Discover OpenCities Planner

DISCOVER

OPENCITIES™ PLANNER

CONNECT THE DATA, PEOPLE, WORKFLOWS, AND IDEAS NECESSARY TO SUPPORT TODAY'S INFRASTRUCTURE PROJECTS

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WELCOME TO THE **OPENCITIES PLANNER**
PRODUCT TOUR GUIDE

This e-book looks at how Bentley's OpenCities Planner can support cities and project owners to use an immersive, 3D city model solution for digital twins to create and share project information as citywide 3D visualization scenes using the web, mobile devices, and showroom displays. OpenCities Planner can help you connect the **data**, **people**, **workflows**, and **ideas** necessary to support today's infrastructure projects.

The e-book includes links to **TWO PROJECT PROFILES** that illustrate how the software addresses your critical business issues. This includes collaborating across disciplines to share and manage city infrastructure information at every stage of the asset lifecycle. OpenCities Planner allows you to make proactive, holistic, data-driven decisions that support city initiatives, improve city infrastructure, optimize resources, and support smart-city goals.

If you have questions, or need more information, please visit **www.bentley.com/OpenCitiesPlanner** or call **1 800 236 8539**.

SOLVE YOUR **CRITICAL BUSINESS ISSUES**

Cities are actively progressing their digitalization and several initiatives are in place to reach that goal. Growing populations have driven cities to develop new urban areas and to improve resiliency and increase capacity. Cities need to better inform their citizenry, and getting them more involved in the urban planning process is key to quick adoption of proposed changes.

City planning without the right communication platform can be a frustrating process and result in costly delays and misunderstandings.

OpenCities Planner is the ideal solution for creating design options, communicating city plans, and engaging with stakeholders and the public.

Learn how you can use OpenCities Planner to provide cities with digital twins for project planning and collaborative web-based 3D visualization.

EXPLORE WHAT'S IN THIS EBOOK ›

WITH **OPENCITIES PLANNER**, YOU CAN:

Digitalize real-world conditions into your virtual design environment for better decision-making.

Integrate solutions and implement data workflows.

Visualize design data from multiple disciplines to improve collaboration, accuracy, and efficiency.

Plan a framework to generate detailed design and meet milestones.

Communicate effectively to ensure the success of urban development and infrastructure projects.

Render 3D models of any size in an actual coordinate system.

Courtesy of City of Helsinki

DIGITALIZE REAL-WORLD CONDITIONS

Cities are turning to digitalization to achieve higher productivity and greater efficiency. This is their key strategy for going digital. City governments are implementing political objectives and policies to improve their urban infrastructure. They are building more apartments and providing public transportation alternatives that deliver better public services.

A digital twin is a digital representation of a physical asset, process, or system, as well as the engineering information that allows understanding and modeling performance. A digital twin can be continuously synchronized from multiple sources, including sensors and continuous surveying, to represent its near real-time status, working condition, or position. A digital twin provides the foundation for digitizing and optimizing processes.

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INTEGRATE SOLUTIONS

Digital twins can be used to visualize operations and serve as a foundation for implementing data workflows. For a city, this can begin with a map of the terrain, followed by the addition of buildings, landscaping, street furniture, and infrastructure components like power lines, water, sewage, transportation, and telecommunications. A digital twin includes all assets and disciplines needed to operate a city. A digital twin will be updated automatically as the city changes.

Going digital requires successful interoperability between multiple applications and data from various sources. An open, connected data environment enables seamless exchange of data and integration among different disciplines used by project stakeholders.

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CORNERSTONES FOR MAKING 3D **VISUALIZATION** SUCCESSFUL

OpenCities Planner, Bentley's web-based urban planning and visualization solution, is an essential component for accessing city-scale digital twins.

Access Data

To create a city-scale digital twin a large amount of data is collected using satellites, airplanes, drones, mobile, and terrestrial methods, along with operational and engineering data. Gaining access to the data across organizations and from various locations is made easier through OpenCities Planner's web-based provisioning.

Share Data

Sharing data easily across distributed project teams enables better decision-making and improves collaboration.

Engage Stakeholders

Engaging stakeholders in city planning allows project teams to gain public feedback, input, and crowdsourcing on urban development projects, fostering better communication, and providing transparency.

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DIGITAL TWINS FOR URBAN **PLANNING**

Urban planning projects must follow a strict process to meet policy requirements to provide a master plan, zoning details, land use, and satisfy building regulations.

OpenCities Planner helps you create a plan that defines regulations and a framework for generating the detailed design and acquiring building permits. Each step has milestones that require you to document investigations and analysis. Some steps require you to interact with stakeholders. In parallel, the developer and contractor have processes for the construction and building of infrastructure, typically carried out using BIM principles. These two parallel processes require information exchange.

Going digital and integrating these workflows can substantially shorten project lead times to achieve the development objectives of a city. Quality data for timely provision of land use and zoning plans can reduce the handling time for building permit approvals. The reduced handling time assists in meeting requirements for developers and contractors to build apartments and infrastructure in a shorter time.

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OPENCITIES PLANNER SUPPORTS DIFFERENT
PHASES OF PROCESS

URBAN
DEVELOPMENT

PREPARE — SKETCH & COMPARE — ANALYZE & REFINE — DIALOGUE — PUBLISH — PROMOTE PROJECT

IMPROVE **COMMUNICATION** AND TRANSPARENCY

Communicating effectively is an important part of any urban development project. OpenCities Planner allows users to access information and create and share illustrations among other team members and stakeholders. This seamless sharing of information improves communication, reduces lead time, and avoids costly change orders.

OpenCities Planner improves data flow among stakeholders and allows data to be re-used and exchanged at different stages of the process between the city and the contractor.

RENDER 3D VISUALIZATIONS TO A WIDE AUDIENCE

OpenCities Planner can render 3D models of any size in an actual coordinate system. The application supports the federation of terrain models, aerial imagery, reality models, semantic city models such as CityGML and COLLADA, and point clouds. Use OpenCities Planner to connect directly to a spatial database to fetch geometry and attributes and visualize them in the 3D scene. The data sources are federated and combined into one unified view.

As a web-based solution, OpenCities Planner enables you to easily communicate, promote, and share projects in an interactive way to gain public and stakeholder buy-in.

One Project, Many Reaches

OpenCities Planner lets you share and stream project information to mobile devices or a desktop without additional work. Create the project once and use it everywhere. Update it once on all platforms.

Courtesy of City of Helsinki

USER PROJECT SUMMARIES

Many cities have successfully used OpenCities Planner on their urban planning projects. The following five projects illustrate some of the extraordinary ways the technology has been implemented, along with the benefits achieved.

Courtesy of City of Stockholm

HELSINKI, FINLAND PROJECT PROFILE

Helsinki created a digital twin of the city using a connected data environment to manage all information and share data across internal and external teams. Since the 1980s, Helsinki has been developing 3D strategies for urban planning. The city model includes geospatial information modeling, cadastral mapping, and 3D city GIS made available as open data to the public, companies, developers, and universities.

Helsinki used a combination of laser scanning and oblique photogrammetry to acquire data and images for the project and generate a reality mesh of the entire city.

Helsinki has expanded the application of the models to several pilot projects, which have helped to analyze solar power utilization and conduct flood assessments, noise calculations, and more.

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NORRKÖPING, SWEDEN PROJECT PROFILE

Norrköping wanted to create a vision of how the city should develop in the future. City officials wanted to engage the public and specifically attract and involve a younger audience of the demographic, a group that's not often represented in the discussion.

The city leveraged OpenCities Planner to answer this group's questions and provide information about the project. Participants shared their ideas and or concerns about a specific place in the city directly in the 3D model. City planners used crowdsourcing to get feedback and local knowledge about the area to build and create a vision for the area.

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STOCKHOLM, SWEDEN PROJECT PROFILE

Stockholm leverages digital twins and visualization to improve public dialogue and engagement in an urban development. With OpenCities Planner, Stockholm is actively accelerating its going digital strategy to improve information sharing among stakeholders.

The Stockholm Room showcases a 3D presentation, providing visual context to the development plan to thousands of visitors each year. Shared urban planning projects in 3D engages the public in urban planning.

To meet the needs of city's expanding population, Stockholm has a plan under way to build 140,000 new apartments by 2030.

For more on this project, visit Stockholm City, Communication of Urban Development

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GOTHENBURG, SWEDEN PROJECT PROFILE

Gothenburg uses 3D city models to support its internal urban planning tasks and engage the public to participate in urban development, including a major tunnel project.

The tunnel is under the central part of Gothenburg and will impact a lot of people. The city created a 3D model of the tunnel and visualized it in the context of the citywide 3D model. The 3D visualization of this tunnel helps to inform the public of the impact and the location of the tunnel, which can be difficult to understand from 2D drawings. When it was first published, this project had over 10,000 unique views in the first 24 hours, resulting in a very successful communication platform for the project.

As the second largest city in Sweden, Gothenburg is quickly expanding and has plans under way to accommodate 150,000 new residents in 80,000 new homes and offices. A complete 3D model of the metropolitan area was created with ContextCapture for an urban planning visualization canvas, and OpenCities Planner serves as the visualization and dialogue platform.

For more on this project, visit Gothenburg City, 3D City Model for Public Participation

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SILKEBORG, DENMARK PROJECT PROFILE

In Denmark, the city of Silkeborg is using OpenCities Planner to create immersive communication of urban planning and large-scale infrastructure projects. The municipality sought to improve communications and be more transparent with its 100,000 residents about urban planning.

It leveraged OpenCities Planner for its highway visualization project. The city is using the 3D model created in OpenCities Planner to visualize the plan for the highways and the road and pedestrian bridges. The visualization platform was used to communicate with the project team as well as externally with the public.

Web-based 3D illustrations of projects have proven to attract public interest and have improved the understanding of potential benefits and the impact of change.

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OpenCities Planner is a web-based 3D visualization solution using federated data for communication and collaboration. Simple-to-use sharing options enable smarter decision-making and improved collaborative planning and project performance. Easily create interactive scenes with CAD/BIM design files and project data. Leverage a large-scale digital twin to share and communicate with project teams or to engage the public for crowdsourcing ideas.

Visualize and share your infrastructure projects. Get started today!

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