

# Addressing Digital Planning Transformation through 3D

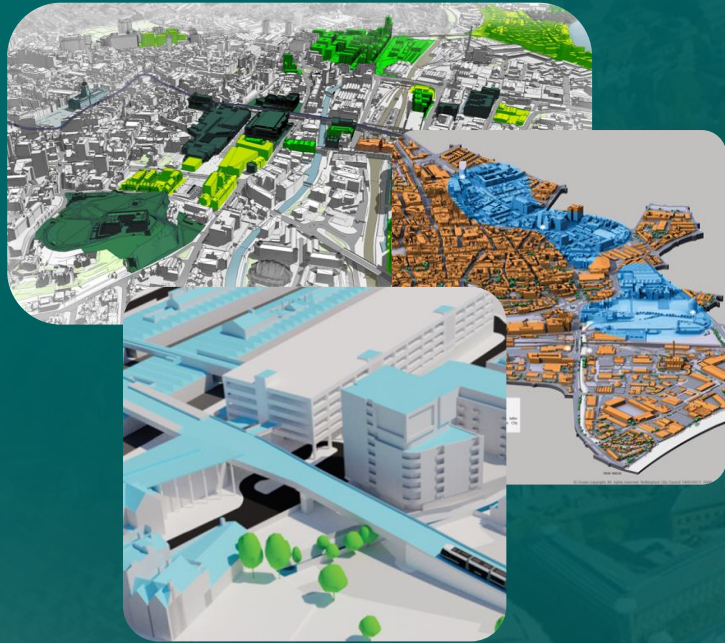


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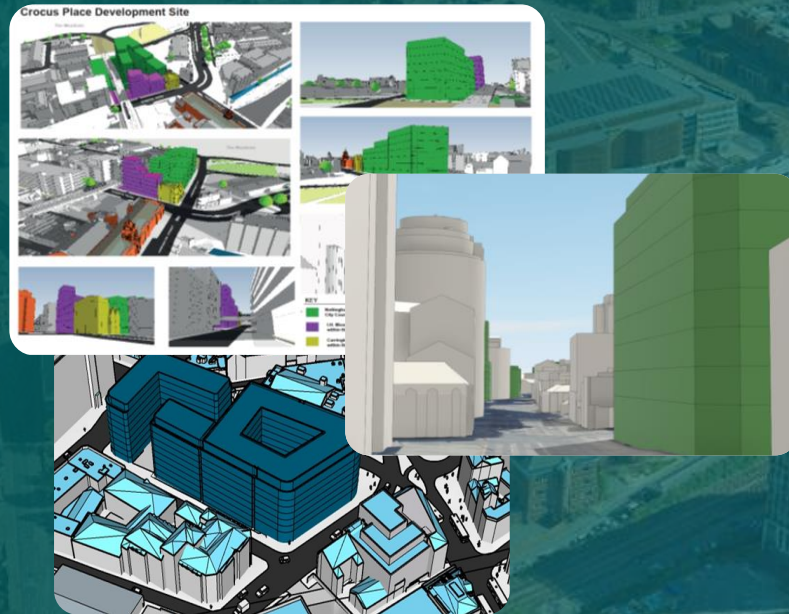




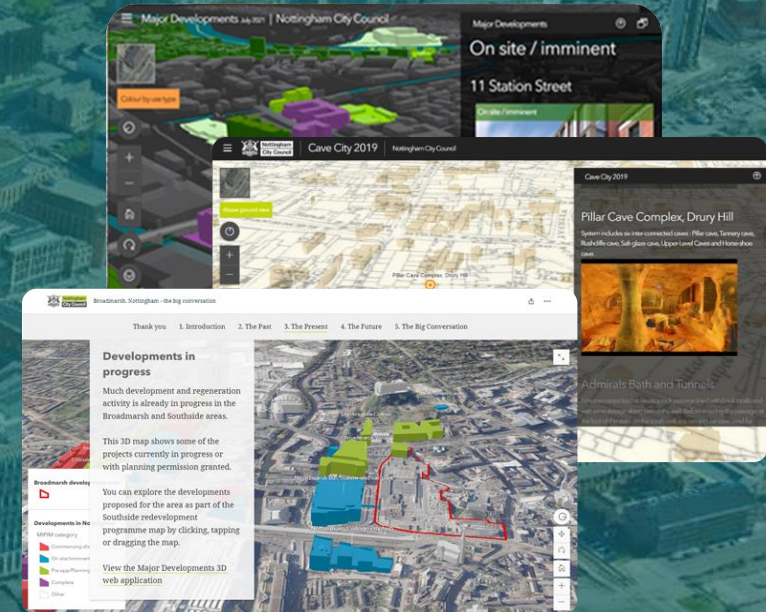
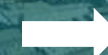
# Where did it begin – our 3D story



Strategic Planning



Site Assessment



Public Engagement

Design software + GIS



# 3D City Modelling and GIS

- Critical business tool
- Model the real world at scale
- 100's of geospatial datasets
- Analyse spatial relationships
- Interoperable and Scalable
- Maximise existing investment

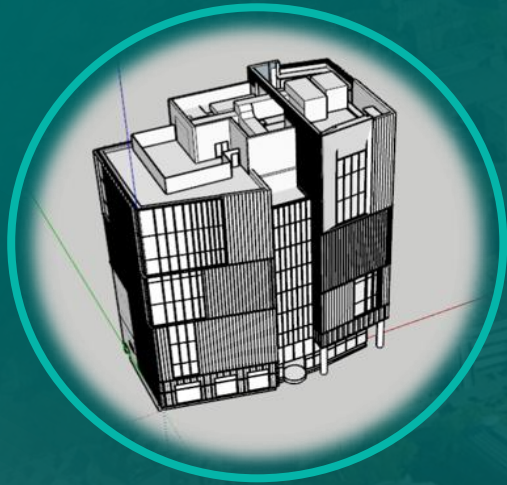


3D Urban Digital Twin



# Pre-application assessment process

Major developments



**1** Developers provide a 3D model (BIM)



**2** 'Dropped' into 3D City Environment



**3** Site Assessment





- Pre-apps
- Developments
- Layer List
- Bookmarks
- Highlight
- Measure

- Navigation controls: zoom in (+), zoom out (-), pan (four arrows), rotate (circular arrow), and a compass.
- Home button (house icon)
- View toggles: eye icon, double arrow icon, sun icon, and a circular arrow icon.

# A Digital Twin for Nottingham City

The journey from an ambitious vision to a virtual reality

- Menu icon (three horizontal lines)
- Help icon (question mark)
- Print icon (printer)
- Share icon (document with arrow)



# Feedback from our planners

*“It is a crucial tool to engage stakeholders (such as Historic England) and the wider community regarding potential new development and its impact in the surrounding environment and protected views”*

*“3D models allow us to test and identify views of developments and to accurately predict the impact on those views.”*

*“It is crucial to calculate site capacity and to engage in negotiations regarding site viability (massing/volume, heights and floor space)”*

*“It gives confidence to officers and applicants regarding the appropriateness of development and therefore the likelihood of planning approval being granted”*

*“Use of 3D models has enabled us to negotiate improvements, and the ability to hold workshops with applicants around the model has been an invaluable part of the design process.”*

*“Proposals can be reviewed without significant costs being incurred by a prospective developer”*



# DLUHC PropTech Innovation Fund



## Round 3 – Digital Engagement

Enhance our existing 3D offer

3D improve engagement & understanding

Blueprint for other local authorities



## Round 4 – Digital Land Assessment

3D Improve...

Site identification

Site capacity assessment

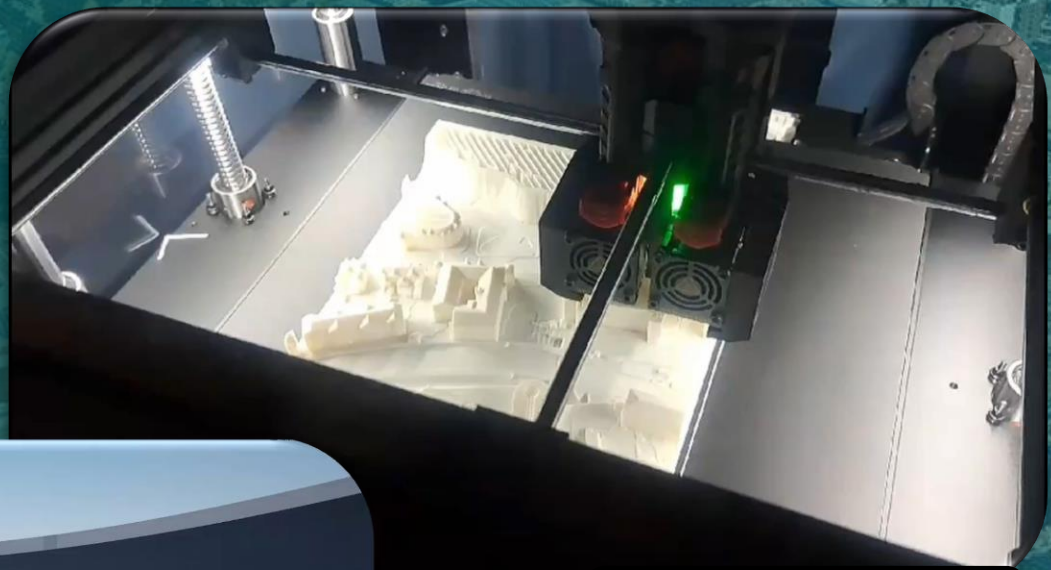
Time saving, higher yields & sustainable developments



# Immersive 3D Assets



1 3D Web



3 3D Physical Model



2 3D Virtual Reality



# Blueprint

## Challenges (3D deployment)



- Business and stakeholder **value**
- **Technology** awareness and readiness
- **Data** availability and acquisition
- **Business process** management
- **Skills & capacity**

## Objectives



- **Build** upon achievements
- **Support** and collaborate with each other
- **Evaluate** tools & techniques; engagement; and ROI
- **Learning** material & real examples





# Return on Investment

## Return on Investment Analysis

Assessing the Socio-economic Value of Address and Street Data to Nottingham City Council

Final Report  
September 2023



## Return on Investment Analysis

Assessing the Socio-economic Value of Three-Dimensional Geospatial Information for the UK Planning Sector

Final Report  
Spring 2024



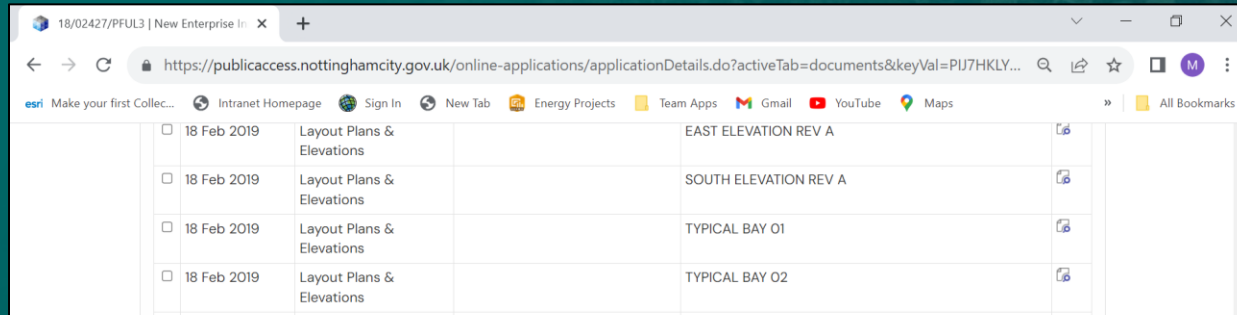
Coming soon

- Provide local support
- Demonstrate national value



# Addressing & 3D

## SNN efficiency

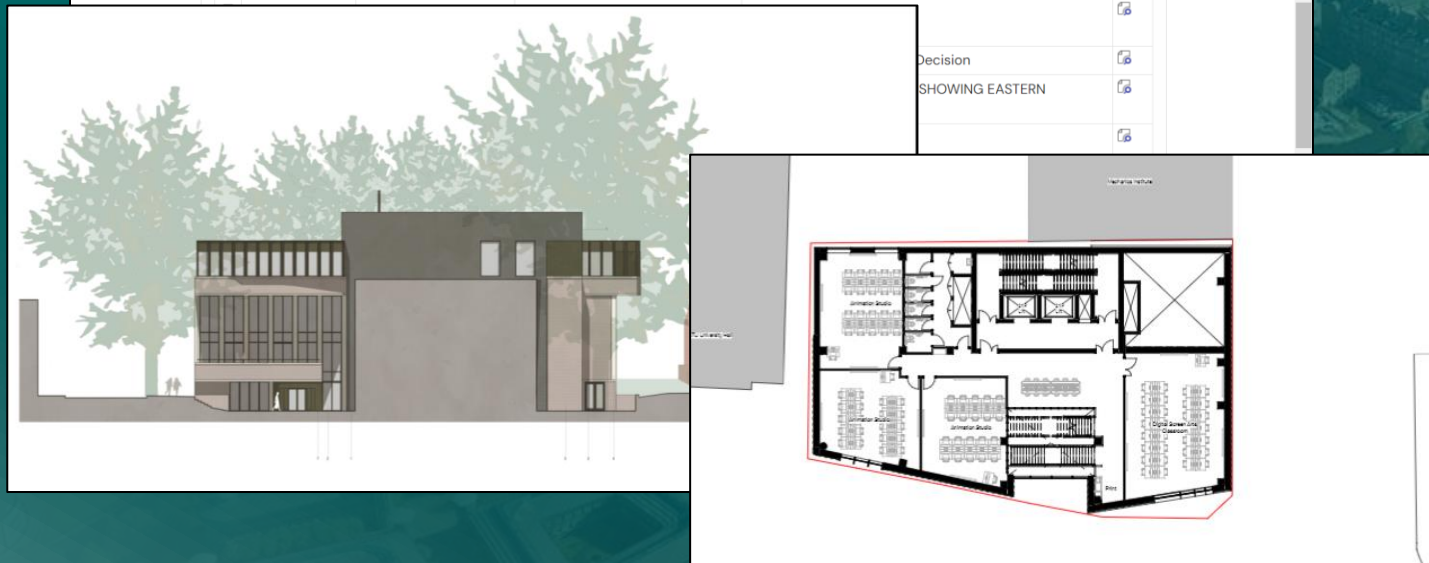


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<input type="checkbox"/>	18 Feb 2019	Layout Plans & Elevations	EAST ELEVATION REV A	
<input type="checkbox"/>	18 Feb 2019	Layout Plans & Elevations	SOUTH ELEVATION REV A	
<input type="checkbox"/>	18 Feb 2019	Layout Plans & Elevations	TYPICAL BAY 01	
<input type="checkbox"/>	18 Feb 2019	Layout Plans & Elevations	TYPICAL BAY 02	
			Decision	
			SHOWING EASTERN	



Building Information Models (BIM) reduce time to interpret 2D technical plans



# Addressing the 'z' value!



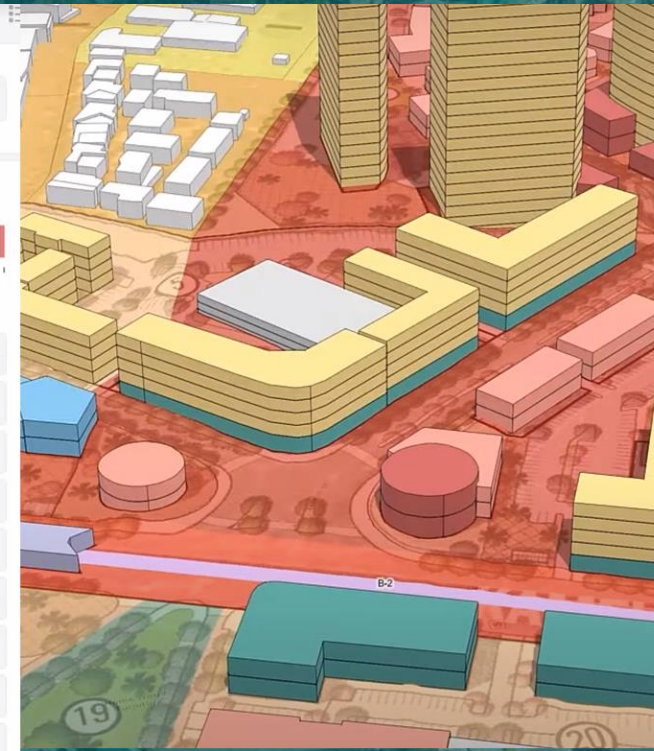
Develop Edit spaces

Select parcels to inspect or develop.

Space use in scenario

Total new floor area: 6.66M sqft

OFF	1.29M sqft
OFF_GF	167,292 sqft
OS	267,917 sqft
PKG	2.2M sqft
RES_MF	2.14M sqft
RES_MF_GF	280,473 sqft
RET	94,847 sqft
RET_BB	88,715 sqft
RET_SM	133,577 sqft



Population	4,957
Households	2,459
Jobs	3,096
Parking Spots	8,753
Required Parking Spots	15,392
Daily Trips	8,053
Energy Use ⓘ	152,236
CO2 Emissions ⓘ	272
Internal Water Use ⓘ	287,991
External Water Use ⓘ	123,425
Waste Water ⓘ	253,432
Solid Waste ⓘ	14,330

As geospatial 3D continues it's journey to supporting digital twins the Z value will become increasingly important!



# The future







Thank you for listening



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