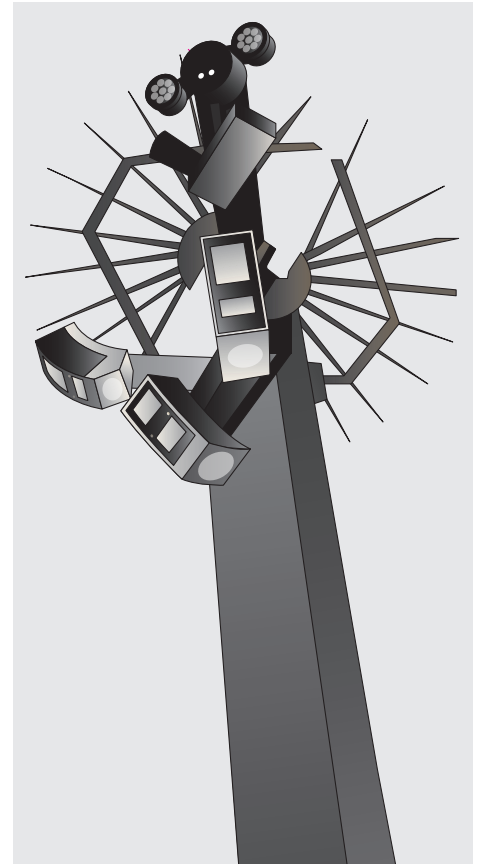
## IT requirements

A fixed IP address broadband connection is required, which involves a single phone line (with appropriate monthly line rental).

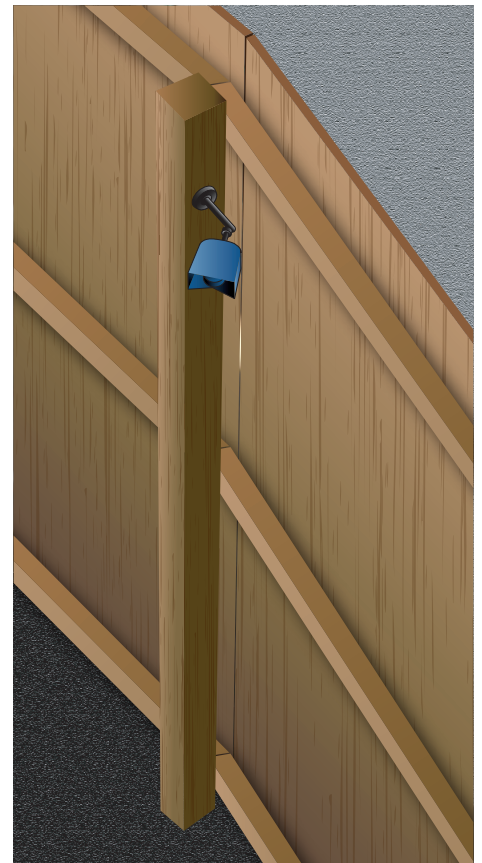
When the internet fails this sends out a call to the key holder/site manager to inspect the site - so in effect creates an alarm.

## Power cuts

A battery back-up facility is included in the system.



**Tower mounted camera**



**Check the camera cannot be vandalised from the street**

## Wireless battery systems

For sites that have no power installed, or have poor radio and mobile signals, the use of a full battery operated (20m range per camera) may be deployed, which can be monitored at a general location or via phone app.



**Typical battery operated camera**



**Mounted battery operated camera**

## Response time

For sites that have no power installed, or have poor radio and mobile signals, the use of a full battery operated 20m range per camera may be deployed, which can be monitored at a general location or via phone app.

The response time is typically 10 to 30 minutes. The need for a response is less likely as the loudspeaker soon causes concern amongst the intruders.

## Human security guards

Placing a physical presence on a construction site - with security guards - is a clear deterrent to those that have sight of the guard and perhaps a guard dog when they are on patrol. Depending on the site layout, size and location the success of a security guard is dependent on the thought out project plan, with routine site walk rounds, clocking stations, back up and awareness of the guards to respond to situations.

The principle problem of security guards is that they cannot be at all places at once. Therefore visual security cameras on large sites as part of any security strategy, with multiple guards providing both office surveillance of the cameras and walking rounds with radio control to a central base, is recommended. Another drawback with security guards is that there are risks with lack of concentration and potential corruption of the security guard.