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Webster’s Dictionary defines “Constructability” as…wait a minute…it DOESN’T define that term. In fact, a general search of accepted dictionaries reveals that as far as this main stream media goes, the term “Constructability” does not exist. Most commentators accept this absence.

“The terms ‘constructability’ and ‘buildability’…are terms which are specific to the construction industry and have meaning only to those operating within the confines of the industry.” Construction Management: New Directions, Edition 2; McGeorge, W. D., Palmer, Angela, London, Kerry (Wiley-Blackwell,2002), pg. 53.

Yet, almost every construction professional has likely heard the term, and maybe even used it. So, what is Constructability, what is a Constructability Review, and, equally important, do you need one?

In the early 1980’s, the Construction Industry Research and Information Association, defined the concept of “Buildability,” as the extent to which the design of the structure facilitated ease of construction, subject to the overall program requirements for the project. This approach focused on the necessary interface between design and construction.

Later, the Construction Industry Institute, approaching the concept from the perspective of improving cost effectiveness and total quality management for the industry, defined “Constructability” as “a system for achieving optimum integration of construction knowledge and experience in planning, engineering, procurement and field operations in the building process and balancing the various project and environmental constraints to achieve overall objectives”.

Distilled to its essence, the process of Constructability is the integration of construction considerations into the planning and design processes of a project. This process should be addressed early in the planning and design process.

To be of real value, the review must include multiple perspectives, especially as to the interaction of the drawings and specifications prepared by the design team with the means and methods anticipated by the general contractor. Design team input should also include engineering issues. While input from the project specific staff is vital, it is often advisable to include a “fresh set of eyes” in the form of senior professionals not assigned to the project.

The Constructability Review process must be established, scheduled and “tailored to each design phase.” Design Professional and Construction Manager Law, Edited by Hess, Stephen A., Bales, Jerome V., Folk, P. Douglas, and Holt, L. Tyrone, (American Bar Association Forum on the Construction Industry; ABA Publishing, 2007), pg. 300. In other words, the review conducted at the Schematic Phase may focus on site, materials and utility location while the review at the Design Development Phase may look at systems, foundation/structure, building envelope and MEP components.

The Constructability Review is designed to catch and correct difficulties which may arise either from design or means and methods challenges, but most
likely from the interplay of the two aspects of the project. If not caught before construction begins, the expectations of the parties can be negatively impacted. Such a delay might mean that control of the project costs, particularly the hard costs of construction, will be lost.

The initial investment in such a review has the potential to generate savings far greater than the expenditure. The risk of problems with the design belong to the Owner under most delivery methods, though this risk is generally shifted to the GC in a design-build scenario. But even in such a delivery model, the Owner must communicate its intent and requirements.

The Constructability Review provides a mechanism whereby the Owner can be protected against the risk of increased costs due to conflicts between the design and construction considerations. At least one study has suggested that an investment of between 2% and 5% of total project costs to such pre-construction planning increase the prospects of an on time/on budget delivery, and can result in a 3 to 1 return in construction savings over planning dollars. Starting Smart: Key Practices for Developing Scopes of Work for Facility Projects, G. Edward Gibson & Michael P. Pappas, Jr., in Conjunction with the Federal Facilities Council, Standing Committee on Organizational Performance and Management (Federal Facilities Council Technical Report #146, National Academies Press, 2003).

The benefit of such services, in the early days of the development, has been recognized by recent iterations of the AIA documents. While not expressly referring to Constructability, Exhibit B to AIA B-143-2004 (Contract Between Owner and Consultant) allows the selection of services such as managing and coordinating the Architect’s services with those provided by the Architect’s consultants, the Design-Builder. Such services may include evaluation of alternative materials, building systems and equipment.

These services are equally important in projects not utilizing the Design-Build delivery system. The goal is to maximize efficiency through the timely exchange of information between design and construction components of the project team. This exchange in turn should lead to lessened conflict between those critical members of the team, to the overall benefit of the project. This lessened conflict should be reflected in a diminished number of RFI’s and ASD’s, and in fewer “hostile” change order requests.

Constructability Reviews are, in a real sense, the application to the construction industry of the old axiom that one should not be “penny wise, and pound foolish.”