



VIRTUAL DESIGN & CONSTRUCTION (VDC)

FULLY LEVERAGING THE CAPABILITIES OF MULTI-DISCIPLINARY MODELS FROM DESIGN THROUGH CONSTRUCTION



23% AVERAGE SCHEDULE REDUCTION

On average, we've seen a 23% reduction in schedule on projects using VDC as compared to traditional delivery methods

By establishing a collaborative virtual environment, Virtual Design and Construction (VDC) transforms the sequential and separate work processes of designing, constructing, and operating a facility into a concurrent and fluid process. Rework and waste that stem from the hand-offs of 2D drawings from one party to another are significantly reduced. Giving construction partners real-time access to the design model shifts critical path activities forward, which can significantly shorten the schedule. Features including enhanced detail and digital model delivery enables proven cost and schedule saving techniques such as pre-fabrication and modularization. In the field, precise VDC models reduce errors caused by construction documents that are open to interpretation, and the final deliverable is a model that can be used to manage operations on an ongoing basis.

VDC can be performed in varying degrees under any kind of delivery model. However, because design is the single biggest factor impacting the construction cost, functionality, and usability of a facility or process, VDC delivers the most value when there is early collaboration between parties through a highly collaborative delivery approach. Through VDC, SSOE has provided an infrastructure that removes barriers and brings the full advantages of multi-disciplinary, collaborative BIM to your projects. Each project has a specific set of challenges and priorities—the key to successfully utilizing VDC is to develop a cohesive plan that incorporates client's standards and requirements, as well as identifying unique project objectives from the beginning.



SAVING TIME, TROUBLE, AND MONEY WITH VDC

TIME: Integrated workflows move construction completion dates up by weeks

- Giving constructors real-time access to data and models moves critical path items forward.
- Eliminating the buffers, contingencies, and other hidden costs and wastes embedded in each hand-off compresses the schedule and optimizes the entire process from design through construction and operation.
- Reducing physical hand-offs and increasing direct communication between parties significantly lessens design and approval process times.
- Utilizing an integrated model for detailing makes responses to changes more efficient and avoids the potential cost and delays of rework late in the design process.

TROUBLE: New solutions to persistent problems

- When all parties work within one collaborative model, the difference is higher quality results than when using separate models, which have to be recreated or merged. VDC streamlines and eliminates hand-offs, rework, and backtracking by coordinating the separate software used for designing, detailing, and construction with one virtual environment resulting in construction-ready models.
- Field errors are greatly reduced by utilizing advanced and detailed clash detection and coordination practices from the start of the design phase through the entire construction process.
- VDC enables a more firm schedule and budget within a tighter range, allowing you to feel more confident in the capital appropriations and production start dates.
- Contracts, planning, and reporting can be tailored to you and your project's needs.

- VDC shifts interaction with supply chain forward to ensure feedback and requirements are incorporated in the original design.

MONEY: Complete projects significantly below market norm

- Eliminating the waste, rework, and inefficiencies of hand-offs reduces overall project costs.
- Revealing and avoiding failures in design removes common and costly waste in the field.
- Utilizing modularization and pre-fabrication reduces cost per unit while improving quality.

This schedule from a recent capacity increase project demonstrates how utilizing VDC can significantly compress a project timeline by moving from sequential to concurrent work processes.

