



SIMULATING THE FUTURE

Virtual Construction... the benefits are real

- ▶ detailing & construction efficiencies
- ▶ increased accuracy
- ▶ schedule compression
- ▶ project cost savings

Virtual Construction
Steel Detailing
Model Coordination
Connection Design

www.bdsvircon.com



Virtual Construction

BDS Virtual Construction brings complex projects to life at the outset, so they can be viewed 'in the round' by project designers and engineers. BDS VirCon's experienced design modellers create a 3D structural model in real time using minimal design documentaion, saving valuable engineering time and resources.

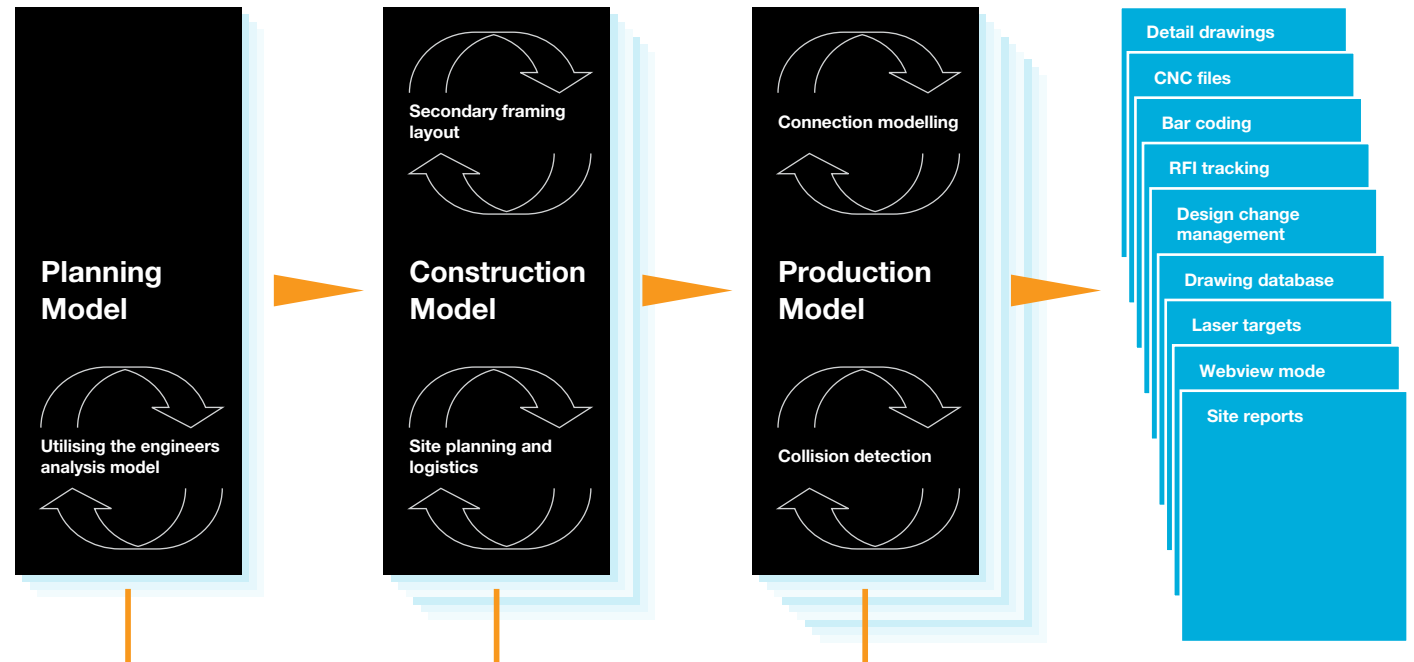
The model will often include precast, in-situ concrete, wood and glass components, ducting and MEP.

This process enables solutions that push construction boundaries and capture the vision and integrity of modern architectural designs. Conflicts can also be caught before construction begins, rather than in the field, saving time and costs. Redrawing is also eliminated by inputting information once and moving through increasingly complex, detailed and accurate 3D modelling phases.



Glass Recycling Plant, Doncaster, UK

The Virtual Construction process



The Planning Model

- ▶ Imports the engineer's analysis model into the Tekla software utilising in-built construction planning tools
- ▶ Imports structural framing from engineering design programs via IFC, SDF or CIS/2 transfer
- ▶ Project managers can quickly and accurately determine initial:
 - ▷ Material quantities
 - ▷ Project schedule information
 - ▷ Critical logistics such as roads, excavations, crane placement and staging areas

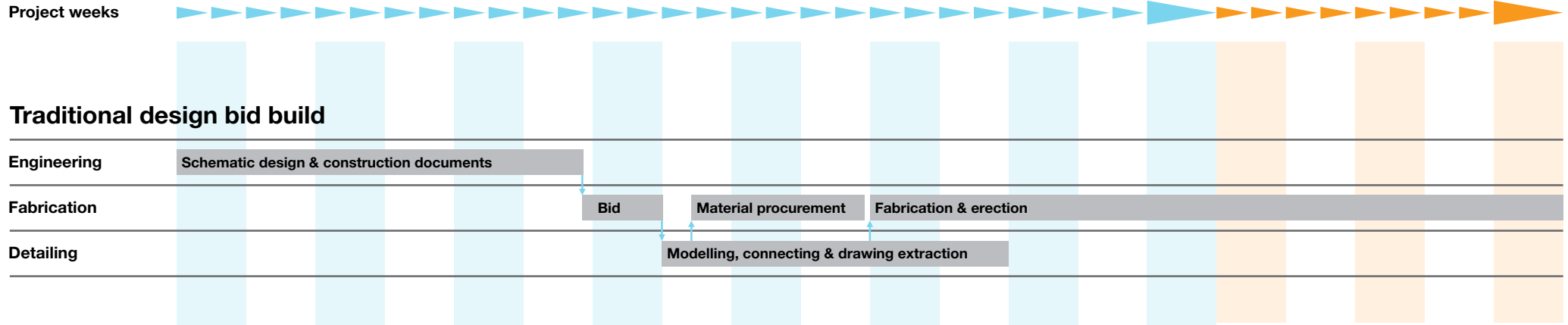
The Construction Model

- ▶ Provides construction team with a real simulation of the project from design phase through to erection allowing:
 - ▷ Team to foresee design or site constraints
 - ▷ Schedule acceleration by design process collaboration
 - ▷ Costs to be saved
- ▶ Direct reference of architectural model for dimension and geometry set out information
- ▶ Removes requirement for 2D design documentation before project planning and production can commence
- ▶ Allows better control of sub contractors

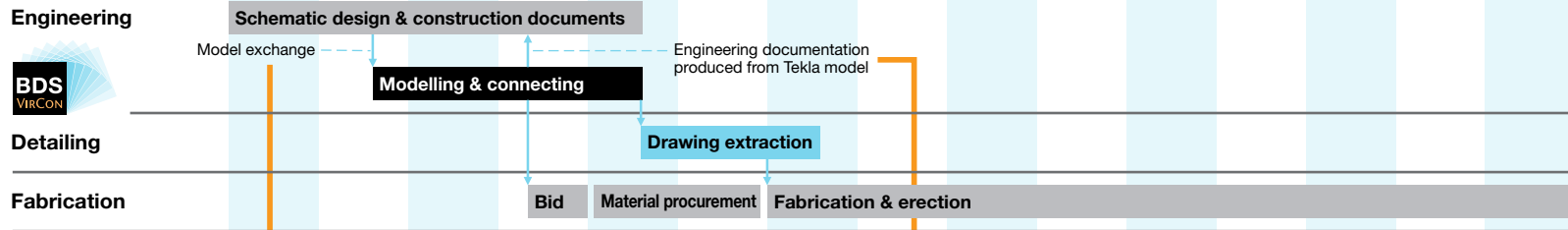
The Production Model

- ▶ Is millimetre perfect and generates information to produce steel, concrete and rebar components
- ▶ Outputs can be electronic or hard copy and include cnc files, fabrication reports, erection drawings, 3D co-ordinates, web based viewer models and drawings
- ▶ Maintains a direct link with the construction model allowing:
 - ▷ Design and detailing status feedback to construction model
 - ▷ Regular status reporting
 - ▷ Design changes to be quickly and efficiently incorporated
 - ▷ Clash detection
- ▶ Increases control over material procurement

Schedule Compression and cost savings



Virtual Construction design build



The Virtual Construction process achieves time savings across the entire project and fast tracks the design and construction schedule.

- ▶ The engineer's analytical design model is converted into the Planning Model
- ▶ Engineering documentation is created directly from the Construction Model
- ▶ The Construction Model is broken into smaller areas to enable faster design completion
- ▶ The architect's and other models are directly referenced into the Construction Model
- ▶ The connection design is done in conjunction with the Construction Model
- ▶ Connection sketches are created directly from the Construction Model
- ▶ The engineering approval review is conducted within the Production model
- ▶ The pre-approved connection library reduces the overall approval review process
- ▶ Shop detailing drawings are created from the Production Model

Virtual Construction reduces duplication, increases the accuracy of design, reduces time taken in the engineering review and better controls documentation from the architects plans, through the engineers designs to the detailer's drawings. The process allows better control of material procurement and subcontractors.

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About us

BDS VirCon is a leading international consultancy producing 'Virtual Construction' design, detailing, construction and planning models for large and complex steel projects. It's one of the most technically advanced and skilled companies of its type in the world with the capacity to work across multiple time zones – utilising project managers, modellers and detailers in seven offices – while meeting strict deadline and quality standards.

As well as an expert workforce, BDS VirCon's capacity to deliver highly accurate detailing models within compressed timeframes is based on quality systems and maximising technology. As one of the largest licenced users of Tekla Structures software in the world they understand how to streamline the delivery process of design, detailing, manufacture and construction. Through the continuous development of their own software program, macros, workflows and management tools the process is further enhanced.

The result – detailing and construction efficiencies, shorter project timeframes and ultimately... project cost savings.



City Center
Las Vegas, USA



Palazzo Hotel and Casino
Las Vegas, USA



Port Waratah Coal Services
Newcastle, Australia



University of Phoenix Stadium
Home to the Arizona Cardinals