IOWA

Facilities Information Services (FIS)

SIMS and Campus Mapping Institutional Support

UI Building Coordinators Network

February 21, 2024

Kirk Banks

Associate Director, Facilities Information Services

Education:

- Bachelor of Science Mechanical Engineering, University of Iowa, 1986
- Master of Business Administration, University of Iowa, 1990

Work Experience:

University of Virginia

- Capital Outlay Project Engineer, FM Facilities Planning and Construction
- Systems and Special Projects Manager, UVa Health System Facilities Services

University of Alabama at Birmingham

- Engineering Manager, Facilities Division

University of Iowa

- Management Engineer, UIHC Division of Facilities Services
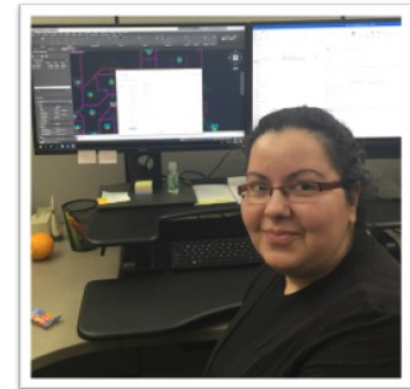- Space Information Manager, FM Space Planning and Utilization

FIS Team

Jay Geisen
GIS Enterprise Systems Architect

Doug Moore
Land Survey and Civil Eng.
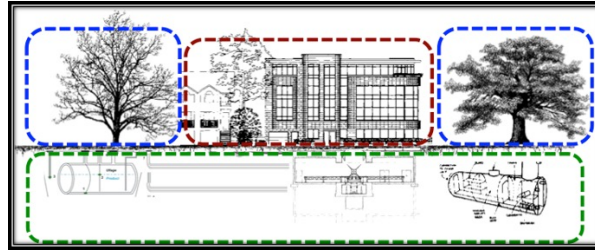Services Coordinator

Mais Albaghdadi
Space Information Specialist

Michael Maddison
GIS Technician

Quinn McNutt
Space Information Specialist

About FIS

Facilities Information Services (FIS)

is responsible for the stewardship of all campus space, infrastructure, real property and land development data for Iowa's 21 million gross-square-feet of space across 2,500 acres.

Single Source of Truth
of campus space data.

Why is FIS Important

FIS systems provides a framework for collecting the data and information required to make decisions about the strategic plans of the fixed assets of the campus.

Application Methodology:

- What does the campus own/lease?
- Where is it located?
- Who is utilizing it and How?
- What is it worth?
- What is the maintenance backlog?
- What is its condition?
- What is the remaining service life?
- What do you fix/replace first and When?

What We Do

- The **Space Information Management System (SIMS**) provides the central master record of campus owned and leased real property including the UI Hospitals and Clinics, Parking and Transportation, Athletics, and University Housing.

- **Land Survey and Civil Eng. Services** provides services for the collection, field verification, and CAD mapping of campus utilities, site assets, land improvements, topographic features and civil infrastructure spatial data and attributes.

- **Geographic Information Systems (GIS)** provides mapping and data services which include campus base mapping, utilities mapping, property mapping, master and capital plan mapping, and other campus maps.

Space Information Management System (SIMS)

→ Architectural and Space Floor plans are made available to authorized users via the cloud-based UI Active Visual System operated by the Advanced Technologies Group (ATG).

SIMS staff performs new building and post renovation site surveys to verify the accuracy of architectural layouts, room use, department occupancy, and other associated data which is embedded on the floor plans.

SIMS staff supports the university and UI Hospitals and Clinics space surveys by updating room assignments and occupying department and space use information.

Request Access to ATG

Access Floor Plans

Navigating to get Floor Plans
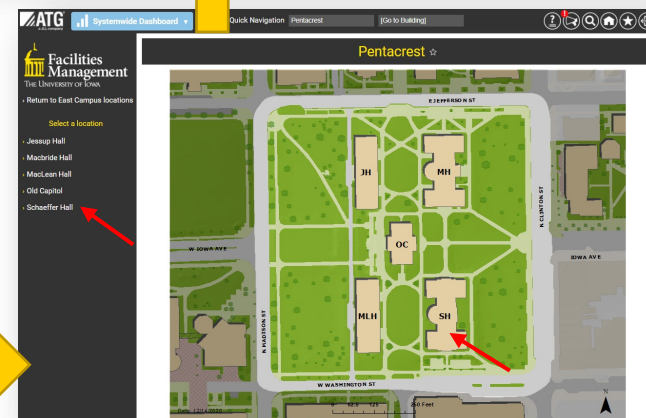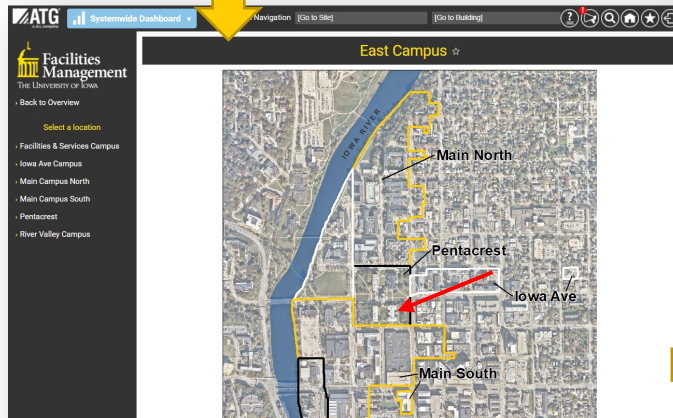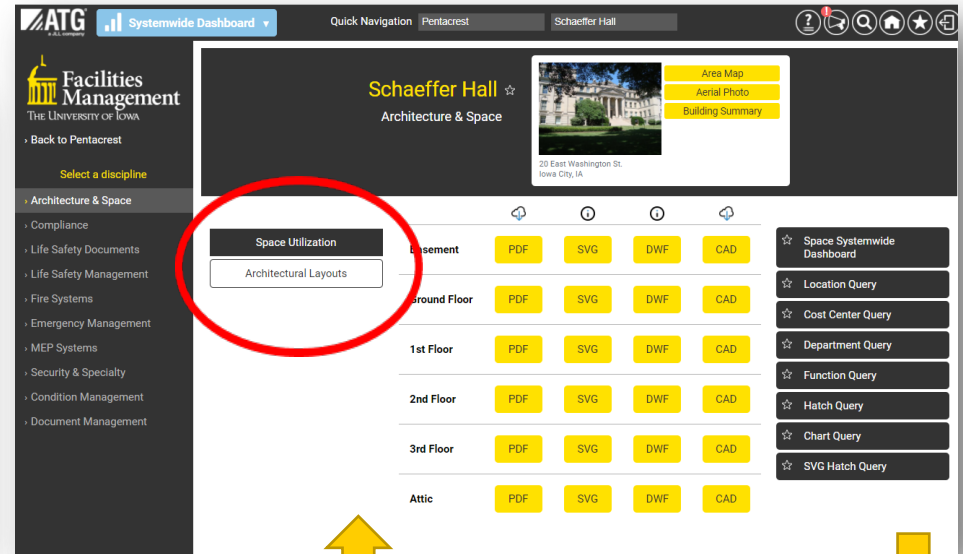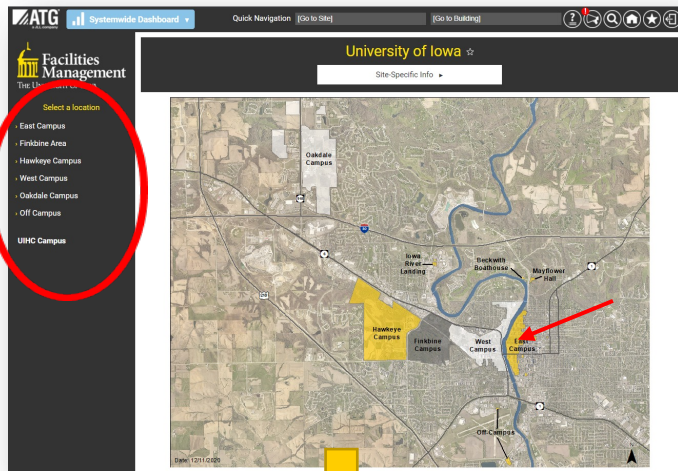
Floor Plans - ATG

Space
Floor Plan

Architectural
Floor Plan

Floor Plans - ATG

Room Data

Space Floor Plan

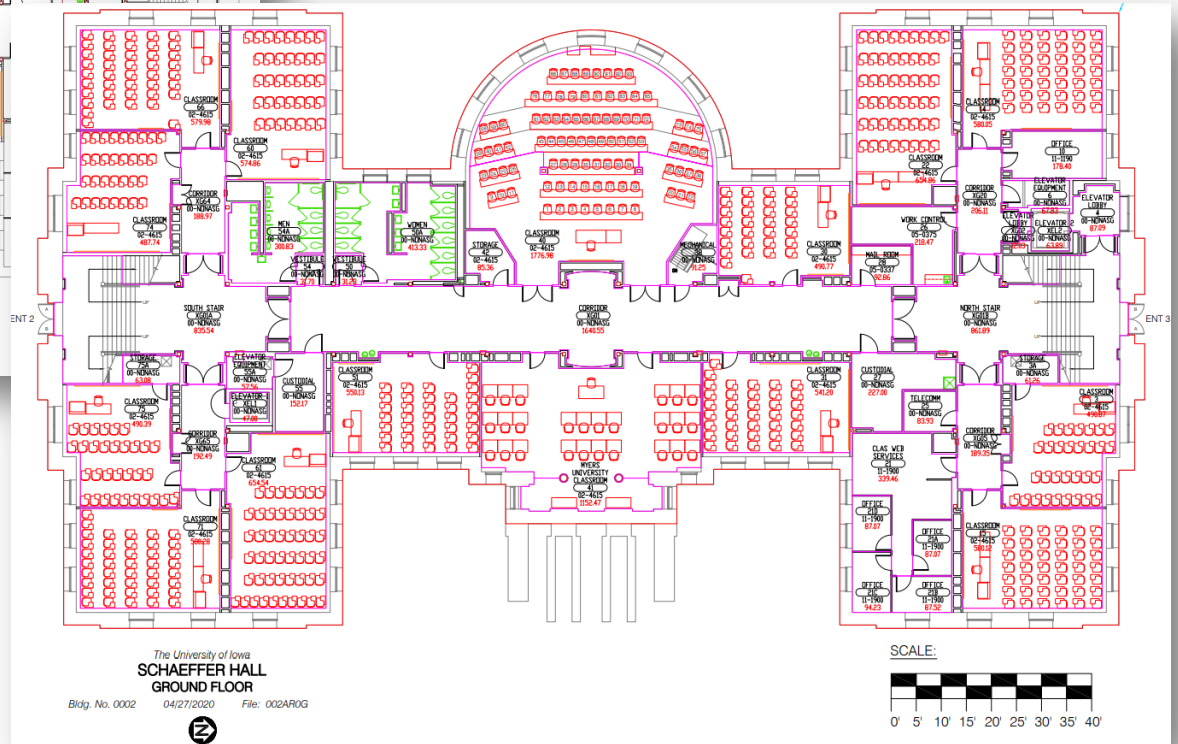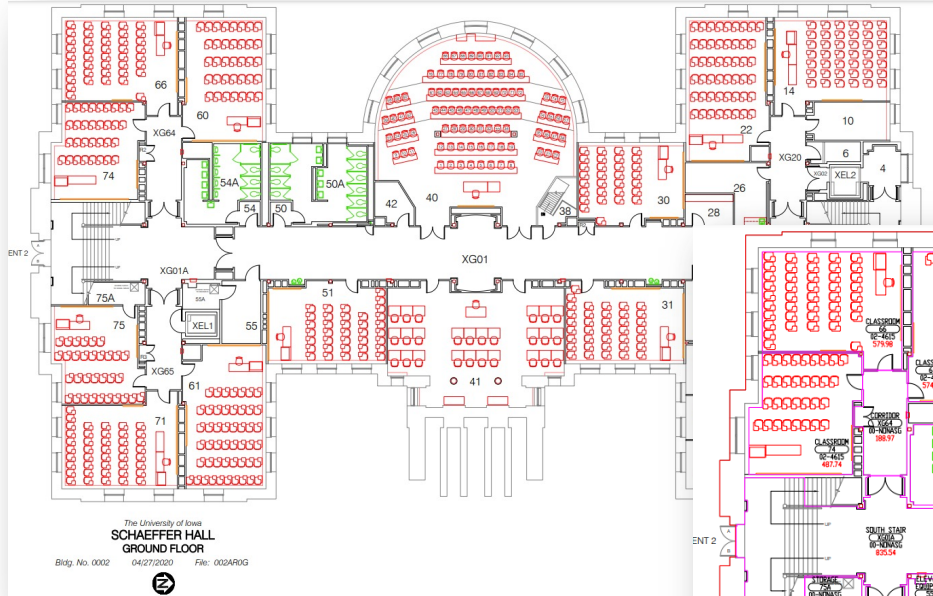| Field	Values
Site	MAIN CAMPUS (EAST)
Building	0002 SH
Floor	G
Room Number	40
Room Name	CLASSROOM
Responsibility Center	4615-40000
Responsibility Center Description	ROOM SCHEDULING
Department	02-4615
Department Description	REGISTRAR
Room Description	ASSIGNABLE
Space Definition	110 - CLASSROOM
Use Code	110003
Use Description	CLASSROOM - LECTURE
Function Code	1.1
Function Description	AA - INSTRUCTION
Division	UNIVERSITY CLASSROOM
Occupancy	96
Date Modified	02/23/2019
Floor Type	VINYL COMPOSITION TILE (VCT)
Custodial Service Level	DAILY
Recent Project	UI PROJECT 92828 - SCHAEFFER HALL REMODELING AND RENEWAL (1998)
Suite/Zone	UNIVERSITY CLASSROOM
Net S.F.	1776.98
DRAWING	002SP0G.dwg

SVG Hatch Query

Hatched Floor Plan

SIMS Update

SIMS Update

Facilities Information Services 360 Photos

360 photos are now taken as part of the site survey process. The implementation of this process has greatly enhanced the FIS' ability to accurately update and maintain floor plans, utility vaults and tunnels.

An institutional benefit resulting for this work has been providing access to these photos via the FIS 360 Photos SharePoint site to enhance campus operations.

Access has been made available limited users within the following Units:

- Classroom Management and Operations
- Learning Spaces Support
- FM Utilities and ENGIE, Building and Landscape Services, Fire and Life Safety, and Design and Construction Services
- UIHC Capital Management
- UIHC Engineering Services
- University Housing and Dinning
- F&O Strategic Communications
- Campus Planning and Development
- UI Public Safety
- CLAS IT

Macbride Hall Auditorium

Ricoh Theta X – 360 Camera w/ 11K Resolution

3D Laser Scanner
Reality Capture

FIS now utilizes Leica hardware and software to efficiently capture existing conditions for the campus physical environment and transfer the digital data into architectural and engineering plans and models.

The process in the creation of AutoCAD drawings, Revit 3D Models and BIM has significantly improved with the addition of the Leica hardware and software and its integration with the Autodesk and GIS software used by FIS.

Growing Words CR Lab

3D Laser Scanner Reality Capture

The Leica BLK360 is an advanced precision imaging laser scanner will allow for rapid LiDAR scanning and capture of high-quality photospheres (360 images) of university physical spaces.

The Leica hardware and software integrates this captured spatial data with Autodesk technology used by Facilities Information Services (FIS) for space and asset management and campus planning.

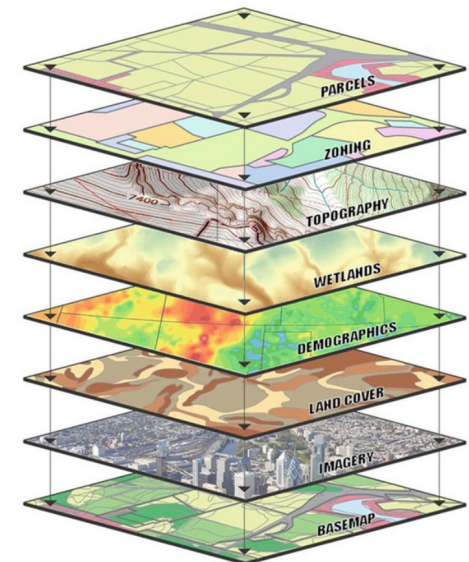**Speed:** 680Kpoints/second

Range: 40m

Accuracy: 4mm @ 10m

IOWA
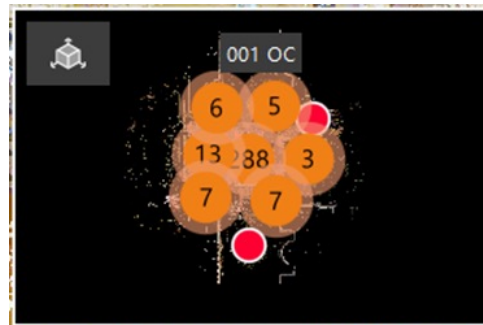
Campus Mapping – Land Survey and Civil Eng. Services - Collection (GPS)

→ Land Survey and Civil Eng. Services utilizes state-of-the-art Global Positioning System (GPS) technology which has transformed its ability to collect and maintain highly accurate and useful infrastructure and property survey data.

→ The connection of GPS technology used to support surveying tasks is important to understand. It provides the means for infrastructure and land use to be planned and designed, built and operated.

→ CAD and GIS systems rely upon survey data obtained using GPS to provide professional grade location and attribute data to campus utilities operators and design professionals.
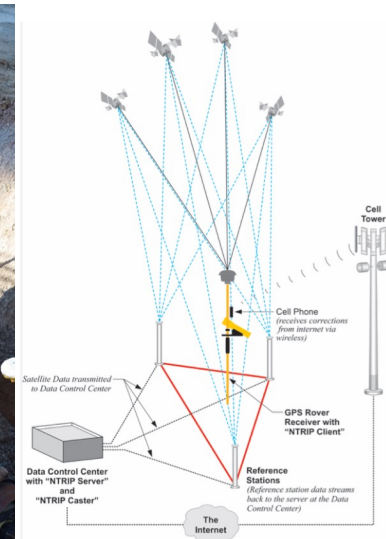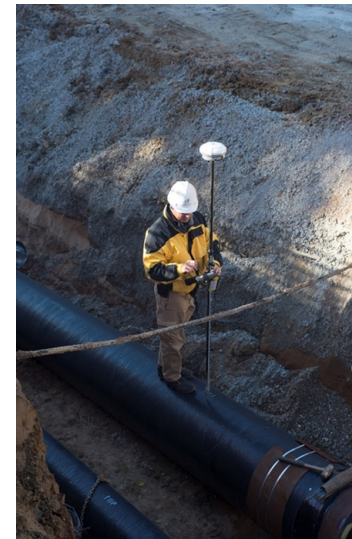
Campus Mapping - Geographic Information System (GIS)

→ GIS connects data to a map, integrating location data (where things are) with all types of descriptive information (what things are like there). This provides a foundation for mapping and analysis that helps the campus understand patterns, relationships, and geographic context.

→ The GIS system includes an impressive set of assets such as aerial photos, SIMS data, parcels, proposed master planning scenarios, easements, contour (elevation) lines, FEMA floodplain extents, signs, exterior furniture and structures, land cover, parking, roads, sidewalks, trees, utilities and countless others.

→ The GIS team uses this data to create user-friendly web-based interactive campus maps as well as printable maps.

→ The institutional benefits of GIS mapping include improved communication and efficiency as well as better management and decision making.

Campus 2D Map

Building Search and Aerials
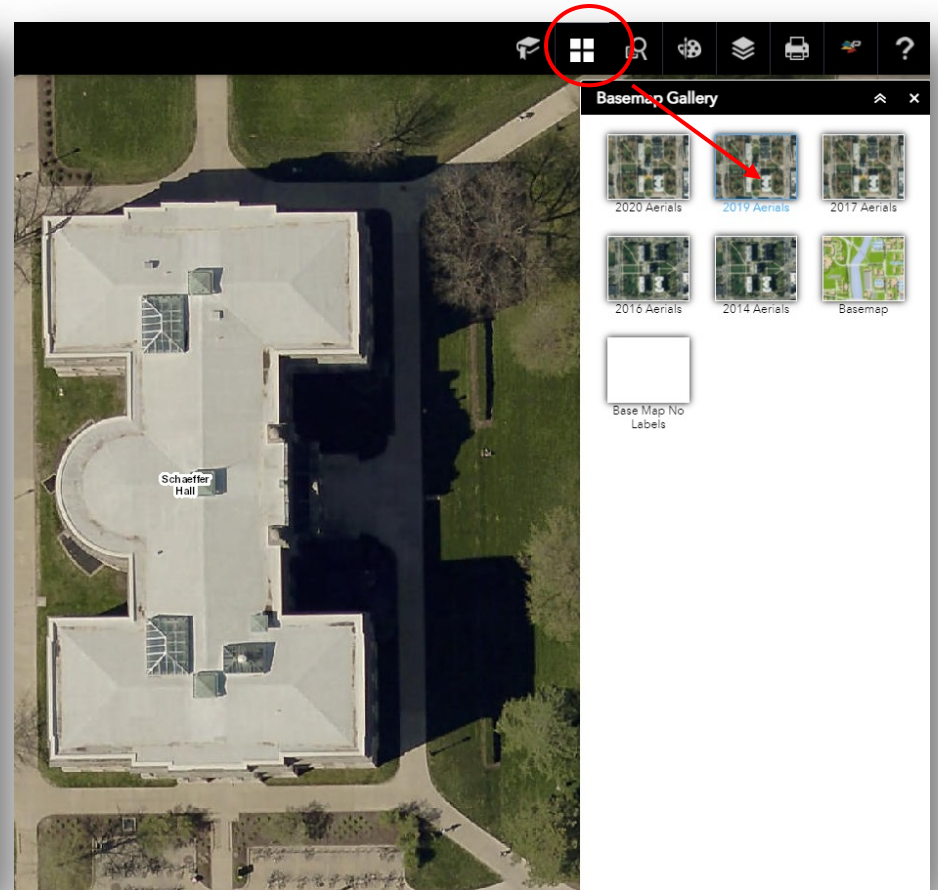
Pictometry – Birdseye Image
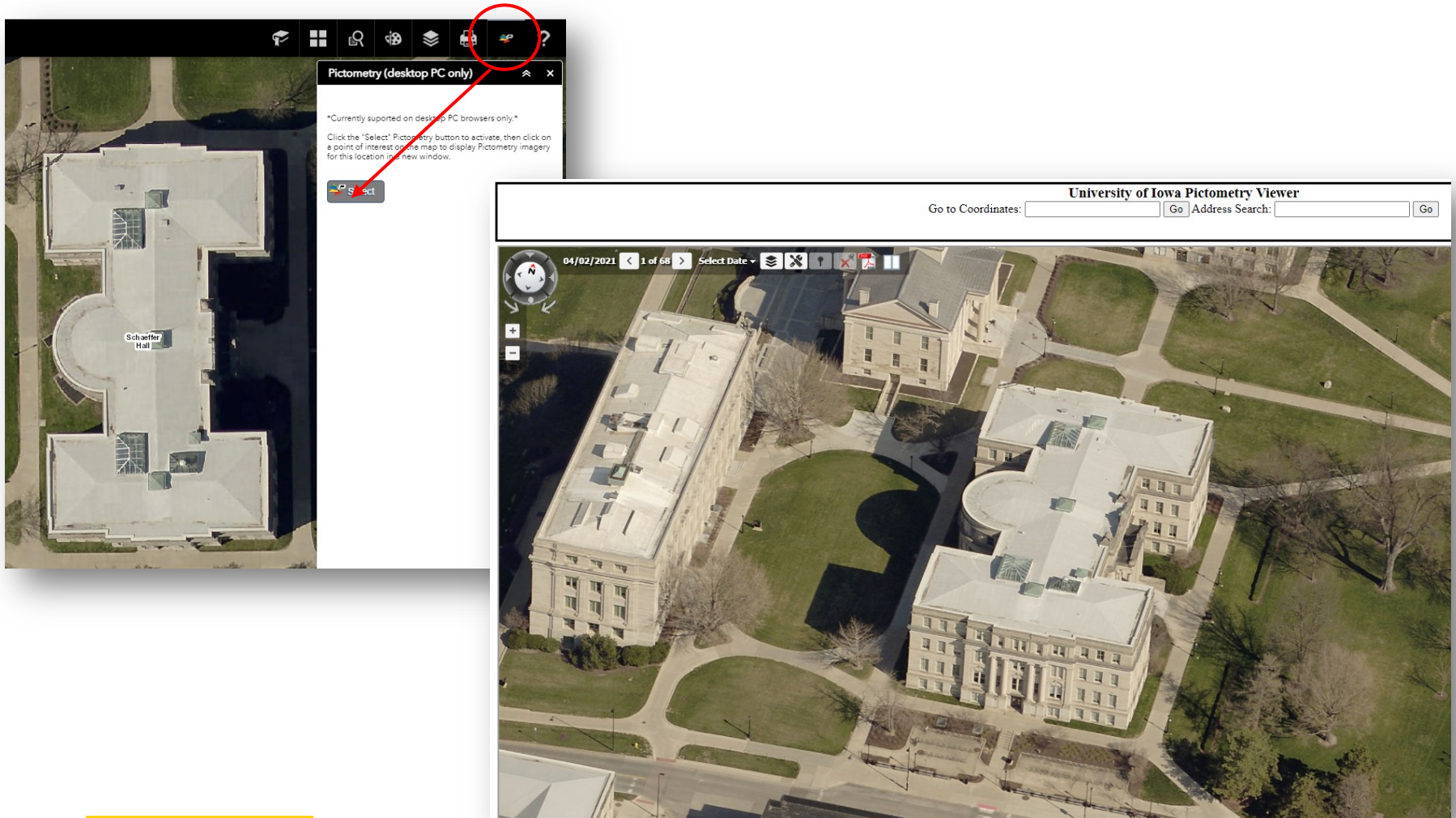
Campus 3D Map
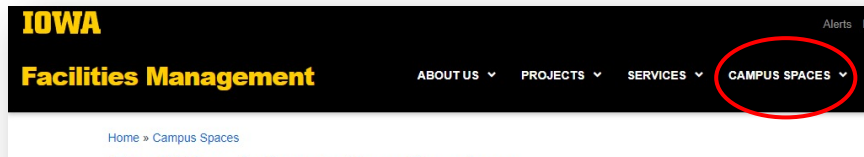
Navigate Tool

GIS Web Map Library

https://gis-web-map-library-uiadmin.hub.arcgis.com/

Institutional Support

Applications
- Active Visual System (ATG)
- FM: AiM
- UIHC: TMA
- Housing: TMA
- ITS Telecom & Network
- Key and Access Services
- Fire & Life Safety
- HVAC Controls
- JoCo Emergency Management
- Unit Planning
- BuildUI
- PI/Energy Caps
- Roof Inventory and Maintenance
- Elevator Maintenance
- Custodial Service Level
- Campus Master Plan
- PeopleSoft
- Classroom Scheduling / Ad Astra

Reports
- Iowa DAS Real Property
- Clery Report
- HLC Assurance Review
- National Science Foundation
- Gordian SightInes
- UI Data Digest
- Facilities Governance Report
- EHS Fume Hood Report
- Risk Management
- Capital Asset Management

Space Survey
- F&A and Occupant
- UIHC Annual Survey

Imagery
- 360 Photos (Interior/Exterior)
- Aerials (Vertical Orthophotos)
- 3D Laser Scanner

Business Intelligence
- CLAS
- CCOM
- UIHC
- CEA Budget

Underground Site Support
- Location Requests
- Design Location Requests

IOWA

Building Inventory
Lease Inventory
Room Inventory
GIS Mapping

Data Warehouse (DWPROD)

Service Mapping
- 2D Campus Map
- 3D Campus Map
- Campus Map (Concept3D)
- Bicycle Infrastructure
- Classroom Walk Time
- UI Accessibility
- Parking (FIS)
- All Projects
- Construction Closures
- StoryMaps
- Campus Tours
- Campus Snow Removal Map
- East and West Campus Snow Priority Routes
- Lactation Room Map
- Single User Restroom Map

Utilities Mapping
- All Utilities
- Chilled Water
- Air
- Electrical Distribution
- Electrical Lighting
- Gas
- ITS Fiber
- Sanitary
- Steam
- Storm Water
- Tunnels and Vaults
- Water
- Controls BAS Map
- Emission Points
- Soil Borings

Other Campus Maps
- Smoking Areas
- Easements
- Sustainability
- University Parcels

Site Mapping
- Trees Inventory
- Signs and Monuments
- Dumpsters Map
- Historical Markers
- Native Plants
- Art on Campus
- MNRA Trails
- Memorials
- Landscape Services
- Campus Spaces and Benches

Printable Maps
- Main Campus
- Hawkeye Campus
- UI Research Park
- MNRA
- Named Buildings
- Institutional Roads
- Campus Parking
- Custodial Zones
- Landscape Services Zones
- Maintenance Zones
- Center for Advancement Maps
- Campus Tours

Non-Campus Maps
- OpenStreetMaps
- Google Maps
- Apple Maps
- Tomtom Maps
- Bing Maps

Institutional Benefits

→ Integrate space data with other management and budget applications. (DWPROD/BI/AiM/TMA/PI & Energy Cap)

→ Extend the capital-planning horizon for long-term funding projections. (Master Planning/Sightlines)

→ Improve the campus planning and project delivery process. (Capital Planning /Project Programing and Design)

→ Promotes a year-round planning and budgeting process in accordance with the university mission and overall strategic and operational goals. (CEA/Unit Plans)

→ Reduce the "crisis management" time associated with service and/or asset disruption. (Floods/COVID)

→ Reduces lost time associated with locating assets and spaces.