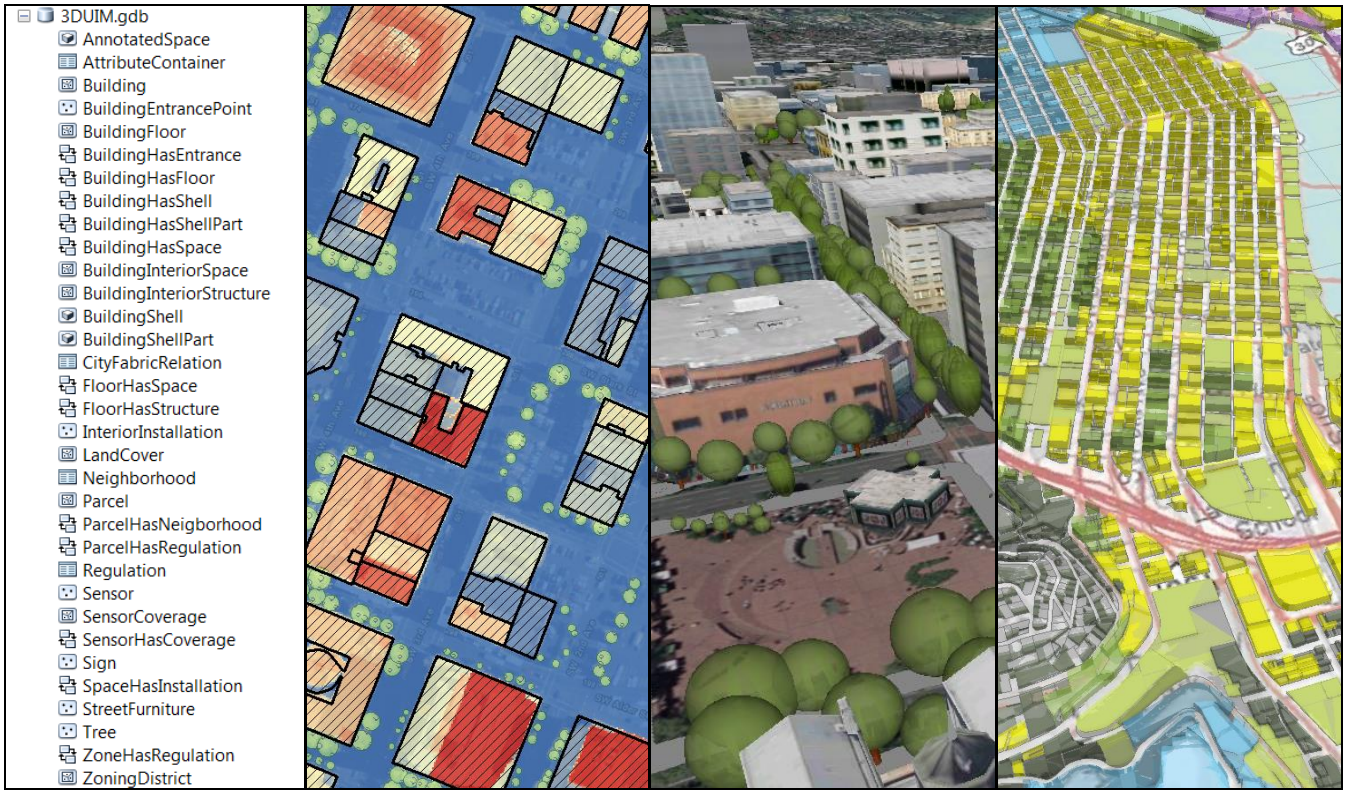
Template: Getting Started with 3D Cities
Version: 1.3 Beta
Date: March 28, 2014

Introduction

The 3D Cities Project is a collection of workflows and tools for importing, creating, and managing common city features. It includes a complete sample data set for downtown Portland, Oregon. The included workflows provide a methodology for taking existing 2D features and using LiDAR-derived surfaces to "3D-enable" them for visualization and analysis.

This template includes the following:

- A set of tools for importing existing city GIS data and land use regulations
- An editing map and geoprocessing models for calculating feature heights from elevation and surface models
- CityEngine projects for parcel-based buildable volumes and procedural façades from 2D building footprints



The 3D City Information Model (3DCIM) supports several 3D data management and analysis workflows

The "backbone" of the 3D City Template is the data structure, which is defined by the 3D City Information Model (3DCIM) geodatabase. This geodatabase stores features and their relationships for modeling city data at multiple scales and within three main themes:

1. **Built Environment**: Building footprints, shells, interior features, and installations (e.g., street furniture)
2. **Legal Environment**: Land ownership, land use zoning and constraints
3. **Natural Environment**: Land cover features

More information on the 3DCIM itself is available from the "Overview of the 3D City Information Model" document.

The 3DCIM is designed to be compact in its structure, making the core of the model easy to populate with data. At the same time, it is compatible with important exchange formats and standards such as CityGML and the ArcGIS Local Government Information Model. Furthermore, it can be extended and localized with minor effort.

Project Contents

The following files are provided in the project ZIP file:

Template Directory	Item	Description
\Information Model	3D-Cities-1.3-schema.xml	A schema-only XML Workspace document of the complete 3D Cities geodatabase.
	DataDictionary-1.3-schema.html	Geodatabase documentation for the 3D Cities Information Model (v1.3), detailing the feature classes, tables, relationship classes, and domains.
	Overview of the 3D Cities Information Model.pdf	An introduction to the 3D Cities Information Model, describing the built, legal and natural environments, database design principles, and feature class descriptions.
\My3DCity	My3DCity.gdb	An empty geodatabase for outputting the XML workspace to a localized schema.
\Samples\Portland	3DCity.gdb	A populated 3D City geodatabase containing sample features for the city of Portland, OR.
	3DCityAnalysis.gdb	A geodatabase containing output analysis features from the Zoning workflow.
	BaseLayerEditing.gdb	An editing geodatabase with Portland sample data for use with the 3D City Base Layers workflow.
	\CityEngine	A sample CityEngine project for downtown Portland, OR, containing 3D City base layers and CityEngine rules.
	\PortlandExample	A collection of sample shapefiles for the City of Portland, which can be imported to the data model using the 3D City Maintenance workflows.
\Workflows	3DCityBaseLayers	A Base Layer editing map, geoprocessing tools, and Attribute Assistant ArcMap add-in for creating and "3D-enabling" city features like buildings and trees.
	3DCityMaintenance	A set of database and ETL tools for importing features and maintaining your 3D City geodatabase, from configuring the database schema to importing 2D and 3D city data.
	3DCitySolar	A set of tools for analyzing and visualizing the rooftop solar potential of your 3D buildings.
	3DCityZoningDesigner	An application for incorporating zoning regulations and visualizing development potential.
\.	Getting Started with the 3D City Project.pdf	An overview document describing the contents of the 3D City Project.

Software Environment

The following software must be installed:

- ArcGIS Desktop 10.2.1 with: (60 day trial available HERE)
  - 3D Analyst and Spatial Analyst
  - Data Interoperability Extension (or FME 2012)
- ArcGIS Server (Workgroup or Enterprise) with the following extensions, or ArcGIS Online Organization subscription
  - Image Server and 3D Analyst
- ArcGIS CityEngine 2013.1 or later (30 day trial is available HERE)

- Microsoft Excel or LibreOffice/OpenOffice

Configure the 3D City Project

You can configure the 3D City project in your environment using the sample data provided by the City of Portland. In doing so, you'll learn how to update and maintain 3D City features using ArcGIS Desktop and your organization's data. Once you're familiar with the workflows using the Portland data, apply these workflows, models, and methodologies to your own city. Get started with the Building your 3D City Base Layers step-by-step instructions to learn how to deploy and configure your 3D City project.

Release Notes

The March 28, 2014 release is the first release of 3D City Project.

New Functionality

N/A

Resolved Problems

N/A

Known Issues

N/A