



Collaboration, Innovation and Resilience: Championing a Digital Generation

Geospatial Information Systems for Better Information Management



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GIS and BIM – the acronyms

Geographically Integrated Solutions



Better Information Management





WORKING WEEK 2025

AND

Locate25
THE NATIONAL GEOSPATIAL CONFERENCE

Collaboration, Innovation and Resilience:
Championing a Digital Generation



Geospatial Council of Australia

Brisbane, Australia 6-10 April

Digital Transformation Prerequisite: Digital Advisory

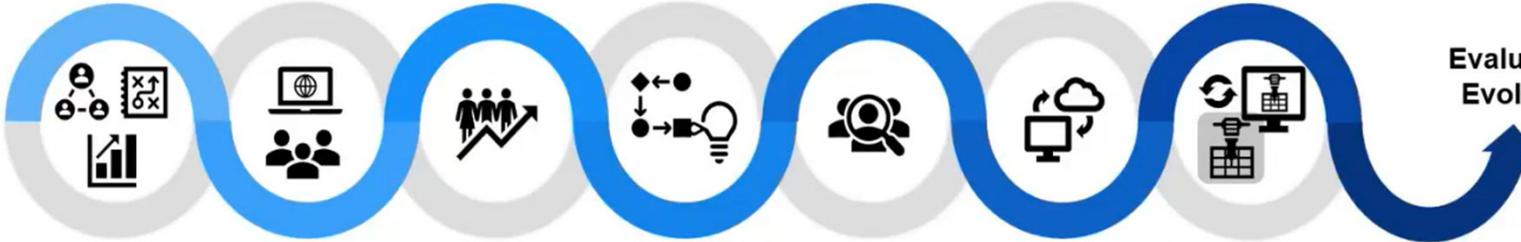
Establish Business Case

Define KPI's

Identify Champions

Develop Solutions!

Evaluate!
Evolve!



Define Deliverables

Choose Technology

Connect Data

70%

of all
Digital Transformation
efforts Fail!



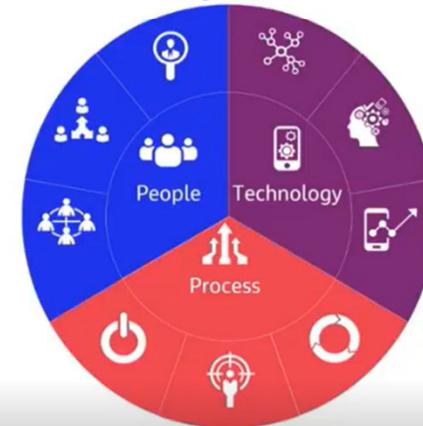
Lack of Stakeholder Support



Too Much, Too Fast



Focus on Technology First



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CHCN AV



Why Integrate GIS and BIM – Jacobs Experience

Why Statements

- Distribution of data to teams who may not have access to it
- Access to information for non-technical stakeholders
- Put CAD/BIM Designs into Geospatial Context
- Make better more informed decisions, environmental and social impacts
- Work in 3D integrating multiple separate disciplines
- Supports Digital Twin Initiatives – can be that initial SDT

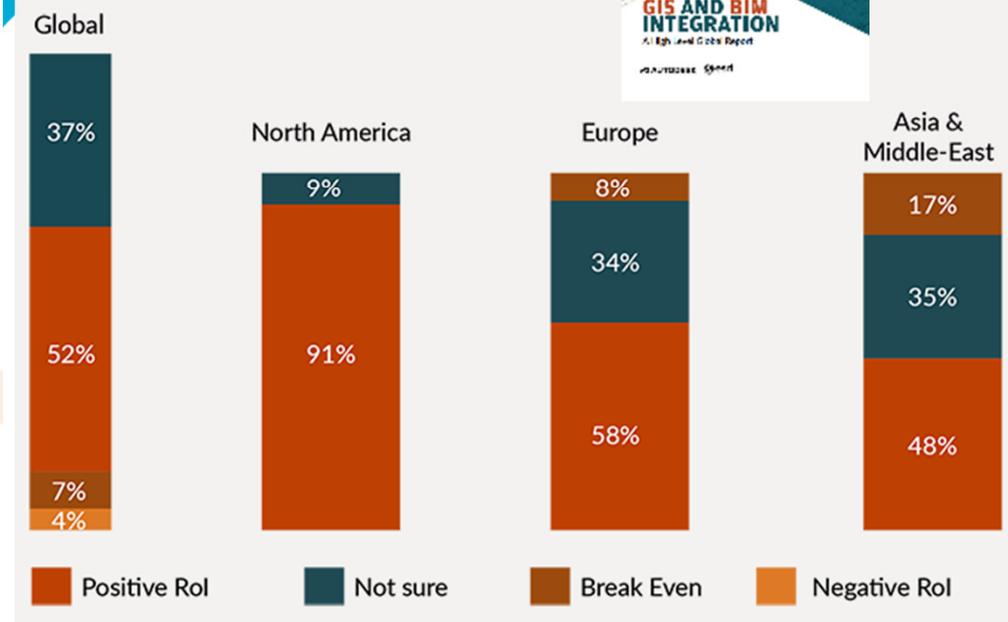
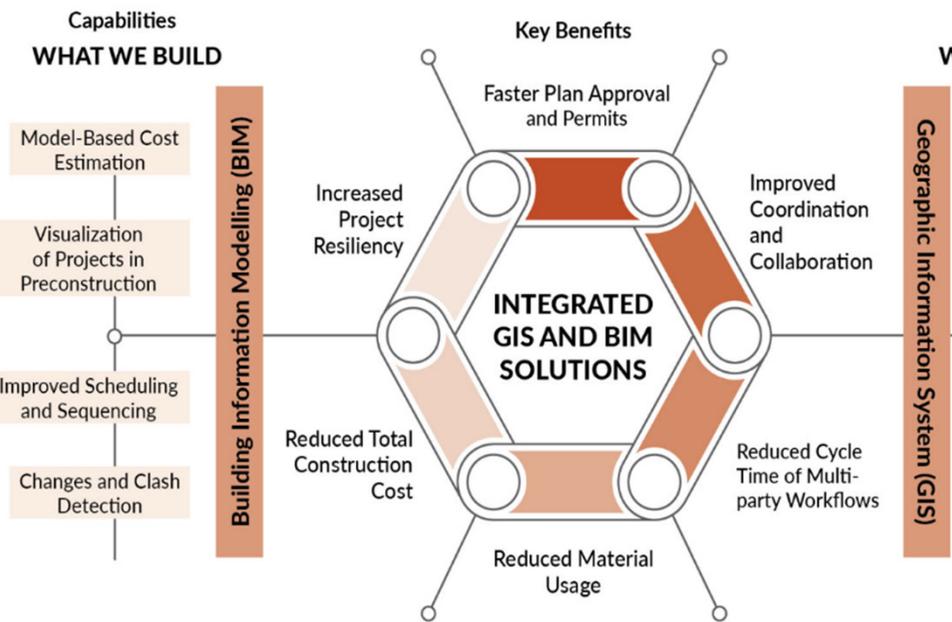


Problem Statement Examples

- Road Infrastructure Project – avoiding no-go-zones with the Design requires good Data Integration
- Environmental Assessment Teams (not skilled in CAD/BIM) need a collaboration environment to easily update constraints with full view of Design and Physical Constraints
- Master Planning – 2D CAD Designs require frequent conversion into GIS for Collaboration interface – process needs to be automated



Why Integrate GIS and BIM – Industry View



Source: Geospatial World – GIS and BIM Integration Global Report

Emerging Trends in BIM – GIS Integration

1. **Interoperability Standards:** Developing and adopting standards like CityGML and IFC to ensure seamless data exchange between BIM and GIS systems.
2. **Smart Cities – Cognitive Cities:** Real-time Data Integration - Combining real-time data from IoT devices with BIM and GIS for dynamic city management.
3. **Generative Design:** Using CityEngine or similar generative design methodologies to optimize design based on geospatial contextual data. Leverages AI and ML.
4. **Automated Data Conversion:** Enhancing the conversion of BIM data to GIS formats using advanced techniques like computer graphics. This approach improves efficiency and reliability, as seen in the integration efforts for smart city projects.
5. **Immersive Visual Twins:** Integration of immersive technologies to visualize BIM and GIS data. Utilisation of gamification engines while deploying AR and VR for design visualization and stakeholder engagement
6. **Sustainability and Resilience:** Using BIM and GIS to enhance the sustainability and resilience of urban environments.



Vendors Working Together



ArcGIS Online Enterprise



ArcGIS for AutoCAD Civild3D



ArcGIS GeoBIM



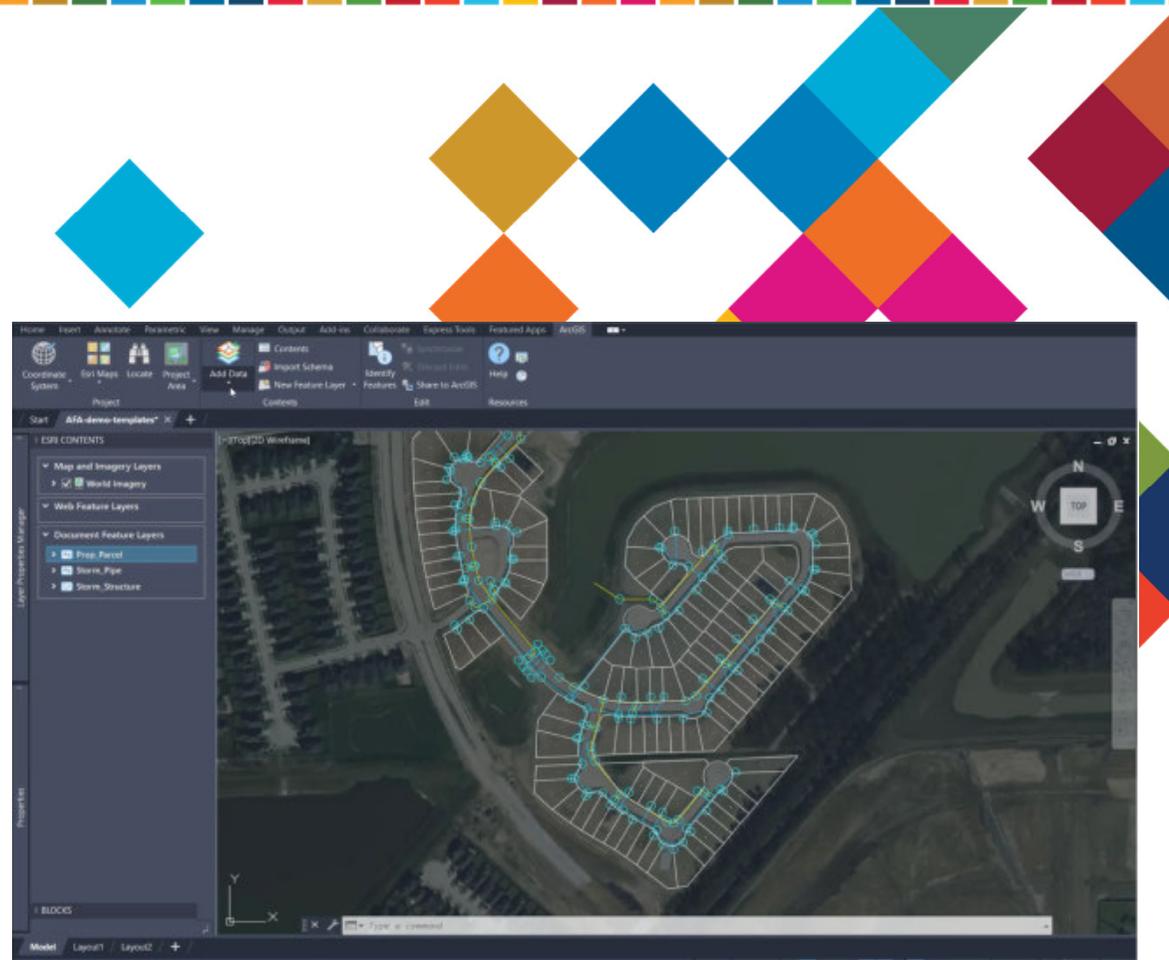
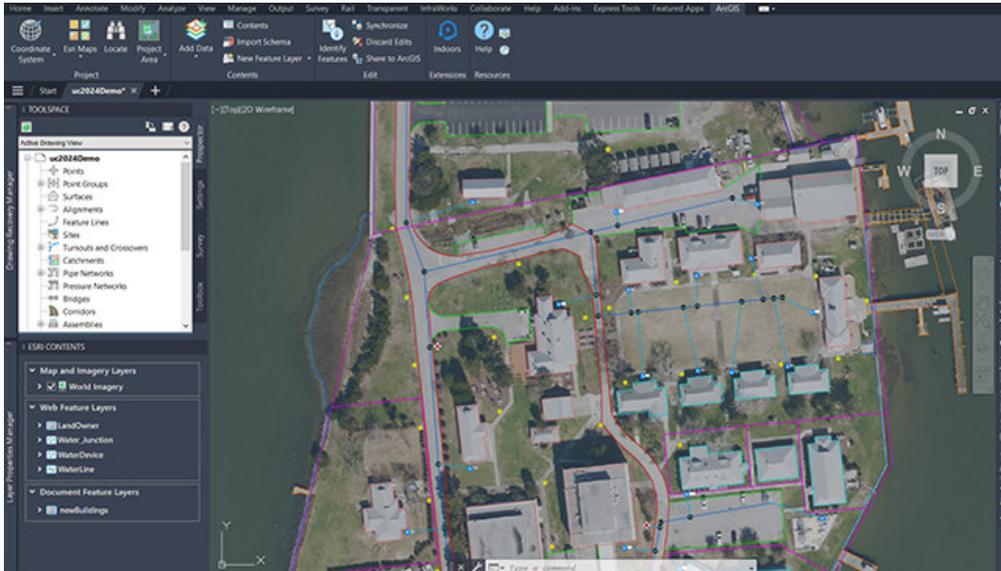
AUTODESK®
CONSTRUCTION
CLOUD

Esri Integration Examples



ArcGIS GeoBIM

Esri Integration Examples



ArcGIS for AutoCAD
Civil3D

Bentley and Cesium

Bentley Systems Acquires 3D Geospatial Company Cesium

Combination of Cesium Plus iTwin Offers Developers the Most Comprehensive Digital Platform for the Built and Natural Environment

Press Release



September 6, 2024



Example of a design review process leveraging the Cesium integration with iTwin Platform

Pointerra

Jacobs

Help Guest User

[point] No mouse coordinate data... FoV: 60°

- QM - Museum, ...
- QM - Back of Ho...
- 07 - QPAC**
 - QPAC - QPAC ex...
- 08 - Carparks**
 - P1 - Riverside C...
 - P2 - Cultural Ce...
 - P3 - SLQ Carpark
- 09 - General Areas**
 - AQ - Carpark Tu...
- 10 - Services**
 - Utilities Pre...
- 11 - Building Forms**
 - Queensland Mu...
 - SLQ - State Libr...
 - GoMA - Gallery ...
 - Ext - Victoria Bri...
 - SLQ - The Edge
 - CEP1 - PDT
 - QPAC - Qld Perf...
 - QPAC - External...
 - QPAC - Qld Perf...
- 12 - Development Forms**
 - CEP2 Option 1
 - CEP 2 Option 2
 - CEP 2 Option 3
 - CEP 2 Option 4

POINT CLOUD LAYERS [11]

CLASSIFICATIONS






WORKING WEEK 2025

AND

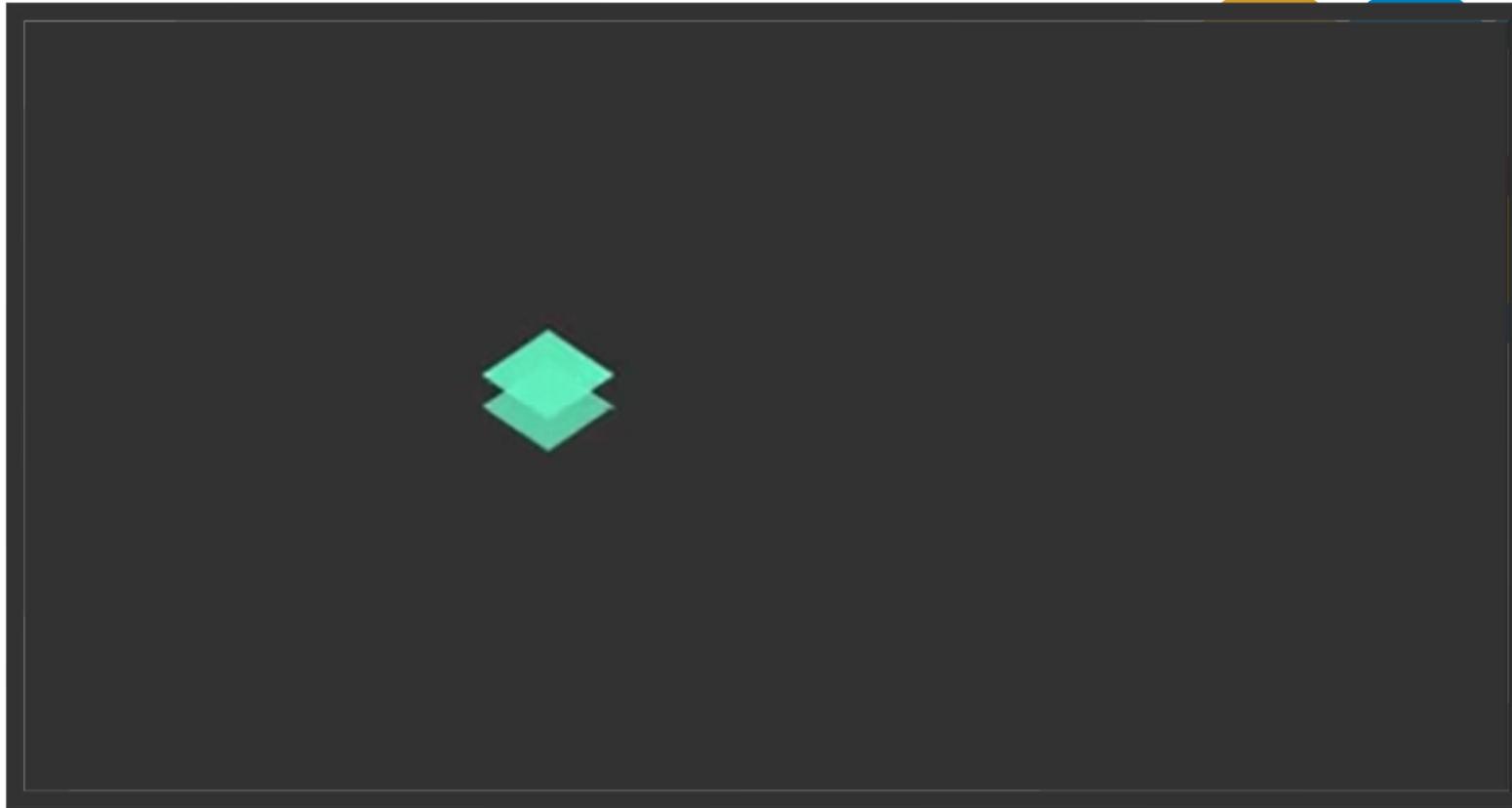
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Gaming Engines



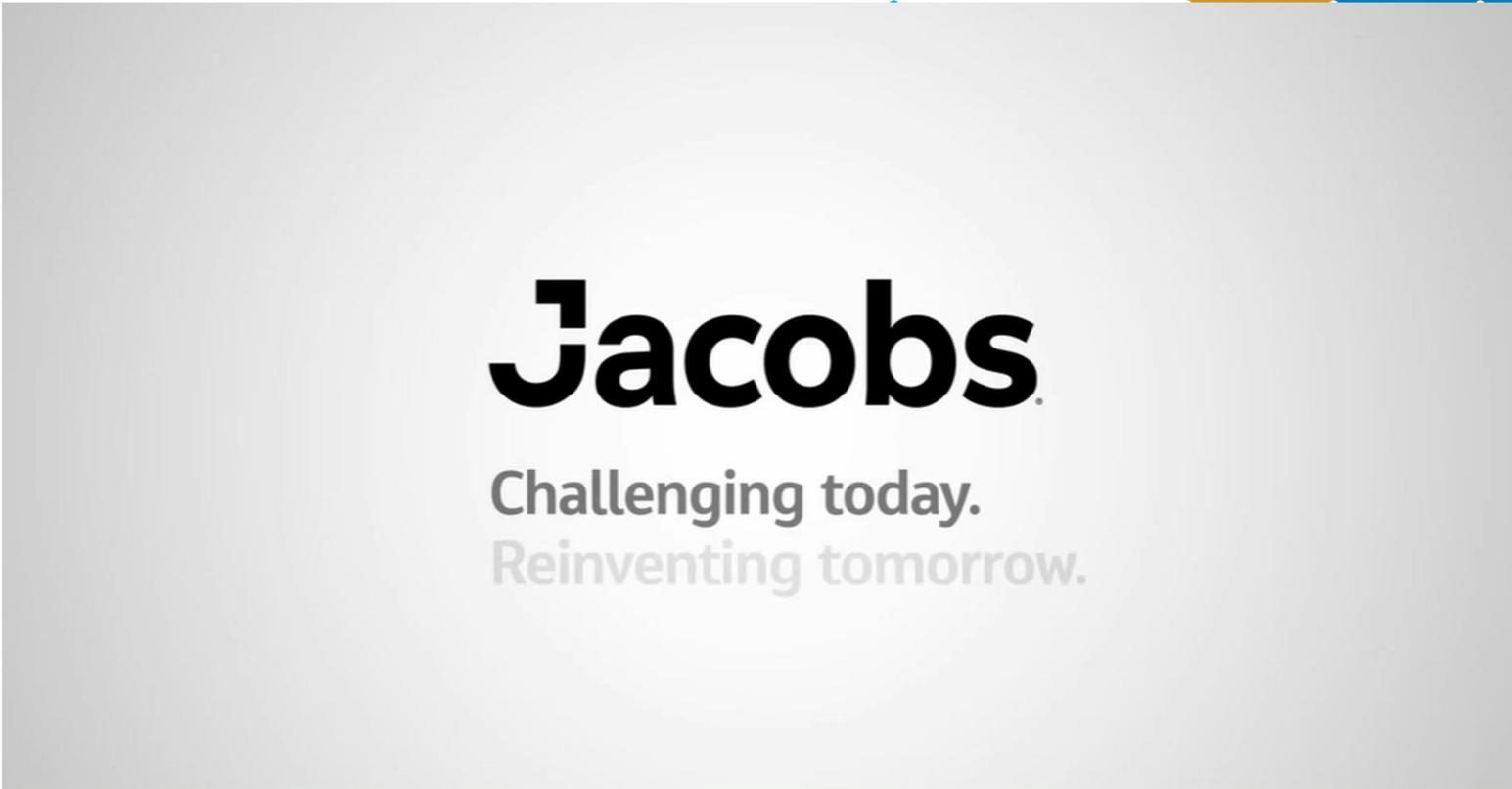
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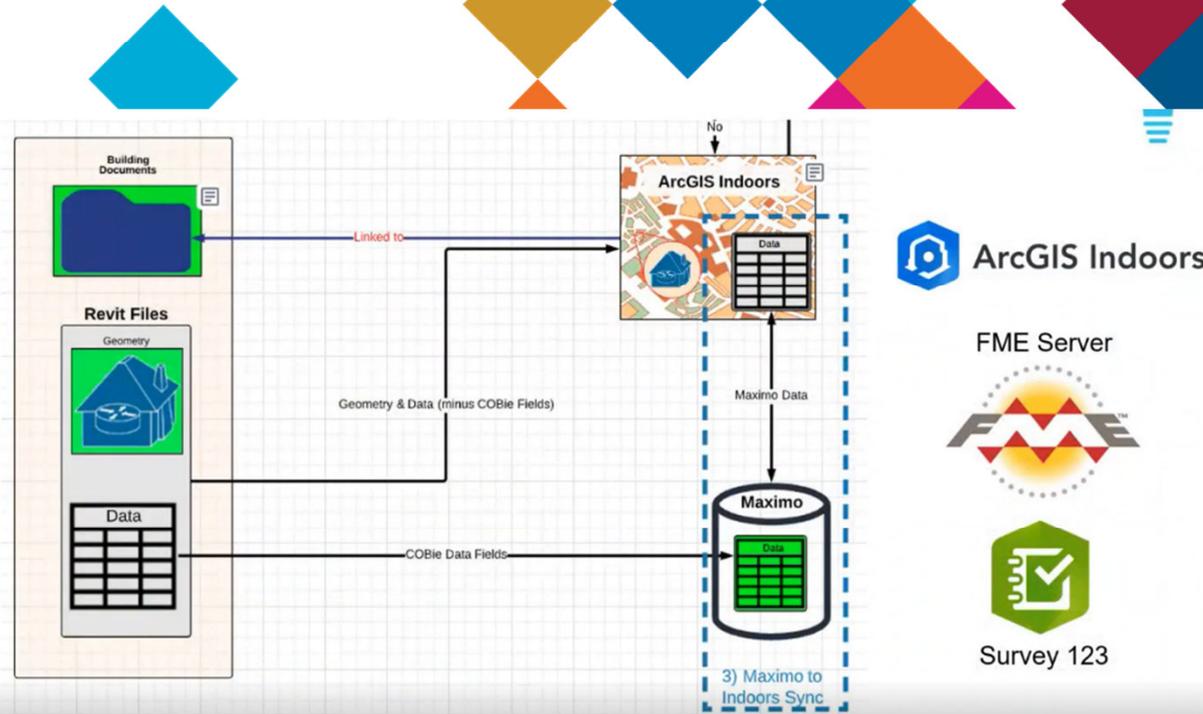
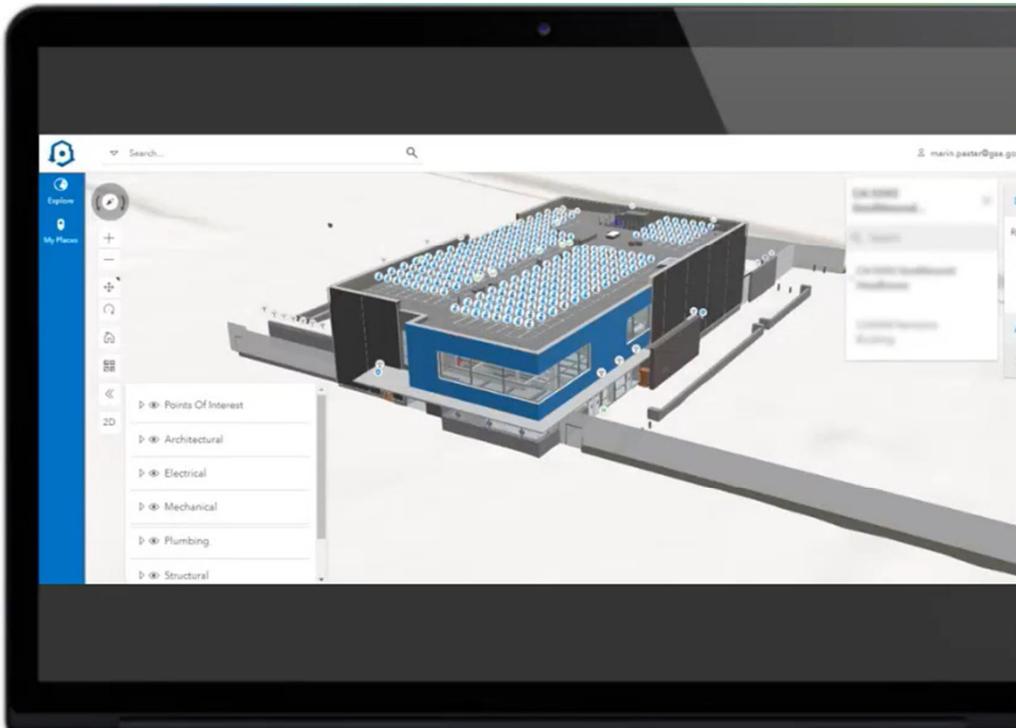
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Gaming Engines

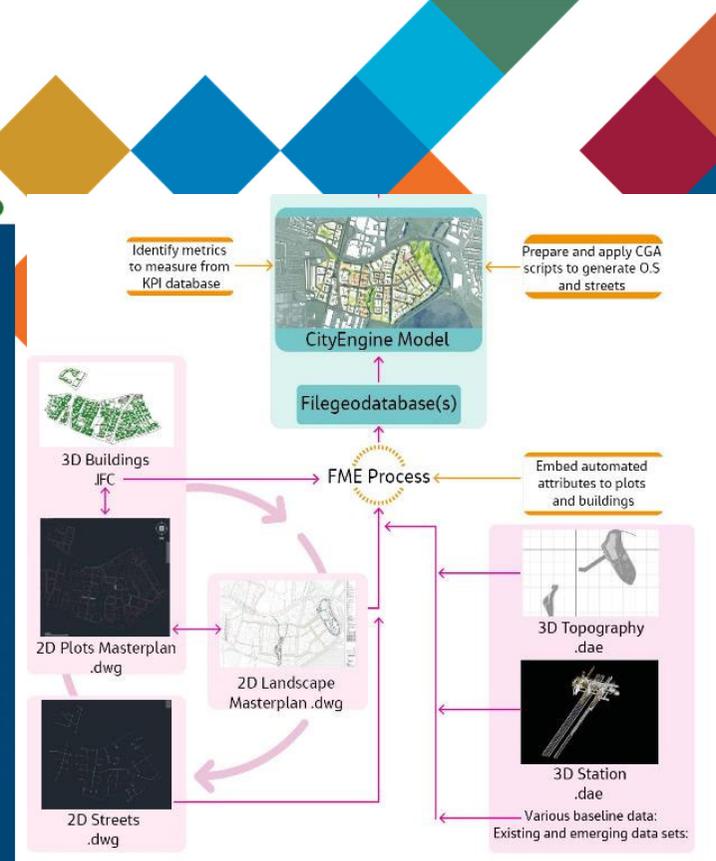


Streamlining Analog Facility Management Workflows



Planning Workflow

MW 2.0 Masterplan Concept



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The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG

11 SUSTAINABLE CITIES AND COMMUNITIES



2nd relevant SDG

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



3rd relevant SDG

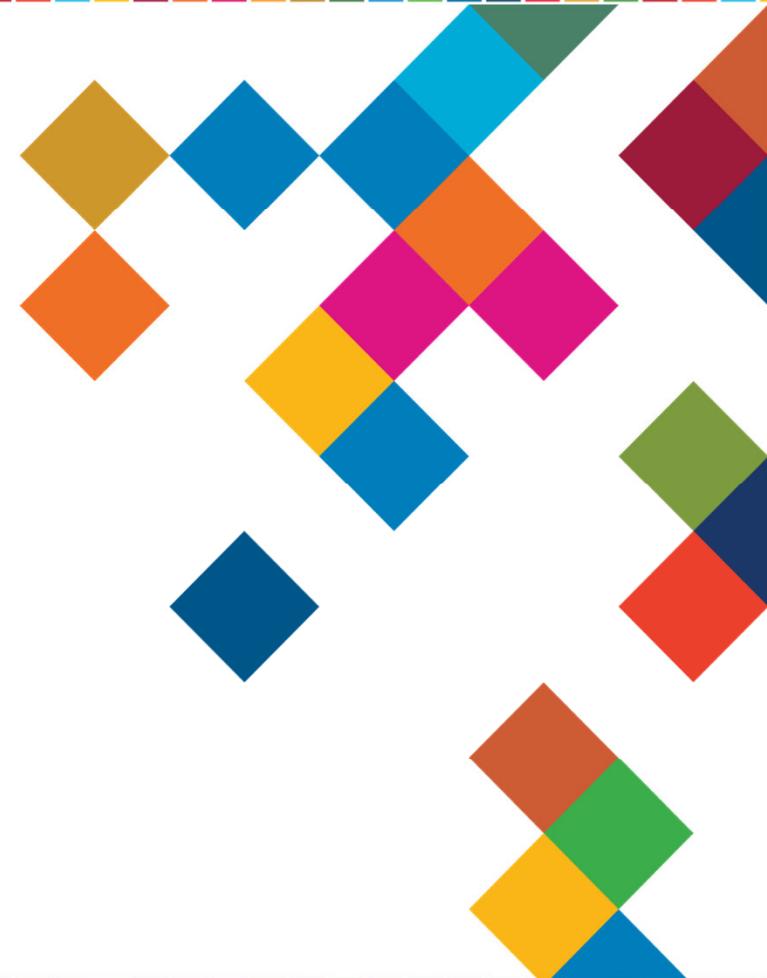
13 CLIMATE ACTION



SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

It's a Team Sport



Who are Jacobs

Our purpose

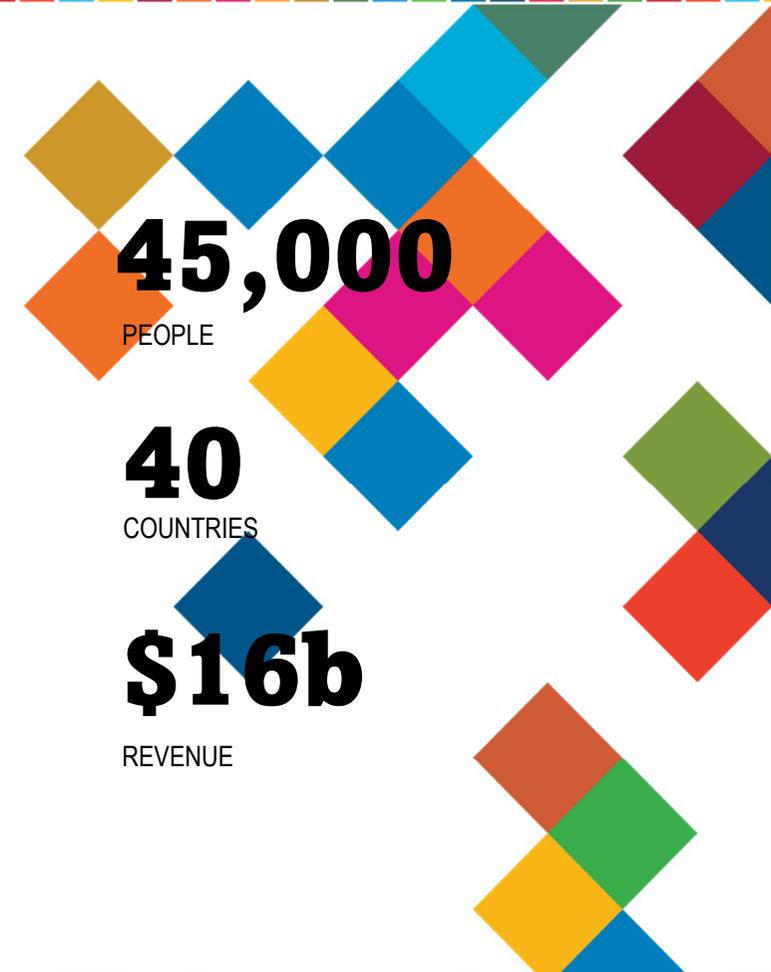
To create a more connected, sustainable world.

Our brand promise

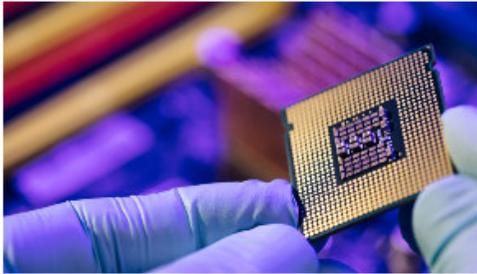
**Challenging today.
Reinventing tomorrow.**

Our values

**We do things right.
We aim higher.
We challenge the accepted.
We live inclusion.**



What Markets do we Serve



Advanced Manufacturing



Cities & Places



Environment



Energy



Health & Life Sciences



Infrastructure



Water



Resources

STEP 1: SELECT HERE THE THREE MOST RELEVANT SDGs
STEP 2: COPY THE SDG INTO PREVIOUS SLIDE

