Overcoming the Biggest Site Design Challenges for Engineers

Introduction

Each day, you face an increase in demand for engineering accuracy, contract compliance, and the production of a variety of deliverables, all within short timeframes. In this e-book, we will explore the challenges, the solutions, and the answers to your most pressing questions so you can explore your next steps to faster decision-making and shorter design time.

Engineering Obstacles

Finding the optimal design for your budget

A good design is not always the optimal design. You need to be confident you are making the right decisions at every step of the process to maximize the design's potential, get the most out of the budget, and keep your clients happy.

Site design is manual, tedious, and time consuming

Even the simplest of site designs can take weeks, if not months, to develop. Creating the optimal design for your client often involves making multiple iterations at various stages of the workflow, but when design updates take time to complete, it impacts the delivery of your project.

Identifying and managing project risk

As an engineer, you need to get the job done quickly without compromising quality and safety. When budgets drive the ability to deliver the best design, it can be hard to determine the right solution that reduces the risk for you and your client while meeting budget requirements.

Difficulty securing stakeholder buy-in

Conveying to your client, the stakeholders, and the community what your design will look like is one of the biggest challenges when designing a site. If your stakeholders cannot see it, understand it, or realize how much risk is involved, they will not proceed – and you risk losing business.

What if you could overcome these obstacles faster and finish projects days to weeks sooner?

Meet OpenSite®

Reduce project design time by 20%

You can use OpenSite's simple automation capabilities with parametrics to quickly create design elements including but not limited to parcels, roadways, parking lots, golf courses, and clubhouses. With OpenSite, you can create a thousand-lot subdivision in hours, not days. The application helps you easily modify the position of the lot and the size and number of parking spaces, or even add a building and watch as the design automatically reconfigures.

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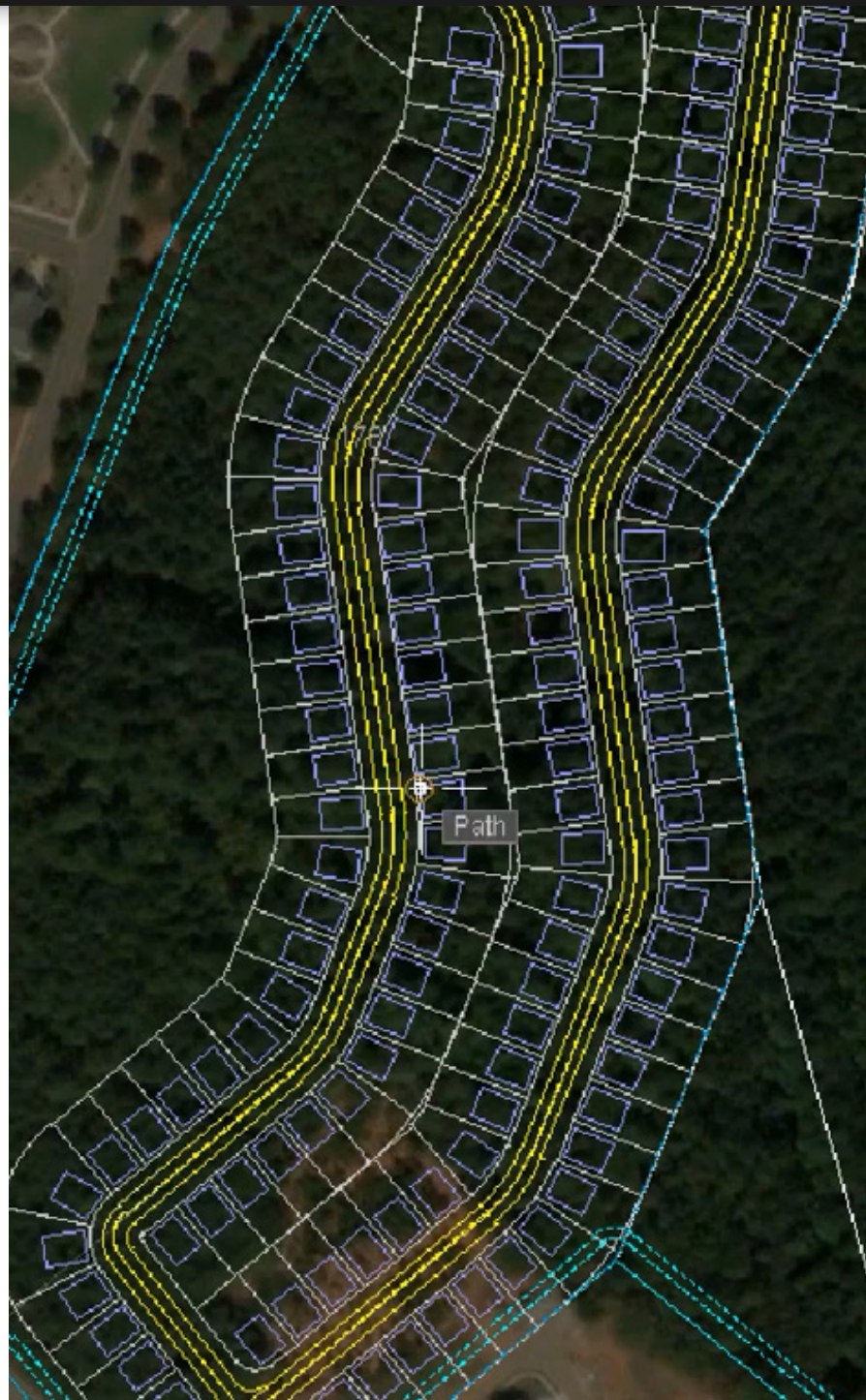
How can I maximize the number of single-family parcels?

The parceling feature can define parcel sizes, draw your desired roadway, and automatically create lots. If a lot configuration is not possible, the software will not draw it. OpenSite tells you what is feasible and what is not, so you can quickly finalize your design. OpenSite provides:

- Rules-based/relational modeling to capture, store, and maintain design elements
- Easy configuration and customization capabilities
- Dynamic change management
- Automated project deliverables



Purpose-built software for any type of site

OpenSite is the only purpose-built software created specifically for site design and land development, but that does not mean you have to be a CAD expert or have specialist skills to use it. Whether you are working on commercial, industrial, residential, or campus projects, you can quickly determine site yield, feasibility, and cost estimates in one simple solution.

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How will my site drain?

OpenSite will analyze grading and stormwater design to optimize the cost of the stormwater piping solution. OpenSite has capabilities to help conceptually design stormwater basin ponds and make sure your layout has considered the pond location and grading cost for pond earthwork movement. OpenSite provides:

- Precise data acquisition
- Drainage and underground utility design
- Enhanced project transparency
- Reality meshes for continuous context of real-world conditions

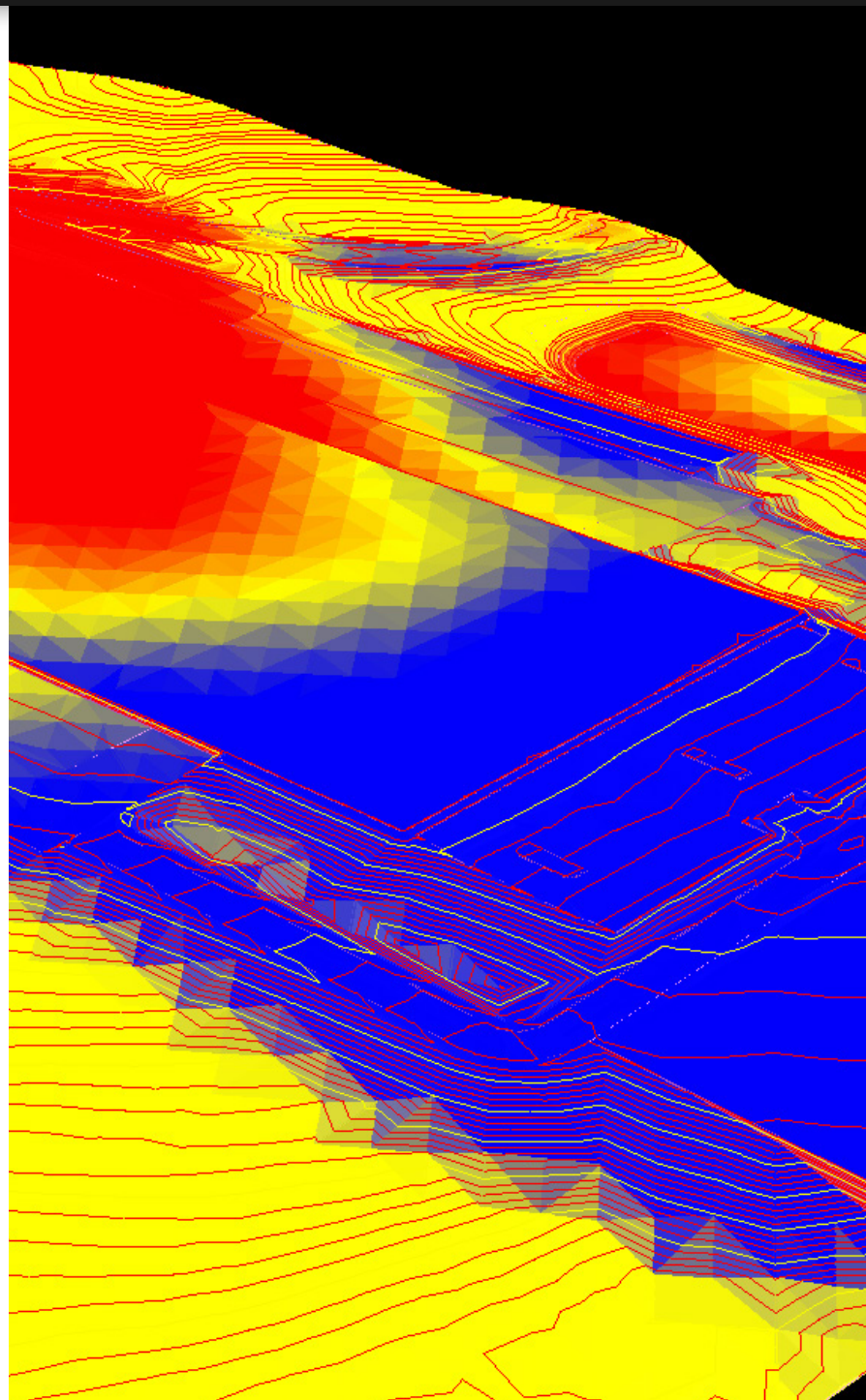
Quickly and cost effectively solve site constraints

OpenSite's capabilities can solve site constraints in hours to days, instead of weeks to months. The application will tell you what is possible and what is not early in the conceptual stage so you can quickly understand if a site is viable. OpenSite's grading solver optimizes earthworks based on construction costs by comparing thousands of design scenarios in just one click to find the best cost of construction based on your requirements.

How can I reduce risk for my project?

You can use the grading solver to understand exactly how much cut, fill, import, and export is required for your design. Detailed cost estimates are automatically generated to find the lowest cost of construction based on your requirements and site conditions. OpenSite can generate reports with deeper economic insights for your project, including cost estimates for rock exports, retaining walls, curbs, gutters, asphalt paving, and even piping to give a total cost of site construction, enabling you to accurately assess the economic feasibility of your project. OpenSite provides:

- Rapid site modeling and analysis
- Earthwork optimization and quantification
- Fast identification of site constraints
- Design alternatives to limit revisions and reduce rework



Advance from 2D to 3D

You can leave traditional 2D CAD design behind and advance to 3D modeling using LumenRT™, which is included with OpenSite. After you create your project using the user-friendly interface, you can export it to your favorite CAD program for creating construction documents. Stunning animations and 3D visualizations will clearly communicate your design intent and quickly secure stakeholder buy-in. These visualizations will show stakeholders and the community exactly what your design will look like, wow your clients, and help them make decisions early.

How can I see what my design will look like?

With LumenRT you can convey your design intent to stakeholders and communicate your plans for the project. High-definition images and videos will show exactly what your design will look like. You can add moving vehicles, pedestrians, and even trees that change with the seasons. When they can see it, they believe it. OpenSite provides:

- Rich environmental context for your designs
- Cinematic quality skies, weather, and atmospheric effects
- A library of animated characters, vehicles, vegetation, and other elements
- A variety of export options

Engineers like you trust OpenSite

“What [OpenSite] SITEOPS® allows us to do that other systems don’t... is it allows us to look at options.”

Hear how Michael Semeraro, Jr. of Langan Engineering and Environmental Services, Inc. used OpenSite to optimize the design process and solve what-if scenarios.

Watch Video

The smart choice for engineers

OpenSite will get the job done faster

When designing a site, you need site design software, not road software. OpenSite is the only true site design software built specifically for site and land development. Using the right software for the task allows for improved projects and improved outcomes.

OpenSite is affordable

You will be surprised by how little a 12-month subscription license of OpenSite costs. Businesses of all sizes can now compete with the industry's leading players.

Bentley has your back

Support and standard training are included with your license, so you can seamlessly onboard your team. Need customized training or help with a specific project? We have options for that too.

Shop Now **Chat with an Expert**

About Bentley Systems

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