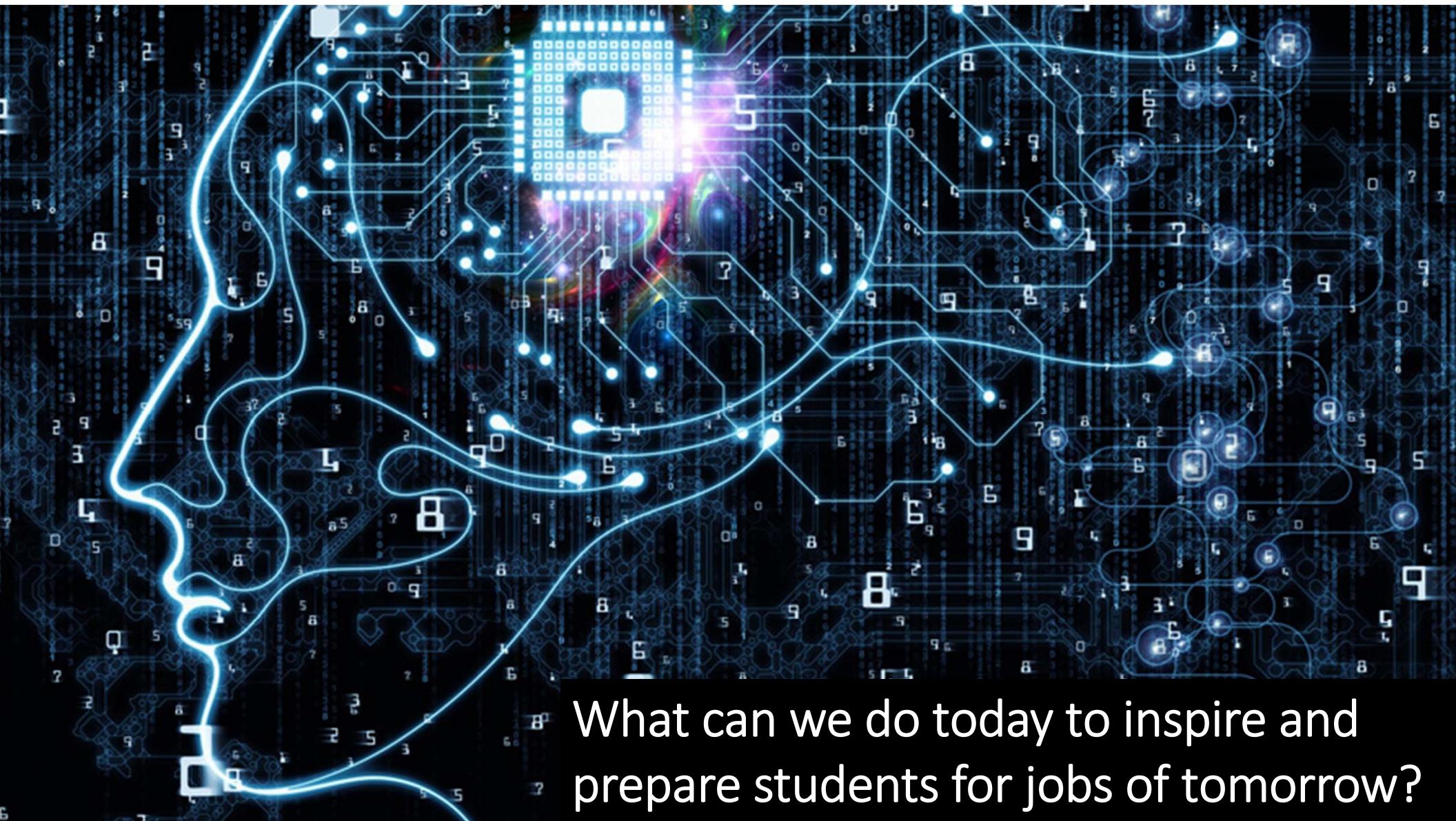


Charles Xie

# Artificial Intelligence and Engineering Education

What does the future of engineering look like?





What can we do today to inspire and  
prepare students for jobs of tomorrow?

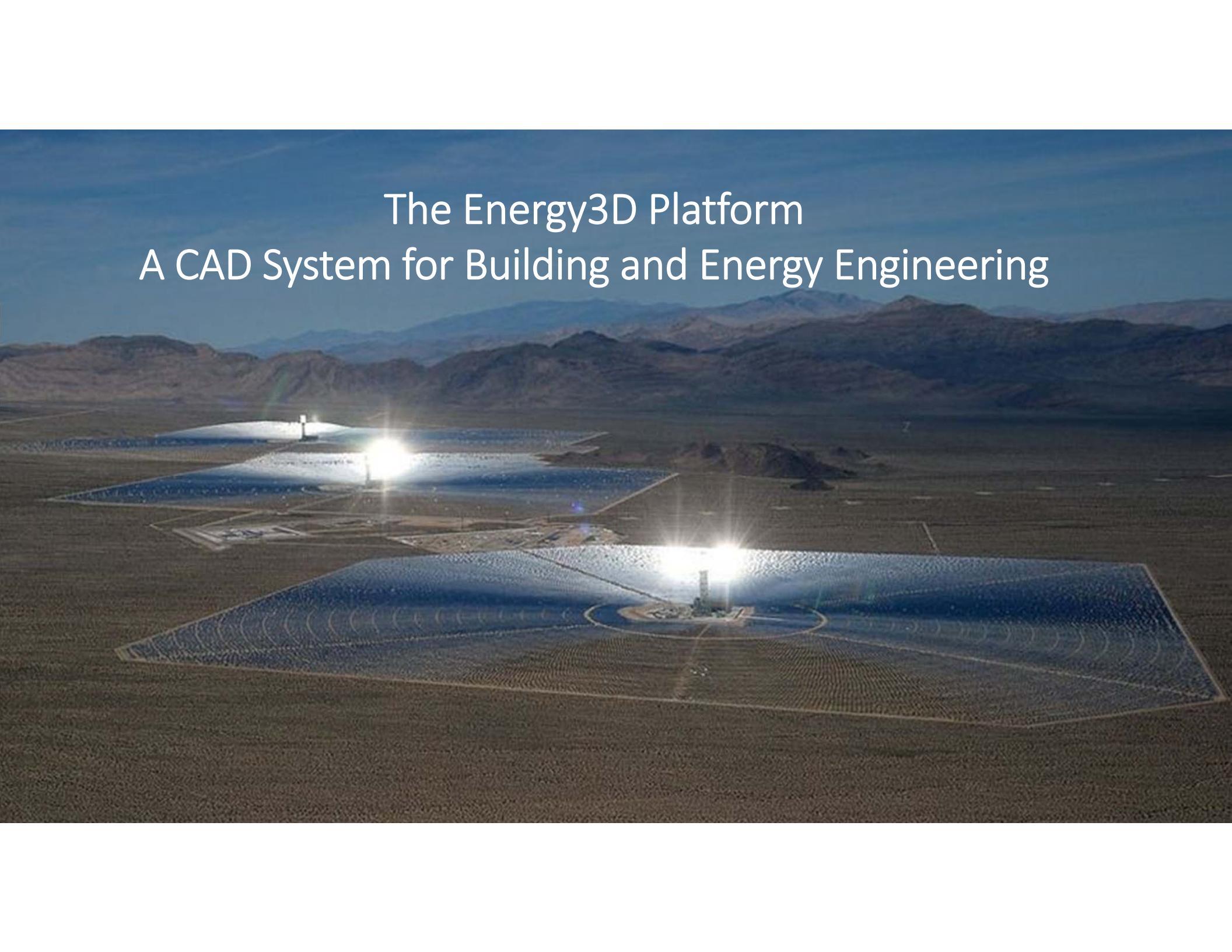


We have something for you.

R&D on AI as an educational tool for:

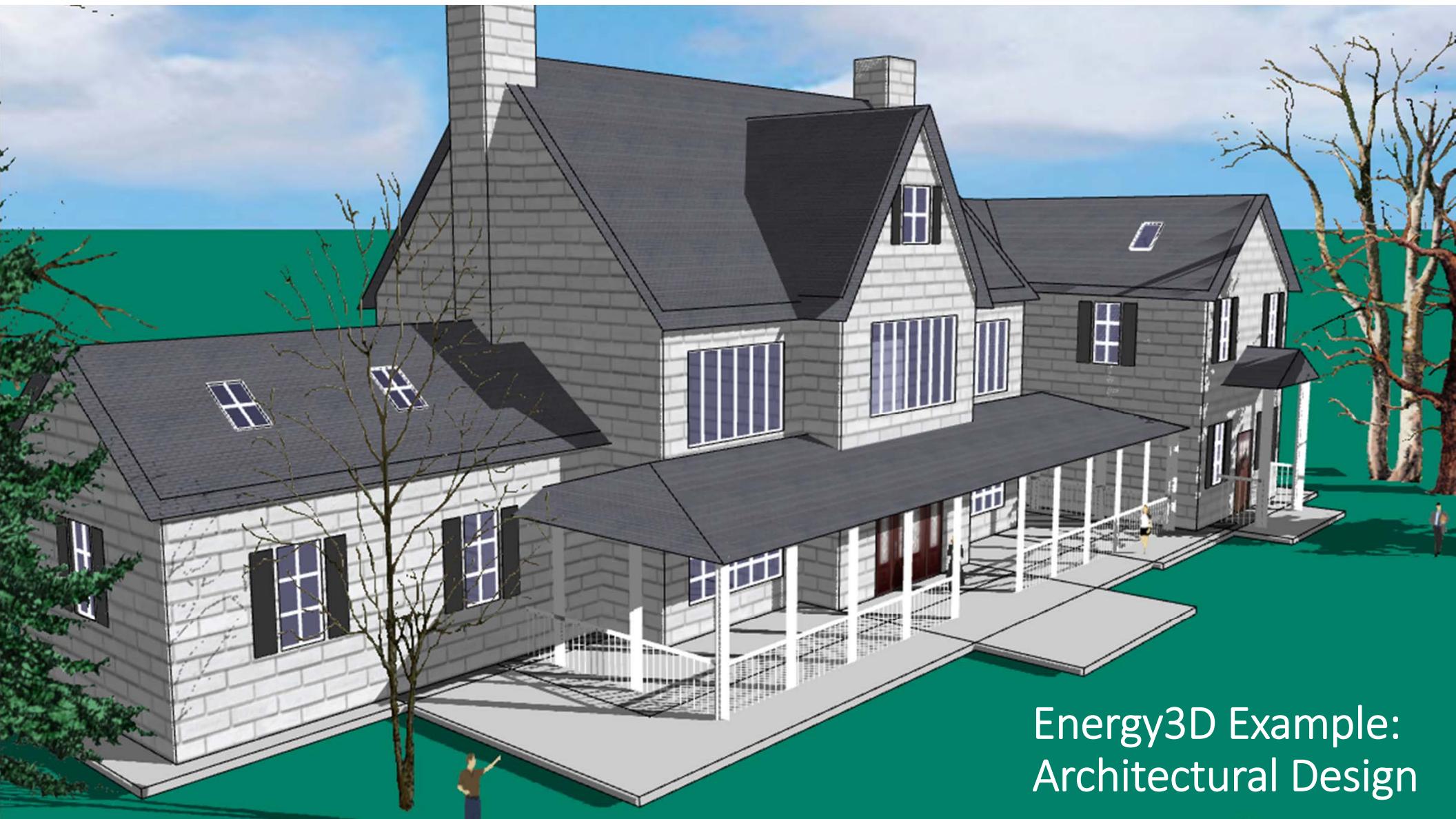
- Cognitive augmentation
- Creativity enhancement
- Automatic assessment
- ...



The background image shows a vast desert landscape with several large-scale solar power plants. In the foreground, there's a massive circular solar array with many small panels arranged in concentric circles around a central tower. Behind it, another rectangular solar farm is visible. The terrain is arid and light-colored, with distant mountain ranges under a clear blue sky.

# The Energy3D Platform

## A CAD System for Building and Energy Engineering



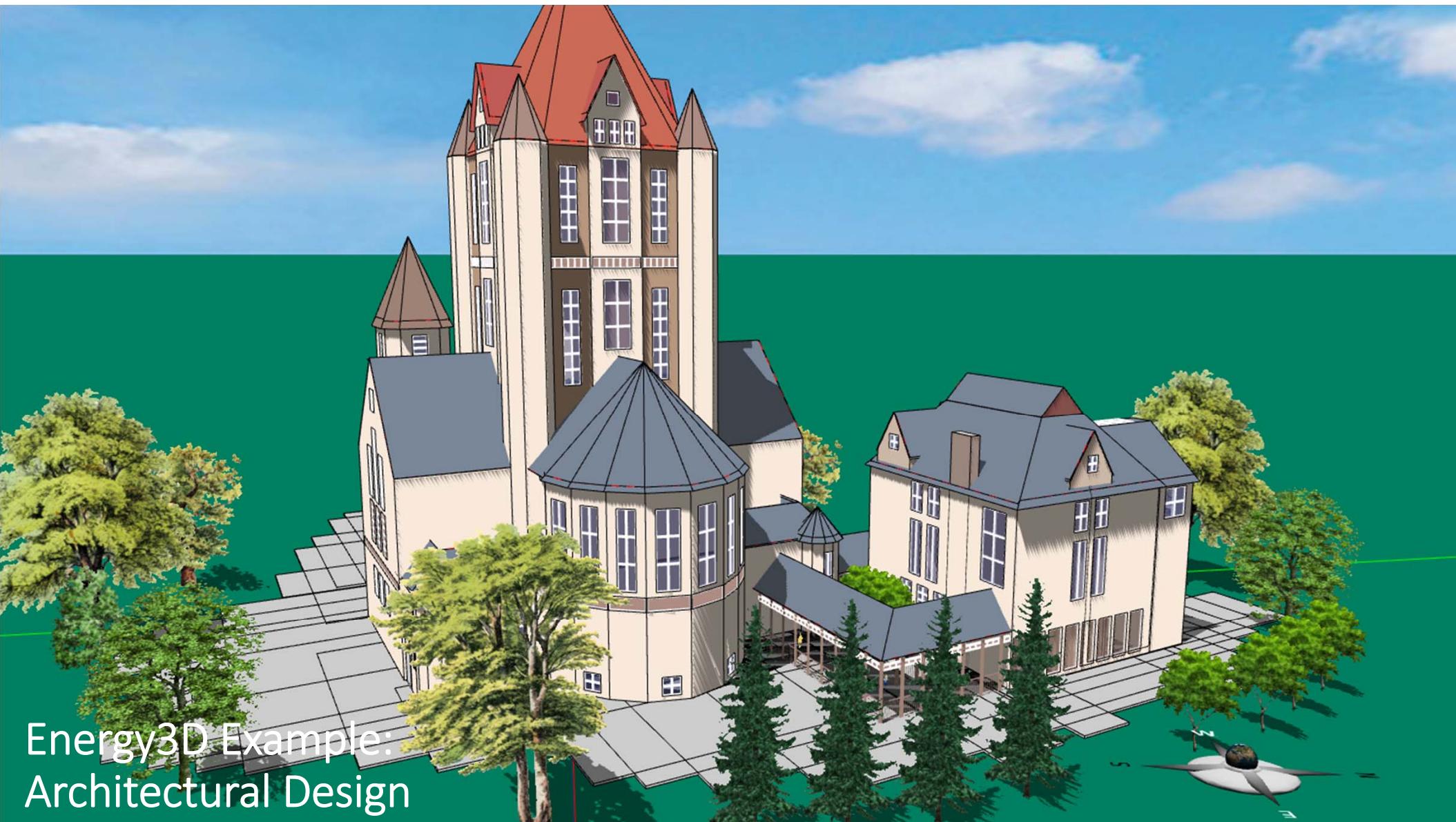
Energy3D Example:  
Architectural Design



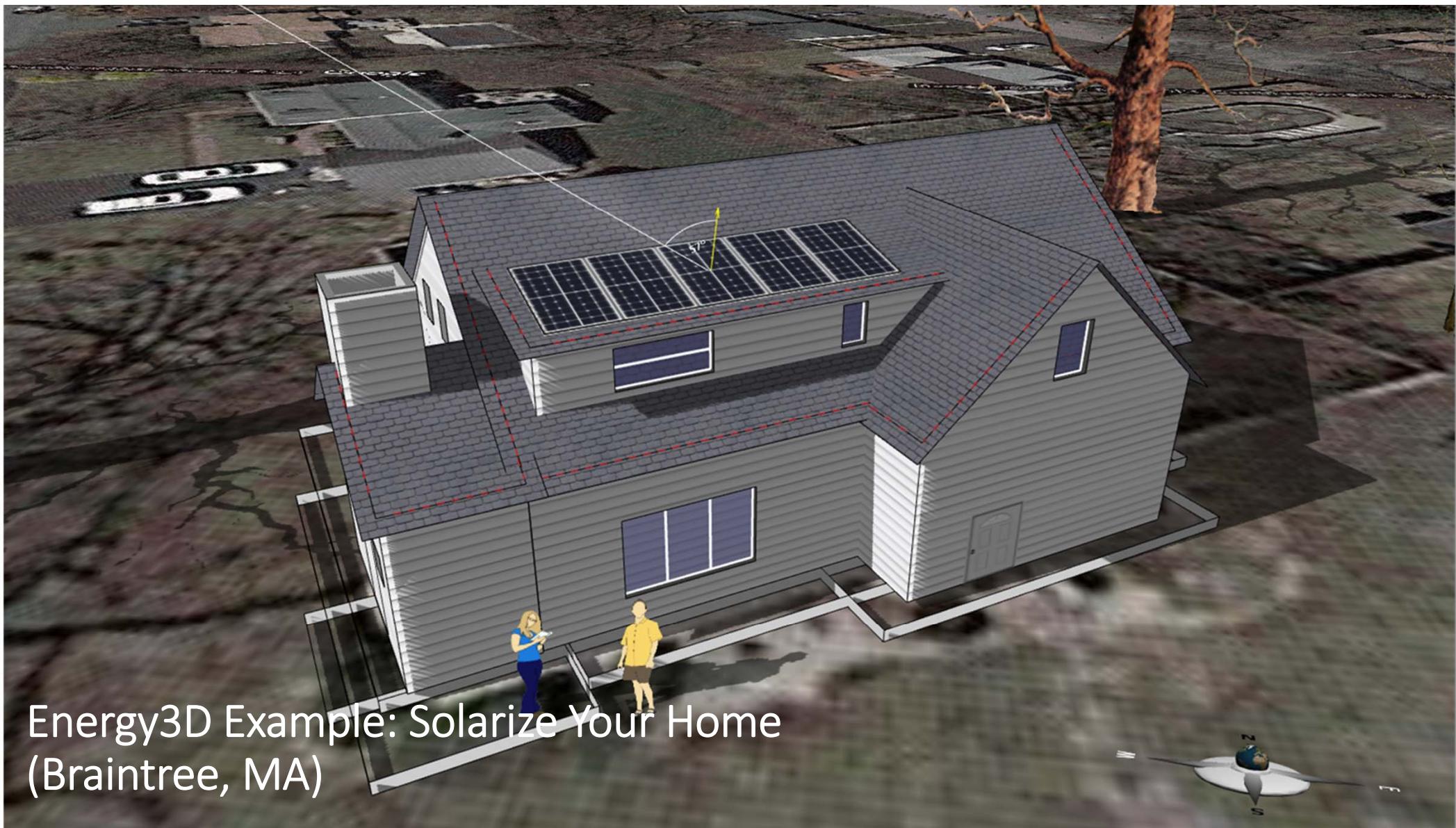
Energy3D Example:  
Architectural Design



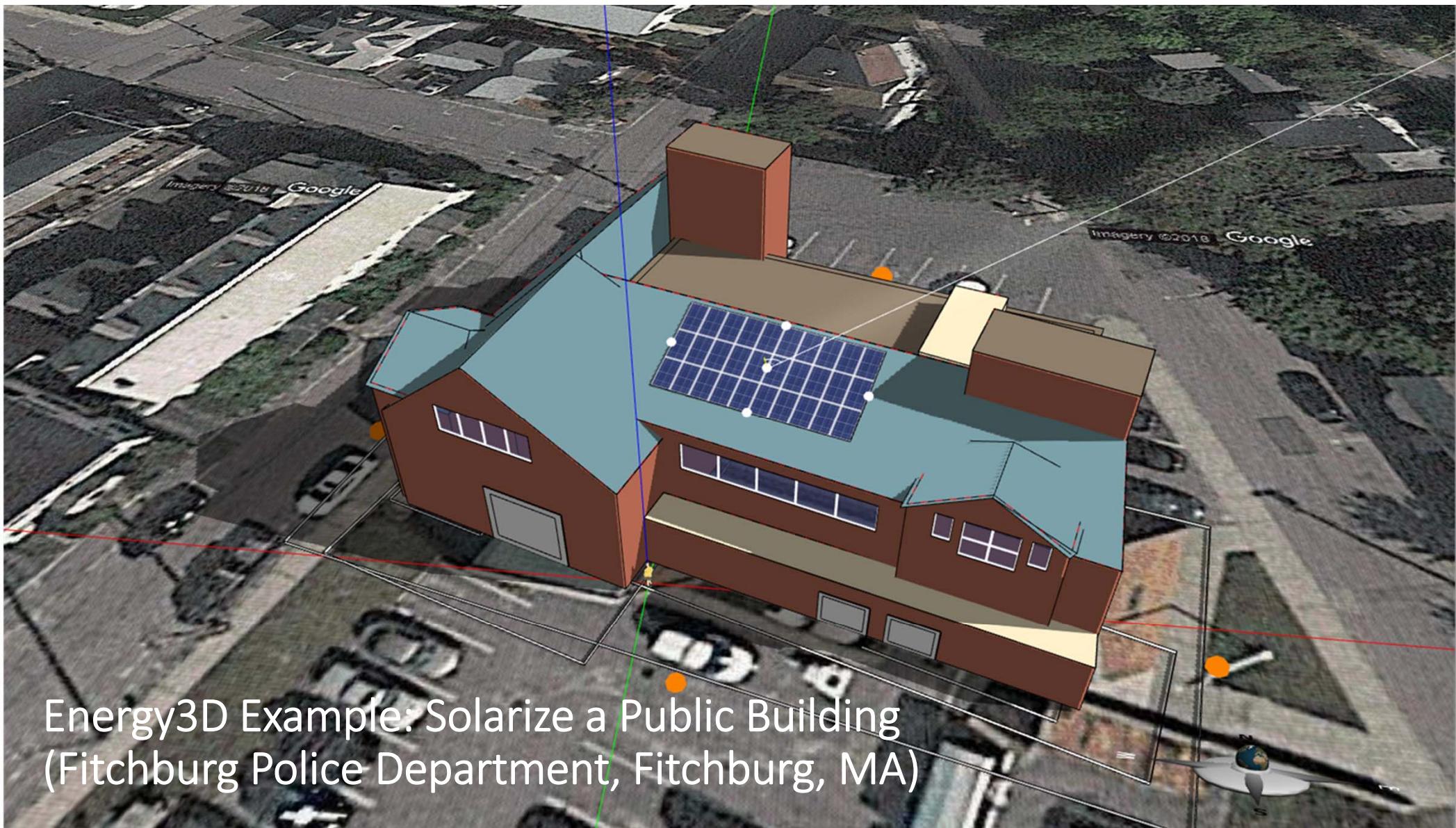
Energy3D Example:  
Architectural Design



Energy3D Example:  
Architectural Design



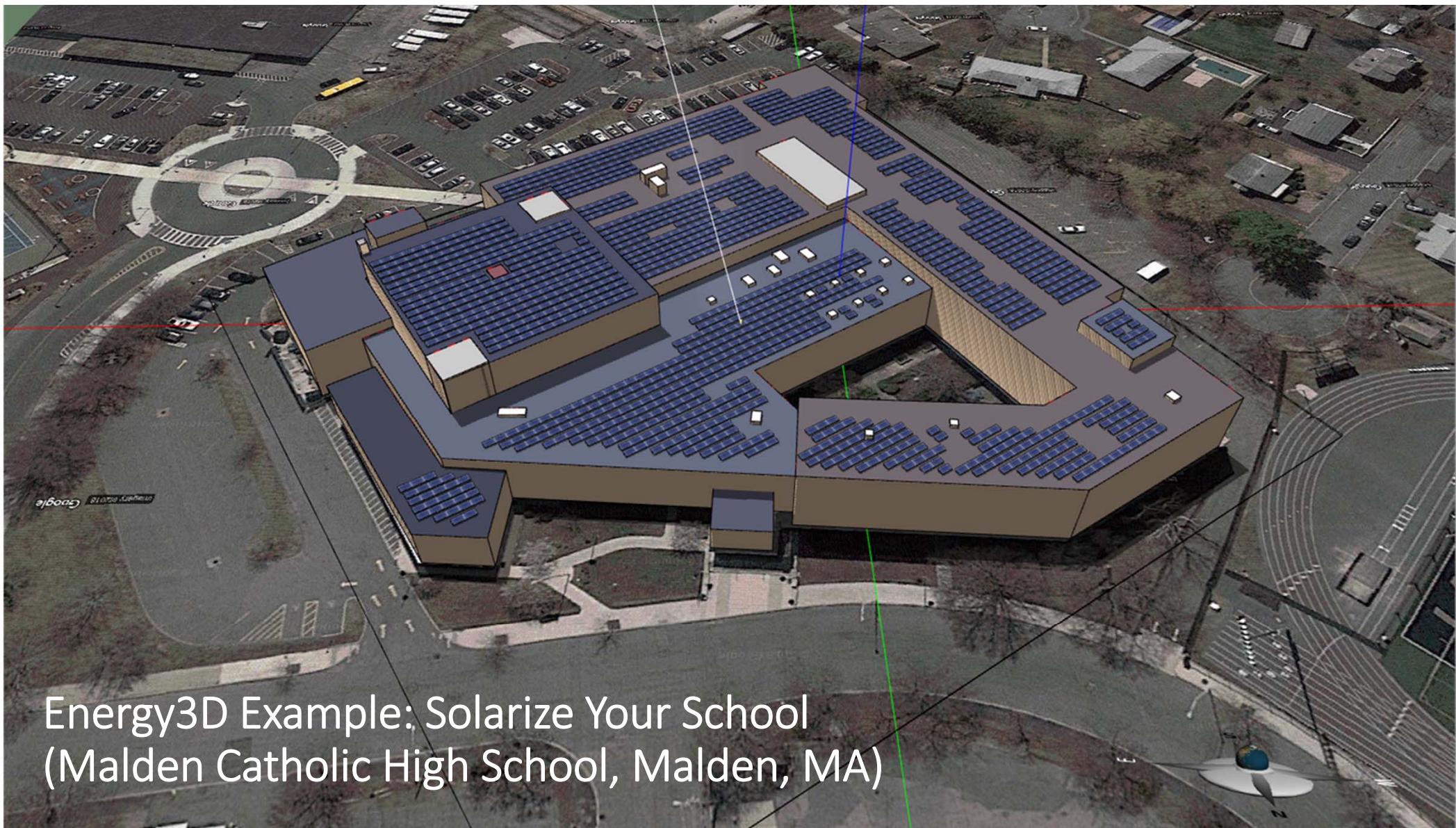
Energy3D Example: Solarize Your Home  
(Braintree, MA)



Energy3D Example: Solarize a Public Building  
(Fitchburg Police Department, Fitchburg, MA)



Energy3D Example: Solarize a Parking Garage  
(Spelman College, Atlanta, GA)



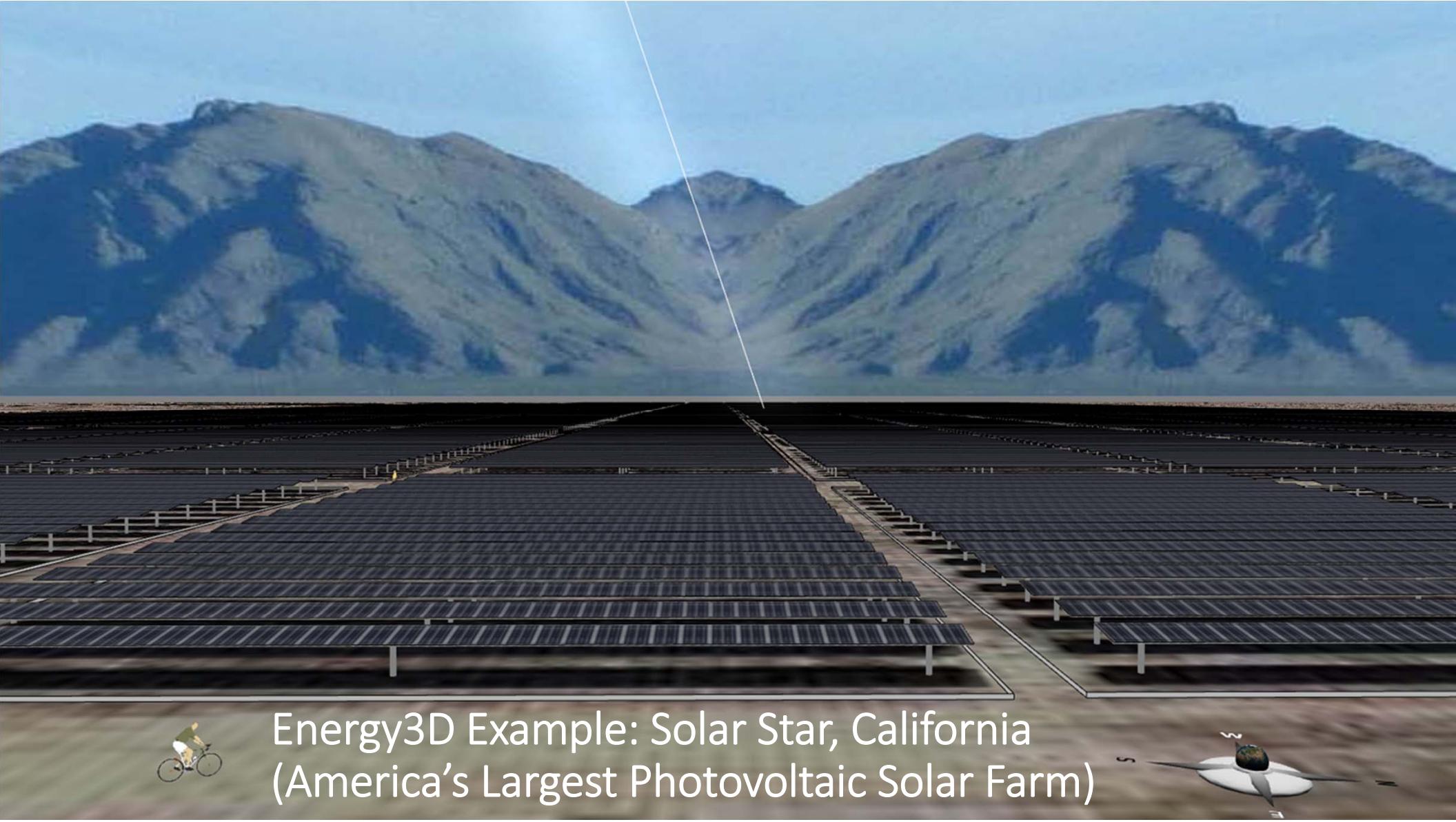
Energy3D Example: Solarize Your School  
(Malden Catholic High School, Malden, MA)



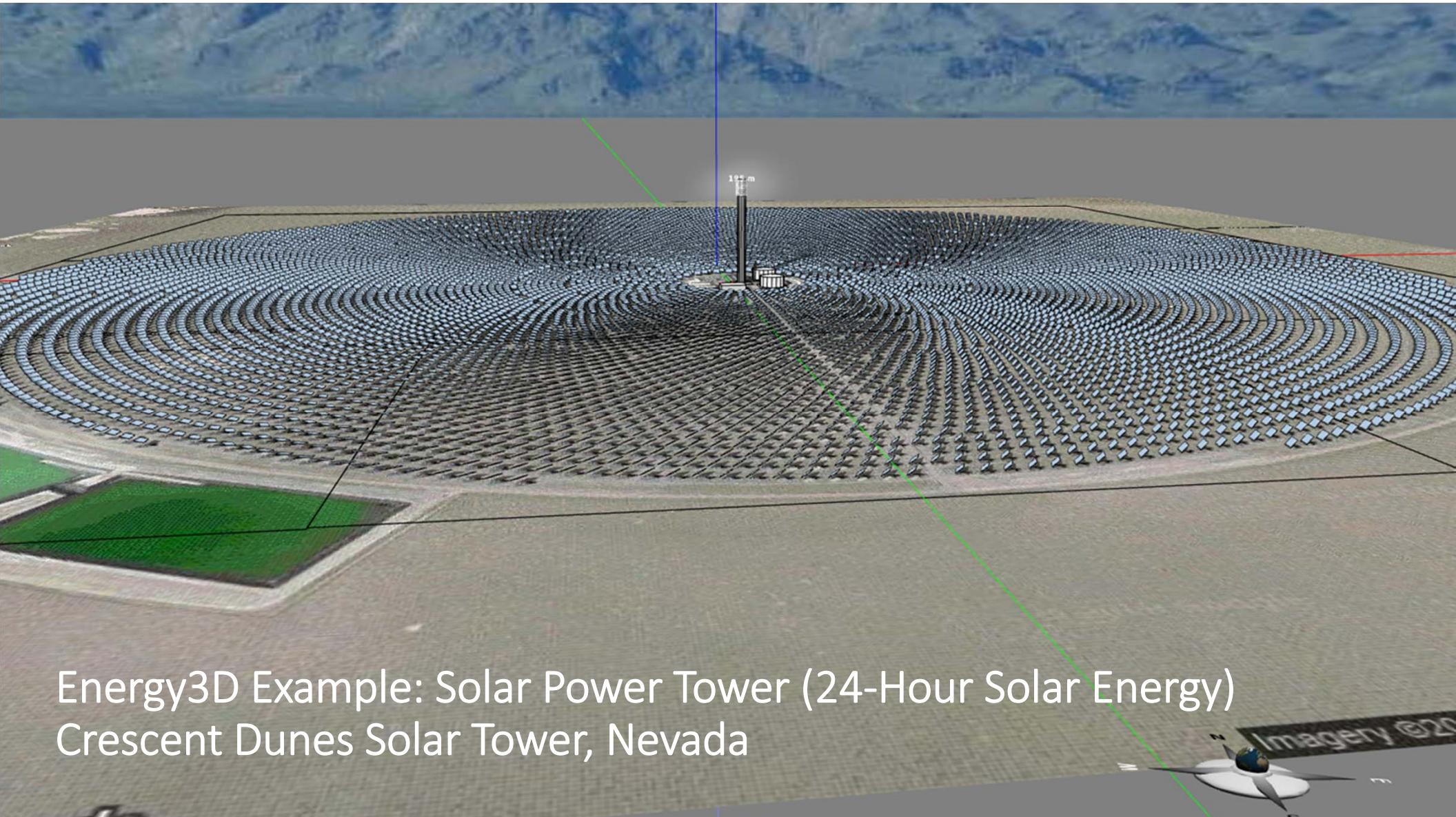
Energy3D Example: Solarize Your Stores  
(Natick Mall, Natick, MA)



Energy3D Example: Advertisement-Integrated Photovoltaics  
(Orlando, FL)



Energy3D Example: Solar Star, California  
(America's Largest Photovoltaic Solar Farm)



Energy3D Example: Solar Power Tower (24-Hour Solar Energy)  
Crescent Dunes Solar Tower, Nevada



Energy3D Example: Parabolic Troughs  
Solar Energy Generating Systems VIII, California

# Energy3D Example: Linear Fresnel Reflectors

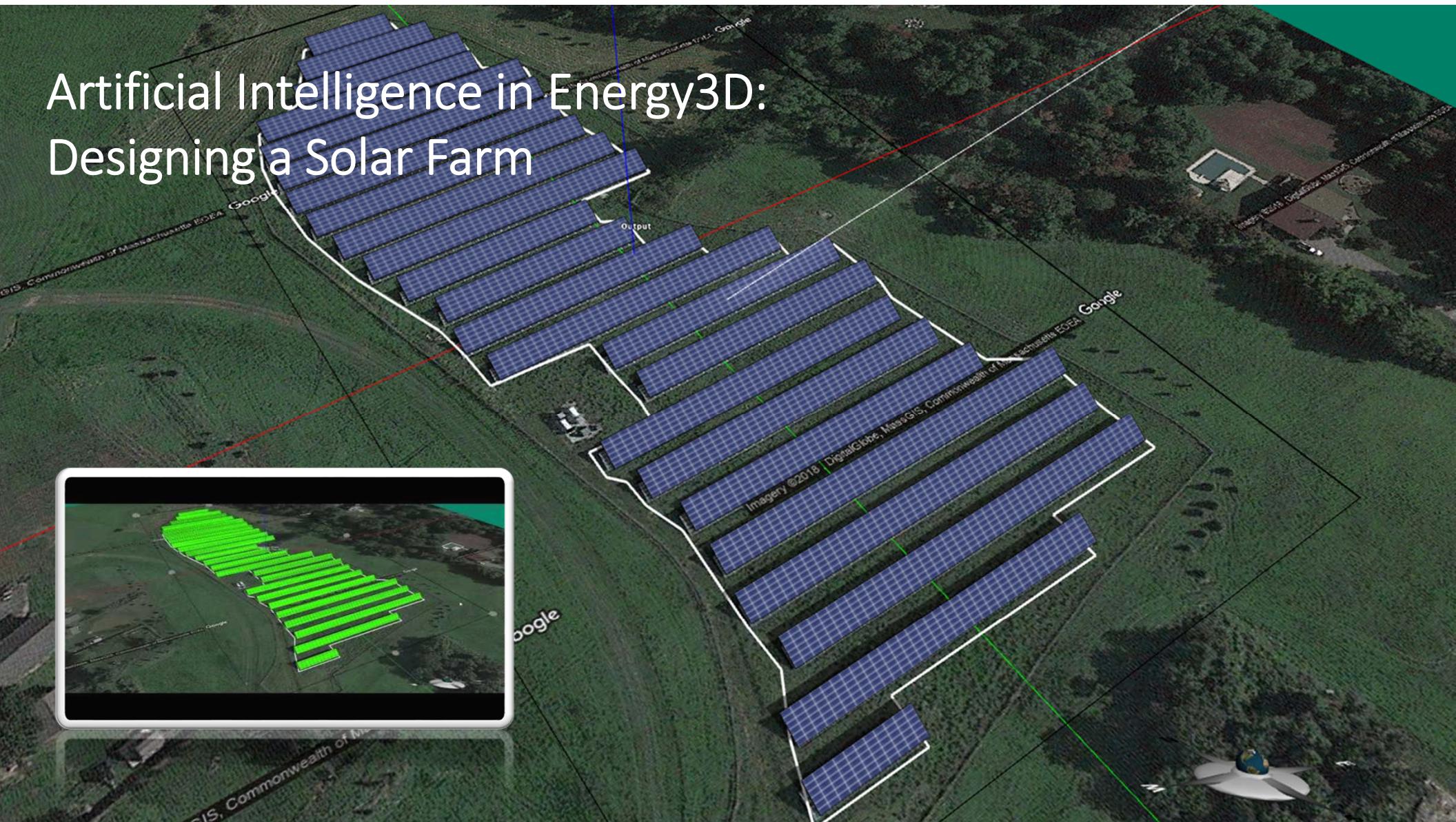
## Puerto Errado Thermosolar Power Plant, Spain





Energy3D Example: Parabolic Dish Arrays  
Tooele Army Depot, Utah

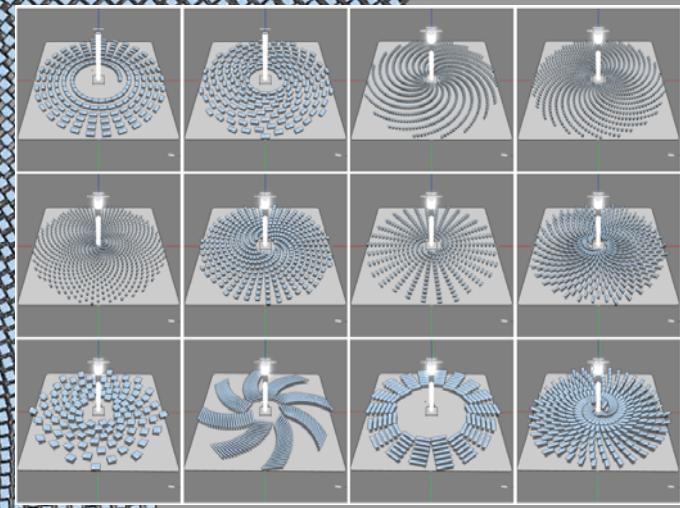
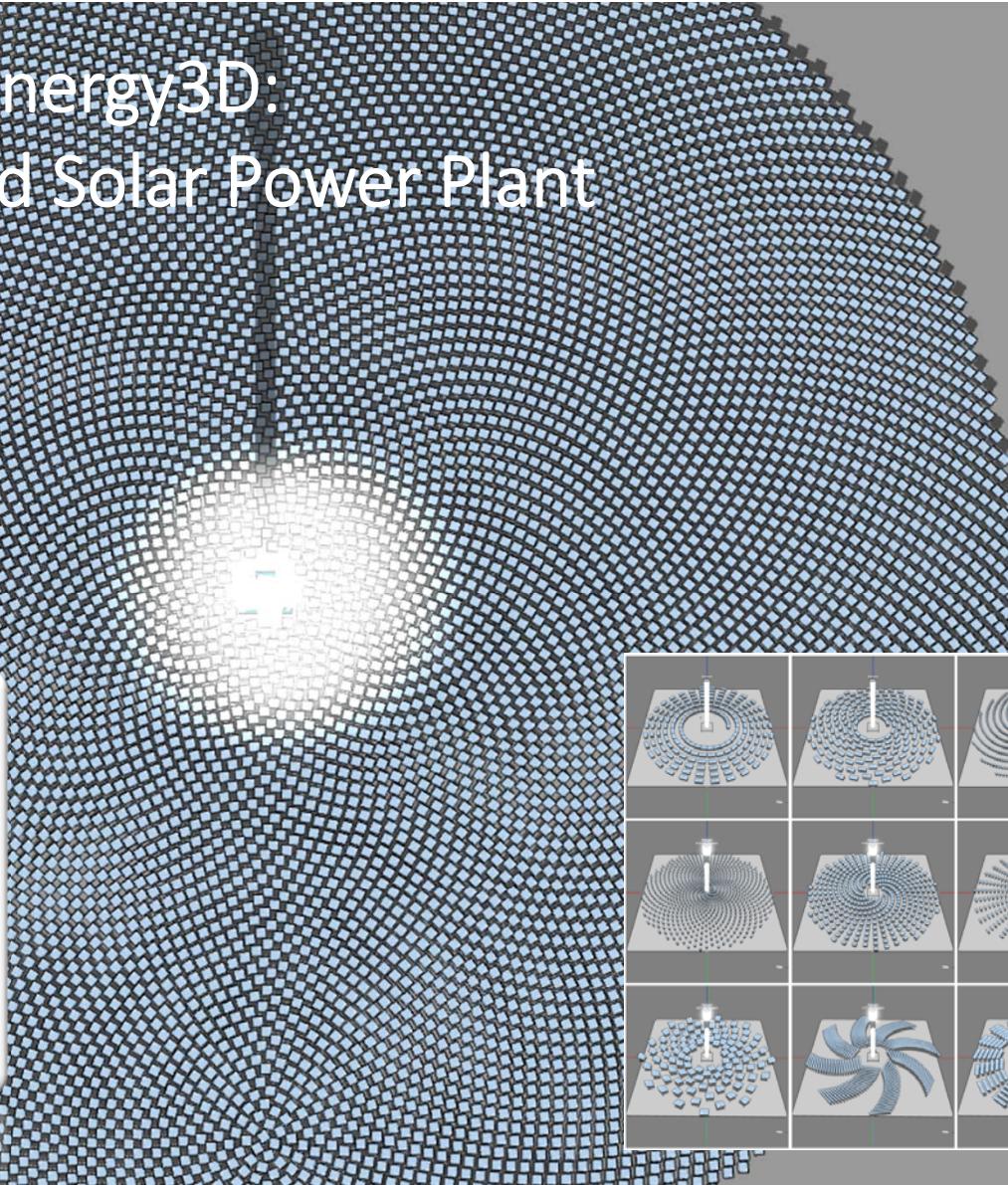
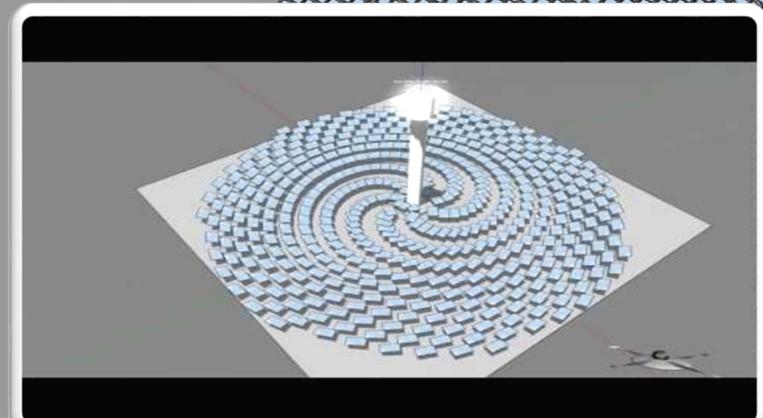
# Artificial Intelligence in Energy3D: Designing a Solar Farm

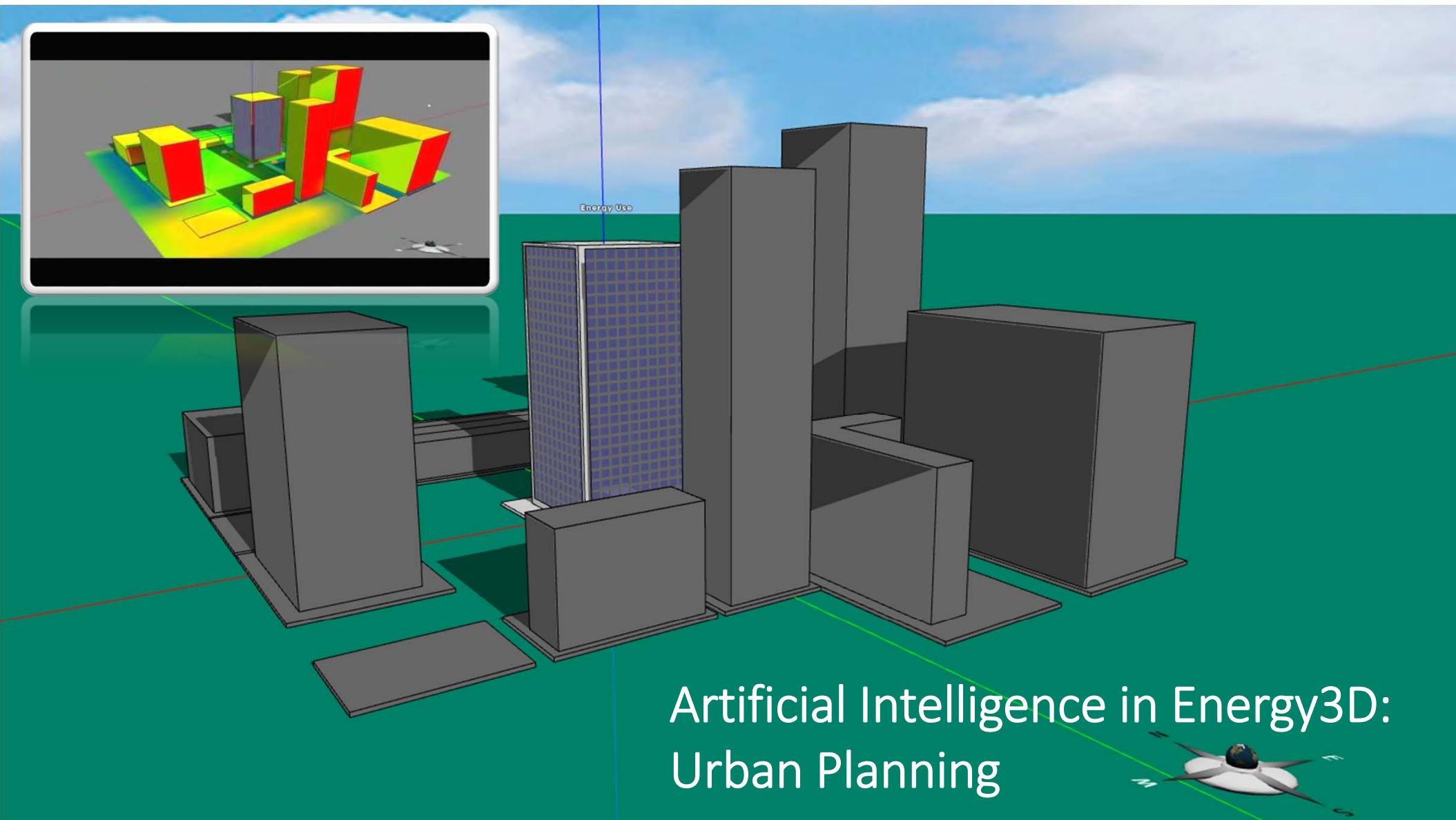


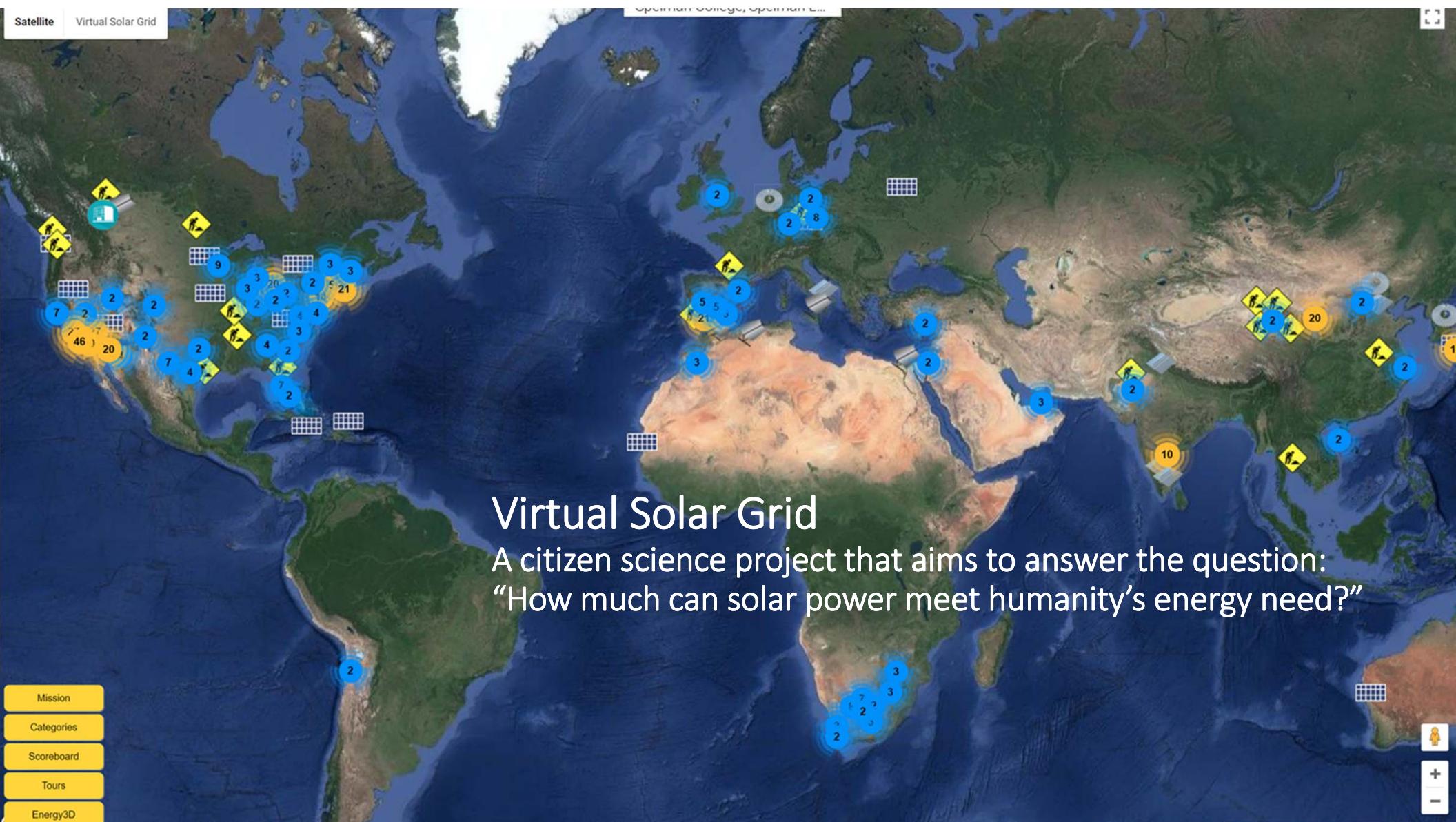
# Artificial Intelligence in Energy3D: Designing a Concentrated Solar Power Plant

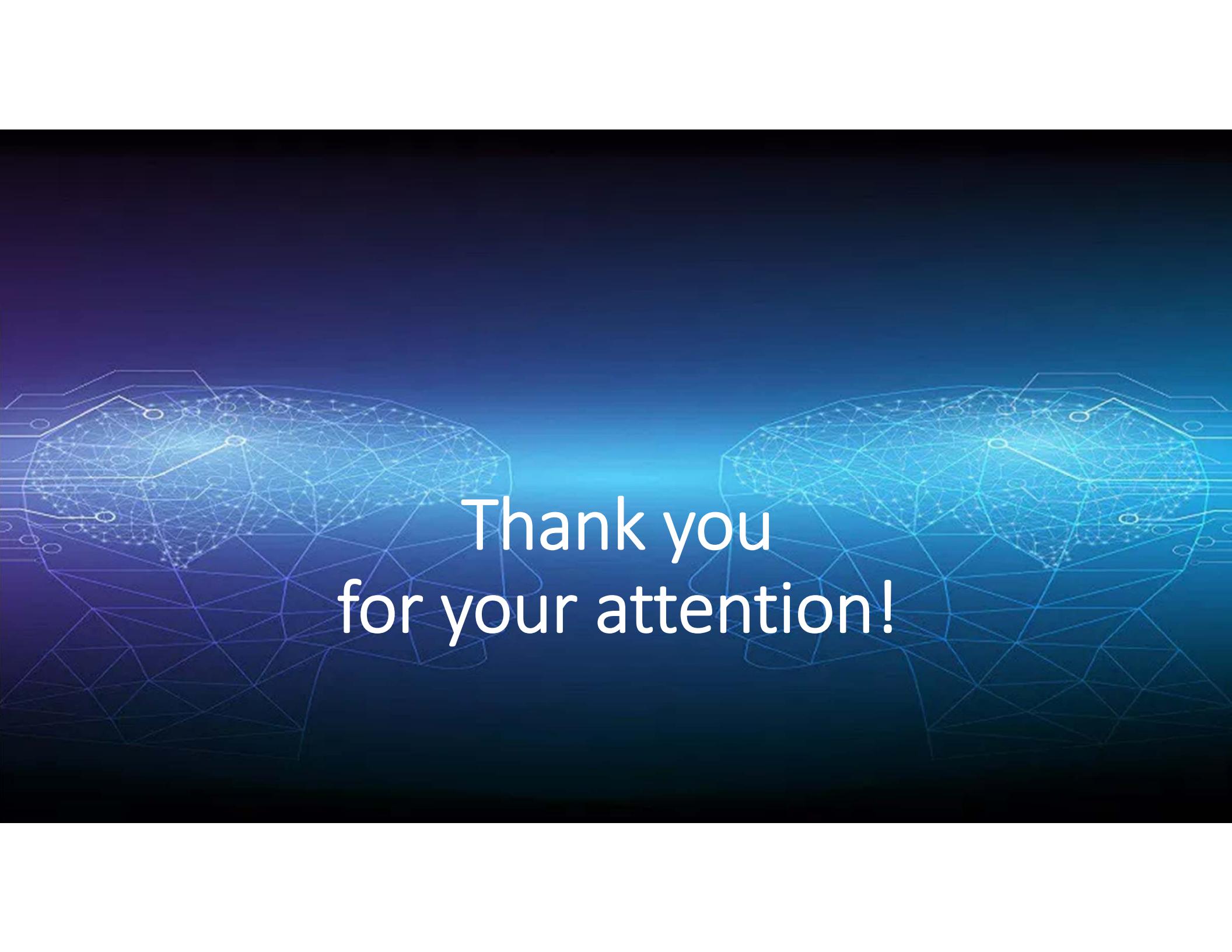
$$r = b\sqrt{n}$$

$$\theta = n\beta$$









Thank you  
for your attention!