

Agenda

Time	Topic
13.30 – 13.40	• Welcome & Introduction
13.40 – 14.30	• GIS + BIM for Infrastructure Management • Some Case Studies...
14.30 – 14.45	Break & Networking
14.45 – 15.45	• Customer Showcase: • OBB • STRABAG • Airport Vienna • Kitzski • TU Wien
15.45 – 16.00	Break & Networking
16.00 – 17.00	• Technical Workshop • ArcGIS 3D Layer Types • ArcGIS GeoBIM • Working with IFC
17.00 – 18.00	• Drinks Reception

Who's in the room

Company Name
AIT Austrian Institute of Technology
axmann geoinformation
Bergbahn AG Kitzbühel
GrECo Risk Engineering GmbH
ikoone
Kitski
Meixner Vermessung ZT GmbH
ÖBB (Österreichische Bundesbahnen)
project-home GmbH
RP Global
Statistik Austria (Gebäude- und Wohnungsregister)
Strabag
TU Wien (Vienna University of Technology)
Uni Innsbruck
VIE Build GmbH (Vienna Airport)



Bridging GIS + BIM

for Smarter Infrastructure Management

Chris Jackson

Esri, Global Business Development



Let's get started!



Infrastructure Assets are inherently geographic

...operating across interconnected, complex environments



The Importance of Context & Collaboration

...understanding “where” in project proposals and deliverables

Collaborate with my service providers across multiple complex projects in my city

Understand the impact of a proposal on **local heritage and archaeology**

Plan a new building/bridge in context to assess **traffic impact**

Understand the impact of **tree-planting** on urban heat islands

Model **human and traffic movement** to assess the practicality of the proposed route

Use my detailed building models to understand **accessibility** and model **evacuation planning**

Connect any IoT sensor in my city to other systems and other physical assets to **analyse performance and predict maintenance**

See/query public transit plans and **predict capacity**

This requires both context and detail

GIS + BIM = x2 Opportunities

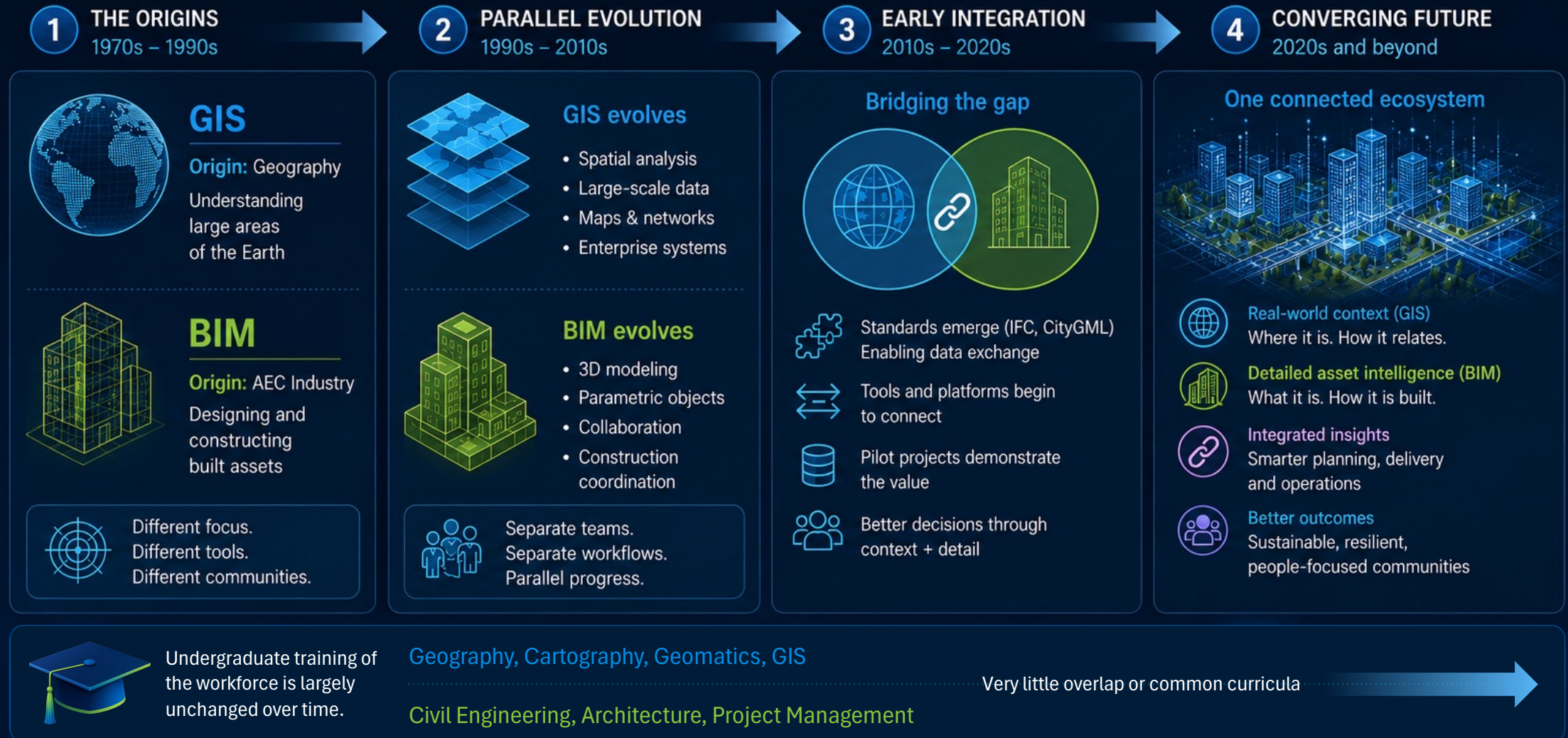
...depends on the definition of "BIM"

1. BIM¹ Model/Output
 - The Digital Model of the Asset
 2. BIM² Process/System (~ISO19650)
 - The Information Management Process
- *GIS has a significant role in both*



History #1: GIS + BIM¹ = Different Origins, Converging Future

...from separate journeys to a connected ecosystem



History #2: GIS + BIM² Process = Information Management

...using location to help deliver “Information Production Requirements & Plan”



2011

UK GOVERNMENT CONSTRUCTION STRATEGY

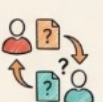
The UK government sets out its vision to drive efficiency and value through BIM adoption across the construction sector.





A CONTINUOUS JOURNEY
Better information.
Better decisions.
Better outcomes.

ISO 19650:2026 — THE RENAME, AT A GLANCE

OLD		NEW
 BIM	➔	Information Management 
 BEP (BIM Execution Plan)	➔	IPP (Information Production Plan) 
 EIR (Exchange Information Requirement)	➔	IPR (Information Production Requirement) 
 MIDP / TIDP	➔	IPS (Information Production Schedule) 

Same work. New vocabulary.

ISO DIS 19650-1:2026 — published March 10, 2026.



ISO 19650
DRAFT
UNDER REVIEW

2026

ISO19650 DRAFT UNDER REVIEW

The next evolution of ISO19650 is under review to address emerging technologies, sustainability, and evolving industry needs.





VALUE



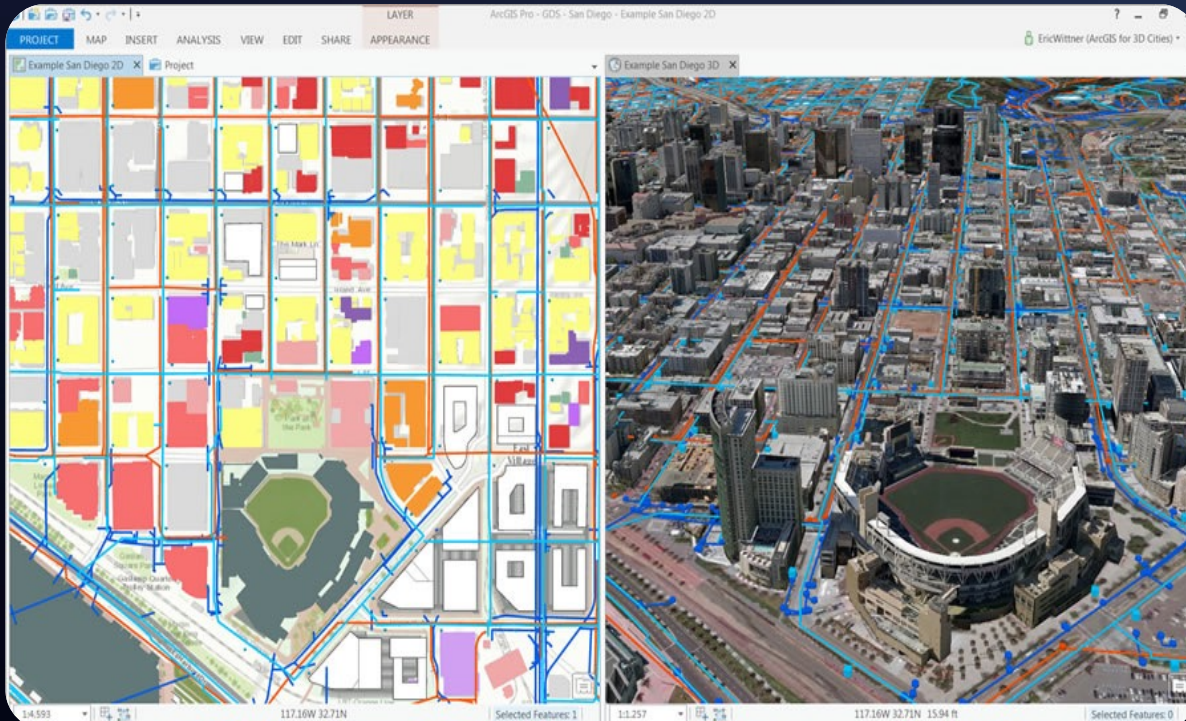
WHOLE LIFE VALUE

GIS + BIM¹ = Better Digital Models/Outputs

Most popular feature requested from AEC project teams = GIS+BIM Integration

GIS software

Provides information about assets in the context of the wider *Built, Societal* and *Natural environments*.



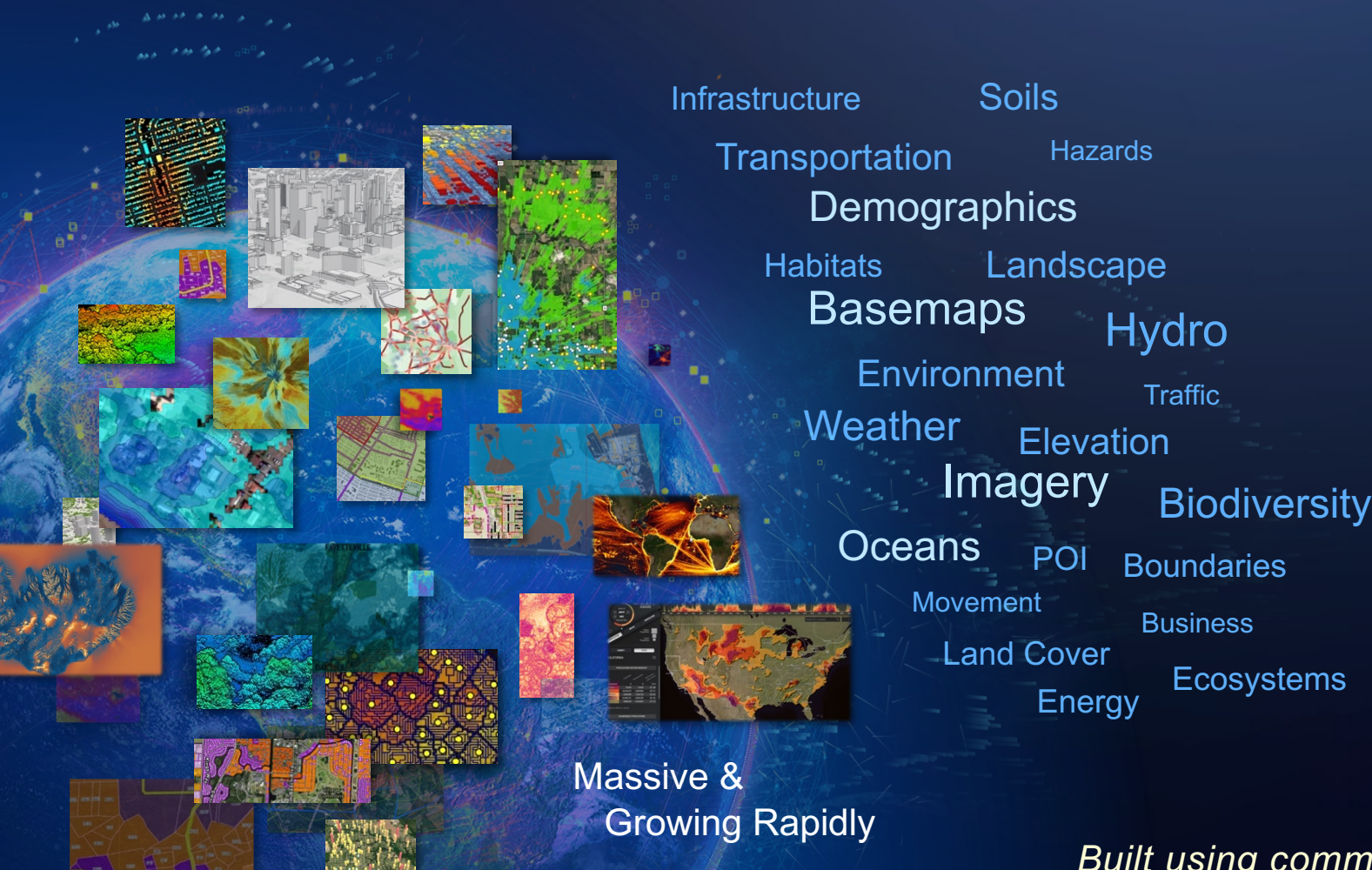
BIM software

Supplies detailed information about *individual built* assets.



ArcGIS Living Atlas of the World – context & content

Petabytes of Basemaps, Imagery, Demographics and Thematic Content . . .



New & Improved

- **Analysis Optimized Imagery**
- **Enhanced 3D Basemaps**
- Google Photorealistic Basemap
- Overture Basemap
- Community Road Closures
- Marine Protected Seas
- **GBIF Data Extraction**
- iNaturalist
- Biodiversity
- Land Cover (1980s–2024)
- **World Imagery for AI**
- World Transit Service
- Winds
- GeoAI Models
- Ecosystems 2050
- **GeoEnriched Hexbin Data**

US Only

- **Nationwide Parcels**
- 2025 Esri Demographics
- **NAIP Imagery**
- Census & ACS
- **Transit Feed**
- Broadband Data
- Hydrology (NHDPlus)
- NGDA Layers

Premium Content

- **Imagery**
- Demographics & Tapestry
- Parcel Attributes
- . . .

Built using community contributions and commercial sources

GIS + BIM¹ = Better Analysis & Modelling

...going way beyond simple visualization of a model on a map



Understand
Where



Determine
Relationships



Detect & Quantify
Patterns



Measure
*Size, Shape,
& Distribution*



Evaluate
*Best Locations
& Optimal Routes*



Model & Predict
Outcomes

GIS + BIM¹ = Better Technology Integration

Connecting Stakeholders, Data & Systems

Project Teams

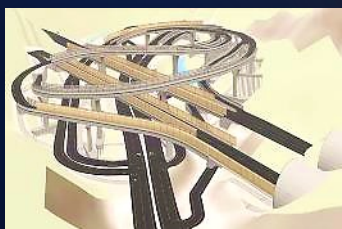
Linking GIS Features
with CAD/BIM/CDE content

GIS Teams

Integrating CAD & BIM Data



RVT



IFC

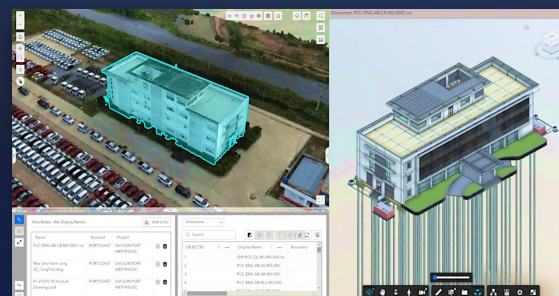


DWG & DGN

ArcGIS Pro

New & Improved

- Easier georeferencing and publishing
- 3D documents



Autodesk Construction Cloud

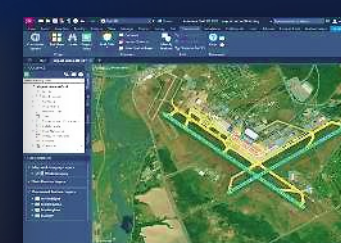
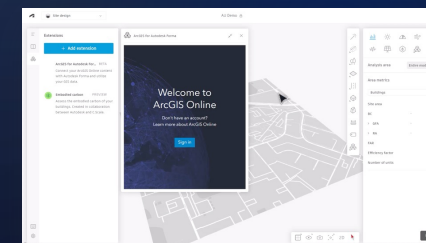
Webapps & ArcGIS GeoBIM



CAD/BIM Authoring s/w

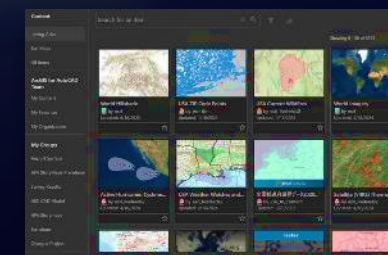
Design Teams

Integrating GIS Data



AutoCAD
Civil 3D
Infraworks
Forma

Rhino
Grasshopper
Vectorworks

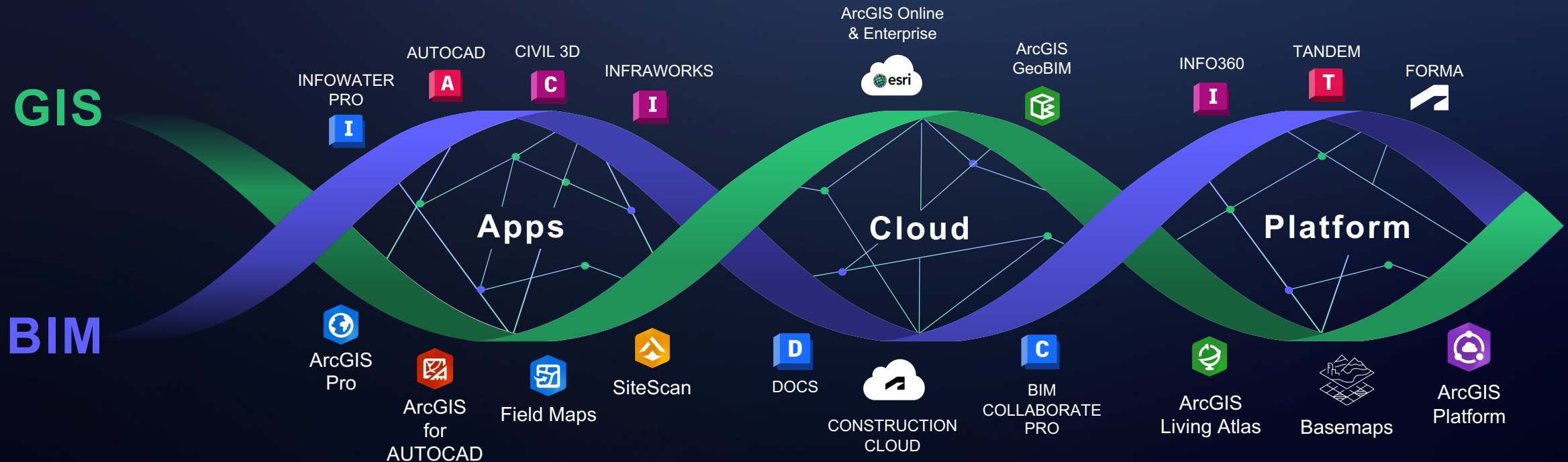


Autodesk Partnership Update



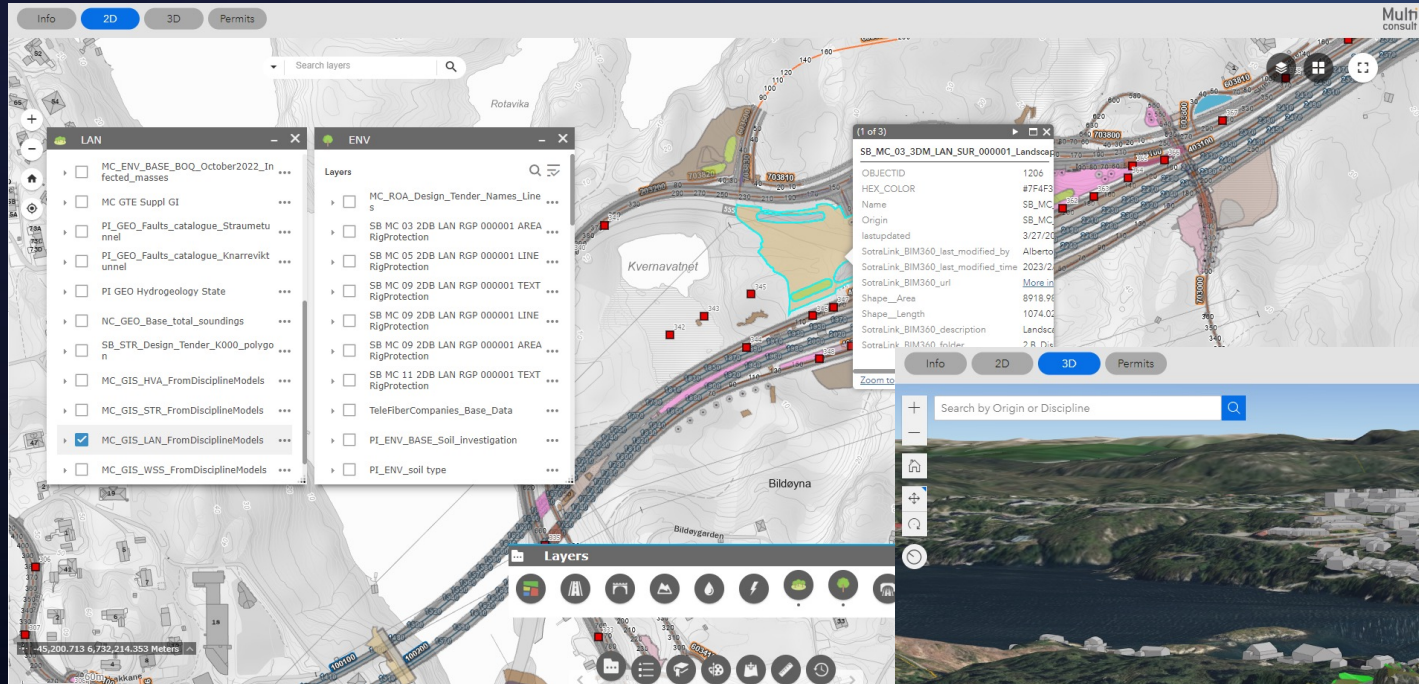
Vision Spatial data is enabling digital transformation

Mission Accelerating Digital Twin creation for the full project lifecycle with GIS and BIM



GIS + BIM¹ = Technology Case Study

Multiconsult

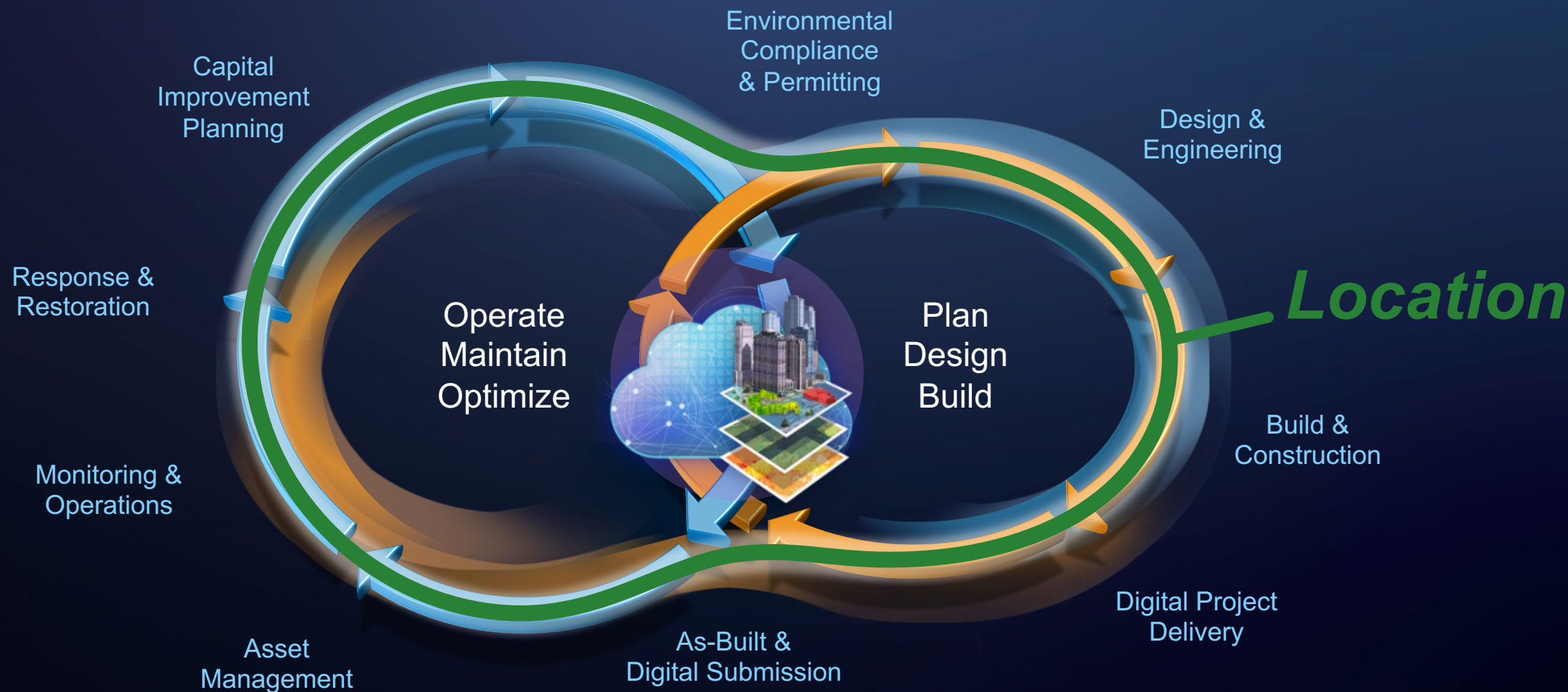


- Integrating multiple models
- Early conflict analysis
- Easier Collaboration



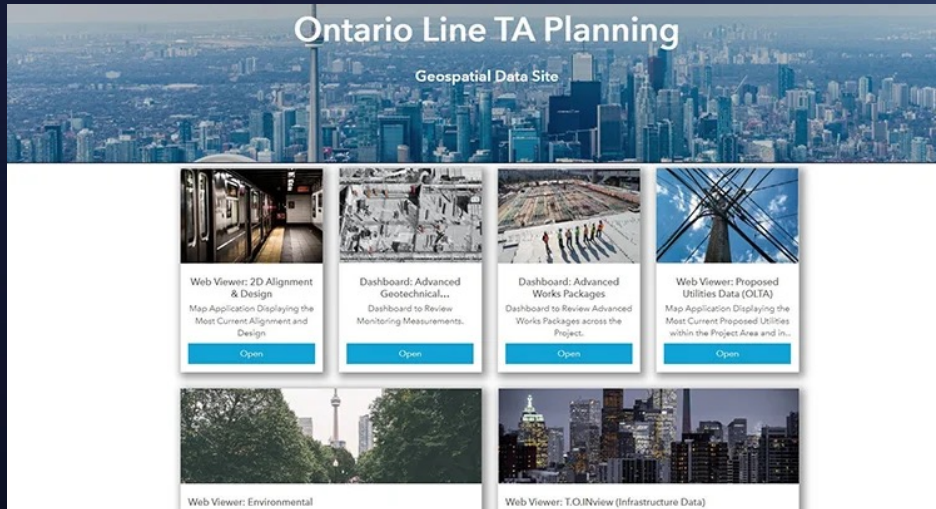
GIS + BIM² = Better Information Management

...using location to help deliver ISO 19650 "Information Production Requirements & Plan"

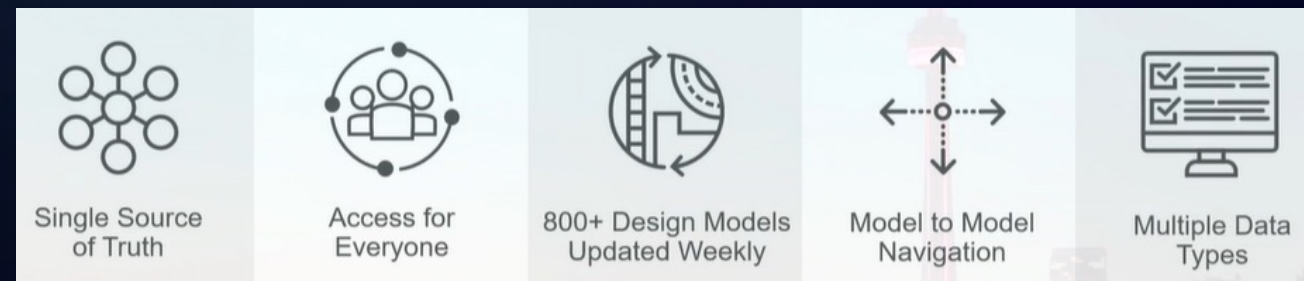


GIS + BIM² = Better Information Management

...Developing a Collaborative Design Environment

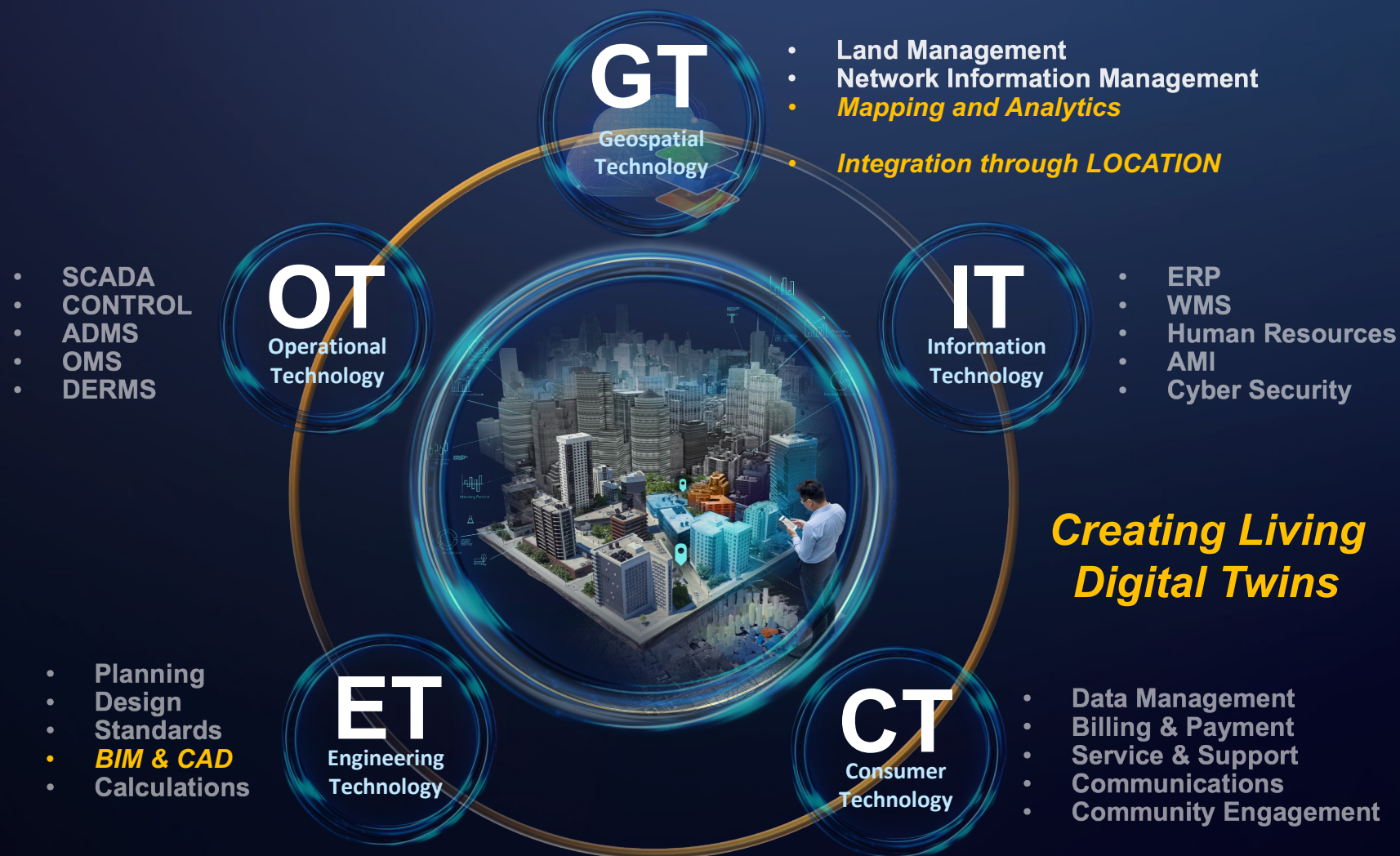


- 15 proposed transit stations
- 10 miles of track
- 1,000 project staff
- Reality Mesh, Point Cloud, 2D and 3D models
- Reduced time spent on visualization
- Improved team communication
- Transparency of data quality
- Breaking down silos



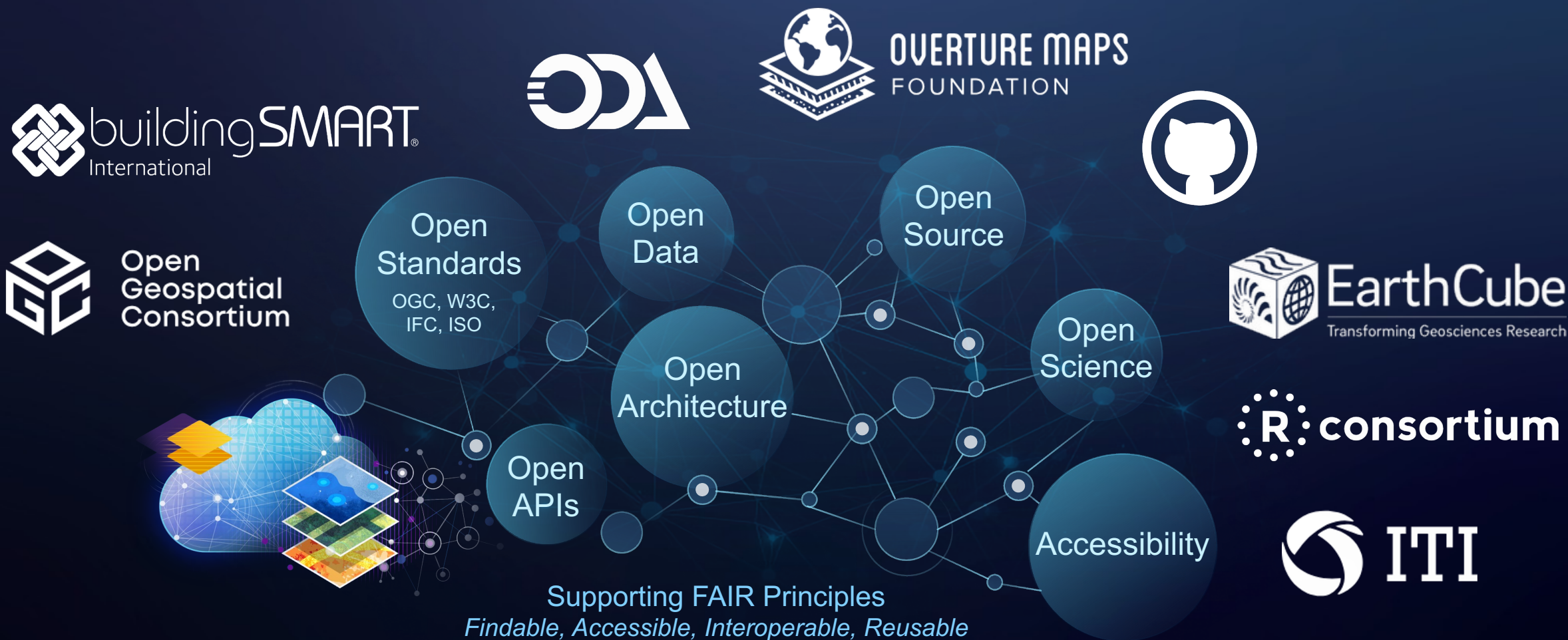
GIS + BIM¹² = Better Information Management

Integrating and Connecting Enterprise System Data and Workflows

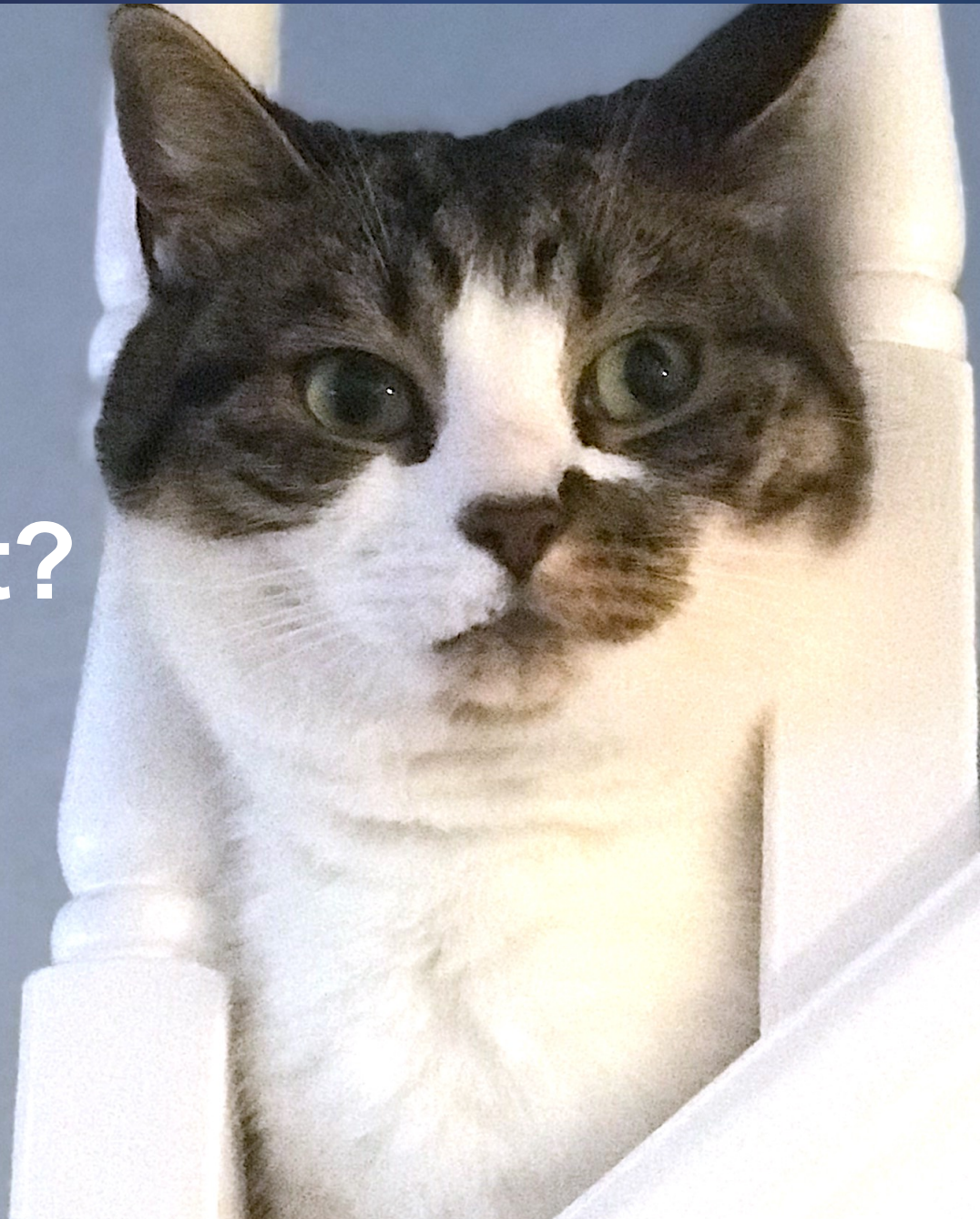


GIS + BIM¹² = Interoperability is fundamental

...leveraging open standards and open data for system integration



So What?



Infrastructure Management Challenges



Disconnected Data and Workflows

- Siloed Data
- Project inefficiency
- Data uncertainty and currency

Impact

- High cost of lost & inaccurate data



Project Complexity

- Collaboration across teams
- Uninformed decision making
- Lack of insight

Impact

- Project delays and poor decisions



Lack of Location Awareness

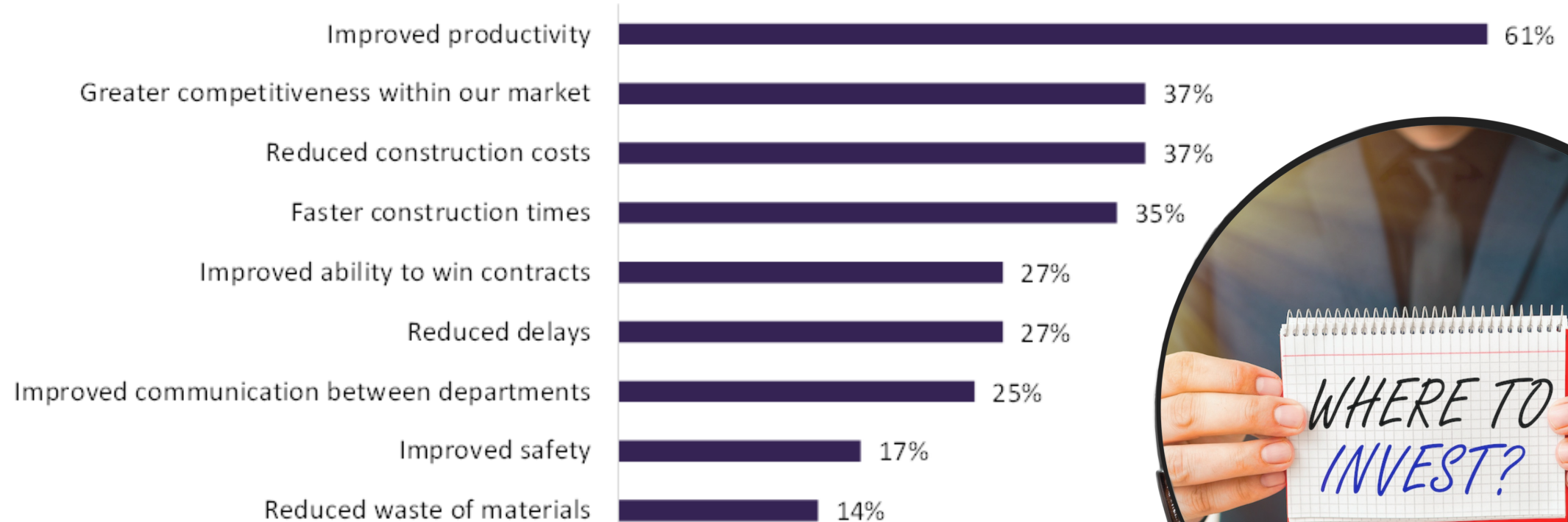
- Lack of understanding real-world constraints and connections
- Anticipating future demands for sustainability and resiliency

Impact

- Permitting delays and lengthy approvals

Business Drivers for Technology Adoption

Source: GlobalData

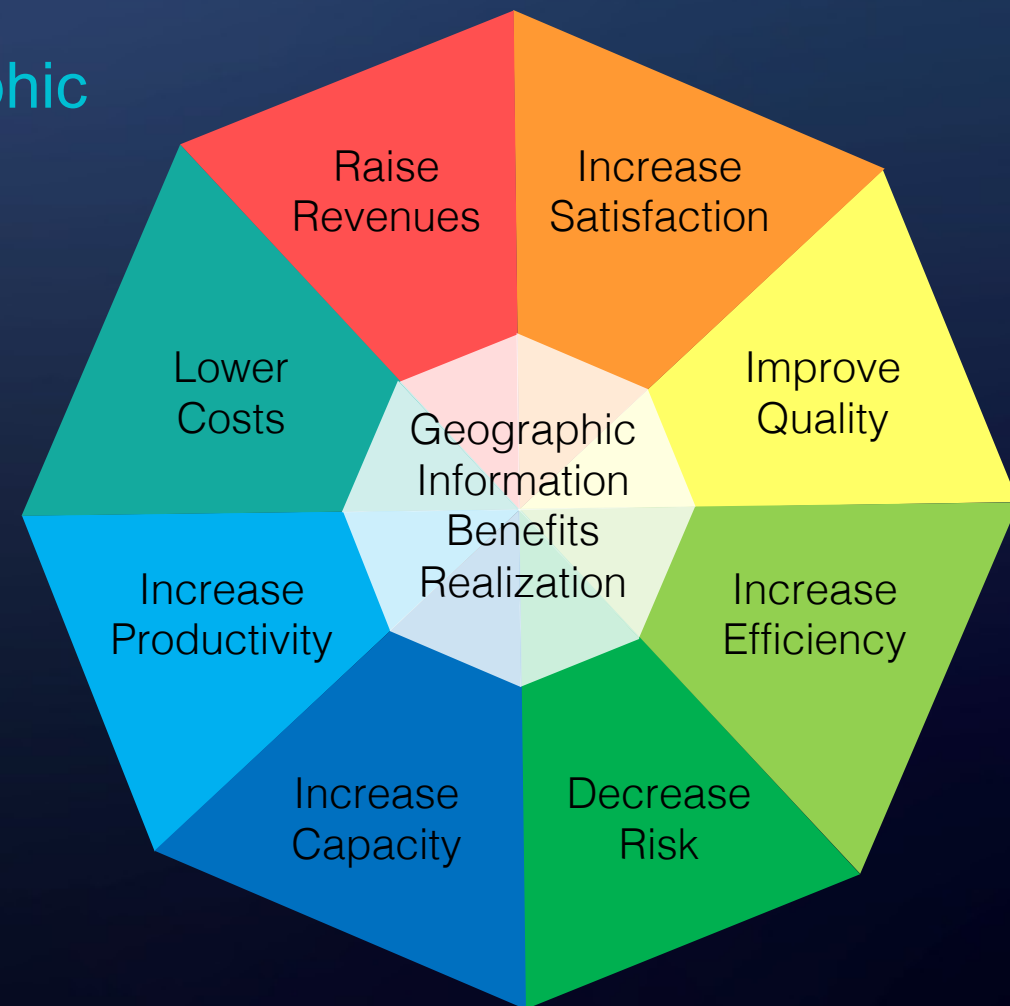


The Opportunity for GIS+BIM

- Infrastructure Assets are inherently geographic
- GIS+BIM provides context + detail
- Many examples of success
- We must elevate/change the conversation

- ***Business Outcomes***
- ***Return on Investment***

(Less talking about GIS+BIM?)



GIS + BIM¹ = Better Business Value

...improving project delivery & asset information management

- Recognition from Owner/Operators, Government & AEC Firms
- Improving productivity by reducing information loss & rework
- Enabling a focus on professional work, not data roadblocks



93%

Clients need BIM models
to integrate with
GIS content

83%

AECs agree
GIS data is important
to daily work

28%

Average Design
Time Saved

90 Days

Average Construction
Time Saved

13%

Average Cost
Savings

2 Final thoughts...



GIS + BIM = Connected Digital Twins

*Helping Organizations
Scale to Achieve
Business Outcomes*



05. AUTONOMOUS
*Self learning and
decision making with
no human interaction*

04. COMPREHENSIVE
*Scenarios of outcomes to
make recommendations*

03. PREDICTIVE
*Capable of predicting
outcomes*

02. INFORMATIVE
*Real-time connection
to sensors from
multiple sources*

01. DESCRIPTIVE
*Virtual representations
of the physical assets or
networks*

Living Digital Twin

Autonomous
Operations

Adaptive

AI Assist &
Decision

Scenario Based
Modeling

Remote Controlled
Inspections

AI / ML

Forecasting &
Simulations

Advanced
Analytics

IoT Sensors

Analytics

Connected Data
Environments

Virtual Model
(Dynamic)

Reality Mapping

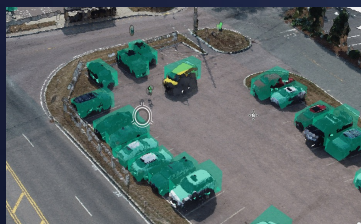
2D/3D Data

BIM & Infra Models

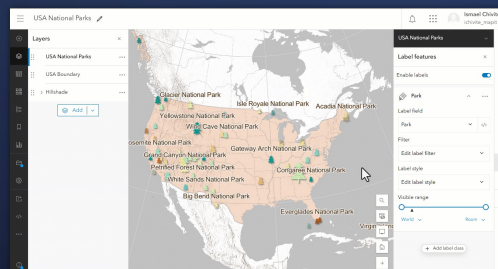
GIS + BIM = Advancing with AI

Integrating the Power of AI across Organizations and Workflows

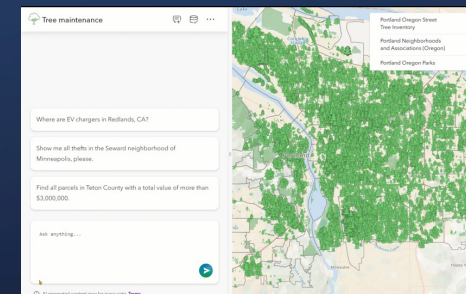
>100 AI/ML pre-trained
configurable models



Available and/or
coming soon to ArcGIS...



Configurable apps (No Code)



Data Explorer
Navigation
Help



GeoAI

Tools & Models

Advancing Science



AI Assistants

Access & Efficiency

Productivity



AI Agents

Automating & Enabling

Collaboration



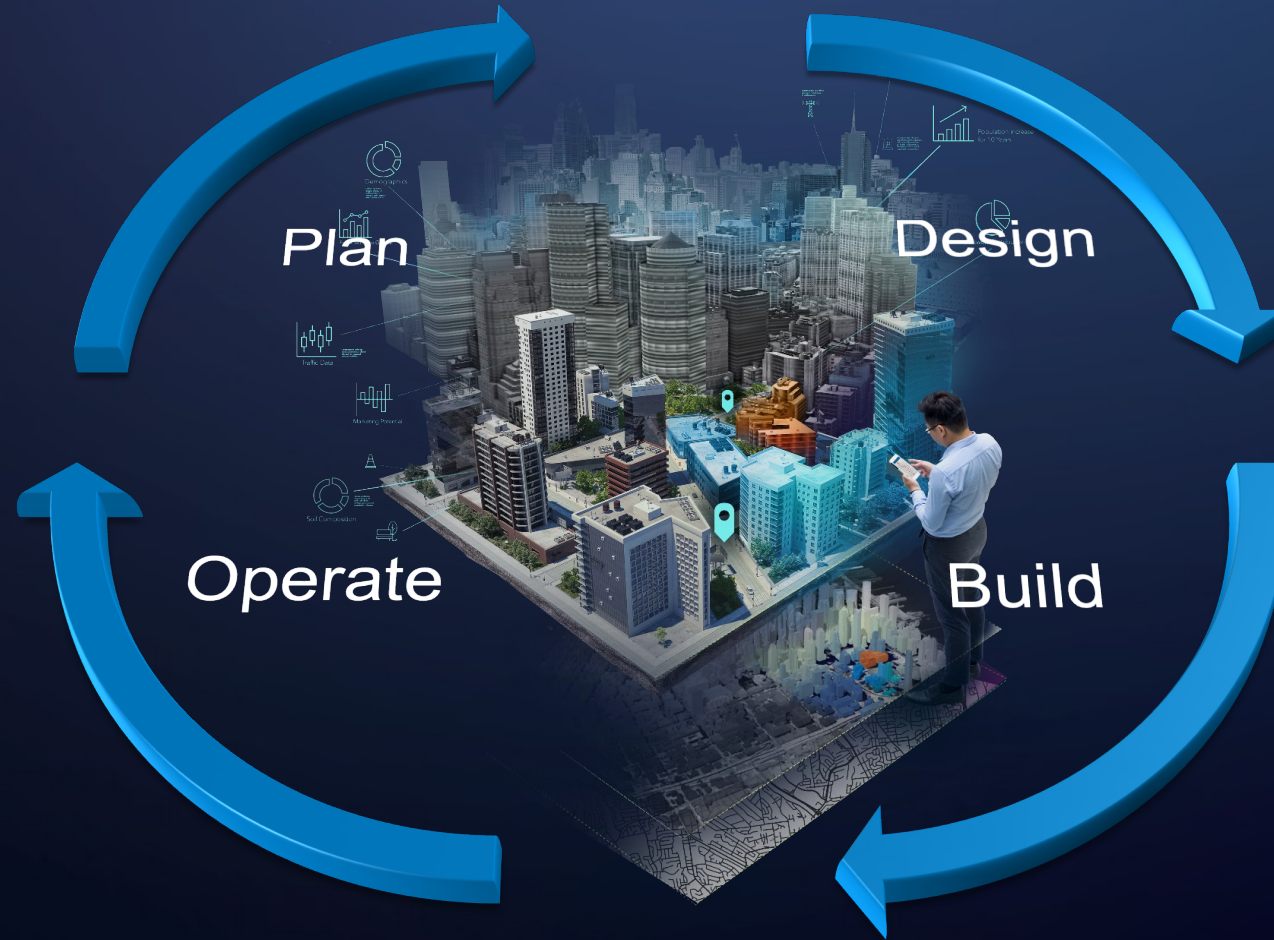
ArcGIS

- GIS Tools & Data
- Agents
- Models
- LLMs

Questions ?



GIS+BIM Value Propositions and Case Studies



GIS for Environmental Consulting



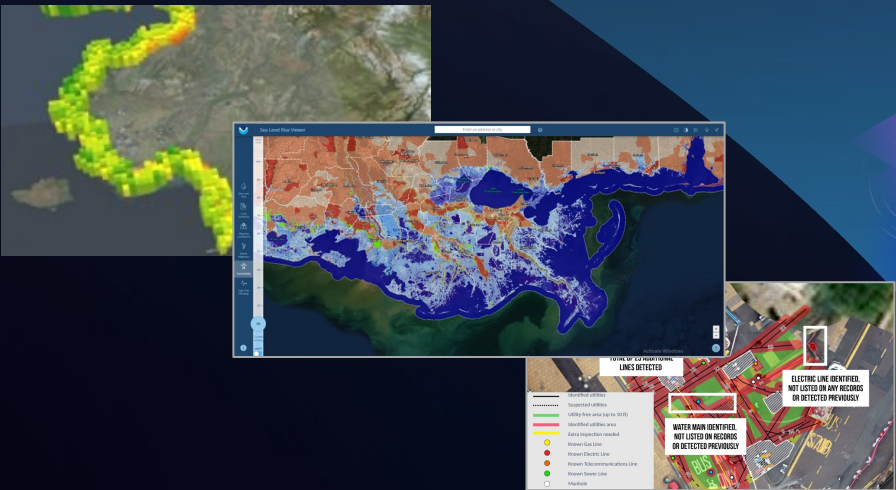
Environmental Consulting

Compliance & Reporting

Permitting & Planning

Climate Change & Biodiversity

Regeneration, Restoration & Remediation



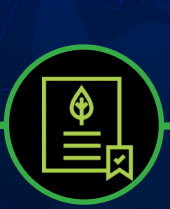
Permitting & Planning



Scenario Framework
Szenariorahmen



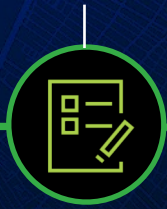
Federal Requirements Plan
Bundesbedarfsplan



Planning Approval
Planfeststellungsverfahren



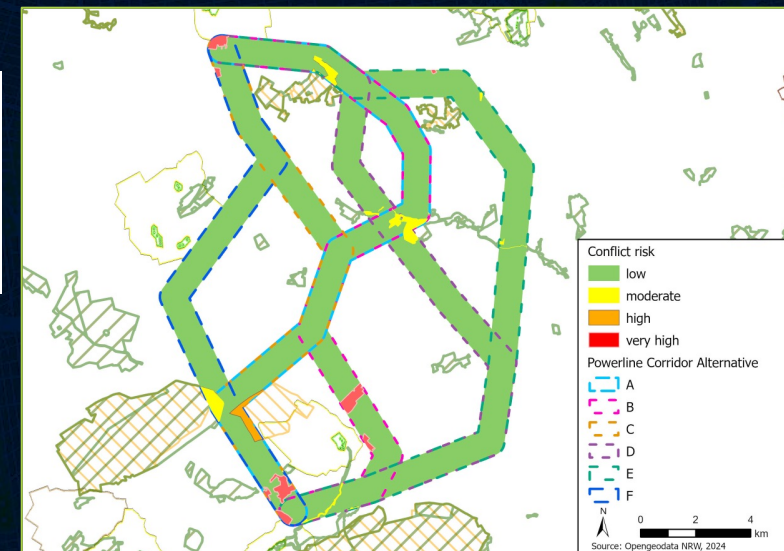
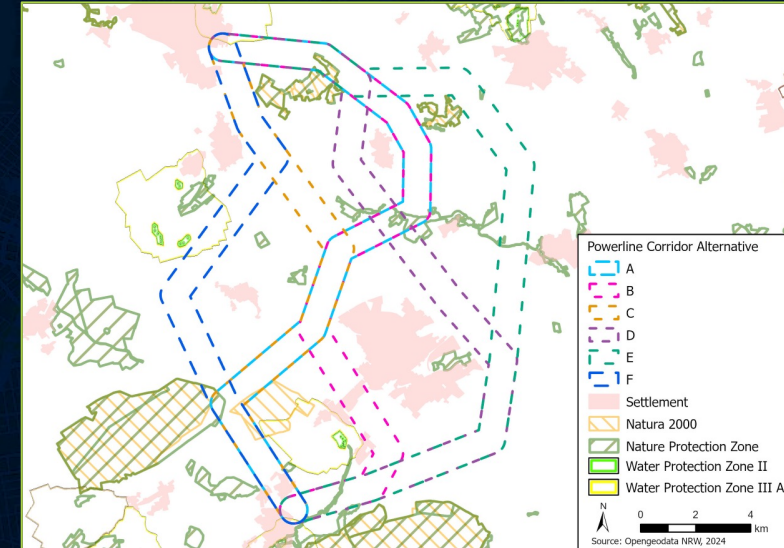
Network Development Plans
and Environmental Report
Netzentwicklungsplan



Federal Sectoral Planning/
Regional Planning
Bundesfachplanung/
Raumordnungsverfahren

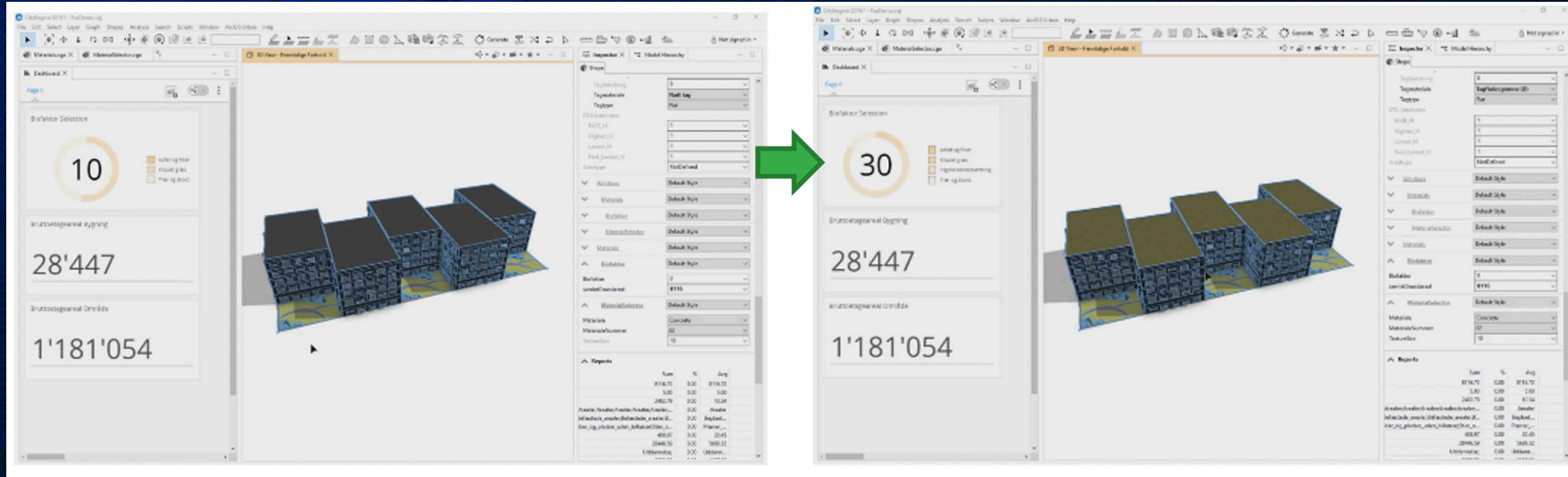


Realisation of the Project
Realisierung des Vorhabens



Alternative	A	B	C	D	E	F
Nature Protection Zone	3	3	1	2	4	1
Natura 2000	2	2	1	1	1	2
Water Protection Zone	2	2	2	2	2	3
Settlement	2	4	3	2	2	3
Sum	9	11	7	7	9	9

Climate Change & Biodiversity

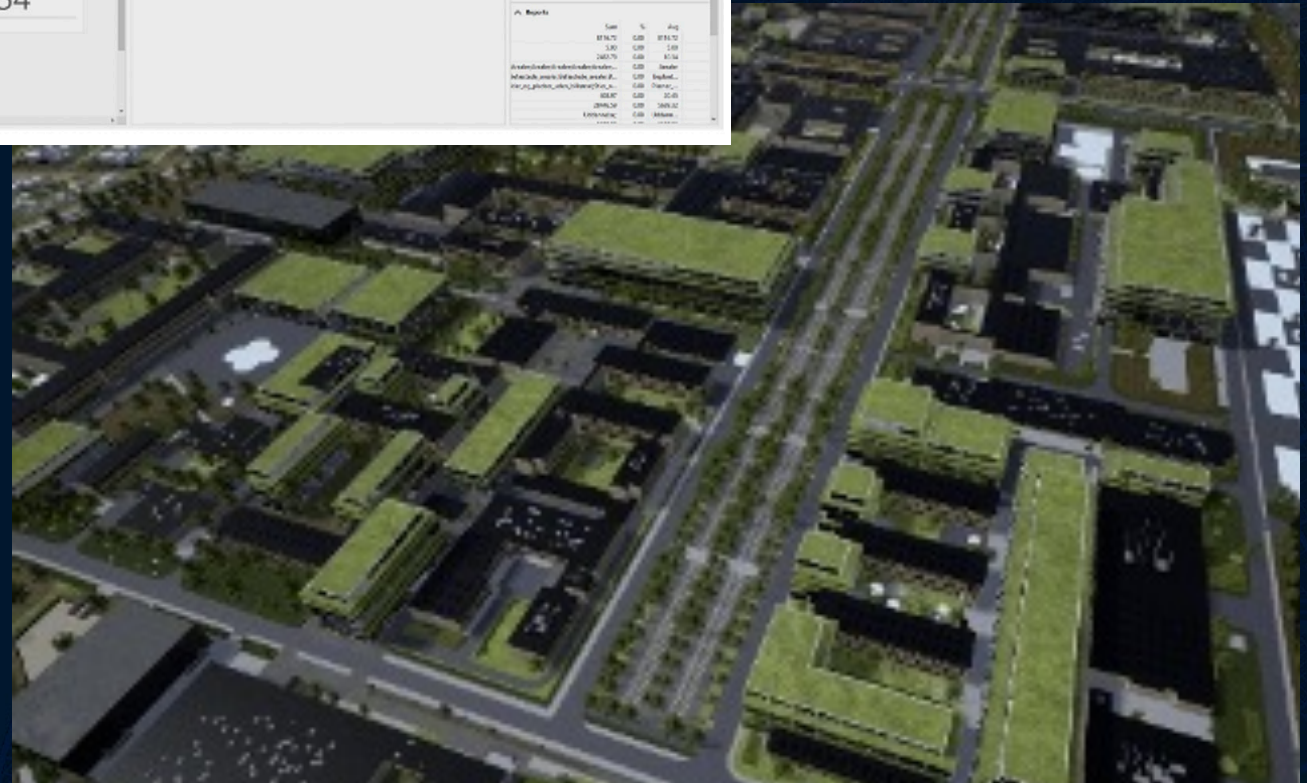


40 quantitative questions

e.g. Bio-factor Improvements
(roof material)

Instantly update the
scores for an entire
University campus

Provides accurate
reports for certification



GIS+BIM for Architecture, Urban Design & Planning



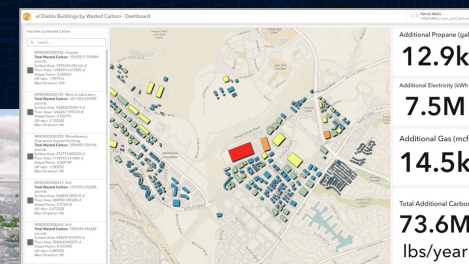
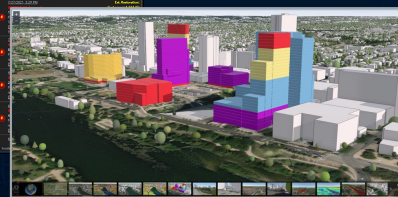
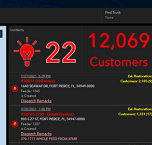
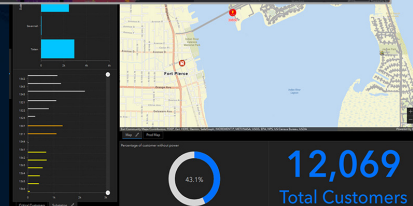
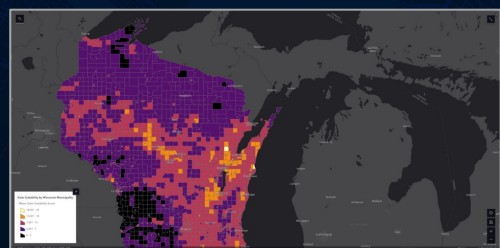
Architecture,
Urban Design
& Planning

Campus &
Masterplanning

Urban &
Environmental
Research

Landscape &
Site Design

Sustainability &
Resilience



Urban & Environmental Research

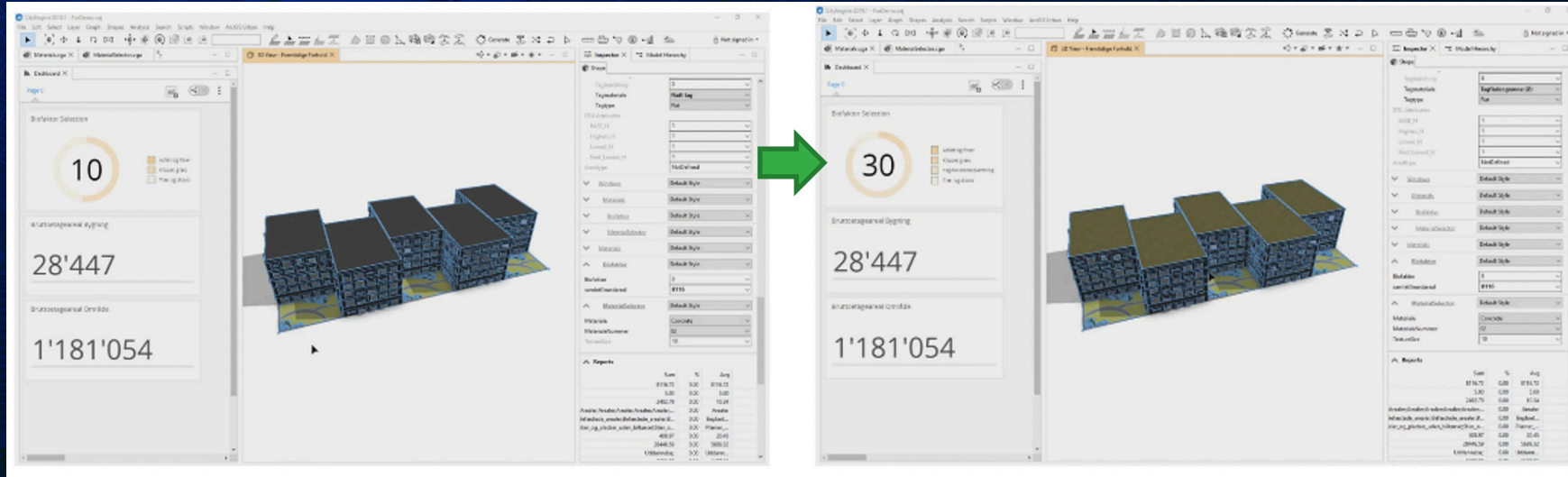


Understanding Zoning, Site Constraints,
& Visibility

Integrating BIM Models, Buried Utilities,
Transport Networks, Ecology & Habitats



Sustainability & Resilience

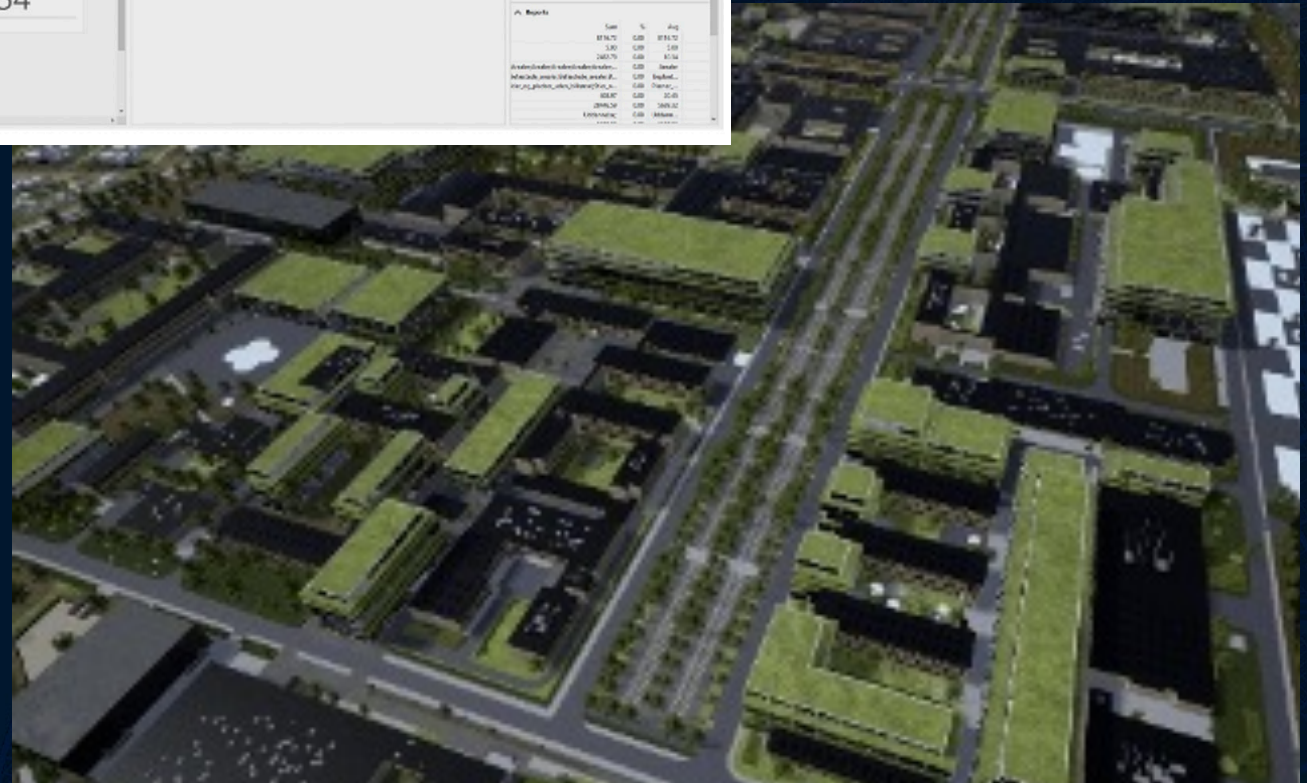


40 quantitative questions

e.g. Bio-factor Improvements
(roof material)

Instantly update the
scores for an entire
University campus

Provides accurate
reports for certification



GIS+BIM for Engineering & Consulting



Engineering &
Consulting

Connected Data
Environments

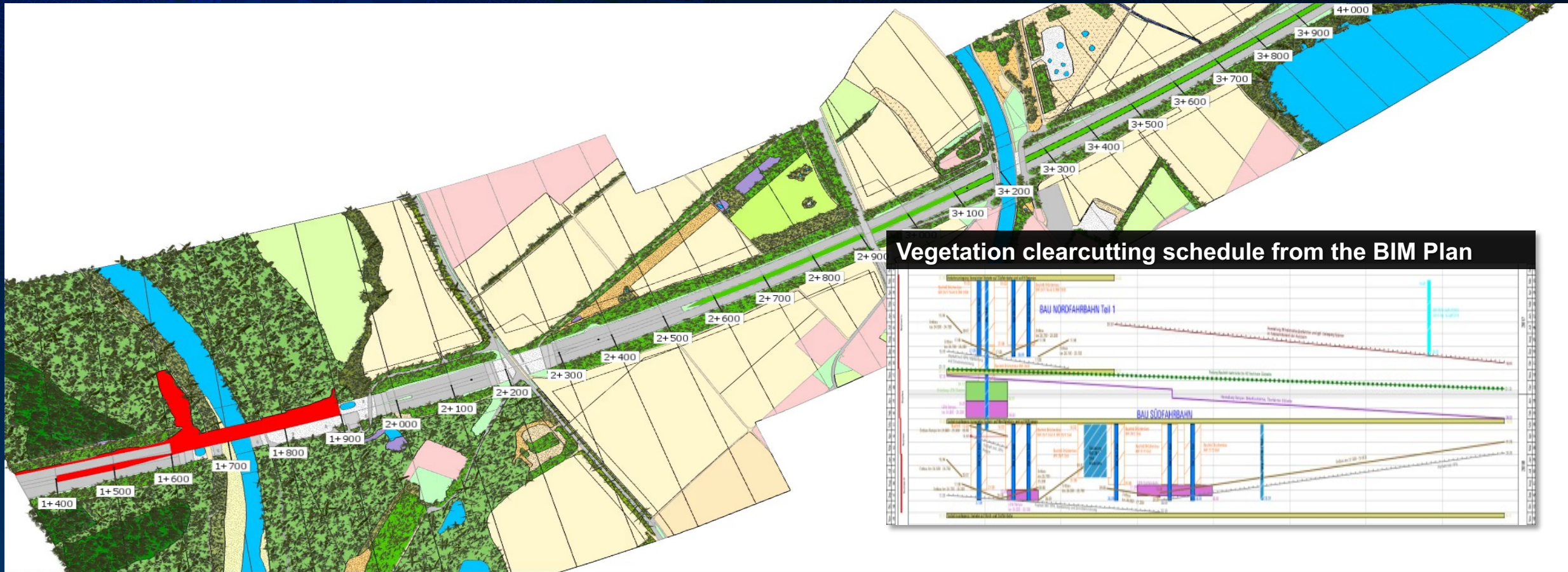
Collaboration &
Engagement

Project Planning
& Management

Solutions &
Operations



Project Planning & Management

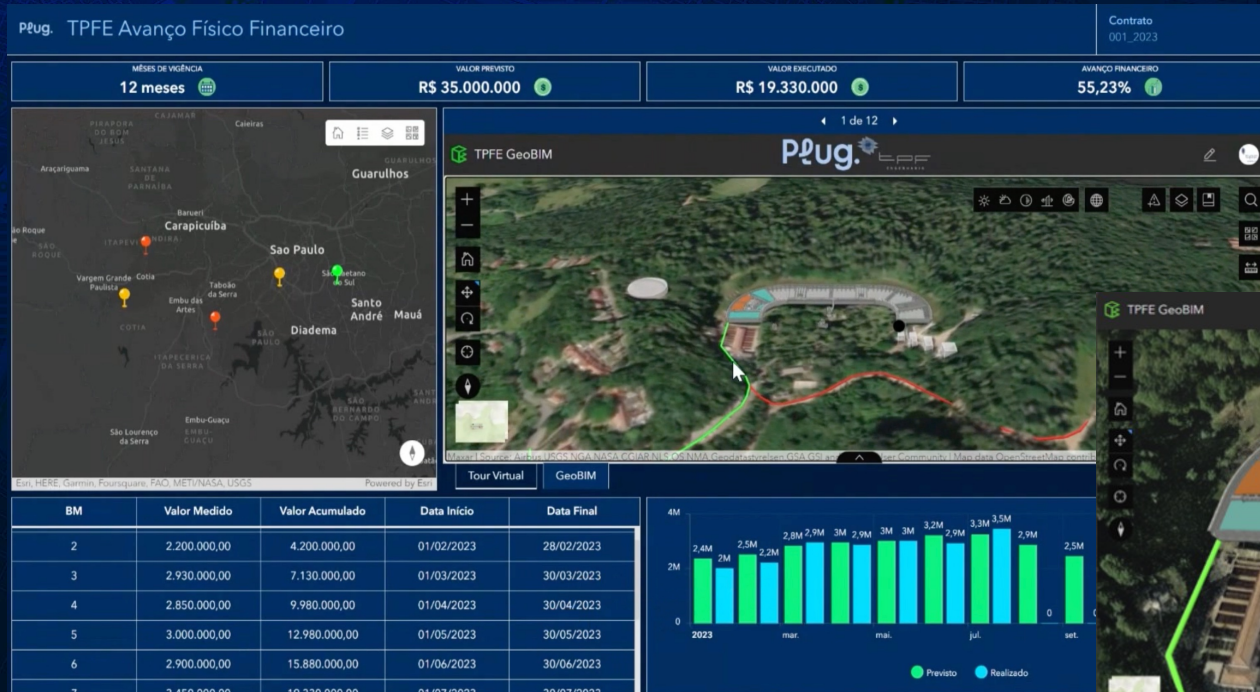


Solutions & Operations

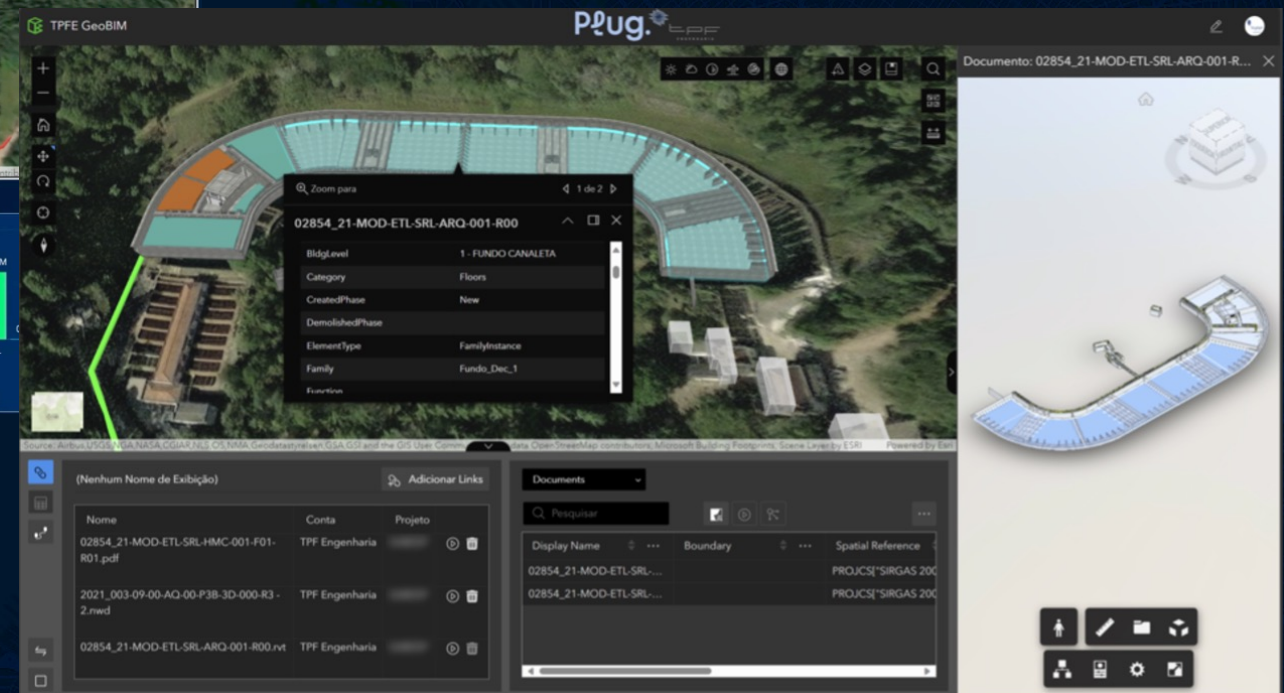
5D browsers for progress monitoring



ENGENHARIA



- Monitor physical and financial progress
- Embed in easy-to-use dashboards
- Improved management decision-making



- GIS
- BIM
- Financials/Contracts
- Time/Progress

GIS+BIM for Construction Management



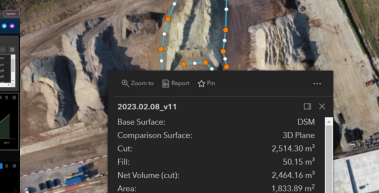
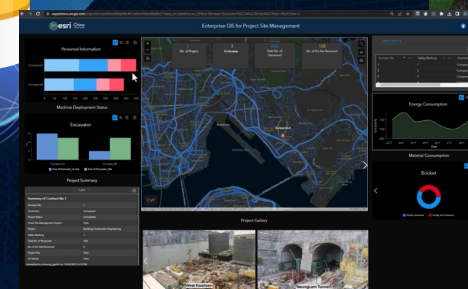
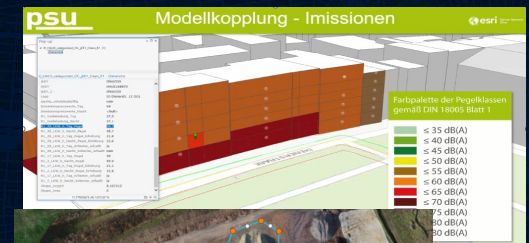
Construction
Management

Field Operations &
Reality Mapping

Project Controls
& Scheduling

Health & Safety
and
Risk Management

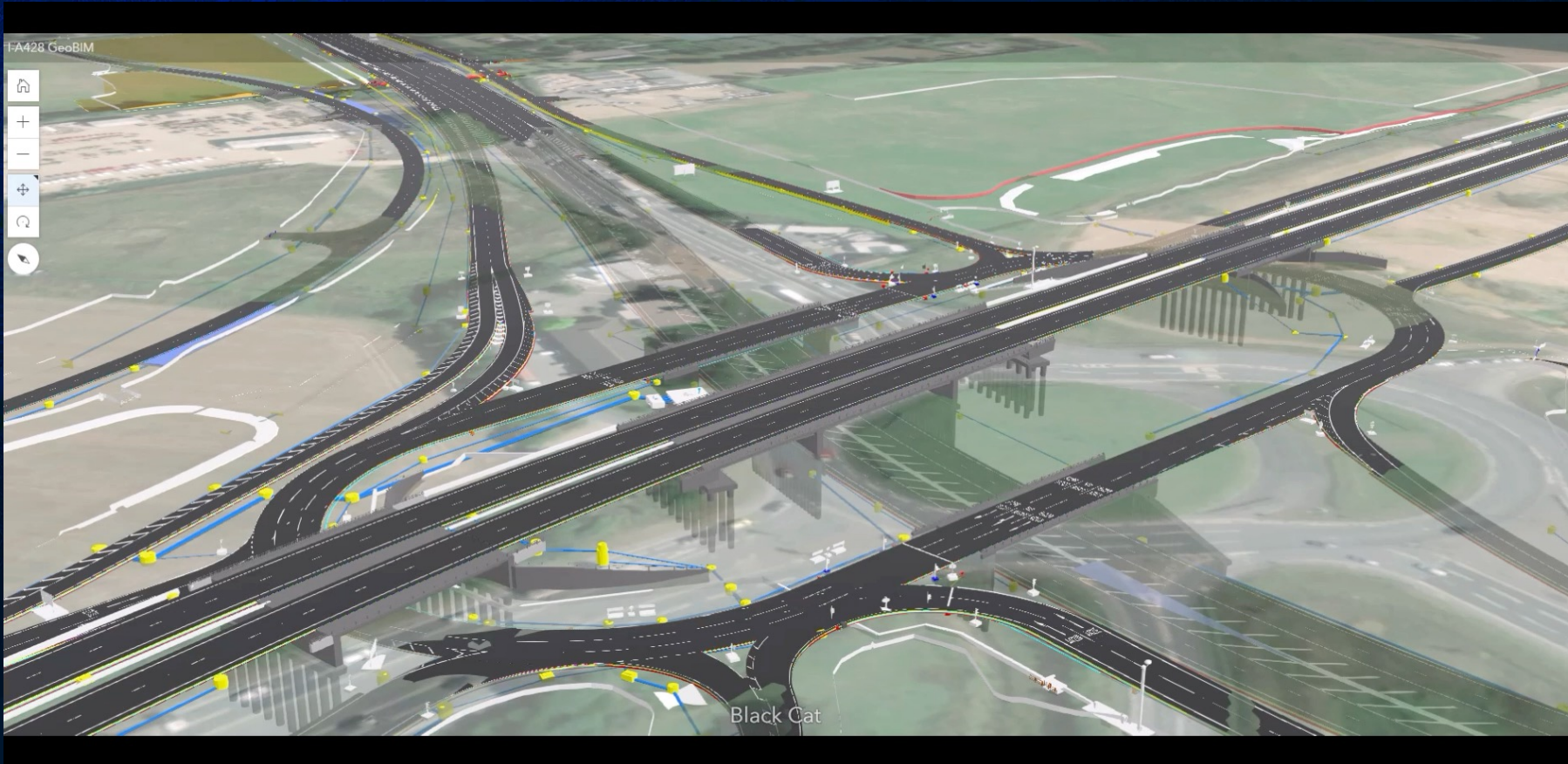
Project Delivery &
Digital Handover



Field Operations & Reality Mapping



Health & Safety + Onsite Risk Management



- 40% time savings
- Faster collaboration
- Faster risk mitigation
- Compliance & Reporting

GIS+BIM for Operations & Maintenance



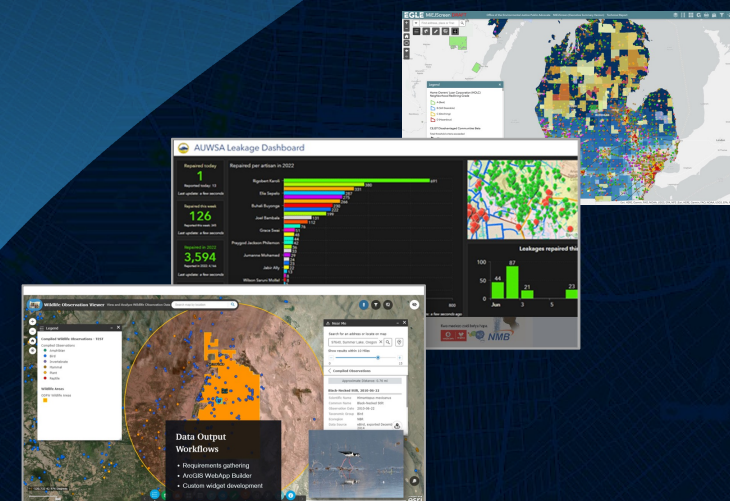
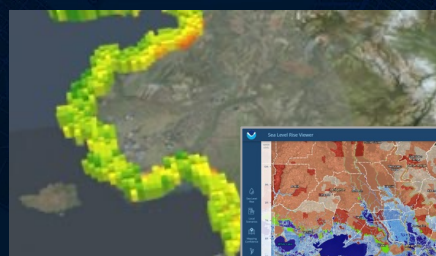
Operations &
Maintenance

Cities

Utilities

Rail

Sea Ports



Utilities

San Jose Digital Twin

Large Load Interconnection

Permitting

Net Zero

Reliability

San Jose Digital Twin

PG&E and City of San Jose partnership

Welcome to the San Jose Digital Twin Hub, your comprehensive resource for the groundbreaking partnership between PG&E and the City of San Jose.

This portal is dedicated to providing detailed information on our collaborative efforts to transform San Jose into a sustainable, resilient community. Here, you will find:

• **Large Load Interconnection Projects:** Explore the latest developments in connecting large-scale energy consumers, such as data centers, to the grid. Learn about the infrastructure upgrades and innovative technologies being implemented to meet the growing demand.

• **Permitting Processes:** Detailed guidelines and resources to help you navigate the permitting procedures for energy infrastructure projects.

• **NetZero Initiatives:** Discover the ambitious plans and projects aimed at achieving carbon neutrality, from energy-efficient buildings to renewable energy integration, see how we are working together to create a cleaner, greener city.

• **Grid Reliability and Capacity Enhancements:** Stay informed about the measures being taken to enhance the reliability and capacity of San Jose's energy grid.

A 3D architectural rendering of a data center complex. The building is a large, multi-story structure with a flat roof. Overlaid on the scene are various colored lines and markers representing energy infrastructure, including power lines, substations, and interconnection points. The scene is set at night with some interior lights visible.

A 3D visualization of a power line and substation. The image shows a tall utility pole with multiple power lines extending from it. Below the pole, there are colorful, translucent lines representing different types of energy infrastructure or data flows. The background is a dark, stylized landscape.

Energy Demand | IMGIS 2025

IMGIS Asset Viewer

IMGIS Route Planner

IMGIS Route Planner

San Jose Digital Twin

Westbank | San Jose Digital Twin

PG&E

Pacific Gas and Electric Company

Home

About PG&E

Energy Demand

PG&E is working to serve 10 gigawatts of new electricity demand from data center projects over the next ten years

10 GW is equivalent to 7.5 million homes

A map of the San Jose area, California, showing major roads, landmarks, and energy infrastructure. The map is overlaid with various colored lines and markers representing energy infrastructure, including power lines, substations, and interconnection points. The map is centered on San Jose, with labels for Milpitas, Santa Clara, and Campbell. The map is also overlaid with a grid of colored lines representing different types of energy infrastructure or data flows.

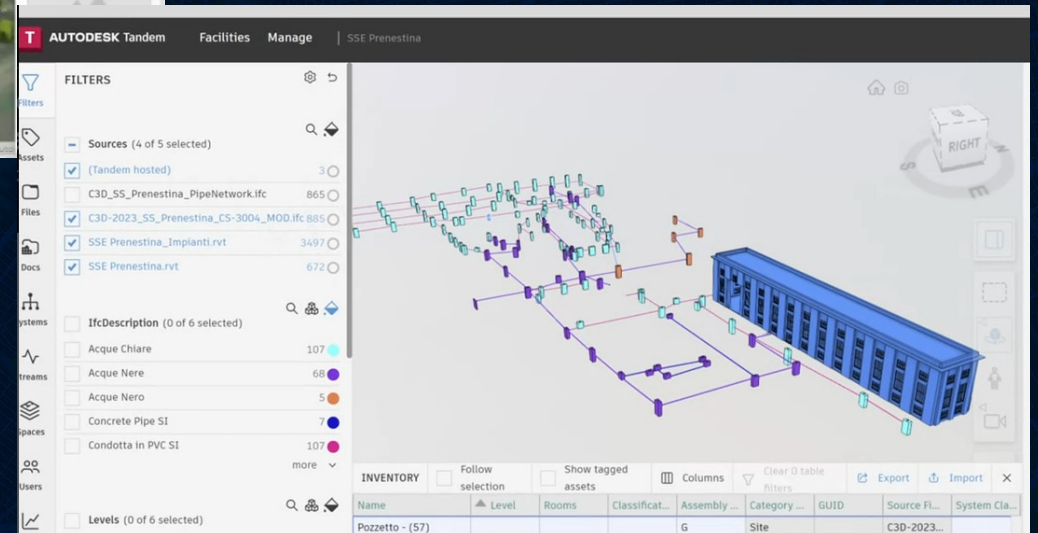
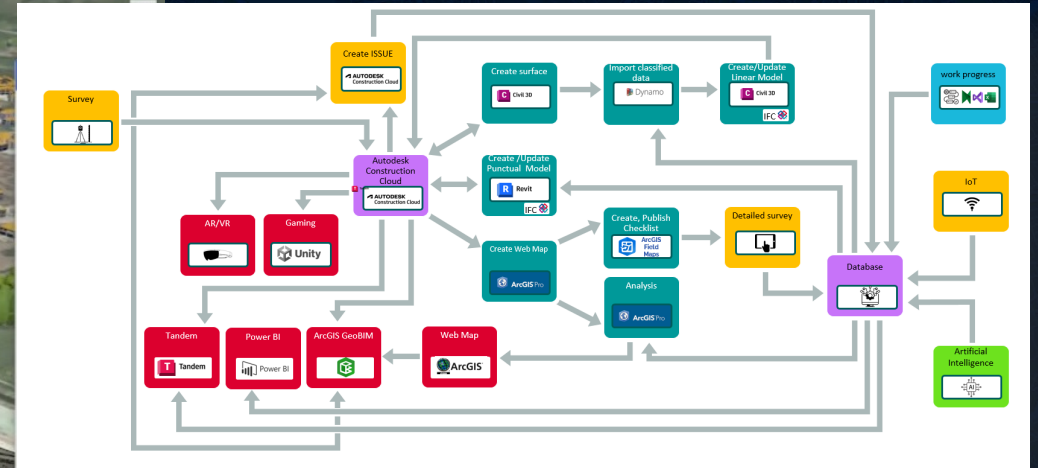
New Projects

Area of Interest

Data Center - 323 Terraine st

Sources: Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, GEBCO, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen and the GIS User Community | County of Santa Clara, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc. METI/NA... Powered by Esri

Rail



- 40% Time-saving from removing repetitive tasks
- Accurate monitoring of environment impact
- Reducing Health & Safety incidents
- ArcGIS GeoBIM portal to access all relevant content
 - Revit, Civil 3D, Dynamo, Tandem

Break



Technical Considerations

1. ArcGIS 3D Layer Types
2. ArcGIS GeoBIM
3. Working with IFC



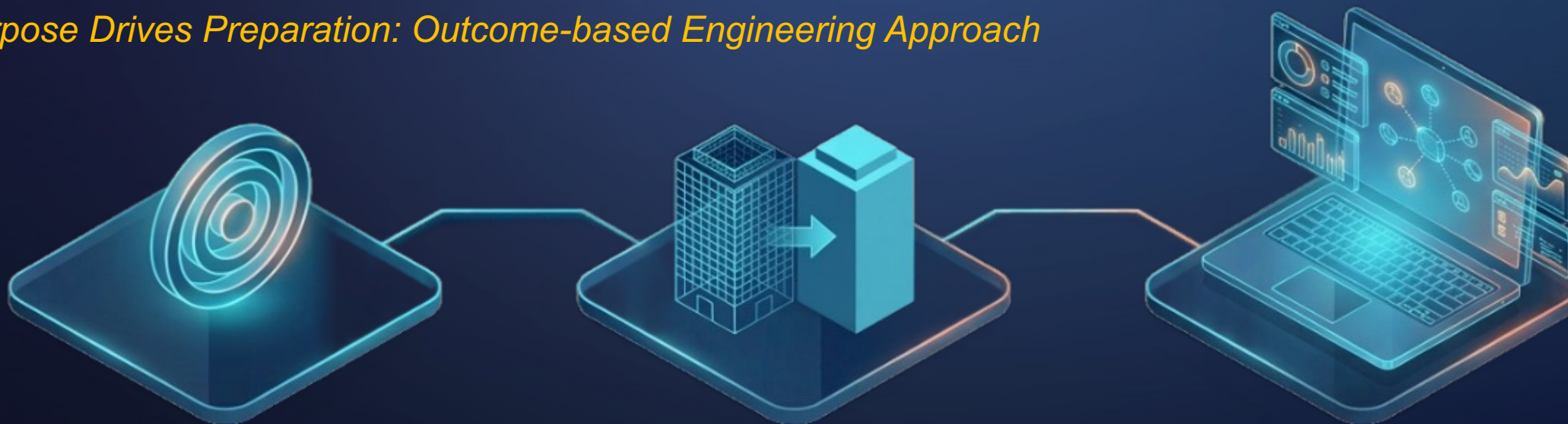


1. ArcGIS 3D Layer Types



Planning for GIS + BIM Integration

Purpose Drives Preparation: Outcome-based Engineering Approach



Define the Objective

- Avoid loading models “just because”
- Ensure a clear defined business objective
- What analysis will be involved?
- Who are the primary users?

Define the Detail

- Determine LOD
- Determine the model format (IFC, Revit, .glb, etc)
- Remove unnecessary categories
- Pre-define building filters
- Choose target layer type:
 - Building Scene Layers
 - 3D Object Feature Layers

Define the Delivery

- Scene Viewer
- Custom Web Apps
- Game Engines
- Other

ArcGIS Platform – 3D Capabilities

Enables users to serve, manage, and analyze 3D geospatial content

New & Improved

- Flood Simulation
- 3D Support in ExB & Dashboard
- Gaussian Splats
- Google 3D Basemap

Data Management

- Data Editing & Maintenance
- Data Integration & Management
- Content & Formats
- Data Creation & Modeling

Visualization

- Styles
- Effects & Animation
- Explore

Analysis

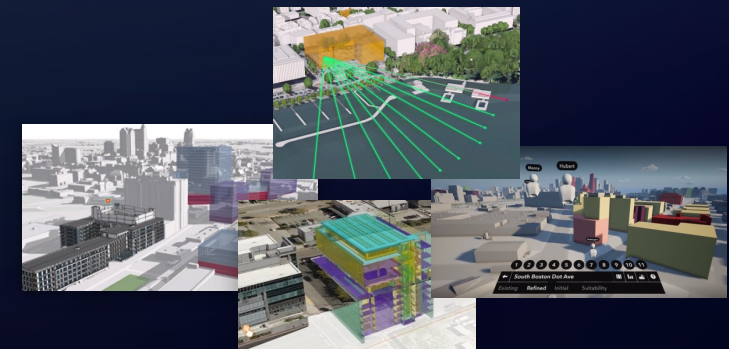
- Exploratory Analysis
- Visual Analysis
- Geoprocessing

Immersive Experience

- XR Experiences
- 3D Web Apps
- Game Engine Integration
- Seamless Collaboration with other tools



ArcGIS
Platform
3D System
of Record



...for a smarter, accessible, and sustainable future

What's New – Data Management

Generate, Manage and Access 3D Information

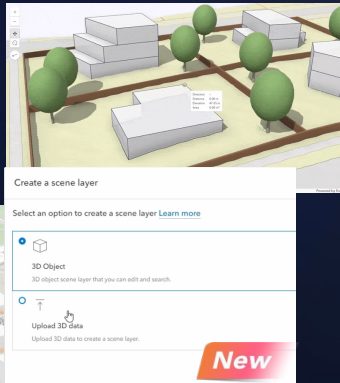
New & Improved

- Esri 3D Buildings Layer
- Create 3D Object Layer in Online
- 3D Mesh Editing (Reality)
- 3D Documents (GeoBIM)
- Stream Layers in Earth
- Optimize Mesh Layer
- Completed 3D Tiles support
- Improved Oriented Imagery support in WebApps

Layer Editing & Maintenance

Mesh editing

Improved Editing



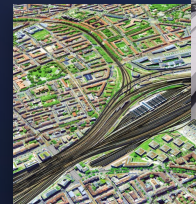
3D model upload (Web)

Scene layer creation Online

Content & Formats

Esri 3D Building layer

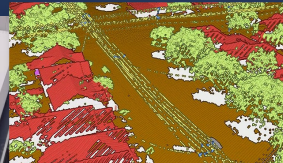
New



CAD/BIM - IFC

CityGML

Point Cloud/ Lidar



New

3D Tiles

Data Integration & Management

Connecting Repositories



Oriented Imagery

2D/3D GIS



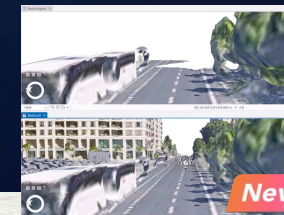
Stream Layers

Data Creation & Modeling

3D Procedural Content



Mesh LOD generation



Leverage 2D



3D System of Record
that stores assets,
data and transactions



*...Providing 3D content shared
...across a variety of clients*

ArcGIS 3D Layer Types



When to use each 3D Layer Type:

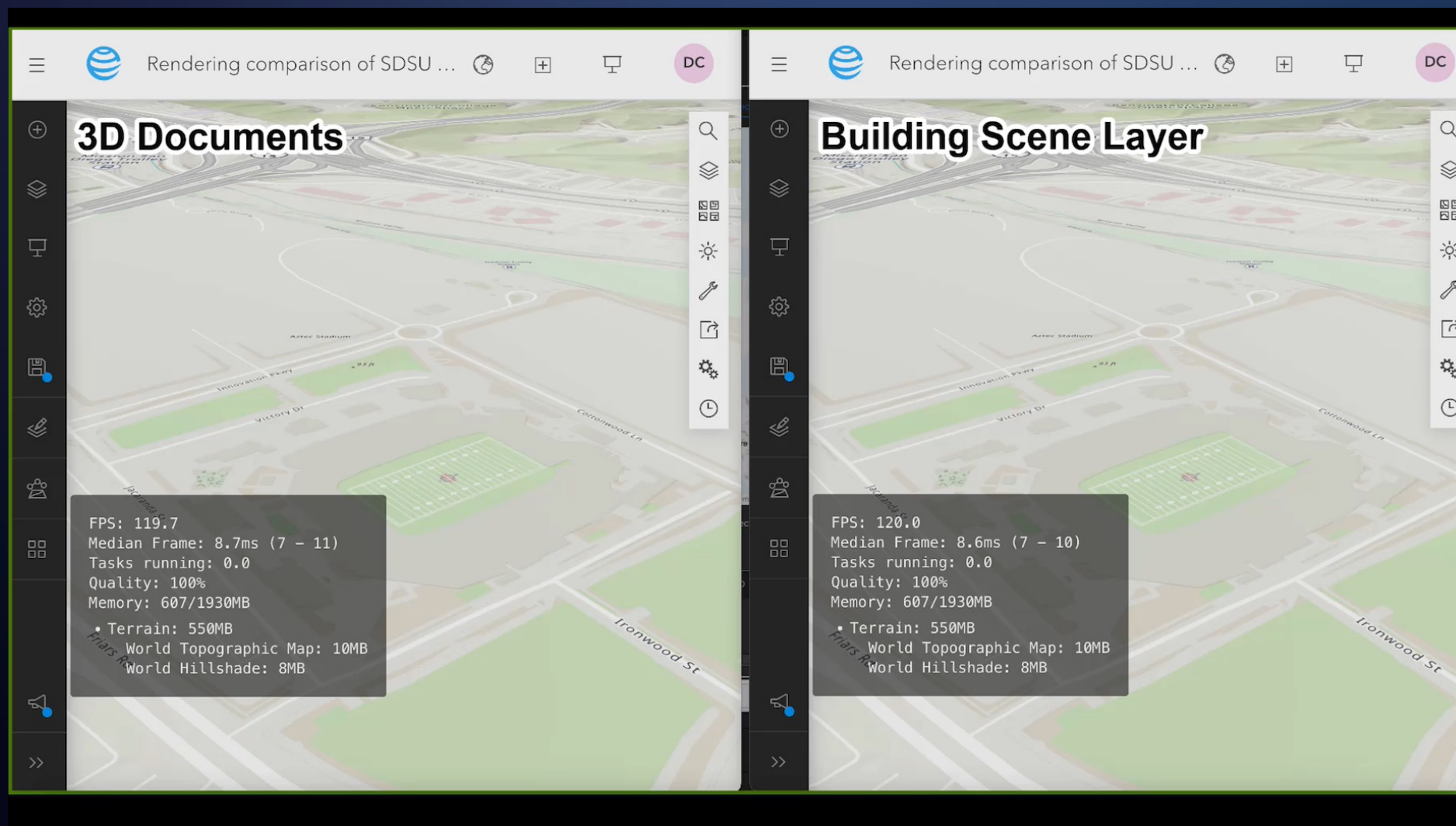
- **3D Point** = any point feature location (sensors, moving assets, network intersection)
- **3D Objects** = trees, street furniture, *BIM Models depending on use-case*
- **Building** = BIM Models, external/internal features (filtered, structured: disciplines, floors)
- **Point Cloud** = LiDAR, Photogrammetry (classification/measurements)
- **Mesh** = Reality capture/mapping – “real-world” conditions
- **Gaussian Splat** = High-fidelity inspection / thin structures (Next-level reality mapping)
- **Voxel** = Geotech, geology, atmospheric (wind, temperature), environmental volumes

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Why Planning, Outcomes and Choice Matters:

3D Object Layer vs. Building Layer – size and load time





2. ArcGIS GeoBIM



What is ArcGIS GeoBIM?

Cloud-to-cloud web application that brings
ArcGIS and Autodesk Construction Cloud into
one connected data environment



Why Use ArcGIS GeoBIM?

- Visualize GIS content, BIM models and project documents in the context of the physical and natural environment.
- Manage multiple Autodesk projects (project portfolio)
- Manage Autodesk Forma project issues
 - See them in geographical context
 - Categorized by attributes (Status, Types, Company, etc.)
 - Create ACC issues directly in the ArcGIS System
- Establish Field-to-Autodesk Forma workflow via ArcGIS Field Maps
- Create relationships between GIS features and Project assets
- Easy collaboration via web interface (compared to desktop)

What do you need to use ArcGIS GeoBIM?

Licenses

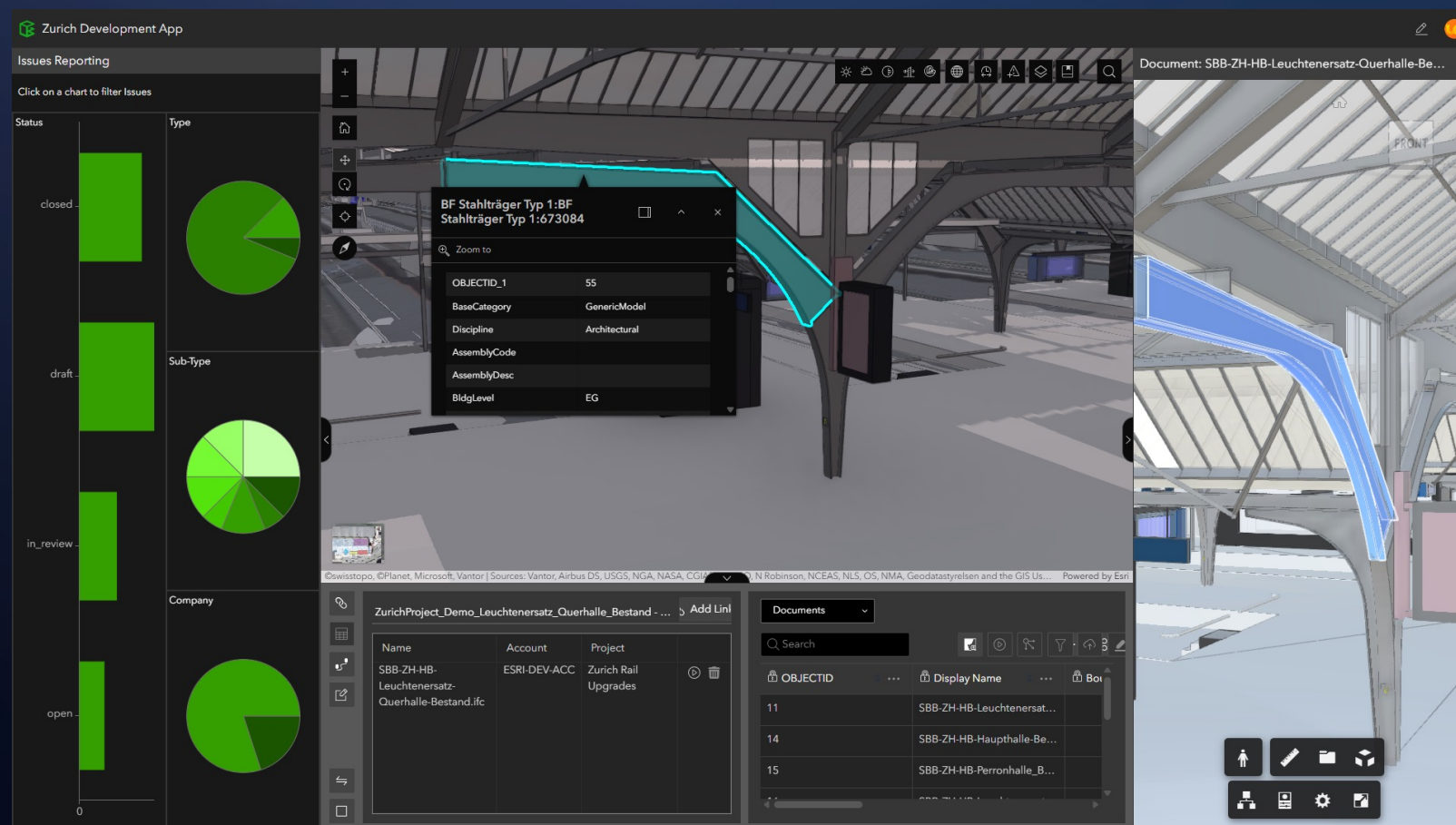
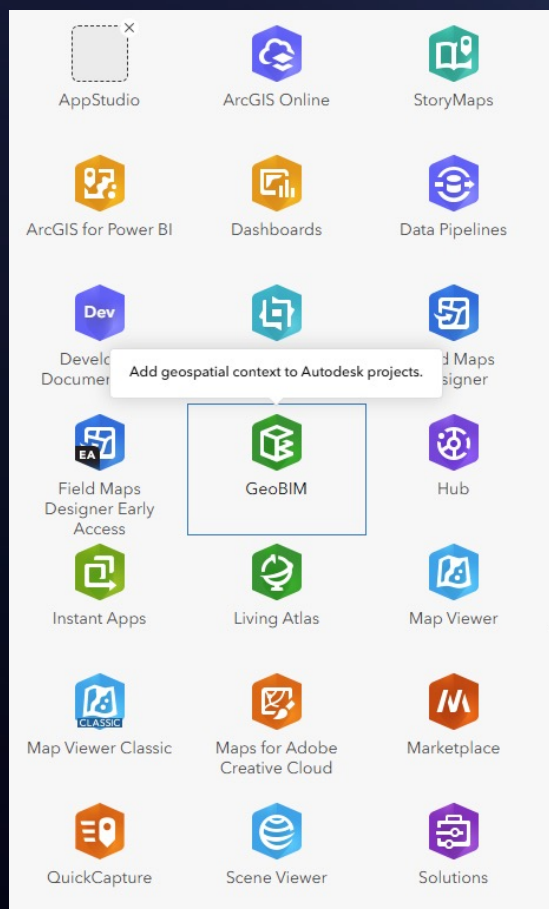
- ArcGIS Online or ArcGIS Enterprise License
 - ArcGIS Online: Contributor or above
 - ArcGIS Enterprise:
 - 11.2 - 11.4 requires additional ArcGIS GeoBIM user type extension
 - 11.5 – 12.0 (New!): Contributor or above
- Autodesk Forma Account
 - With access to an Autodesk Forma project

Data

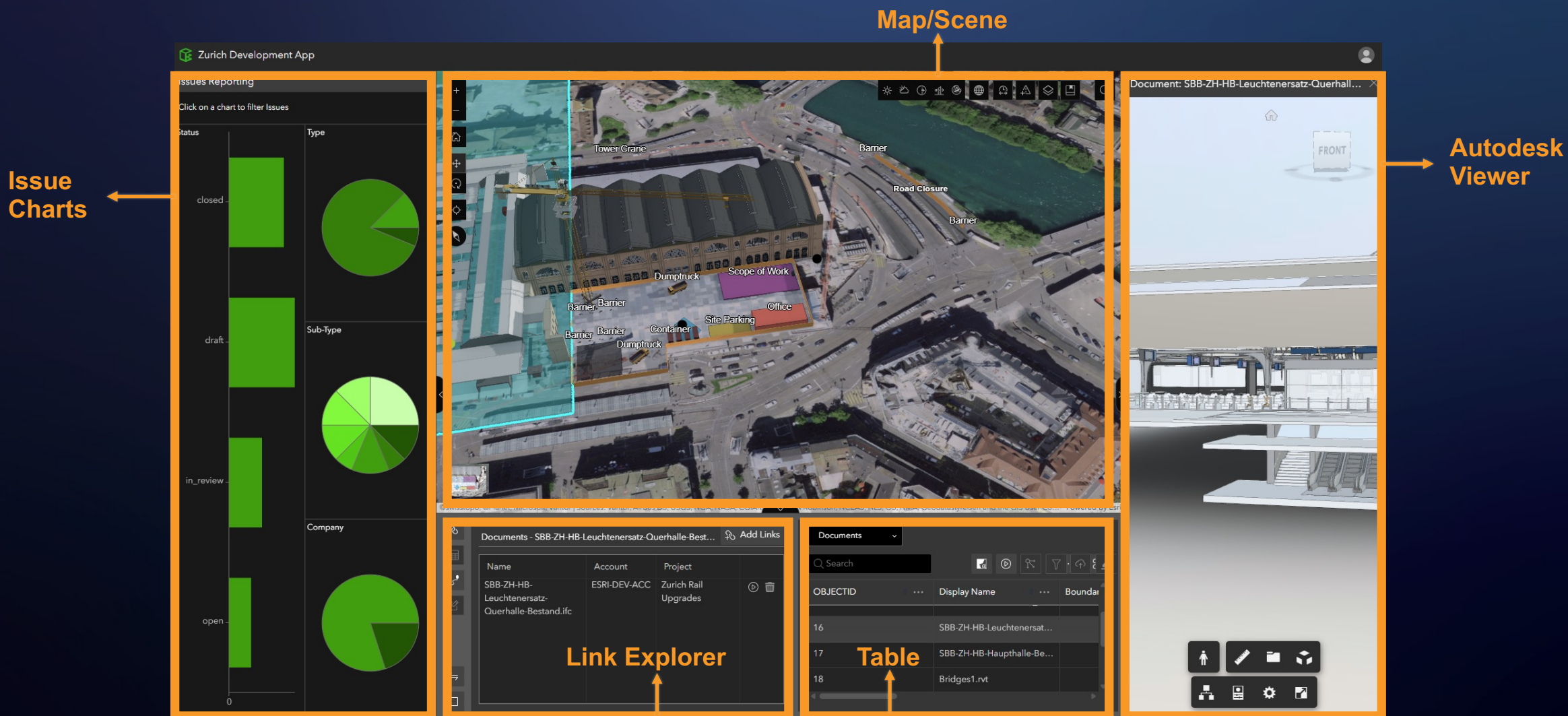
- Georeferenced Documents
 - .RVT, .IFC, .DWG, .DGN, .JPG, .PDF
 - Uploaded to ACC

What does it look like?

Main product: Web Application for ArcGIS Online and ArcGIS Enterprise



ArcGIS GeoBIM Web Application Components:



ArcGIS GeoBIM for ArcGIS Field Maps

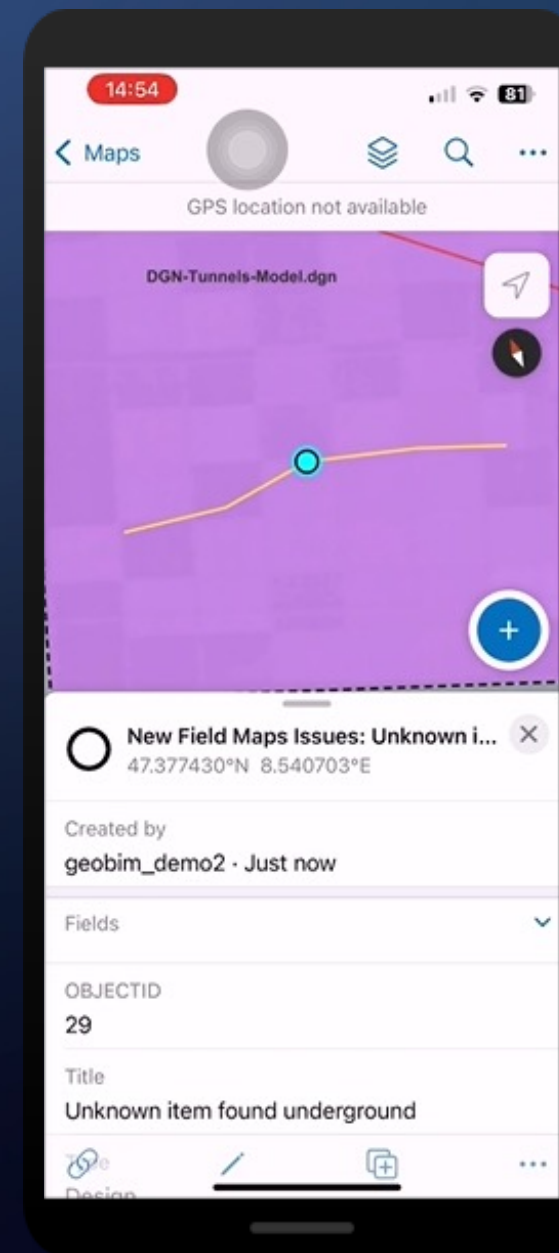
Access GIS and Forma content from a mobile device

What does it do?

- Allows field workers to create issues using ArcGIS Field Maps on site, which can then be uploaded to Forma

How does it work?

- Enable a GeoBIM map for Field Maps
- Use Field Maps mobile app to collect information
- Edit and upload Field Maps issues to Forma through GeoBIM



2. Add Document Models (Beta)

GeoBIM Tools

What does it do?

- Process Revit and IFC files, on scale
 - Revit + IFC versions: any version GeoBIM supports
- Creates a 3D Object Feature Layer containing models processed
 - One service with many models in it
 - Each model will be one single entity (as opposed to individual elements in BSL)
- Models are simplified
- Models are linked to original model on Forma
- Semi-automated (one button clicked)



2. Add Document Models (Beta) - CONTD

GeoBIM Tools

When to use it?

- When you don't need individual asset information of your BIM model
- Focus on visual accuracy
- BIM model is updating frequently

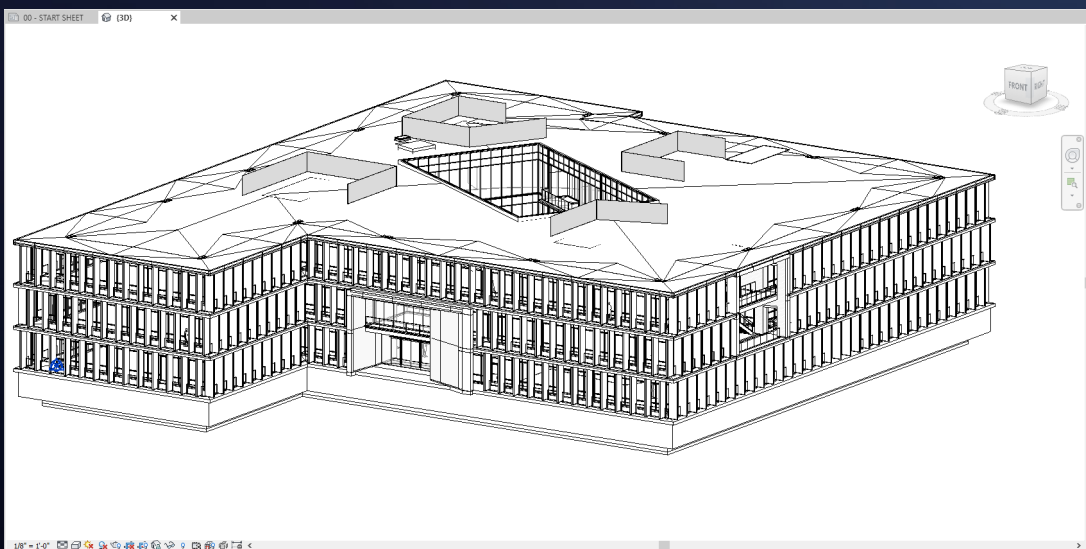
Why use it?

- Data duplication
- Simplify the existing BIM -> GIS process – bypassing ArcGIS Pro
 - Especially in the early stages where updates to the models are often
 - Flat learning curve
- Optimize storage and performance
 - Achieve visualization performance without sacrificing visual accuracy

2. Add Document Models (Beta) - CONTD

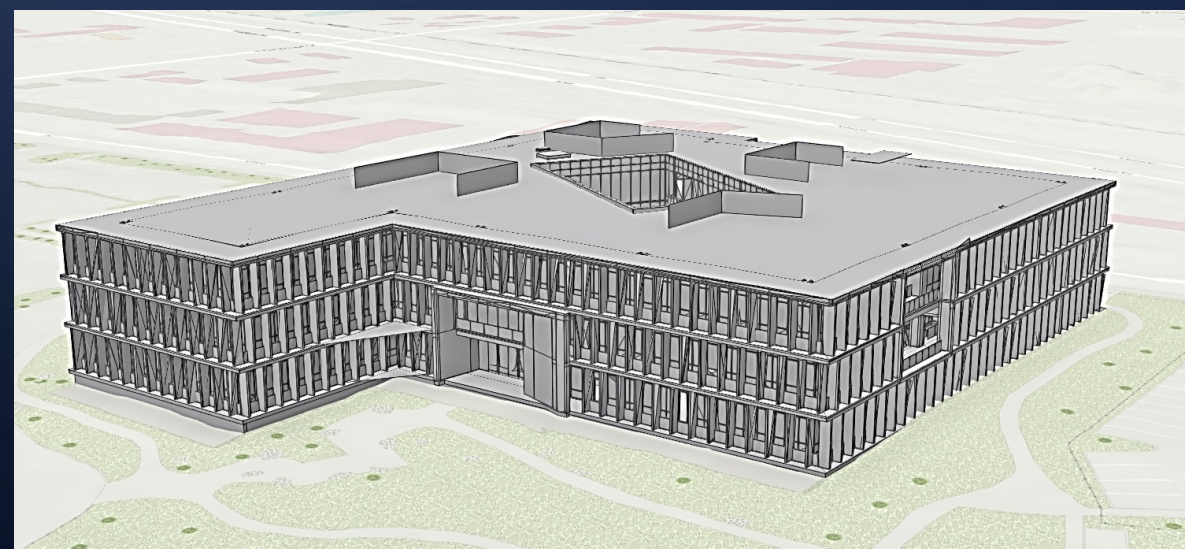
GeoBIM Tools

Original BIM Model (Revit)



848 MB
2,957,754 Vertices
5,825,235 Triangles

Simplified 3D Document (3D OFL)



66 MB (92% reduction)
980,749 Vertices (66% reduction)
1,656,814 Triangles (71% reduction)



3. Working with IFC



What is IFC?



Industry Foundation Class

- ISO standard file format and schema for open BIM exchange that is vendor-agnostic
- Includes information about geometry, materials, schedules, quantities and elements
- IFC is an interchange format and not (commonly) edited
- **IFC4 and IFC4x3 can store coordinate systems and spatial reference information (without PRJ required)**
- Allows project stakeholders to collaborate in a common format
- Can be used for viewing, measuring, clash detection, simulations
- Can be exported and imported from/into most BIM authoring/editing platforms

LOD for BIM-GIS Integration: Finding the Right Level of Detail

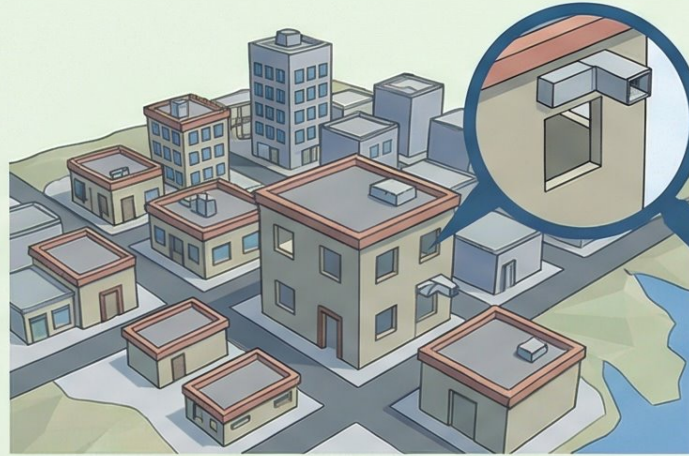
LOD 100 - 200: Conceptual & Approximate



Use Case: City-scale planning, zoning, massing studies.

Data: Generic shapes, overall volume, approximate location.

LOD 300: Precise Geometry & Specific Information (The Sweet Spot)

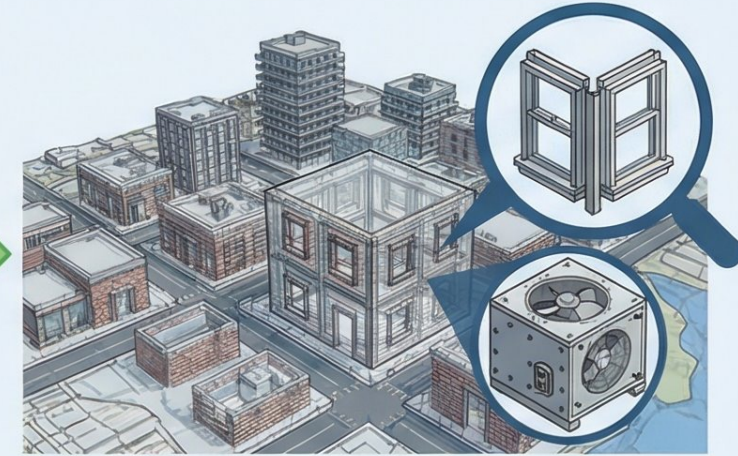


Use Case: Site analysis, clash detection (spatial), asset management.

Data: Accurate size, shape, location, basic system info.

Best for GIS integration.

LOD 400 - 500: Fabrication & As-Built (Too Much Detail)



Use Case: Construction fabrication, detailed facility maintenance.

Data: Manufacturing details, assembly instructions, individual parts.

Can cause GIS performance issues.

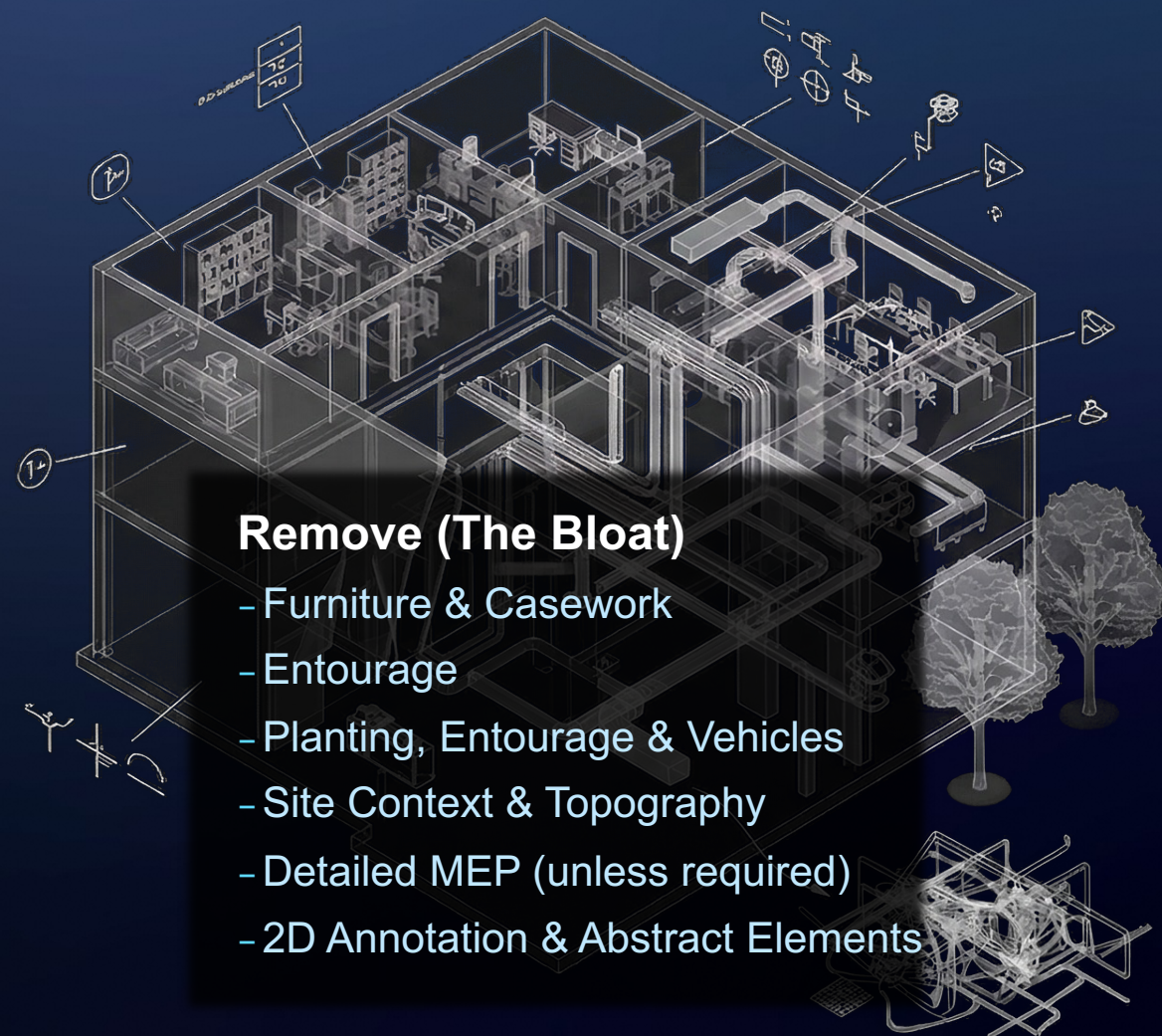
BIM Data Preparation Flow

Simplify & Filter for GIS

Key Takeaway: For effective GIS integration, filter BIM data to LOD 300 (precise geometry without fabrication detail) to balance accuracy with system performance.

Optimizing IFC for GIS

Focus on Categories



IFC Georeferencing

... NOT a mandatory attribute

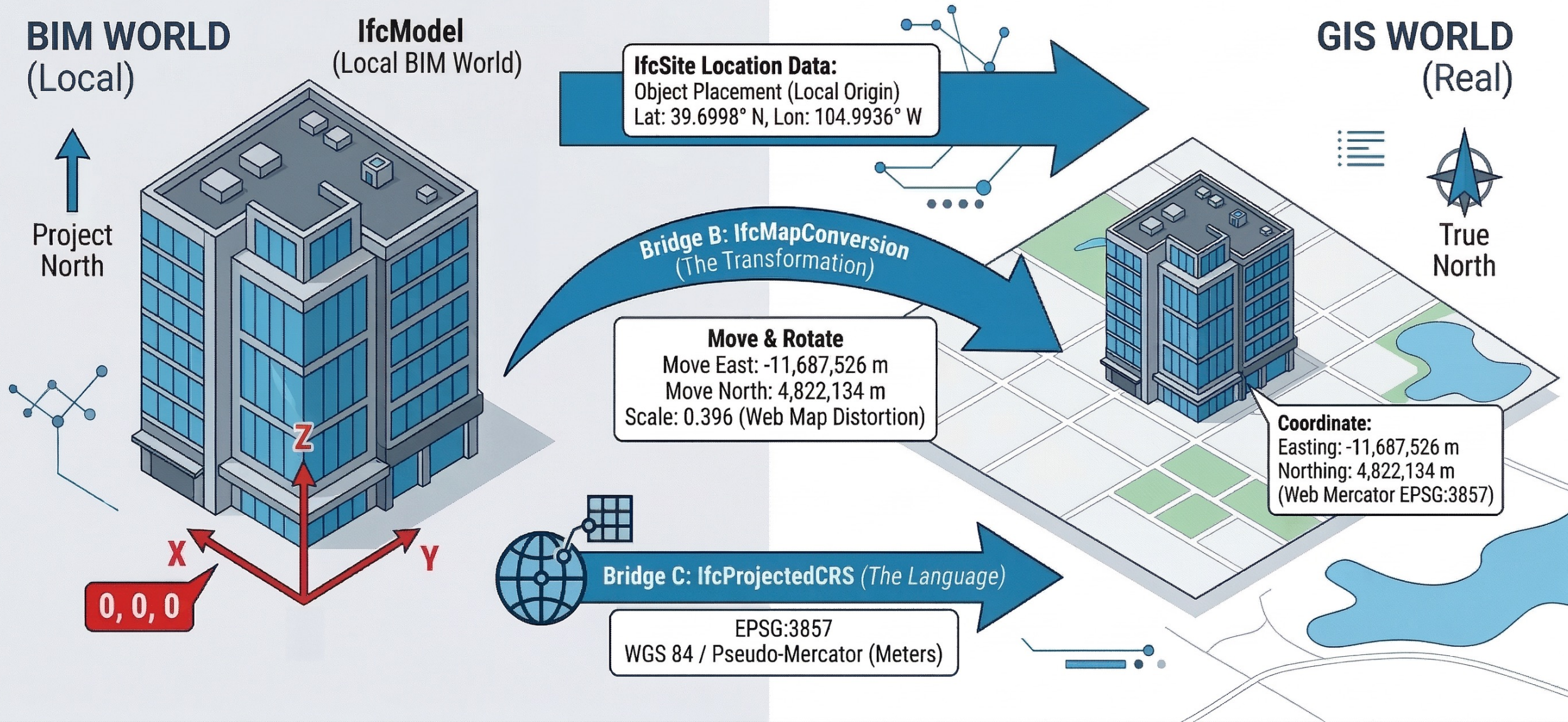
- IFC 4x supports native georeferencing
- IFC 2x3 does **NOT** support georeferencing
- Georeferencing in IFC 4.x is governed primarily by the following IFC Entities:
 - IfcMapConversion
 - IfcProjectedCRS
- Supports EPSG CRS, Eastings/Northings/Height, Map Units, Scale and Rotation Angle.
- Properly georeferenced IFC can be used in ArcGIS Pro without a corresponding PRJ
- Only recommended under 'Industry Best Practices'

```
#13413=IFCLOCALPLACEMENT(#74,#13415) ;  
#13444=IFCLOCALPLACEMENT(#74,#13446) ;  
#21=IFCMAPCONVERSION(#15,#20,566446787.,4880701481.,0.,$, $, $) ;  
#1273=IFCMAPPEDITITEM(#1279,#1274) ;  
#1226=IFCPROPERTYSET(#1279,#1227) ;
```

```
#16=IFCPROJECT('1zvoKX5szVWtqdMZSMDzmr',#5,'Project','Default Project',$,$,$,(#15),#6) ;  
#20=IFCPROJECTEDCRS('EPSG:32632','WGS 84 / UTM zone 32N',$,$,$,$,#7) ;  
#27=IFCPROPERTYSET('1zxdaO81vRWX9u1rPdJSqU',#5,'Pset_BuildingCommon',$,(#28,#29,#30,#31,#32,#33,#34)) ;
```


Georeferencing with IFC Entities: The Proper Handshake

Replacing implicit coordinates with explicit, standardized entities for Web GIS



Key Differences Between IFC and Revit Support

- ‘Construction disciplines’ are equivalent to ‘Revit disciplines’ (Feature Datasets)
- Feature Class names are (mainly) equivalent to Revit names. Notable exceptions include:

IFC entities	Revit categories
Slabs	Floors
Spaces	Rooms
Site	Topography
Plates	Curtain Wall Panels
OpeningElement	Walls, Doors, Windows, etc.

- IFC Classes (or Entities) (1000+) are much more granular than Revit Categories (200+)
 - Therefore, multiple IFC Classes are sometimes combined in a Feature Class
- Floor plans are not automatically created
 - Can be created manually at ArcGIS 3.2+ using [Extract BIM File Floorplan](#) GP tool
- Revit “Generic Models” are the equivalent of IfcBuildingElementProxy

IFC Validation Service

Official open-source quality assurance tool developed by buildingSMART

- Confirms if an IFC model is truly a standardized valid model
- Ensures project data is reliable and interoperable before sharing for BIM workflows
- What does it check?
 - **STEP Syntax** – verifies the file is structurally correct, machine-readable follows ISO standards
 - **Schema Compliance** – ensures the file is an official IFC version (2x3, 4x3, etc) and all data types, attributes, and entity relationships are correct
 - **Normative Rules** – validates the file meets mandatory IFC standards
 - **Industry Best Practices** – checks for deviations from default and common industry modeling practices (*ProjectedCRS & MapConversion*)
 - **bSDD Alignment** – checks for consistent data and terminology structure
- <https://validate.buildingsmart.org/dashboard>