

## DME2016 Week 5 Outline Intro to 3D modeling with GIS.

1. Start ArcMap
2. Start downloading [today's data](#).

Recap of last week's [Raster Modeling Exercise](#).

### Intro to 3D City Modeling:

Today we bridge from the world of 2-D mapping to using the Z dimension and true 3d models to gain a fuller perspective on situations. Municipal GIS data-sets often include detailed terrain models and information about the heights of buildings. Tools like ESRI's ArcScene and ArcGIS Pro make it fairly easy to create visualizations that feature the 3D landscape, we can also use three-dimensional information in analytical studies, such as understanding the visual connectivity between objects that we propose to add or remove, as affected by the heights of buildings and the terrain.

Today we will explore how the technique of Graphical Hierarchy, so critical for presenting clear ideas, also applies in developing 3D visualizations.

### Recap on Geography and an Information Infrastructure for Planning and Design

- Recalling [some of the first slides we discussed in DME2015](#) some of the fundamental aspects of practical geography include systematic observation of things and conditions, systematic design and encoding of information and subsequent re-use of this information for analytical purposes.
- Administration and planning of cities has a large component of practical geography. Information is developed and maintained by various departments, such as Public Works, Tax Assessing, Public Safety, Urban Planning and Design; and re-used for applications – many of which are future-oriented considerations of change and alternative acts of development and preservation.
- In the third workshop of DME2015 we took a look at [a framework for organization and sharing of information in urban design or landscape design activity](#). It turns out that organizing information for re-use is one way an individual or an organization can express the feeling that information, once organized, should be re-usable. Or another way of saying that an individual or an organization that remembers what she has learned, can learn a lot more than a similar being who is constantly starting from scratch.
- One of the most interesting geographical applications to me for the past 15 years or so, has been [the interchange of information between the world of architectural design with geographical information systems](#). There are a lot of really interesting challenges and opportunities in this space. One of the things that makes it so sexy now is relatively easy tools for publishing and viewing city-scale 3d models on the web.
  - **Boston 3d City Model:** [On-Line Viewer](#), [Downloadable Tiled City Model](#)
  - **Cambridge 3D City Model:** [On-Line Viewer](#), [Downloadable Tiled City Model](#)
- Another very interesting set of problems in the overlap between GIS and 3d design has been the emergence of open-standard encodings for 3d information that allows software from different developers to specialize in specific phases of authoring, exchange and viewing.

Over the next few weeks, we will be looking at several workflows and applications related to city-modeling with georeferenced data.

- [Beginning a 3D model using municipal GIS Data](#)
- Exchanging information with the design community ([SketchUp 3d Warehouse](#))
- [View corridor studies](#)
- Video Fly-Throughs
- [Intelligent, Articulate Terrain Modeling](#)

**This week's Exercise:**

- Discuss the Exercise.
- [Intro to ArcScene](#) – The ArcMap 3d Viewer and Animator
- [Beginning a 3D model with municipal GIS Data.](#)

