



VELA SYSTEMS

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The Leader in Field Software for the AECO Industry.™

REAL-TIME BIM / RFID-ENABLED PRODUCTION MANAGEMENT

The \$998M contract for the New Meadowland's Stadium project is the largest-ever order for Skanska USA Building Inc. Skanska is the construction manager for the 1.9 million-square-foot stadium which involves the construction of a technologically advanced open-air stadium with seats for 82,000 spectators. The project is scheduled to be completed in 2010. Skanska will leverage the interoperable technologies of Tekla Structures and Vela Systems. A critical part of the construction of the stadium includes approximately 3,000 pre-cast concrete components, manufactured by High Concrete in Denver, Pennsylvania and its subcontractors in New Jersey. Managing and controlling the pre-cast concrete supply chain is crucial to the deliver the project on time, within budget and to the specified quality.

To deliver the high profile stadium project within the strict time frame required by the two NFL franchises and the owner demands a new level of collaboration and communication. The design, fabrication, delivery and assembly of the essential building components, the pre-cast concrete, is the key to successful performance. With the high contract value, risk management through secure project controls is also critical.

First, due to the constraints in the existing Meadowlands Sports Complex and the massive scale of the new stadium construction, the job site lacks the space for a "traditional" materials lay down and storage area. Staging the pre-cast concrete components on the job site is not a feasible option, mandating the use of "JIT" or just-in-time project delivery methods. As pre-cast components move off the trucks and are put directly into place, coordinating the fabrication sequence and delivery schedule with the plant in Pennsylvania is critical with the job site preparation in New Jersey. Supply-side visibility and real-time communication between Skanska, High Concrete and its subcontractors is vital.

Second, to ensure that the pre-cast components comply with the design specifications, rigorous quality control and quality assurance throughout the process is top priority for both Skanska and High Concrete: at the concrete plant during manufacturing, immediately prior to shipping, at receiving on the job site and during installation. The design-build delivery structure shifts the onus on to Skanska to drive comprehensive quality compliance, compounding the challenges that the project team faces.

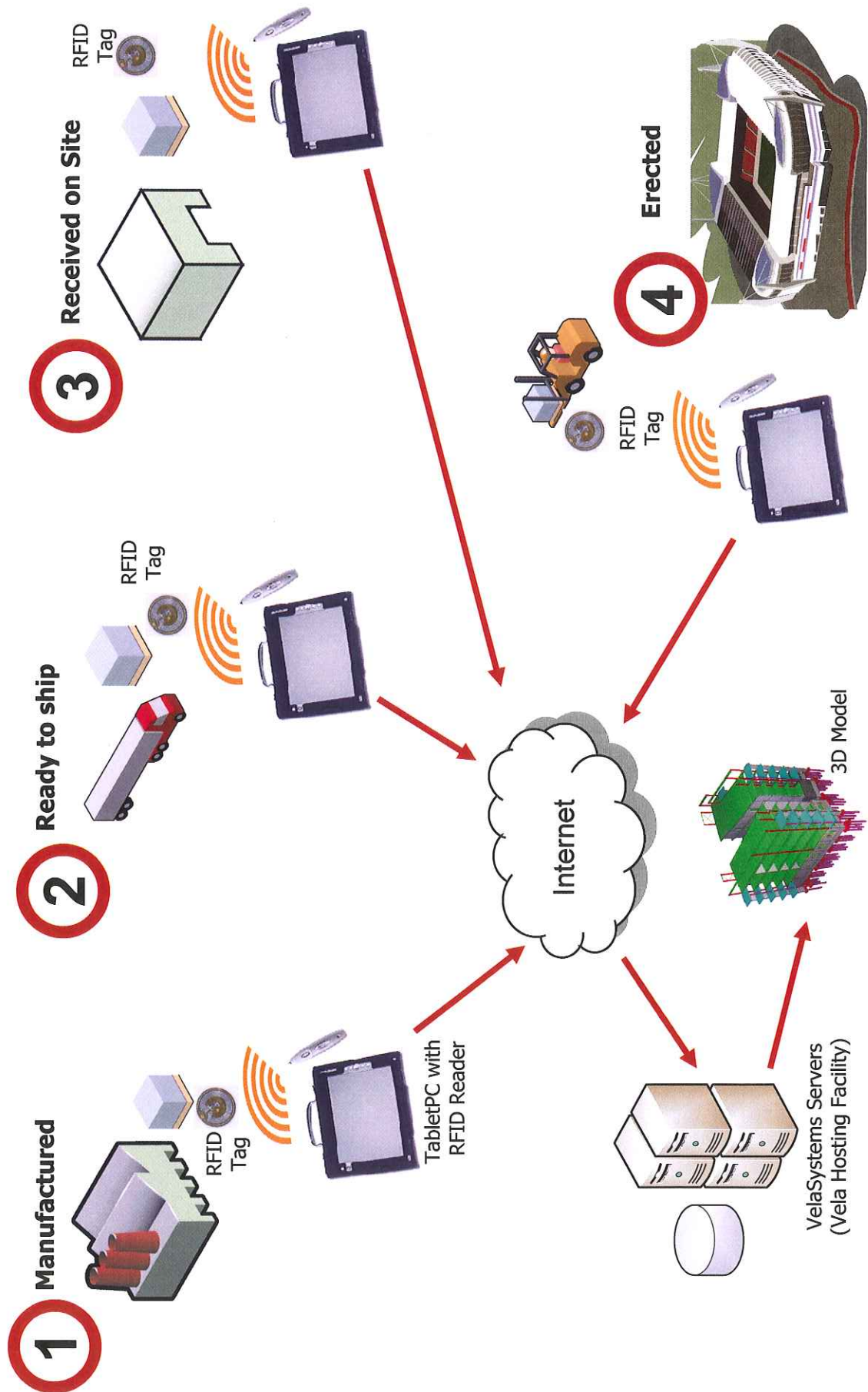
Third, the design-build, fast-track project delivery method lacks the "slack" in the schedule to recast and reship panels rejected on site due to quality that is sub-standard and below tolerance. Open collaboration between all stakeholders is critical to maintain the schedule and related assembly sequence of the pre-cast concrete components, and to avert potential costly delays.

The solution: to enable real-time supply-side visibility, quality control and quality assurance, just-in-time project delivery and coordinated schedule management across the value chain, Skanska USA Building Inc., High Concrete and its subcontractors leverage the power of an interoperable solution – Tekla Structures BIM seamlessly integrated with Vela Systems RFID Materials Management. The solution enables the project team to capture, control and share important, field-related materials management information. Then, the team visualizes this construction management information in one centralized place, in a 4-dimensional context -- the animated BIM model in Tekla Structures.

Key benefits of the Tekla Structures and Vela Systems interoperable solution include:

- Enabling real-time supply-side visibility into the status of pre-cast concrete components;
- Creating real-time communication and collaboration between key stakeholder and suppliers;
- Driving accuracy by eliminating the cumbersome, error-prone paper-based process;
- Accelerating project delivery process through just-in-time construction methods;
- Managing and visualizing physical components through a virtual, 4-dimensional BIM model;
- Coordinating the component manufacture and delivery with site preparation schedule;
- Controlling and assuring quality across the supply chain to minimize delays;
- Eliminating the need to maintain and manage a materials laydown area for on site staging;
- Creating a secure audit and history log for each component at each stage of the process;
- Enhancing overall project risk management through control over a key component;
- Gaining at least 10 days on project schedule @ \$100,000/day benefit = \$1.0MM savings.

REAL-TIME BIM / RFID-ENABLED PRODUCTION MANAGEMENT (VELA SYSTEMS, TEKLA & SKANSKA USA BUILDING)



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