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CCTV…..The Basics

Almost every day I get asked to quote a CCTV job and almost invariably I ask "what does the end user want to see". The typical response I get is…… they want to see 20m or they want to see people in the room. Unfortunately, both of these answers are almost useless.

Consider the following examples.

The key to a good CCTV installation is getting the correct images. In general correct images are those that can be used to:-

A/ Identify an intruder or suspect

In real real world this means a scene width at the person of **2 metres** no wider

B/ Identify a vehicle (read a number plate)

In the real world this means an image **2 vehicles wide** no wider

C/ Identify a persons action(s)

This is generally achieved by an 'overview' type camera

As you can see all of the above are very different applications, and the biggest variation in equipment selection will be the lenses. To identify a person at a distance of 4 metres (2m scene width) requires a focal length of almost 10mm. Obviously, this lens will only show a small section of the room. Therefore, a second camera is required with a wider angle lens to view activity in the room.

To read a number plate at 25m (4m scene width) requires a lens with a focal length of about 30mm. A standard 8mm lens at a distance of 25m will give a scene width of about 15m. When you consider that a number plate is about 450mm wide this means the number plate will occupy less the 1/30th of the width of the screen, or on a 17"monitor about 10mm of the screen.

Other considerations in CCTV include:-

Cable - ALWAYS use copper/copper cable. Most coax purchased from electrical wholesalers have a steel centre conductor with copper on the surface of it. This is fine for TV antennas, but not CCTV. Also remember that it is a requirement that underground rated cable be used for all subsurface runs, including in conduit.

Power - Use appropriate power supplies and do not overload them I would recommend always allow 25 – 30% extra capacity. Please remember that a 13.8V power supply is often NOT suitable for dome or board cameras as they are designed for 12V +/- 10%.

Connectors - Poorly crimped or incorrectly sized BNC fittings cause a large percentage of CCTV faults. Ensuring that the correct tool is used to terminate BNC fittings removes most connector related call backs. Adaptors like F to BNC and the like should be avoided as they can cause signal loss.

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