

GMG Digital Design: Strategic BIM

GMG's Building Information Modeling (BIM) process involves the use of multi-dimensional modeling software to effectively design, build and manage projects. BIM improves the design and construction process for all project team members. The benefits of BIM translate into superior contract documents, better visualization, and decreased production time as well as less schedule risk and reduced field conflicts. By applying BIM, GMG project teams reduce errors and improve coordination.

GMG sees a major advantage for the use of BIM in the reduction of redundancy and the improvement of process efficiencies for the design and construction teams through its ability to perform conflict detection. As such, errors in coordination and/or the overall schedule will be reduced. In addition, cost savings can be realized by a reduction in construction time.

Advantages of utilizing BIM include the following:

- Design effort is closely coordinated, reducing downstream RFI's and Change Orders..
- Quantities and shared properties of materials can easily be extracted.
- Systems, assemblies, and sequences can be shown in a relative scale with the entire facility.
- Construction documents can be coordinated in terms of procurement details, environmental conditions, submittal processes and other specifications for building quality.

Frank B. Ryan, Jr. AIA Senior Architect, Revit Team Leader and BIM Manager for STV, Inc.

Frank Ryan, a senior architect with STV, is proposed as our BIM Manager for this project. Mr. Ryan has 23 years experience as a principal architect, planner, designer, owner's representative, and project manager for commercial, institutional, and educational projects throughout the United States. Mr. Ryan has worked specifically with BIM and IPD concepts and protocols since 1998. He is familiar with many BIM programs, including Revit Architecture 2010, Revit MEP 2010, Revit Structure 2010, Bentley Architecture V8i, and Autodesk Civil 3D.

In his role as Revit Team Leader at STV, Mr. Ryan provides day-to-day support for all Revit and BIM related issues within the New York office, as well as overall system and protocol advice for the most efficient use of the BIM platforms within the firm as a whole, with STV's consultants, and with STV's clients. Mr. Ryan's current project engagements are:

Bronx Mental Health Redevelopment

STV is providing design services to The New York State Office of Mental Health (OMH), the Bronx Psychiatric Center, and the Dormitory Authority of the State of New York (DASNY) for a major redevelopment of the Bronx Psychiatric Center. The new campus will retain three existing buildings; add a new three-building Residential Village complex; add new Children's and Adult Facilities and a support building; and include new roads and site utilities throughout the campus. The Adult Facility is to consist of 156-beds and the construction costs are estimated to be approximately \$80 million.

Iowa Correctional Institute for Women

STV is providing the site planning and architectural design for the new 888-bed women's correctional facility in Mitchellville, Iowa. The \$57 million project will transform an existing smaller facility into a state-of-the-art women's facility with new multi-custody housing, skills training programs, mental health and medical facilities, and correctional industries. STV will also provide construction administration services to verify that the construction is fully in conformance with the original intent of the project and project goals.

United States Military Academy Preparatory School

STV is providing comprehensive design services under a design-build contract to construct a \$100 million Preparatory School for the United States Military Academy. The new school is located in West Point, New York. The school will include a 250 bed barracks building, dining and kitchen services, academic classrooms, offices, auditorium, and an athletic center including gymnasium, training room, weights room, multi-purpose room, lockers, and three outdoor fields for soccer, football and lacrosse. Also included is an indoor athletic field for football practice. STV's BIM scope of work for the project includes civil, environmental, structural, architecture, mechanical, plumbing, electrical, and fire protection. The final BIM model will be turned over to the client for ongoing facilities management.