

VIC3D

IMMERSIVE PLANNING THE FUTURE OF
VICTORIA IN 3D

ESRI DEVELOPER SUMMIT 2021

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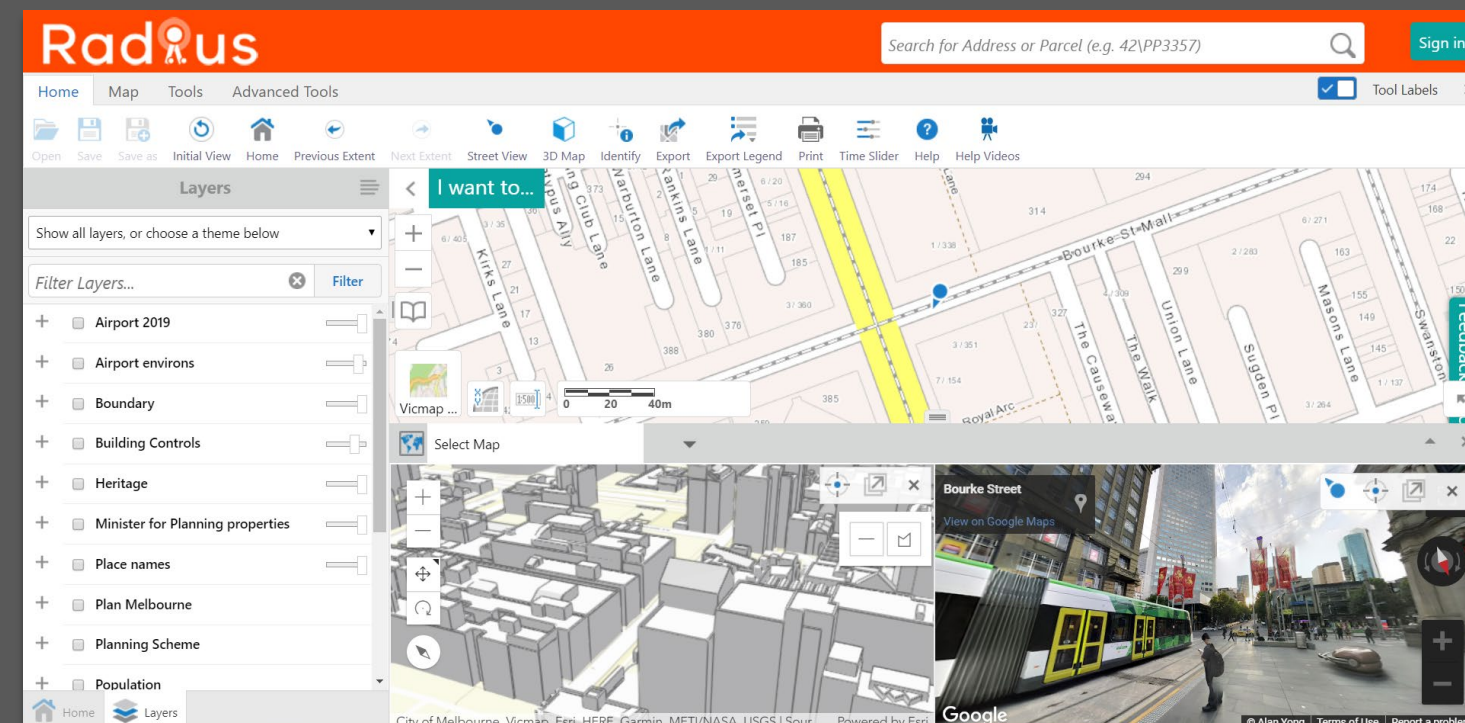
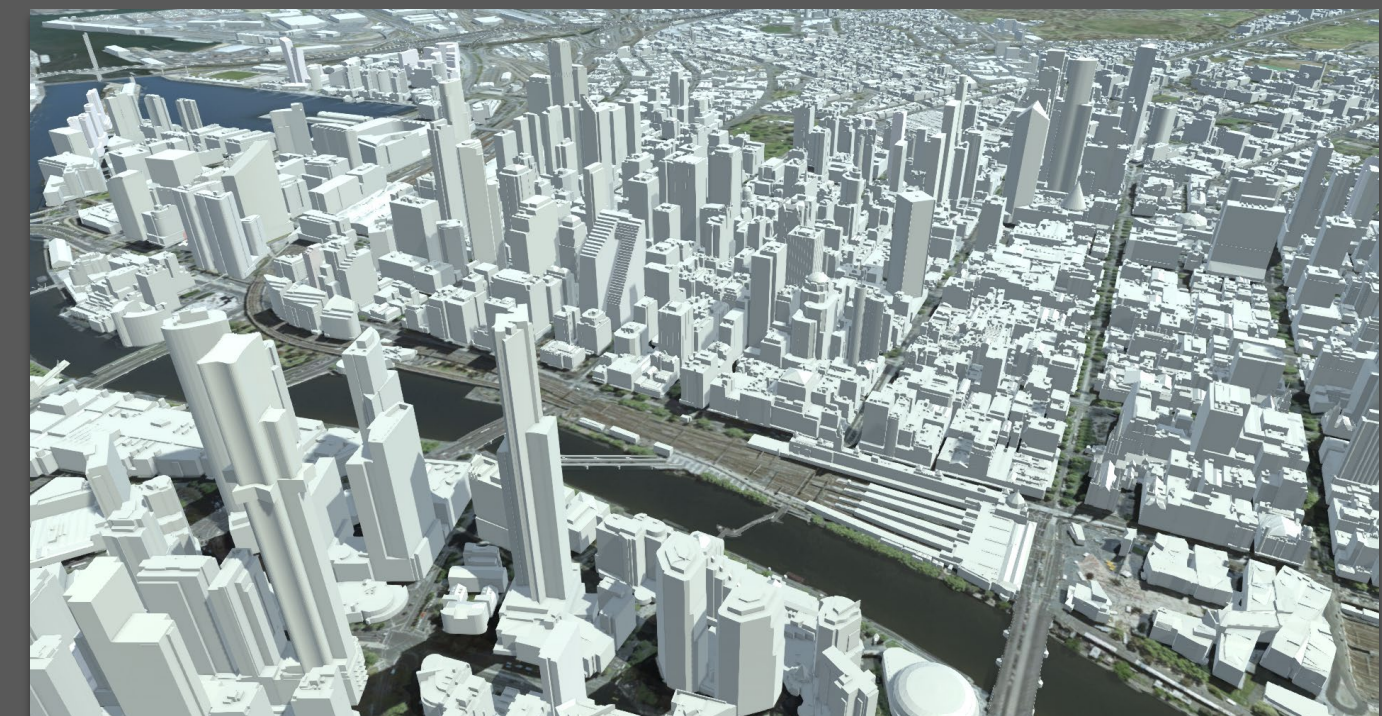
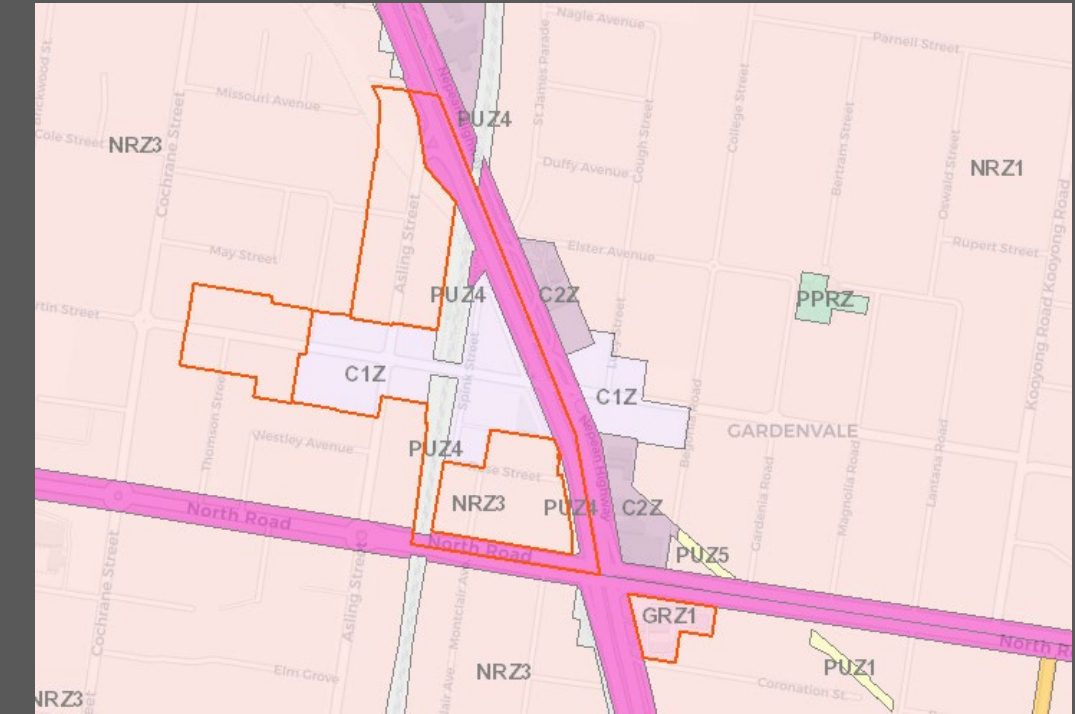
INTRODUCTION

What are the Planning Group Spatial Services team responsible for?

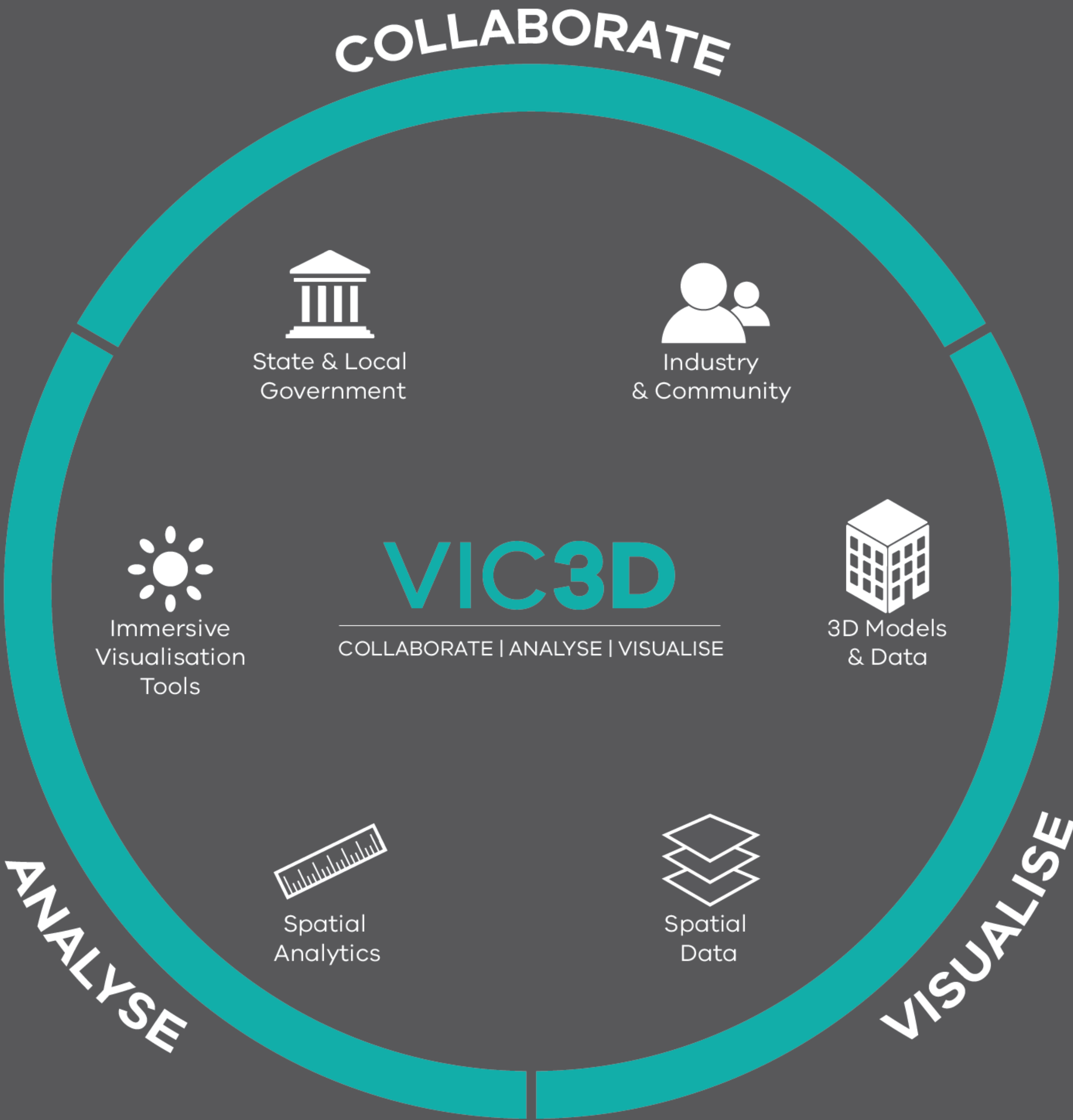
- Manage the Victorian Planning Scheme
- Provide the Minister with the ability to visualise development activity across the state
- Deliver advanced spatial analysis to the Planning Group

What is the current state of spatial in Planning?

- Comprehensive ArcGIS Implementation
- Bespoke disconnected 3D Solution
- Passionate team of Spatial Developers and Analysts
- Engaged stakeholders and management



SOLUTION



KEY INGREDIENTS



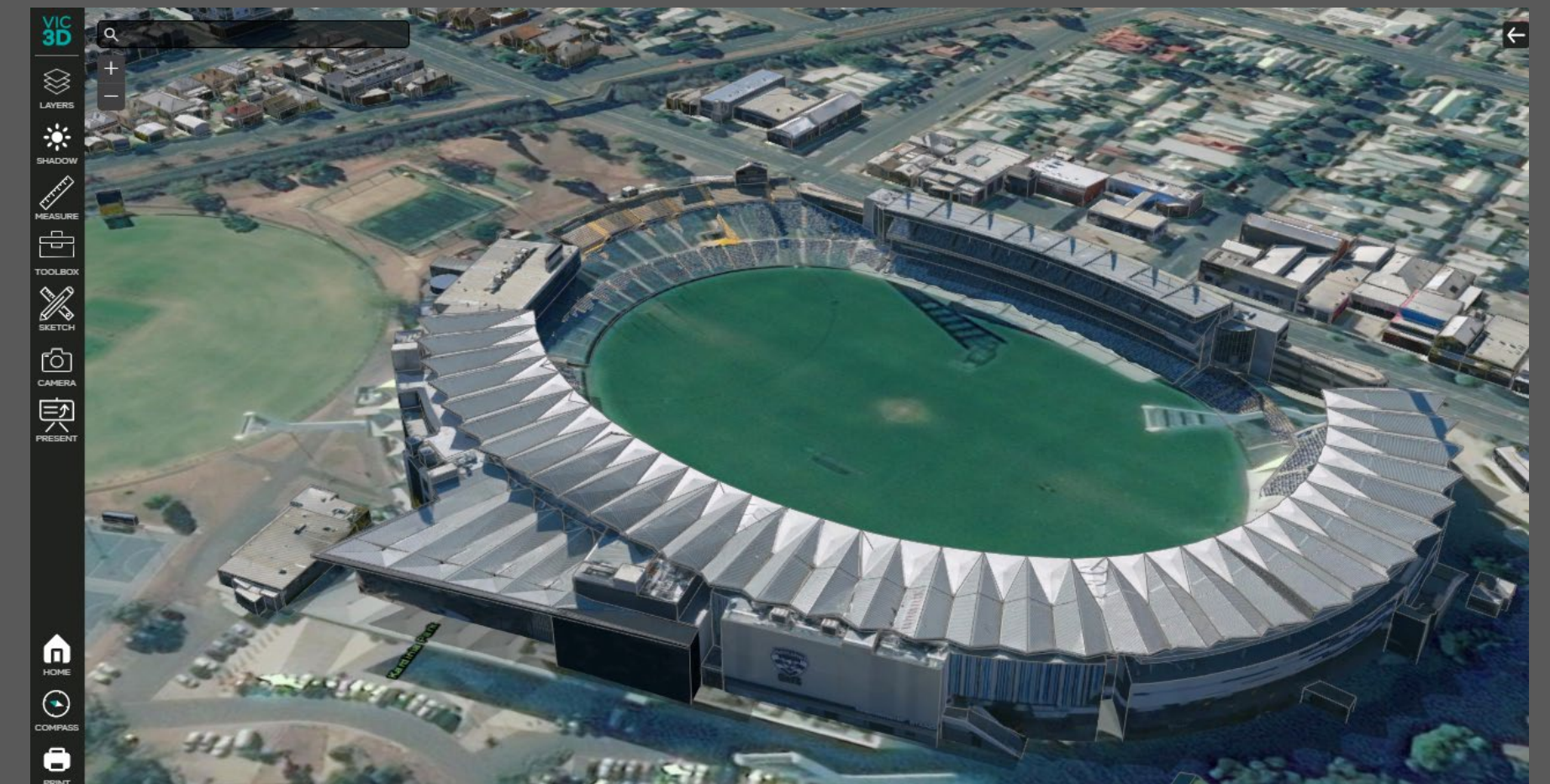
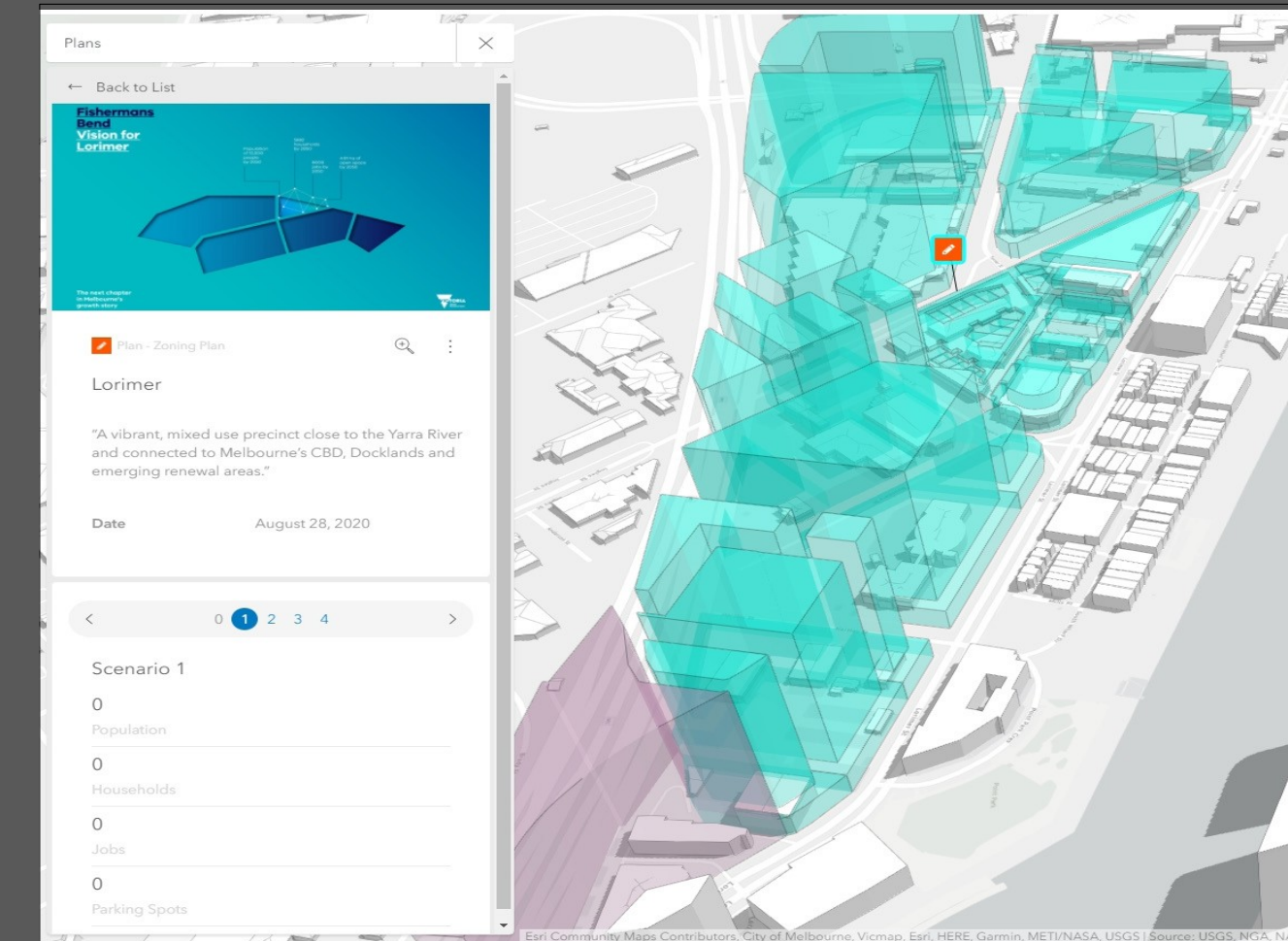
STEPS TOWARDS SUCCESS



SOLUTION OVERVIEW

Based on our analysis we settled on the following technology stack

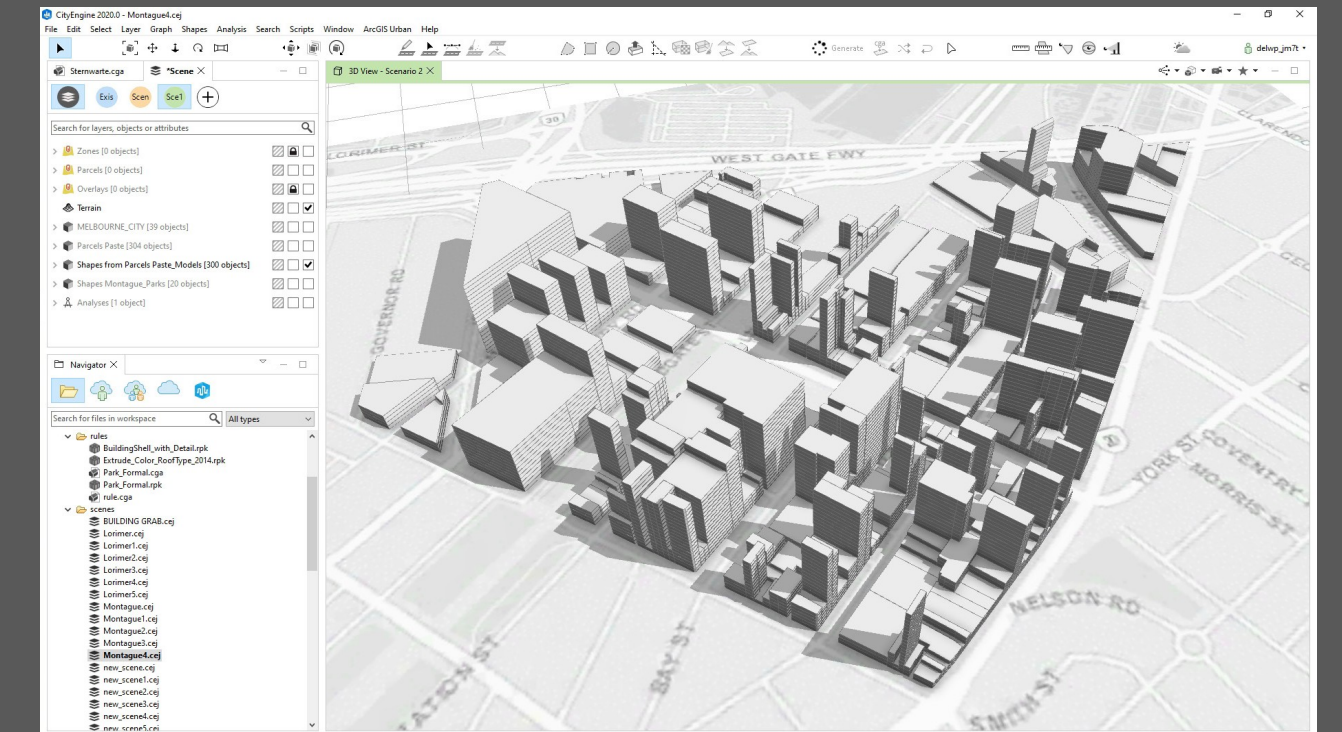
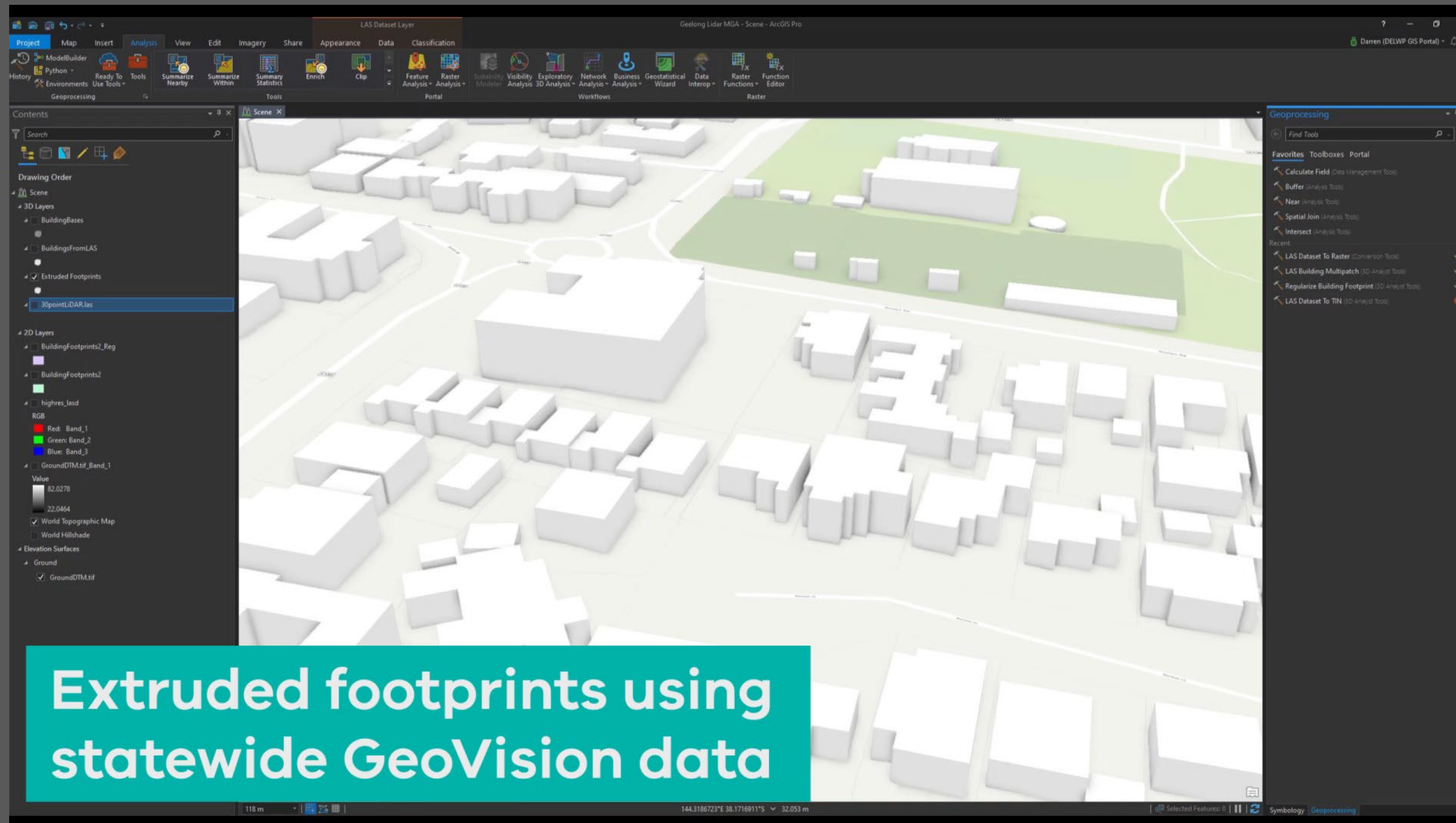
- ArcGIS API for JavaScript
- ArcGIS Pro
- ArcGIS Solutions
- CityEngine
- ArcGIS Urban
- Unreal Engine
- FME and Python



DATA

Building a state-wide 3D dataset and publishing development models

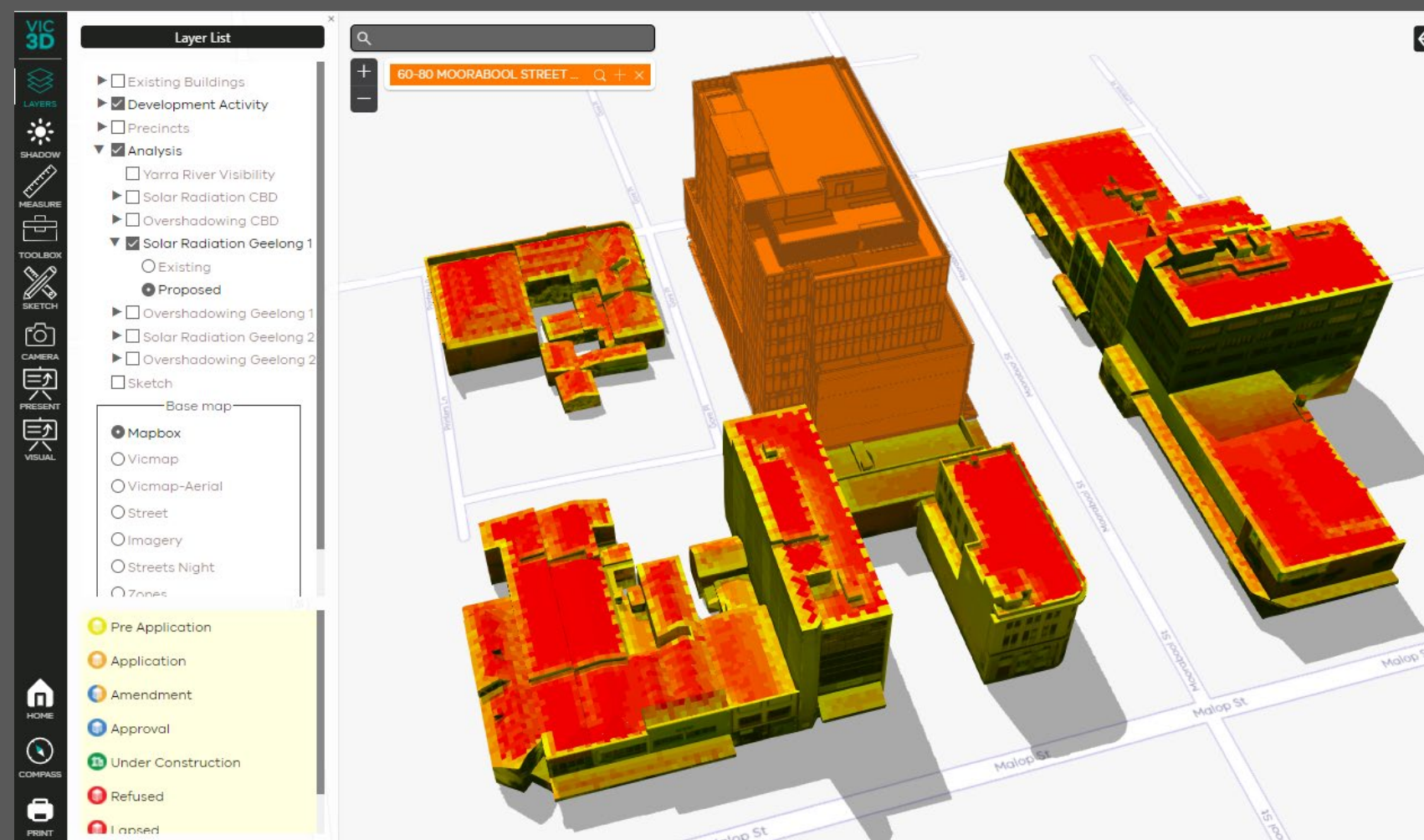
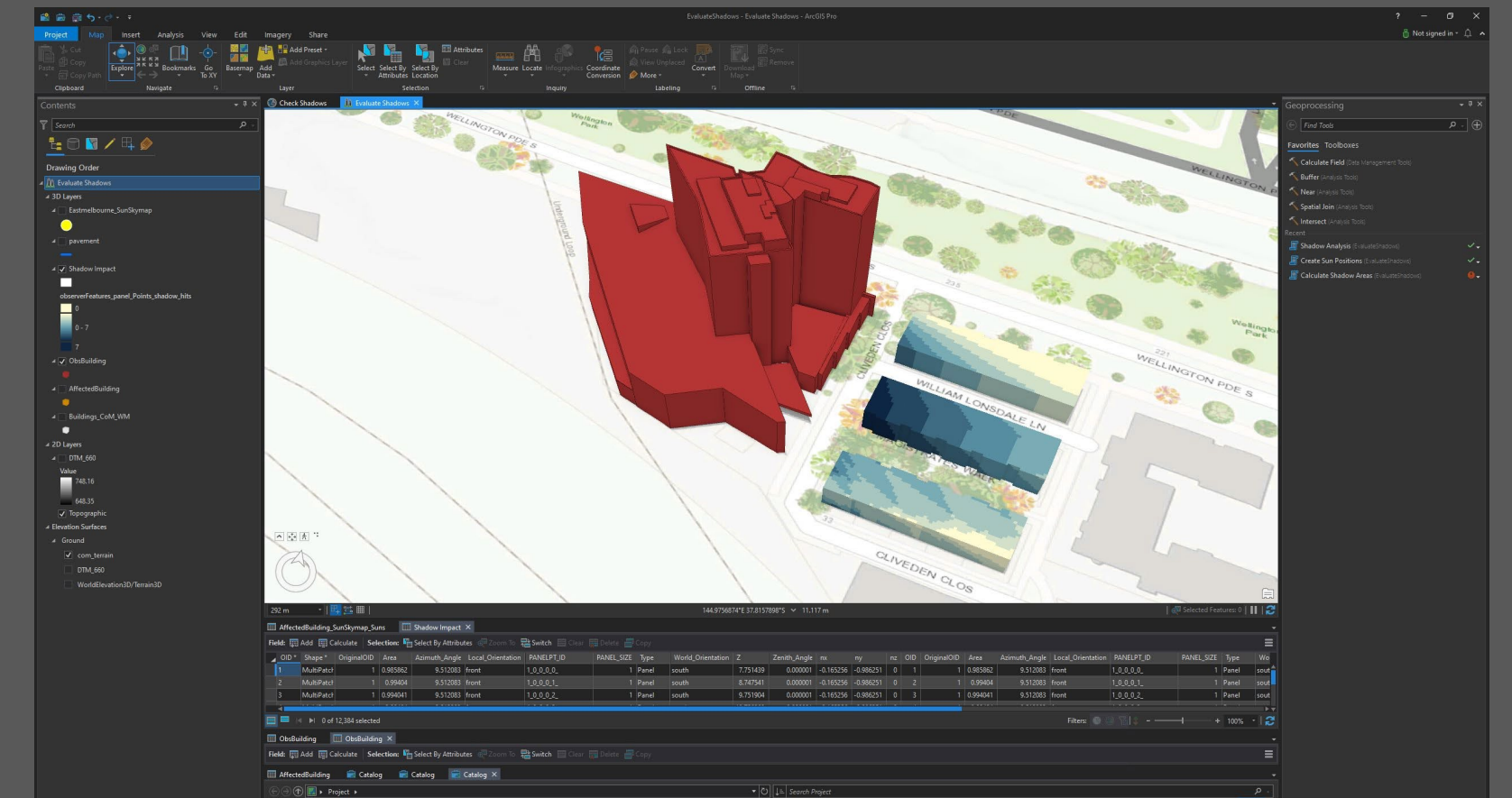
- Identify datasets that are available and determine the gaps
- Design appropriate data schemas and structure
- Automated management and publication of data
- Collaboration and data sharing is important



ARCGIS SOLUTIONS FOR GOVERNMENT

Taking advantage of the great range of tools available

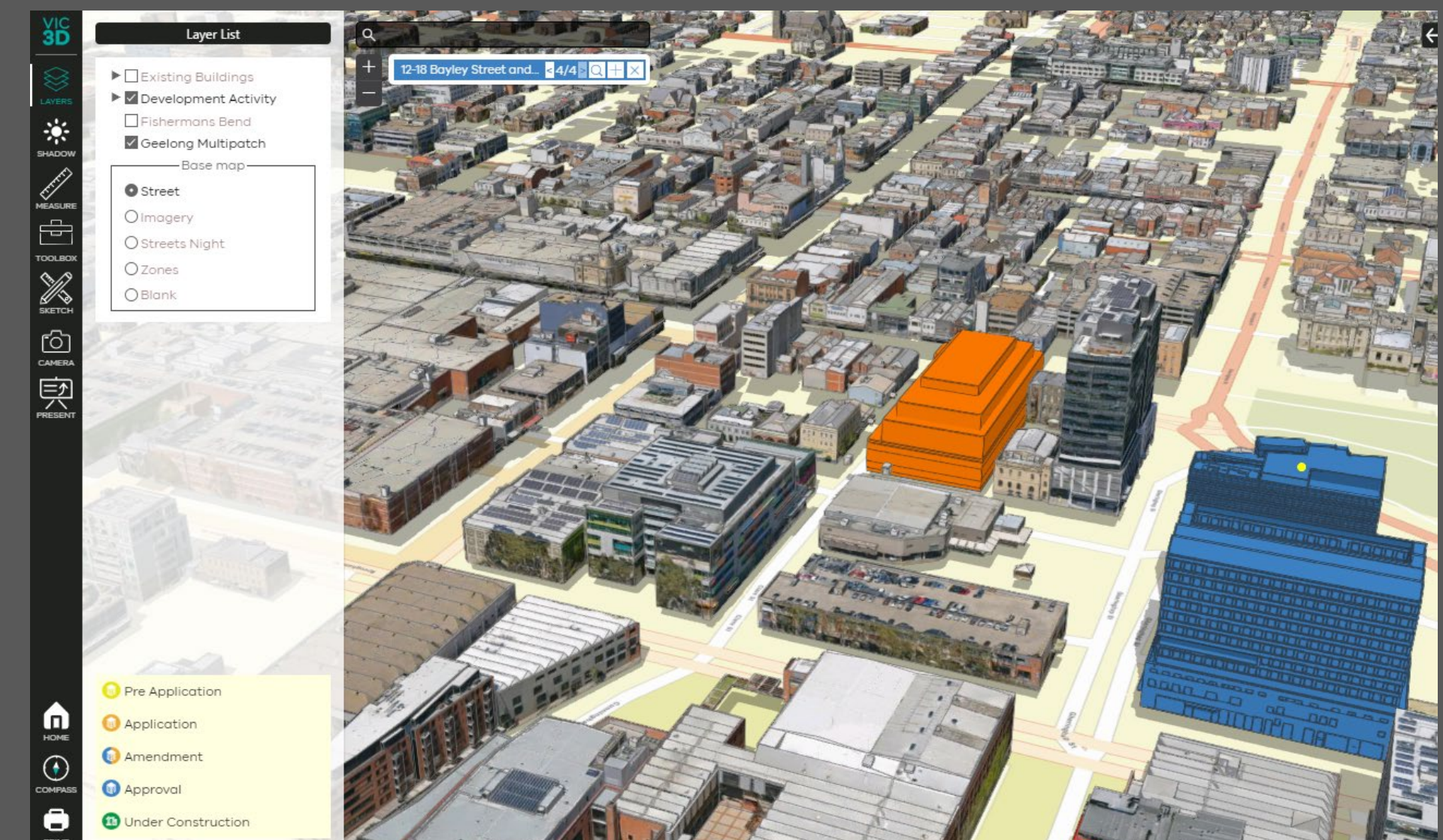
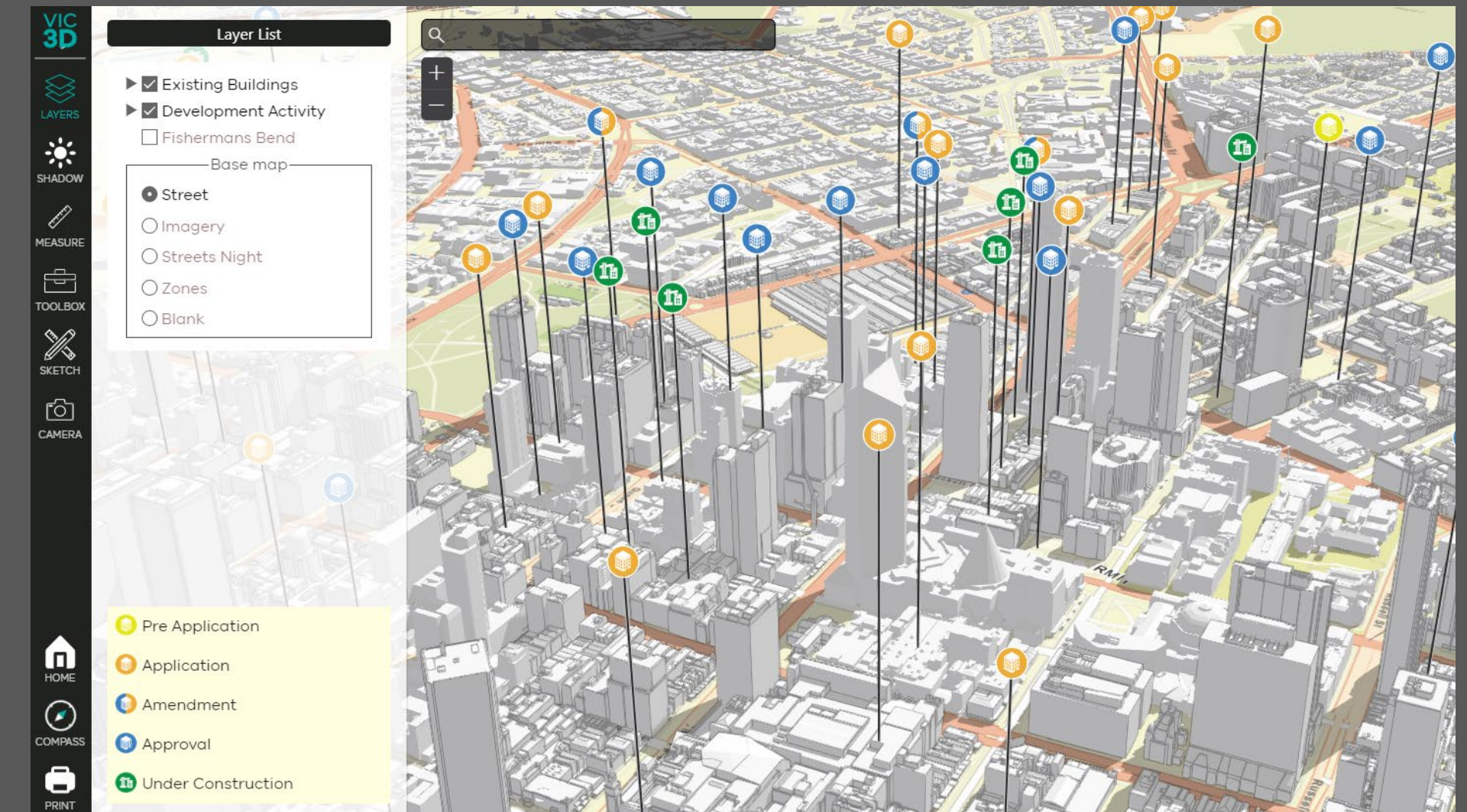
- A collection of maps and apps used to assess the physical impact of each new development on existing community
- 3D Basemaps tools provided us with the ability to utilise existing datasets we acquired to build and maintain a 3D basemap
- The Planning and Development tools offer:
 - *Evaluate Shadow Impacts*
 - *Conduct Visibility Assessment*
 - *Calculate Solar Radiation*

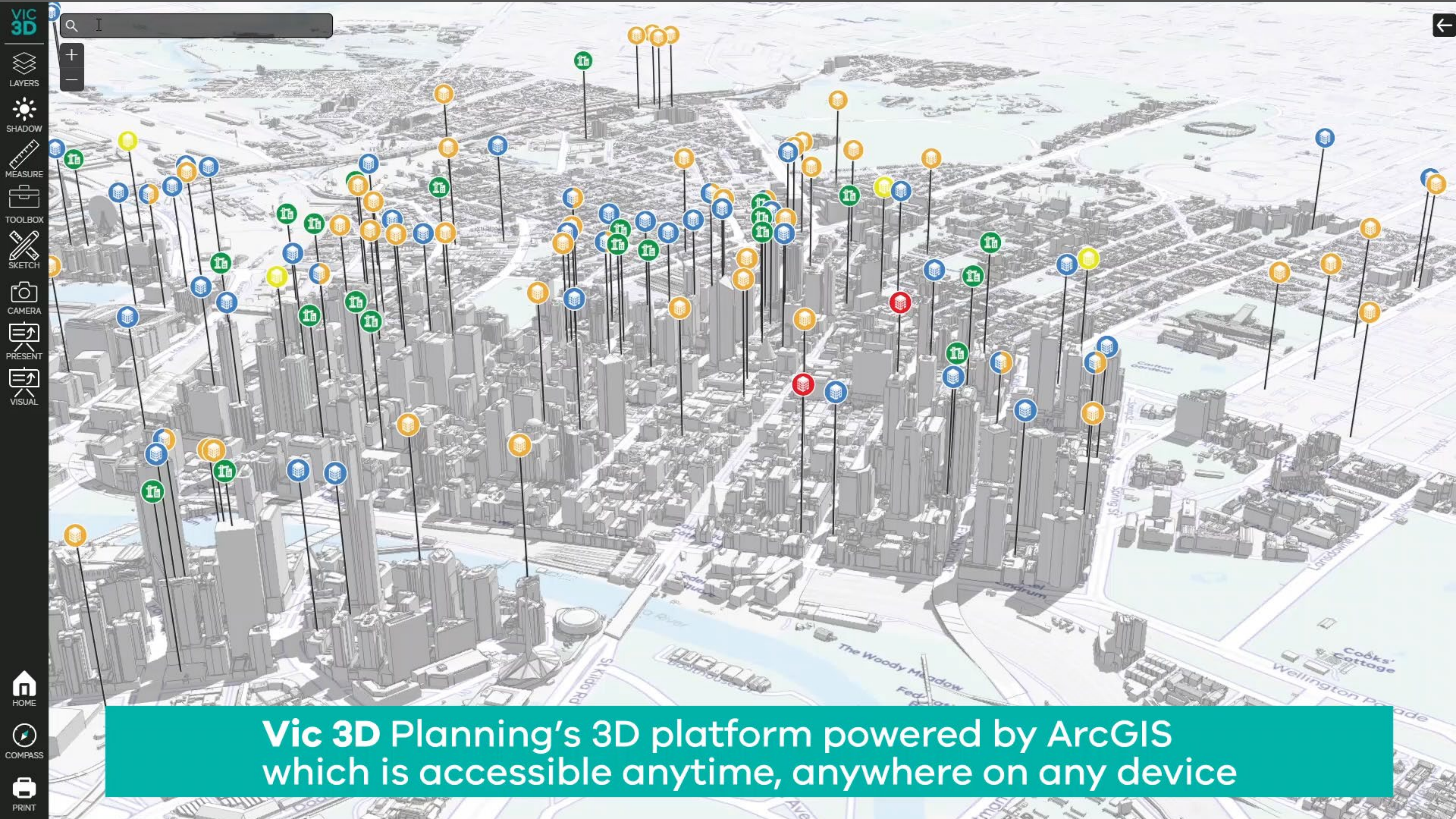


VIC3D WEB APPLICATION

Highly accessible, intuitive and responsive web based 3D application

- Visualisation of existing built form alongside development activity
- Shadow Analysis capabilities
- Measurement tools to calculate distance and area in the 3D space
- Toolbox of features to provide visual assessments on line of sight and viewshed
- Sketch feature to model potential developments without the proposed building model
- Camera tool capabilities to setup defined viewpoint and perform fly throughs



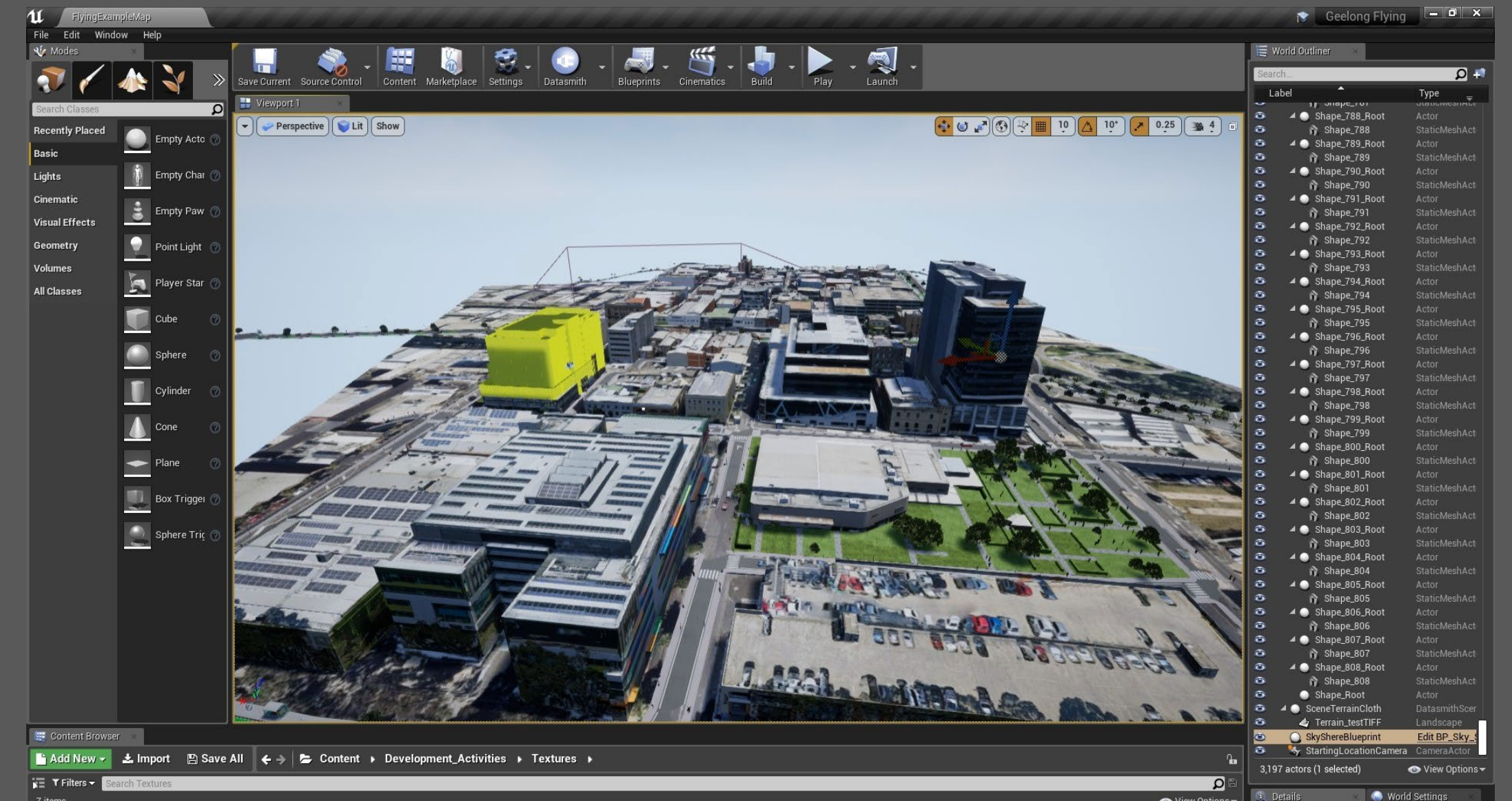
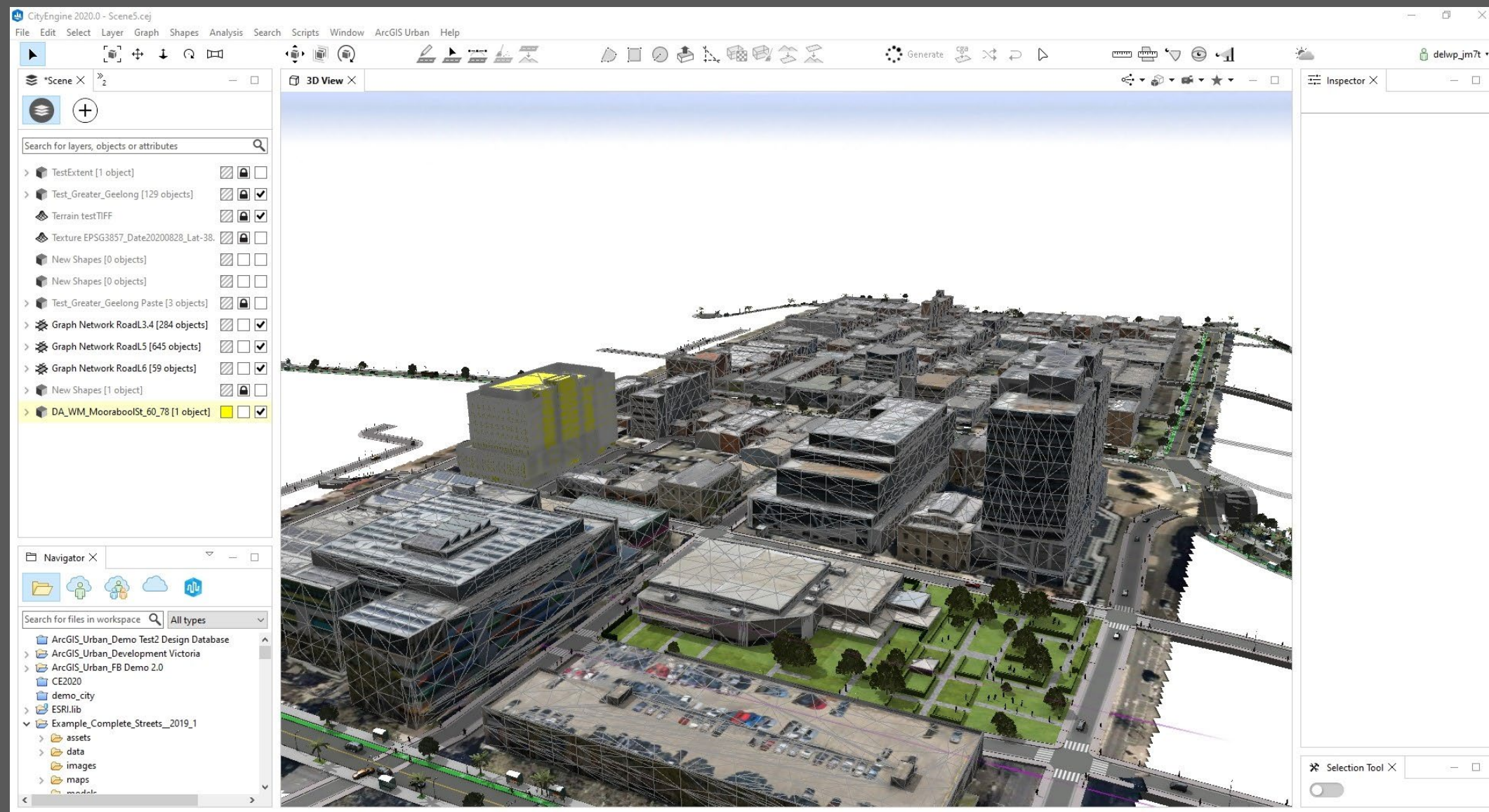


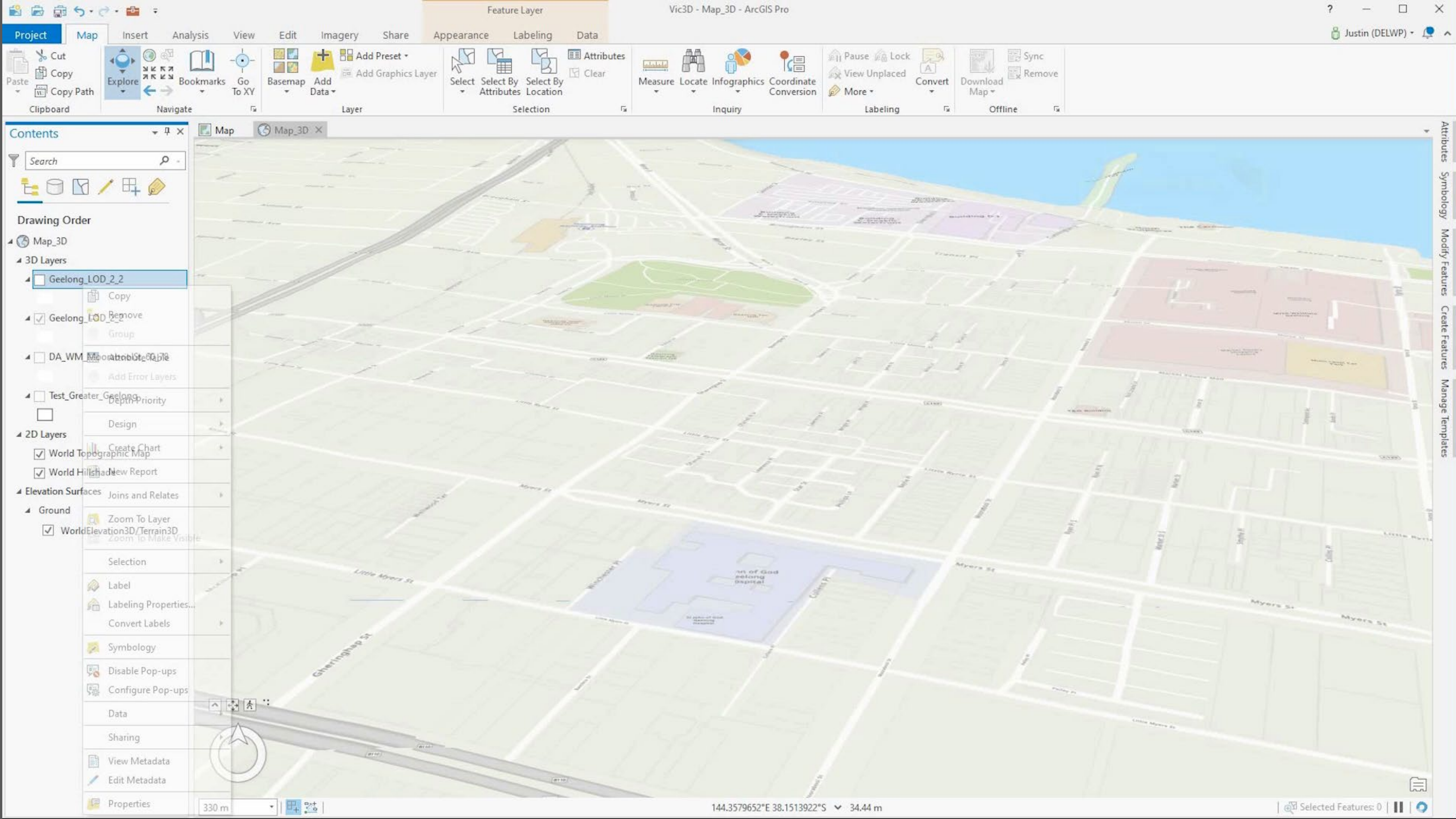
Vic 3D Planning's 3D platform powered by ArcGIS
which is accessible anytime, anywhere on any device

CITYENGINE + UNREAL ENGINE

Employing CityEngine and Unreal Engine together opens up new opportunities

- Advanced 3D modelling capabilities
- Ability to generate high-end visualisations within the resultant project scene





ASSESSMENT OF DEVELOPMENT ACTIVITY

Access how proposed buildings will look alongside the existing built form

- Visualisation of existing built form alongside development activity
- Markers across city to highlight where development is occurring



MOCKUP PROPOSED DEVELOPMENTS

Access how proposed buildings will look alongside the existing built form

- Visualisation of existing built form alongside development activity
- Markers across city to highlight where development is occurring



VISIBILITY, SOLAR RADIATION AND SHADOW ANALYSIS

Analyse the impacts of new buildings on the existing built form

- Review visibility of key features from proposed developments
- Analyse the solar radiation impacts of a new building
- Review the overshadowing introduced from a newly proposed building



REALISTIC FLYTHROUGH VISUALISATIONS

Provide a realistic look at proposed developments for community consultation

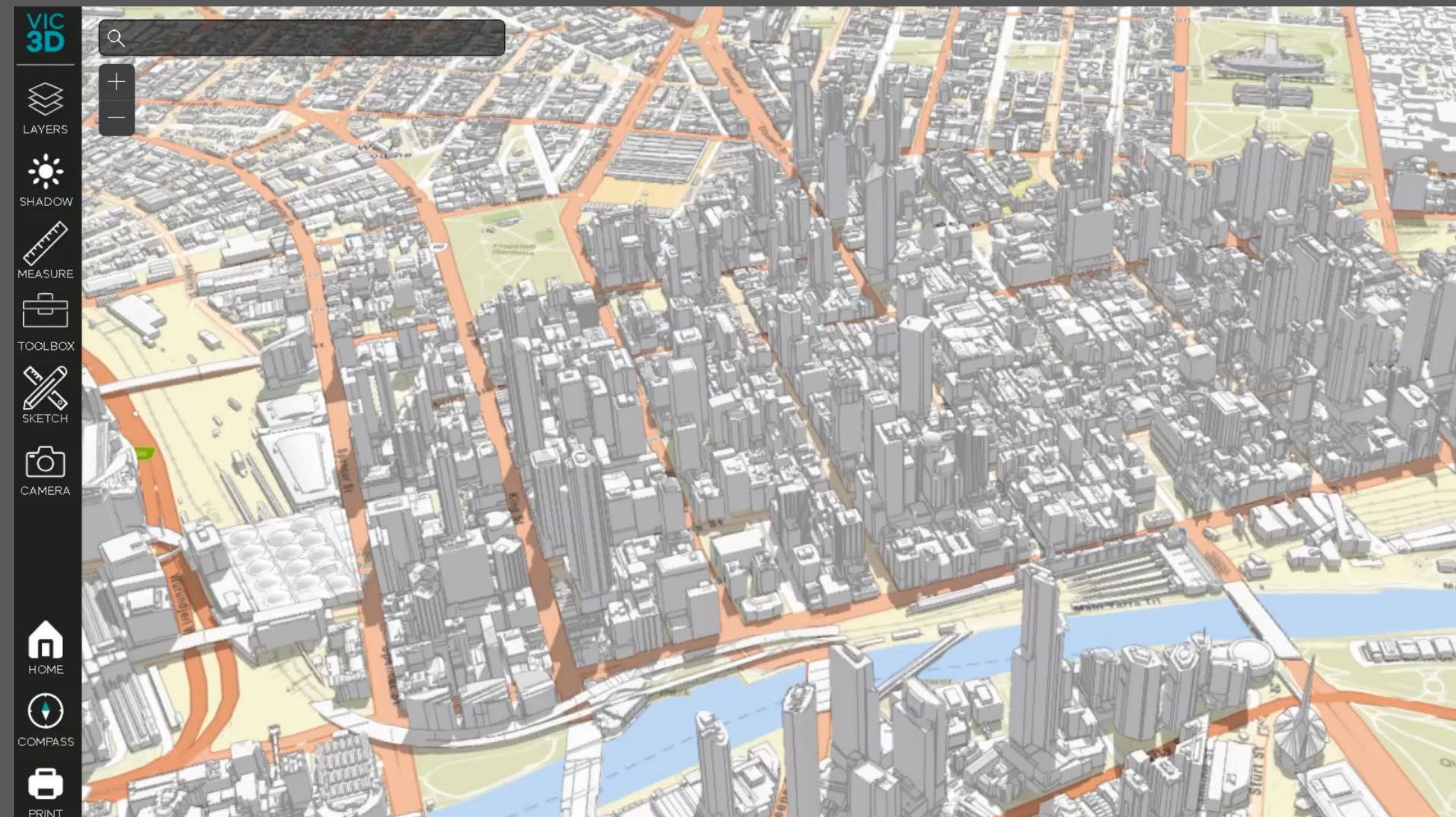
- Realistic flythroughs can now be generated from the spatial data in Vic3D
- Gaming Engine technology such as Unreal have unlocked a lot of potential for the Spatial Team



WHAT ARE THE BENEFITS?

Upon completion of the development phase, we did an assessment of the benefits realised as part of the project

- Delivered upon stakeholder expectations
- User group excited to do more with spatial and 3D analysis
- Platform established to support future development
- Streamlined data publishing processes
- Empowered spatial team
- Embracing new technology



LEARNINGS AND ROAD AHEAD

Road Ahead

- Enhanced shadow analysis
- Visualise real time data
- Leverage VR/AR Technologies & integrations with Unreal/Unity

Learnings To Date

- No one tool for the job
- Business Case / Management buy in
- Availability & Accuracy of data
- Accessibility & UI Design
- Invest in your people
- Collaboration is key



ACKNOWLEDGEMENTS

Zhijie Shen (DELWP)

Elle Bios (DELWP)

Tim Gray (DELWP)

Darren Green (DELWP)

Ran Pan (DELWP)

Christine Ma (Esri)

Robert Clout (Aerometrex)

Gordon Sumerling (Esri Australia)

GIS Team (City of Melbourne)

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