Bentley LumenRT®

Bring Your Designs to Life

Access Rich Content Libraries

Quickly create cinematic quality images, videos, and real-time presentations of your infrastructure design models immersed within the context of lifelike digital nature. Employ easy-to-use tools with access to rich content libraries containing plants, trees, people, vehicles, architectural objects, civil engineering elements, and more. You can bring any project to life, deliver environmentally coherent models, and speed stakeholder buy-in with the power and simplicity that LumenRT provides.

Incorporate Digital Nature

Add lifelike windblown vegetation from a huge library or create your own custom plants using the Plant Factory application. Sculpt terrain formations and ground covers, render water features and photo-realistic skies in day or night scenes.

Animate Models

Populate models with animated people, animals, and moving vehicles using custom object animation paths as well as indoor and outdoor objects. Use the EcoPainter capability to paint or erase groups of objects in large populations automatically repositioned relative to the terrain.

Speed Stakeholder Buy-in

Shorten the time required to gain stakeholder buy-in and secure project approvals by producing attention-getting presentations that enable people to experience design work in a natural world environment.

Render Cinematic Quality in Real Time

Create stunning photo-realistic visualizations in seconds using the dynamic immersive visualization engine platform. This platform provides natural looking light and shadows, real-time global illumination, IES point and spot lights, lens

Communicate your design intent more clearly to speed approvals.

flares, and luminous materials. Interactively adjust time of day, add lens flares, and apply depth of field while benefiting from highly accurate reflections, anti-aliasing and motion blur.

Create Highly Impactful Designs

Make any design highly impactful with the ability to work seamlessly within any modeling and geospatial workflow, regardless of the authoring environment.

Integrate with CAD and Geospatial Workflows

Bentley LumenRT provides API integration with MicroStation®, Autodesk Revit, Esri CityEngine, Graphisoft ArchiCAD, and Trimble SketchUp with workflows that ensure continued synchronization with native designs throughout work-in-progress while also supporting the import of additional content in standard 3D formats. Reliably export vehicle simulations easily add multi-lane traffic animation, add section planes, switch on and off layers, and leverage model intelligence for tasks such as labeling.

Share Your Creations

Produce remarkable high-definition images, videos, and interactively navigable animated 3D LiveCubes. Share compelling presentations of your projects that can include camera animation paths and walk-through and fly-through modes.

> *"LumenRT is our communication tool of choice. It lets us easily produce professional videos and interactive experiences that empower the audience and provide in-depth understanding of our projects."*
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> — *Kurt Styles, Project Manager, Visual Engineering Resource Group, Washington State Department of Transportation*

Bentley LumenRT At-A-Glance

Incorporate Digital Nature

- Populate models with animated trees and shrubs that are responsive to wind and seasons
- Apply water materials with realistic caustics, including lakes, ponds, and pools
- Sculpt beautiful terrain formations with rich materials and animated grass groundcovers
- Create your own custom plants and import them from Plant Factory
- Generate high resolution 3D skies with a variety of realistic atmospheric effects such as fog and haze
- Add an infinite ocean and sea plane to the scene with adjustable agitation and speed properties
- Easily switch from night to day with a single click. Enjoy moonlit skies with twinkling stars

Animate Models

- Populate scenes from extensive libraries of animated people and animals
- Choose from libraries of indoor and outdoor objects like light fixtures, furniture, fences, and background buildings
- Animate moving vehicles including articulated trains and trucks
- Easily create animated multi-lane traffic
- Paint collections of any object type such as trees, vehicle, and characters
- Define custom animation paths
- Automatically reposition objects to match terrain

Render Cinematic Quality in Real Time

- Accurately render interaction between natural day and night light with rich atmospheric volume
- Apply IES point and spotlights
- Use point and spotlights that are fully adjustable with IES lighting profiles
- Efficiently render both extremely bright and dark areas without loss of detail
- Easily select and adjust luminosity, brightness and contrast of all materials

Bring your projects to life with real-time environments.

- Create custom materials and save them in your own material library
- Create natural ambient shadows for all objects in your scene
- Organize your lights into groups for easy on/off and automatic toggle settings
- Use high-performance anti-aliasing and motion blur for exceptional clarity and realism
- Set advanced material rendering options such as bump maps, specular highlights, reflections, and transparency control
- Perform light and shadow studies with Bentley LumenRT's adjustable sun, accurately set using NREL's solar positioning algorithms
- Apply anamorphic streaks and lens flares that are fully adjustable for sunlight and artificial lights
- Set camera focal distance to create eye-pleasing depth of field effects

Integrate with BIM, CAD, and Geospatial Workflows

- Enjoy API integration with MicroStation, Autodesk Revit, Esri CityEngine, Graphisoft ArchiCAD, and Trimble SketchUp
- Ensure source CAD/geospatial model changes are intelligently merged into the LiveCube while preserving existing scene geometry and edits
- Add section planes to dynamically create cross-sections views of the entire scene
- Import objects using industry standard 3D formats (OBJ, DAE, FBX)
- Export geometries, materials, Bentley LumenRT proxies, lights, cameras, layers, and BIM information
- Create vast scenes in high definition without losing quality or increasing rendering time
- Switch layers on or off to expose various parts of the scene
- Use low-definition plants, vehicles, and characters, which can be placed in the source CAD/GIS system file and converted automatically to high-definition objects in Bentley LumenRT
- Import MicroStation traffic and VISSIM simulations
- View and navigate BIM attributes and leverage for labeling and annotation.

Share your creations

- Easily share your projects with real-time LiveCube environments that can be packaged into self-contained executables and run independently on any computer or streamed across the Web
- Easily create smooth animation paths directly inside LiveCube and preview them in real-time
- Composite videos and images together for professional looking results
- Navigate your 3D photorealistic environments in real time through Bentley LumenRT's walk-through and fly-through modes

Bentley
Advancing Infrastructure