BIM & GIS Interoperability Demonstration Project

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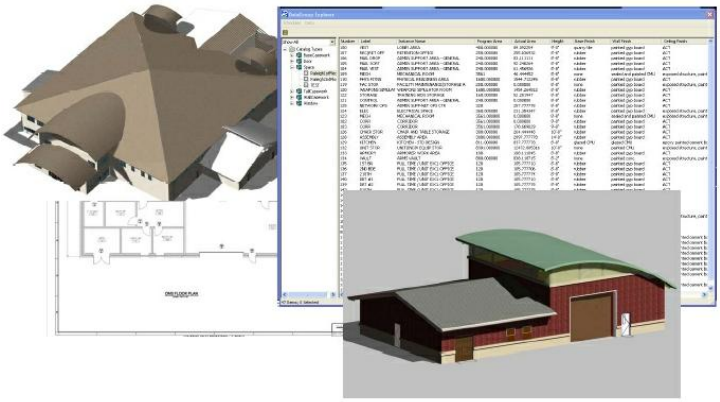
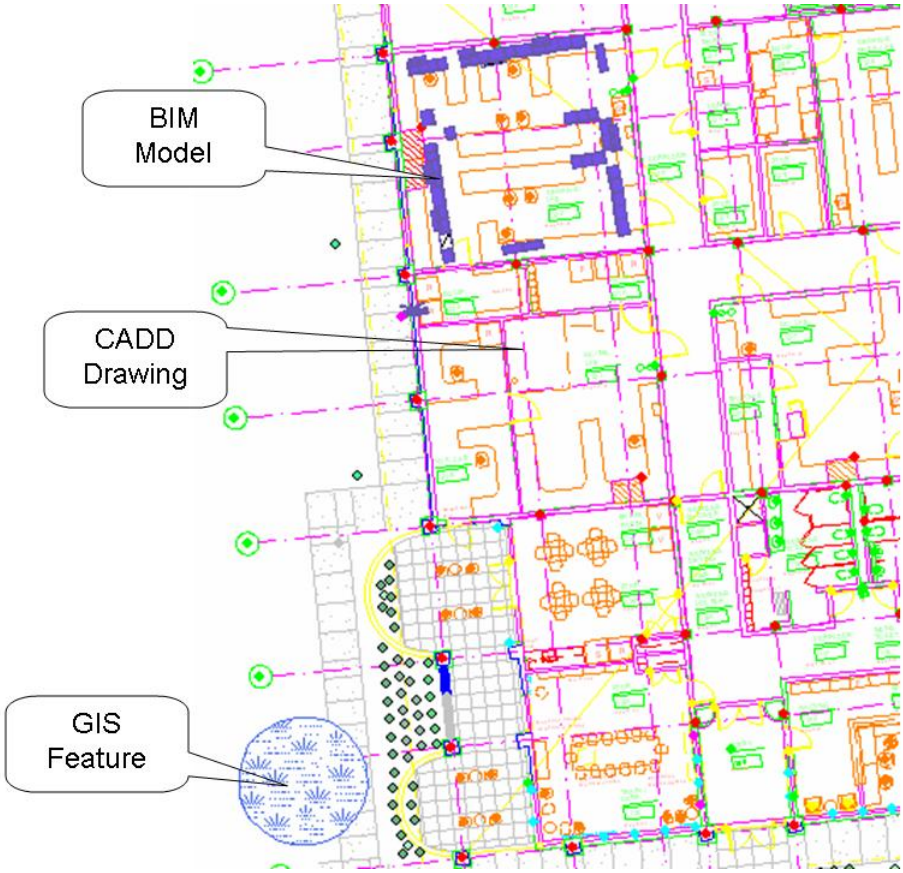
The Building Information Modeling (BIM) and Geographical Information System (GIS) Interoperability Demonstration Project supports current BIM and GIS initiatives to advance DOD planning, design, construction, and operations and maintenance (O&M) practices. A number of different data sets in DOD include 3D civil site plans, 3D building models, and GIS spatial databases, and it has been problematic to share the content of these more advanced data sets. In an effort to advance the interoperability of data between the building, site, and geospatial disciplines, DOD has embarked on several new technology initiatives to facilitate information sharing among these environments. One of the goals of this project is to facilitate that sharing in the context of an industry-sponsored standard.



This project will demonstrate exchange of data between disparate systems and allow them to operate at their maximum efficiency without the need for deference to one another's processes or functionality. The steps taken will be to assess the current state of data, develop the criteria to evaluate existing and separate BIM and GIS data sets, demonstrate the process, and in the end, deliver a shared data model and the documentation on the process and software utilized to accomplish the interoperability. Using ERDC data as the source for the BIM content, the DOD community can capitalize on the method of interoperability being demonstrated with training and tools to repeat the capabilities and functionality within the organization.

The interoperability processes are performed by capturing data contained within a BIM model. Both graphical and nongraphical information from within several BIM software vendors' solutions and ESRI ArcGIS geodatabases are able to be reused and displayed. This interoperability demonstration project employs a mixed-vendor solution to create objects in the BIM environment and share them in the GIS environment.



Interoperability Example

The project is being accomplished by extracting BIM data for display and interrogation from 2D and 3D environments as well as ESRI ArcGIS relational databases. The solution demonstrates how the BIM data can be stored in a relational database and used in both BIM and GIS. This project, using the SDSFIE standard as the basis for attributes, demonstrates this functionality as a technological solution for interoperability between BIM and GIS environments.