



# Introduction to GIS

## GIS and Facilities Management

# Outline

- **What is Facilities Management?**
- **GIS integration with FM**
- **Potential use**
- **GIS applications for FM**
- **Case study**
- **Conclusion**

# What is Facilities Management

- Facility management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology.

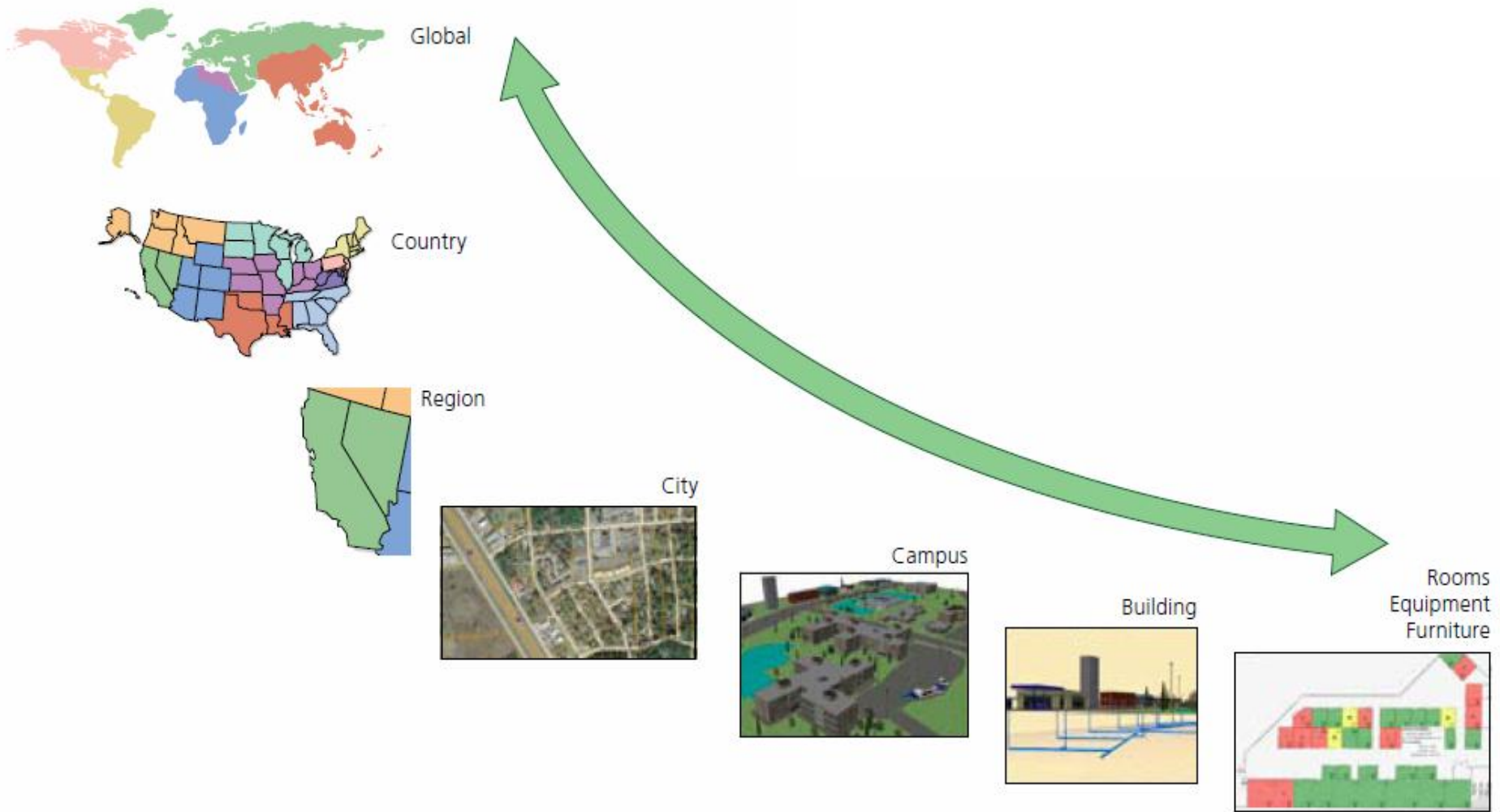
## Hard Skills

- Electrical wiring and power distribution
- Plumbing and water-works
- Operation and maintenance of HVAC
- Spatial Planning
- Civil and structural engineering

## Soft Skills

- Customer Relations
- Contractor coordination and support
- Team-building
- Technical Judgment
- Time Management
- Business Continuity
- Financial Awareness

# GIS and Facilities Management



# GIS and Facilities Management

- For years, facility managers have been using GIS at the landscape level to manage a number of the assets in their facility portfolio.
- Some of the earliest applications of GIS in facility management were related to pavement management at airports, municipal water and wastewater infrastructure, and electric utility distribution.
- For example, facility managers of the US Air Force have developed a standardized set of GIS layers to support the management of Air Force bases.

# GIS and Facilities Management

- GIS can integrate with and extend your current facilities management (FM) system. Maintaining and managing all your facilities and assets in GIS means everyone in your organization knows their location and status. Data can be updated quickly, work orders created efficiently, and space used more effectively.
- GIS can allow efficient sharing of information in and out of the field, providing a comprehensive view of operations.

# GIS and Facilities Management

● Traditional geospatial data layers that might be of interest to facility managers include:

- Transportation (road centerlines, edge of pavement, rail lines, airports)
- Hydrography (lakes, ponds, rivers, streams)
- Utilities
- Pedestrian corridors
- Land use
- Zoning
- Parcel ownership
- Facility condition index (FCI)
- Performance measurement by building
- Total cost of occupancy by building

# GIS and Facilities Management





# GIS and Facilities Management



# GIS applications for FM

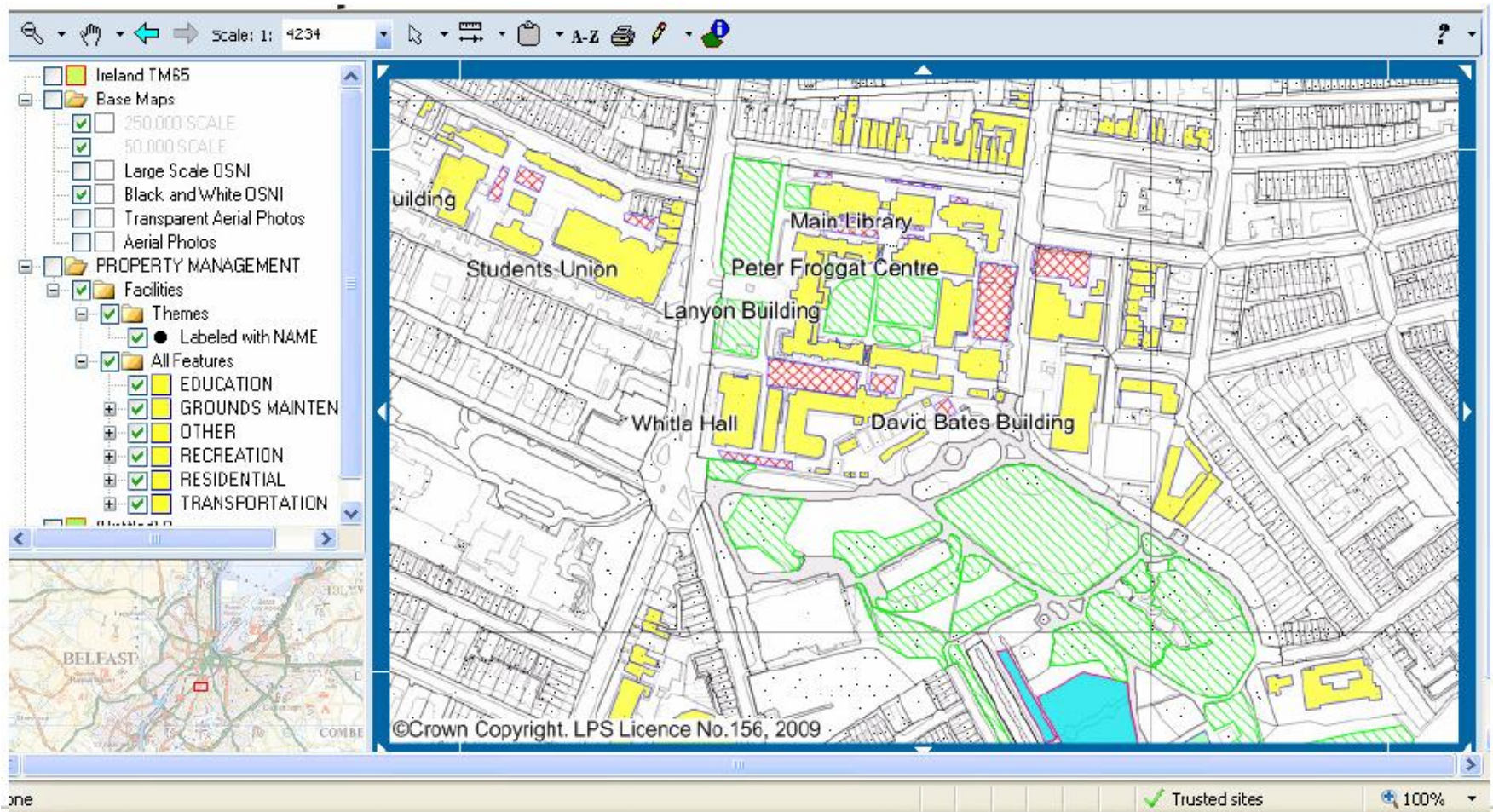
- Asset Management and Maintenance
- Lease and Property Management
- Space Usage
- Disaster and Business Continuity Planning
- Space planning – Buildings Based Management
- 3D Visualizations
- Compliance

# GIS applications for FM





# GIS applications for FM





# GIS applications for FM

The screenshot displays a web-based GIS application running in Internet Explorer. The browser address bar shows the URL <https://localhost:8080/Map.aspx>. The application interface includes a toolbar with various navigation and tool icons, a main map area, and a sidebar with a legend and a search box. A "Feature Information" window is open, displaying the following data:

Name	Value
Description	Polygon
NAME	Lanyon Building
FEATURECODE	(none)
URI	<a href="#">Document - click to show</a>

The map shows a building footprint labeled "Lanyon Building" in orange with a cross-hatch pattern. Other buildings are shown in green and yellow. A small inset map in the bottom left shows the location in Belfast. A copyright notice at the bottom of the map reads "© Crown Copyright. LPS Licence No.156, 2009".

An additional browser window is open, displaying a photograph of the Lanyon Building. The address bar shows the URL <http://www.paddl.net/lanyon/lanyon.jpg>. The photo shows a large, historic stone building with a prominent tower and a clock tower, situated on a green lawn.

# Case Study

## The U.S. Army Corps of Engineers

### Challenges

- Increased demands on federal operations and maintenance (O&M) budgets are keeping real property managers under pressure to provide additional space to their clients with minimal funding.
- To address the allocation of space, validation of assets, and verification of organizations and related personnel in the Fort Worth District.

# Case Study

## **The U.S. Army Corps of Engineers**

### **Solutions**

- Esri business partner Dewberry & Davis, was contracted to provide the data collection and program creation services for the Fort Worth District.
- The company implemented Esri's ArcGIS Server and ArcGIS Online for the project.
- The software had everything they needed, from the geodatabase to manage and maintain data in one central location for fast display over the Internet.

# Case Study

## **The U.S. Army Corps of Engineers**

### **Solutions**

- The company deployed 26 staff members for 12 weeks to redline floor plans and collect room utilization information.
- They collected facility utilization information including the number of personnel and workstations, room conditions and organization, and room types. All this information is now stored in a geodatabase, the common data storage and management framework for ArcGIS.



# Case Study

## The U.S. Army Corps of Engineers

### Results

- More than 10,000 man-hours were saved by calculating building space .
- Standard forms are generated directly from data, increasing efficiency.
- Necessary paperwork now takes minutes instead of half an hour to complete.
- Data accuracy and integrity increased by using geodatabase.

# Conclusion

- GIS proves to be an effective tool to manage facilities, contribute to time saving and reduce significant cost.
- The initial cost of the GIS/FM applications might be high but It will payback for it selves due to the noticeable cost saving.
- GIS serves you through the life cycle of your space, from site selection, space planning, and maintenance to lease management, usage, continuing safety issues, and continuity planning.

**Thank You**

