

Despite the growing popularity of Building Information Modeling (BIM) throughout the construction industry, BIM continues to be primarily applied only during the design phase. Mortenson is committed to using BIM throughout all project phases on every project. These models fully integrate all MEP systems, structural systems, enclosure systems, and interior partitions prior to any work being put into place. We have found there is an opportunity to gain great value by bringing model information into the field and into the hands of trades people – we call this the "last hundred feet."

On the Tulalip Hotel and Conference Center, Mortenson coordinated all primary systems into one model. Because the model combined all necessary documentation, the model became the primary point of reference on the job. With this tool, trades had one source for all information instead of having to search through multiple sets of drawings to gather specific details. Mortenson bridged this gap through the use of two innovative tools: 1) Plan Room Computer (PRC) fig 1.1 and 2) the Integrated Work Plan (IWP) fig 1.2.

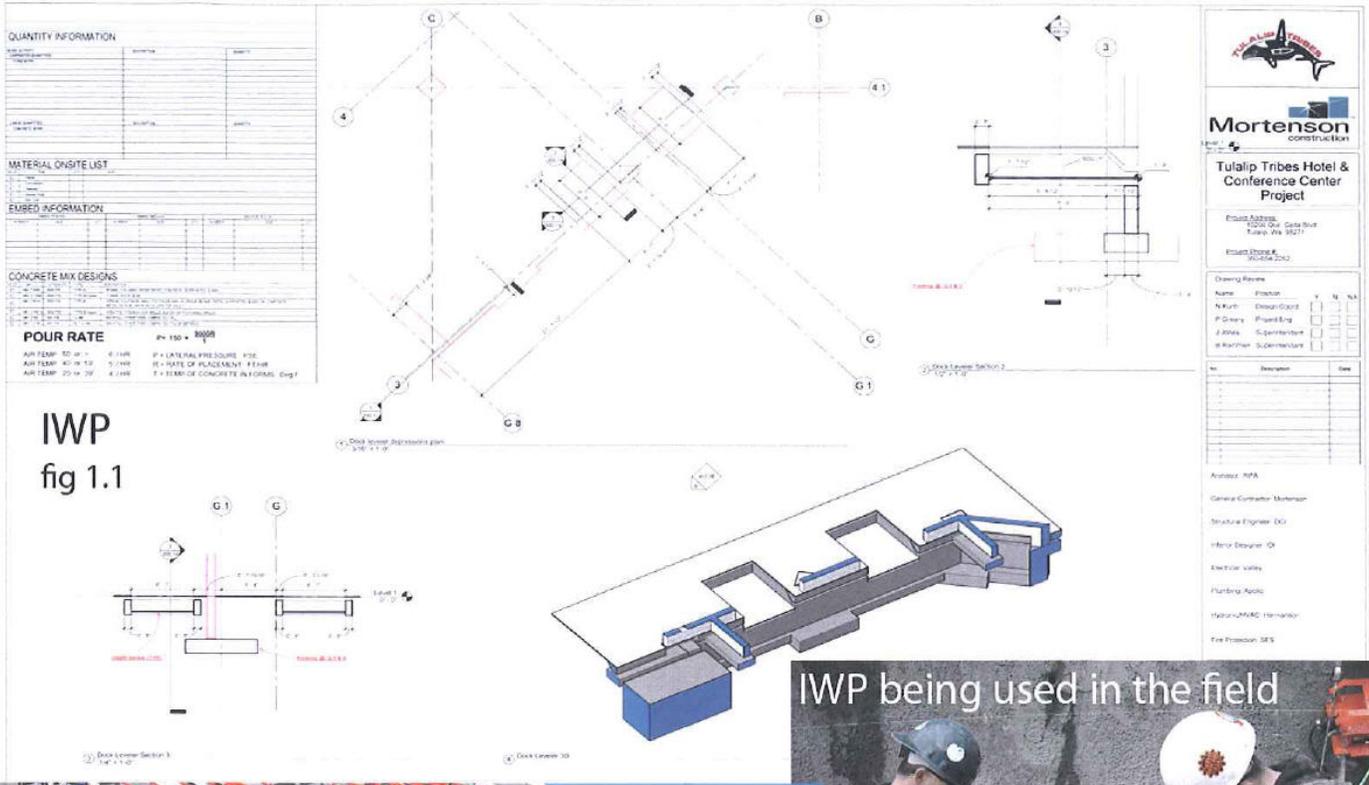
The aptly named Plan Room Computer sits in the job trailer's plan room. It features an interactive and read only version of the model, used by all trade foremen to better understand design intent and realize their work in 3 dimensions. This tool also allowed for engineers, foremen, and subcontractors to communicate effectively amongst each other using only one point of reference.

The Integrated Work Plan is a 2D drawing taken from the coordinated construction model. The IWP effectively combines relevant dimensional information, safety and quality details, and all other information pertinent to completing a specific task, slab edge, embed layout, sleeve layout etc. The IWP is delivered to carpenters in the field, and it eliminates the need to build from multiple documents.

Ultimately the model, and the IWPs became the primary source of building information on the project for crews in the field, providing layout for our MEP subcontractors, enclosure subcontractors, interior partition subcontractor, to our own carpenters.

The use of the PRC and IWPs integrated the craft workers and improved production in many areas. The structure was built six weeks ahead of schedule. The foremen could spend more time in the field and less time in the trailer, due to the consolidation and distribution of fully coordinated information. This meant less stoppage while costly RFIs get resolved, impacting the schedule. This effort saw an increase in craft efficiency by 22 percent. In addition, there were 30 percent fewer RFIs compared to similar projects that did not use BIM. Through these coordination efforts not one embed, blockout, or sleeve was misplaced.

As a result of the improved quality and productivity on the Tulalip Hotel project, Mortenson has made the process of distributing coordinated information and integrating field personnel with BIM part of our standard operating procedure.



Mortenson construction

Tulip Tribes Hotel & Conference Center Project

Project Address:
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Tulip, WA 98271

Project Manager:
Mortenson Construction

Project Engineer: DO

Structural Engineer: DO

Interior Designer: DO

Electrical: Valley

Plumbing: Apollo

Mechanical: Mortenson

Fire Protection: SES

