

FORENSIC ANIMATION

Gives Jury the Big Picture

BY JASON FRIES



When it comes to eminent domain trials, seeing is believing

Most of us have heard or used the phrase, “A picture is worth a thousand words.” What this illustrates is that we tend to use our eyes, not our ears, to fully understand something complex, especially if we are being asked to decipher fact from fiction. It is for this reason that 3D computer animation has become such a powerful tool for use in eminent domain trials. When a judge or jury is faced with a series of complex facts, a visual can be especially helpful.

In 1999, the firm where I was working was one of the first in the country to use forensic animation in an eminent domain trial. The computer animation presentation we created was extremely successful in educating the jury about the facts in the case. However, the cost associated with modeling 15 square miles of topography as well as the future freeway project that initiated the eminent domain action was steep. Today, advancements in technology and timing has made the cost more affordable.

Visual Tools Make a Difference

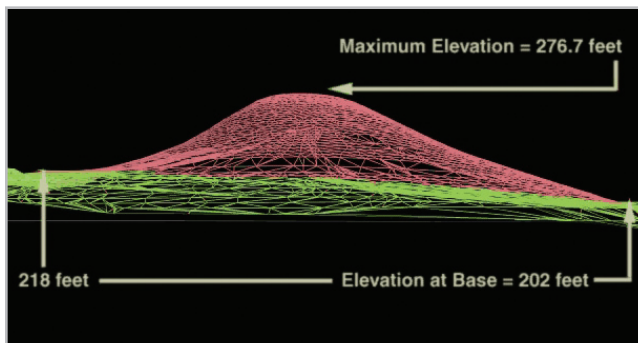
My firm was first contacted by an attorney who needed a creative solution to a common problem. His client had recently used eminent domain to take land needed for a new freeway project, but there was a large gap between his appraiser’s estimated land value and that of the opposing counsel’s appraiser. Although both appraisers had similar

backgrounds and used similar methods, the attorney feared that the dueling appraisers would confuse the jury, causing them to come back with an inappropriate land value.

In addition to the appraisal problem, a neighboring landowner had sued the attorney’s client for compensation, claiming that the freeway project would damage his future development opportunities. The attorney feared opposing counsel’s bleak description of the future effects of the freeway project on their client’s land would prevent the jury from making an educated verdict, no matter how much refuting evidence was presented.

In analyzing the two cases, we were able to address them both with a single solution. We would visually illustrate the current land topography and the future freeway project so both juries could see for themselves the real facts of the cases and make educated decisions.

In the first case, although the land in question was simply rolling hills of grass leased to ranchers, the landowner had claimed the highest and best use of the land was a light industrial complex. By creating a 3D model of his land, as well as the surrounding land to give context, the client’s attorney was able to show that the size and shape of the rolling hills on his land, while fine for goats, was not well-suited for delivery trucks or building foundations.



Case #1: These 3D computer models effectively illustrated to the jury why the land could not be used for light industrial.



In the second case, my firm used blueprints to model the future freeway project in conjunction with the landowner's future development plans based on architectural drawings. Placing both on top of a terrain model that was built for the first trial, we were able to show that the future freeway project would have no discernible effect on any meaningful view corridor that might compromise the plaintiff's future development.

Both approaches enabled the juries to become visually educated. As a result, both trials ended with a defense verdict for the taking agency.

Affordability Factor

Initially, the cost to create such a dynamic presentation made this technology out of reach for all but the largest cases. However, the costs have come down dramatically due to technologies that did not exist in 1999. With recent developments in 3D modeling, editing and compiling software, along with the advent of Google Earth, it has become more affordable to create dynamic, forensically accurate, topography-based animation for eminent domain cases.

One of the more useful tools now available to right of way practitioners is Google Earth Pro. For anyone who is unfamiliar with the technology, it is a virtual, accurate, interactive, 3D terrain model of earth. While the free version is great for planning your next road trip or exploring the top of Mt. Everest from your living room, it is the professional version that offers the tools needed for an eminent domain trial.

Half the Battle Already Done

In the 1999 case example, a significant number of man hours went into creating an accurate 3D terrain model of the subject property and the surrounding area. Today, Google Earth Pro has already performed that step because the 3D terrain data comes from both the National Aeronautics and Space Administration (NASA) and the United States Geographical Society (USGS), and the aerial mapping is from GIS-based aerial photography. What makes it even more useful is its open source system that allows anyone to add 3D models of physical structures from all over the world that you would not find in the USGS or NASA databases.

For example, "fly" over San Francisco in Google Earth Pro and you will not only see the terrain of San Francisco, but most of the buildings as well. These buildings were created by Google Earth users who enjoy creating 3D digital content. Like Wikipedia, the user community self-regulates (along with ground rules set by Google) so that the 3D digital content is relatively accurate. The end result is an accurate terrain, and city model that can be a solid foundation for many eminent domain disputes that come before a judge or jury.

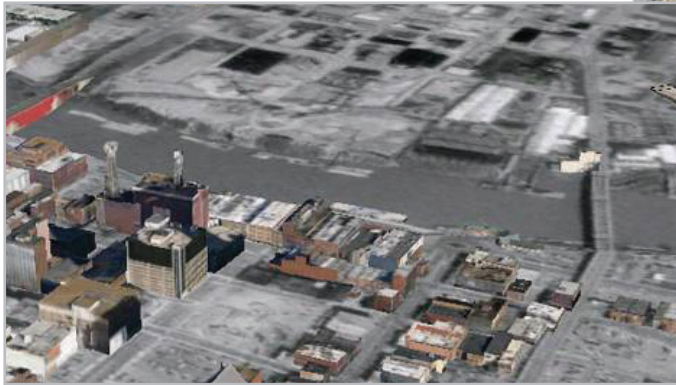
The Other Half

In many cases, an accurate terrain model alone will often not be enough to educate the jury to the facts of your case. Oftentimes, more visual data is needed, especially if you are trying to explain property lines, easement locations and future development that includes freeways, pipelines, power lines or buildings.

Case #2: By showing the actual site before development (below) in comparison to a 3D model of future development (right), the jury was able to see the true impact on the view corridors.



Back to the future: As demonstrated by these images of downtown Nashville in 2010 (right) and 1986 (below), the software lets you go back in time and visually show the subject property's development history.



Google Earth Pro allows you to import 3D models that are created through 3D modeling software, allowing you to add property lines, power lines, pipelines, 3D buildings or small freeway projects. Combining it with 3D studio Max 2012, After Effects 5.5, Photoshop, AutoCAD 2012, and HTML, we have been able to create visually persuasive animations that work to educate juries to the true land values or future impacts. More importantly, these animations are available at price points that meet even the smallest budget.

From easement locations and flood plains, to traffic flow and public transportation routes, it may be hard to imagine all the different 3D elements that can be imported. Google Earth Pro even allows you to change the year of the aerial map that is layered on top of the terrain model. In some areas, you can go back as far as 30 years. This can be very useful if you need to illustrate a development in the area of the subject property at the taking date, which is different from that of the trial date. It is also effective if you need to educate the jury on the development history of the area surrounding the subject property. Combining it with other data sources allows you to create the foundation for a visually accurate, educational tool that can illustrate your case facts clearly and concisely.

The Third Half

Now that you have created an interactive, customizable world with current property lines, future public works projects or developments, you are now set to illustrate the case facts so that the audience sees the case as you do. You may want to illustrate that the subject property is miles away from the closest freeway or that the comparable properties opposing counsel's appraiser used are much closer to desirable locations or are topographically superior. Having your expert attempt to fly around a city and its surrounding area in front of the jury may be too much to ask, but

fortunately the software allows you to record your flyovers and export them as premade movies. By combining a multitude of premade movies and editing software, you can design a final product that is persuasive and user-friendly.

The Fly in the Google Earth Ointment

Although Google Earth Pro is a great tool in the right hands, it does have its limitations. Its import system has a size limit, which makes it difficult to use in large projects. It also provides very limited control of the camera tilt, pan, rotation, speed and elevation during the recorded flyover movies. This can limit its ability to illustrate specific visual points and make educating a jury on a certain case fact difficult.

Additionally, the software does not allow you to import models that are underground and needed for projects that involve pipelines, aquifers and subways. This of course will limit its effectiveness as a tool in specific cases. In these cases, it is better to spend the extra money to create your 3D world from scratch inside 3D Studio Max, which is what we use at 3D-Forensic. There is also other professional animation software available that permits limitless control over your environment. However, if these limitations do not affect your case, Google Earth Pro can be the cost-saving, visually-illustrating, jury-educating tool you have been looking for.

Jason Fries

Jason is Chief Executive Officer of 3-D Forensic, a company that specializes in eminent domain animations. With 15 years experience in the field, he has created over 700 animations for use in mediation and trials, and has testified in both civil and criminal proceedings.

