North Central Texas Council of Governments

Addressing 911 Challenges: 3D GIS Supporting Z-Axis

Heather Geyer

FUGRO

Fugro Remote Sensing and Mapping Services

Land Survey

Geo-data Acquisition

Data Processing

Product Development
and
Digital Platforms

“One minute saved in emergency response is 10,000 lives saved in a year.”

- An estimate by the FCC

FUGRO SIMMETRY™ 2023

Fugro's RapidSOS-ready SIMmetry™ connects common geospatial data into a 3D environment with easy-to-use tools for improved situational awareness enabling rapid response times for emergency dispatchers helping save lives.

- 3D visualization of community data
- Connect to RapidSOS-ready SIMmetry™ 3D GIS
- Access GIS tools for addressing, measuring, and interaction
- Precisely locate a caller in a 3D environment
- Provide locational intelligence to responders at the scene

www.fugro.com/simmetry

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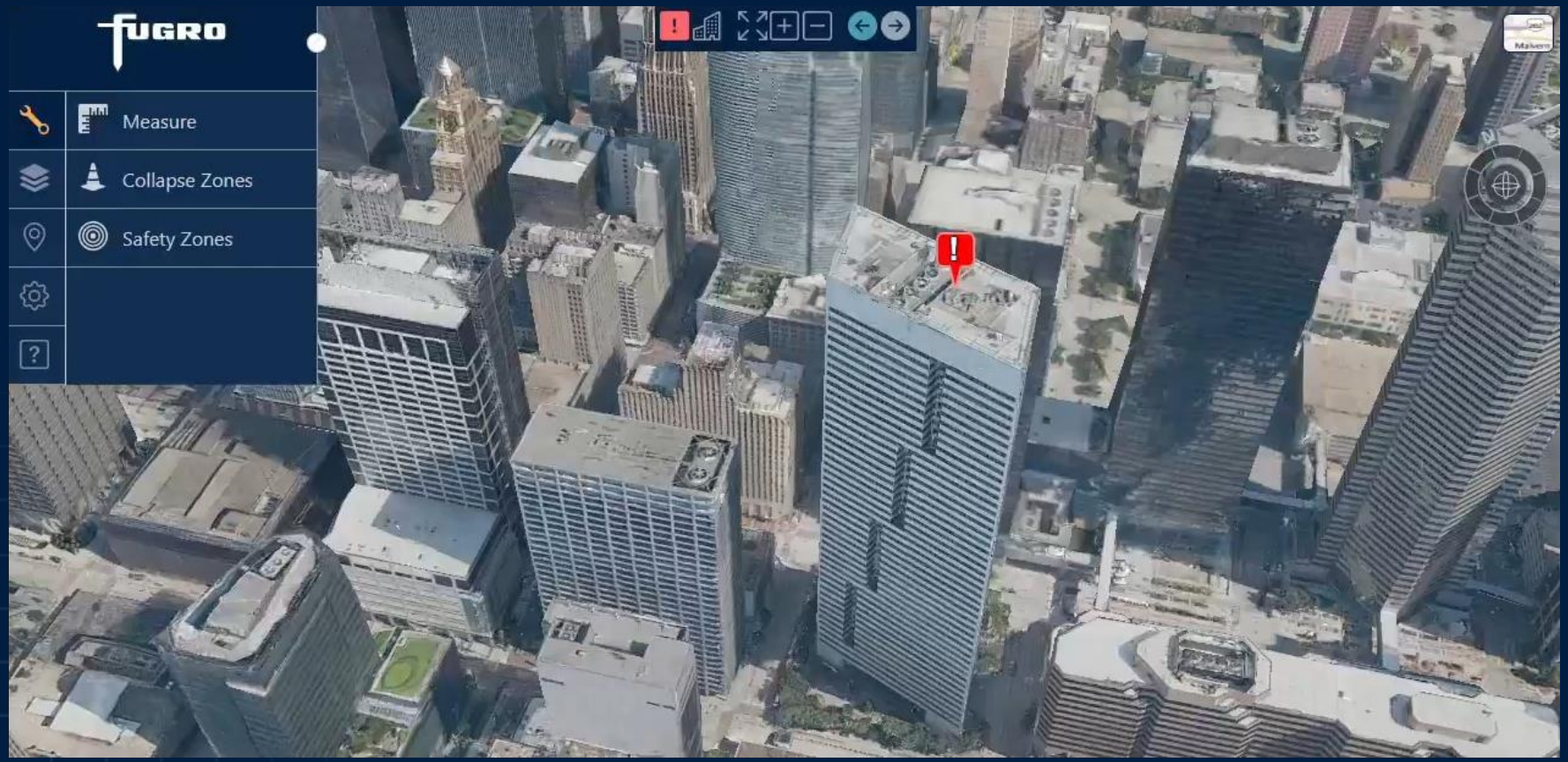
FUGRO SIMMETRY™

RapidSOS Ready

FUGRO

Enable ECC operator to enter 3D immersive world to improve situational awareness, helping reduce response times and ultimately save lives



The Federal Communication Commission (FCC) estimates that 10,000 lives could be saved each year if the emergency dispatching system (9-1-1) could get help one minute sooner to those calling for emergency assistance

1
Options for Creating 3D Data

FUGRO SIMMETRY™

RapidSOS Ready

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Lidar Data

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RapidSOS Ready

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Lidar Data and Nadir Imagery

FUGRO SIMMETRY™

RapidSOS Ready

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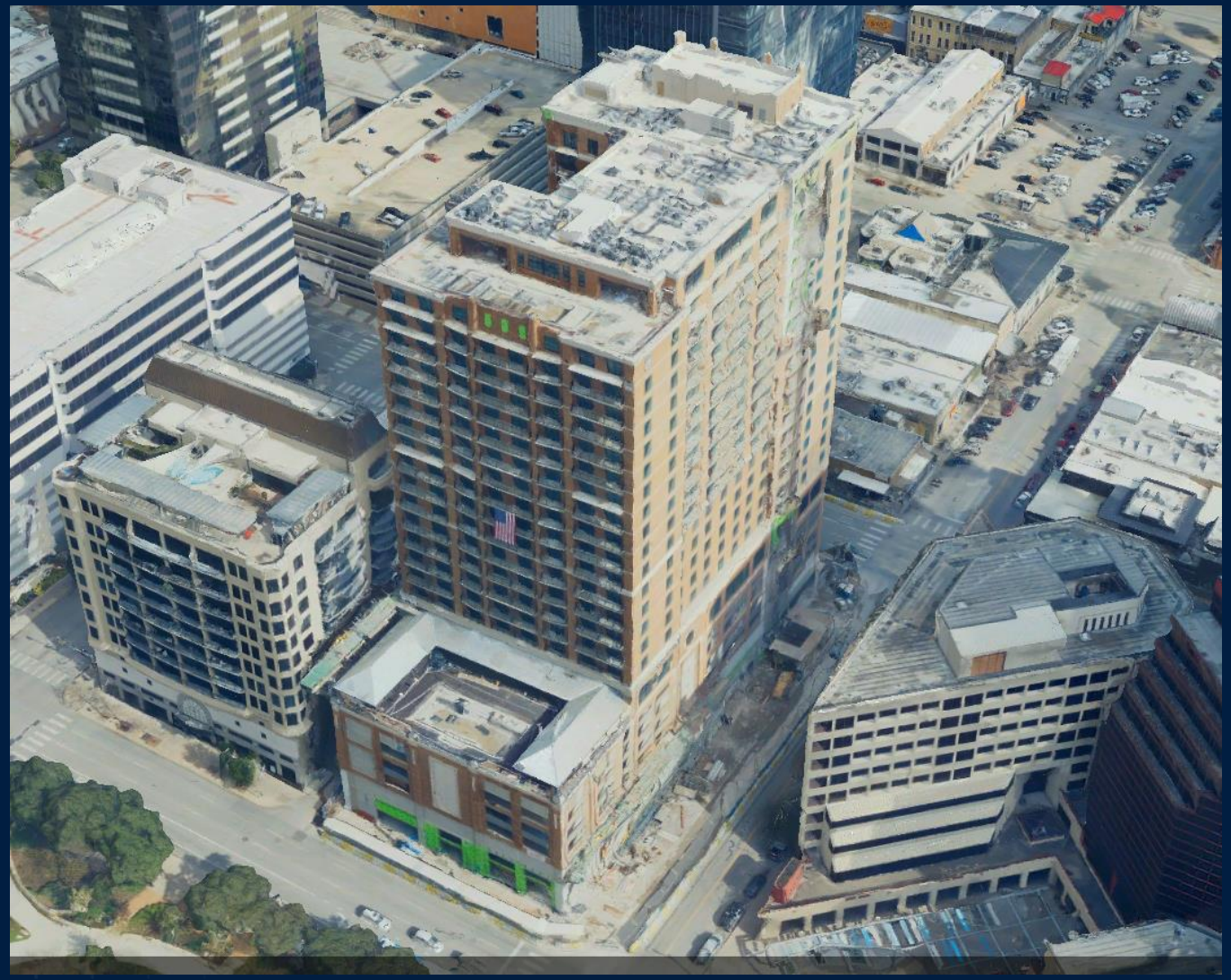
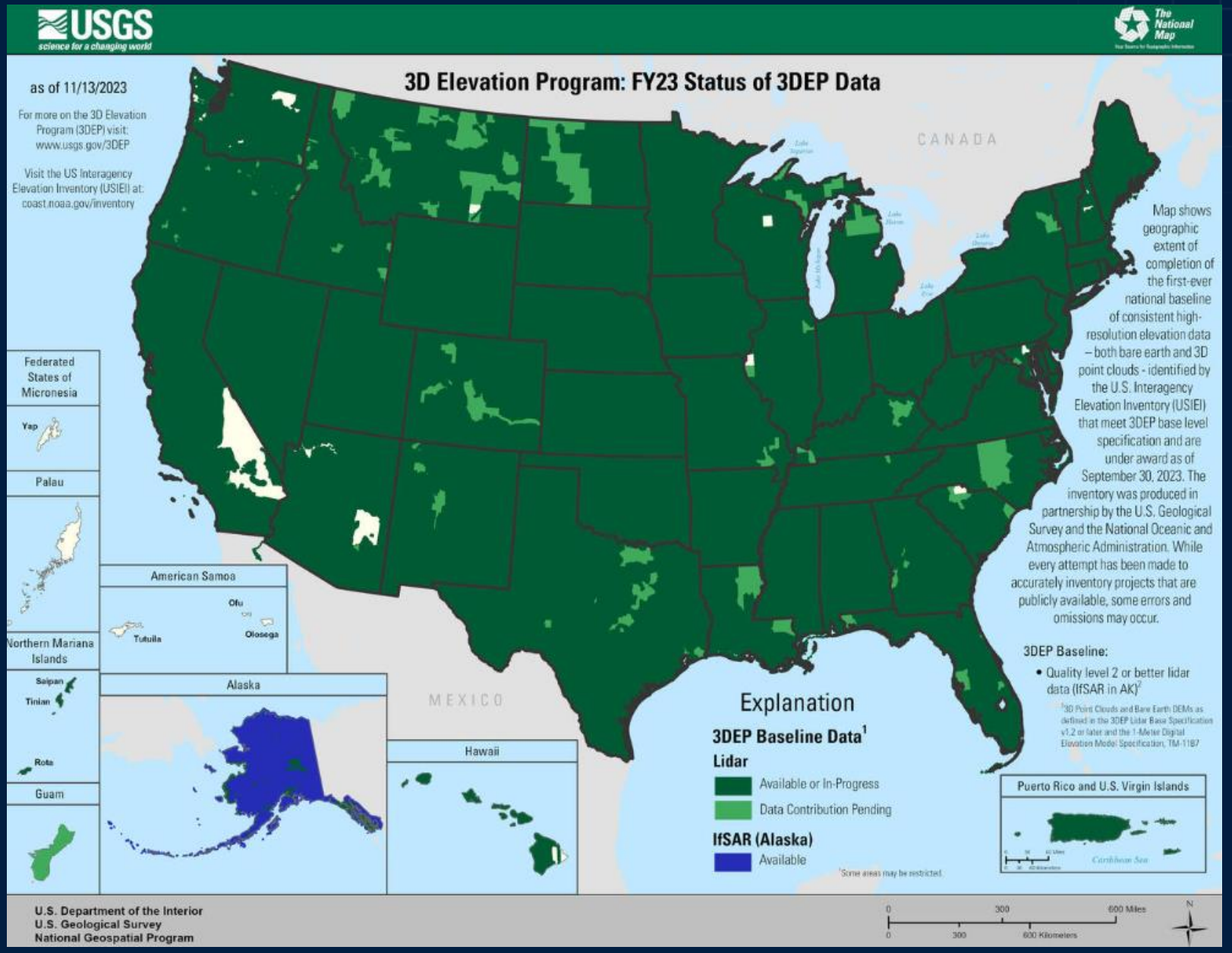


Oblique Imagery

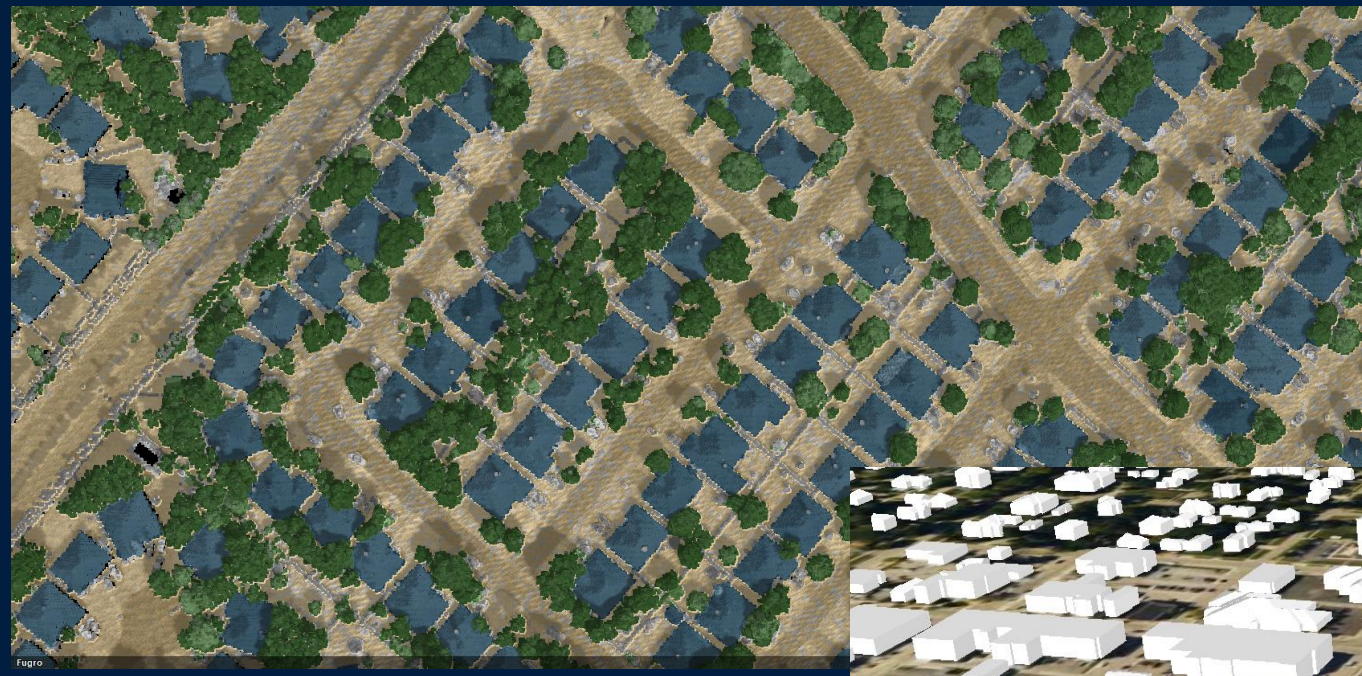
Lidar Derived 3D Models

USGS LiDAR Data

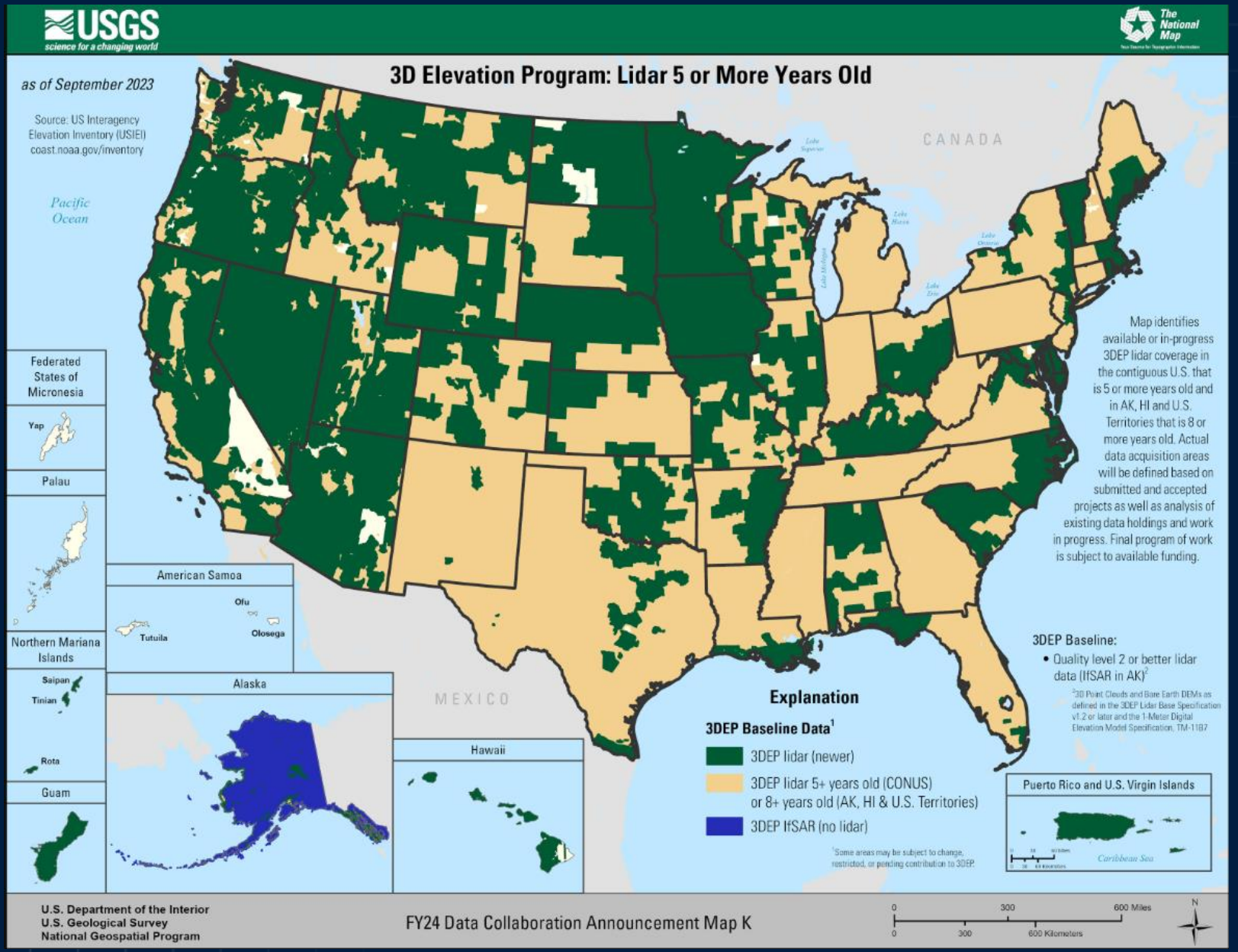


Sense.Lidar®

- Uses cloud-based processing and AI
- Accurately classify clusters of lidar points at scale to 99% accuracy
- Identify unique features (i.e. bare earth, hydro, buildings, vegetation, culverts, utility assets, etc.) without compromising speed, quality, or cost



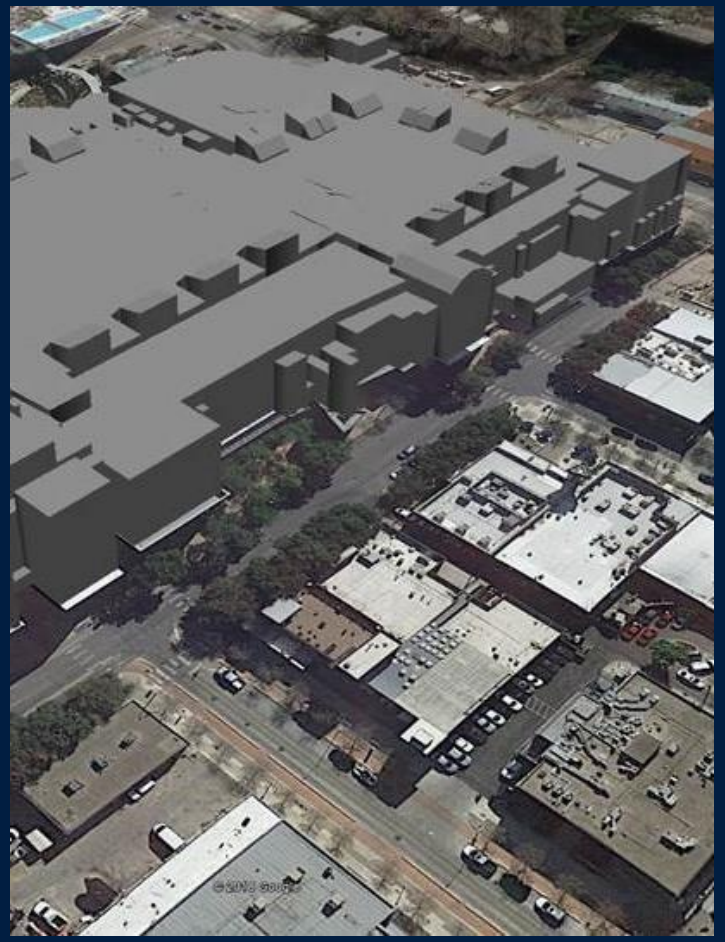
USGS LiDAR Data



Existing data considerations

- Not all data is considered equal
- Data quality impacts 3D model results
- Data vintage doesn’t always represent actual

Lidar-Derived 3D Building Models



Nadir imagery and lidar derived 3D data

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2.36 ft
39.69 ft
0.73 ft
23.81 ft
139.35 ft
145.55 ft
42.01 ft
Horizontal Plane Area 2793.39 Square ft
FUGRO

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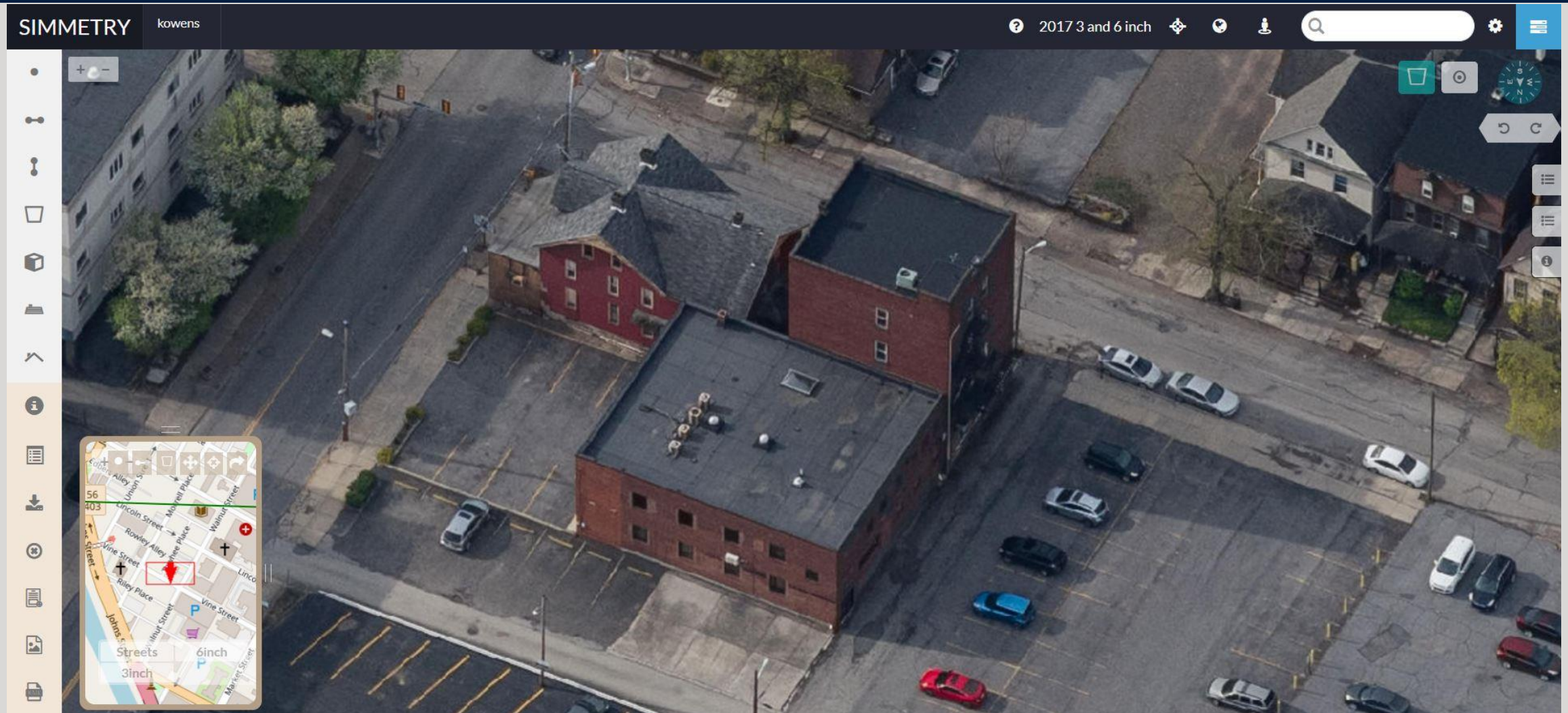
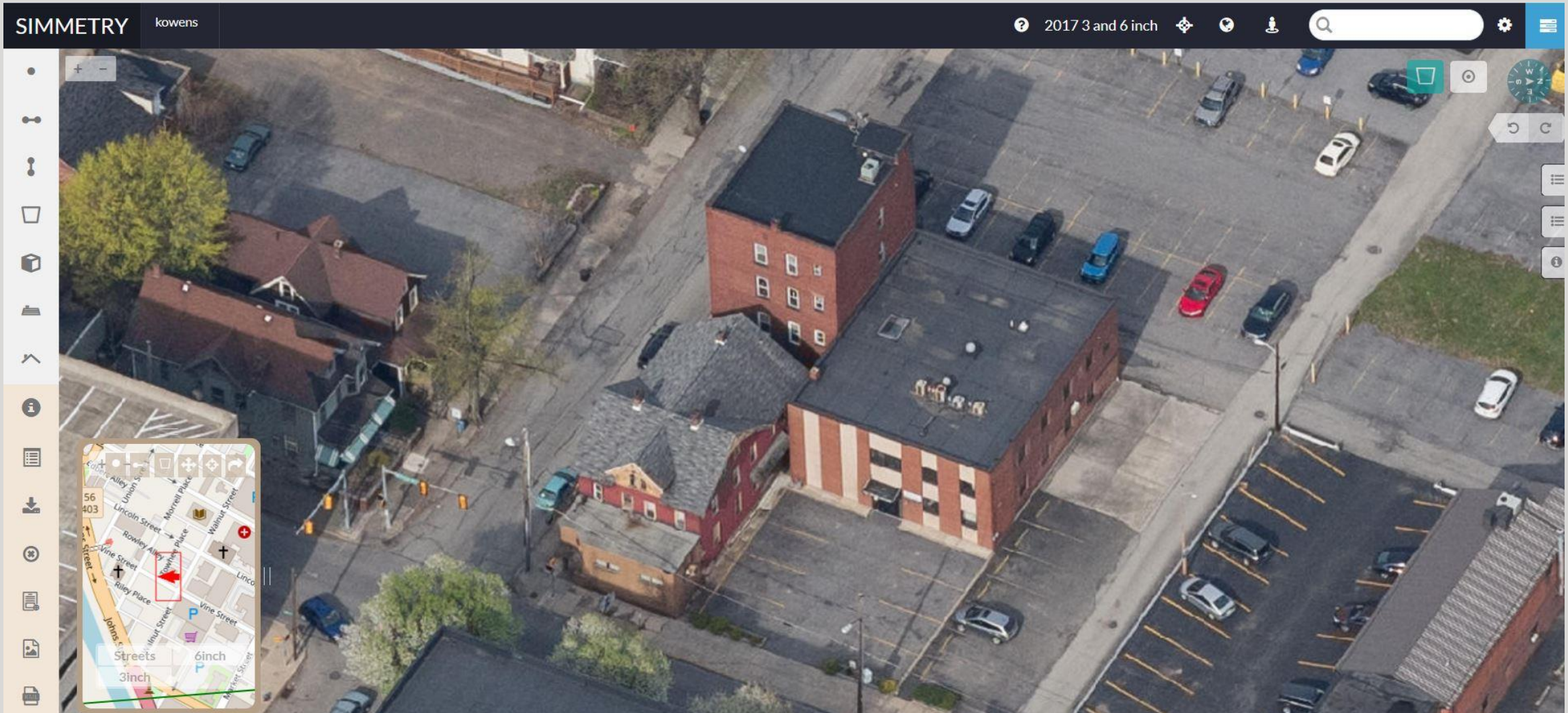
Oblique imagery derived 3D data

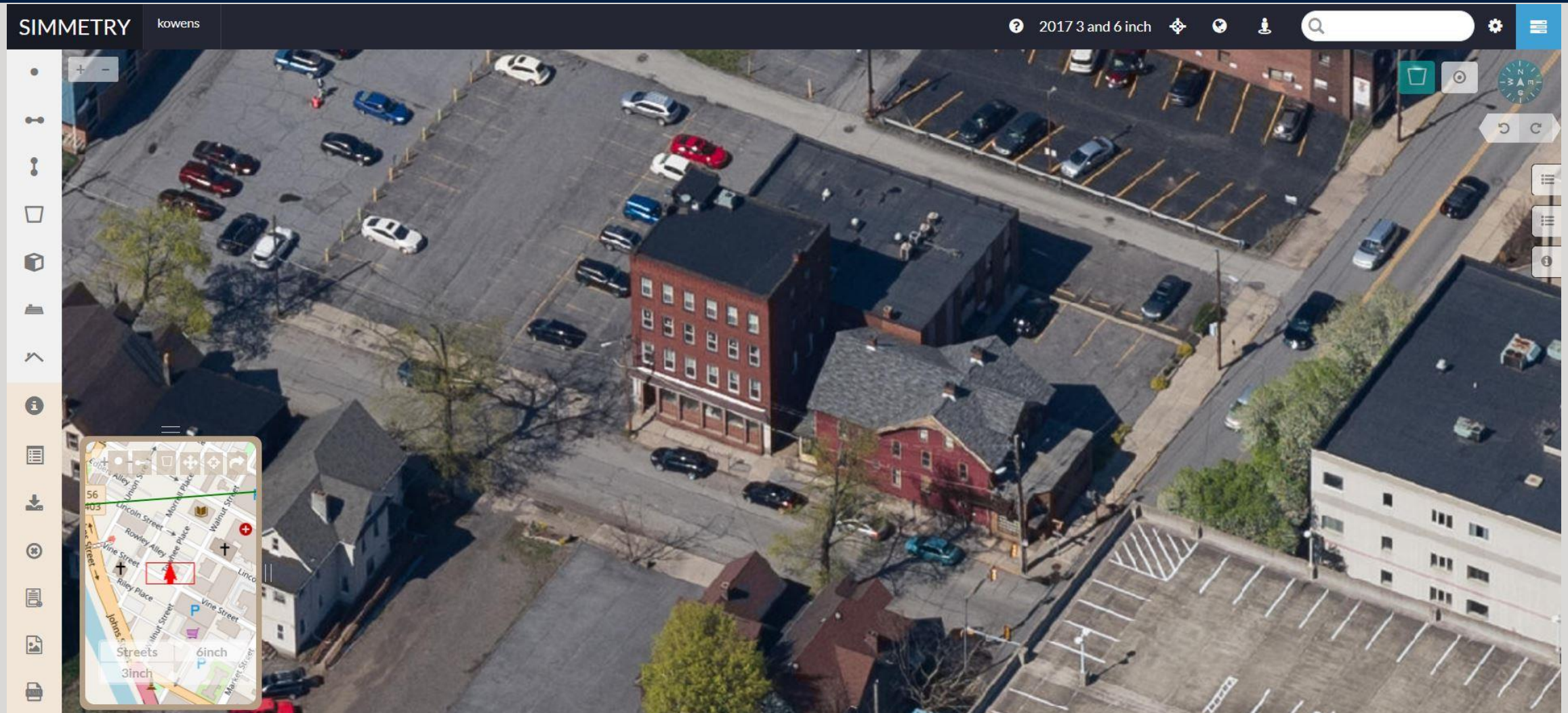
Example 3-inch oblique imagery – north view (Cambria County, PA)



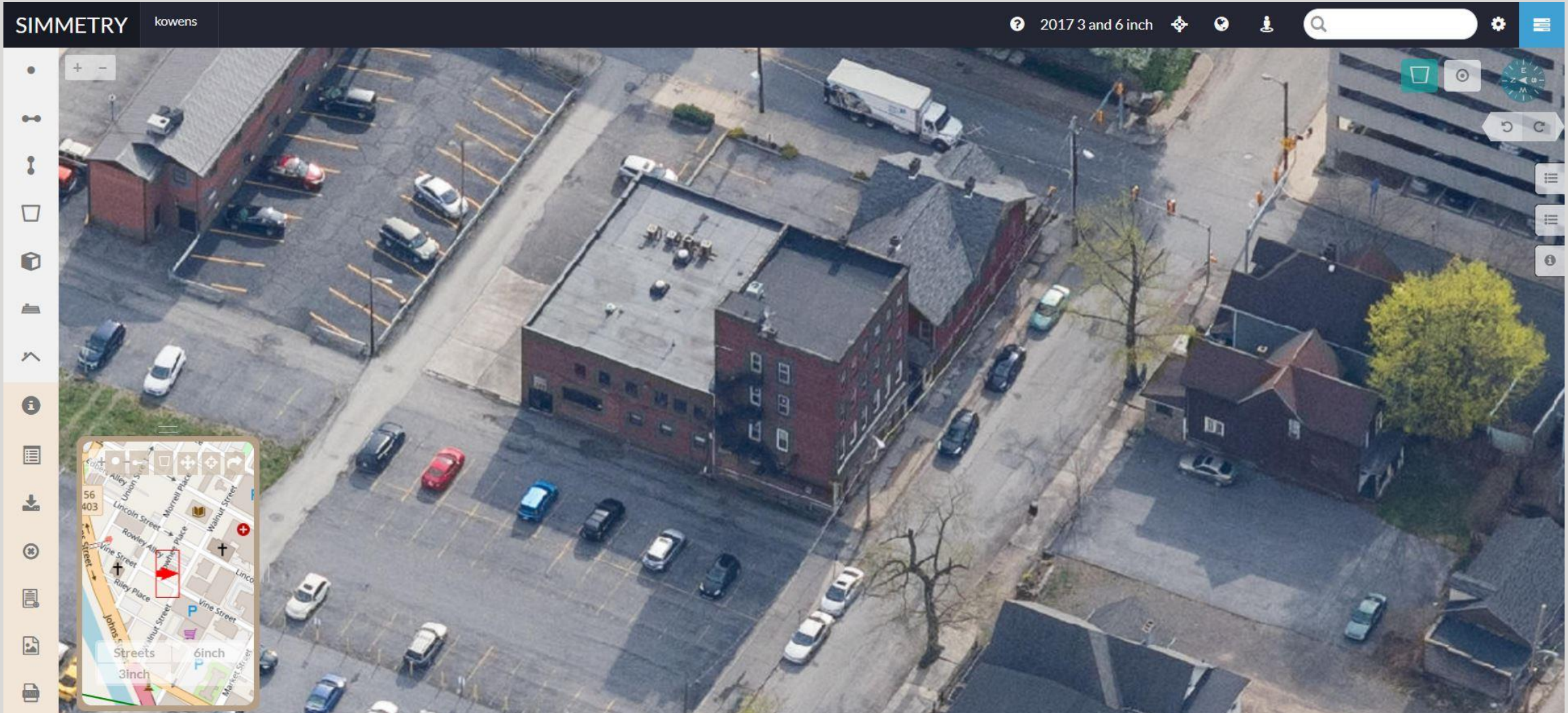
Example 3-inch oblique imagery – east view (Cambria County, PA)



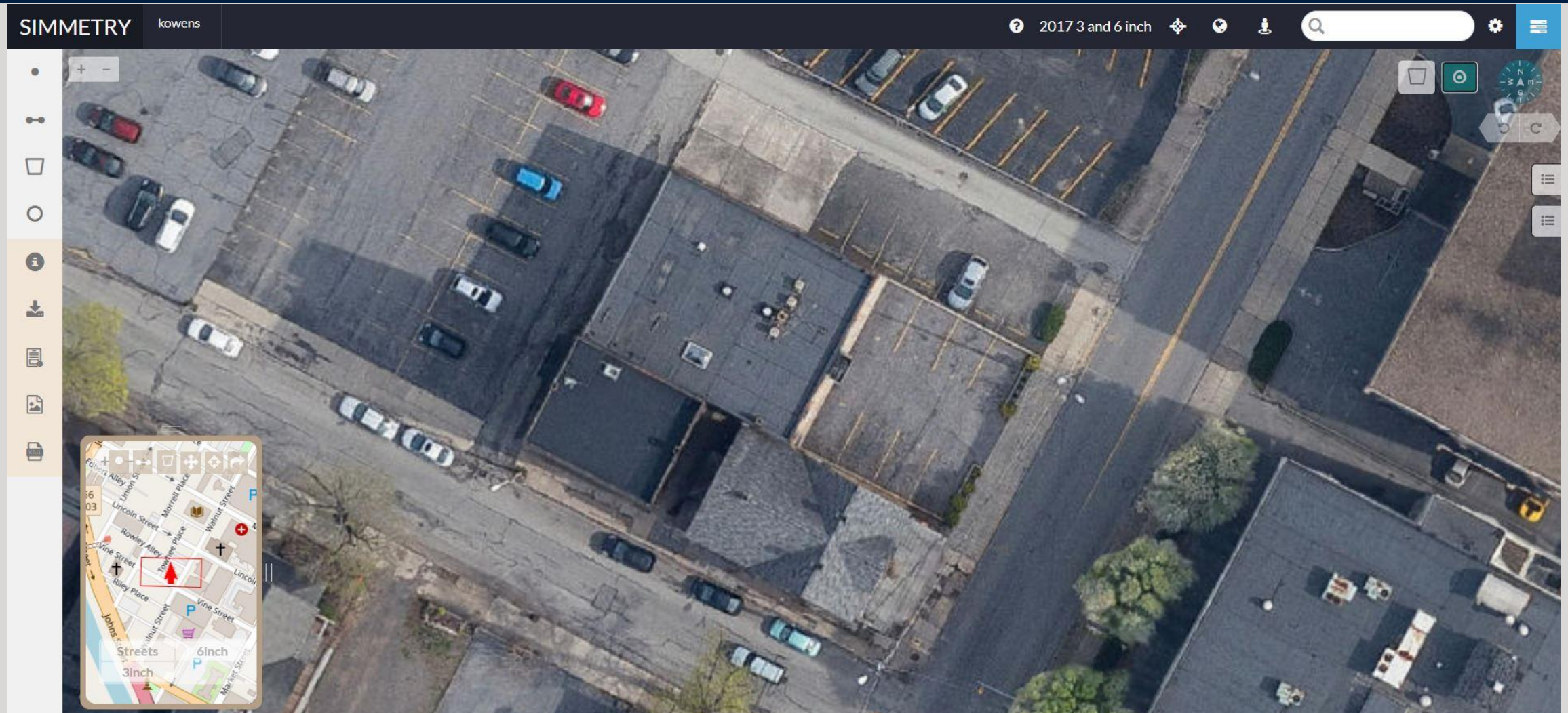
Example 3-inch oblique imagery – south view (Cambria County, PA)



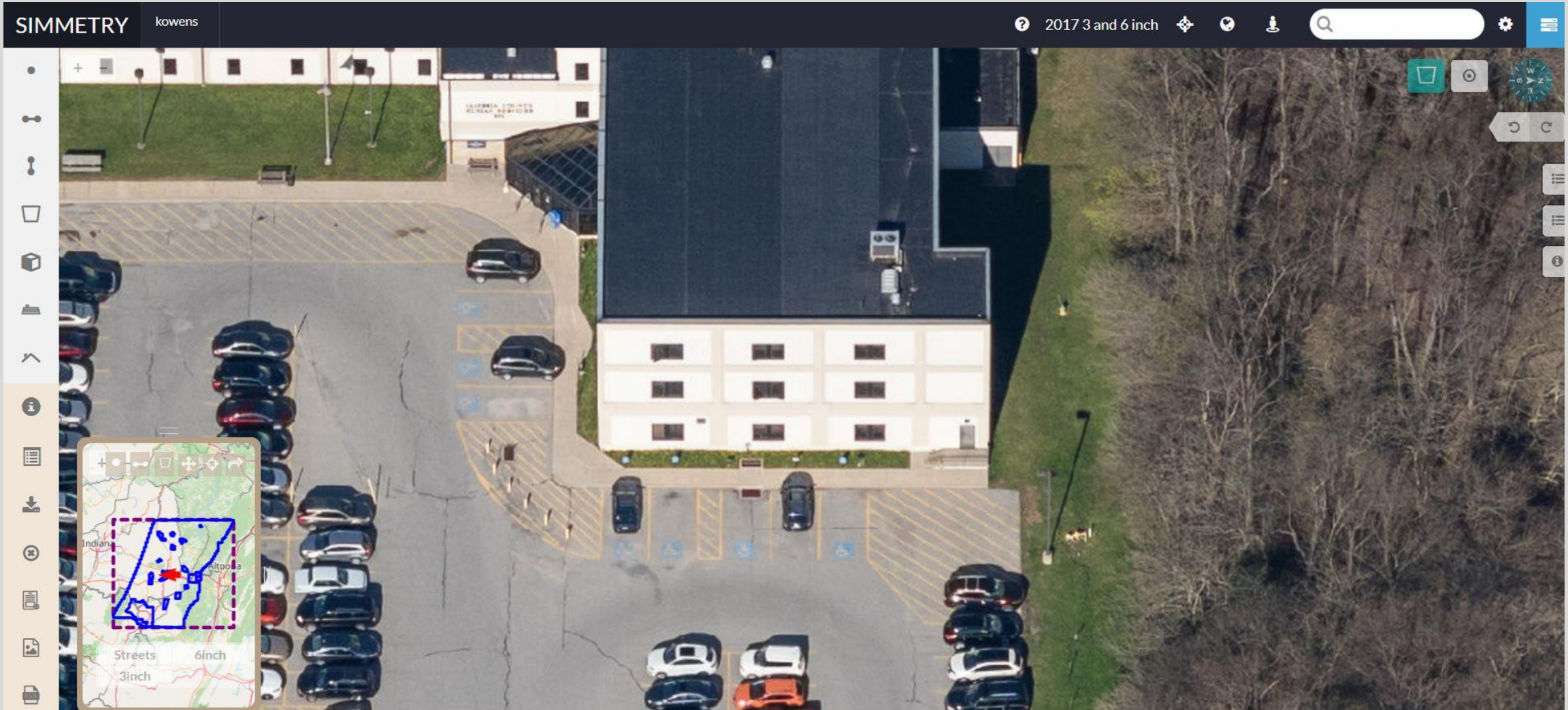
Example 3-inch oblique imagery – west view (Cambria County, PA)



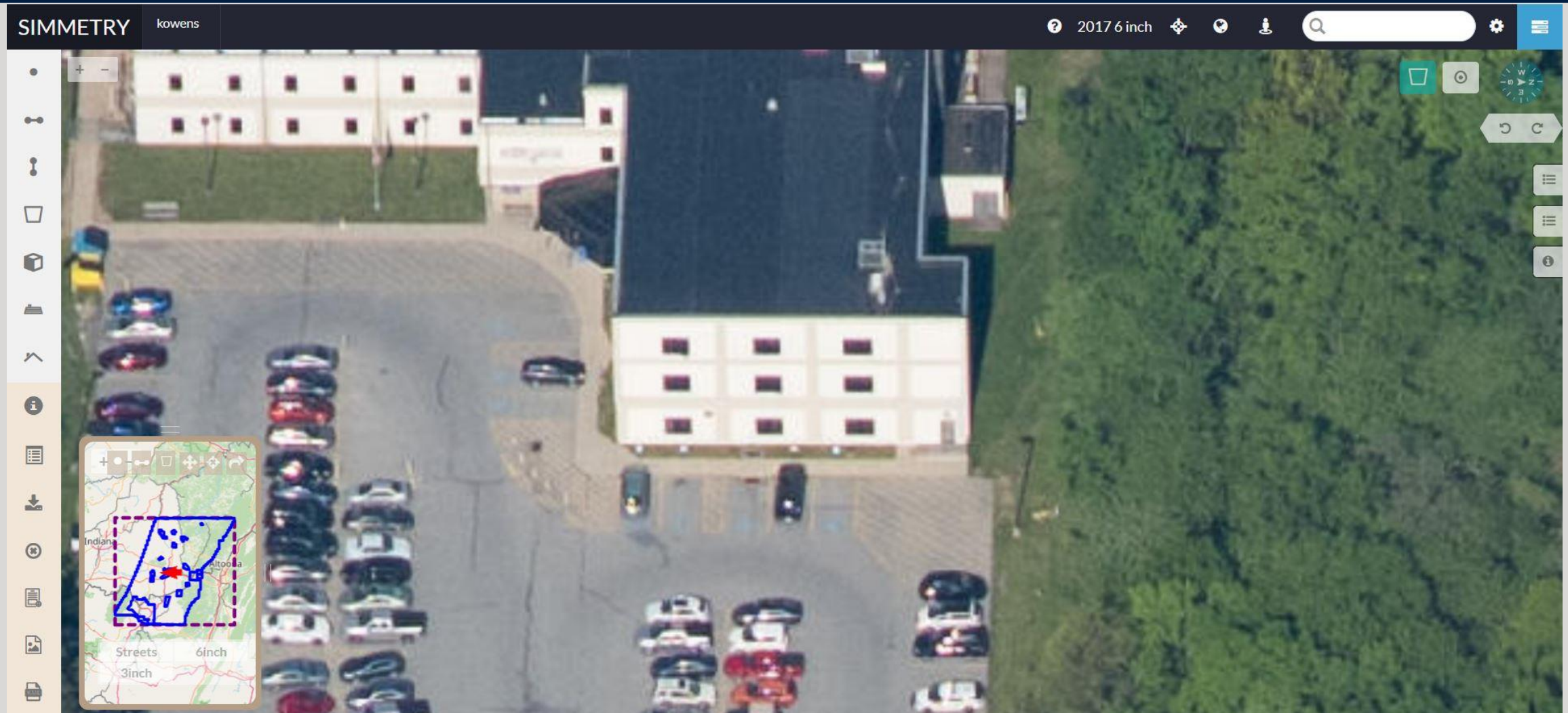
Example 3-inch oblique imagery – nadir view (Cambria County, PA)



Example 3-inch oblique imagery (Cambria County, PA)



Example 6-inch oblique imagery (Cambria County, PA)



Example: Cambria County's 3D model
Increased side and overlap data capture

Example: 3D model from obliques - standard sidelap data capture (not Cambria)

Example: 3D model from obliques - standard sidelap data capture (not Cambria)

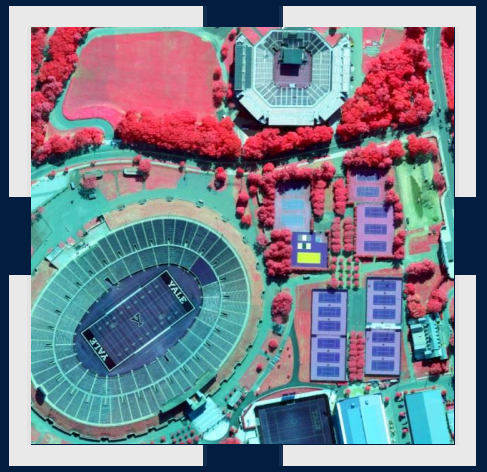
Example: 3D model from obliques - standard sidelap data capture (not Cambria)

3D Modelling

Obliques, lidar, and nadir imagery

Lidar

Lidar and nadir imagery



Oblique imagery

Addressing 911 Challenges
3D GIS Supporting Z-Axis

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