



Urban Planning and Geodesign with Esri CityEngine Using CityEngine's Street networks for Urban Design

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Demo Theater

An abstract graphic in the bottom right corner consisting of several overlapping, tilted rectangular shapes. The shapes are filled with a gradient from light yellow to light green. One of the shapes has the text "Demo Theater" written on it in a bold, sans-serif font.

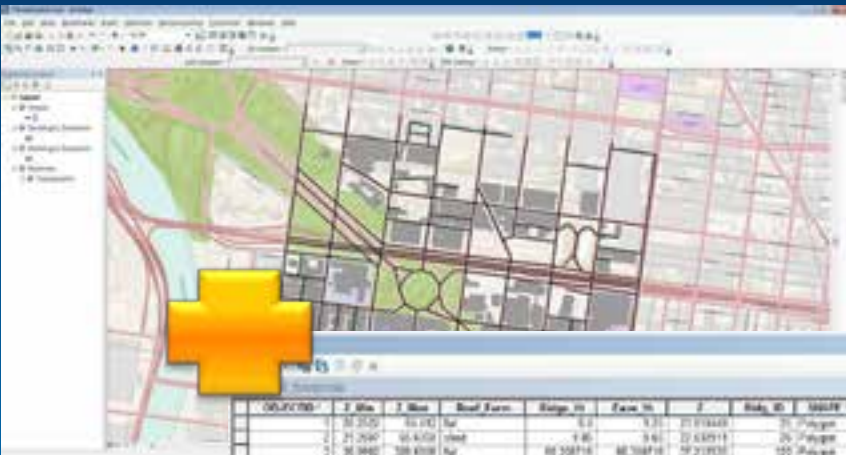


CityEngine



Transform 2D GIS Data into Smart 3D City Models

2D GIS Data + Rules



Shapes

| OBJECTID | F Area | F Perim | Roof Area | Roof Perim | Flow In | F | Flow Out | SHAPE | SHAPE_Length | SHAPE_Area |
|----------|---------|---------|-----------|------------|---------|-----|----------|-------|--------------|------------|
| 1 | 35.2529 | 30.2192 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 2 | 21.2547 | 36.6329 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 3 | 35.9482 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 4 | 37.3039 | 37.7551 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 5 | 21.8571 | 38.5052 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 6 | 35.0788 | 33.028 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 7 | 18.1574 | 38.1027 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 8 | 11.8582 | 38.5307 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 9 | 11.2821 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 10 | 11.2821 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 11 | 11.2821 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 12 | 8.2896 | 30.2192 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 13 | 23.3238 | 37.7551 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 14 | 34.1071 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 15 | 28.2529 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 16 | 31.0746 | 37.7551 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 17 | 35.9482 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 18 | 28.2529 | 38.8708 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |

Attributes

```
file: extrude.cga
Created: 10 Jul 2014 08:38:22 GMT

version "2014.0"

attr height = 10

Lot -->
  extrude(height)
  comp(f) {top: roofGable (30,2,1) X
  | all : X }
```

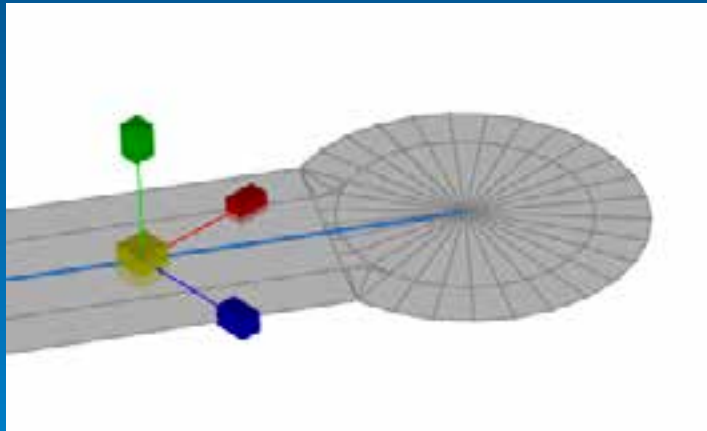
Rules



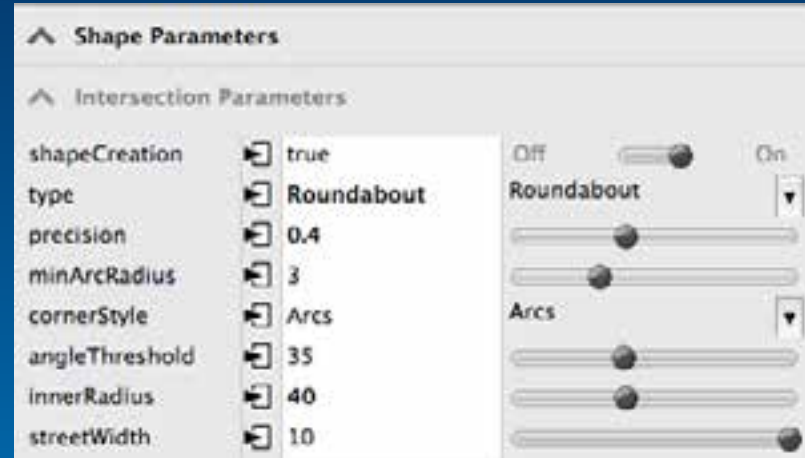
Introduction

- **What are shapes?**
- **Why do we want to create shapes?**
- **How are shapes created?**
- **What is special about street shapes?**

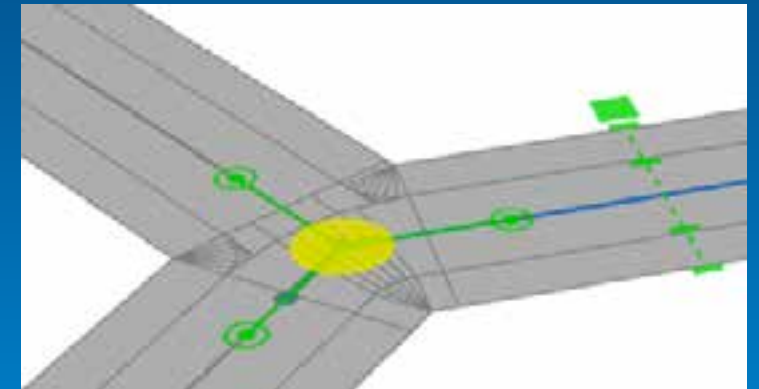
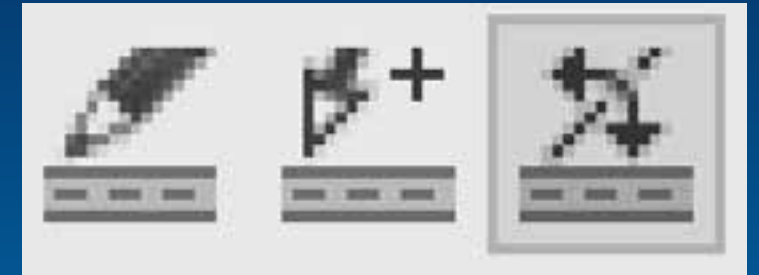
Editing street networks



Move, rotate, scale

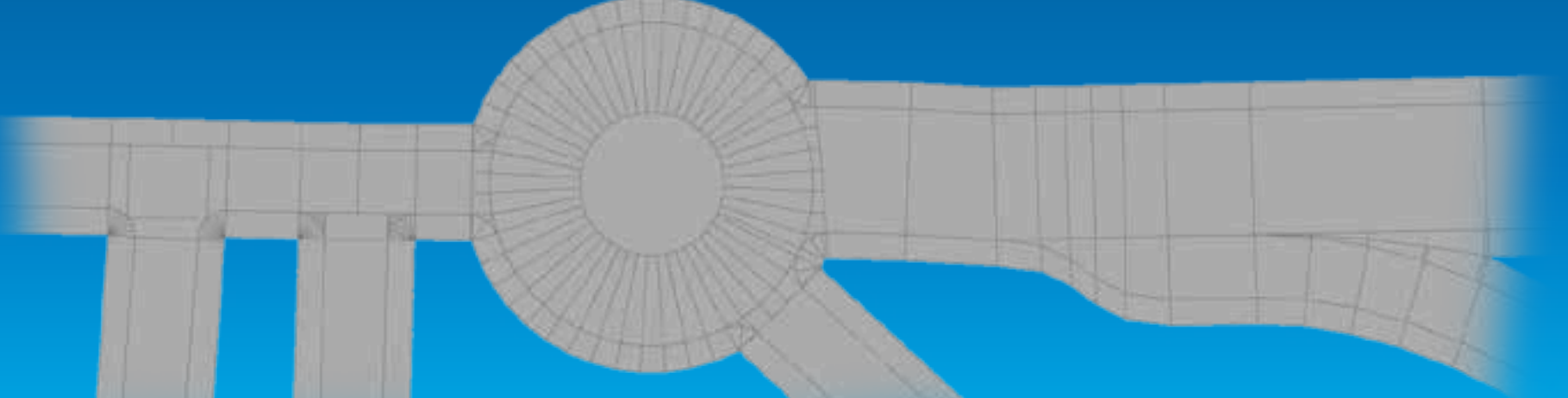
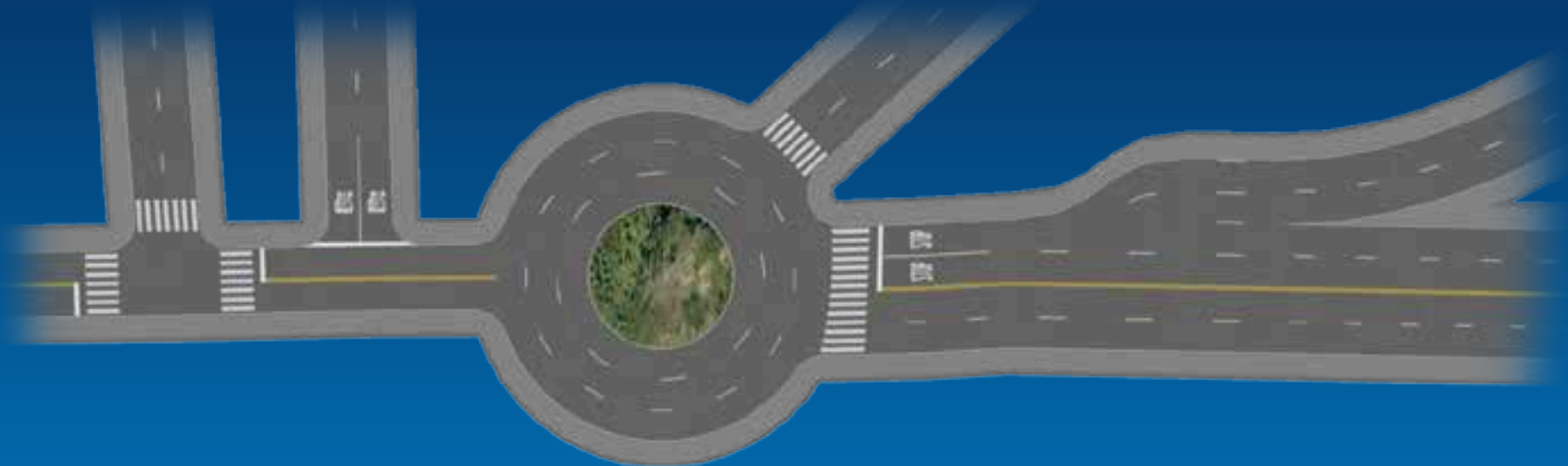


Street parameters



Edit street tool

Intersection Types



Crossing, Junction, Roundabout & Freeway

Acquiring Street Data

- **Import from FileGDB, ShapeFile, DXF or OpenStreetmap**
- **Graph cleanup**

Integrating Street Networks

- **Align streets to terrain**
- **Align terrain to streets**
- **Fitting widths to existing buildings**
- **Interpreting 2.5D street position data**
- **Simplify graph / find curves**

OpenStreetmap import: Judge Harry Pregerson Interchange



OpenStreetmap import: Judge Harry Pregerson Interchange



Rule files



Thank you...

- Please fill out the session survey:

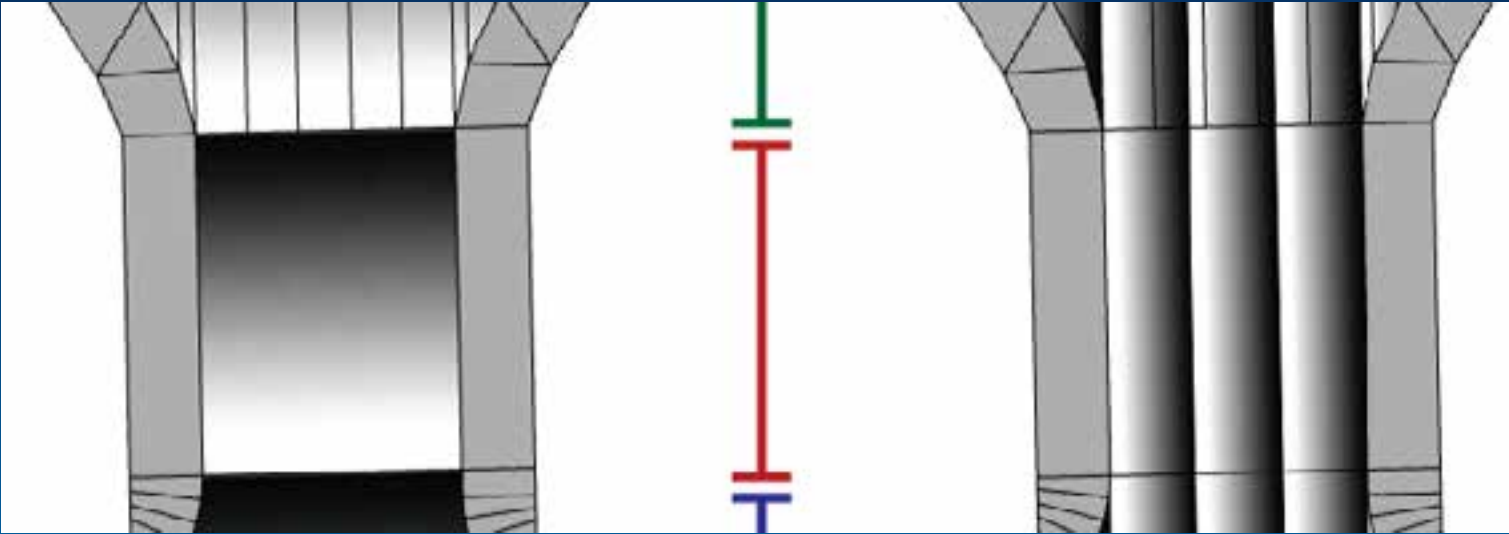
First Offering ID: 1440

Online – www.esri.com/ucsessionsurveys

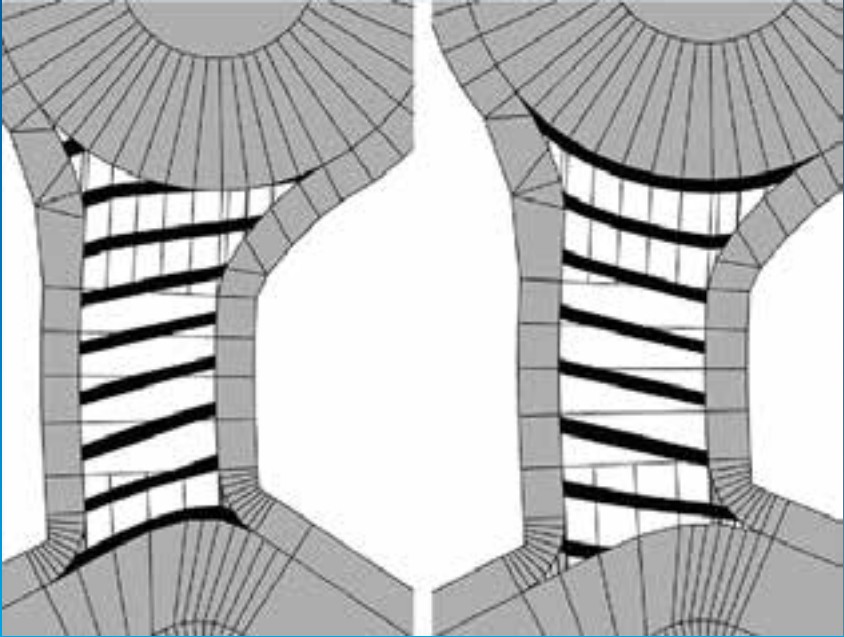


Understanding our world.

UV Set 0



UV Set 2,3



Esri Roads and Highways is not CityEngine



- City Engine is a modeling and visualisation tool
- Supports decision making, rapid prototyping and sharing 3D models
- Roads and Highways is a different product