GISette

City of Marlborough
Massachusetts
GIS

A quarterly newsletter to broaden people's understanding of mapping, geography and the City's Geographic Information System

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For Marlborough's Public GIS Web Site Visit the Following Link:
http://gis.marlborough-ma.gov

Welcome to this edition of the *GISette!* Winter has passed us by again and spring has finally sprung! We hope you still enjoy reading our little newsletter as much as we enjoy writing it. Marlborough's geographic information system is chugging right along and there are great things on the horizon. Our GIS mapping website continues to be hit with developers, engineers and realtors alike. There should be some substantial improvements to it coming soon with a new release of the existing software we use. Stayed tuned here for all the updates!

Coming improvements to Marlborough's GIS you will be seeing in the near future

- Ability to download exiting GIS data layers from the City's website for developers, engineers, planners and the like
- Addition of water/sewer stub information to GIS website
- Added linking of residential plans as PDF files to be viewed and downloaded
- Behind the scenes software upgrades to improve performance and display of data

INSIDE THIS ISSUE

3-D isn't just for TV's

The Creature from the Black Lagoon meets GIS.

When I was about eight years old, I was witness to one of the greatest occasions in entertainment history. I remember that the buzz was almost tangible as you could just feel the excitement of coming events. My family's television had never shown anything so amazing, so shocking or so startling! It was the second coming of the 3-D boom of the 1980's! I had been prepared, of course, for months having made sure to get my cardboard 3-D spectacles at the local convenience store in whatever corny promotion they were offering. When the great day came to watch the momentous event, I remember feeling, well, very let down. I was angry with my faithful Saturday afternoon sidekick, Dale Dorman of then Channel 56's Creature Double Feature. After all of the hype, all of the emotional pleas to get my 3-D glasses, 3-D really stunk! I mean, it was bad. Really bad. There were maybe a handful of times that the Creature from the Black Lagoon even remotely left the screen. What the heck?

Fast forward (no pun intended) thirty years and we have a new era of 3-D upon us. Yes, there are movies and newfangled 3-D televisions, but that's not what I'm talking about. GIS has hopped on the 3-D train and this time it is actually pretty cool! It has purpose too, and it is fulfilling that purpose well. 3-D visualization and mapping is becoming a lot more common than you think and will more than likely become mainstream faster than you think.

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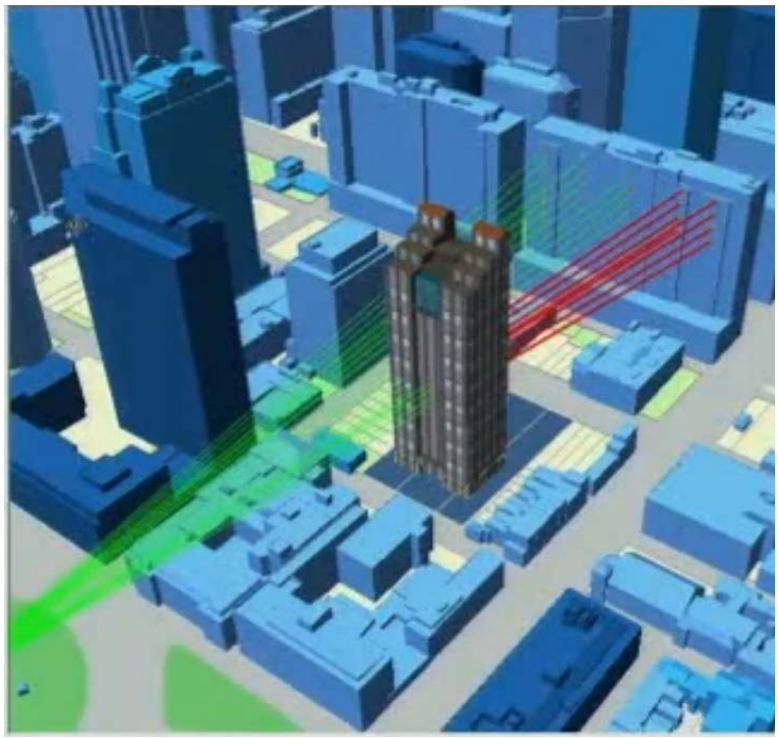
3-D cont.

Traditionally, GIS has been a two dimensional world. Layers of information piled atop one another in order to perform analysis. We may know the "Z" value for an object (its height) but to incorporate that into one seamless display for further analysis has been more complicated. That has changed. Because of the way we now collect data, the "Z", or height value, can be collected at the same time we get the horizontal information for an object. A house can be correctly catalogued as a "three-decker" at 25 Main Street with a flat roof at a height of 38 feet. Now, let's take that example a step backward and pretend there is no building yet. Say a developer is proposing a new 30 story office tower in an abandoned brownfield section of a downtown metropolitan area. At first glance in 2-D, this seems to be a boon for the local economy. It brings jobs, growth and an overall improvement to an area that has languished for years. But, what if we model the same scenario in 3-D. What if we look at what impacts the height of the new building will have on adjacent structures? What if we add the annual track of the sun into the mix? We can use GIS to perform a 3-D visibility analysis of the area. Now we start to follow the shadow cast by this new building. We can see that the playground down the street and popular sidewalk cafes will now be forever in shadow. Let's say we propose that the building now be 20 stories and not 30? How will that affect the overall community and still make all the parties involved happy?



We can also take a look at a less happy subject but one that is all too real in today's changing world. Law enforcement and Homeland Security agencies like the Secret Service and FBI are using GIS to model sniper hazards in urban environments. Historically, this type of analysis has been done using 2-D applications focusing on identifying hotspots for further investigation on the ground. But, by utilizing 3-D analysis, we can change our methodology to investigate viewsheds for specific locations and test the various lines of sight from potential hazard areas. Translation: If important person "A" stands right here, where can bad guy "B" see him from with a rifle. Think of the time savings alone in working this way. Half the manpower and twice the end product!

Whether we utilize 3-D GIS analysis for urban planning, underground mining operations or archeology, it is quickly earning its place as an everyday form of GIS practice. As we all know, the world is not flat. Everything is affected by that third dimension. The effect of shadows and wind, the reflection angle of the sun on rooftops, all play into important decisions being made in this day and age.

3-D analysis has come a long way in recent years. It ultimately serves to make our lives easier and, like GIS in general, make decision making more informed and, hopefully, better for all of us. Unlike the Creature from the Black lagoon, it promises not to disappoint.

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