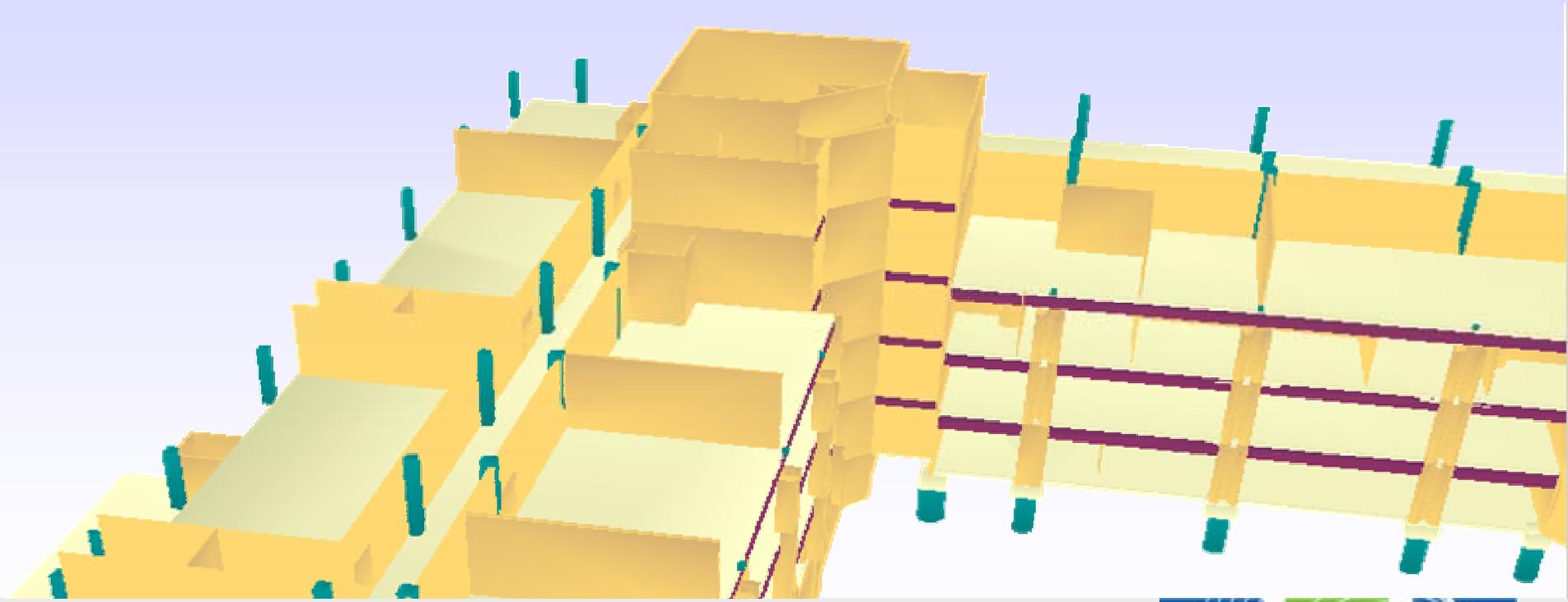


Adding Value with 3D Models

Shawn Foo
CSIRO



CRC Construction Innovation
BUILDING OUR FUTURE

What is wrong with 2D?

- Objects are defined using basic graphics
 - Lines, arcs, circles
- Users have to apply their own interpretation in order to understand the drawing

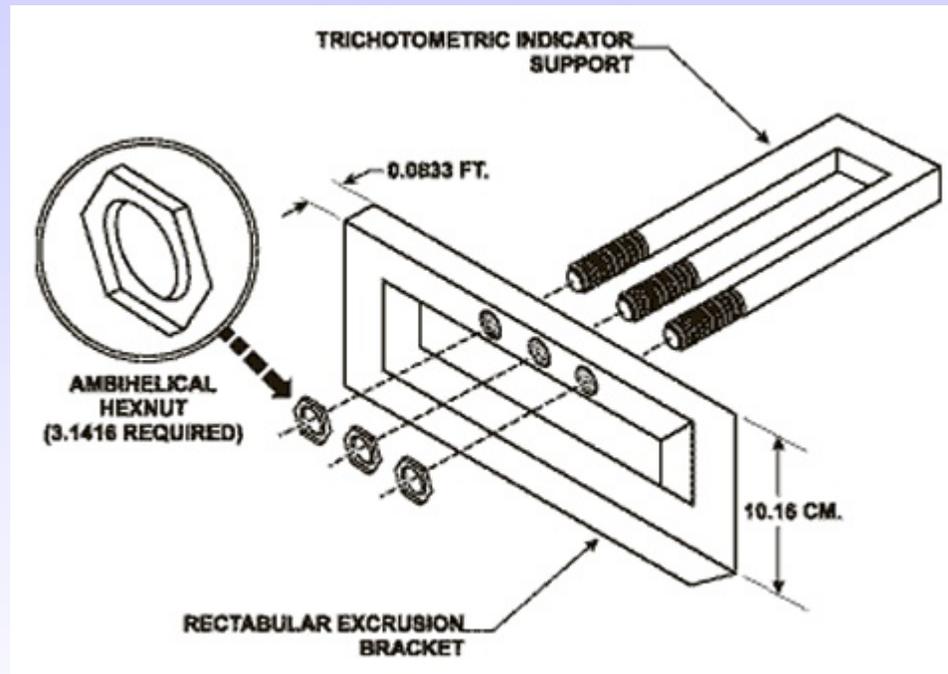


What is wrong with 2D?

- Extremely difficult to automate interpretation of drawings
 - 30 years of work : no reliable results
- No explicit relationships between plans, elevations, sections and details



Problems with 2D



What are 3D models?

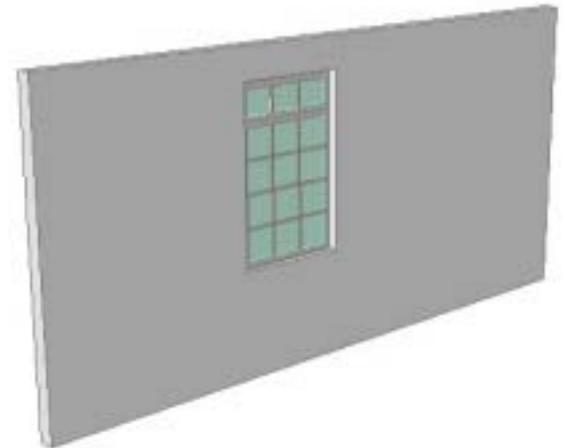
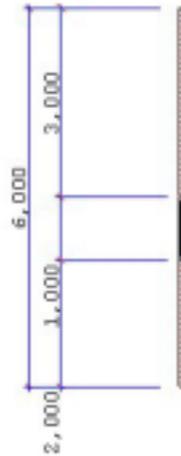
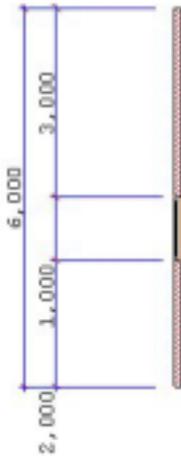
- Our major interest is in the “objects” within the model
- Objects encapsulate all the information about an element
- Using objects allows
 - Packaging of information
 - relationships to be defined
 - Automatic generation of plans, sections, etc from internal 3D model



Using 3D models

Wall..
Length: 6000mm
Height: ?

Wall
Length: 6000mm
Height: 2700mm
Width: 120mm
Material: Concrete



Why use models?

- Visual feedback

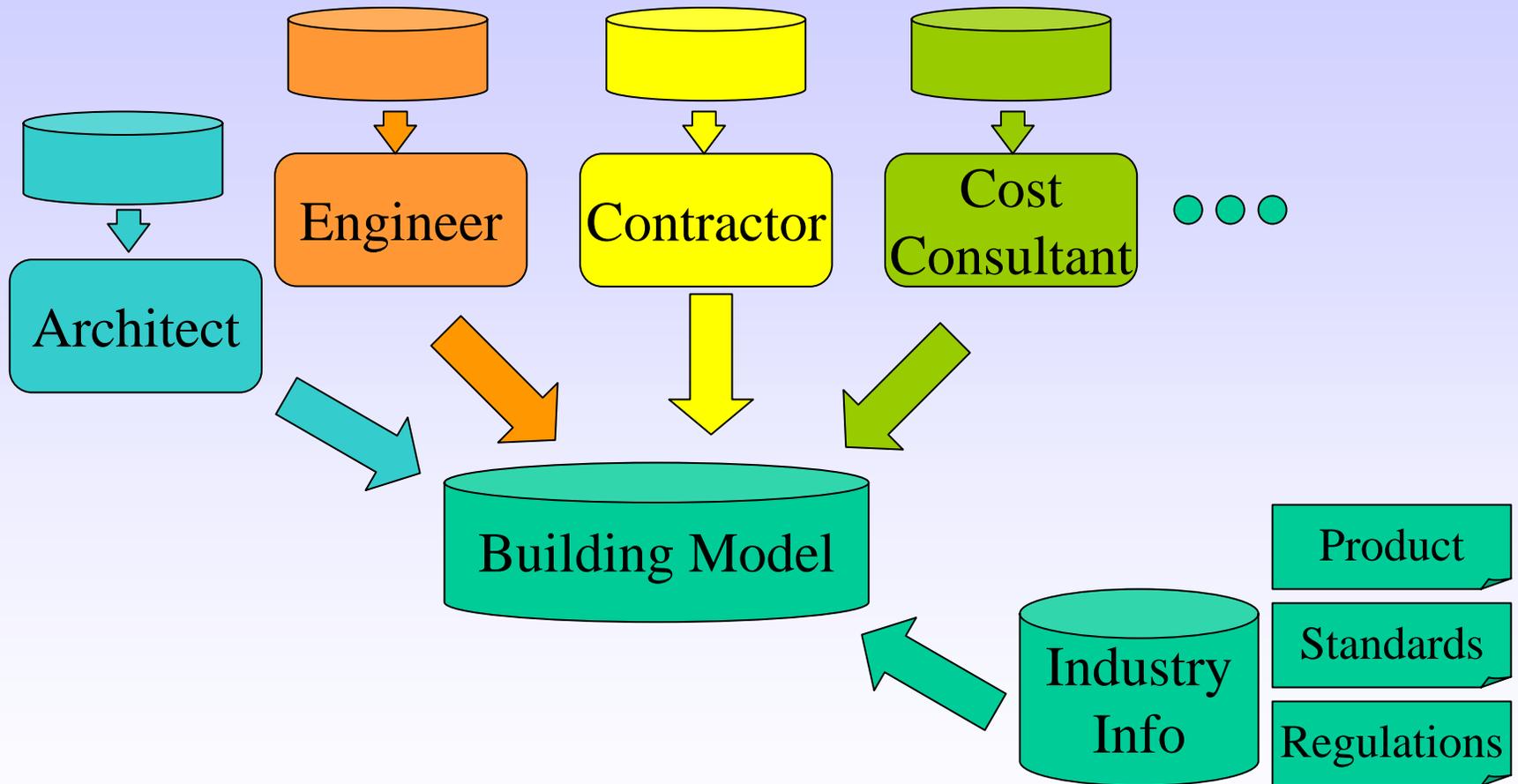


Why use models?

- Encapsulating the information
- Geometry is not as important as many people assume
 - Need geometry to infer other data for other uses
 - Feasibility and early design do not even use geometry
- Useful through all phases from planning to demolition

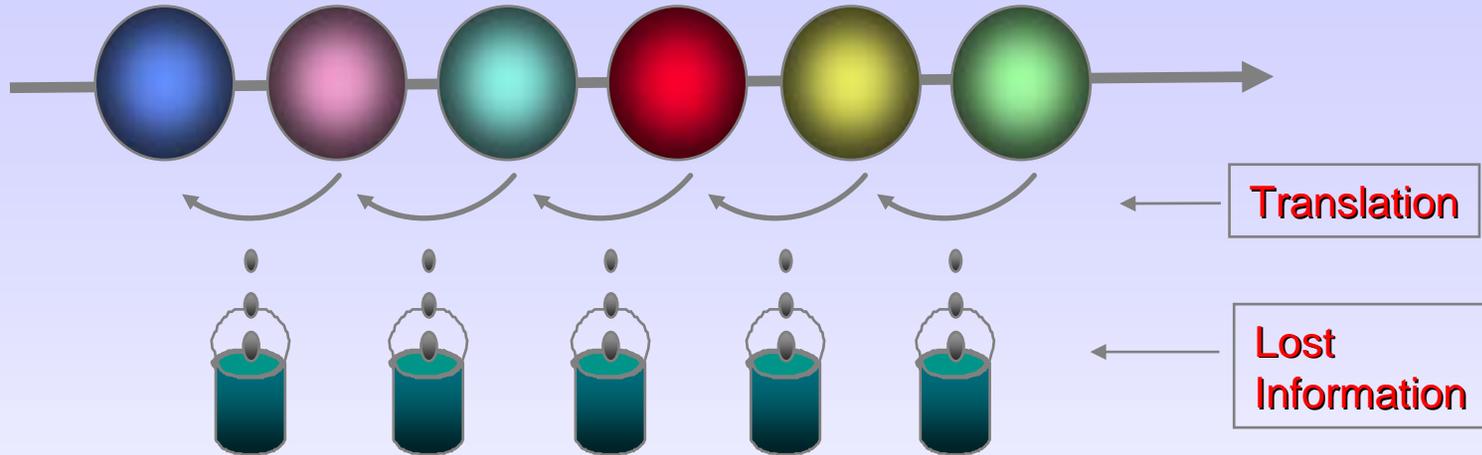


Goal: Information sharing

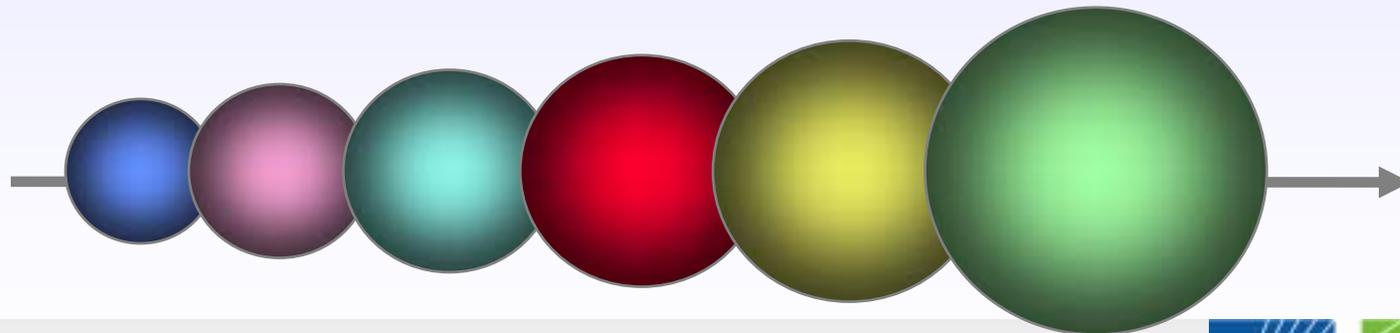


Goal: Information retention

Current Model:



Model with Interoperable Solutions:



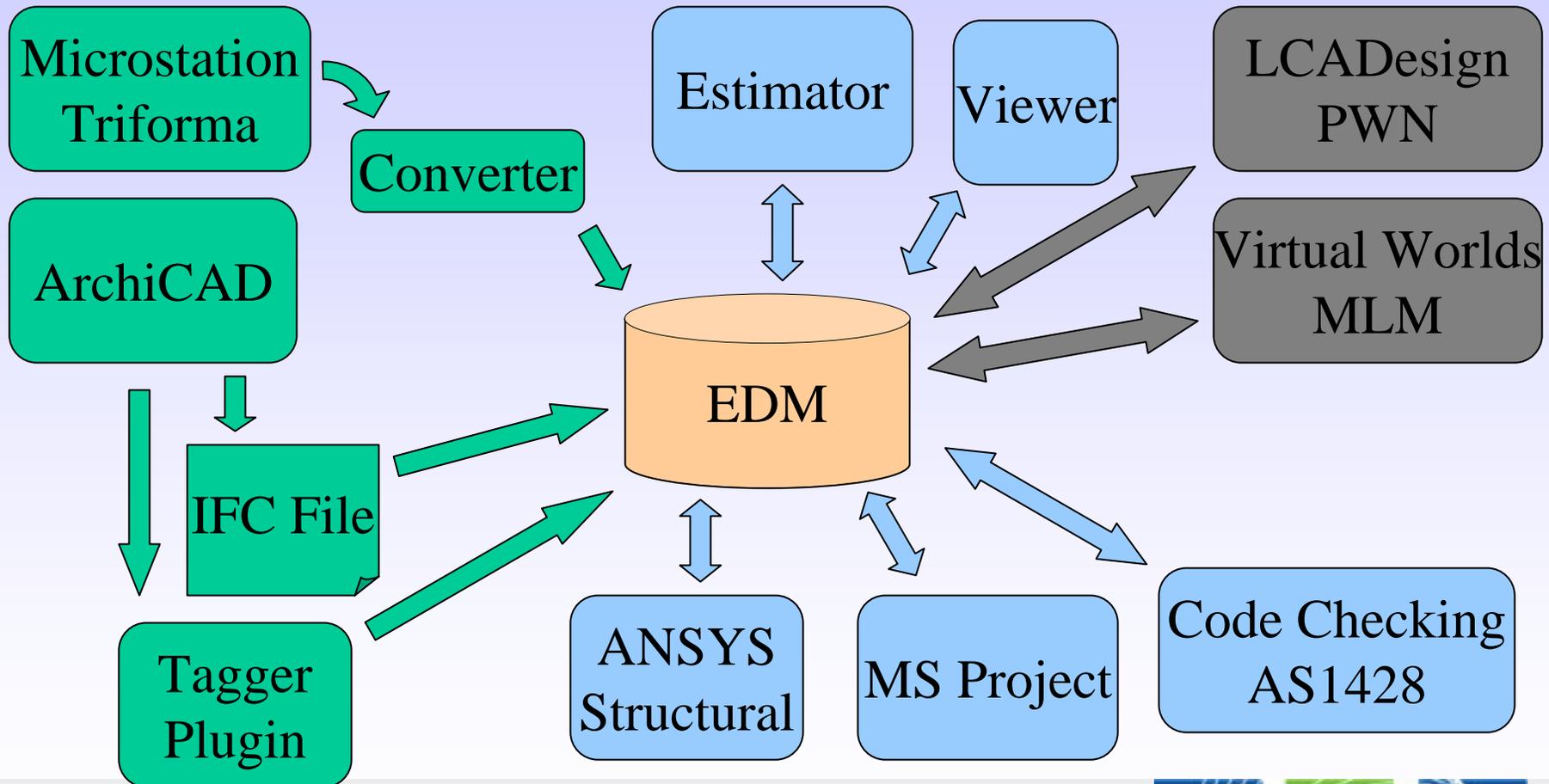
Planning / Schematics / Design / **Analysis** / Construction / FM



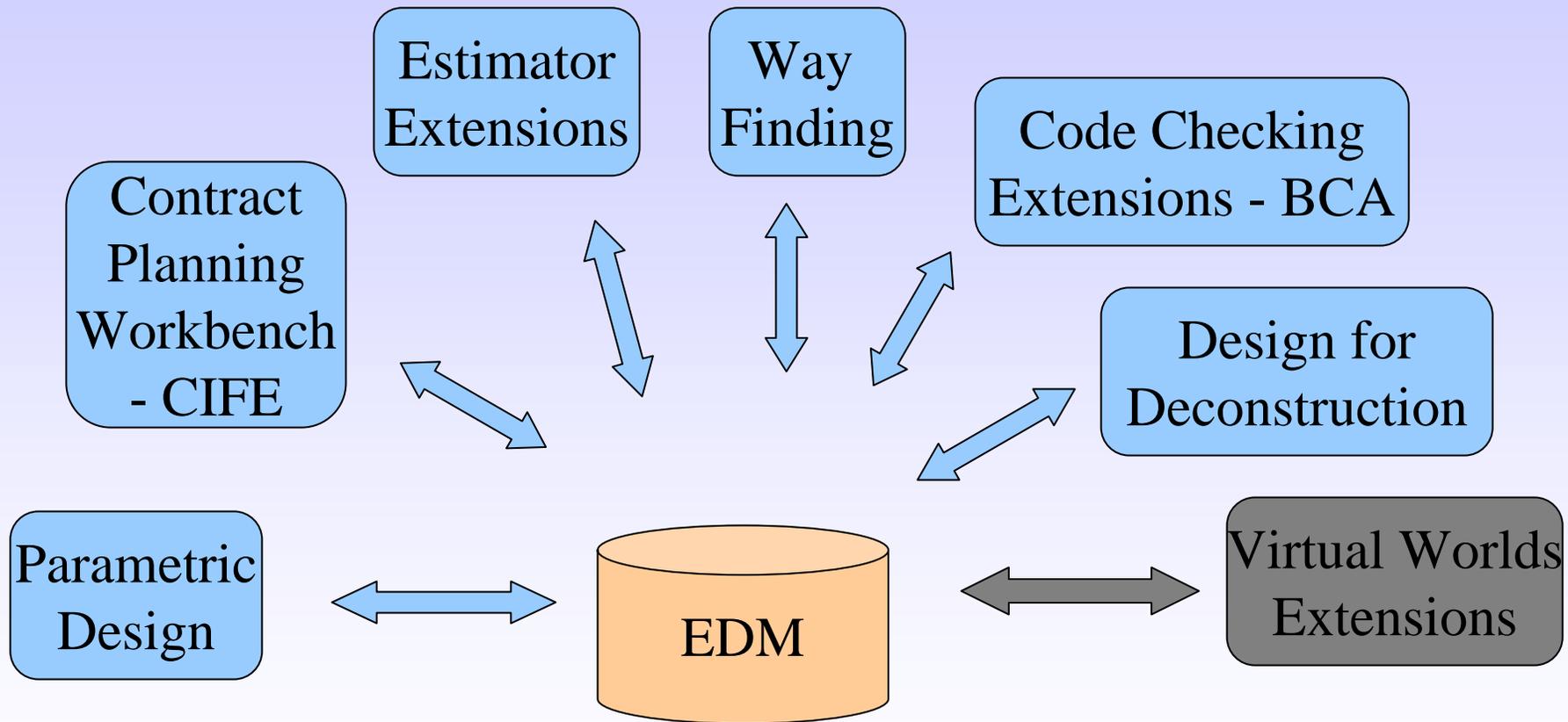
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What have we achieved?

For detailed design:



New & proposed projects



Risk - Leading edge versus Bleeding edge

- Using IFC standard for information exchange
 - Supported by major CAD platforms
- Significant effort in Scandinavia
 - Finland – US\$35M over 5 years
- HUT project
 - Extension to Alvar Alto designed auditorium



Information is a source of learning. But unless it is organized, processed, and available to the right people in a format for decision making, it is a burden, not a benefit.

- William Pollard

