

/// GPRS LASER SCANNING SERVICES

3D BIM MODELING

3D BIM models are accurate digital representations of a building or site to facilitate design, construction and operational processes. 3D BIM models provide clients with the ability to break down architectural, structural and MEP building features and see how they fit into a single finalized structure. Users can isolate and alter walls, columns, windows, doors, etc. to support the planning and design needs of any project.

CASE STUDY: 3D LASER SCANNING

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TASK:

An engineering firm needed to have existing conditions of a power plant documented and modeled to plan for renovations.

PROJECT APPLICATION:

Laser scanning to create an intelligent 3D BIM model would accelerate the engineering of facility upgrades.



PROBLEM

- The client needed to accurately document the existing conditions of the plant without interruptions to the power supply.
- The client required 2-4mm accuracy of dense piping and pipe runs throughout the facility.
- The client needed to guarantee that installations complied with safety regulations.



SOLUTION

- Where accessibility is difficult and areas are unsafe, 3D laser scanning offers a solution to capture precise as-built data from a distance.
- In one day on site, GPRS' project manager used the Leica RTC360 laser scanner to capture 150 laser scans, documenting existing conditions of the facility.
- GPRS generated a 3D BIM model for use in CAD software, including all civil, structural, electrical and mechanical features, piping and conduit 1" and larger.



BENEFITS

- Due to the vast space and density of piping, it would have been much more difficult and time consuming to accurately depict the location of pipe runs, structural features and other details in the plant manually.
- The point cloud data from laser scanning was used by CAD technicians to create an intelligent 3D BIM model for planning, fabrication and clash-detection.
- Verified measurements and virtual planning guarantee installations will comply with safety regulations.
- Using virtual 3D models, the firm can plan and model future developments to manage the facility without having to re-enter the site.

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THIS POWER PLANT MUST OPERATE AS EFFICIENTLY AS POSSIBLE. OUR CLIENT CANNOT AFFORD ANY DELAYS OR MALFUNCTIONS, WITH SO MANY PEOPLE DEPENDENT ON THE ENERGY SUPPLY.

CHAN LAM, PE |
SENIOR EPC PROJECT MANAGER/
PRINCIPAL MECHANICAL

