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REVIEW ARTICLE

Evolution of New Emerging Multimedia Tools for Crime Scene Sketching: A Review Literature

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ABSTRACT

The documenting of the crime scene is a key duty which needs to be performed quickly, accurately and reliably, and highlights the evidence that may be used to further provide justice for victims and to assure that offenders are prosecuted. New emerging tools and soft-wares are used for creating crime scene designs viz; Sketching, Photoshop, Illustrator, Auto CAD and Sketch-Up. These tools play a crucial role in recreating the facts and figures to help and prepare the meaningful analysis of the situation. This article focuses mostly on documenting a typical crime scene and noting any potential pollution that might have affected its original look quickly. To measure and record exact positions of findings and functions, a Total Station (TS) is employed.

KEY MESSAGE: Sketching offers various instruments for manipulating, viewing and working with your model. The essay will not explore them completely, but will present the fundamental tools for the creation, modification and view of a model's sides and faces. Typical scene drawings and models give a two-dimensional image of the scene (2D).

KEYWORDS | crime scene visualisation through sketching, 2d diagrams, 3d modeling

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INTRODUCTION

RECONSTRUCTIONAL SKETCHES OF CRIME scene is useful for interpretation of information of the investigation. All relevant observations need an accurate location in investigations into the criminal arena to safeguard the custody chain for any findings or observations. Evidence placement is vital for the analysis of the spatial distribution of evidence, the support of the investigative report and the eventual rehabilitation.[1] The initial stage of the investigation and inspection of the crime scene quickly records a full, objective picture of the crime scene without incorrect information. The display of the 3D crime scene is more efficient and intuitive than previous techniques.[5]

In this paper we will try to summarize the concept of crime scene sketching including various tools that helps to depict the frame of situation cited including the modern techniques like crime scene software imaging, 2D–3D modeling etc.

METHODOLOGY

Distribution centers that were utilized in this article: Benji_02, Christopher Clepoint, Elfpainter, GE Apparatuses, Highlander, Joseph Briggs, KARE Plan/SketchUp, Kostyan Novikoff, Emblem Cabinetry, Woodsmith, SketchUp Group, FORENSICnetBASE, Criminal science Assortment (ProeQuest), Web of Science, Exploration Door including the Public Criminal Equity Reference Administration (NCJRS) Edited compositions Data set, with additional record and full-text

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Reconstructional Tools and Investigation

Passive recording of the crime scene, such as pictures is already generally understood inadequate. A task requiring particular knowledge is necessary for active reconstruction documentation.[1] Since the 1970s, when computerised 3-D models were first produced, computer graphics were utilised to increase the visualisation of the forms and structures, Until recently, however, computer software is primarily use for 3-D modelling. To generate a useful 3D model, we need a modeling specialist and AutoCAD software. In the view of the time demanding and expensive nature of the 3D modeling procedure, researchers use free trial version of 3D modeling software for every investigation, until the investigation team or crime situation not demanding.[6]

In certain situations it is more evident than in other cases that it's important to make a map of the crime scene, indicating where the evidences are placed. For instance, situations with bloodstain patterns already have apparent evidentiary dispersion. For situations with invisible traces in the image and invisible evidence, it is less common to visualise their geographical dispersion even though a map is important to comprehend where they have been located. An investigator into the crime scene utilises four main documents: reports and note-taking, photographs, and videography, as well as mapping or drawing.[7-8] There are advanced ways for documenting, such as 360° photography, 3D laser scans and a Total Station (TS) and/or photogrammetries, but require particular know-how. In the Netherlands, the Visualization and Reconstruction Team of the National Police (ETVR) is using these approaches. Investigators from the criminal scene and visualisation specialists document two separate elements of the crime scene, each one of which has evidence. The context of the evidence and its relationship. Both are necessary for rebuilding. But it is impossible to deduce the exact location of the proof from pictures or to make it evident in the 3D scans. This is where a hiatus in crime scene documentation arises.[1,3] There is a fairly high learning curve with many modeller tools, thus it is frequently not enough to devote time to master tools to get even simple results. [9-10]

Fortunately, as researchers have made interaction with their computers more comfortable and graphical software easier to use during the past few years, the typical investigator has new alternatives accessible. One instrument in particular, Sketch-Up (version 8), truly flattens the learning process and gives any researcher wanting to spend some

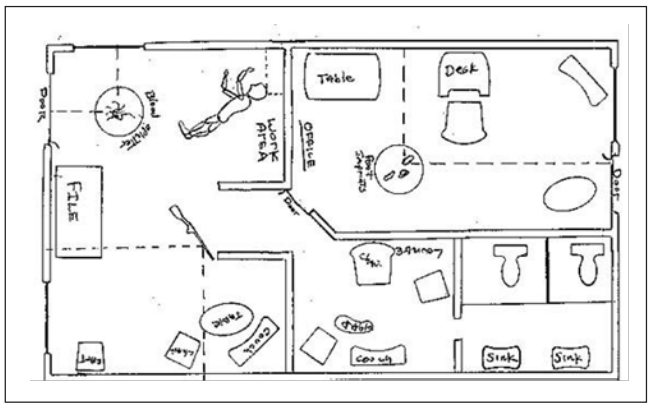

Figure 1: Rough Sketching: Crime Scene

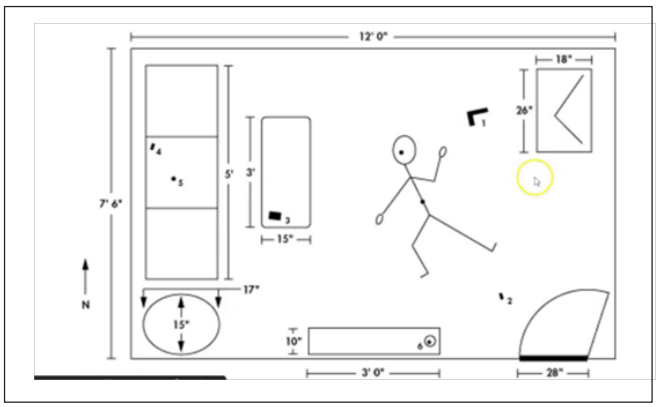

Figure 2: Crime Scene 2D Sketching: Adobe PhotoShop/Illustrator

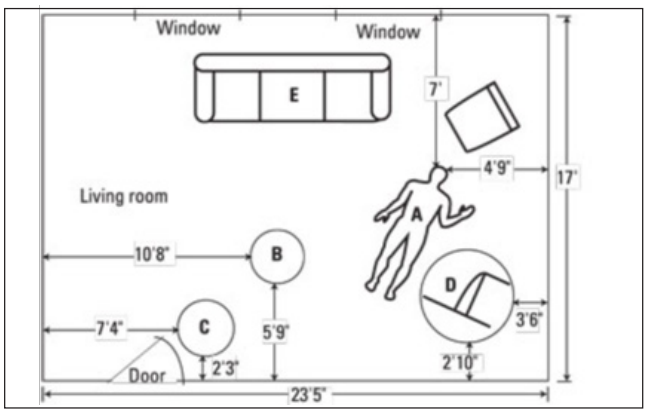

Figure 3: Crime Scene Sketching: Triangulation Method

Figure 4: Crime Scene 3D Model (SketchUp)

time studying the programme a fundamental 3D modelling.[2,7]

The graphics of a crime sight are visual designs designed to convey details seen in a real place. They include basic, hand-drawn (often termed rough sketches), complicated, complex designs and interactive, realistic reproductions. The two-dimensional (2D) top-down representation of the scene is presented in typical scene designs and model models. Although 2D drawings and models are valuable to show space information acquired at scenes, 3D models can communicate such information more effectively. With Sketch-Up, the authors suggest that researchers who have no professional expertise in graphics may build realistic models for the 3D crime scene without changing the way they are doing the scene and even construct to-sized 3D models provided enough measurements are given. When Sketch-Up is started, a popup will show the user that allows the project to pick a drawing template. Templates are not changing the manner in which sketches are done; they just offer the default scale, style and color for new projects. Any parameters that can still be modified following the creation of the project. Sketch-Up has many integrated templates for both imperial and metric units and may build and save user-specific templates for future use.[2,8]

In Sketch-Up, the authors suggest that researchers that don't have professional graphics education are capable of producing realistic 3D crime scene models, without modifying the processing of this scenario.[2,4]

Sketch-Up offers several tools for manipulating, viewing, and using your model. This paper will not explore them completely,

but will present the most fundamental tools for creating, modifying and viewing the borders and sides of a model. The Large Tool Set palette had all the fundamental tools for the example provided in this article, but most are intended for specific work. When you pick a simple tool, you will receive instructions on how to use the status indicator at the end of the window. The question mark icon next to the status indicator will launch the instructor window, which helps researchers learn about the fundamental and advanced functions of each tool.[2,9] The authors highly recommend new users to use the free lessons on the Sketch-Up website (http://www.sketchup.com/ intl/en/training).

All these instruments allow the modeler to draw 2D forms on a certain plane. What's the 3D translation like? If the borders of a 2D form are closed (there are no gaps), SketchUp tones the form surface to show that the face may now be modified. The Push/Pull tool allows the user to click any face, to push it or to pull with the mouse to turn a 2D form into a 3D one. Typing a number into this tool will alter the size of the form to allow the user to produce cylinder and boxes with certain proportions.

CONCLUSION

Modern techniques like Rough Sketching Layouts, Adibe PhotoShop, Illustrator, AutoCAD and SketchUp are the most used method for 3D Portrayal of entire crime scene in the court room. On the contrary, this is not being applied in the conventional method of sketching. So, it is concluded that the modern techniques like crime scene software imaging etc., are creating revolutionary benchmark in criminal justice. IJFMP

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