Demand for innovative solutions continues to grow as the architecture, engineering and construction industry progresses beyond traditional drawings to 3D models as a focal point of communication during construction and design. Visualizing the real world in 3D optimizes operations with a combination of building information modeling and geographic information systems.

- **BIM** delivers a detailed 3D view of the built environment to document and verify designs, so you can visualize the building and the impact of decisions before breaking ground and generate design documentation for construction management.

- **GIS** enables you to understand a project’s interrelationships — including geospatial data, aerial imagery and field observations — for a more comprehensive view of the project area.

Together, these powerful technologies create interior and exterior context. Deployed throughout concept, design and construction, these tools help you mitigate risks, save time, meet specifications and simplify processes without compromising quality or compliance.

For BIM and GIS workflows it’s all about accuracy based on real ground conditions, which isn’t possible with older low-quality imagery, such as free satellite imagery. High quality aerial imagery data informs future infrastructure design decisions, giving project teams and stakeholders a deeper understanding and improved awareness of projects. It also provides timely and easy access at scale in both 2D and 3D formats. Accuracy is critical and aerial imagery from providers that update their data frequently and offer multiple formats, such as orthographic, oblique and 3D, provide the most value. More importantly, the most innovative solutions offer flexible export and

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**GET THE MOST OUT OF BIM & GIS WITH HIGH-RES AERIAL IMAGERY**

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integration of imagery base-layers inside of GIS, CAD and visualization applications.

**BENEFITS OF COMBINING BIM AND GIS WITH TRUTH ON THE GROUND**

BIM and GIS have a fundamental reliance on imagery and 3D data to create true context. Utilizing BIM and GIS in tandem empowers you to manage information on a much larger scale and to extend the value of digital BIM processes through visualization and analysis. Project stakeholders gain better insight into how a new infrastructure project will affect the surrounding structures, and how those existing structures potentially could affect the building in return. With the combination of these technologies, companies can:

- **Manage data efficiently and accurately.** When data isn’t current, at high-resolution and spatially accurate, you have to make assumptions or go back to the property. Without up-to-date GIS information for accurate context or current conditions, there’s more room for error during all phases of the project, which can lead to significant time lost and increased costs. The GIS data gives asset managers a spatial representation of the project, so they can identify, take inventory, evaluate, monitor and maintain it more efficiently. With BIM and GIS data, it’s possible to accurately forecast construction and maintenance needs and budgets. You can also configure the data to meet your specific needs for planning, prioritizing and tracking costs and progress.

- **Increase visibility into the supply chain.** Integrating BIM and GIS creates a clearer view of the supply chain status, so you can stay on top of deliveries of materials. BIM provides accurate information early in the procurement process. GIS is useful for logistics, such as warehousing and transport. Together, you can monitor the flow of materials, assess the availability of resources and track supply chains.

- **Provide more accurate and timely information to field crews.** The combined technologies help identify more efficient routes and information regarding site access, including any possible obstructions. It is also possible to maximize vehicle assignments to cut downtime.

"Utilizing BIM and GIS in tandem empowers you to manage information on a much larger scale and to extend the value of digital BIM processes through visualization and analysis."
or schedule preventative maintenance. Mobile access to cloud-based location data helps facilitate inspection, inventory and surveying.

- **Facilitate complete building handover.**
  Most assets on the inside and outside of a property have an estimated life span. Using BIM combined with GIS allows you to better track all of the assets you own, make informed decisions about future developments and stay up to code. It also allows operations and facilities management personnel to quickly locate and identify assets that require regular maintenance, repair or replacement. Current and historical imagery along with 3D models show the state of the building and the progression of improvements over time. This is valuable when communicating changes to a new team member or owner. Data integrated from GIS and BIM, such as imagery for real-world context, is frequently presented through maps and other communication visuals to convey project plans and status updates to stakeholders throughout the project life cycle.

- **Improve overall productivity and profitability.**
  With heavy competition and slim profit margins, accurate and current location content creates a competitive edge. BIM and GIS help project teams understand the environment and ground conditions in a proactive instead of a reactive manner, taking the guesswork out of decision-making. This makes a huge difference to the bottom line, as studies estimate the average cost of mistakes on engineering projects tend to be higher than 5% and occasionally exceed 15%.

- **Enhance stakeholder communications.**
  Up-to-date and highly accurate visuals of project plans and conceptual designs give clients and collaborators real-world context for decision-making and action. Aerial images reduce confusion and accelerate review and approval because stakeholders clearly see the project in actual conditions.

Integrating BIM and GIS allows you to track and gain property insights, so you can make better operational decisions and improve collaboration across project teams before, during and after construction. Teams using these technologies side-by-side gain insight into how their decisions affect asset planning, project management and building handover.
Nearmap gives us the ability to get data we want when we want it, 24/7, and at an impressive detail level. Image quality from tile to tile is more consistent and current, so our team can produce beautiful and accurate models for our clients with a lot less work."

The 105-year-old employee-owned infrastructure solutions firm serves public and private owners and contractors in the AEC industry. More than 4,000 full-time professionals deliver a range of infrastructure-related services, including planning, design, program management and construction management at HNTB.

“Assessing orthographic and panoramic views, the ability to measure slopes and footprints of buildings, to accurately measure building height — that all used to be guesswork for us,” recalls Austin Reed, HNTB’s 3D-visualization team lead. HNTB turned to cloud-based aerial imagery provider, Nearmap, to leverage the most out of their visualization workflows.

Nearmap brings the real world to you. We capture, manage and deliver the most current location content in the world, allowing businesses and governments to explore their environment easily. With Nearmap, organizations unlock opportunities that consistently inform decision-making and transform the way they work. Our high-resolution, frequently updated aerial imagery is 2.8-inch GSD, better than satellite imagery. Delivered within days of capture, Nearmap shows changes over time. Users save time and money, reduce site visits and efficiently plan with current, clear imagery.

About Nearmap

Nearmap is delivered through a refreshingly easy-to-use interface called MapBrowser™ or accessed via Esri®, Autodesk, or other third-party applications.