LandTech Consultants

ENGINEERING | GEOSPATIAL | REALITY CAPTURE | DIGITAL TWIN TECHNOLOGIES

Indoor GIS for Campuses

IFMA Technology Committee - Webinar

LandTech Consultants, Inc

University of Denver

5.22.2024

IT Technology Community

A Community of IFMA

beta Built Environment Technology Alliance

IT Technology Community
A Community of IFMA

BETA & The IT Community are committed to providing appropriate and relevant content to the GLOBAL community utilizing a broad range of communication and publication platforms.

We continuously answer the question,

"How does Technology Support CRE & FM?"

We want to collaborate to share the best practices case studies!

The Importance of IFMA Communities and Councils

Communities are aligned with ***Core Competencies***

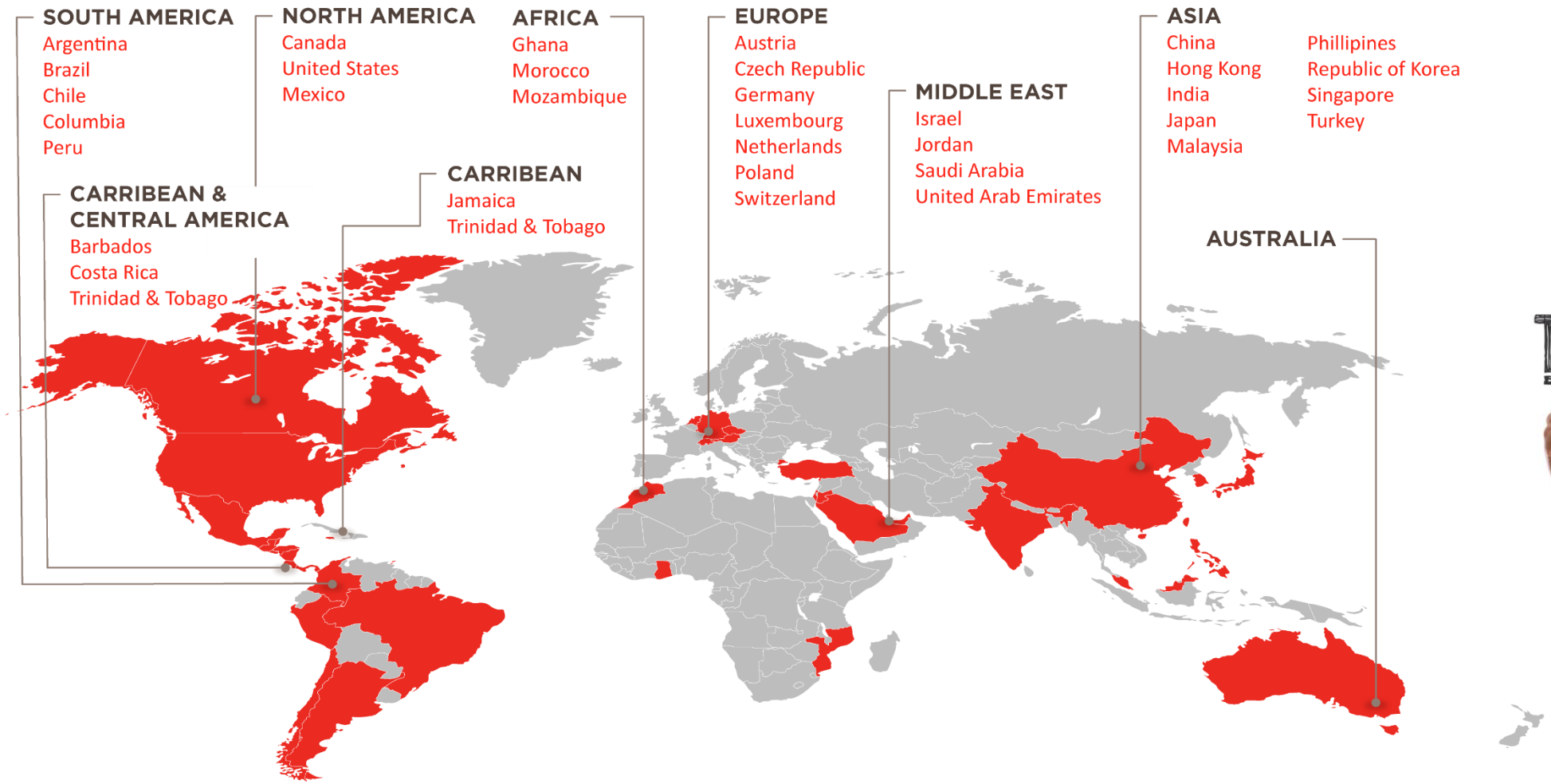
- Business Leadership (BUS)
- Environmental Stewardship & Sustainability (ESUS)
- Information Technology Community (IT)
- Military Community (MIL)
- Operations & Maintenance Health Safety (OMHS)
- Real Estate Advisory & Leadership (REAL)
- Workplace Evolutionaries (WE)

Councils are aligned with ***Vertical Markets***

- Academic Facilities Council
- Airport Facilities Council
- Banking Institutions & Credit Unions Council
- City & Country Clubs Council
- Corporate Facilities Council
- FM Consultants Council
- Food Service & Restaurant Council
- Legal Industry Council
- Manufacturing, Industrial & Logistics Council
- Museums/Cultural Institutions Council
- Public Sector Facilities Council
- Religious Facilities Council
- Research & Development Facilities Council
- Utilities Council

Many thanks to our Members

We have over 250 Members from over 30 countries



What We Do to Support the Built Environment

- Articles
- Books
- Webinars
- Conference Workshops and Presentations
- Hosted Symposiums
- Newsletters
- Benchmarking Reports
- Networking Events
- Social Media
- Subject Matter Expert Advice for Membership

WORLD WORKPLACE EUROPE
6 - 7 MARCH | ROTTERDAM, NETHERLANDS

Facility Fusion
an IFMA Conference & Expo

IFMA WORLD WORKPLACE 2024
OCT 9-11, 2024 SAN ANTONIO, TX

AUTODESK UNIVERSITY

World Workplace Asia-Pacific

beta Built Environment Technology Alliance

POPUP EVENTS

Blueprint

infocomm

AMERICAN MADE CHALLENGES
U.S. DEPARTMENT OF ENERGY

Symposium

IFMA FOUNDATION
MAKING FM A CAREER OF CHOICE

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esri Partner Network Bronze

Indoor GIS for Universities

Introductions

UNIVERSITY OF DENVER

Facilities Management & Planning

The University of Denver is a private research university in Denver, Colorado.

Founded in 1864, it is the oldest independent private university in the Rocky Mountain Region of the United States.

It is classified among R1: Doctoral Universities – very high research activity.

Jill Quezada, MPA, FMP

Space Management Analyst

20+ years in Higher Ed. and Space Management, with significant experience designing, developing, and administering space management programs and systems.

Indoor GIS for Universities

What is it?

Why is it important?

How do I get one?

What is Indoor GIS?

- Indoor geographic information system (GIS) is a complete geospatial system to create, manage, analyze, and map indoor data that enables shared awareness of your facility operations to deliver greater efficiency and engagement.
- Foundational component for a Smart Campus.

What is an Indoor GIS?

System of Record

System of Engagement

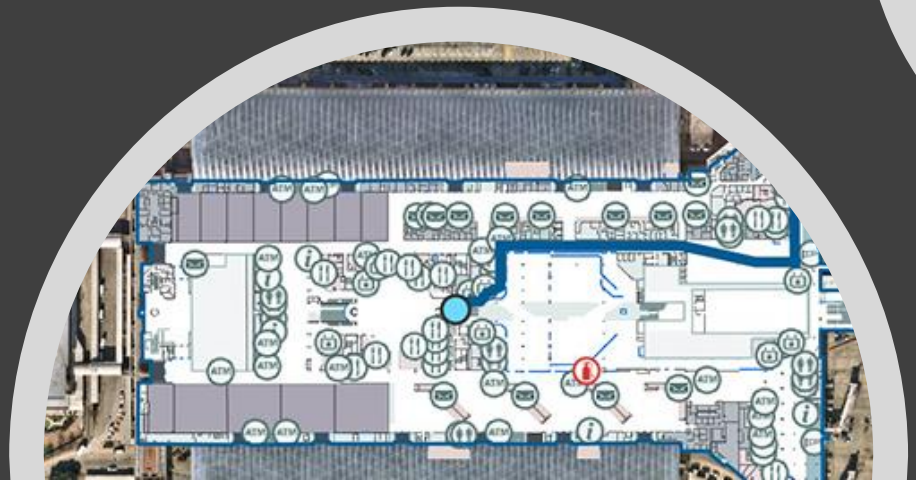
System of Insights

Why is it important?

- Answer is different for everyone
- Spend most (a lot) of our time indoors.
- Built world is growing in size and complexity.
- Indoor space is a limited resource
- Inherent value in understanding and managing the Indoor world

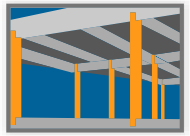
Why is it important?
Key Patterns of Use

- Indoor mapping
- Space planning and management
- Indoor positioning and navigation
- Indoor analytics and data collection

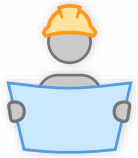


How can you use it?

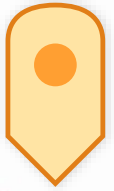
Digital Floorplans



Indoor Space Management

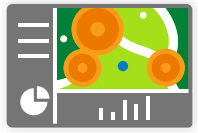


Asset Tracking



Locate People

Maximize Resources



Location Information and Analysis

Real-time Indoor Data

Enhanced Safety and Security

How do I get one?

- System Requirements
  - GIS system considerations
- Data Considerations
  - Data availability and cleanliness
  - Building and related data sources
- What to think about
  - Objectives, priorities, audience, timeline, resources
- Who can help? (spoiler: It's us)

Indoor GIS for Universities

Highlighted Project: University of Denver

ArcGIS Indoors Implementation

DU Indoors

THE SPACE USE

SOURCE OF TRUTH

UNIVERSITY OF DENVER

Facilities Management & Planning

Project Context and Objectives

Building Stats

- 2 Campuses
- 120+ buildings
- 4M+ gross square feet
- 10,652 rooms

Project Drivers

- Challenging experience with previous system
  - Administrative challenges
  - Unfavorable end-user experience
  - Lack of confidence in data deliverables

Objectives

- Create DU's Space Use Source of Truth
  - Leverage results (read: *blood, sweat, tears*) of previous space survey
- Build a better system
  - More User-Friendly = Better Adoption = Higher Response rates = More complete data
  - Allow for ongoing data maintenance
    - Not just at a particular point in time
  - Improve administrative capabilities

Project Overview

Discovery
- Understand Requirements

Pilot Project
- Build and Test Prototype

Data Migration
- Import floorplan & related data

Full Development
- Build out of all components & User Acceptance Testing

Rollout
- Deployment and Training

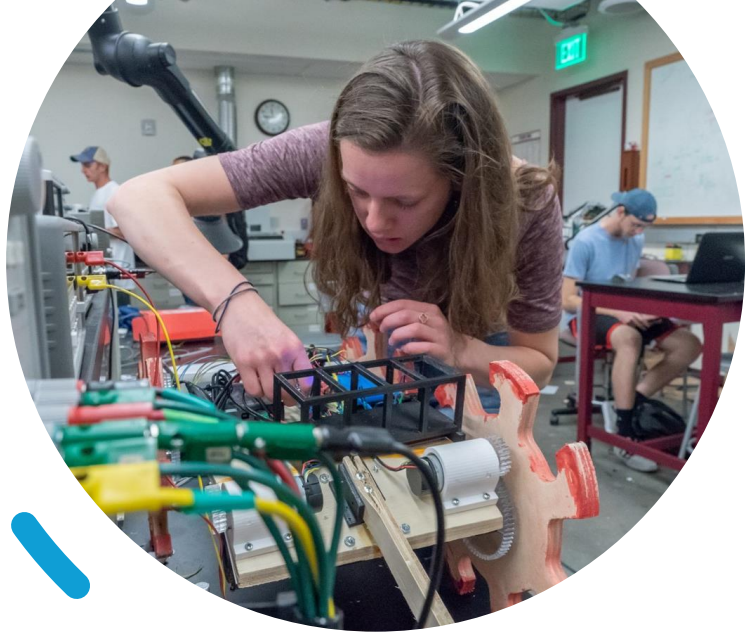
Annual Space Survey
- Use of new system

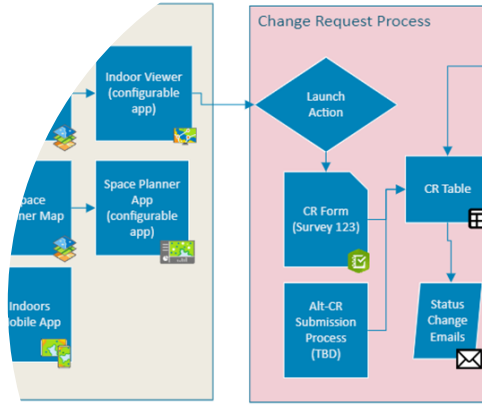
Multi-Step Building Data Validation (Parallel Process)

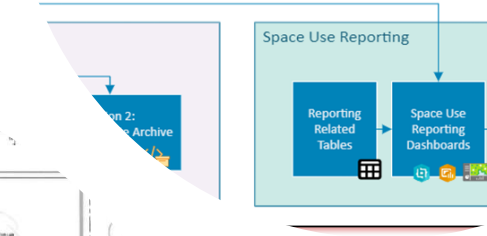
Approx. Timeline: 8 months

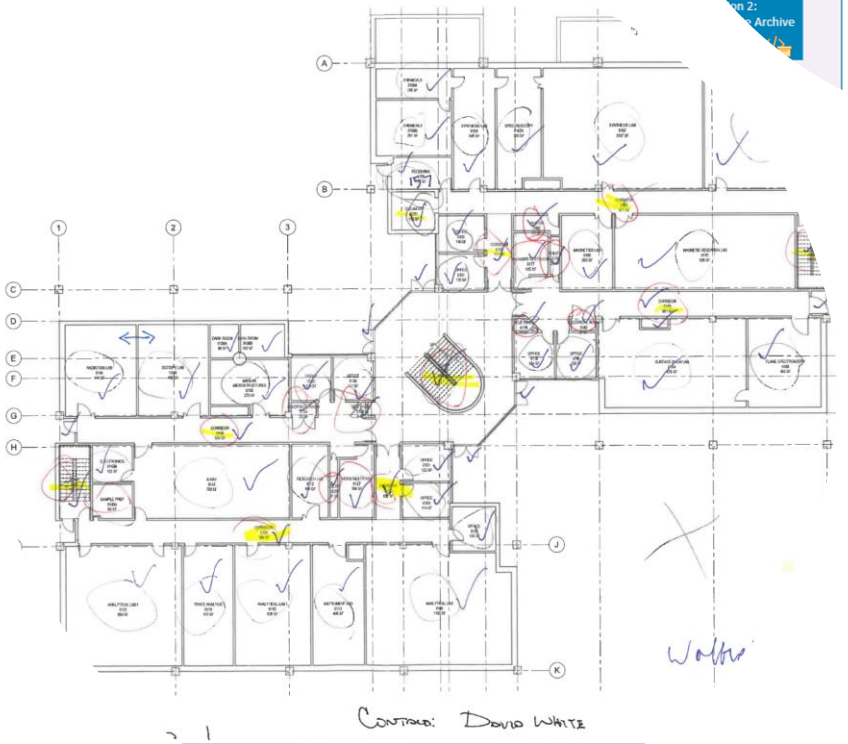
Progress-to-date

- Building Data Validation
- Discovery Phase near complete
  - Dozens of stakeholder meetings
  - Stakeholder trends
- Pilot data import
- Prototyping begun
- Data Schema Extension
- Solution Architecture
  - BIM to Indoors, COTS Apps, Custom Apps and workflows, and automation processes.









Conclusions and Takeaways

- Indoor GIS: Different Benefits for Different People
  - Ask around
  - Cross-functional support
  - High potential for future growth
- Discovery is an adventure
  - Additional value
  - Worthwhile upfront effort
- Power of the Pilot
  - Sometimes precursor
  - Sometimes proving grounds
  - Always beneficial
  - Always recommended

Discussion

Q&A

Comments

Etc.

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UNIVERSITY OF DENVER

Thank you!