## Xavier University Case Study

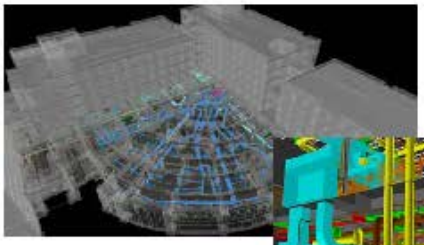
FM-BIM integration is a process improvement enabled by technology in Facility Information handover at the completion of a building project. Messer's research has shown project information delivered to owners (traditionally in paper-based drawings and operations and maintenance manuals) takes anywhere between one and two years to be entered into the applications used for on-going facility management. This lack of timely entry has cost owners substantial time and money by preventing effective usage of their systems to perform space planning and preventive maintenance, which in-turn causes warranty and maintenance issues as well as inaccurate space tracking. This innovation was to leverage Building Information Models used for design and construction, and connect the pertinent information or data to our customers FM application to replace the paper based turnover and manual re-entry of data. We proved the concept on a $117 Million project at Xavier University that aggressively added four new facilities over a two year period, expanding the customer's campus by 25% and where BIM was not required by the owner.

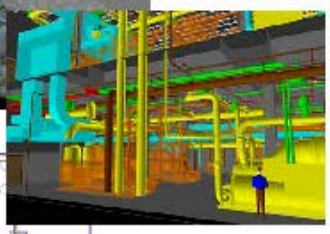
Building Information Modeling use on the project identified system conflicts during the construction planning process eliminating rework in the field and insuring that the designed systems would meet the maintenance strategy requirements of our customers, in this case Xavier University. The visualization aspect of the tools allowed Xavier's Facilities Management (FM) personnel to plan how they would maintain each piece of equipment before installation. To complete the integration to BIM we utilized the customer's FM software, FM:Interact by FM:Systems. Messer worked with Xavier to understand the data that was manually entered into their space planning and maintenance management systems. Based on that information, we identified the opportunities to enhance the Autodesk Revit models and prepare it to connect with FM:Interact. We then worked with FM:Systems to create integration points and beta test what is now a live product for them. This integration is unique as it is a seamless two-way integration of pertinent information from the Revit models to the owner's facility management system. When information is changed in one system the other is updated in real time. The information integrated included gross building square footage; rentable net area; individual room and area information including square footage, floor finishes, base finishes, wall finishes, ceiling finishes, space classifications (using HEGIS codes -Higher Education General Information Survey), departments owning the space, and the employees assigned to the individual rooms. This integration occurs at the end of the construction project saving the customer manual data entry and providing more timely information at occupancy for proactive management of the facility. This has enabled the customer to better track the space of the new facilities for their lifecycle planning and decision makers can make more informed budgeting and space management decisions.

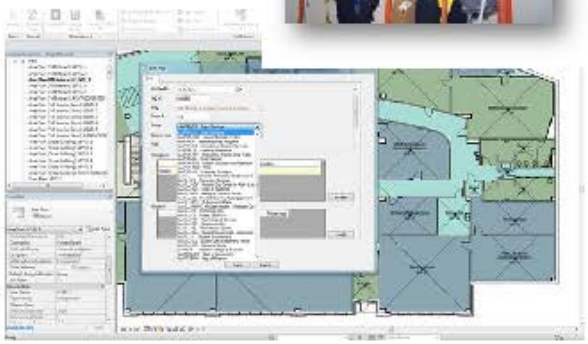
The integration of the Revit models with FM:Interact avoided well over 12 months of manual data gathering and entry (saved over 30,000 lines of manual entry) by the customer for more than 4,000 new spaces. Our customer stated that having this technology helped them to avoid adding personnel to manage the incoming data or consuming their individual workload to perform the data entry and helped them focus on maintaining and operating buildings rather than spending critical time loading information as they have on past projects. The data integrated from the Revit models is more accurate than manually collecting and entering as well. An additional benefit from this integration is the owner has consolidated the employee's physical location information, which had been stored and recorded in several forms and systems, into a single-source within the facility management system. The end result is that through the innovative use of these technologies we can resolve the dilemma of project turn over documentation on our future projects and deliver a better construction experience for our customers.

Maintain and Operate

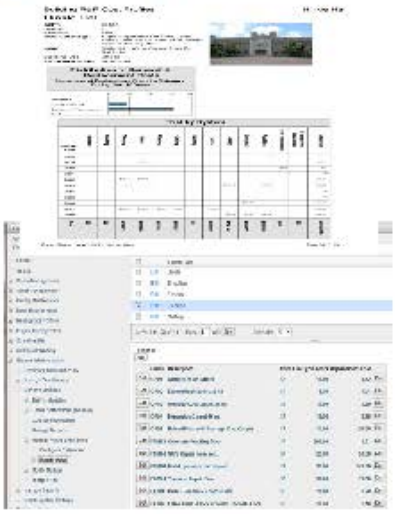
XAVIER UNIVERSITY



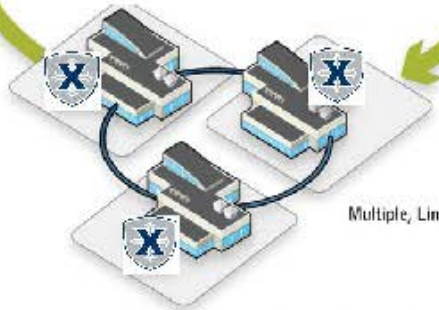




Models used to facilitate construction




Lifecycle
Flow of Information



Bi-directional integration of space data

Multiple, Linked Models

Project Handover