

ARCHIBUS Success Story



University of California-Riverside Gets High Scores Combining ESRI GIS and ARCHIBUS Data

California has always been in the forefront of trends in food, fashion, and fun that are later adopted by the rest of the country.

Now a new trend in managing facilities may be emerging at the University of California—Riverside (UCR). That's where a tech-forward initiative is unfolding that links ARCHIBUS facilities management data with Geographic Information Systems (GIS) software from industry leader ESRI of Redlands, California.

The combination of interior and exterior asset and geospatial information will, says UCR's Campus Space Manager Berent Pippert, transform the way the campus looks at itself today. And how it manages itself in the future.

6.6M Gross Square Feet. And More to Come.

UC-Riverside's ample 1,100-acre campus hosts approximately 17,000 students, plus administrative staff, in 623 buildings managed by ARCHIBUS. In all, there are over 230 CAD floor plans and 16,000 rooms inventoried. As big as the school is, though, it intends to get bigger.

Current enrollment is expected to increase by 35% over the next ten years. To accommodate that growth, gross square footage will nearly double to 11,000,000 square feet.

The school's growth trajectory presented a tantalizing opportunity for UC-Riverside to improve on a number of aspects of campus management, not the least of which was the inadequacy of existing campus CAD-based maps. UC-Riverside had minimal GIS data on its current assets. And existing maps not only did not cover the entire campus, they also failed to meet accuracy standards.

The solution, says Pippert, was to introduce GIS technology to produce an accurate, comprehensive campus map that can be used for planning, design, construction and facilities management. Integrating the new GIS data with the existing facilities management system would provide the basis for a campus-wide GIS/FM enterprise system that could serve the needs of the campus community at large.

Establishing GIS Data Layers

To begin its project, Pippert and his team defined six main GIS data categories: Administrative (campus boundaries, parcels, easements), Infrastructure (campus lighting and other utilities), Land Cover (trees, topography, etc.), Reference Data (survey monuments), Structures



Vital Statistics

Organization:

University of California – Riverside

Facilities Facts:

1,100-acre campus, 17,000 students, 623 buildings, 16,000 rooms documented by 230 CAD floor plans

ARCHIBUS Applications:

Real Property & Lease Management, Space Management, Overlay with Design Management for AutoCAD & Revit

Reason for Implementation:

Leveraging FM and GIS data from ESRI for improved campus mapping and management in support of anticipated near-doubling in square footage

Benefits Gained:

Improved strategic planning for new facilities and better facilities/asset management with integration of GIS and FM data

Business Partner:

Business Resource Group (BRG)

Web Site:

www.ucr.edu

(buildings, athletic fields, 3D wireframe representations), and Transportation (parking lots/spaces, walkways, streets, etc.).

That was followed by outsourcing to licensed surveyors the task of creating a new, more complete reference geographic database, including setting 13 new surveyor monuments as control reference points, and also delineating parcel boundaries.

Light Detection and Ranging (LIDAR) technology, a remote sensing system employing lasers, was then used to create topographic campus maps using one-foot contours, documenting building and tree heights, and producing an elevation grid. Data analysis, using rasters for interpolating topography and other tasks, was developed to support ESRI ArcScene data analysis for viewing 3D data and generating visual simulations and 3D fly-throughs.

GIS Leverages FM. And Vice Versa.

Linking GIS with FM data presents few problems, Pippert reports. The GIS Buildings data layer contains building ID numbers that link to the campus ARCHIBUS database. The FM database link will allow the GIS to link to work order, environmental health and safety, and other systems campus-wide via the data repository to present, for example, asset location information in a graphic format. The linkage can also perform building and classroom highlighting, display assignable square footage and a building's footprint, and more.

This level of integration makes it possible to run cross-referenced queries to extract richer, relational data. Additional integration is being made between GIS and ARCHIBUS via the Real Property & Lease Management application, into which is being added parcel, lease, and property information. GIS and ARCHIBUS information will be linked using Assessor's Parcel Numbers (APNs) for interactive queries.

Ultimately, says Pippert, the GIS/FM system will be capable of performing a range of much-needed but previously technologically unsupported tasks. The university, for instance, will be able to provide real estate services mapping, improve site analysis and planning for campus facilities, and institutional planning analysis for determining the source of student populations served and their geographic location relative to the campus.

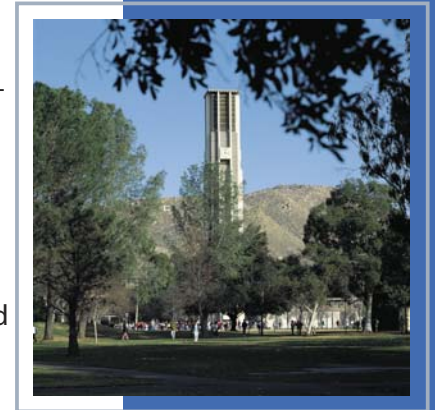
Multiple Benefits, Multiple Audiences

Many departments—from maintenance to environmental, through police and design/construction—will benefit from the GIS/FM system as it evolves, Pippert points out.

Whether it's the identification of better access paths for the handicapped, crime location and tracking, compiling parking space inventories, or other visualization and spatial analysis needs, the campus is seeing immediate improvements in data management with savings to match.

"Capital and Physical Planning and the Office of Design and Construction are no longer solely reliant on outside contractors for map production and analysis," says Pippert. "Costly site surveys will also no longer be needed for all projects. And land use and facilities planning can now be completed in-house at minimal cost."

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—Berent Pippert
Campus Space Manager
University of California -
Riverside

