Manhard Consulting Designs Site Plan for Construction of World's Largest Yogurt Production Facility

Bentley SITEOPS® Facilitates Project Delivery within an Unprecedented Time Frame

Project Summary

Organization:
Manhard Consulting, Ltd.

Solution:
Land Development

Location:
Twin Falls, Idaho, United States

Project Objective:

- Improve site infrastructure for 200 acres of land to support the world's largest yogurt production plant.
- Minimize time and costs associated with earthworks analysis and site grading.
- Meet the aggressive schedule imposed by client.

Products used:
SITEOPS

Fast Facts

- Chobani invested USD 450 million to build its yogurt production facility in Twin Falls, Idaho.
- Manhard used SITEOPS to develop the 200 acres of sloping terrain to accommodate the 939,000 square-foot building pad.
- SITEOPS facilitated collaboration and enhanced decision making between Manhard and the general contractor, optimizing optioneering.

ROI

- Using SITEOPS reduced the schedule from ground-break to building pad delivery to an unprecedented 326 days, requiring 2,000 workers and 1.7 million resource hours to build.
- SITEOPS provided a solution that kept earthworks and grading costs to a minimum.
- The new Chobani production facility created over 300 jobs and continues to promote economic growth in Twin Falls, with a USD 1 million expansion recently announced.

Aggressive Design-build Schedule

Headquartered in Norwich, New York, Chobani, LLC is best known for suppling its number-one-selling Greek yogurt to millions of people across America. When its New Berlin facility reached maximum production capacity due to increasing consumer demand, the company had to instate additional manufacturing space to capitalize on the momentum of the Chobani brand. Chobani contracted Tippmann Construction to design and construct a nearly 1 million square-foot facility production and distribution plant to be located in Twin Falls, Idaho. The contractor turned to Manhard Consulting, a full-service civil engineering and surveying firm, to assist with the land development phase of the project and complete a site design under the aggressive schedule mandated by Chobani.

> *"Without the power of Bentley SITEOPS, the critical site planning decisions never could have been made at such an accelerated pace."*
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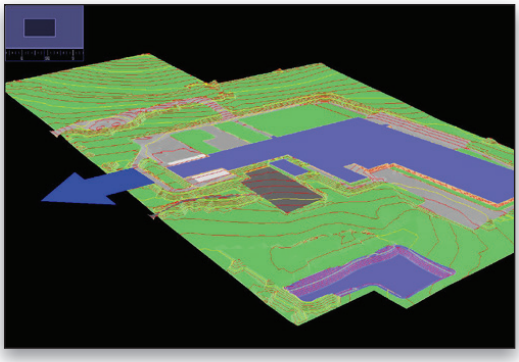
> *— Frederick Thaete, Director of Engineering, Manhard Consulting*

To deliver a site master plan for this fast-track USD 450 million project, which included grading and earthworks analysis, infrastructure design, and stormwater management, Manhard relied on the conceptual design capabilities of Bentley SITEOPS. The innovative use of Bentley's civil site design software enabled project engineers to produce site designs faster, and provide more land development options to the general contractor, creating an informed project lifecycle.



SITEOPS allowed Manhard to provide a grading design that minimized the volume of earth moved, significantly reducing the time associated with preparing the site for building erection.

Working with Terrain Constraints

Faced with 200 acres of sloping Idaho terrain that would impact the site layout and ground elevations linked to a 939,000 square-foot building pad, Manhard needed to work closely with Tippmann to make decisions quickly and accurately. The abbreviated timeline imposed by Chobani together with an aggressive design-build schedule required close coordination between the Manhard team, Tippmann, and various other consultants involved in the design of the production facility building.

With all grading constraints associated with the logistics of arriving milk supply trucks, finished product truck maneuvering, truck docks, and other support services, a traditional approach to site layout and grading would take too long and would likely throw the project off schedule, resulting in an ineffective solution. Furthermore, stormwater drainage also needed to be considered to minimize the total area of ground disturbance.

Employing a traditional iterative process would have required Manhard's project engineers to design a grading scheme and perform earthwork analysis, which would likely add weeks to the project schedule. Based on the analysis results, the engineers would then have to modify the grading design and perform a separate analysis to achieve the desired work balance condition. To accommodate these challenges and provide viable options to its client, Manhard required an innovative, integrated design approach.

Optioneering and Collaboration

The exact placement of the facility on the site was highly variable. With each modification the grading design, earthwork balance, and ultimately amount of time needed

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– Frederick Thaete, Director of Engineering at Manhard

to complete the earth-moving operations was in flux. Using SITEOPS, Manhard analyzed earthworks and generated multiple site design options with associated costs in a matter of days, as opposed to months. The ability to work in real time with Bentley's conceptual design software streamlined collaboration, enabling the teams to sit down in a design charrette format and work on the site plan as a group with easy-to-understand 3D renderings and visualizations of the grading concepts. SITEOPS allowed Manhard to work with Tippmann to quickly and easily make changes and decisions regarding the site plan, and immediately see the resulting impacts to the earthwork for the project. "Without the power of Bentley SITEOPS, the critical site planning decisions never could have been made at such an accelerated pace," stated Frederick Thaete, director of engineering at Manhard.

Bentley's site development software enhanced collaboration and enabled site optioneering to accelerate construction. SITEOPS' BIM advancement engendered confidence among the design team from conception through to project delivery, ensuring Manhard's engineers had considered the best choices and arrived at the most cost-effective solutions for the constraints of the 200-acre site.

Meeting Unprecedented Deadlines While Minimizing Costs

Manhard began design of the site in November 2011 for ground-breaking on December 17, 2011, and on December 19, 2012, the world's largest yogurt plant was officially opened for production. The cost-optimization features in SITEOPS helped provide a grading design that minimized the volume of earth moved, reducing the time and grading costs associated with preparing the site for the start of building erection to keep the project on schedule. Having immediate feedback on site grading concepts with quick cost estimations and revisions available through SITEOPS saved the design team considerable time critical to the 326-day successful delivery of the entire production facility. Thaete noted, "The mission of delivering the project within the unprecedented time frame requested by the client would have been virtually impossible without utilizing SITEOPS."

Capitalizing on Technology-driven Success

With SITEOPS as the driving technology that provided the foundation for the timely construction and operation of its Twin Falls yogurt production plant, Chobani was able to capitalize on the momentum of its brand. Timing was critical to the success of the project and developing the land using SITEOPS enabled the team to work collaboratively, streamlining decision making to overcome the challenges in record time. To erect the building, 2,000 construction personnel were recruited, and upon its completion the plant opening created over 300 jobs and continues to act as a catalyst for economic growth in Twin Falls and the entire region.

Less than three years later, Chobani has announced a nearly USD 1 million expansion to the Twin Falls manufacturing facility, a true testament not only to the company's brand, but to Manhard, Tippmann, and the capabilities of Bentley technology.

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