RAMTECH

MEP Engineering for Mega Mixed-Use Development in UAE

ES Engineering Services

Building Information Modeling (BIM)

AT A GLANCE

CLIENT CHALLENGES

- Ensuring a seamless collaboration between multiple project partners using a signal-shared model
- Clash detection between all trades and services as well as architectural and structural layouts was required

CLIENT BENEFITS

- Enabled the identification and resolution of interface issues prior to construction
- 3D model comparisons helped in developing more efficient, sustainable, and cost-effective solutions for the project
- Chances of redesign were eliminated, and considerable time and costs were saved

Business Need

The project was a marquee and prestigious greenfield construction of a 41-story mixed-use building. The asset consisted of a podium space, and commercial and active areas interconnected with the residential tower. Vegetation on the podium landscape created shaded areas to encourage all-day use of the space.

RAMTeCH was appointed by the lead MEP contractor to provide complete mechanical, electrical, plumbing, and fire services (LOD- 0 to LOD – 500). This was inclusive of the extraction of shop drawings and as-built drawings to facilitate site construction.

RAMTeCH Solution

As the role of the MEP BIM Consultant, RAMTeCH was responsible for setting up a collaborative working relationship among all project partners including various design disciplines, contractors, specialists, suppliers and customers, using a single shared Revit 3D model

The first stage involved validating the consultant-provided design and assessing the ease of fabrication at the site. Multi-disciplinary teams were created to build and validate the separate components of the MEP model. Using the individual models created, a single unified 3D model was generated. Clash detection between all trades/services and architectural/structural layouts were identified and a solution was suggested to the client and site team before installing the services.

RAMTeCH provided detailed working drawings for the project, describing every part of the building. A detailed 3D model with sectional details of the required areas was prepared, tagged, and included in the final produced working drawing sheets. The details were provided in the form of plans, sections, elevations, and 3D models with detailed annotation and information.

Results

A swift and accurate comparison between various design options was possible with 3D models developed by RAMTeCH. Using the 3D models, the client was able to review the project in a virtual environment before the commencement of construction. These virtual models rehearsed complex procedures, optimized temporary works, and procurement/site teams planned the procurement of materials, manpower, and equipment.