



@ GSA

BIM Guide Overview



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foreword

The United States General Services Administration (GSA), through its Public Buildings Service (PBS), provides and maintains quality workplaces for over a million Federal agency associates in approximately 8,500 owned or leased buildings across the United States. One critical business function PBS performs to support this aspect of its core mission is the planning, design, and construction of new and newly modernized courthouses, office buildings, border stations, and other facilities. To this end, PBS manages over 170 new construction and repair and alternation projects with a current capital investment program that totals over \$8 billion and constitutes over 340 million rentable square feet. Insuring that these dollars are invested wisely and effectively is critical to another aspect of PBS' core mission - upholding the public trust.

Working with its construction industry partners, over the past 10 years PBS has set and achieved high standards for both design and construction excellence in its major capital projects. The resulting national awards, professional recognition, and media attention PBS has received have affirmed our commitment and strengthened our resolve to do even better in the future.

The construction industry is ripe for fundamental changes enabled by the same virtual, smart object modeling technology now prevalent in aerospace, automotive, and other industry practice. Just as today's major manufacturers use computer technology to model their products virtually before production, in the future we will first build our buildings virtually on a computer before attempting to build them physically in the field.

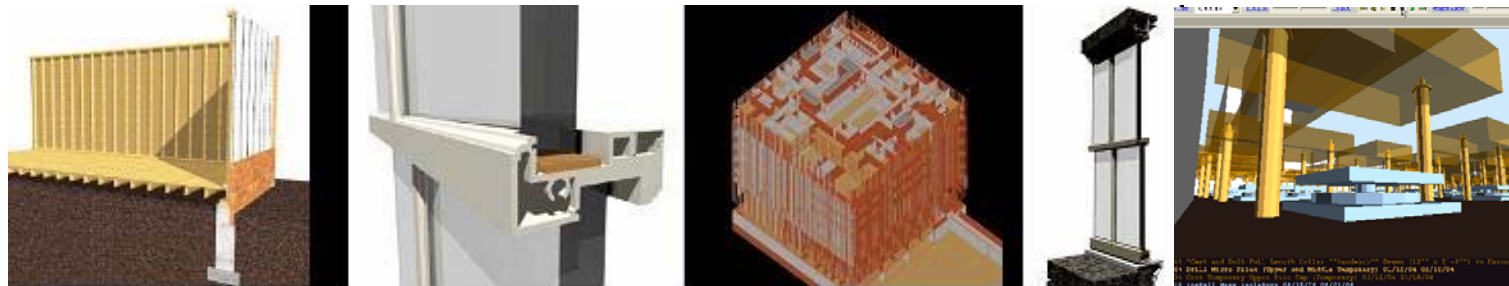


Figure 1: Virtual Construction Detailing from GSA Pilot Project

As this technology has begun to find application in the construction industry, it has acquired a variety of industry-specific names. In titling this guide, OCA has adopted the now predominantly used name, Building Information Modeling, or BIM. BIM is a data rich digital representation cataloging the physical and functional characteristics of design and construction. Its purpose is to make the design information explicit, so that the design intent and program can be immediately understood and automatically evaluated.



In the future, BIM will empower design and construction professionals to work collaboratively throughout the project delivery process, focusing their energy on higher order functions such as creativity and problem solving, while computers do the tedious tasks of counting and checking.

But for real property owners and managers such as PBS, BIM holds great promise beyond improving productivity in the design and construction process. Ultimately, this technology has the potential to enable the seamless transfer of knowledge from facility planning through design, construction, facility management and operation, and recapitalization or disposal. While all parties involved in design and construction stand to gain from the adoption of BIM, it is the owners who will potentially benefit the most, through the use of the facility model and its embedded knowledge throughout the 30 to 50 year facility lifecycle.

This potential can only be realized if the information contained in the model remains accessible and usable across a variety of technology platforms over a long period of time. Given the accelerating pace of technology development, in 20 to 30 years our now state-of-the-art hardware and software applications will be outdated and obsolete. For this reason, it is essential from GSA's perspective to insist that BIM incorporate a universal, open data standard to allow full and free transfer of data among various applications.

Fortunately, there are emerging efforts to create industry standards for BIM data exchange and archiving. Because of our long-term owner's interest, PBS is actively supporting the use of open standards that promote maximum interoperability. As a public institution, PBS views this approach as a governmental imperative. We must ensure that the private sector can compete openly and equally for our business. We should endorse standards that promote interoperability and advance industry efficiency; and, finally, we should encourage the development of a robust system that can evolve and endure beyond the limits of current practice. Use of open data standards and BIM technologies helps us accomplish this goal.

The foregoing paragraphs outline a bright vision for the future for construction industry professionals and real property owner-developers. The issuance of this provisional guide is a major step toward hastening the arrival of that envisioned future. We are committed to promoting the standardization of BIM, increasing its use on our projects as it develops and matures, and encouraging others to do the same. We are convinced that to fulfill our mission of providing a superior workplace for the Federal worker and superior value for the American taxpayer, we can do no less.

