VTrans Civil Integrated Management Effort

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What is Civil Integrated Management?

Civil Integrated Management (CIM – Also known has Building Information Modeling/BIM), at its simplest, is the concept of having a centralized repository of information related to the transportation infrastructure network.
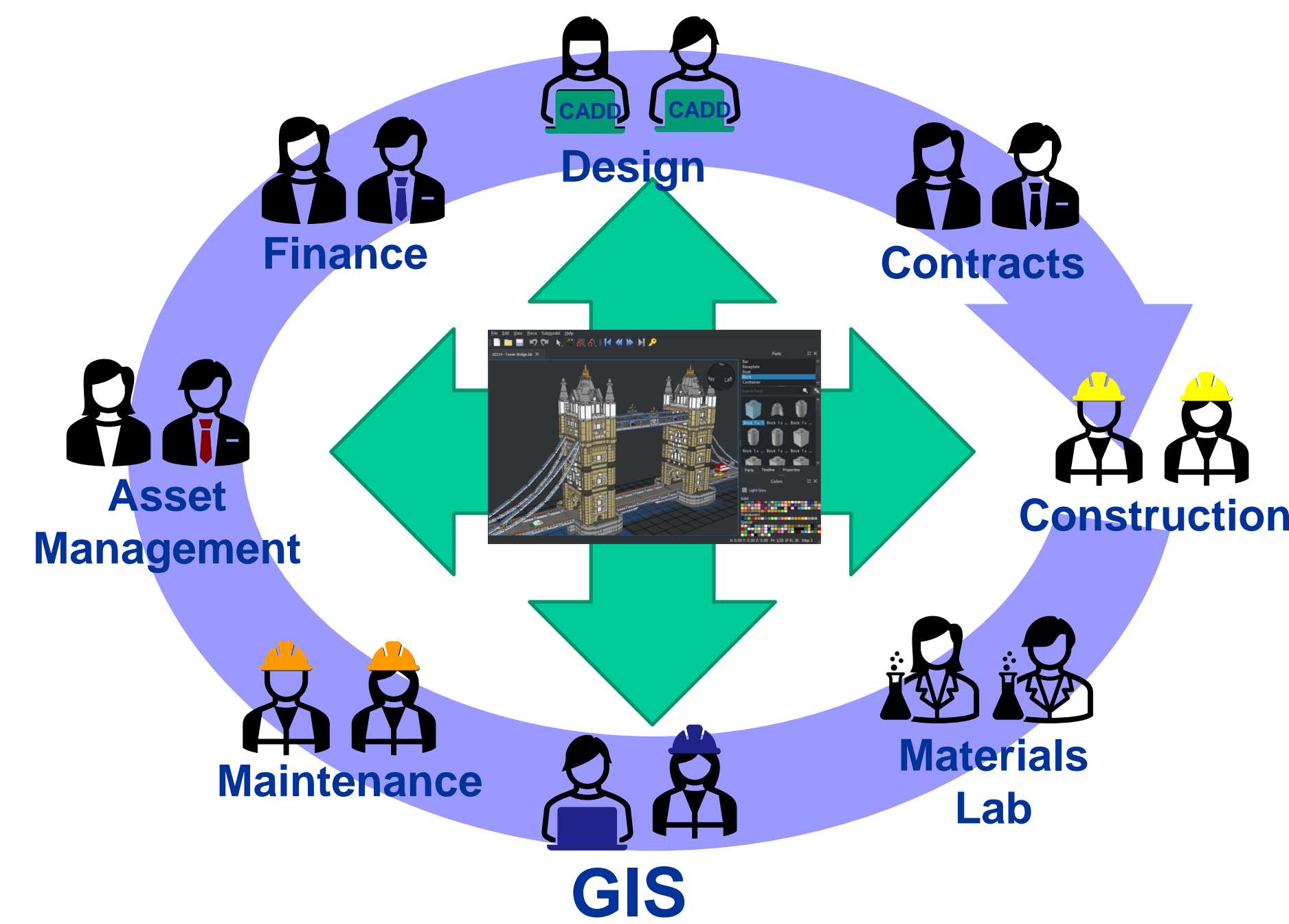

Figure 1. We "communicate" *through* the model.

How Does CIM/BIM work?

The core of this concept is the idea of a "digital twin" - a 3D electronic model equivalent to its real-world object, that acts as a reference. Data and information can then be affixed or "hung" from the digital twin, allowing users to interrogate the model to get more information about its details. It's important to note that this is not "if", but "when"; the agency needs to adapt.
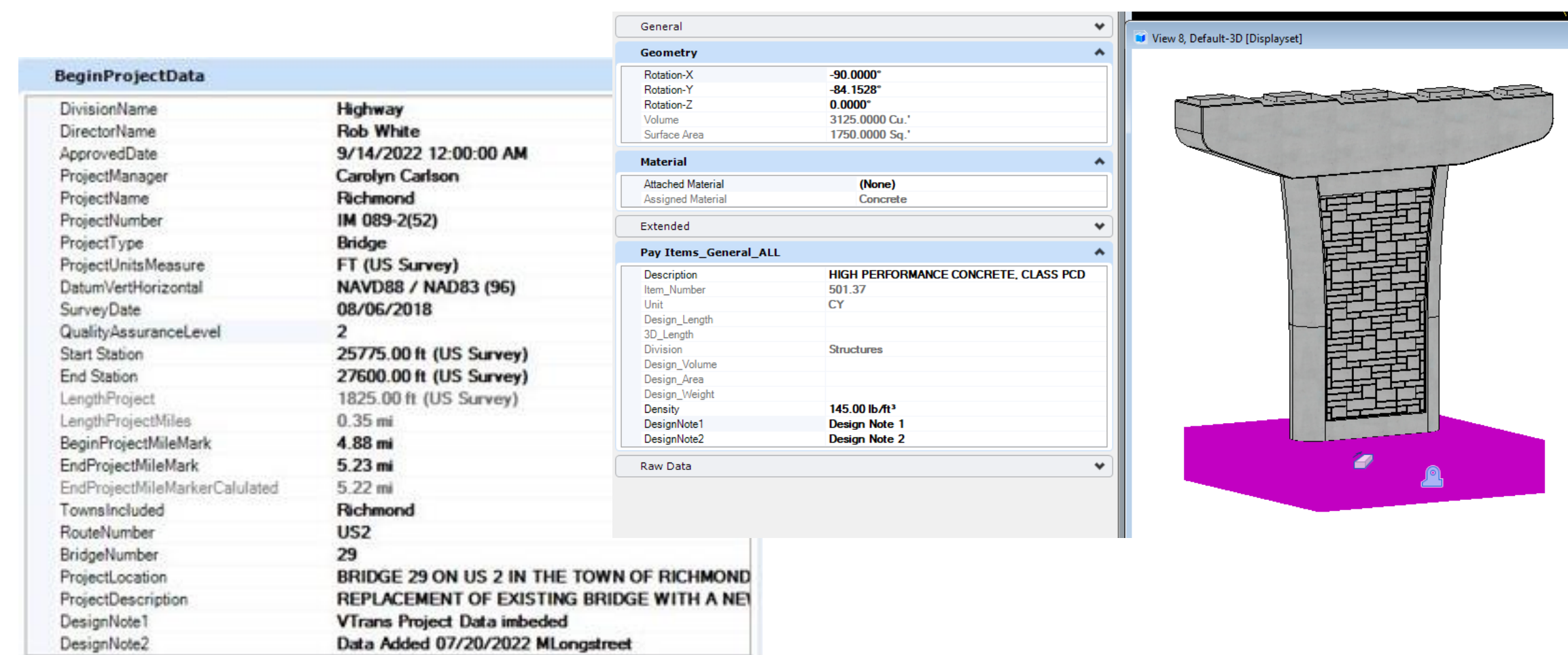

Figure 2. Examples of the digital twin

What are the challenges?

The Agency faces many challenges in developing its CIM/BIM methodology. The technology, while not new, is still in process, and industry standards have not yet been fully set. Because of the sheer volume of data, performance is an issue. As a result, some DOTs are taking an intermediate step to focus on data integration between existing system. These leads to another challenge – not all the data and information needed by various areas within the agency is being collected usefully, or in some cases, not at all. We need to recognize when our work impacts others and try to help each other get what we need.
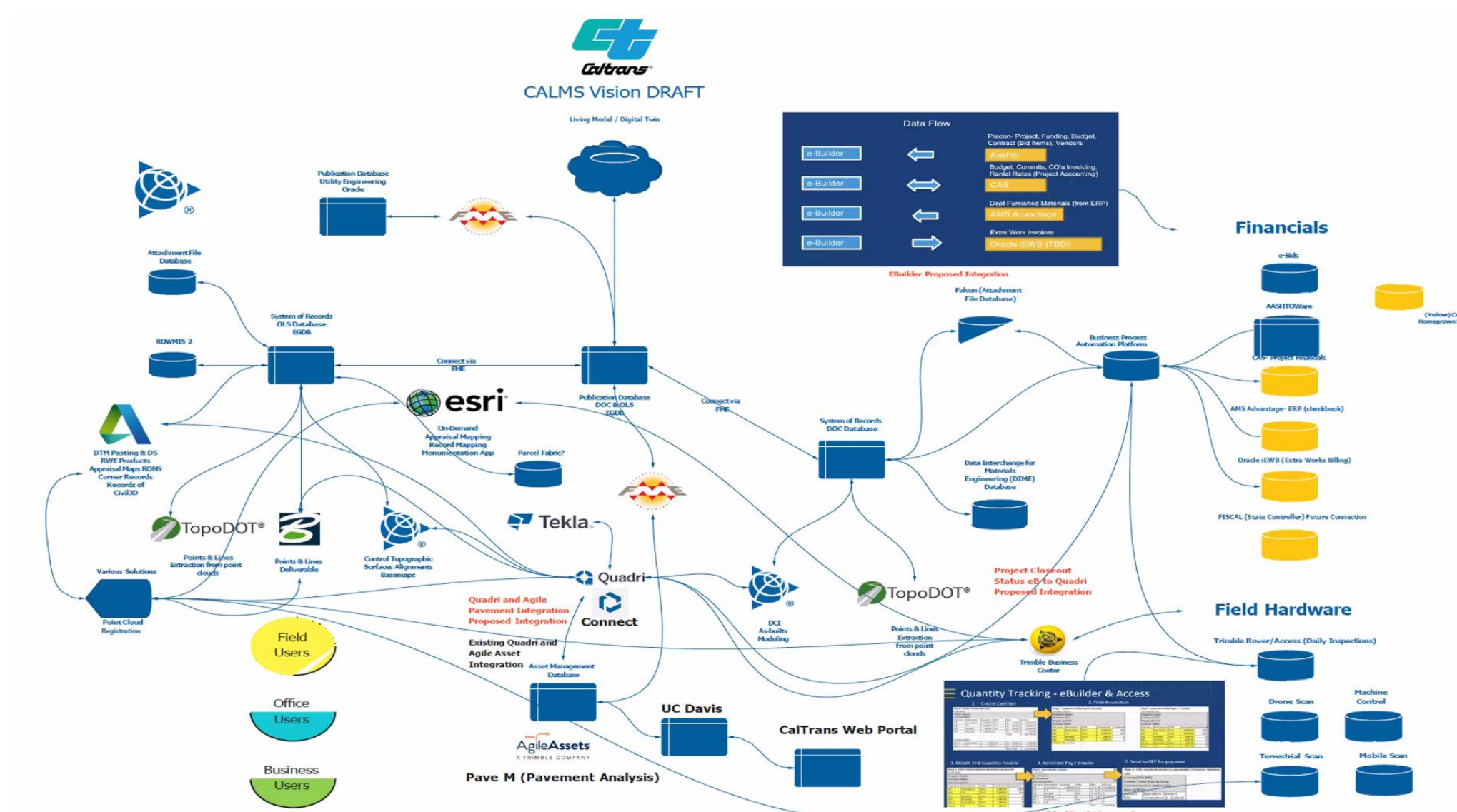

Figure 3. CALTRANS' vision for data integration as an intermediate step to CIM/BIM

Why is this important to VTrans

This where the industry is headed. Our contractors and consultants will want projects delivered as 3D models. For CIM models to be useful, we need to create standards for development and use. It's not "if" but "when".

References

FHWA's EDC-6 Digital As-Builts Webinar Series

https://dabs-technologyinnovation.com/webinar-series/

Building Information Modeling (BIM) for Transportation Infrastructure

https://www.youtube.com/watch?v=bEI-TCPmmT0