

Video Surveillance

Lowering Risk in CCTV Design



Simon Lambert, BSc (Hons), MASC, CCTV Consultant, Lambert & Associates
3/18/2013

[Comment now](#)  6 [Email](#) [Print](#)

Security systems are designed to reduce risk. Their owners invest money in them for that reason.

Unfortunately, the process of buying a CCTV system creates new risks for the owner. The installer is also subject to significant risks as a result of the job. So, what are these risks?

CCTV buyers and installers seem to have widely tolerated these risky situations for many years as being "just the way it is". In this short piece you will see that it doesn't have to be the case. Why do these new risks arise? What can we do to remove them?

Hollywood CCTV myths

Let's think first about the risks to the buyer of the new system, which most often originate if they are a non-expert regarding CCTV. Primarily, the news and entertainment media have misrepresented the reality of CCTV for many years.

Hollywood movies and TV dramas commonly portray crime-fighting heroes using fantastical computer wizardry to pull tiny details from dark, blurred surveillance camera footage and succeed in bringing the bad guys quickly to justice.

Understandably, after a longstanding diet of these stories, the wider population of non-experts now commonly believe that such results are achievable. Of course, in normal reality they are not.

With such expectation firmly rooted, the buyer is unaware of the huge risk that the CCTV system that they buy will disappoint them. This won't necessarily be apparent to them when they take ownership and pay the installer.

Their disappointment will lay hidden, as a false sense of security, until an incident happens. Now they discover that their CCTV images fail to provide the information that they needed and naively expected would be there.

I know this to be true because often in my business as an independent CCTV consultant I am called by owners to report on why their system is letting them down.

"Expert" sales advisor

Of course, it is human nature for them to blame the installer's experts who advised them when they were choosing it. I find in the majority of occasions that this blame is justified because they have installed lenses that are overly wide-angle, preventing the required details from being captured.

Most commonly, the "expert" advisor will have been the installation company's

ADVERTORIAL

[Login](#)



50% 50%

[Tweet](#) 4

[Like](#) 0

[Share](#) 1

0

White papers



[Five reasons to install HD-SDI in 2013](#)



[The Impact of M&A & Investment on the Security Business](#)

Related content

[Suspended Sentence for Pub Landlord](#)

[The Cloud: Protected or Precarious?](#)

[SME Security Concerns for Outsourcing to the Cloud](#)

[Lowering Risk in CCTV Design](#)

[US Fire Data Explained in Detail](#)

salesperson, though sometimes the installer's technical expert is also involved.

Sadly, the latter is often barred from meeting customers because they are too likely to tell truths the salesperson would rather were glossed over to win the sale!

Either way, it is perfectly reasonable for the buyer to expect these "experts" to design a CCTV system after diligently agreeing to their needs. So, the big question we will answer now is, "Why did the designer choose the wrong lenses?"

Wrong lens

This is such a widespread problem that I fear many installers who design CCTV systems are not properly trained. Having personally taught this subject to hundreds of people already working in CCTV I discovered that most didn't have a clue before they attended the training course. Further, what I see makes me suspect that a large proportion of those who have received training don't bother to use what they know to design and install good systems for their customers.

But why?

I understand how much pressure there is to produce large numbers of design proposals and sales quotations as quickly as possible so that sales targets can be achieved, as I was a salesman for several CCTV installers many years ago.

This hasty work often prevents careful designs. If a quotation results in a sale it is usually presumed that the installation department will correct any problems. Sometimes they don't because this delays completion and eats profits.

All of the above can add up to a shocking state of affairs, especially in the security industry whose role is to provide protection. I wouldn't believe it were true if I hadn't seen so many poor CCTV installations with my own eyes so many times, year after year.

Am I being overly critical? No. Many consultants I know have frequently seen exactly these same problems.

Installers who simply are not trained don't realise, or care, that they are failing their customers.

Consequently, they have little driving them to improve. We can hope that this article highlights the weaknesses, offering a simple solution that inspires them to take corrective action.

We can also hope to offer a solution to those who simply ignore their training because they are in a hurry to make money out of customers who don't know enough to recognise the ineffectiveness of their new system. So, let's reveal the answer to these situations.

Video System Design Tool

The answer is a tool that addresses several issues. The headline feature of [JVSG's IP Video System Design Tool](#) software ensures that every camera's field-of-view meets the customer's needs and expectations.

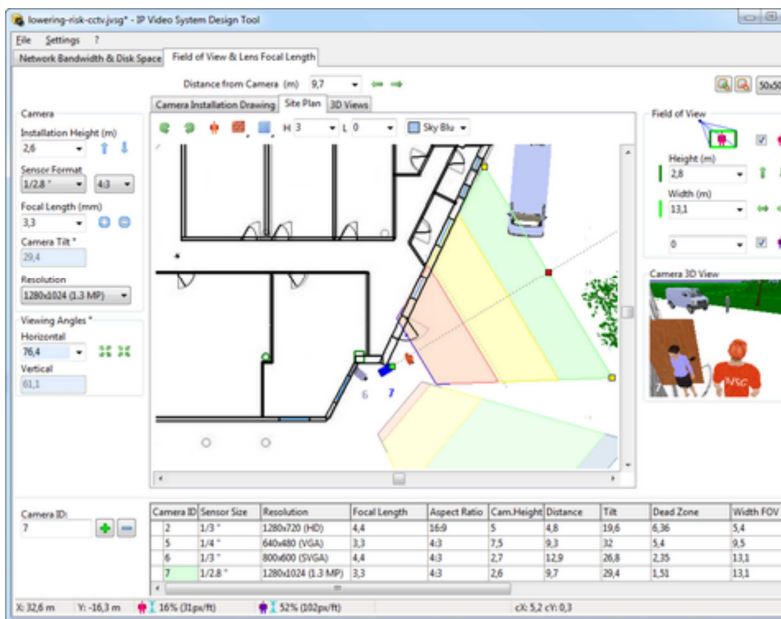
Firstly, their needs are met by sales people and designers using it.

Secondly, their expectations, especially those of the non-expert customer, are met by clear pictorial illustrations predicting how much detail their CCTV pictures will contain.

Creating these in collaboration with customer can be extremely valuable because they begin to understand the limitations and compromises that are necessary. Most powerfully, they buy-in to your design proposal because they have contributed alongside you.

IP Video System Design Tool

[Comment now](#)  6 [Email](#) [Print](#)



It can be an uphill struggle for the sales person to override the misguided beliefs that Hollywood has embedded in the customer's head regarding CCTV's capabilities. It can be even harder to get the better of a sales competitor who is also bidding for the business and who is making fantastic and unrealistic claims for his system to a customer who might fall for such lies.

Using IP Video System Design Tool to your advantage, your illustrations and collaborative work with your customer can make them more confident in your proposal.

Crucially, you can use it to actually disprove any of your competitor's dubious claims without having to resort to denigrating them. Such badmouthing inevitably undermines you too in your customer's eyes. Now, the logical alternative is so much better.

Community of users

Of course, if you are not an installer, but a CCTV user who is technically minded, then using IP Video System Design Tool will permit you to design the camera layout and fields-of-view yourself so that you can show the installers what they must achieve.

The great idea is that this leads to realistic quotations and CCTV being implemented successfully if the installers want their bill paid.

Why is this so easy to achieve using JVSG's IP Video System Design Tool?

The software is supported by a clear user's manual in printable PDF form. It runs to 60 pages but is not difficult to read as it has a lot of illustrations.

Online support from the software's creators is very good too. With the number of copies sold now more than 1,500 there is a large community out there sharing experiences.

3D field of view

The IP Video System Design Tool's foundation is modelling camera's fields-of-view in three dimensions, like they are in the real world, which is why the results are so good.

The main reason CCTV design has for many years been so poor is that designers have largely relied on drawing pencil triangles on a flat two-dimensional plan drawing.

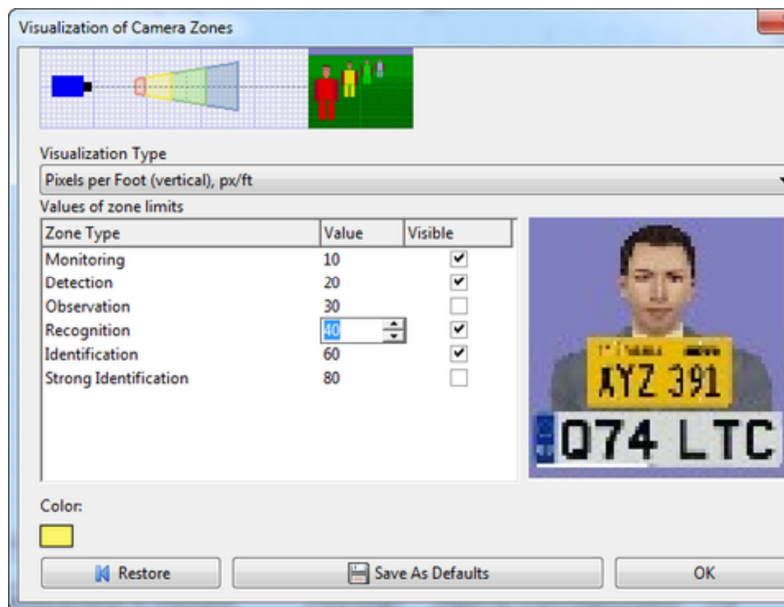
These lack the 3rd dimension, height, so these plans ignore the reality of blind-spots beneath cameras, etc.

In its simplest form, the IP Video System Design Tool shows a graphical layout of a camera with user-adjustable height, tilt, target distance, lens, standard/megapixel sensor format, pixel count, compression type and ratio, etc.

Very usefully, you dial in the height of a target you need to see within the top bounds of the camera's view, and similarly, for the lower edge of the picture.

A CAD-style plan view and side elevation of the camera's field-of-view are generated, which reflect all these inputs, including a simulated camera view. The zones within which "identification", observation, "detection", etc. are possible get differently coloured.

Visualisation of Camera Zones



Similarly, user-defined ranges of pixels/foot (PPF) or pixels/metre, etc. are automatically drawn. This is all especially useful when old rules-of-thumb can no longer be used with all the new sensor sizes in the marketplace.

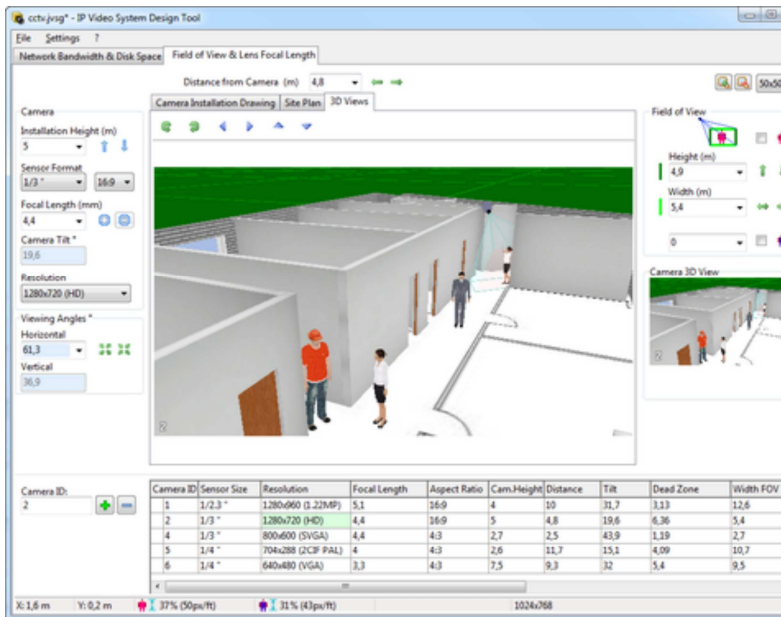
To hone the optimum view for your requirements the fields-of-view graphics can simply be clicked-and-dragged with immediate recalculations reflected on the display.

When you have discovered your solution all of the key parameters are tabulated for export into a spreadsheet so that a design of any size can be compiled piece by piece.

Import plans to build 3D model

To go further and create models of your site using the software is quite easy. You can import AutoCAD plans if you have them, or scans of paper drawings, or aerial photographs, as the base upon which the 3D elements can be "dragged and dropped" with correct scaling.

Imported CAD plans



Built-in tools include: walls, doors, windows, boxes, columns, vehicles plus number plates, Rotakin targets, realistic people, etc.

The simulated camera view can be dragged with the mouse to pan and tilt or relocate to its optimum orientation.

Storage data predictions made

The pixel count can be simulated on test targets so that limits of detail are easily seen. Even digital compression types and ratios are simulated to better illustrate your images in the real world.

These latter calculations enable IP Video System Design Tool to automatically create predictions for cameras' data rates over networks and, similarly, the volume of data that recorders will need to store.

The main parameters governing each are user-adjustable for every camera. Again, these are usefully tabulated for export into a spreadsheet.

I hope that this article has succeeded in several things for you.

Firstly, laying out strong motivations for using cutting-edge tools to reduce the risks from poor design of CCTV systems. Whether you are an installer trying to win sales and finish profitable installations or a CCTV user who wishes to ensure good behaviour from their installers.

Secondly, that JVSG's well-supported [IP Video System Design Tool](#) has been created with an impressive understanding of what CCTV designers need to achieve the first point.

Thirdly, it is easy to use, also in combination with other software such as CAD and design documents.

Finally, with a low price for such a powerful tool and a free trial version available to download it's almost impossible to think of a reason not to try it for yourself and see the many benefits that come from lowering your risks.

[Download your free trial of JVSG's IP Video System Design Tool now.](#)

Copyright © 2013 TechWeb, A UBM Company, All rights reserved.