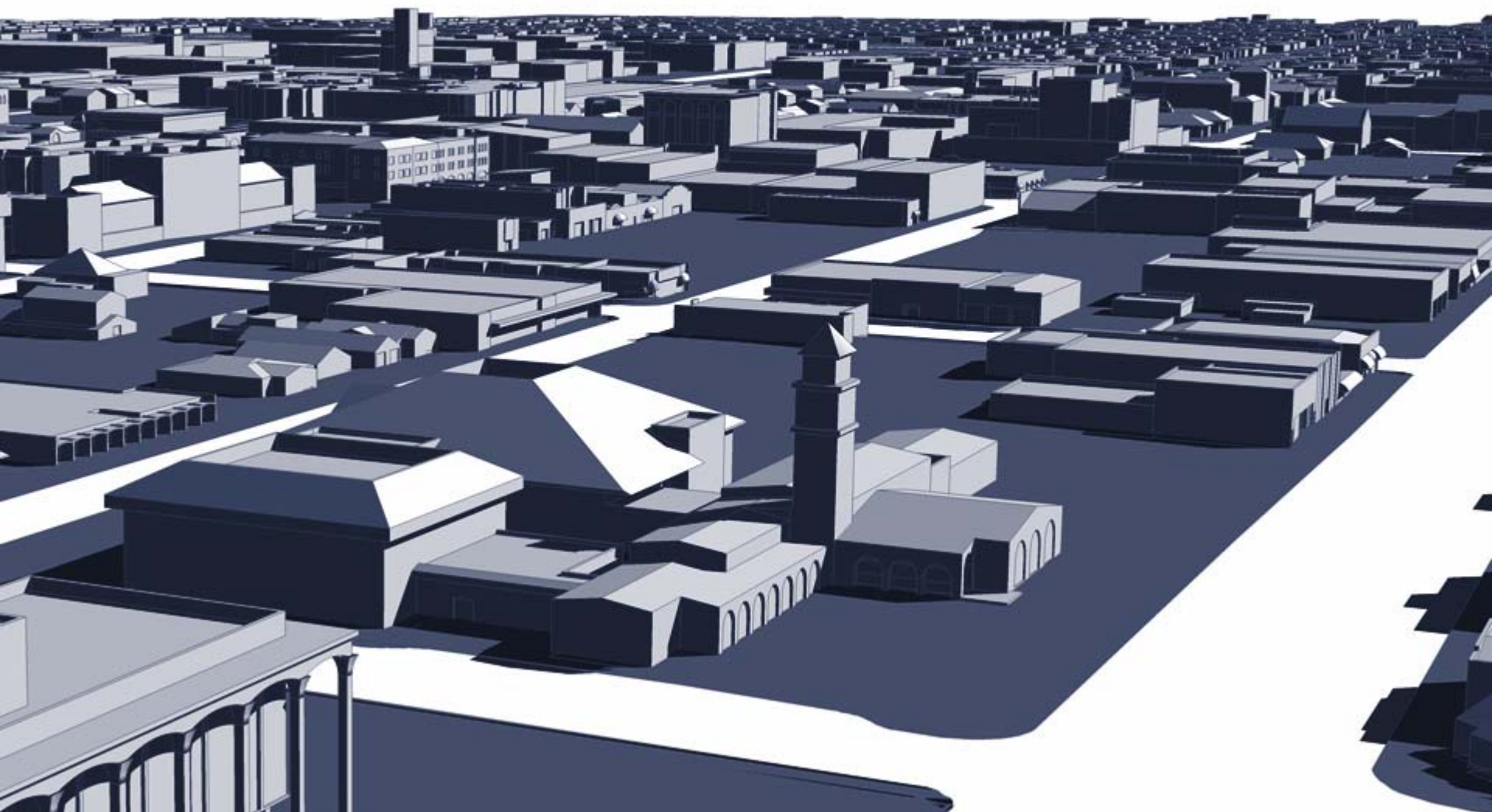


DOWNTOWN^{3D} fullerton

COMMUNITY PRESENTATION
June 29, 2010



AGENDA

- ◆ Welcome
- ◆ Introduction
- ◆ Overview of Project Goals
- ◆ Overview of Products
- ◆ Question and Answer

DESIGN, COMMUNITY & ENVIRONMENT

Brian Fulfrost

Associate Principal

Project Manager

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Bill Bogenschutz

Project Urban Designer

Yiu Kam

Project Urban Designer

Will Fourt

GIS Analyst / Project Planner

Charlie Loy

GIS Analyst / Landscape Designer

Mike Ernst

Graphics Manager / Project Urban
Designer

Agnes Chan (LEED certified)

Project Planner

Bill Fulton

Principal in Charge

THE PROJECT TEAM

CITY OF FULLERTON

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Project Director

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Project Manager

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SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG)

Peter Brandenburg

SCAG Project Manager

*Why build a 3D model of
Downtown Fullerton?*



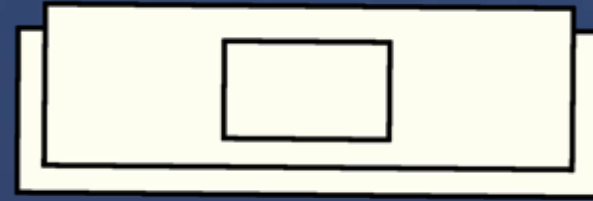
PROJECT GOALS

- ◆ **Public Outreach:** an interactive, innovative, and eye-catching tool to foster public awareness and involvement in planning processes in downtown
- ◆ **Visualization:** an three-dimensional, detail-oriented model which accurately depicts the built environment through real time presentations, animations, and flythroughs
- ◆ **Urban Design:** a model which will be accessible and editable by planners and architects to instantly assess and analyze potential development and long range land use scenarios
- ◆ **Mapping:** integrate seamlessly with a range of other datasets, including Land Use and Zoning, Transportation, Green House Gas modeling, etc.
- ◆ **Sustainability:** City can track LEED standards and Green House Gas emissions geospatially



PROCESS

Step 1: Utilize aerial imagery from Pictometry to digitize building footprints and building heights



North



West



East

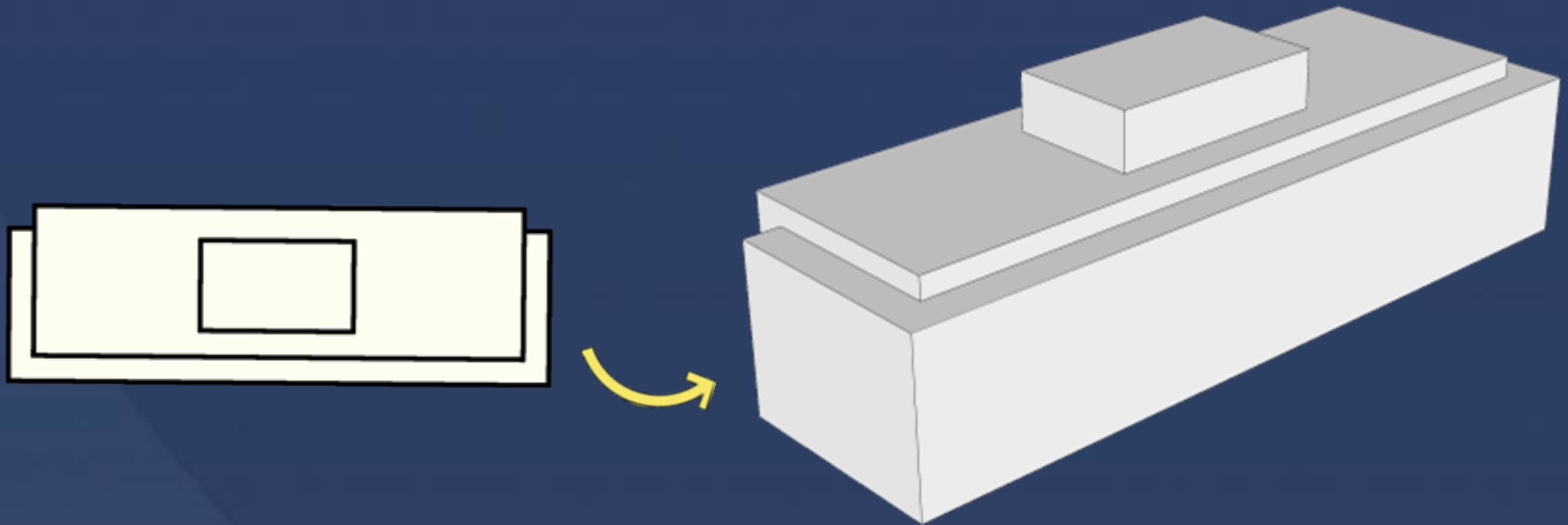
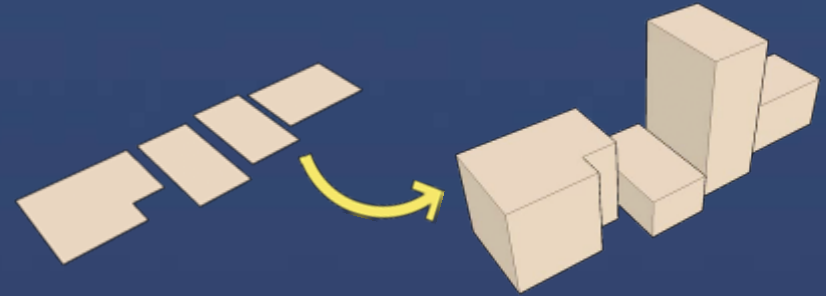


South



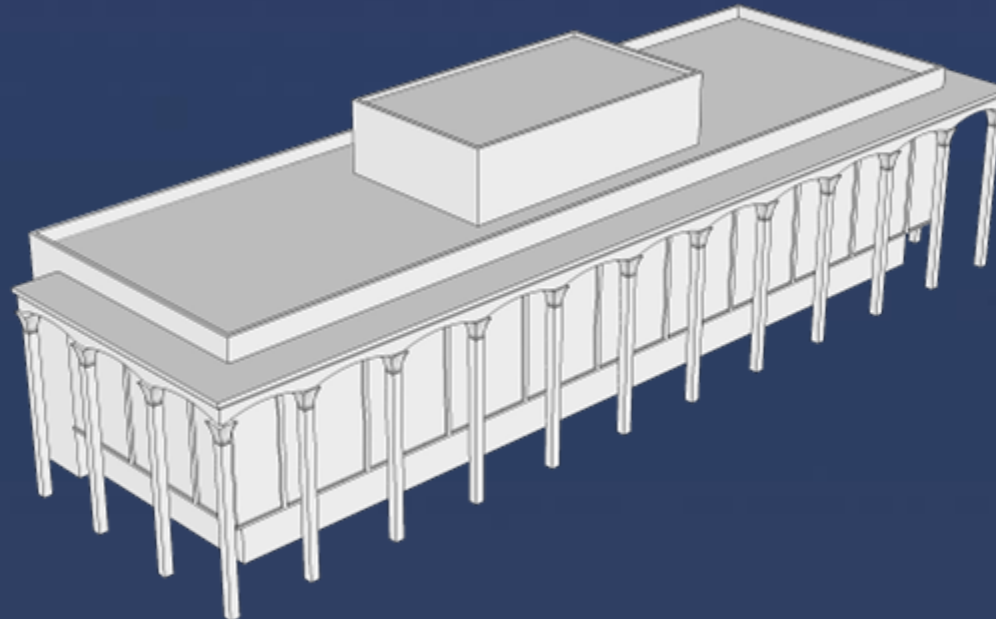
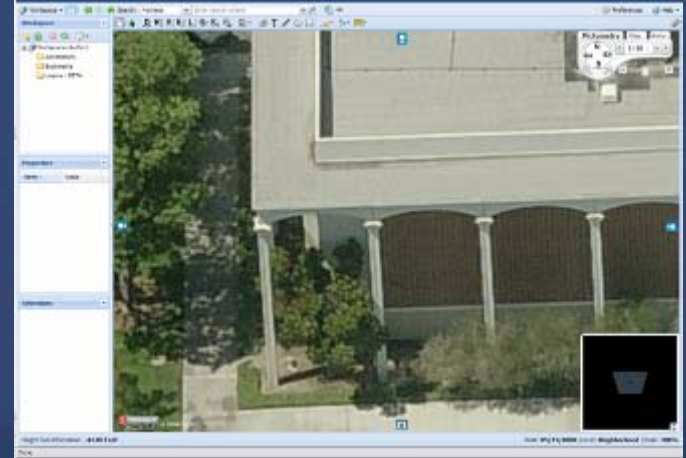
PROCESS

Step 2: Automatically extrude heights in ArcGIS to create basic 3D Model

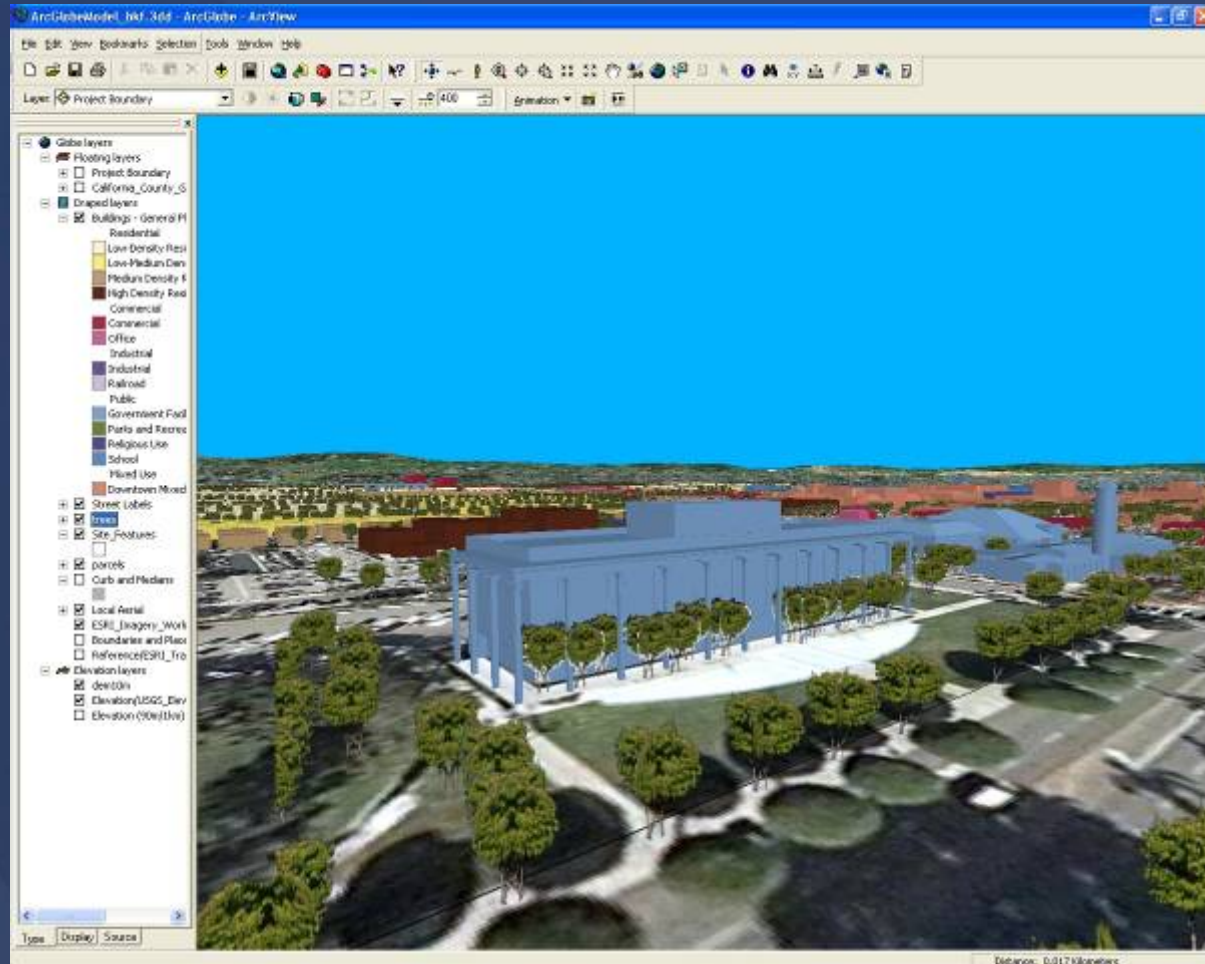


PROCESS

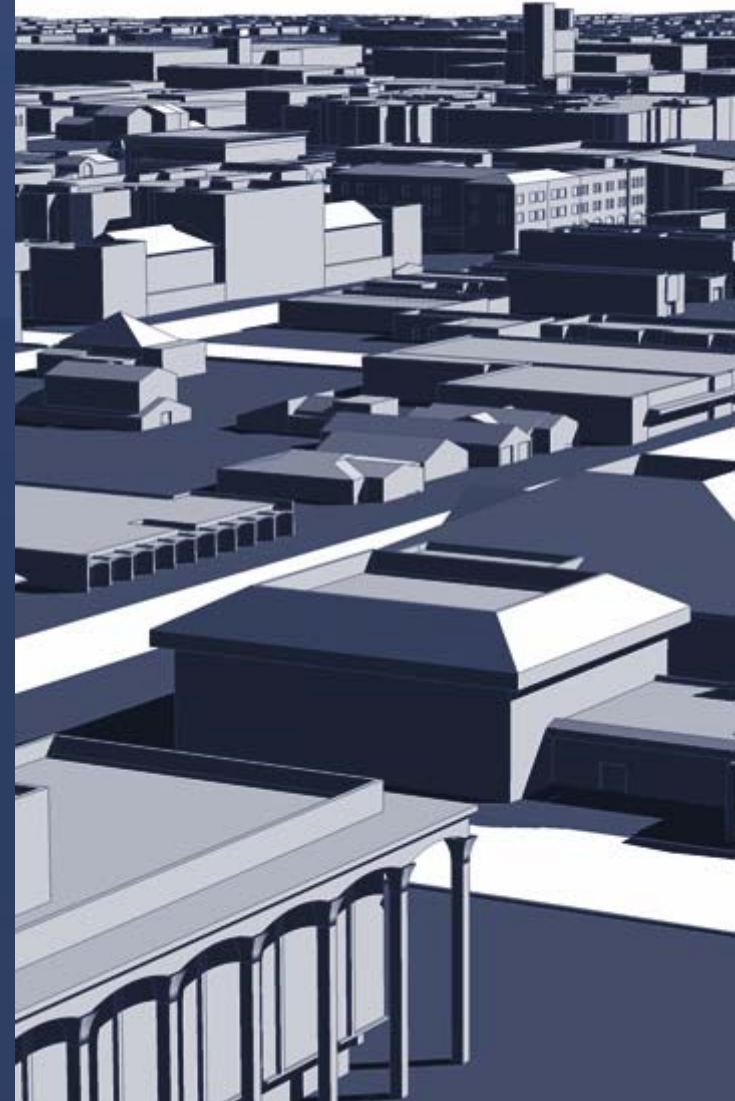
Step 3: Add detail to 3D massing models using SketchUp with oblique imagery as reference



Step 4: Import 3D Model into GIS



What are the products and what goals do they achieve?



- ◆ **3D Model in SketchUp**
- ◆ **3D Model in ArcGlobe and ArcScene**
- ◆ **3D model in Google Earth**

3D Model in SketchUp

- ◆ Quick and powerful, stripped down modeling software with low learning curve
- ◆ Excellent real-time model navigation system is ideal for meetings and workshops
- ◆ Easily editable 3D model ideally suited for planners and architects to instantly assess planning and development scenarios
- ◆ System of viewpoints and ability for flythroughs make SketchUp model a good candidate for public outreach materials and visualization

Public Outreach

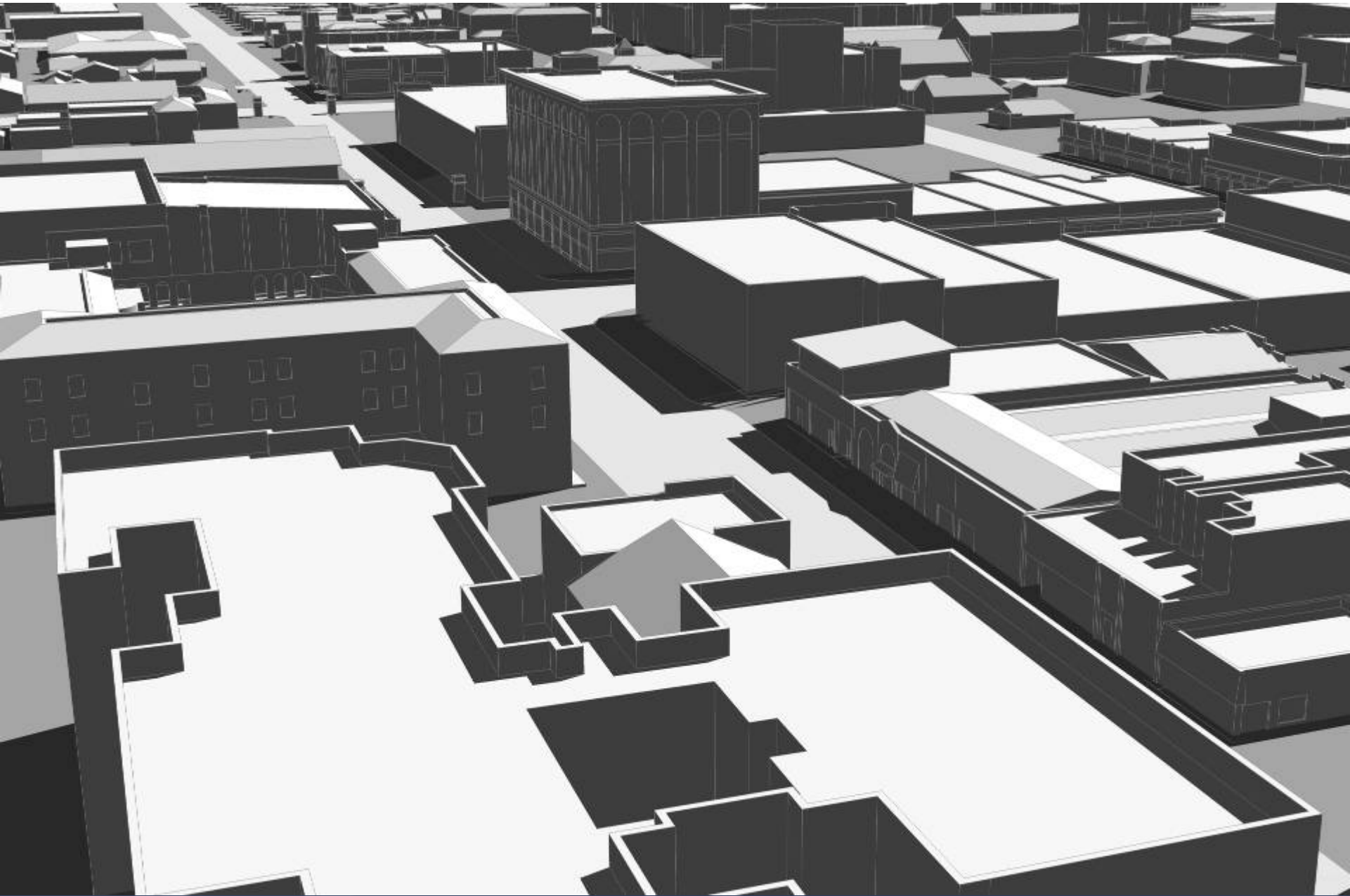
Visualization

Urban Design

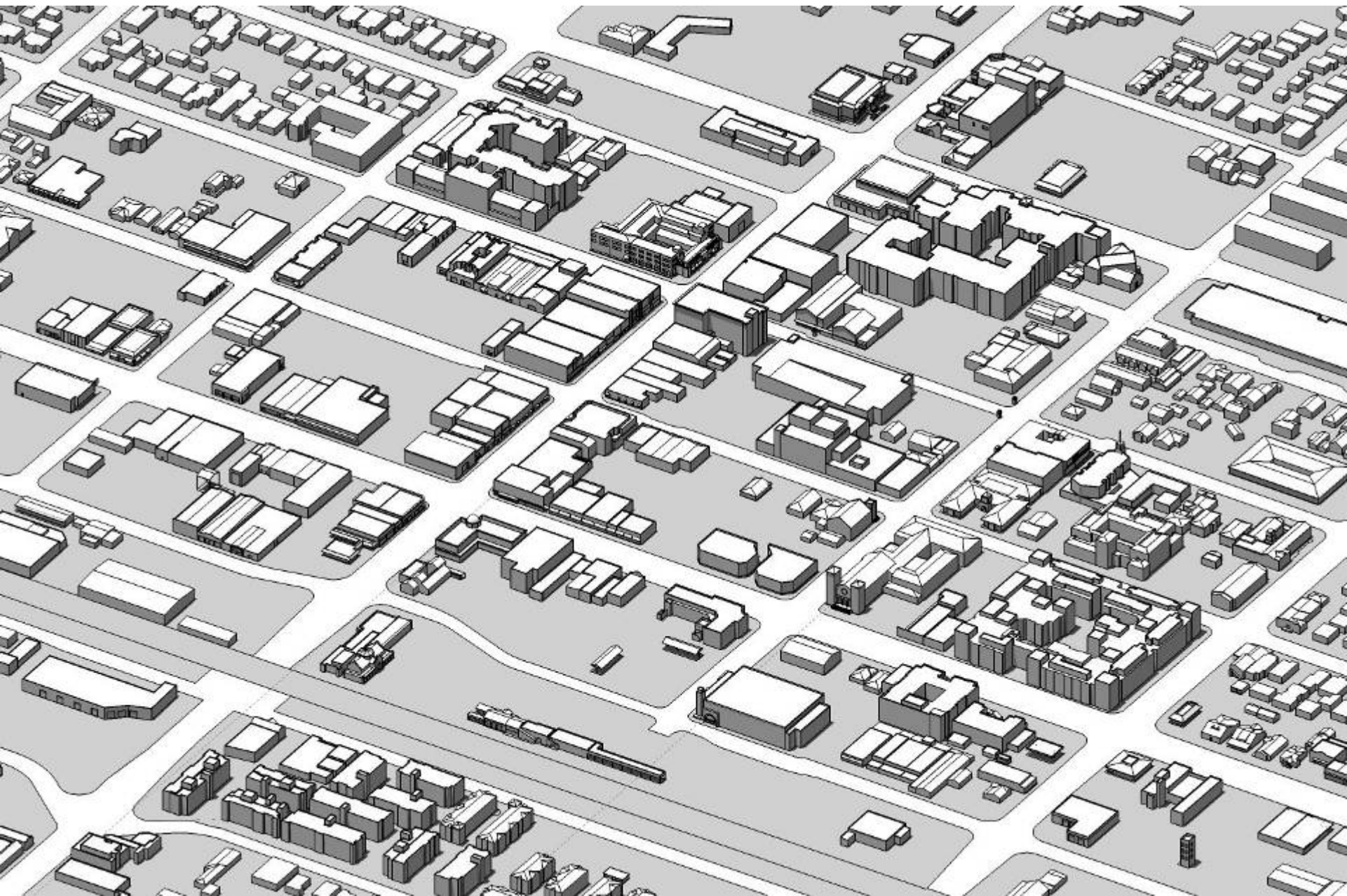
Mapping

Sustainability

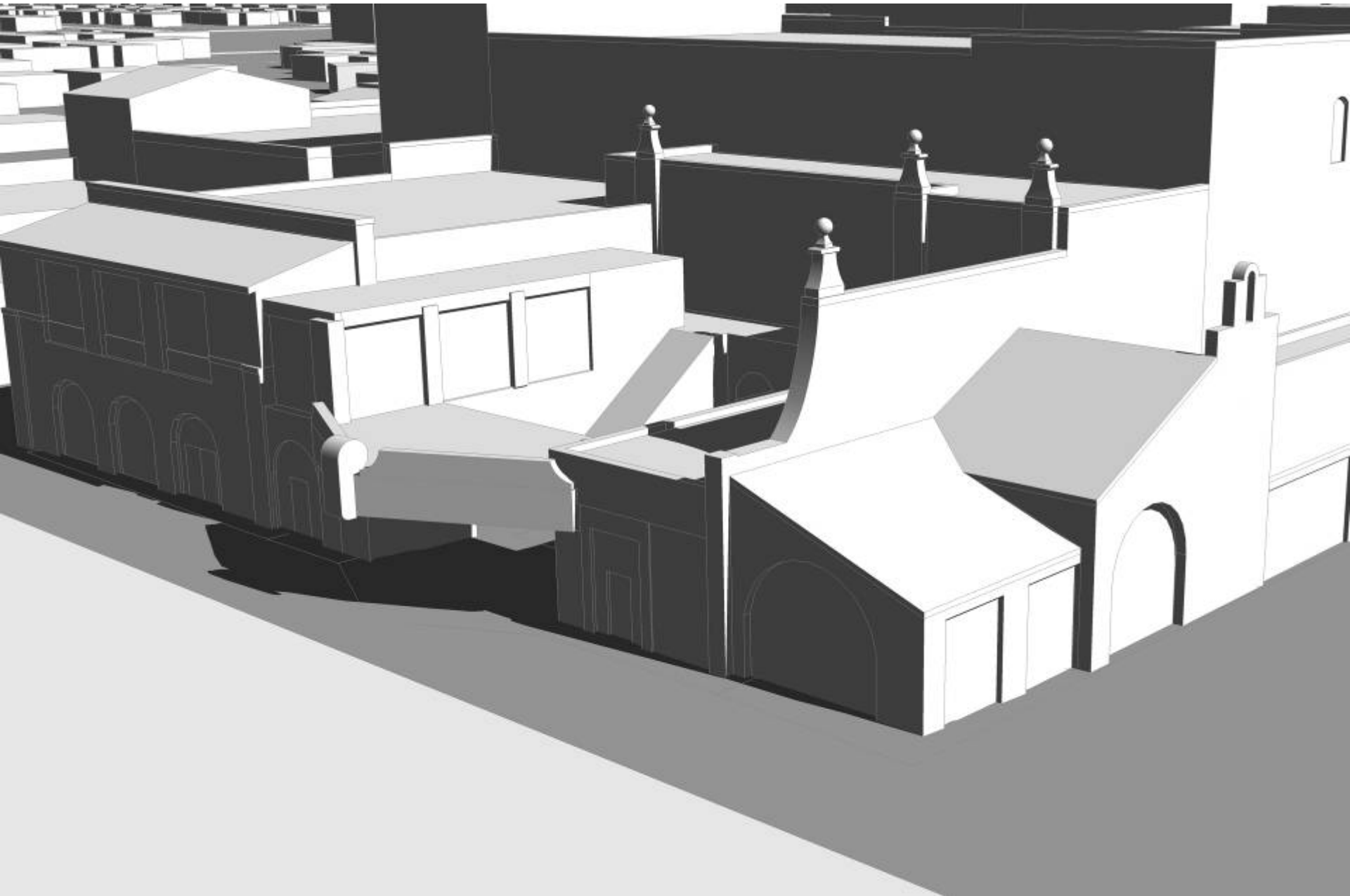
FINAL PRODUCTS



FINAL PRODUCTS



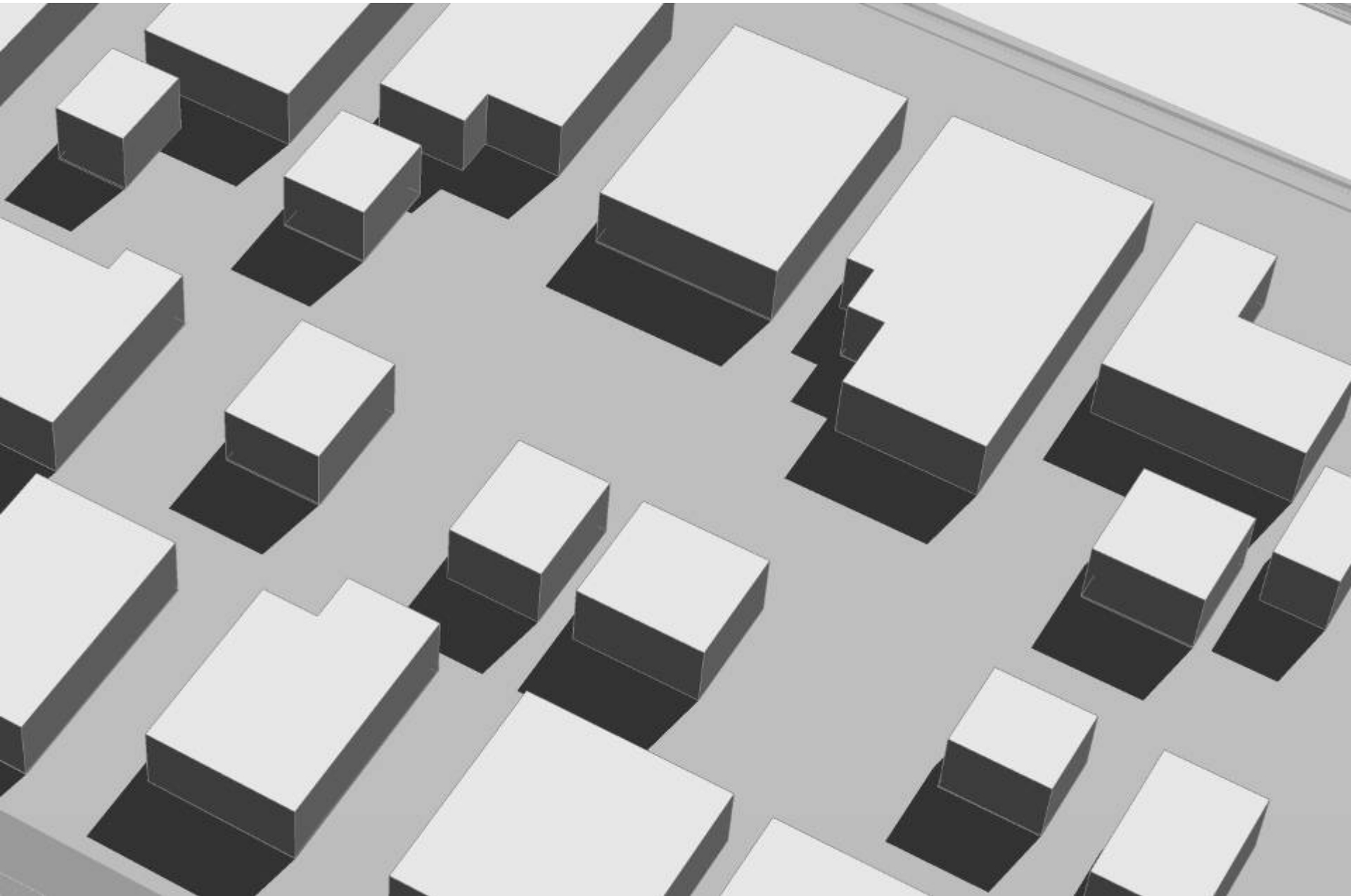
FINAL PRODUCTS



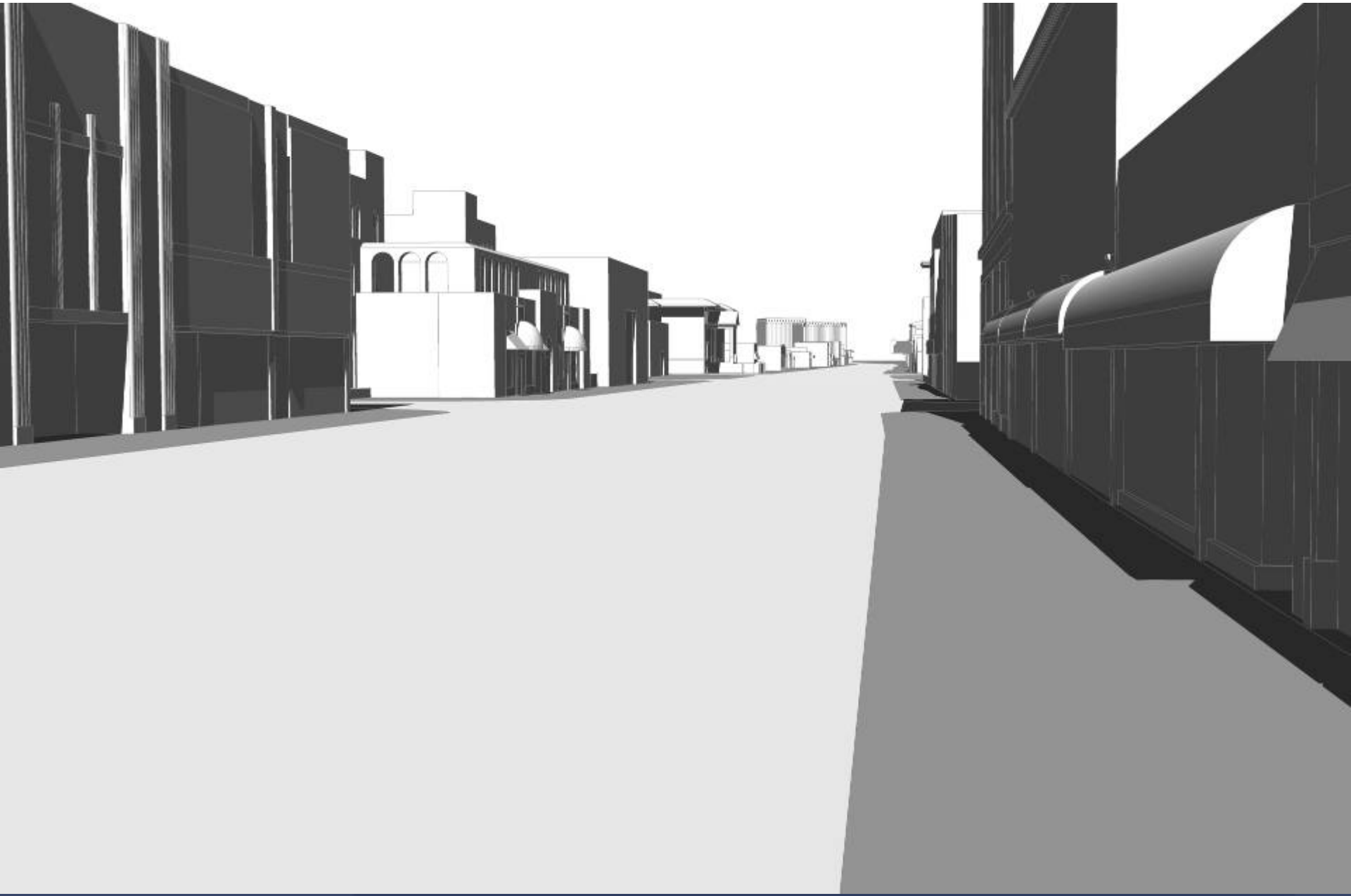
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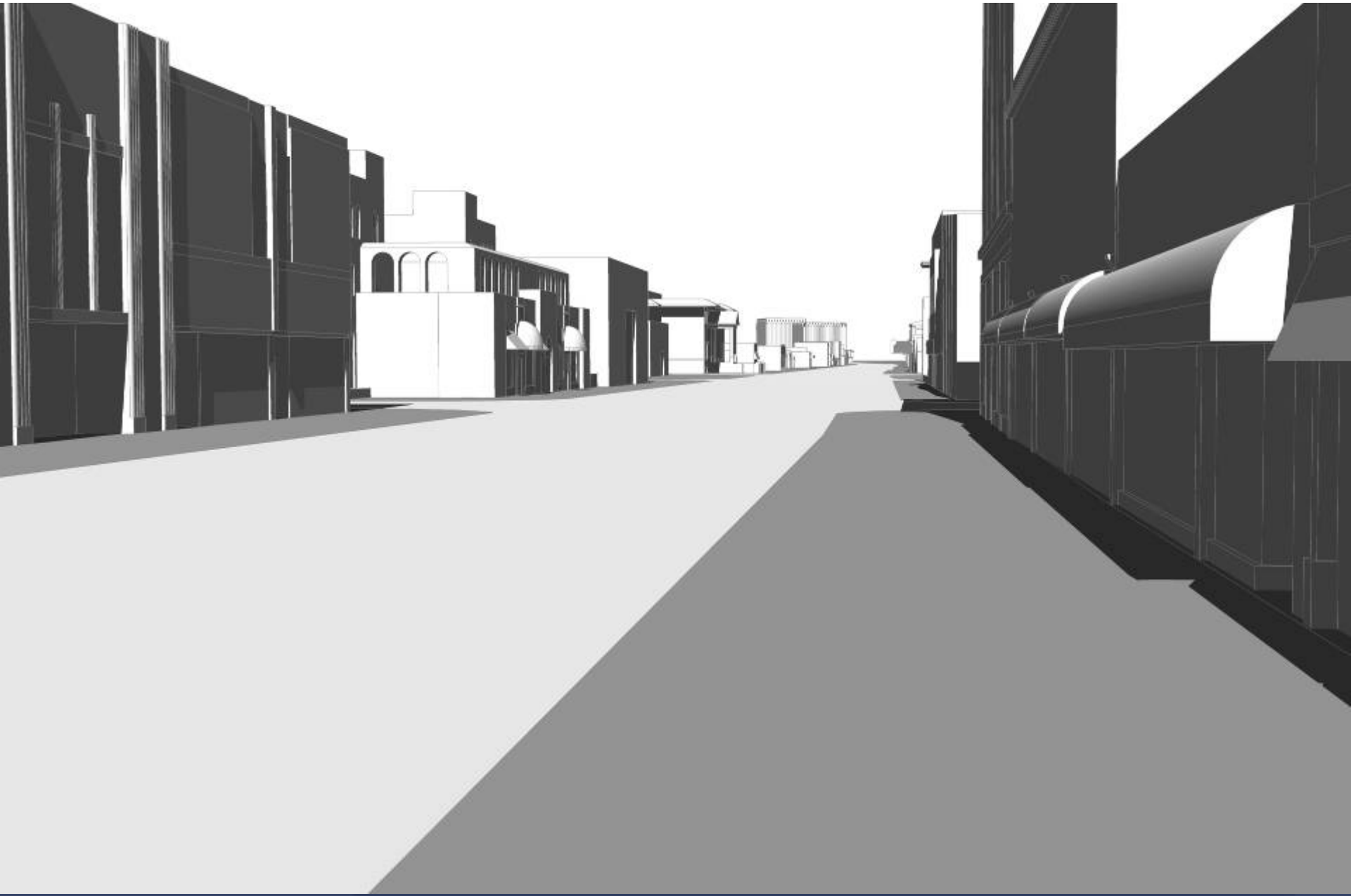
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FINAL PRODUCTS



FINAL PRODUCTS



FINAL PRODUCTS



3D Model in ArcGlobe & ArcScene

- ◆ Overlay, embed, and encode attributes of various City-managed data such as zoning, land use, and transportation level-of-service for powerful three-dimensional data-driven analysis
- ◆ Accurately depicts the relationship between the built and natural environments (topography, water systems, etc)
- ◆ Combination of codification and flythrough capabilities make ArcGlobe & ArcScene model ideal for presentations

Public Outreach

Visualization

Urban Design

Mapping

Sustainability

3D Model in ArcGlobe & ArcScene

- ◆ Coordinate Citywide sustainability audits with measurable datasets that can be embedded to the model, making for responsive and interactive environmental impact alerting

Public Outreach

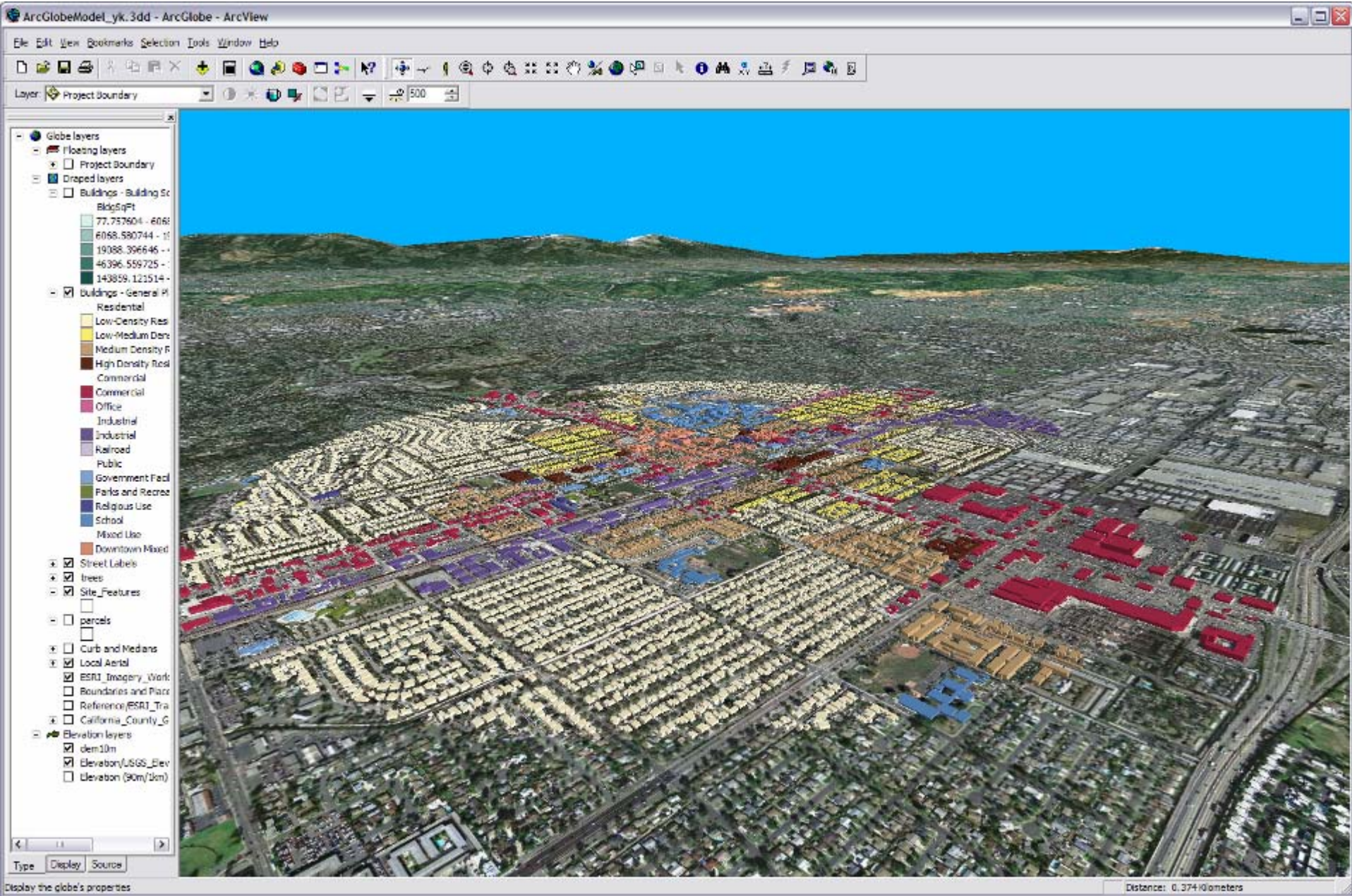
Visualization

Urban Design

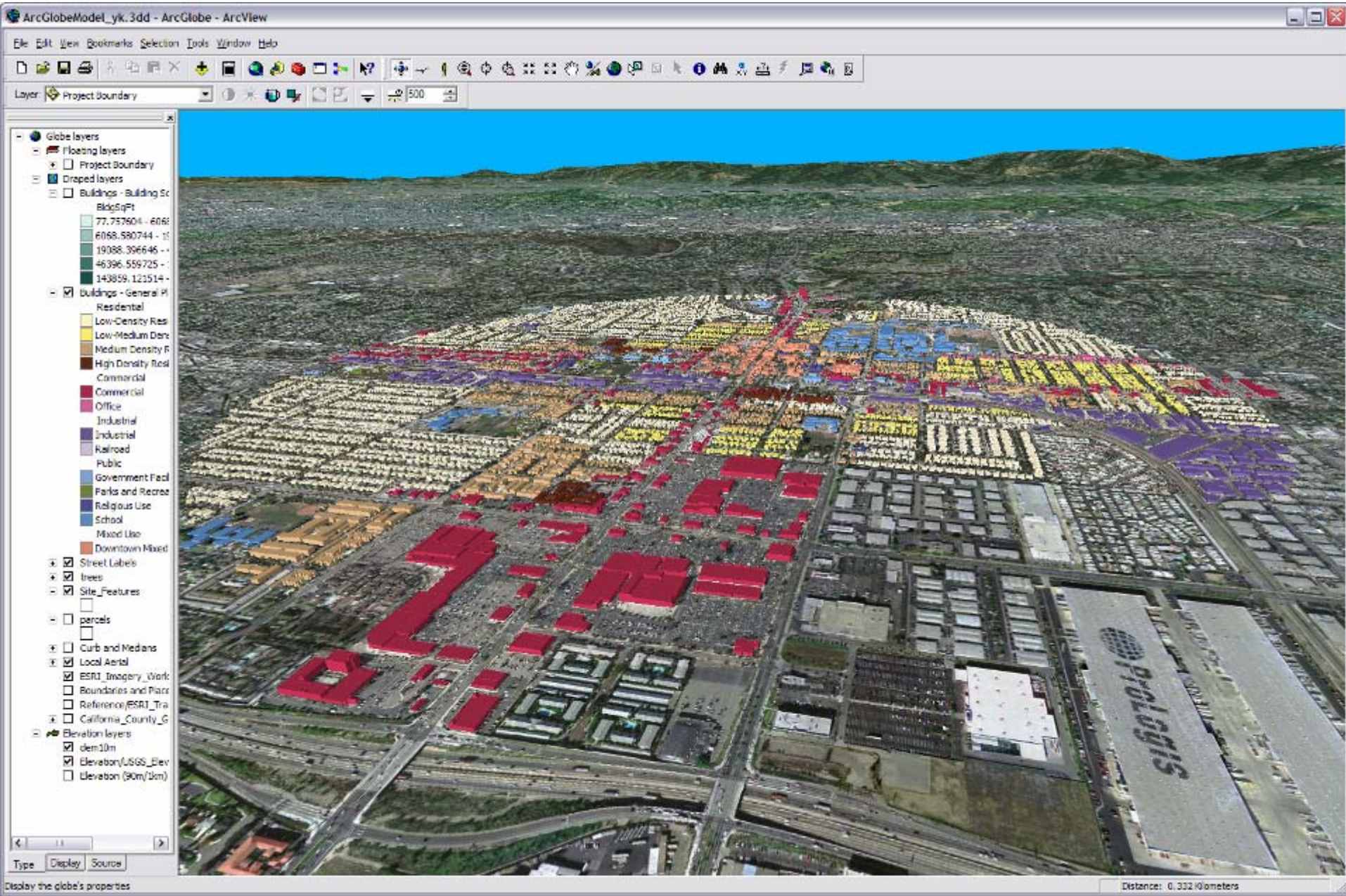
Mapping

Sustainability

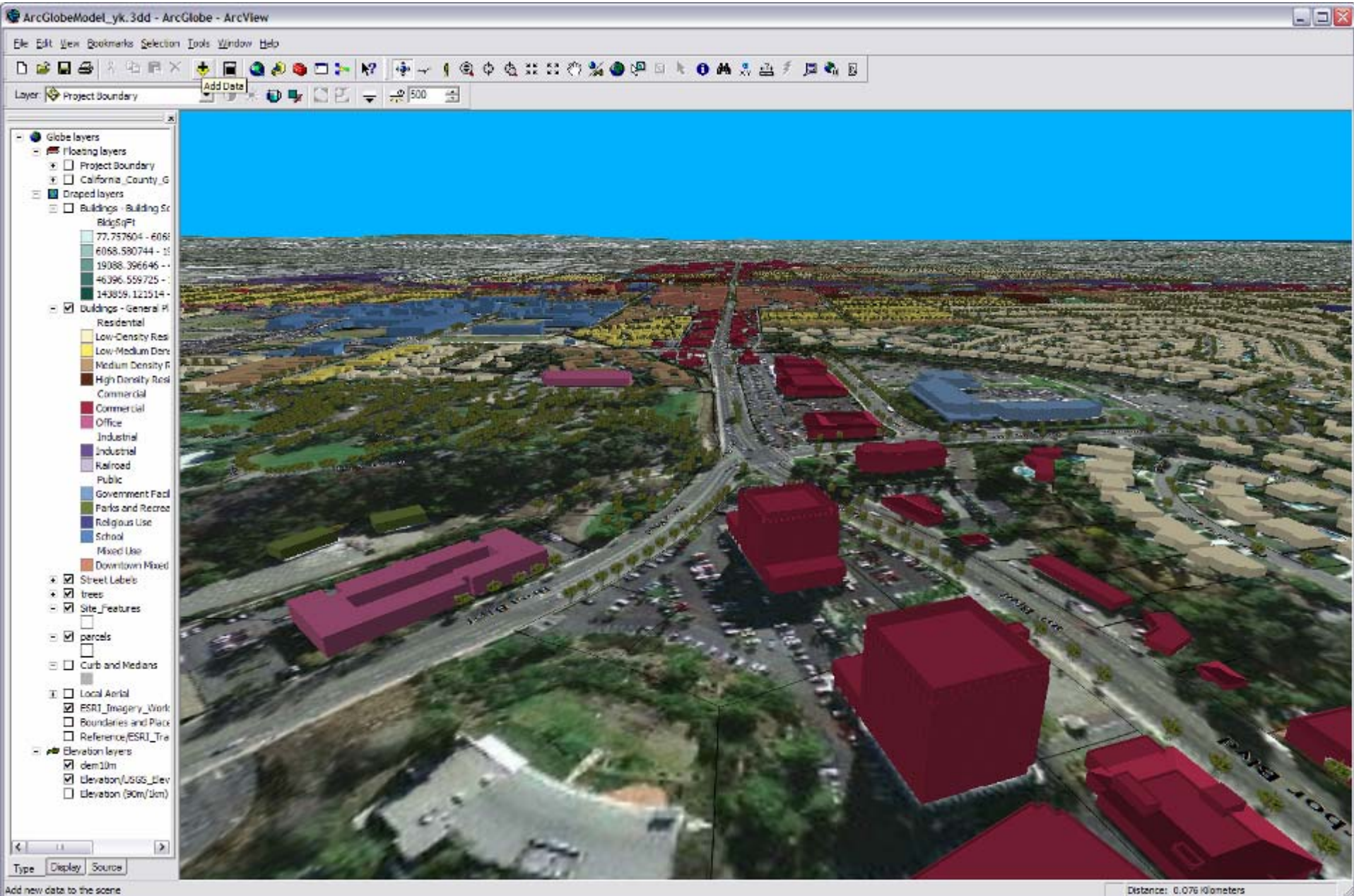
FINAL PRODUCTS



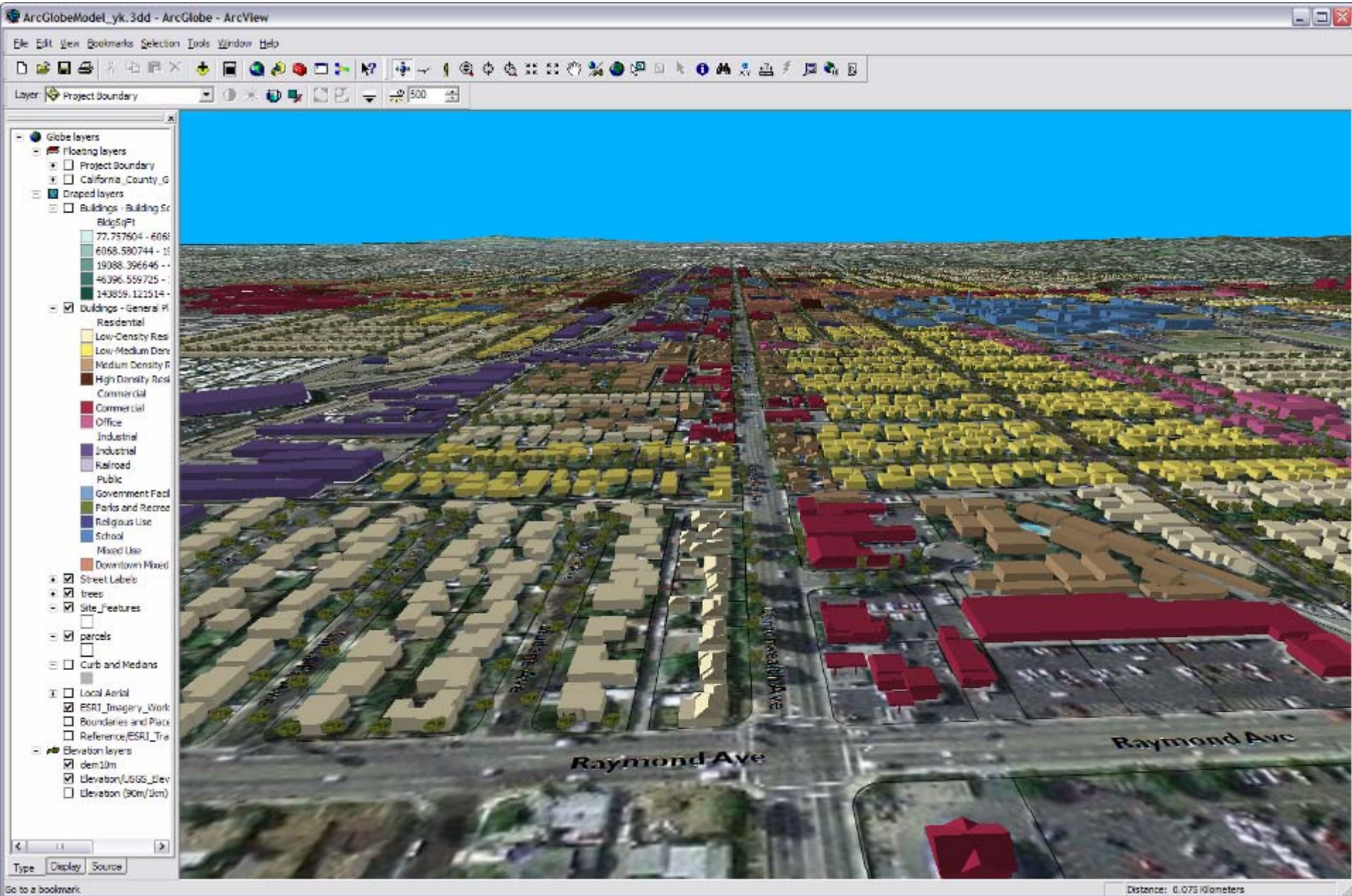
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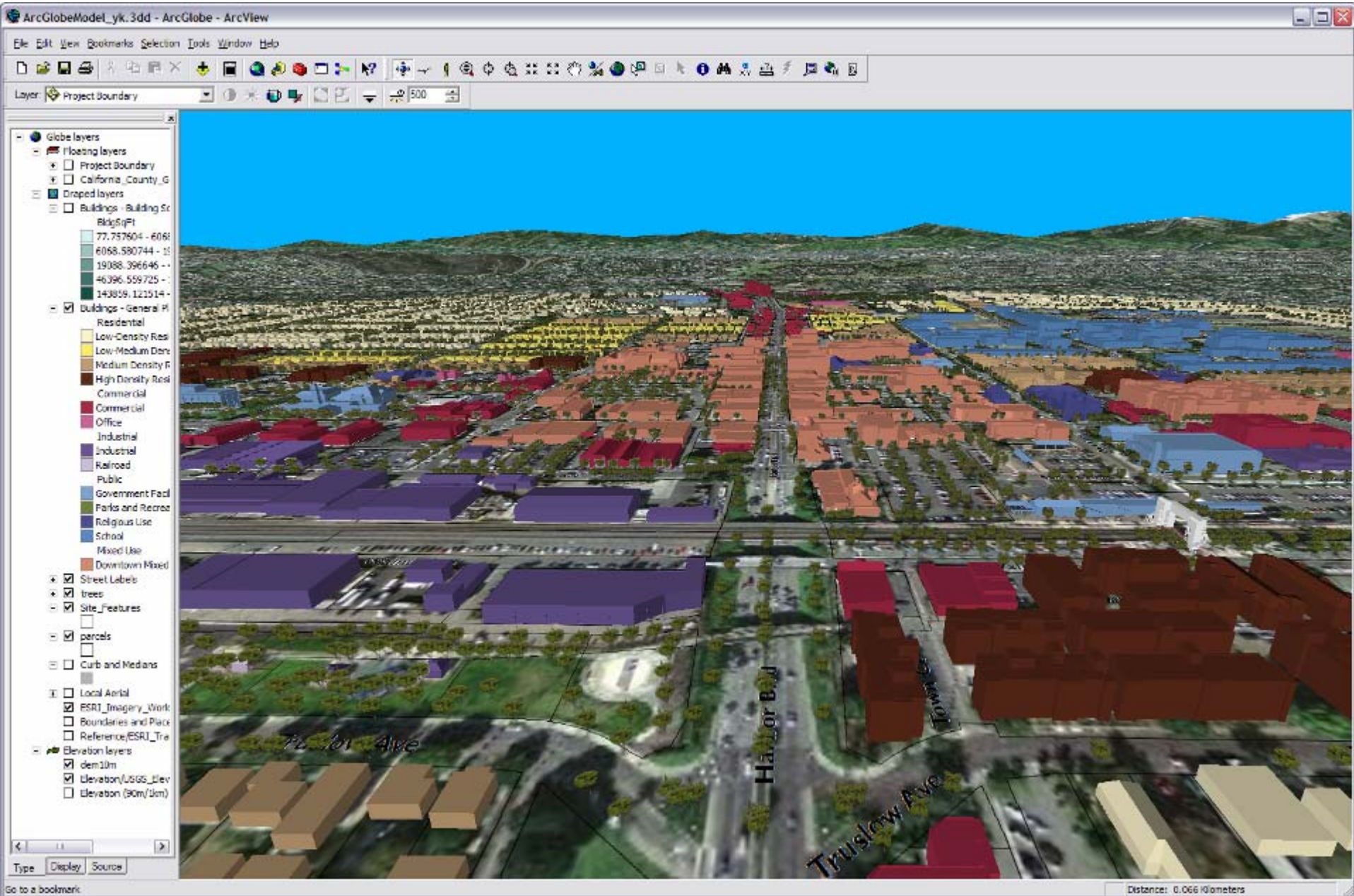
FINAL PRODUCTS



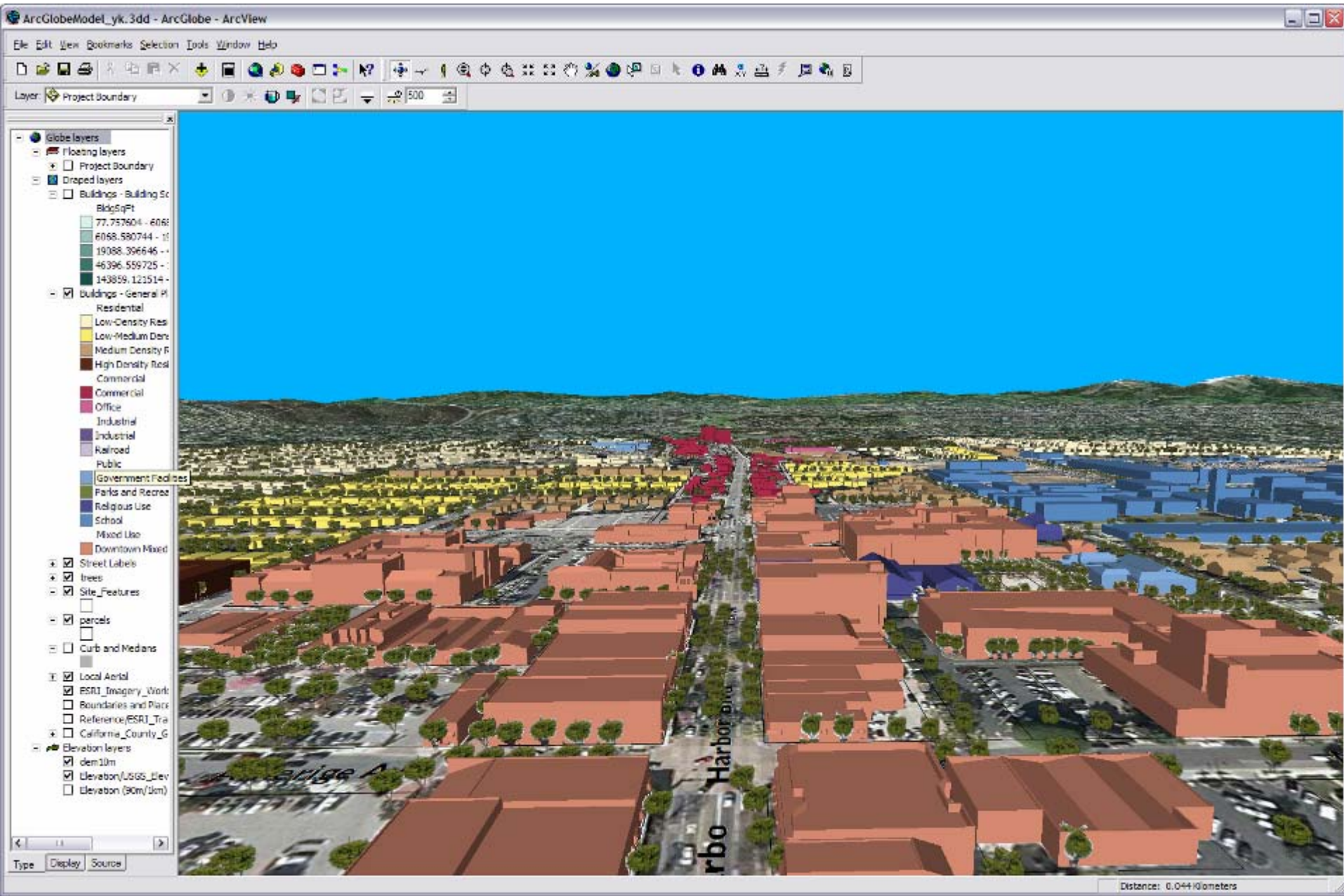
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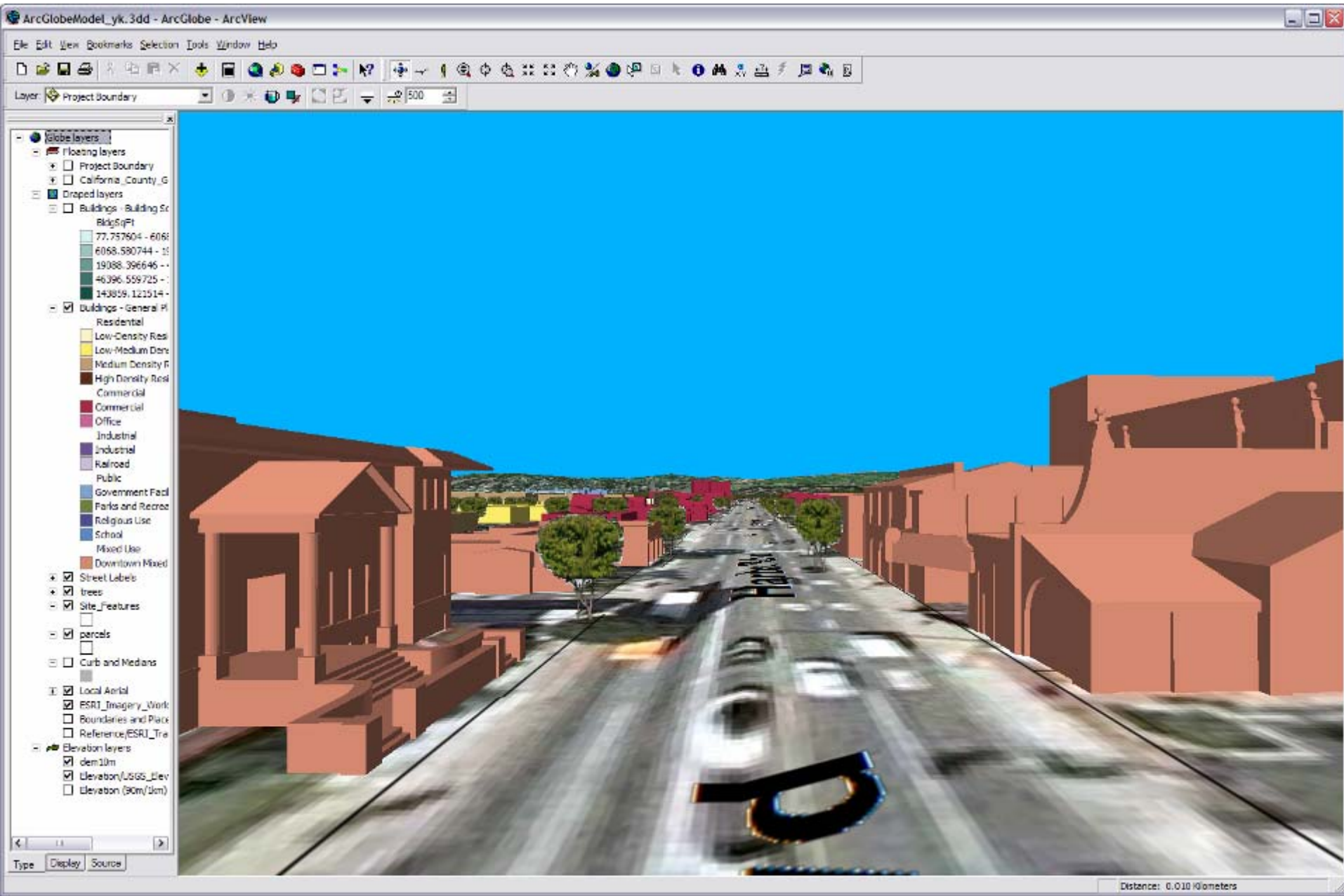
FINAL PRODUCTS



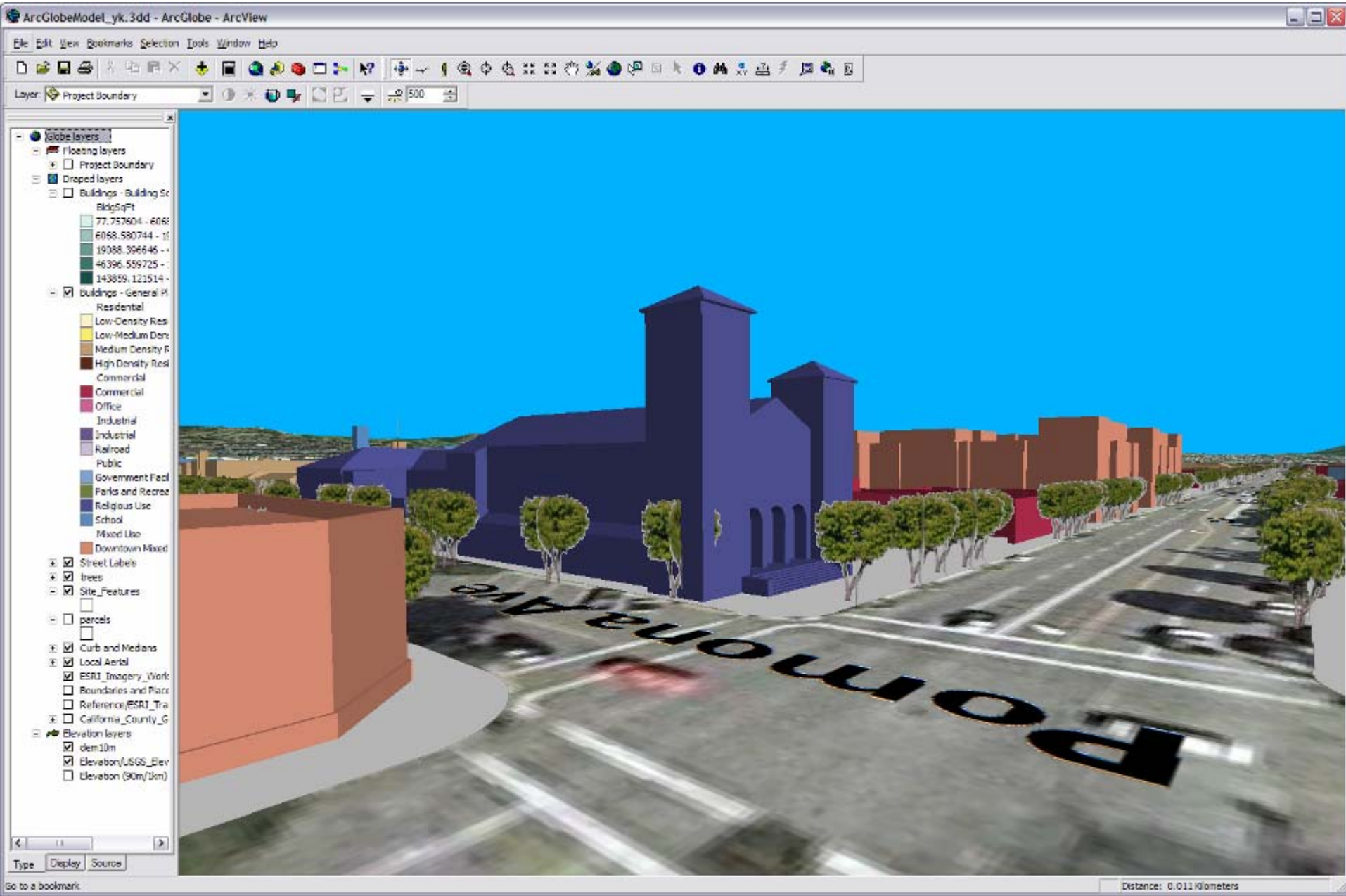
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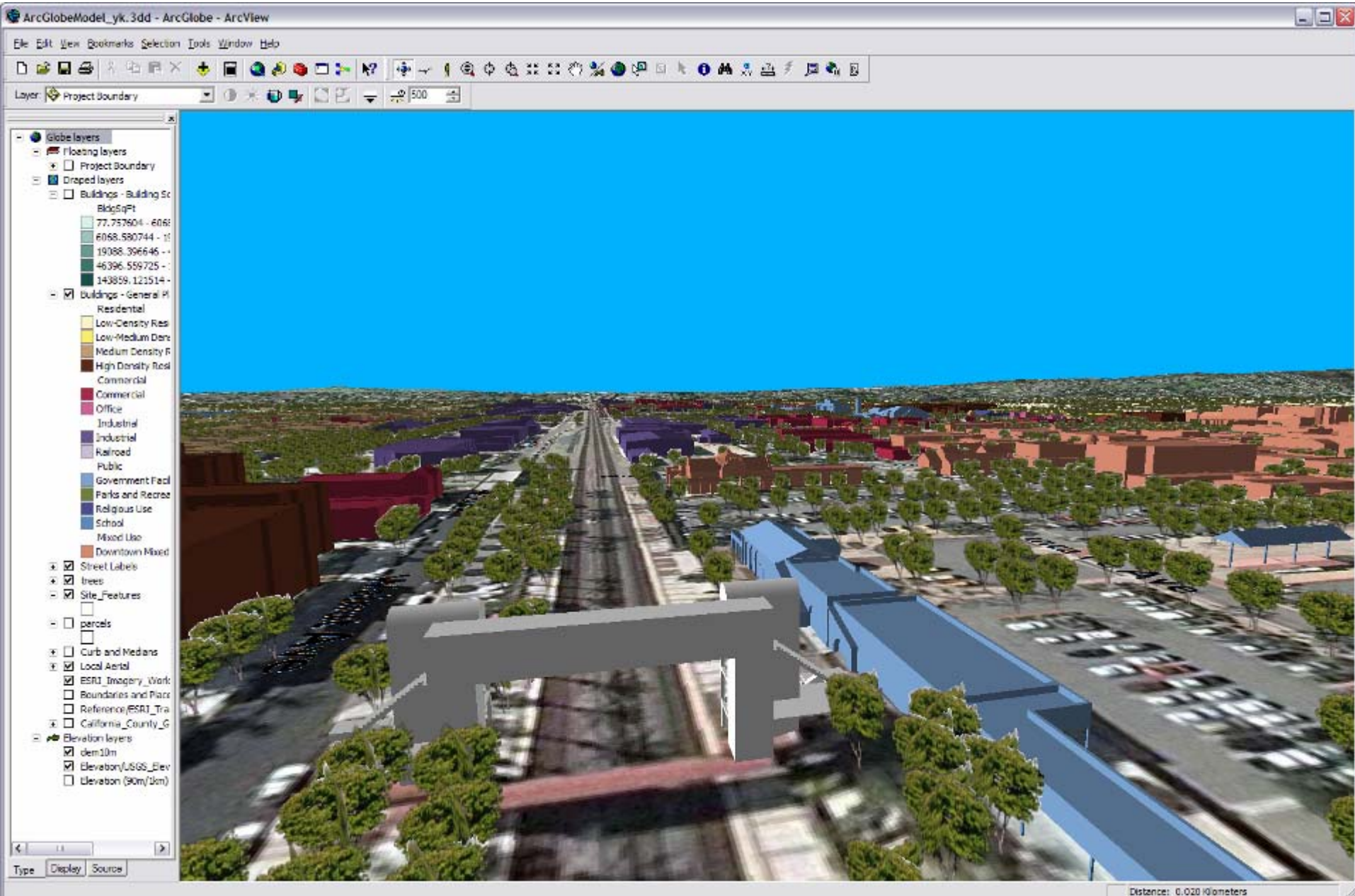
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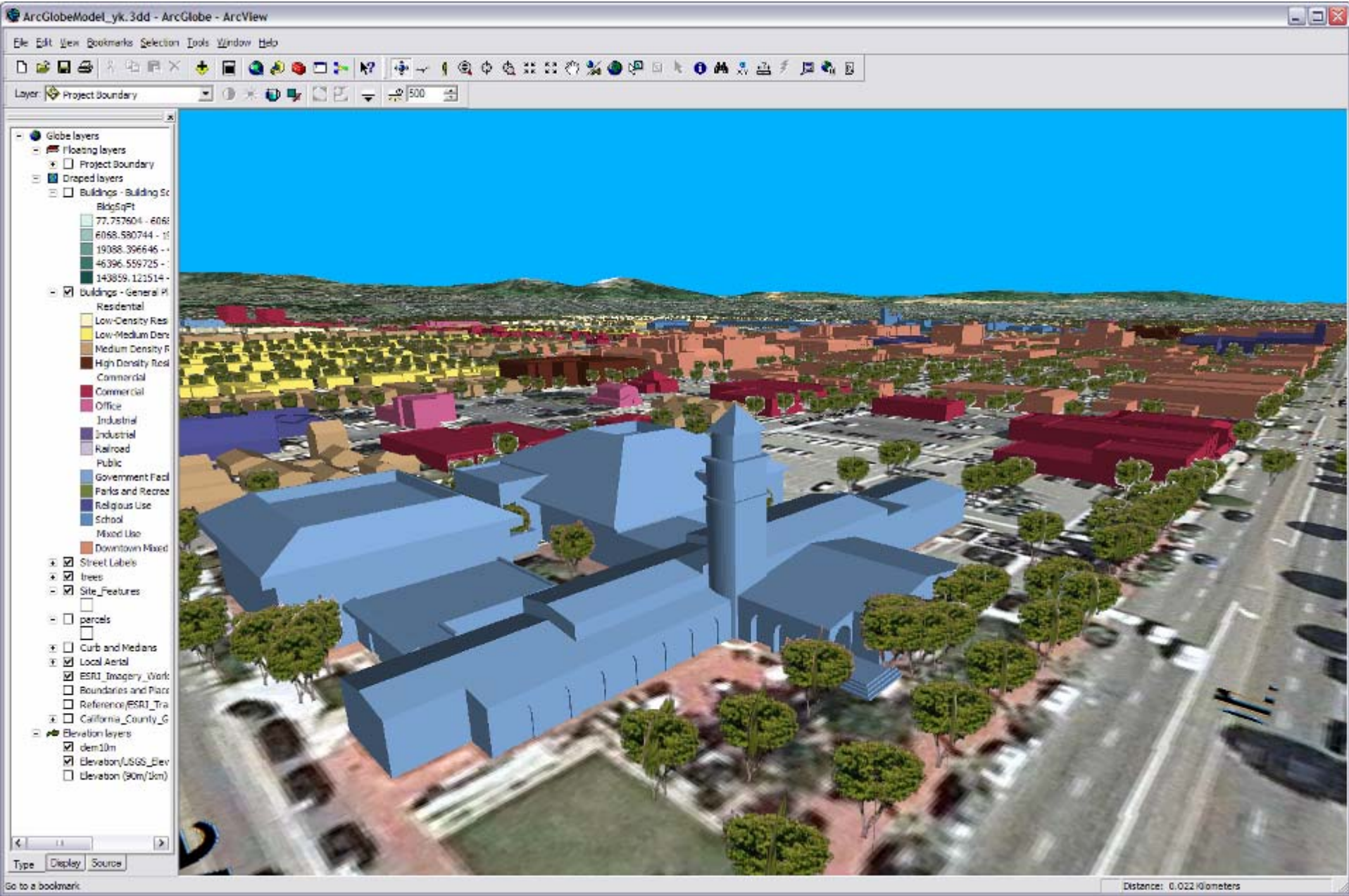
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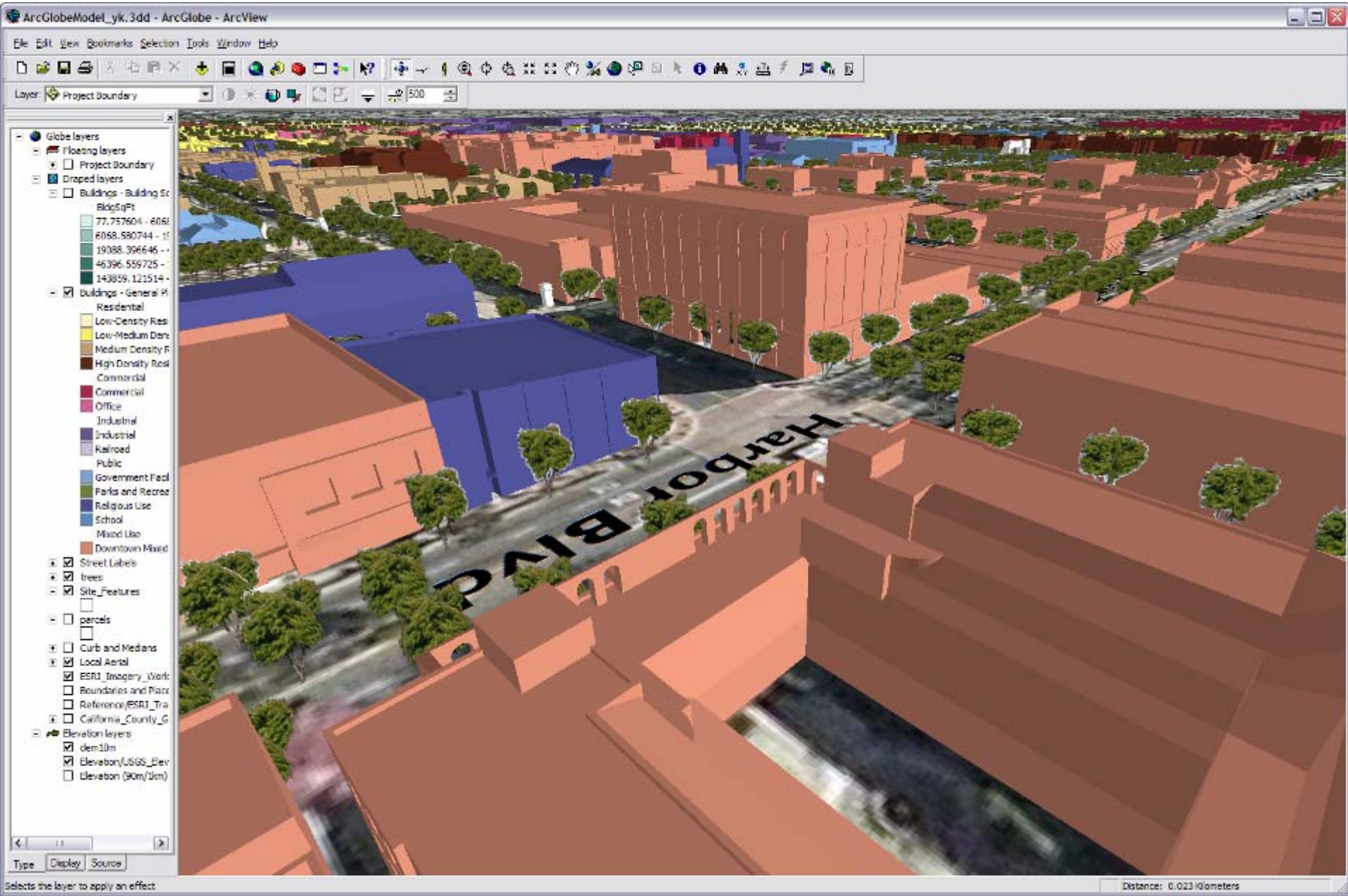
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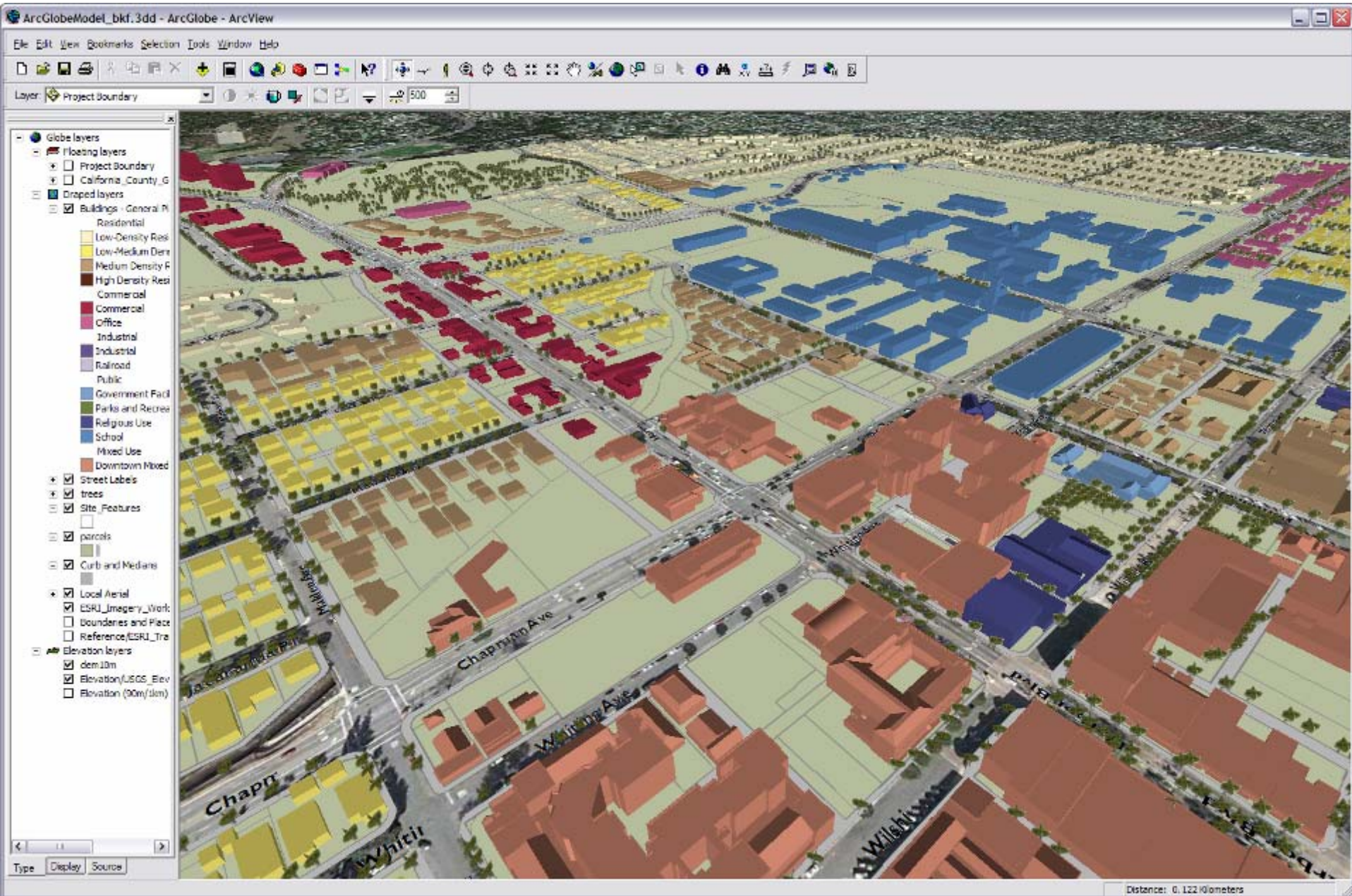
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FINAL PRODUCTS



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ArcGlobeModel_bkf.3dd - ArcGlobe - ArcView

Layer: Project Boundary

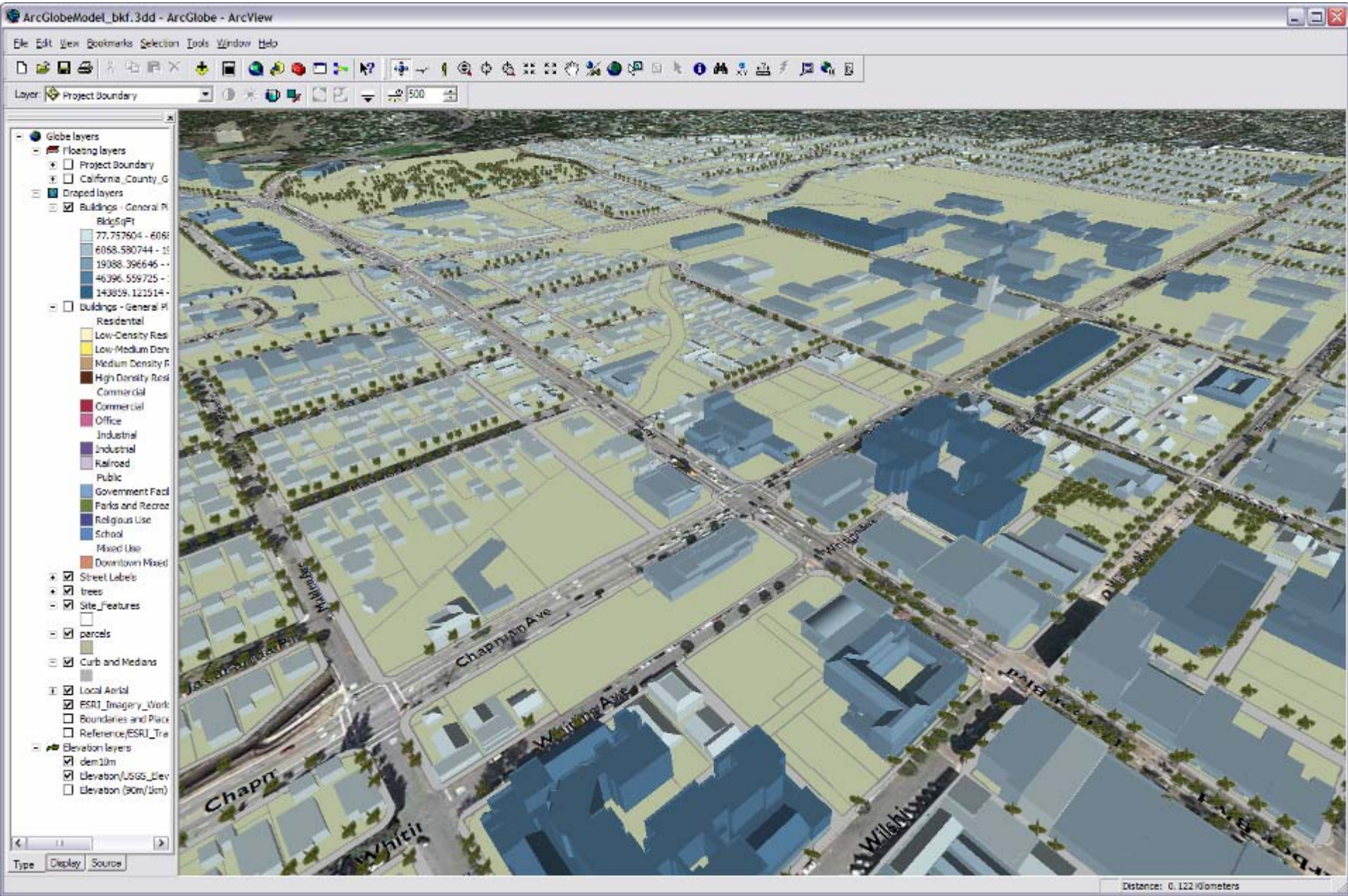
Attributes of Buildings - General Plan Land Use

CentroidY	APN	GP_ABR	GP_DESC	ZONE_ABR1
33.867762	033-045-04	IND	Industrial	MG
33.86802	NEWAPN	HRES	High Density Residential	MG
33.871648	NEWAPN	DWN	Downtown Mixed Use	C3
33.87368	033-011-21	DWN	Downtown Mixed Use	C3
33.873625	033-011-21	DWN	Downtown Mixed Use	C3
33.871698	033-021-03	DWN	Downtown Mixed Use	C3
33.873124	033-012-21	DWN	Downtown Mixed Use	C3
33.872845	033-012-31	DWN	Downtown Mixed Use	C3
33.871986	033-021-02	DWN	Downtown Mixed Use	C3
33.872018	033-021-02	DWN	Downtown Mixed Use	C3
33.872108	033-021-17	DWN	Downtown Mixed Use	C3
33.872182	033-023-23	MRES	Medium Density Residential	R3
33.873674	033-011-24	REL	Religious Use	C3
33.872187	033-021-01	DWN	Downtown Mixed Use	C3
33.871707	033-023-03	MRES	Medium Density Residential	R3
33.870804	033-022-03	DWN	Downtown Mixed Use	C3
33.870073	033-031-44	DWN	Downtown Mixed Use	C3
33.87269	033-014-24	MRES	Medium Density Residential	R3
33.870012	033-032-29	COM	Commercial	C3
33.872606	033-012-32	REL	Religious Use	C3
33.870571	033-022-03	DWN	Downtown Mixed Use	C3
33.870609	033-022-26	DWN	Downtown Mixed Use	C3
33.871174	033-022-01	DWN	Downtown Mixed Use	C3
33.870969	033-024-24	REL	Religious Use	OP
33.872652	033-012-23	REL	Religious Use	C3
33.873221	033-014-01	MRES	Medium Density Residential	R3
33.872093	033-023-24	MRES	Medium Density Residential	R3
33.869824	033-031-40	GOV	Government Facilities	PL
33.870094	033-031-46	DWN	Downtown Mixed Use	C3
33.870074	033-031-25	DWN	Downtown Mixed Use	C3
33.873199	033-012-16	DWN	Downtown Mixed Use	C3
33.872725	033-012-18	GOV	Government Facilities	PL
33.871178	033-022-12	REL	Religious Use	C3
33.871172	033-022-11	DWN	Downtown Mixed Use	C3
33.870691	033-024-12	COM	Commercial	C3
33.8696	033-032-20	IND	Industrial	MG

Record: 1 | Show: All Selected | Records (1 out of 6968)

Number of features selected: 1 | Distance: 0.122 Kilometers

FINAL PRODUCTS



FINAL PRODUCTS

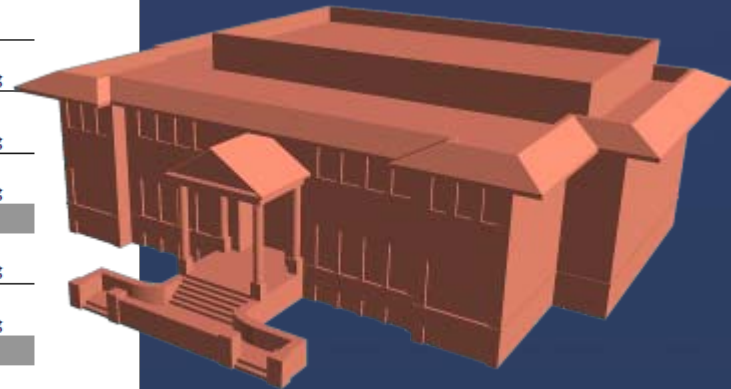
CITY OF FULLERTON DOWNTOWN FULLERTON 3D

RECOMMENDED ENERGY AND ENVIRONMENTAL DESIGN DATA FIELDS
MAY 18, 2010

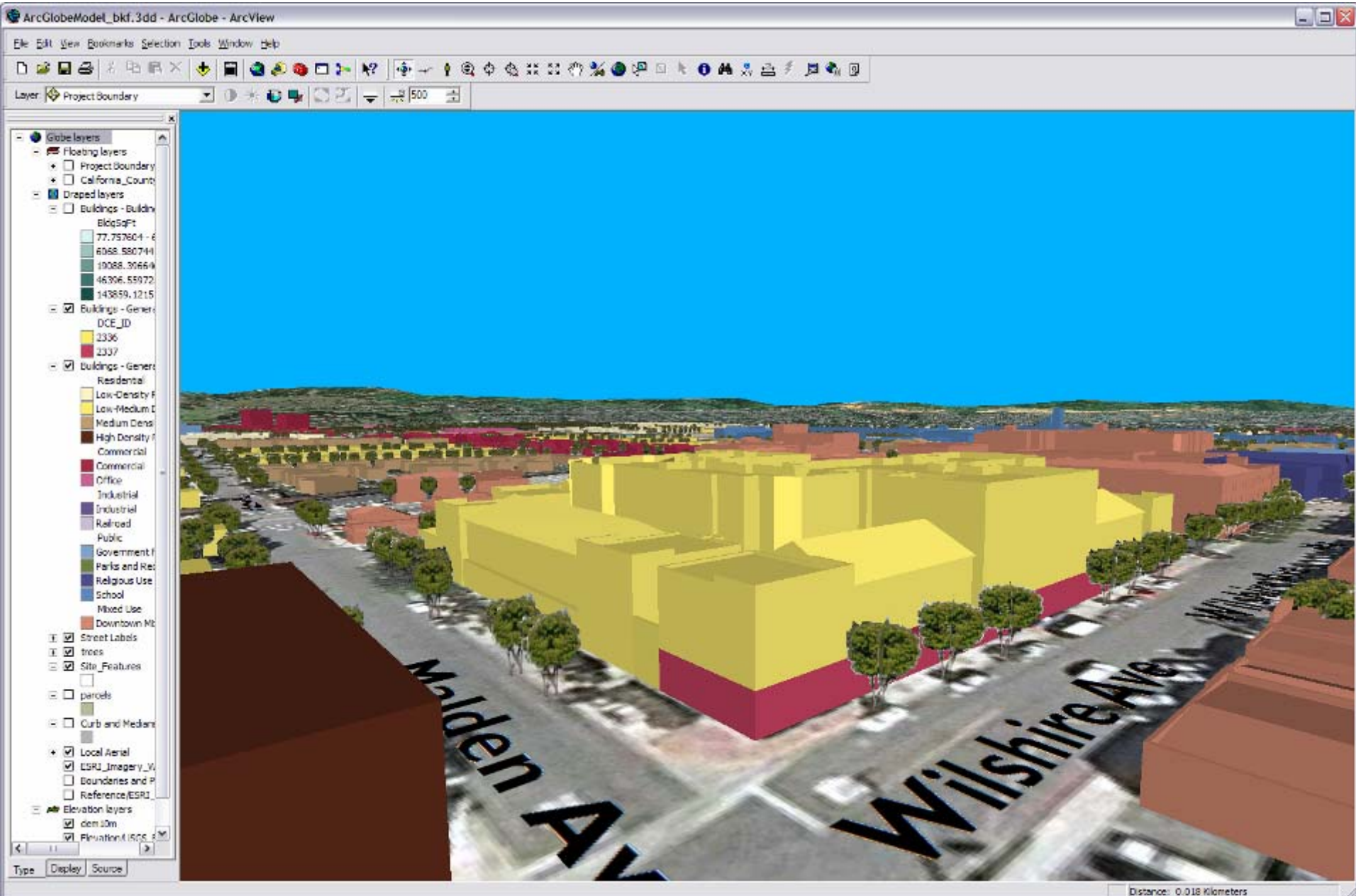
Facts (from the U.S.Green Building Council):
In the United States, buildings account for:

- 72% of electricity consumption
- 39% of energy use
- 38% of all carbon dioxide (CO2) emissions
- 40% of raw materials use
- 30% of waste output (136 million tons annually)
- 14% of potable water consumption

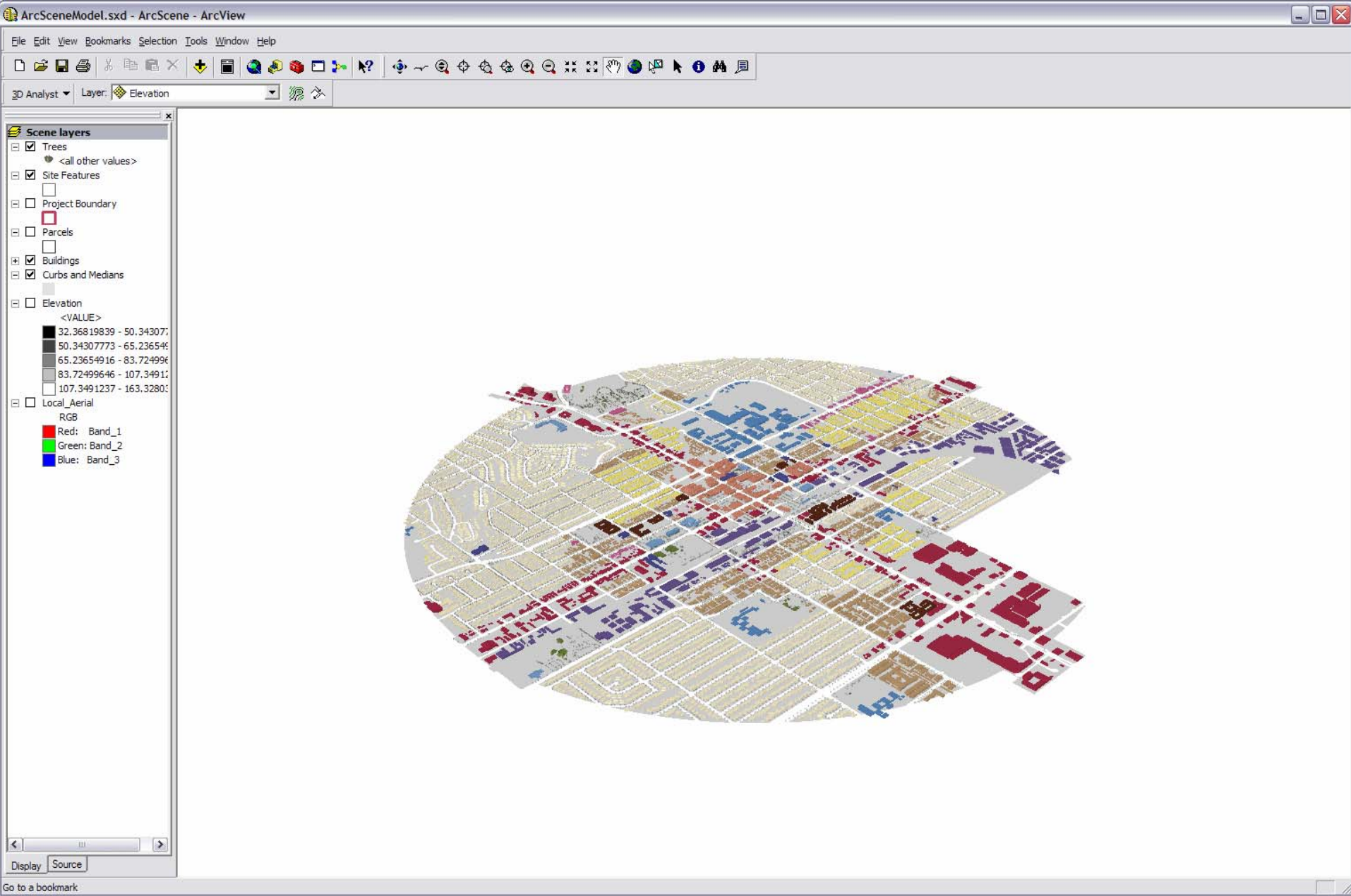
What to Measure	Data (Proxy)	Value	Effect	Category
ENERGY EFFICIENCY				
Features reducing energy usage	On-site renewable energy systems (i.e., solar, wind, geothermal, low-impact hydro, biomass)	presence/absence	+	Site
	Energy Star equipment	presence/absence	+	Building
	Building automation system for heating, cooling, ventilation, and/or lighting	# of major systems automated	+	Building
	Green roofs	presence/absence, or % cover	+	Building
WATER EFFICIENCY				
Features reducing water usage	Greywater systems, dual plumbing	presence/absence	+	Building
	Participant in SoCal WaterSmart rebate program	presence/absence	+	Building
GENERAL				
Pre- and Post-1978 Title 24 regulations	Building age	pre-1978 and post-1978	- (older)	Building
Sustainable buildings	LEED certification	Certified, Silver, Gold, Platinum	+	Building
MATERIALS - NEW CONSTRUCTION				
Features reducing material waste	use of recyclable materials	presence/absence	+	Building
Amount of waste going to landfill	waste amounts by land use/building type	waste in pounds	-	Building



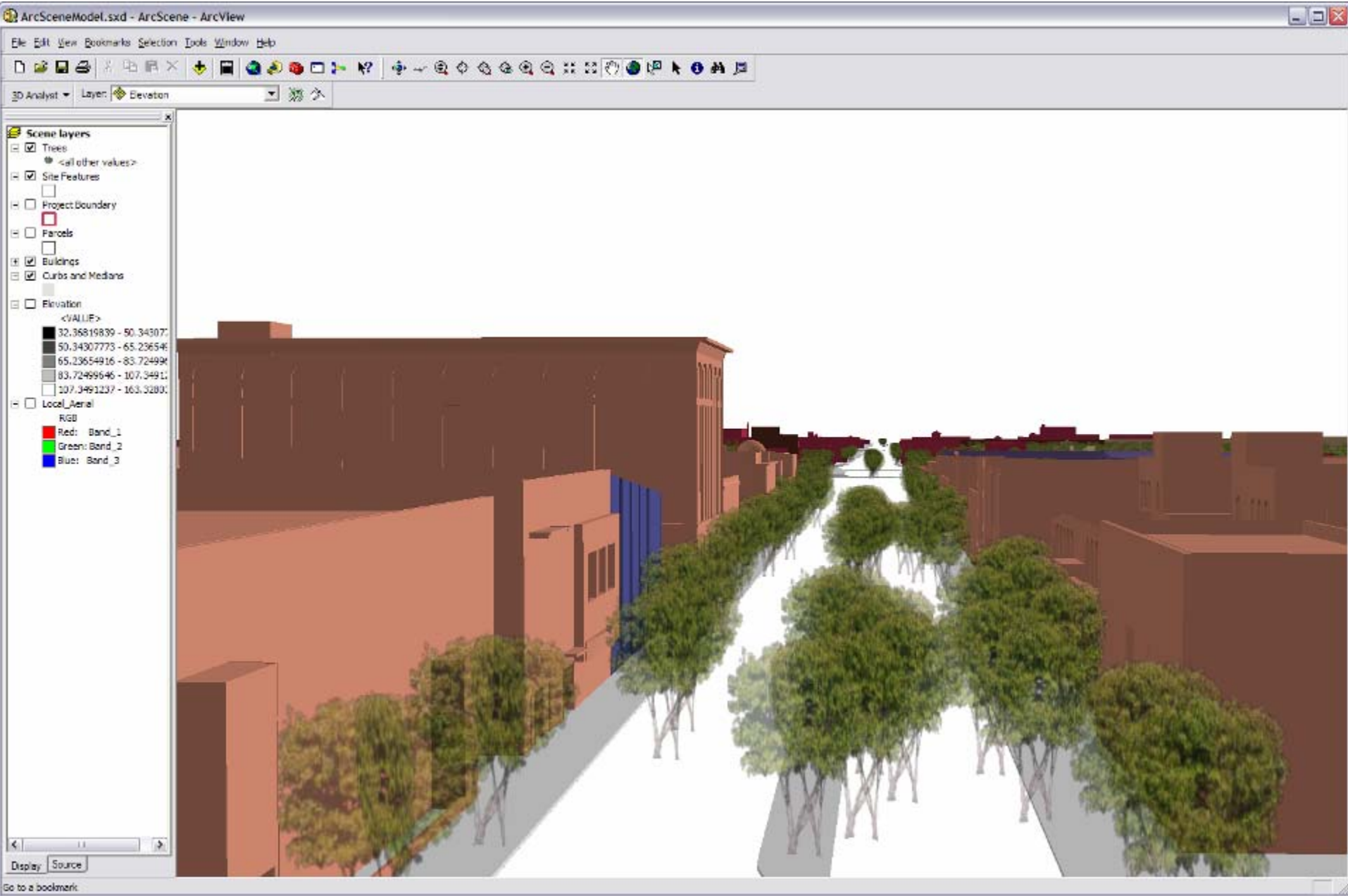
FINAL PRODUCTS



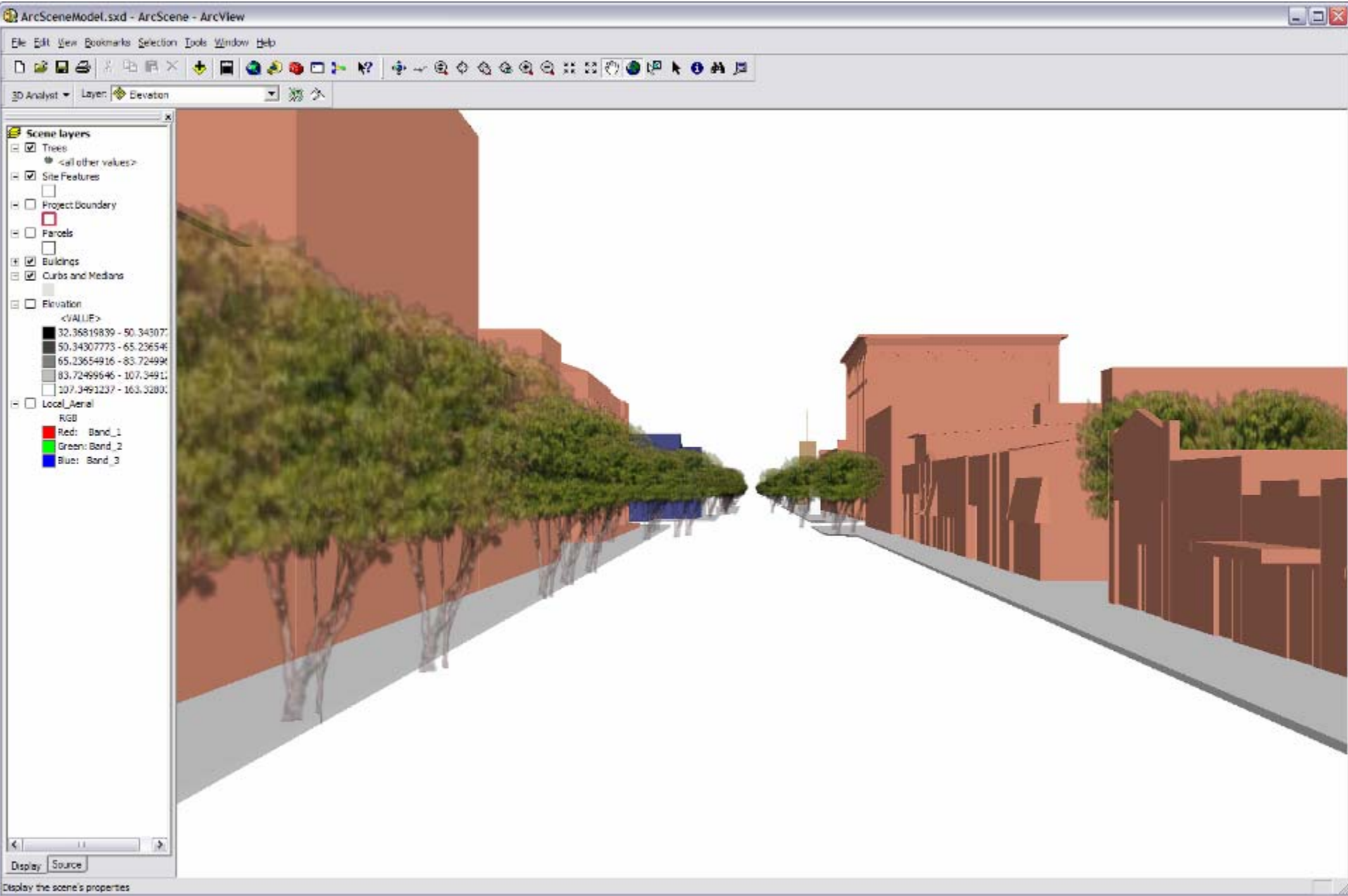
FINAL PRODUCTS



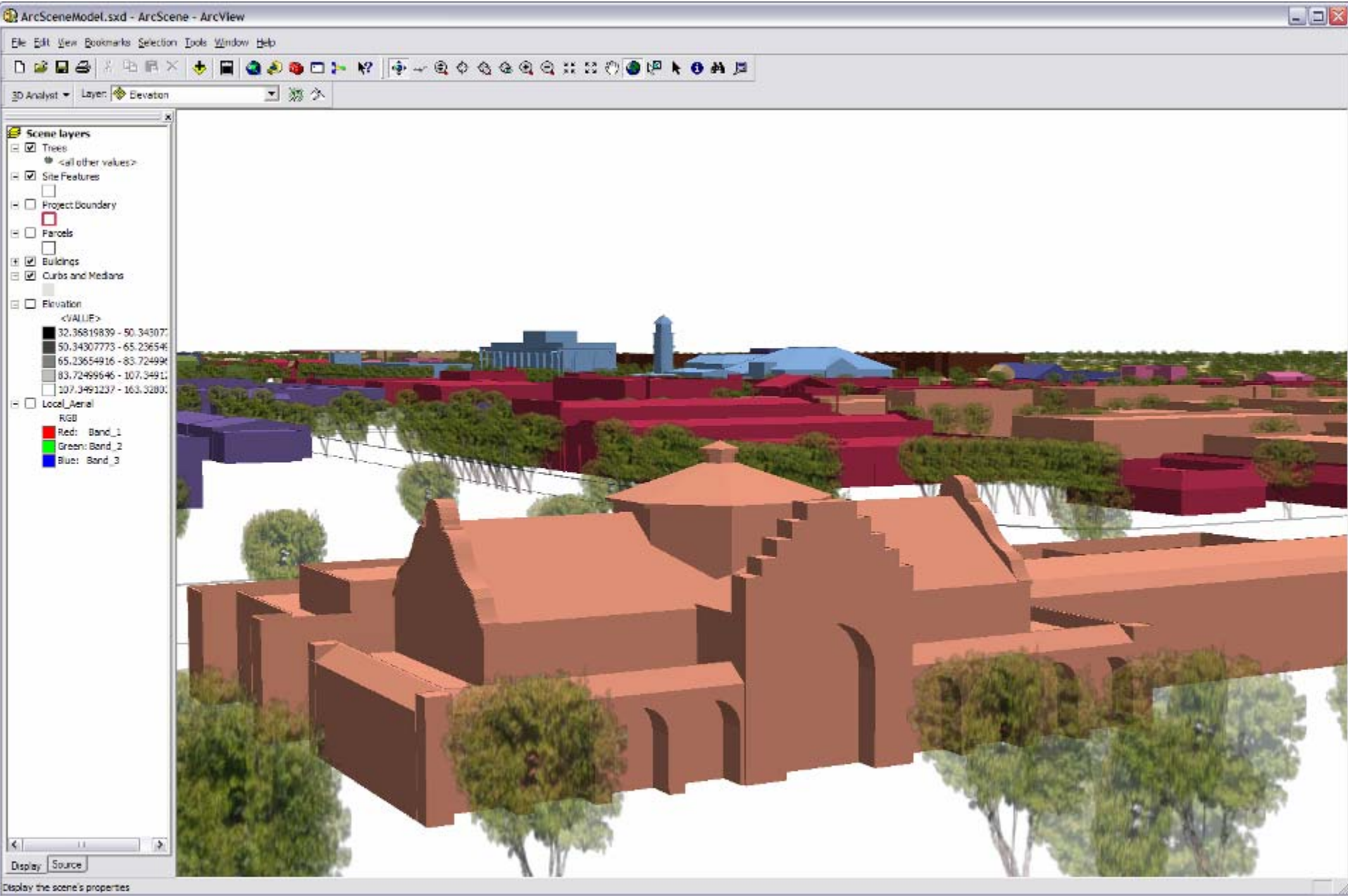
FINAL PRODUCTS



FINAL PRODUCTS



FINAL PRODUCTS



3D Model in Google Earth

- ◆ Downloadable model enables the public to visualize existing conditions and potential development and long range planning scenarios in readily accessible software at home
- ◆ Flythroughs or walkthroughs can be pre-packaged to make for a hassle-free experience for the end user
- ◆ Symbolized GIS layers can also be displayed

Public Outreach

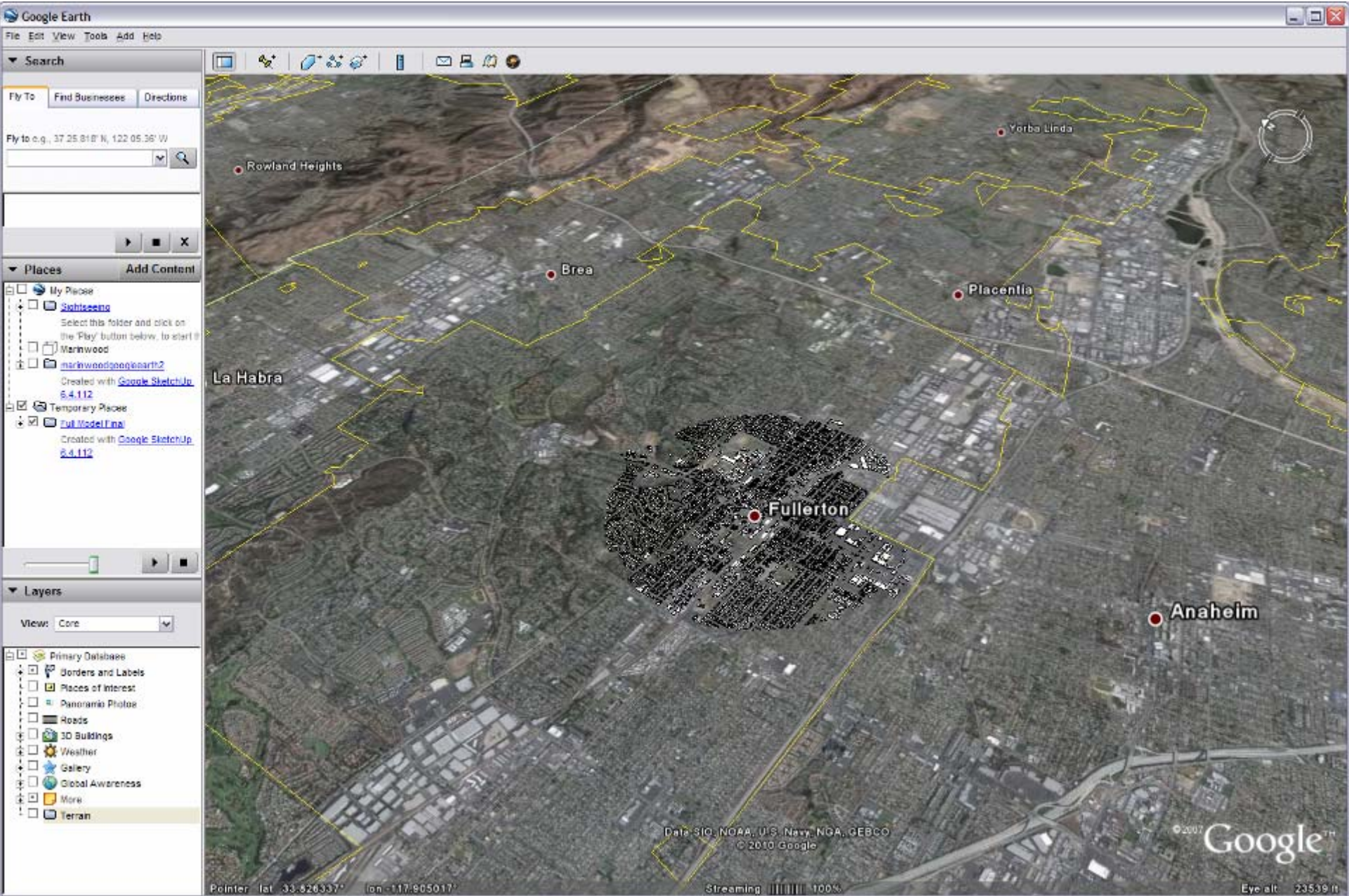
Visualization

Urban Design

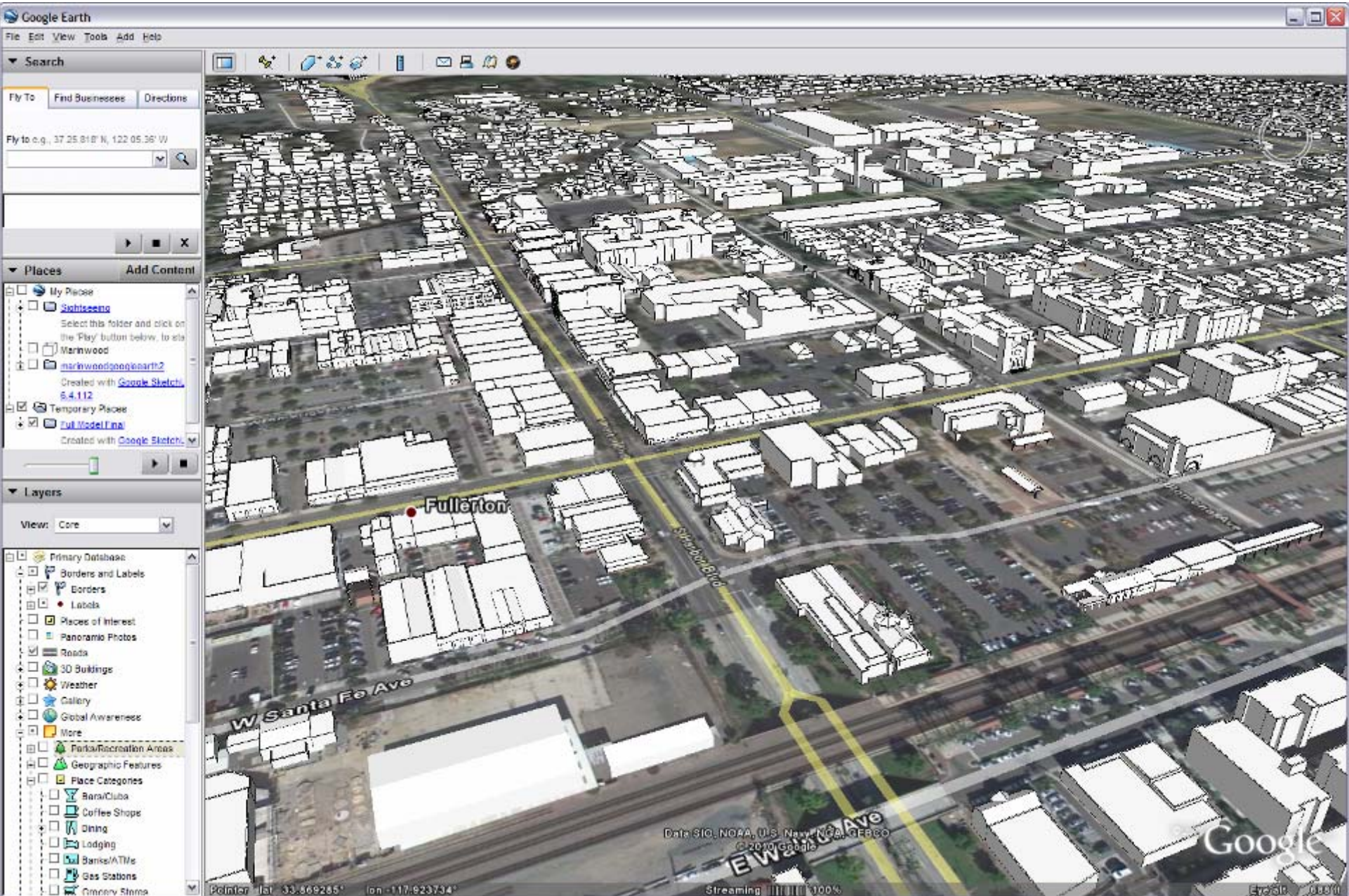
Mapping

Sustainability

FINAL PRODUCTS



FINAL PRODUCTS



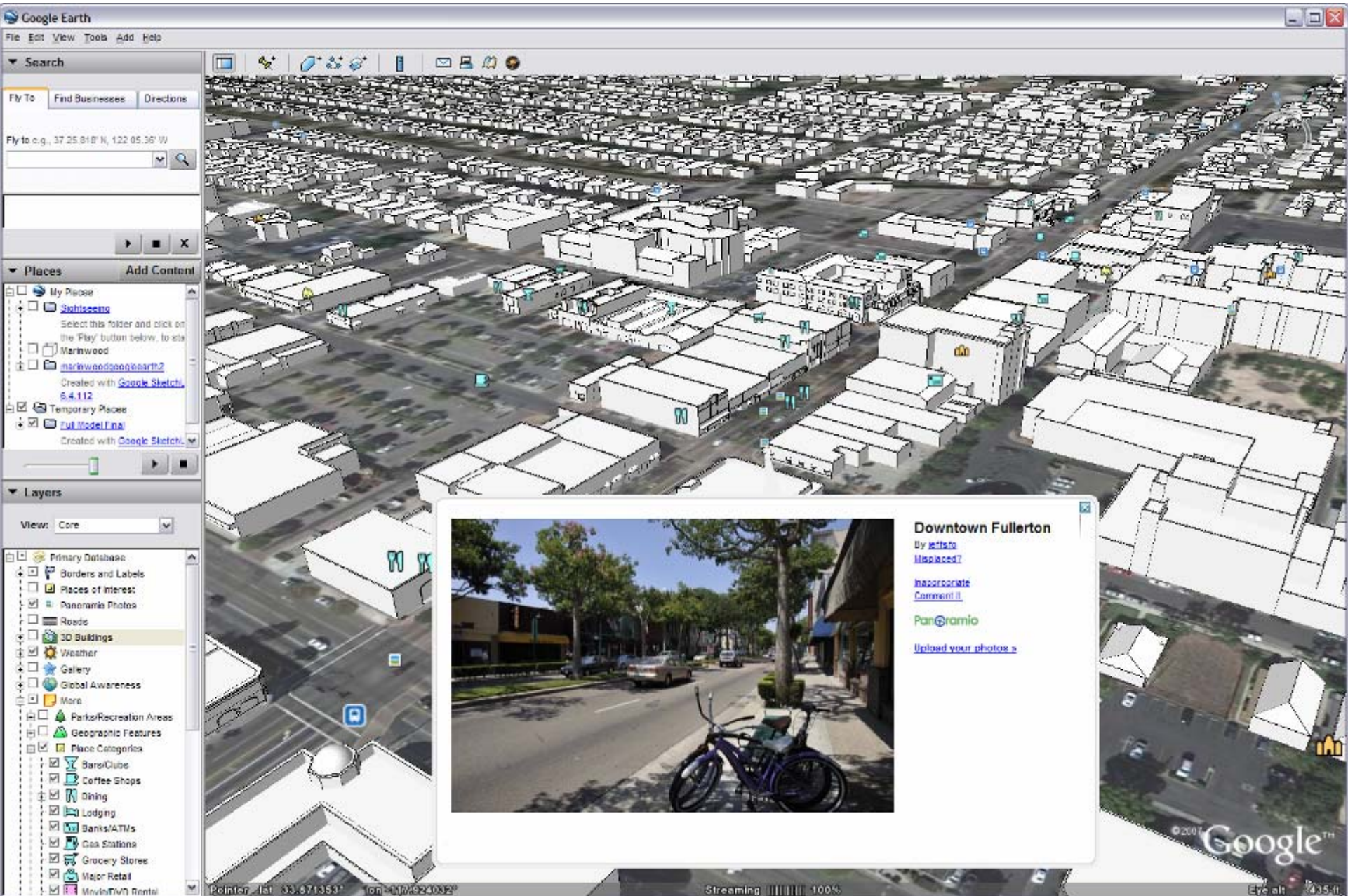
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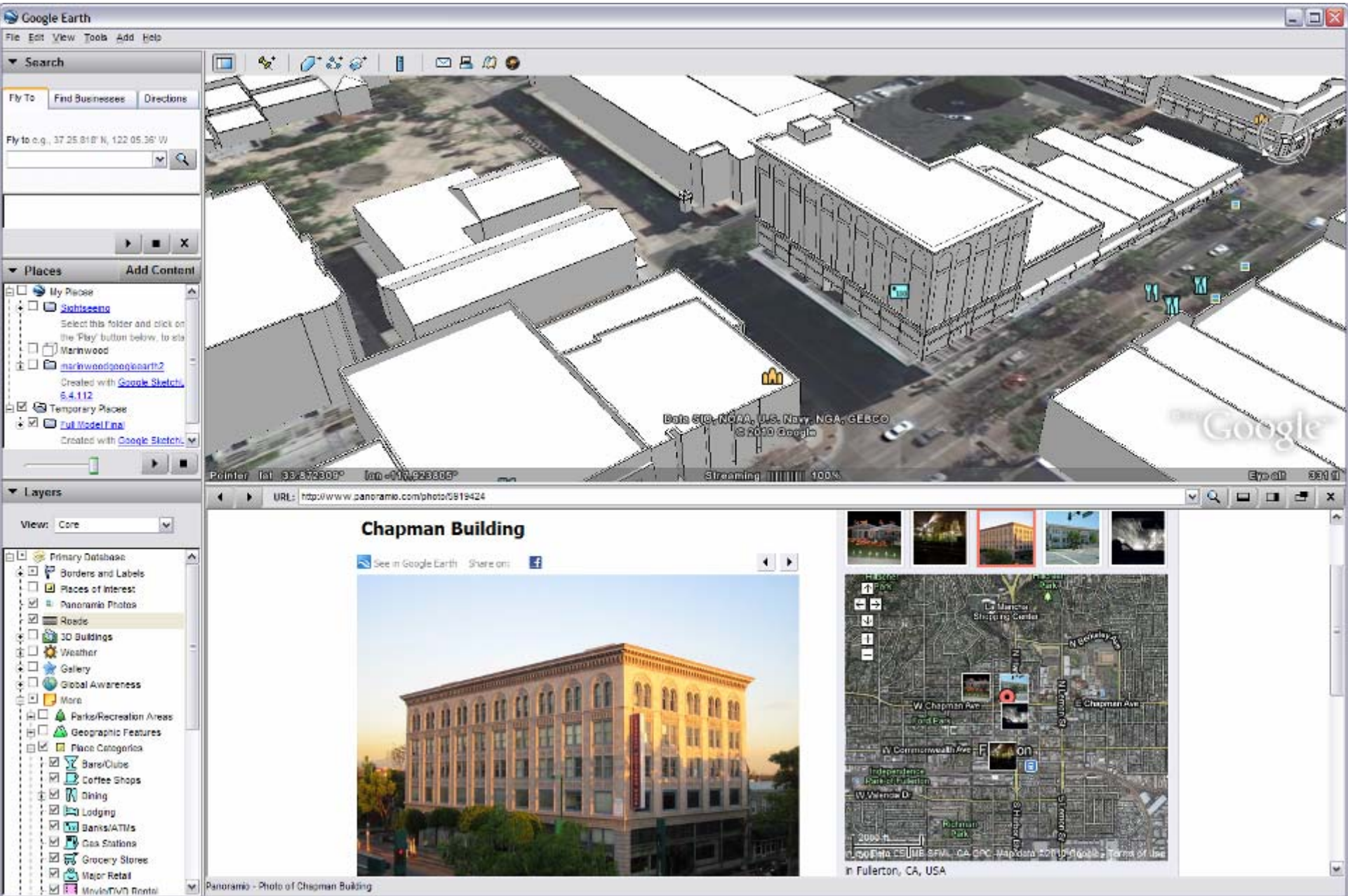
FINAL PRODUCTS



FINAL PRODUCTS



FINAL PRODUCTS



NEXT STEPS

- ◆ If you have additional comments and questions, contact:

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DC&E Project Manager
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Project Manager
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DOWNTOWN^{3D} fullerton

COMMUNITY PRESENTATION
June 29, 2010

