

BEST PRACTICES

“As-Built” Documents

understanding the risks and responsibilities

By William S. Thomas

Current versions of the American Institute of Architects (AIA) family of contracts address responsibility for preparation of project documentation which reflects the “as-built” condition of the work. Providing “as-designed” or “as-constructed” record drawings is an additional service under the standard B101 Owner/Architect agreement. The A201 “General Conditions,” however, require the contractor to keep and maintain documentation reflecting field changes, selections made during construction, approved shop drawings and submittals, and which serves as a “record of the Work as constructed.” (Article 3.11). These “as-built” documents are to be provided to the Architect and Owner at the conclusion of work, and have many uses and benefits. While these contract provisions reflect the typical expectations for construction professionals, the trend is away from this practice, and towards a more custom approach, with owners seeking access to more and more robust and integrated documentation, some of it from the design professional, and all of it for free.

UNDERSTANDING THE LANGUAGE

As with all things in construction, the words used to describe documents reflecting the work as built are not interchangeable. The work product of the design professional, used by the contractor to construct the project, are typically referred to as the Construction Documents, or Contract Documents, consisting of drawings and specifications. These documents show the project “as designed,” and are the baseline from which the “as constructed” set of documents are generated. From time to time, due to addenda issued during bidding, and before construction, the design professional will issue a set of “Conformed Documents,” which incorporate these pre-construction changes. During the project, the scope and execution of work changes, invariably, as a natural part of the construction process. These changes often result from design modifications, differing site conditions, contractor-requested changes, responses to RFIs, or value engineering, among

other reasons. These changes are to be documented so what was actually constructed can be memorialized. This report of changes is typically made directly on the Contract Documents by the contractor, the end product of which are the As-Built drawings.

Some owners request the architect issue a set of documents at the end of the job which incorporate all of the changes reflected in the As-Built, often referred to as “Record Drawings.” Record Drawings take the notes of changes made to the on-site Contract Document drawing set, which are then edited and compiled in an “architect reviewed” set reflecting the on-site changes, and purportedly representing the conditions of the completed project. They could also include the “Shop Drawings,” those documents prepared by a contractor, supplier, manufacturer, subcontractor, or fabricator, reflecting their drawn version of the information shown in the Contract Documents. These documents are then officially released, in either paper or electronic format.

If the project is using BIM technology, the participants may be creating their documents in separate distinct models based on their discipline, as architects, structural engineers, building service engineers, contractors, subcontractors, or suppliers. Their individual building models are uploaded to a shared data environment, known as the "Common Data Environment," where they can be accessed and combined. These individual models are then imported into a single piece of software, and become a "Federated Model."

BENEFITS VERSUS RISKS

As-Builts provide a resource available during the project which depict all current, authorized changes, work scope and materials installed. This makes them an excellent tool for proving claims of unanticipated conditions, changes in scope or inefficiencies. After project completion, As-Built or Record Drawings can be used by the owner or property manager as a reference over the life of the facility, assisting in the location of buried or hidden elements, troubleshooting problems, for health and safety reasons, and as a guide for subsequent changes or expansions. The property manager could use them for safety training, failure analysis, tenant information, lease or sales literature or information required by authorities with jurisdiction. If future expansion or development is planned at the site, they can serve as demolition drawings, or for recording land-use history.

With all the benefits, there are a number of risks. Decided cases where the accuracy or existence of As-Built documentation is in issue do exist. Courts have uniformly held those to blame for inaccuracies in the drawings responsible for the consequences, including potential personal injury or added cost. Further, if changes were not reflected in documentation and were not noted on approved As-Built drawings, they were not properly approved. Also, courts recognize accurate As-Built data

as a major factor in judging entitlement to extra-contractual damages when things had to be changed due to differing conditions. If the documents are being transmitted electronically, or the owner is given access to BIM models or CAD drawings, have there been "field verification" and "markup drawings" prepared with such precision that allow actual point data to be converted into the modelling software? How accurate will these documents really be? How much precision and assurance can the design professional provide when issuing a set of Record Drawings? These questions need answers before any work product is released. If in an electronic medium, it is imperative that all disciplines who have access to the model keep their inputs current and accurate, and that sufficient data is kept in the system to later make sense of the changes.

COMMUNICATION AND EXECUTION

Design professionals requiring As-Built drawings as part of the contractor's set of deliverables should have a clear, understandable, and comprehensive set of directives in the specifications so expectations can be measured. Formatting, procedure, and protocol should be dictated, down to the color of ink used to denote changes. While there is no industry standard, there are numerous guidelines and requirements of public agencies and scholarly articles on "as-builts" which provide example language and thorough checklists for

best practices. If the owner wants something more than just As-Builts, the contractor or design professional needs to clearly communicate what they can provide, and whether it is part of basic services or will cost more.

CLOSING THOUGHT

Contractual language must be examined on the front end to make sure it is understood by all participants what the deliverable will be. Necessary liability and risk shifting provisions in the contract need to be carefully examined by counsel to ensure they are appropriate to the level of documentation requested, and in the format provided, whether paper or digital. And finally, the deliverable itself must meet the criteria spelled out in the specifications and should be kept current as the project progresses, incorporating all contemporaneous changes and information, and be prepared with care and attention, quality checked, and not be something rushed through at the end of the job. ■

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