From 2D Map to 3D World: Cambria County, PA Merges Spatial Data for Robust GIS
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ABSTRACT TEXT: The way you use geospatial data and the information derived from it is changing. Cambria County, Pennsylvania is adapting with it and demanding more from their data, using not just imagery, but the necessary analytics to drastically improve their GIS and asset management practices.

In 2017, in partnership with Fugro Geospatial, Inc., Cambria was the first county in PA to implement a high-resolution, 3D oblique modeling environment. The County merged the 3D environment with their existing GIS layers that include geology, utility lines, and parcel data resulting in a more intelligent and seamless map than ever before. Cambria County enhanced 3D environment builds a GIS that efficiently resolves everyday management and planning challenges. Join us to visualize the oblique 3D modelling environment, developed for both GIS users and non-users alike. From E911, to transportation, to property assessment and civil engineering, you'll learn about the benefits of an oblique imagery derived 3D model and how to extract and apply the most practical information from your data.

3D Cadastral and Construction of a Visibility Measure with Grading System for CAMA Modeling
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ABSTRACT TEXT: This presentation focuses on leveraging and maximizing software potential in real property assessment process using Cyclomedia imagery and ArcGIS software. We utilized a 3D cadastral and constructed a visibility area measure along with a visibility grading system that can be utilized as a differentiating amenity of condo units for CAMA valuation modeling. There are many instances where properties are physically similar, closely located and are valued the same. Many times views from a property is a major selling point, however this attribute is not easy to capture in the CAMA modeling. Implementation of this methodology would allow the positive value reflection of unique attributes like visibility into a condominium unit's market value.

Cyclomedia is a web based application with street view used to aid in construction of a 3D cadastral with condominium unit visibility measures. Each pixel of an image within Cyclomedia has its own latitude, longitude and height information. Unlike a photo from Google streetview; point, line and polygon measurements can be accurately made due to LIDAR. Because of such precision users are able to utilize the built-in measurement tool to obtain latitude, longitude and height of a point, the distance of a line and the area of a polygon.

While using this measurement tool, window locations may be obtained and imported into ArcGIS. New York City has a 3D digital building model that can be used along with window locations. We can measure a condominium unit's visibility area in square footage for all of the unit's window locations by generating an apartment's isovist. An isovist is the area visible from a point without any obstruction. After the visibility of a unit is calculated, an intersection between the unit's visibility polygon and Earth feature raster will be executed. This intersection will yield exactly what the occupants from a unit can see (i.e buildings, parks, rivers, junkyards, landfills etc.).

Each type of Earth feature will have a score within each raster cell an Earth feature lays in. Scores will be summed and visibility polygons will have a total score. Scores are imperative to distinguish quality of view rather than just quantity of view. Once this score is calculated the score will identify superior or inferior views and can be utilized as an additional variable in the CAMA property valuation model.