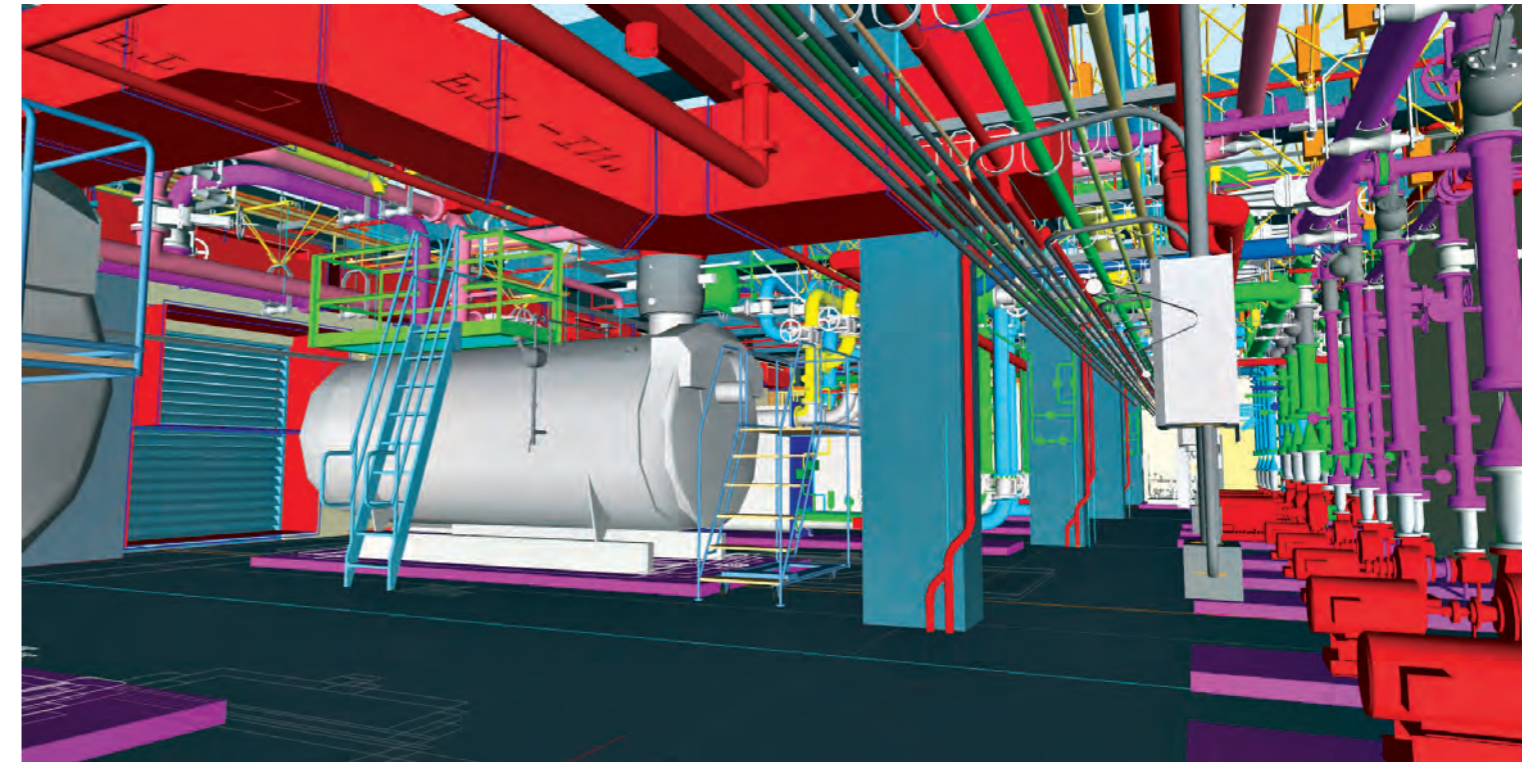


BIM in Industrial Projects

Catskill and Delaware Water Treatment Ultraviolet Disinfection Facility

Westchester County, New York, United States



“ The improved quality of the drawing coordination as well as the new means of communicating schedule and progress through these BIM applications has brought new standards to the jobsite. ”

Christian Sandberg
Commercial Manager, Skanska USA Civil Northeast

The project is a high-capacity water treatment facility, treating drinking water from the upstate Catskill and Delaware Catchments areas, providing around 90 percent of the needs for New York City. The maximum capacity of the facility will be approximately 2 billion gallons per day (approximately 7.6 million m³). The water treatment is by means of ultraviolet light disinfection only and the Cat-Del facility will be the world's largest UV disinfection plant when taken into operation in 2012.

The project consists of nine major structures: the UV building, ED building, North forebay, South forebay, Catskill valve chamber, Catskill flow meter chamber, Catskill connection chamber and the generator building. The UV building will host 56 48-inch UV treatment units, each with a capacity of 40 million gallons per day and holding 210 UV bulbs.

At Cat-Del the team has been using BIM applications such as 4-D scheduling and 3-D coordination. The project was originally designed in 2-D and all contract documentation, including design, was provided in 2-D. In order to facilitate and enhance certain project processes such as drawing coordination, change order processes and conflict resolutions, the NYDEP provided the contractors with a 3-D model. The model was an interpretation of the 2-D design and was very detailed.

Using BIM applications at the project has been instrumental in scheduling and progress updating as well as prime and drawing coordination.

The model was initially used to virtually navigate the facility and all of its structures. It helped the project team understand the design early on so that alternate means and methods could be studied and the construction sequences could be visualized. By connecting the model to the baseline schedule the project team, the construction manager and the client could easily understand the sequence of construction activities for this very complex water treatment project.

The logistical planning was a great challenge due to the project site's limited access. Crane access and transportation of material had to be planned carefully and the model provided great help to understand these challenges.

The drawing coordination was started as a 2-D process but once the 3-D model was introduced and made available, the team got up to speed with the technology and the drawing coordination, gradually changing from 2-D to 3-D. This drawing coordination evolution has proved very beneficial and overall a great asset to the stakeholders.

Catskill and Delaware Water Treatment Facility	
Location	Westchester County, New York, USA
Maximum capacity	2 billion gallons per day, equals approx. 7.6 million m ³ per day
Client	NYCDEP (New York City Department of Environmental Protection)
Contract value	USD 1.109 million (EUR 860,000)