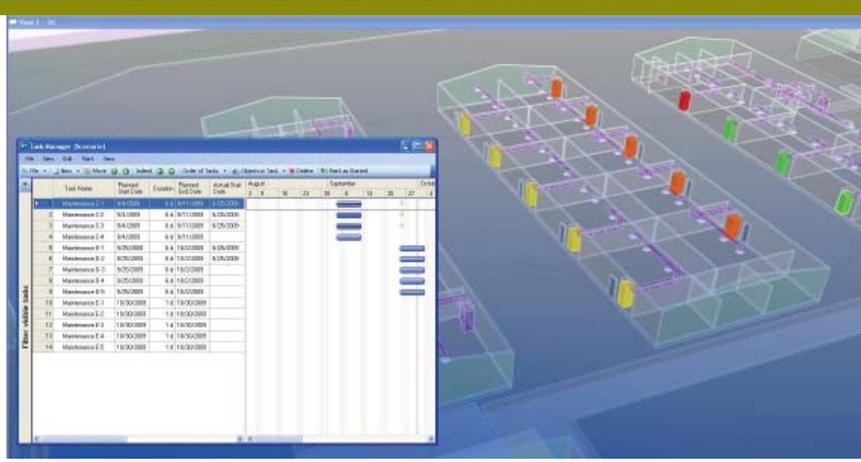
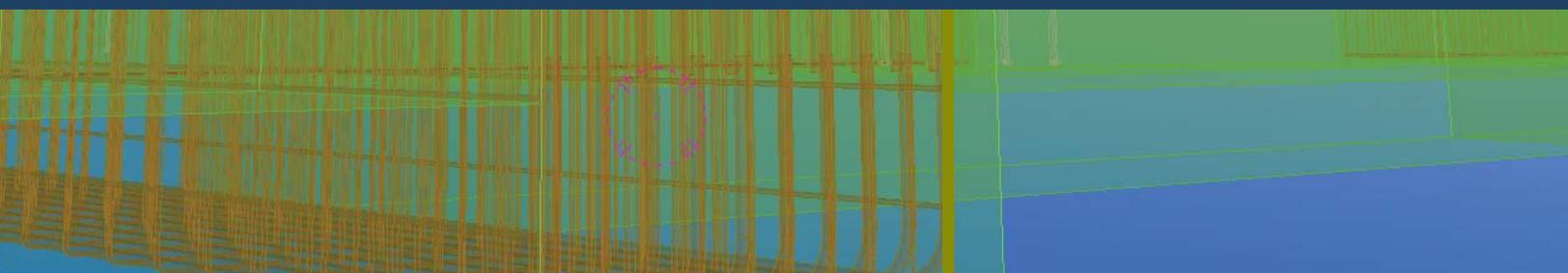


A Brief Overview of Building Information Modeling Facilities Management (BIM FM)

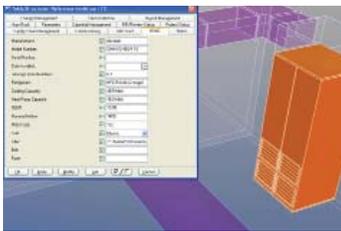
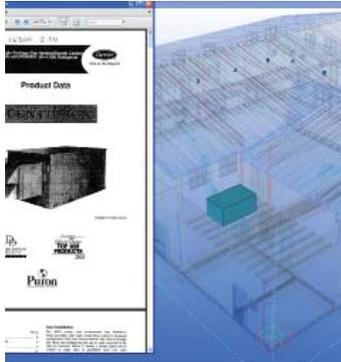


TOPIC
BIM FM

INDUSTRY
Public K-12 Education

THE OBJECTIVE
Increasing understanding of the service/process/program

What is BIM FM?



**BUILDING INFORMATION MODELING
Facilities Management**

Building Information Modeling and its use in Facilities Management, or BIM FM, is a means of organizing and accessing information about a building, such as its energy usage or output, in a 3-D format. The tool, also described as a “model,” is typically utilized through a custom-made database used to manage the building or facility.

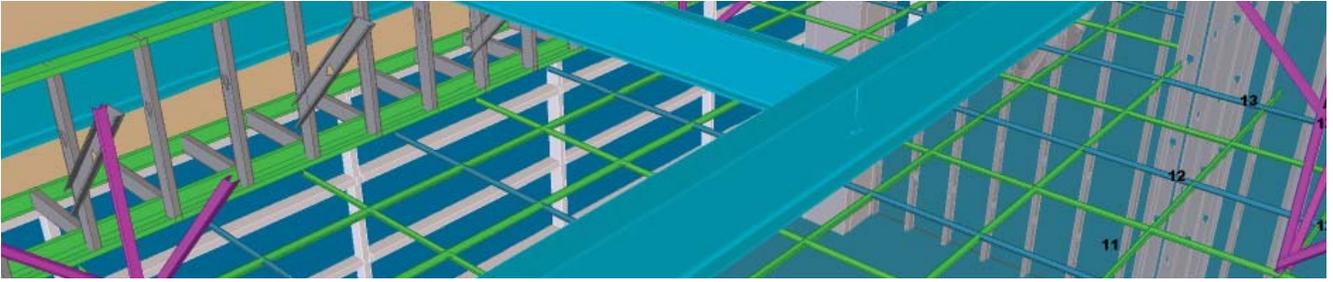
The biggest advantage to this type of facility management is that the user can visually “move,” or search, the database without needing an intrinsic understanding of the facility.

For example, If the user would like to locate warranty or Operations & Maintenance (O&M) information on a specific HVAC unit, they do not need to know the make and model of the unit. Previously, the user would physically track down the unit and read the make/model information. Using the BM FM tool, the user would instead go to the unit within the model and click on the unit to access all related information and documentation.

Why was this tool developed?

Blach Construction developed this tool as a way to deliver innovative solutions and added value to our clients, while also making positive contributions to construction-related technology. The company’s commitment to being environmentally conscious stewards of the planet also helped to form the founding drivers for this tool.

- Blach’s original objectives for developing BIM FM:
- 1) Enhance the construction processes by providing model-based access to all relevant project data for on site construction teams during the course construction;
 - 2) Create an as-built construction model that exists for the life of the facility;



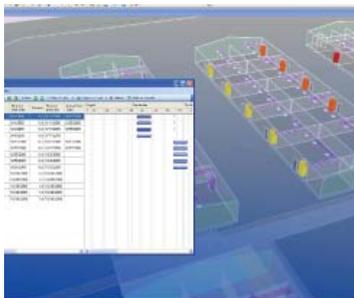
- 3) Secure the majority of Blach’s virtual design and construction efforts as well as all of the above. This would be accomplished by the same software package to maximize interoperability and minimize model bouncing.

As Blach developed the tool, the main obstacles the company encountered were identifying the best software package to use as the foundation for the database and quantifying what functionality would be of the most value to clients.

One of the first clients to benefit from Blach’s BIM FM tool was the Alum Rock Union Elementary School District (ARUESD) in San Jose, CA.

What are the benefits of BIM FM?

Through the use of a fully customized database, Blach developed a **functional, visual tool that allows the District to easily access, maintain and track** the facility throughout the course of its life-cycle.

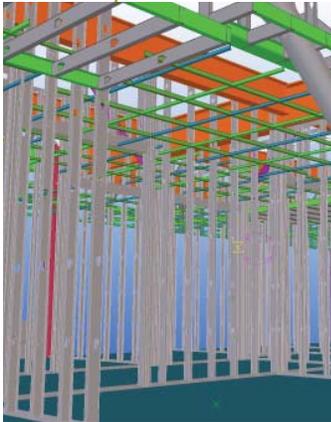


The tool is flexible by design and searchable objects can be anything represented in the model. For the ARUESD’s Matheson campus, the model was customized to feature data-loaded objects, primarily equipment such as HVAC units, electrical switchgear or panels, supply and return air grills, dampers and includes “District standards.”

The ARUESD users have the ability to open a hyperlinked Operation & Maintenance manual, construction submittal documents, commissioning reports and any other document that has been linked. The District’s model also includes archived, as-built drawings.

In addition to hyperlinked documents, Blach set up fully customized “User Defined Attribute” tabs, which can be populated by the District at any time with information and tracked.

- Blach's BIM FM tool translates to easier processes & lower long-term maintenance costs for clients.



Further customizing the District's model, Blach set up detailed tabs for doors, frames, hardware and plumbing fixtures. Another feature of the ARUESD's model is rolling HVAC maintenance schedules that color the units in the model to provide an instant visual cue as to which units will be due for maintenance within a predefined period of time.

An essential component of the BIM FM tool is the ability to easily print a report of any of this data through fully customizable reporting features. In addition to the features previously mentioned, the ARUESD user can see which electrical panel and circuit each piece of equipment is on, as well as all the equipment on any specific panel through custom filters.

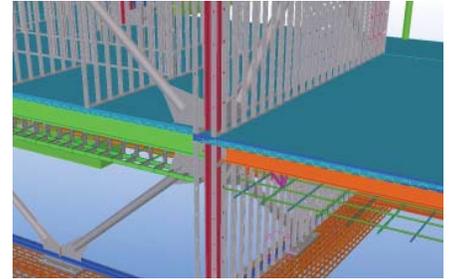
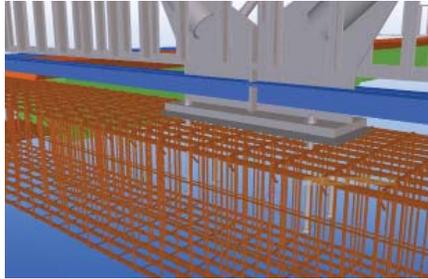
- The end result of this increased efficiency is both lower maintenance costs and increased sustainability through reduction in the districts carbon footprint (reducing paper files, archives, driving from sites to maintenance yards, etc).

How is the model built & maintained?

When a client decides to leverage the BIM FM tool, Blach will work with the client to determine their unique needs. As previously discussed, this tool is completely customizable and it is vital for both the client and Blach to work as a team to design and build each component individually.

Once Blach and its client define expectations and have identified the tool's specific components, Blach will evaluate how the tool (model) will be built. For example, if the tool will be for a new project, Blach will need to know information such as if the project was modeled and if plans available.

When plans are not available, Blach will build a model based on the existing building and conditions on site. This requires site visits, taking measurements and cataloging the existing equipment.



"At Tekla, we are always thrilled when our customers are recognized for their achievements using our Building Information Modeling (BIM) solution... Blach is no exception. For the FIATECH CETI Awards team to recognize Blach in this way, it is a testament to the way they work with their customers and partners to ensure mutual success."

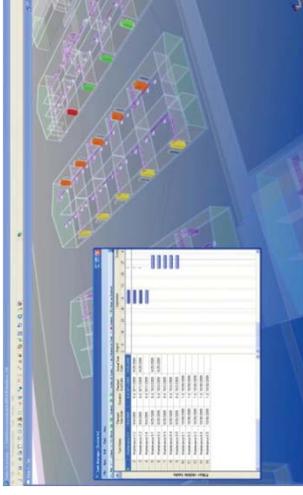
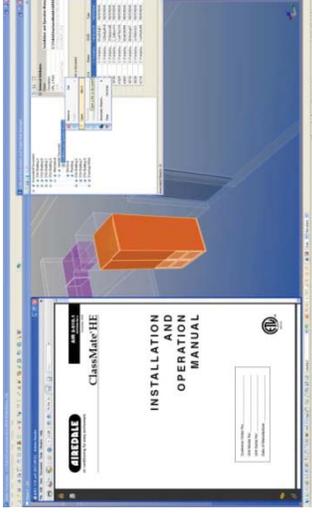
Hans Ehrnrooth,
President of Tekla,
Discussing Blach's 2010 CETI
Award for its BIM FM Solutions

Once the model is built and all of the data is entered, Blach will transfer the model to the District's servers and provide detailed training to the District to ensure that staff is well-prepared to use the BIM FM tool.

For more information, or to talk to Blach's Manager of BIM Services, please contact Gino Cecchetto at (408) 869-8415.



BUILDING INFORMATION MODELING Facilities Management



No Archived Paper

- Storeroom full of archived files from the construction and maintenance of your facility?
- Know you have as-built drawings of your facility but can't easily locate them?
- Can you easily figure out what equipment is still under warranty, or what equipment is fed from a specific electrical panel?
- How much value are you getting from those paper files you can't quickly sort through and access?

Move to a 3D Digital Archive

- All that information and more can now be stored and accessed electronically through an easy to navigate 3D model
- See the item, click on it, select the information you need.
- Documents open in their native program so you can print, email, modify, and save them back to the archive

Manage Your Facility

- Use that stored information to increase the efficiency of your maintenance staff.
- We can create color coded rolling periodic maintenance schedules, electrical panel schedules, filters that show equipment on the selected panel, filters that color equipment that is in or out of warranty, and much more.