

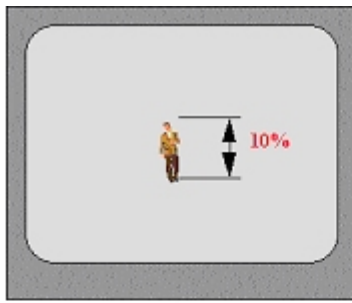


SYSTEM DESIGN - SOME SIMPLE RULES:

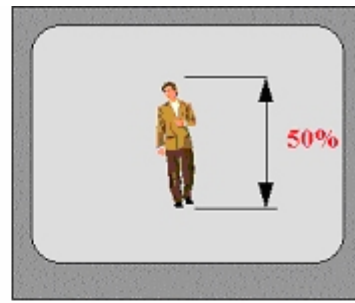
Over the past few years CCTV has had a major impact on crime detection and prevention, and has never been out of the news for long. CCTV is also useful management tool and ensures best working practices and Health and Safety requirements are met. The innovation of Digital Technology has improved the day-to-day management and quality of archived video. However, basic rules must be followed in the design of the system if the video is to be used as evidence and to be of value at a future date.

The following rules will assist the designer to select the correct camera with the correct focal length and light tolerance capabilities for most simple installations:

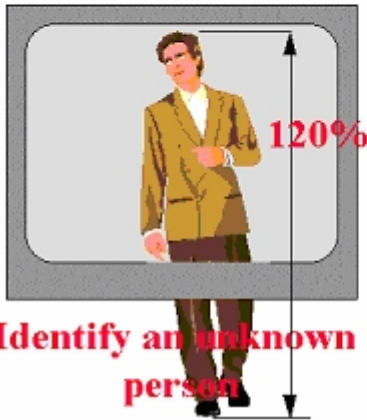
1. Produce a plan view of the site showing the areas, which require CCTV coverage. Mark the plan with approximate dimensions of buildings open areas and perimeters. This will allow you to calculate the approximate numbers of cameras required and the relative mounting positions for internal and external cameras.
2. Select a suitable location for the control equipment. For reasons of compliance with Data protection Law and so that evidence cannot be easily removed from site the Video recording equipment should be installed within a locked room or placed within a locked cabinet.
3. When selecting suitable camera types consider the following:
 - Is the camera inside or outside? External cameras require protection from the environment.
 - What is the lighting conditions affecting the camera view. Is sufficient lighting for colour cameras?
 - Consider the type of lighting to be used i.e. white halogen or Meta halide lighting for colour cameras.
 - Would cameras that operate in very low light conditions be better such as Day Night cameras or would Monochrome or Night Vision cameras be more suitable
 - If fixed cameras are to be used which lens will be most suitable for the size of image required on screen during live view and playback. If in doubt affordable cameras with built-in manual zoom lenses are now available. This enables the installer to adjust to the perfect picture during installation
 - Is the camera low enough to be attached by vandals? Special cameras and cages are now available to protect cameras from damage. Home office guidelines for recognition of persons.



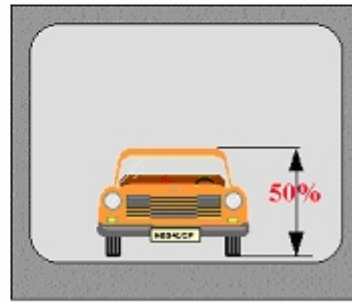
Detect a person



Recognise a known person



Identify an unknown person



Car Number Plate

4. Consider the size and position of monitors. Are they best desk or wall mounted? Are they large enough to be seen without eyestrain?
5. Getting the video signals from the cameras to the recording equipment. Consider the type of cables to be used and how the cameras will be powered.
 - Where will the cables be routed.
 - Inside buildings? Outside buildings?
 - Within underground ducting?
 - What type of cable to use? This is normally determined by distance. 50 to 100 meters shotgun coaxial cable is best and most economical. Over this distance data cable CAT5e is good, especially if there are more than 8 cameras on the system. If distances are over 1000 Meters fibre optic cables may be more suitable.
6. Now the selection of suitable Digital Video Recording Equipment from the wide range available. Make your selection based on current and future requirements for numbers of cameras and audio feeds to be archived. How quickly you want to record (from 1 to 25 images per second per camera), the quality of the recorded image (size of image retrieved from the archive) and most importantly the size of archive storage (how long the video will be kept before it is overwritten. Location for the DVR (Digital Video Recorder), installed within a locked room or within a locked cabinet. DVR should be kept secure to comply with Data Protection Guidelines.

Finally, can the system be simply maintained and cleaned. CCTV system images are of no use as evidence if the lens was dirty or the recording system failed when an incident occurs.