Digital Twin:
Building a 3D geospatial model of Ottawa

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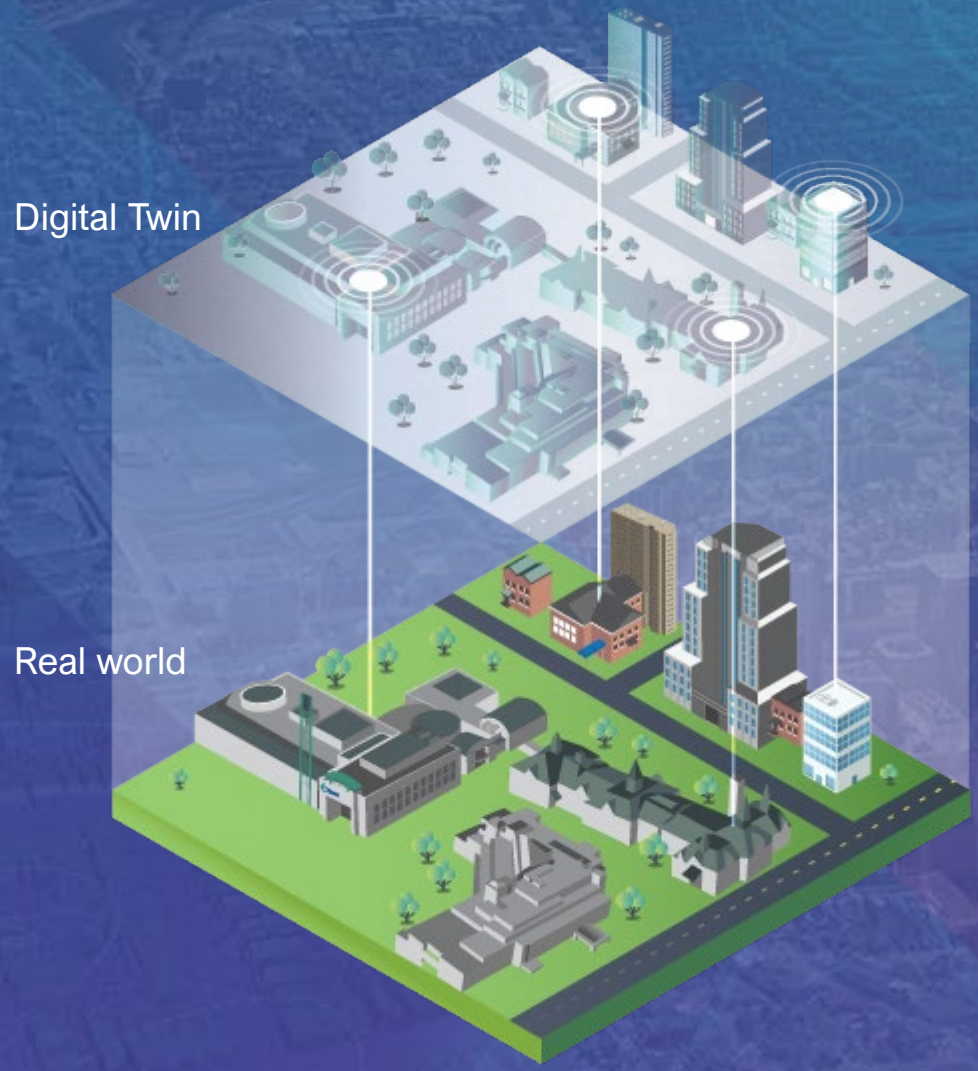
OTwin - Ottawa's Digital Twin

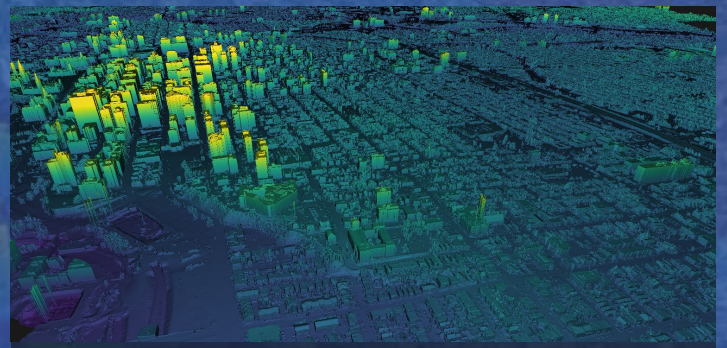
GATS is developing a transformational Digital Twin, a 3D model of Ottawa, a new geospatial system to support the development of the New Zoning Bylaw Consolidation project and the policies of the new Official Plan.

Providing transformational capabilities for numerical modelling and visual analysis



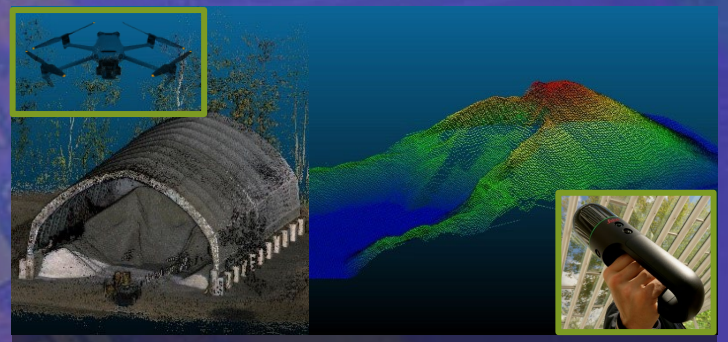
Reality Capture and Data Intelligence Program

City-wide high-resolution imagery

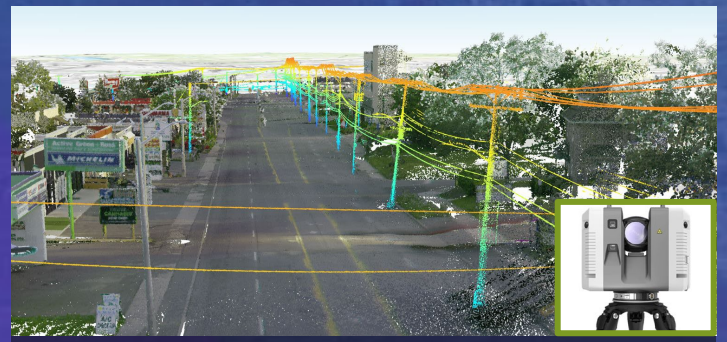


LiDAR Point Cloud

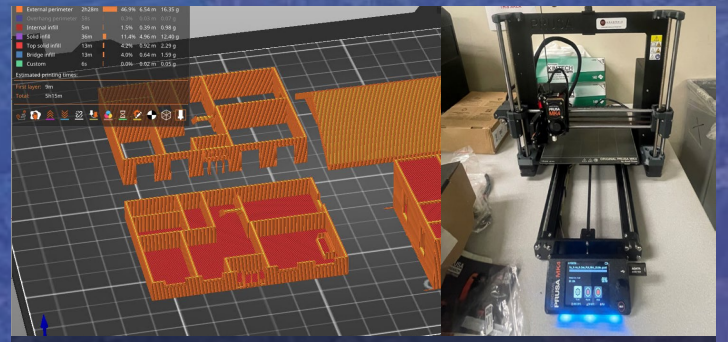
Photorealistic mesh



Drone and mobile handheld 3D laser scanner



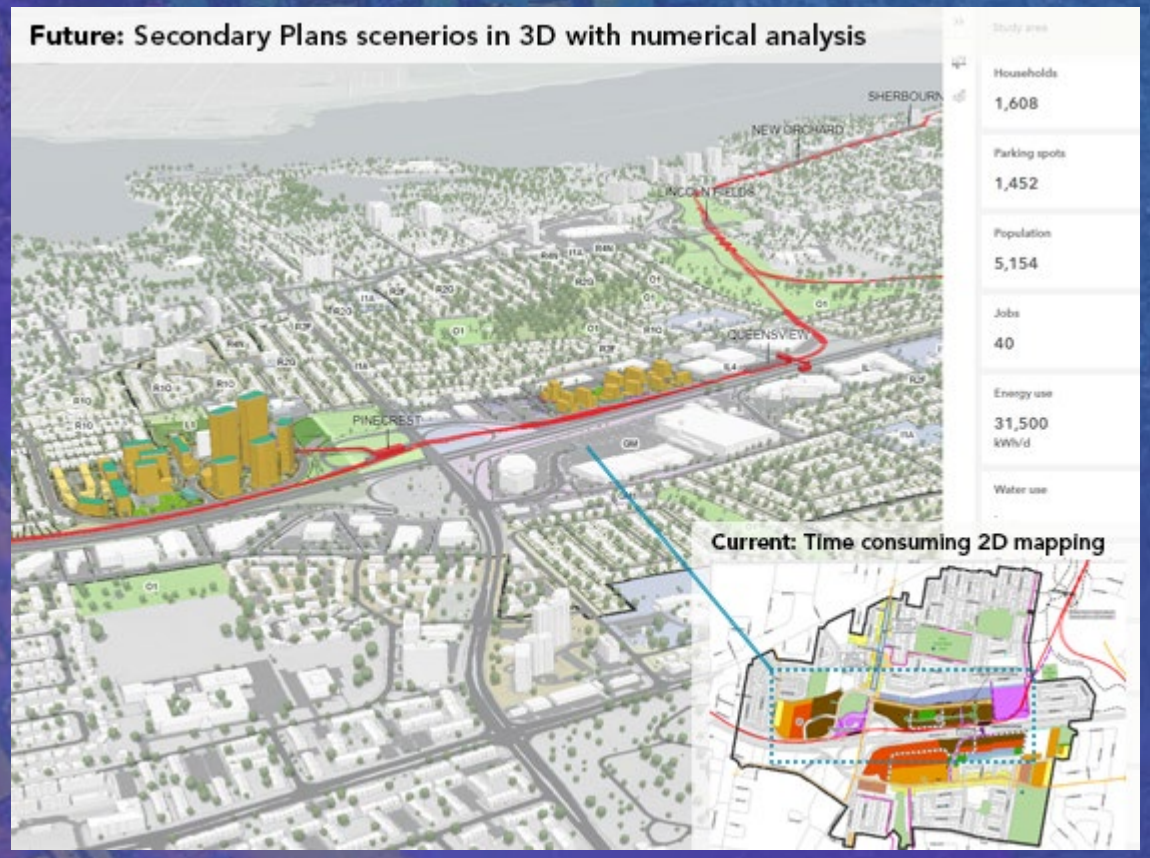
Terrestrial 3D laser scanner



3D printing

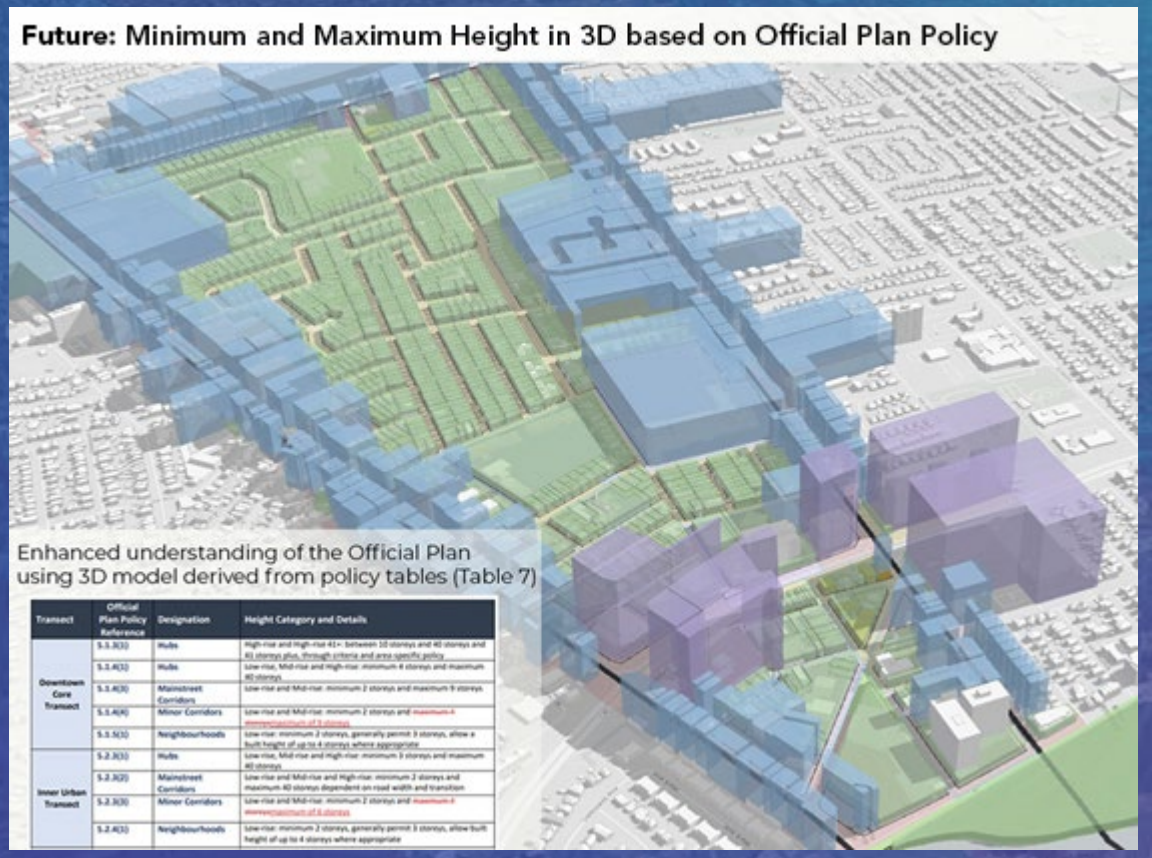
Digital Twin: Taking us from a static to a dynamic 3D geospatial approach

Future: Secondary Plans scenerios in 3D with numerical analysis



Current: Time consuming 2D mapping

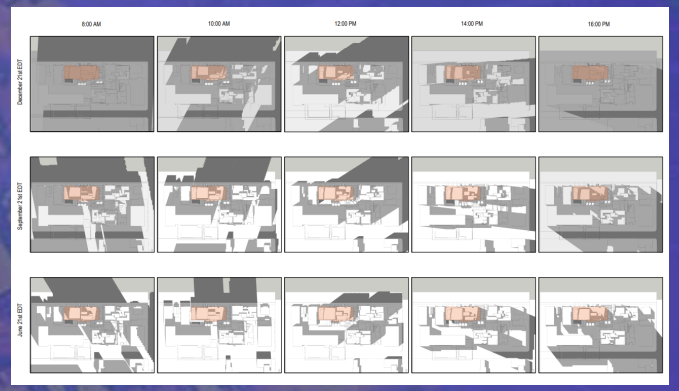
Future: Minimum and Maximum Height in 3D based on Official Plan Policy



Enhanced understanding of the Official Plan using 3D model derived from policy tables (Table 7)

Transect	Official Plan Policy Reference	Designation	Height Category and Details
Downtown Core Transect	5.1.3(1)	Hubs	High-rise and High-rise 41+: between 10 storeys and 40 storeys and 41 storeys plus, through criteria and area specific policy
	5.1.4(1)	Hubs	Low-rise, Mid-rise and High-rise: minimum 4 storeys and maximum 40 storeys
	5.1.4(3)	Mainstreet Corridors	Low-rise and Mid-rise: minimum 2 storeys and maximum 9 storeys
	5.1.4(4)	Minor Corridors	Low-rise and Mid-rise: minimum 2 storeys and maximum 4 storeys/maximum of 5 storeys
	5.1.5(1)	Neighbourhoods	Low-rise: minimum 2 storeys, generally permit 3 storeys, allow a built height of up to 4 storeys where appropriate
Inner Urban Transect	5.2.3(1)	Hubs	Low-rise, Mid-rise and High-rise: minimum 3 storeys and maximum 40 storeys
	5.2.3(2)	Mainstreet Corridors	Low-rise and Mid-rise and High-rise: minimum 2 storeys and maximum 40 storeys dependent on road width and transition
	5.2.3(3)	Minor Corridors	Low-rise and Mid-rise: minimum 2 storeys and maximum 4 storeys/maximum of 5 storeys
	5.2.4(1)	Neighbourhoods	Low-rise: minimum 2 storeys, generally permit 3 storeys, allow built height of up to 4 storeys where appropriate

Massing Models Submissions (BIM)

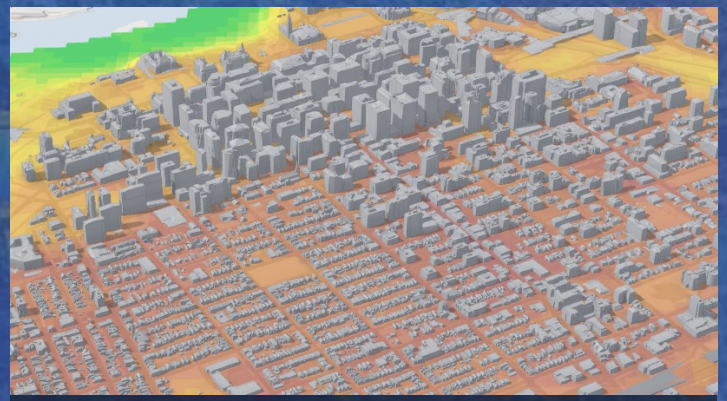


84 and 100 Gloucester St.
not yet approved by Council

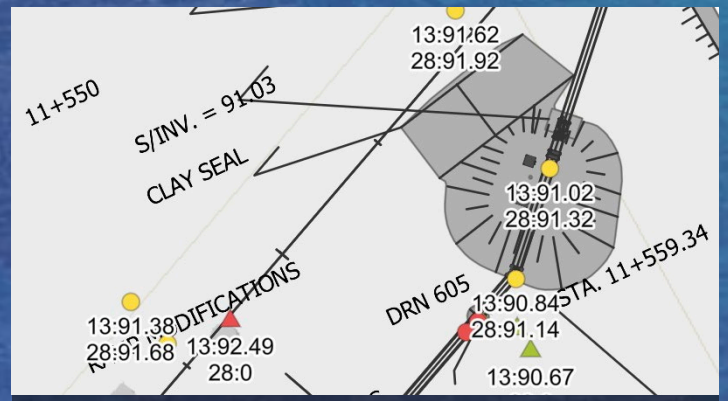
3D Shadow and Solar analysis

Digital Twin is collaboration

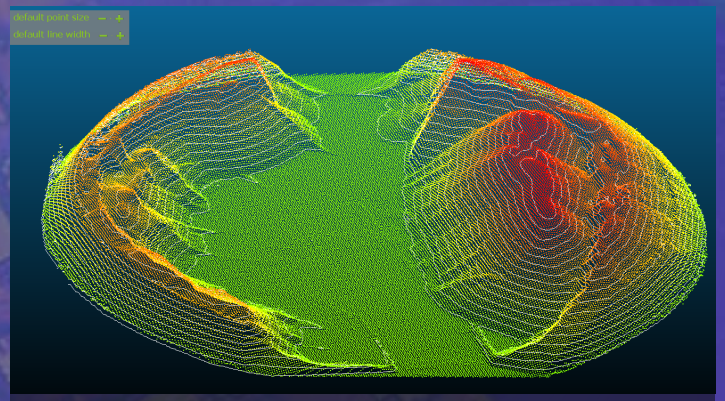
Solar capacity on rooftops MWh per year analysis for the Climate Change unit



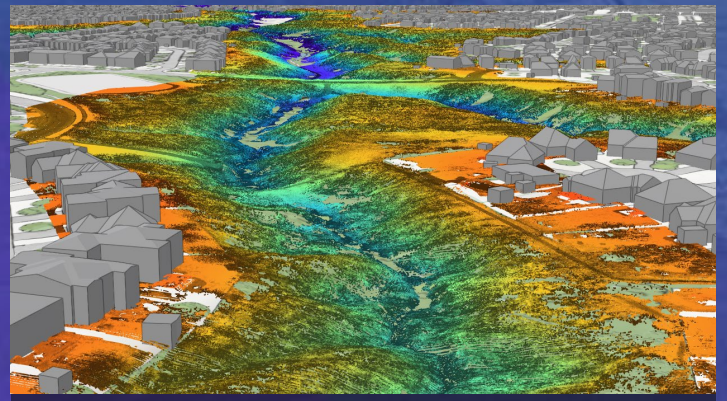
Heat islands 3D mapping for Ottawa Public Health



Mobile real-time survey for as-built validation with Inspections



Salt Dome Scanning with Public Works



Slope stability and erosion LiDAR scan for Bilberry Creek with Asset Mgt

Impervious surface analysis with Revenue Services

Digital Twin Road Map

Foundation | Current | Future

Building and maintaining Digital Twin foundation

Modernized Acquisition program

Developing the Digital Twin environment with IT

WE ARE HERE

Release of Internal staff tool for Development review

Public-facing user interface for public engagement

Integration of Approved New Zoning Bylaw