

The future of Digital Engineering

Plenary Session

**Geospatial World Forum 2018**

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## Introduction

As a global director for delivery technology,  
I am responsible for the coordination of applied technologies used to design & deliver global projects.

These solutions are used in support of the architecture, design, engineering, build, and scientific client services for AECOM's business lines and geographies.



The background of the slide features a large, semi-transparent watermark of the AECOM logo, which consists of a stylized 'A' and 'E' intertwined.

Imagine It. Delivered.

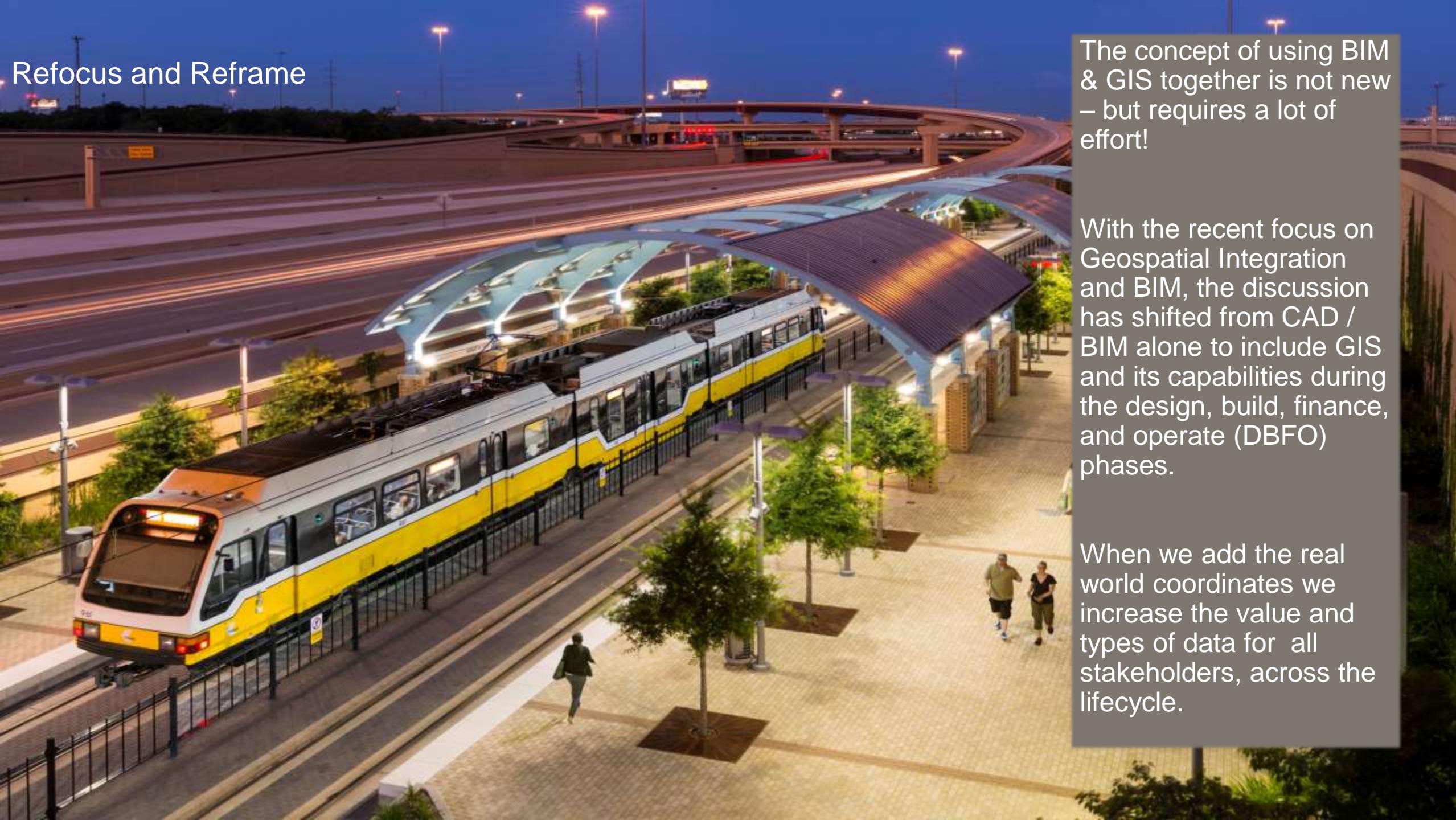
It's one thing to imagine a better world. AECOM was built to deliver it.

Worldwide, we design, build, finance, operate and maintain projects and programs that unlock opportunities, protect our environment and improve people's lives.

We develop and implement innovative solutions to the world's most complex challenges.

- US\$18.2 billion of revenue in fiscal year 2017
- Ranked #1 in *Engineering News Record's* "Top 500 Design Firms" for 8th consecutive year
- One of *Fortune* magazine's "World's Most Admired Companies" for the third consecutive year
- 400 offices in over 150 countries

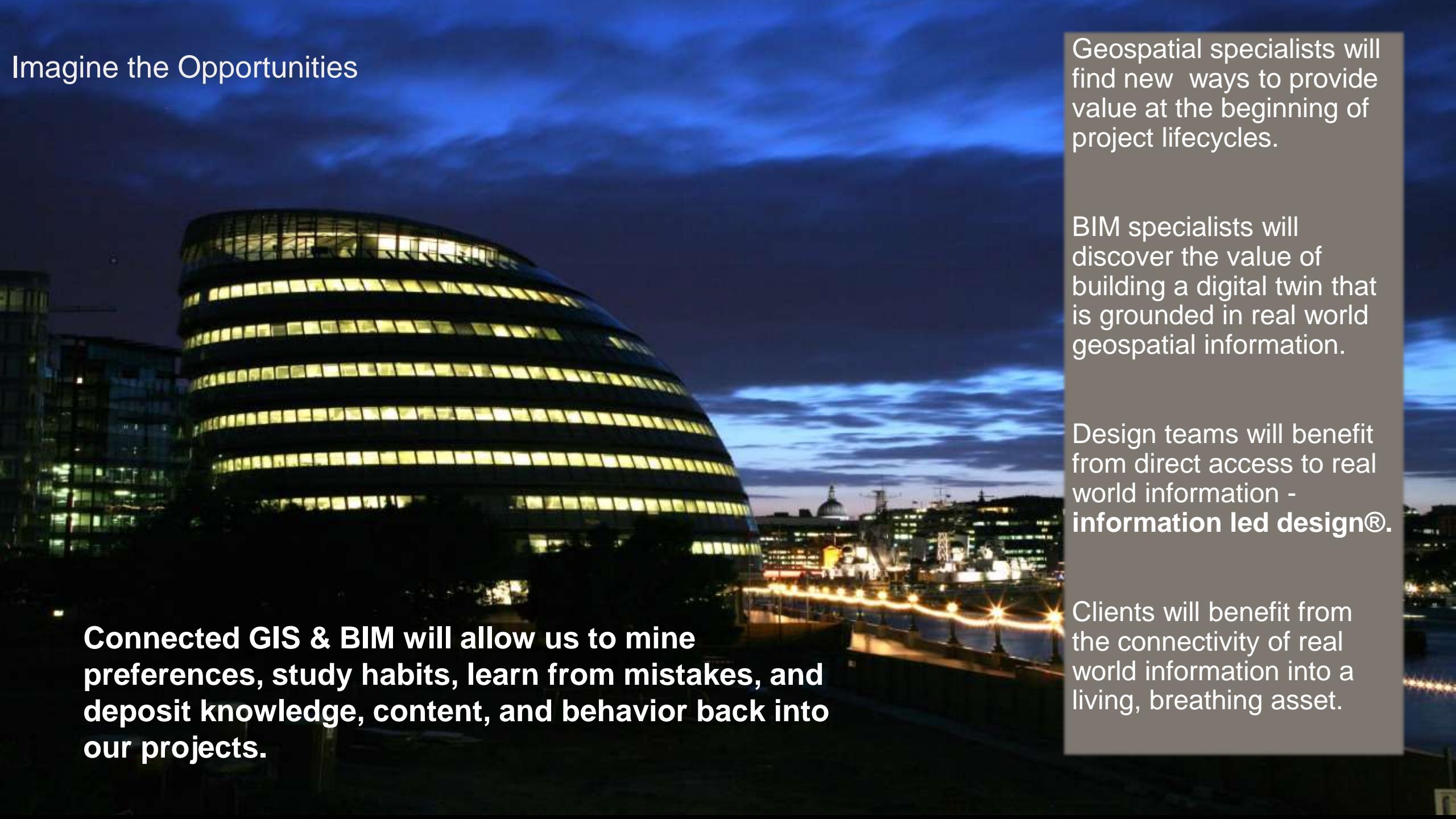
## Refocus and Reframe



The concept of using BIM & GIS together is not new – but requires a lot of effort!

With the recent focus on Geospatial Integration and BIM, the discussion has shifted from CAD / BIM alone to include GIS and its capabilities during the design, build, finance, and operate (DBFO) phases.

When we add the real world coordinates we increase the value and types of data for all stakeholders, across the lifecycle.



Imagine the Opportunities

**Connected GIS & BIM will allow us to mine preferences, study habits, learn from mistakes, and deposit knowledge, content, and behavior back into our projects.**

Geospatial specialists will find new ways to provide value at the beginning of project lifecycles.

BIM specialists will discover the value of building a digital twin that is grounded in real world geospatial information.

Design teams will benefit from direct access to real world information - **information led design®.**

Clients will benefit from the connectivity of real world information into a living, breathing asset.

## Airports – Asset Management



**Airports are like little cities –  
worlds of design and existing infrastructure.**

AECOM is responsible for Asset Management on the exterior campus of Denver International Airport.

Data transfers occur between design components, BIM , and GIS systems into the rest of the operating systems.

We connect data types together. BIM holds the utility content and GIS is a visual platform for maintenance in the field –linked to a maintenance workflow. The interior campus uses models integrated into Maximo (no GIS)

## Airports – Wayfinding & Lease Management



AECOM also uses BIM / GIS for internal campus projects, although not as extensively.

Concourse way finding allows passengers to geo-locate via a Mobile Application to find a Lounge, Facility, Restaurant or Gate location through a simplified map.

Lease management applications also use BIM / GIS technologies in Orlando, Hong Kong and South West Florida international airports.

## West Kowloon Cultural District (WKCD) - Hong Kong



AECOM provided GIS consulting for the WKCD. One of the largest art and cultural projects worldwide – dedicated to accessibility, connectivity, and sustainability.

We developed & maintain a geo-spatial **Central Repository** with district-wide data from various sources including all operational data for the district. e.g. architectural, planning and engineering

Centralized integration of information allows the client to make strategic decisions during the design, build, and operate phases for the asset.

An aerial photograph of a modern urban landscape. In the foreground, there's a mix of modern skyscrapers with glass facades and lower residential buildings. A prominent feature is a long, narrow waterway or canal running through the city, lined with red autumn trees. The city is surrounded by green parks and fields, with a hazy horizon in the distance.

Real-time, predictive analytics

A digital model should be bi-directional and connect to multiple layers of data, including City Information Models – this will produce better predictive analytics.

Today we are not only consumers of information to complete our tasks, we have also become a key supplier in the data supply chain.

Going forward, we need to think about our analytical solutions as intellectual property that create recurring business value.

# THANK YOU

FOR MORE INFORMATION

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