

# CG Visions

Leading building information modeling firm delivers 3D models in Adobe® PDF to improve design collaboration and communication with builders and their clients

## CG Visions

[www.cgvisions.com](http://www.cgvisions.com)



### Industry

Architecture, Engineering, and Construction

### Challenges

- Improve collaboration with homebuilders, homebuyers, and contractors using digital 3D models
- Reduce building errors by more clearly communicating design intent

### Solution

- 3D PDF Review and Collaboration  
CG Visions converts 3D models from a variety of design applications to Adobe PDF to facilitate collaboration between design and construction teams and to better communicate design details to homebuyers.

### Results

- Reduced change order costs by as much as 95% during home construction
- Reduced building materials costs by minimizing rework and waste
- Improved collaboration among architects, engineers, contractors, builders, and homebuyers
- Increased homebuyer satisfaction
- Enhanced marketing efforts by making designs available to homebuyers as 3D Adobe PDF files to share with friends and family

### Systems At A Glance

- Adobe Acrobat® 9 Pro Extended

## Building a competitive advantage

Today's tough housing market can challenge even the most efficient builders and architects. With less revenue coming in, building and design professionals are looking for smarter ways to serve customers without increasing costs.

At CG Visions, a recognized leader in Building Information Modeling (BIM) consulting services, delivering 3D models in Adobe Portable Document Format (PDF) is enabling the firm's homebuilding clients and their customers to gain rapid, reliable insight into home designs, long before construction begins.

"Builders can come up short when trying to convey complex design information to homebuyers," says Cory Shively, partner at CG Visions. "By converting 3D CAD models to Adobe PDF, homebuilders bring to life design concepts that people typically have a hard time grasping." This can be anything from how a house will look on a proposed lot to the impact of a two-story atrium in an entry. "For people in the design industry many of these things make sense, but for homebuyers, it can be confusing without the aid of 3D models," adds Shively.

CG Visions describes itself as platform agnostic, meaning the firm creates and accepts designs in AutoCAD, Revit, Vertex BD, and other native application formats. Staff then convert models to platform- and application-independent 3D PDF files to overcome problems sharing designs between architects, engineers, contractors, builders, and homebuyers.

## Converting designs for construction success

Presenting designs as 3D PDF files makes 3D viewing accessible to the masses in a way that is reliable and familiar. Using only the ubiquitous, free Adobe Reader®, anyone involved in a building project can view and interact with 3D PDF files.

By converting models to 3D PDF files, CG Visions enables architects and engineers to easily collaborate on designs, mark up digital drawings, and make notations on design specifications. These professionals can sign off on final designs and even track approvals from their colleagues.

For many of the homeowners that CG Visions' clients serve, the 3D PDF files clearly convey from all angles how a home will look. Because the homeowners have a vision of the home before construction begins, they are less likely to make changes during the building process, keeping construction and materials costs down and projects on schedule.

"When architects and builders rely on 2D drawings, customers can have a hard time visualizing what their new home will look like. This can translate to time-consuming, expensive changes in the field," explains Shively. "Because PDF is already such a pervasive format, the homebuyers intuitively understand how to view and interact with the 3D PDF document of their home design. You see the proverbial light go on as they see exactly where the staircase descends or how the downstairs rooms flow together."

At CG Visions, 3D models in Adobe PDF enable the firm's homebuilding clients and their customers to gain rapid, reliable insight into home designs, long before construction begins. Clients such as Camberley Homes use the 3D models in PDF to take potential buyers on a virtual tour of its home models, clearly showing the features of each layout.



*“Since we started using 3D PDF files, we’ve helped our clients cut field-change costs by 95% and keep to tighter construction schedules.”*

Cory Shively,  
Partner,  
CG Visions

### Digital collaboration cuts development time and errors

For CG Visions and its clients, changes to plans, delays in construction, and field changes add to project cost as much as labor and materials. By using 3D PDF files to collaborate with architects, engineers, and homeowners during design and construction, CG Visions can help builders dramatically cut design and building costs.

“It used to be that clients would go out and see their home mid-construction and want to make changes to the layout or materials. These changes increased overall costs and delayed project completion,” says Shively. “Since we started using 3D PDF files, we’ve helped our clients cut field-change costs by 95% and keep to tighter construction schedules.”

Managing the building process using 3D PDF files helps all parties reliably communicate design and construction changes, and eliminates the need to circulate multiple designs simultaneously. Shively notes, “We use 3D PDF files as a mark-up and communication tool to facilitate conversations between engineers and architects. They use the free Adobe Reader to collaborate better, and finish the work faster and more cost effectively.”

### Virtual tours increase sales and satisfaction

In a typical residential housing development, builders construct multiple model homes for potential buyers to tour. These homes are constructed to code and fully decorated—a significant cost to the builder—to give future prospective customers the best possible idea of what their future homes might look like.

At Camberley Homes, a division of Winchester Homes, the innovative homebuilder will use 3D models in PDF files created by CG Visions to take potential buyers on a virtual tour of several of its home models, clearly showing the features of each layout.

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Cory Shively,  
Partner,  
CG Visions



#### **For More Information**

[www.adobe.com/products/acrobat/](http://www.adobe.com/products/acrobat/)

"With 3D PDF models at their fingertips, our staff can take buyers on a virtual tour of a home we might previously have built as a model," says Rick Mountjoy, community operations manager at Winchester Homes. "Where we might have previously constructed several model homes, it is now much more cost effective to build one and then show the other layouts as 3D PDF files inside the sales office."

These virtual tours of 3D PDF models let buyers "walk" from room to room, measure distances between walls or windows, compare features of different layouts side-by-side, and make customizations to a prototype design. All of these features facilitate better communication between builders and buyers, leading to more satisfied homeowners.

In the near future, Camberley is also looking to enable more interactive, web-based sessions with customers who are unable to come into the sales office, giving homebuyers the chance to provide virtual, real-time feedback to design staff.

#### **A visual attraction**

"It's rewarding to see the look on homebuyers faces when they view the 3D PDF model of their future homes," says Shively. In addition, the company knows that once construction begins, homebuyers are e-mailing the 3D PDF files of their home designs to family and friends, helping builders reach a broader audience.

"We see benefits across the board; customers are happier and share that enthusiasm with friends, pre-construction teams collaborate better, and projects stay on track and on budget," concludes Shively.



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**Adobe Systems Incorporated**  
345 Park Avenue  
San Jose, CA 95110-2704  
USA  
[www.adobe.com](http://www.adobe.com)

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