

Crime

...Let Plowman Craven
bring your Crime Scene
to life...



Plowman Craven

Crime

3D modelling puts your investigations into the picture

We live in three dimensions. It's the way our eyes show us the world. Yet, for too long, Investigating Officers have had to rely on flat, two-dimensional photographs and drawings to help them make sense of the thousands of words they collect in witness statements and expert opinion.

It's confusing for them, for prosecutors and defence lawyers alike and, critically for judges and jurors too. Not any more! the advent of three-dimensional modelling and presentation, derived from the latest advances in sophisticated laser-scanning technology, now allows for truly accurate reconstruction of the crime scene. Evidence can today be presented visually with accuracy in a way that even the most inexperienced man or woman can understand instantaneously.

It is often said that a picture is worth a thousand words. **A computer generated 3D image is worth a million - and it can make a case watertight.**

It all has to start with infallible measuring accuracy. So out goes the old-fashioned tape measure and in come the latest laser scanning techniques. It's as important an advance in the art of criminology as has been the advent of DNA profiling.

And this is the business model of Plowman Craven, a company that has made measuring its business, providing a wide range of industrial, commercial and public service organisations with spatial data solutions which work in constructive and practical ways, ensuring a truly measured response to what has been presented as evidence.

Were witnesses really able to see what they claimed? Could that vehicle really have been in that position? What would have been the trajectory of that fatal bullet? **3D modelling can make the answers obvious to everyone.**

Making it all clear

Plowman Craven has to date been called on to assist in more than 200 serious crime scene reconstructions of incidents of the kind that make national headlines.

Combined with 2D plan drawing, the use of photogrammetry and 3D modelling has enabled the company's expert teams to not only reconstruct crime scenes with complete accuracy but to determine time eventing and the sequence of events; provide clear graphical presentation of physical evidence and witness statements and allow interactive interrogation of witnesses and verification of what they say happened.

Involvement can come at any stage of a case, from assisting in crime prevention measures and pro-active operational briefings through instant 24-hour response to crime scene call-outs, and on to reconstructions made days, weeks, months or even many years after the event. And it is as useful to road planners in preventing accidents and to police forces in explaining them as it in the prevention and detection of crime.

The company's services have been widely used in pro-active contingency planning at major sports, for exhibitions and fairs and for other public events - ensuring the most effective and efficient response potential by the police and other emergency services to incidents

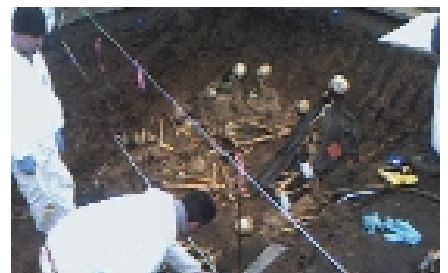
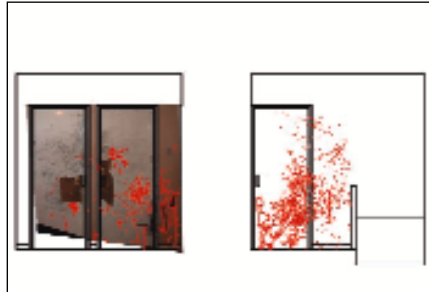


that hopefully will never happen.

Accident and crime sites can be small and complex or big and sprawling. Forensic investigations by Plowman Craven **can range from measuring the spatter pattern of blood on a wall to the flow rate of a river - and determining their significance.**

"The needs can be highly complex or simple and straightforward. If somebody has been apprehended and charged with a crime, the level of our involvement will often depend on what plea has been entered. We may be asked to provide simple verification or to seek to explain the otherwise inexplicable," says Plowman Craven's Senior Project Manager, Stirling Morfett, adding, "Sometimes we have to trawl through highly complex data sets. As the cost of sophisticated equipment like ours and the cost of data processing come down, so there is certain to be an increasing demand for these services. They will eventually become the norm rather than the exception in incident investigation and we are ready to cope efficiently with what is a continually increasing workload. There are light years of difference between a decade ago and the state of things today. We already





have more than 120 highly skilled, highly motivated staff at our Harpenden, Hertfordshire headquarters and have been experiencing 100 per cent year-on-year growth. The confidence gap has been bridged and police forces around the country are recognising the **value of sophisticated, fail-proof measuring with state-of-the-art equipment and techniques that produce truly accurate data quickly and at an affordable cost.**

"It is a technological leap that enables forensic experts to easily and accurately explain events and movements and determine beyond any reasonable doubt how victims, suspects and witnesses fit into the crime scene picture.

"Investigating Officers can determine which blood was whose; how a car got where it ended up or whether a person could possibly be where at the scene they claim to have been, and explain how their movements fit into the time scale."

Technological leaps

The lead in all this technology has come from the aviation and car industries where 3D data capture and presentation has truly been a revolution in the way things work. "Built by hand" was once a hallmark, but no human eye could ever produce the minute tolerances achieved through computerised measuring techniques.

Plowman Craven's Business Unit Manager Duncan Lees explains "Two dimensional measuring alone can never produce an accurate representation. It sees the world as flat - and we all know that even the smoothest of surfaces has its ripples and imperfections."

"Laser scanning bombards a surface with minutely measured reference points that can then create a truly accurate model."

"And it is a science that is undergoing enormous acceleration as young people who have grown up in a video games world leave university and enter the measuring industry. They have grown up immersed in this exciting technology and

are now taking it forward in leaps and bounds."

"But there is also a great value for older, less technologically inclined people too. Jurors who would otherwise be bemused by the evidence showered on them suddenly see it with clarity. 3D presentations lift the veil as they present things in the way we actually see them in our everyday lives. Our world isn't actually flat, nor is it a true sphere - and only 3D can show it, and everything in it, in the way they really are."

Of course, the human computer is still an important element in all this: "That's why we place such an emphasis on employing the brightest of people and providing them with thorough and ongoing training," says Stirling Morfett, adding: "Their role is to provide an accurately measured framework in order to make a faultless representation. If absolute accuracy is not there, then any analysis of the results will be faulty."

"The fact is, everything comes down to spatial data, on where something sits in relation to something else. Quality of data is the key and that's what Plowman Craven and its advanced measuring technology provides."

"For Plowman Craven that means work measuring everything from screw holes to ensure a piece of self-assembly furniture fits together easily to the layout of a dockyard or the precise dimensions of a massive office tower." comments Duncan Lees.

Prompt response

In practical terms, Plowman Craven provides the Police Service and other agencies with a 24/7 call-out: **"It is key that we are able to give round-the-clock service. Our security cleared teams are trained to be as unobtrusive as possible, not getting under everyone's feet and contaminating the crime scene.** They can be tens of metres away from forensically sensitive areas yet still able to accurately record a wealth of relevant data."

Plowman Craven has been involved in helping solve crimes that occurred just two hours earlier and others that took place two decades and more ago. Adds Duncan: "Our exciting new techniques are today not only bringing earlier resolution to present crime solving but are helping close out investigations of old crimes, at long last bringing the perpetrators to book."

"We were, for instance, able to make sense out of a night club killing where two or three hundred people had been milling about, creating an otherwise totally confusing crime scene and another time our measuring of tidal ebb and flow and offshore currents and under-tow was able to pinpoint exactly where a body, washed up on a beach, had been put in the water."

"Plowman Craven, with its expertise and - excuse the pun - truly measured approach, is a valuable but cost effective weapon in the crime and accident prevention, detection and resolution arsenal."



Plowman Craven, your partner at the crime scene...

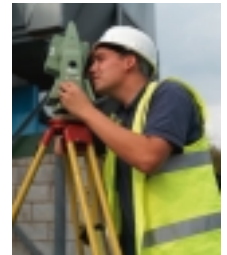
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*All numbers are available
24 hours a day 7 days a week*

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3D laser scanning
2D plan drawing
3D modelling
Animation
Sequence of events
Time eventing
Graphical presentation of Physical evidence
Graphical presentation of Witness statements
Interactive interrogation and verification
Calculation of sight lines
Calculation of bullet trajectories
Pro-active planning
Operational briefings



Area Referencing
Legal Services
Asset Management
Facilities Management
Engineering Surveys
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