

Focus on Construction Drawings: Innovative Project Delivery Methodologies

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SUMMARY

Over the last 25 years architects have had to constantly keep up with and incorporate changing technology. The drafting room of today is frequently abuzz with conversations on how to best structure and sort information with the result that drawings often end up organized more along the lines of software code. This is a result of forgetting the fundamentals of good visual communication, and giving little thought as to how the information itself should be presented to be usefully and easily perceived by the document users.

Interestingly, many of our construction document problems are a result of poor visual communication.

WORKING IN CONTEXT

Working in Context is a process to simplify the preparation of, and augment the understanding of drawings. It is based on the premise that the organization and presentation of information is as important as the information itself. It is analogous to defragmenting our drawings and telling a story. It ensures that the “whole is greater than the sum of the parts” by combining related drawings to create more understandable groupings of information that are more simply referenced and easier to find.

“*Working in Context*” may be a new term, but it is not a new idea. Past generations of architects used these ideas well to graphically communicate the often complex fenestration and spaces they imagined - conveying a stunning architectural richness in surprisingly simple ways. Much thought was given to meaningfully combining the various drawings to communicate within the context of the design itself. In fact, they often used no referencing overlay system at all as they prepared sets of construction documents for intricate designs.

INSTRUCTIONAL SYSTEMS AND DEFAULT SCHEDULING

Instructional systems are drawings that graphically coach the drafter or contractor in understanding project conventions such as dimensioning or

documenting methods such as the default scheduling systems discussed below.

Default scheduling systems employ a methodology to schedule building components such as toilet accessories, doors, partitions, sealants, and so on. These take form as preorganized, ready-to-use, “drop-in” sheets complete with schedules, details, general notes, and notes to the drafter and contractor. The schedules are prepopulated based on previous work—ready to be edited for a particular job. If set up within a building information modeling (BIM) software template, they populate as you add information to the model.

PROJECT PLANNING

Planning a set of documents is the first step to having a well-coordinated set of drawings. The use of cartoon sets and network diagrams can help in the planning process. Common computer-aided design (CAD) standards in use today typically espouse a one-size-fits-all, “mail slot” approach to project organization, but as a network diagram will show, it is not an effective way to organize the set. Instead, arranging drawings in a “contextual” manner will result in sets with fewer sheets and require less cross-referencing between sheets.

3D DOCUMENTATION

From the days of manual drafting, when construction documents were considered a craft or artwork, three-dimensional (3D) drawings have rarely been used. That did not change when we moved to CAD software to draft our projects; instead, we made “clean” 2D versions the same as we did when we drew by hand.

In contrast, BIM software today creates 3D, virtual models of our designs right inside the computer. Architects can now easily place 3D views of the building in our construction documents that better explain project complexities to contractors and owners as well as to ourselves.

About the Contributors

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RESOURCES

More Best Practices

The following AIA Best Practices provide additional information related to this topic:

- 11.02.04 Terminology: As-Built Drawings, Record Drawings, Measured Drawings
- 11.02.03 Organizing Construction Documents
- 10.03.02 Record Drawings: Meeting Expectations

For More Information on This Topic

See also “Construction Documents Production” by Susan Greenwald, FAIA, CSI; Kenneth C. Crocco, FAIA; and Kristine K. Fallon, FAIA, *The Architect’s Handbook of Professional Practice*, 13th edition, Chapter 13, page 400.



See also the 14th edition of the *Handbook*, which can be ordered from the AIA Bookstore by calling 800-242-3837 (option 4) or by email at bookstore@aia.org.



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Key Terms

- Design
- Preliminary design
- General design data