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Construction Process Can Lead to Defects

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Webster's Dictionary defines the word defect: de-fect (de'fekt; also, and for v. always, di fekt') n. [<L.pp. of deficere, to fail < de-, from + facere, to do] 1. lack of something necessary for completeness; shortcoming 2. an imperfection; fault; blemish.

When relative to construction claims, the word defect also equates to financial disaster when it reaches litigation.

The process that it takes to construct any building project is an extremely complex process. It is replete with architects, engineers, professional societies and associations, manufacturers and suppliers, building officials, general contractors, specialty contractors, and a virtual army of labor which lends itself to numerous volumes, many years of education, and specialized training.

As with most businesses, construction is an extremely competitive industry. Often referred to as a "dog-eat-dog" way to make a living.

This article is intended to give the reader a thumbnail sketch of how the system, as it applies to the construction process, really works and how it can often lead to defects during construction.

Competitive Bidding

The low bidder gets the contract. With the competitive bidding process, the only way for a contractor to be awarded the contract is that he / she must first be designated the low bidder. In order to be designated the low bidder, it can either mean that the successful bidder has a substantial following of subcontractors and material suppliers that are highly cost effective and are capable of furnishing low quotations for their collective work. Or, it could mean that one or more of them omitted one or more items in their cost breakdown that could equate to a lot of money ... missed.

When a low bid is received by a general contractor from their subs and suppliers, it is often wondered by the recipient just what and how much the low bidder left out of his / her bid and whether or not to take the chance of using that low bid. The dilemma is always raised ... "Well, if they bid this number to us, then they surely must have bid it to our competition". And, to make things worse, most of the sub bids are received by telephone only moments before the prime contract bid is to be submitted, and; therefore, the general contractor has precious little or no time available to scrutinize this temptation, otherwise known as the "last minute low bid".

Cost vs. Profit

The pursuit of lower costs can become a powerful driving factor, which all too often leads to construction defects, especially during a recession such as the current recession that the construction industry has faced throughout the past four years. These highly competitive elements are forcing contractors into resorting to the widespread practice of using semiskilled, and, most often, unskilled labor to perform skilled labor tasks. These skilled labor tasks in the past have always required extensive training, certification, and years of experience.

In addition to this widespread and growing practice of the utilization of questionably skilled labor, supervision is also waning. All too often, semiskilled and even unskilled crews are left to their own devices to perform their work on the job site without proper supervision or even without any supervision at all.



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Building Materials

Before building materials can be used in any building, they are first run through a highly complex, and extensive engineering, testing, and review process. This review process is usually conducted by a vast number of independent testing laboratories and the results are reviewed by many professional committees, such as the American Society for Testing and Materials, (A.S.T.M.) and the International Conference of Building Officials, (I.C.B.O.).

Reports of the testing results and the Professional Societies' findings are published and updated regularly. These reports, often referred to as A.S.T.M. Standards, I.C.B.O. Reports, and Uniform Building Code Standards, state the minimum recommended standards for the use of the materials.

Architects and engineers refer to these "Standards" and specify them in their plans and specifications. Once these specifications are made part of the construction documents for a building project, it is incumbent upon the general contractor, all of the specialty contractors, and all of the materials suppliers to comply with the specifications.

Defects

Here's where the problems begin. Assuming that the specified materials are currently available, the contractor may figure that he / she can save money by substituting either materials or manufacturer, thereby creating the possibility of using materials that may be inferior to that which were originally specified, and approved for that project.

Often, there is little or no review process of the materials actually used in the project by the architect or engineer who specified them in the first place. Another common cause of defects is when materials or products used in the project and the user does not follow the installation instructions or read and understand the I.C.B.O. Report which states the approved method for installation and use of the material.

As an example of this, let's take the scenario of the plastering contractor who sends his lather to a job to install lath and the metal trim on the outside of a house. The lather is fairly new to his trade or may have an attitude problem and ignores the manufacturer's installation instructions or I.C.B.O. Report and installs the lath with an excessive overlap, thereby thickening the material and reducing the thickness of the cement plaster and stucco finish. The stage is set for cracks.

Another scenario that can lead to structural defects is during concrete placement of foundations. A 2,500 p.s.i. concrete foundation is specified on the approved drawings. The contractor orders concrete from a ready-mix supplier. The first load is delivered to the job at 7:00 a.m. It's going to be a very long day. The load is checked to make sure that it is what was ordered. The concrete crew starts depositing the concrete into the forms when someone decides that the concrete is too dry and it would be much easier to work with if it was wetter. They add water to the load. Now, the load of concrete is much wetter and thereby exceeds the water-to-cement ratio that the specifications and standards allow for and creates a weakened portion in the structure.

What do they do? Send the concrete load back to the ready-mix plant? It's going to cost somebody a lot of money, maybe even someone's job. Well, they decide to just use it!

Now the building has a portion, or portions of the foundation that may never come up to the specified 2,500 p.s.i., strength and now has the potential for failing to carry the loads imposed by it's design.

Since, in this scenario, no concrete specimens were taken for testing, nor were compression tests conducted, no one would know anything about the excessively wet concrete, until the building fails.

The most common cause of defects, is the lack of quality control during the construction phases of the work.

Quality Control

Construction defects can greatly be reduced when a concentrated program of education and training is once again deployed throughout the industry.

Quality control systems and methods must be taken seriously, continuously, and be religiously augmented throughout by all parties concerned. By not controlling quality, construction defects and the resulting defects litigation cases, will only continue to grow in the future.

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