

THE ACADEMY OF ELECTRICAL CONTRACTING

Paper presented by

Ben P. Waters and Charles E. Wise, Fellows

Construction Management  
April, 1981



What created a market for the services of Construction Contract Managers?

Architects' and engineers' fees are generally divided with a percentage of the contract charged for design, preparation of drawings and specifications, preparation of contract documents and receiving bids on behalf of the owner. An added percentage fee is charged with certain costs reimbursable to the architects and engineers for construction supervision for the owner. This was more or less the traditional arrangement in our industry and held sway until about 1950.

One service desired by owners, both public and private, had not been offered by the usual architecture and engineering firms. This was an accurate estimate of final cost of construction. Clients in the public sector were often going to bond elections for an amount that turned out to be less than competitive bids submitted for the work, which proved unworkable. In fact, the facility had to be re-designed to eliminate desirable features, leaving the public dissatisfied and the architects and engineers facing an over-run in their cost for the services.

Often the architecture and engineering firm asked for assistance in costing the proposed project. This assistance usually was provided gratis by building contractors and their principal subcontractors. When public funds were involved, the accommodating contractors gained nothing from the necessary conferences and pricing when formal bids were received by the owner. Contractors who donated these services could only expect to create good will for themselves. On private work, the cost figures generally were passed on to a Board of Directors, who likewise wanted to be assured they were dealing with accurate figures to include in their budgets. Unlike public projects, it sometimes was possible for private owners to make awards to the assisting contractor and his principal subcontractors, but this did not always happen. Private work under these circumstances often led to a "team" being formed which has had favorable results for owners and contractors in cost control and performance.

In the late 1950's, the Bureau of Yards and Docks and the Corps of Engineers were getting into their PERT and CPM programs as applied to construction and again contractors' experience was called on often in preparation of these time, sequence and cost documents.

These activities coincided with an all-out drive to eliminate all possible employees of the Federal government by awarding to contractors services heretofore performed by civil servants. Also, the long lasting effort by specialty contractors to promote the awarding of separate contracts for electrical and mechanical work by public awarding authorities began to show some results. The early awards of separate contracts came first by certain states and later by the General Services Administration on a trial basis. Separate electrical and mechanical contracts were never looked on favorably by either the Army or Navy, except in very unusual projects where the specialty work of electrical and/or mechanical contractors was representing a greater dollar value than the building or structure to be contracted out.

Early experience with construction project management reminds us of the reluctance of building contractors to expose the C.P.M. printout to subcontractors even though these subcontractors were called on for vital information as to time and cost. Of course, this reluctance had its source in a desire not to disclose just which craft or portion of the work was on the critical path.

At this point, let me retell an old story that is at least partially appropriate. There was a storekeeper in a small farming community who also was its religious leader. It was his habit to quote scripture as he saw it to each of his customers as they made their purchases. For instance, if he sold a loaf of bread, he might conclude the transaction with "Man shall not live by bread alone"; or, if you bought a pair of shoes, he would give forth, "Blessed is he who walks in the path of righteousness." One day a stranger came in and asked for a horse blanket. The storekeeper pulled out a blue blanket and offered it to this customer for \$25.00. The stranger expressed doubt that the blanket was suitable for his thoroughbred horse. Immediately, the storekeeper pulled out a gray blanket of the same quality and offered it for \$100.00. The stranger still expressed doubt and explained that his was a very fine horse and should have a fine blanket. The storekeeper said, "Let me look in my back room" and returned with the same quality red blanket and priced it at \$250.00. The stranger was satisfied and the sale was made. As the stranger left the store, Mr. Storekeeper muttered, "A stranger knocked at my door and I took him in."

All that has been said leads to why construction project managers became in demand.

Further developments pointed out that in industrial construction, qualified personnel had to be diverted from their productive efforts in the plant to follow, control, and supervise new and expansion facilities if proper results were to be achieved. This was generally a short-sighted policy, and reflected in loss of production in the plant. In speculative building, it is impractical generally to build up a contract management group of highly paid and qualified people only to reach a stopping point in the project because of market changes. This type of building can go back to the architect and engineer concept with its cost control problems being taken over by the construction contract manager, whose services are only for the term of the activity.

Now, what is expected of a construction contract manager? Review all plans and specifications as they are developed; advise the owner and architect/engineer regarding on site conditions, foundations, systems and materials, feasibility, availability of labor and materials, time requirements for procurement, installation and construction costs; and make recommendations for savings as seem appropriate.

The construction contract manager provides cost consultation beginning simultaneously with design and prepares a cost estimate prior to bids being solicited. He is expected to advise the owner when he detects that the cost will exceed available appropriated funds. Likewise, he is expected to consult the owner and architect / engineer if the construction period is to exceed their expectation and suggest means of compressing this time. Such suggestions usually fall into use of flying forms, unscheduled overtime at control points, etc. The construction contract

manager is usually required to prepare a material takeoff of quantities for each bid item and price these. From this takeoff of materials the construction contract manager is to secure quotations and place orders in the owner's name for long lead-time items that might delay construction. In the electrical work these are usually switchgear, special decorator lighting fixtures, and special systems, as, for example, energy controls and others as may be appropriate. He is also to detect problems that might cause interface confusion in trades involved by reason of labor agreements or customs of the trades involved. This last item is of great importance to the electrical and mechanical trades, and not all construction project managers seem capable of overcoming the known obstacles that probably will arise. Construction project managers have generally shown a distinct and appreciated ability to spell out and include in bid documents the required temporary facilities as necessary to carry the work forward without delay and excessive claims for extra compensation to contractors after award.

Since 1975, construction project managers have included in their responsibilities, at the request of owners, extensive studies to effect savings in energy. This is a field where electrical and mechanical consultants are working closely, not only in applying their familiarity with utility rate structures, but in opportunities to use low pressure steam, heat from computer activities and lighting, and in some instances, the drilling of water wells, ponding of water and so forth.

Going back to "A stranger knocketh at my door and I took him in," our observation is that few construction management firms were formed primarily for that purpose. Generally, they grow out of general contractor or architect / engineering organizations who see a worthwhile business opportunity. Often, they are reasonably well qualified to enter the field as construction project managers.

To take each separately, the general contractor has his expertise plus the ability to do adequate pricing except in the work of specialty contractors where he must go back to his usual source, his subcontractors. Since he cannot control the award of a subcontract, this results in his seeking consultants with ability to perform and be paid, since they are not expecting award of a contract to perform the work.

The architecture and engineering firm is at an even worse disadvantage since its pricing has always been based on reference to past work, cost of similar design or going to the general contractor for gratis assistance. General contractors are no more anxious to perform when they know the contract will be put up for open market bids than specialty contractors. In both organizations, the construction project managers are often created for hopeful sale of their primary services or as a means of maintaining their basic organization when times are hard or competition is severe. In such conditions key or important members of their organizations can be assigned to contract management and be paid out of owners' funds.

Short term experience has indicated a tendency to reassign such key personnel to the primary functions of either the general contractor or architect / engineer and bring about poor performance in the contract management function to the detriment of the owner and the contractors involved in the work.

Thus far, nothing has been said about arrangements where the contract manager (generally a general contractor) agrees with the purchaser that he will perform the work if competitive bids are above cost figures given by the contract manager. This last feature is questionable in several areas and, if known to prospective bidders, will discourage competition and result in either relatively high bids or ridiculously low bids based on the reaction of the bidders.

Now, let's get into what contract management means to the electrical contractor. To our minds the possible removal of the architect / engineer as interpreter and third party in contract decisions is a great loss to the industry even though, at times, the electrical contractor finds it difficult to accept rulings as to plans, specifications and contract documents by the architect / engineer. Many of their arguments could be avoided if the electrical contractor was privy to the full document signed by the purchaser before he enters a claim. However, the electrical contractor has a better opportunity to be understood by the contract manager and gains an advocate who is likely to understand the problems.

Where architecture / engineering firms enter the contract management field, full confusion is likely to arise, and the architect / engineer finds it difficult to create an atmosphere that he is dealing as a disinterested party if his contract management firm is delegated the authority to control cost and proceed at a specified pace with construction.

Electrical contractors who might be invited to or contemplate taking part in contract management have all the problems of a general contractor if they plan to be involved in contracts awarded directly to them by the owner / purchaser. Those not having engineering - design talent in their organization will be forced to acquire such personnel. They also will be faced with the management of both union and open shop jobs. There also lurks the problem of whether a contract manager is actually a contractor and subject to its privileges and risks. Please be reminded of the special professional liability insurance that is prudent if you enter any phase of electrical design.

The first author's (Ben Waters) experience in contract management has been acquired by working, on an hourly basis, for a general contractor entering the field or, in a few instances, for a firm entering the field from past experience in preparing construction project management studies. Both have been interesting, but whether an electrical contractor would be wise to create an organization for contract management is very questionable in our minds.