



Construction project management: The engineer/contractor/management relationship

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The following article has been prepared in attempt to explain the typical roles and responsibilities of the engineer, project manager and the contractor.

The Engineer

In most cases, the engineer is hired to prepare a plan and technical specification for the work to be completed. At this point, the role of the engineer is to design a plan and specification that best suits the client in terms of function, economics, and long-term durability. An engineer is typically hired for one or more of the following reasons:

1. The city, insurer, lender or state requires it.
2. The client wants to ensure that prospective contractors will be bidding on the same work scope.
3. The client is not sure of the extent of work required.
4. The client wants a non - biased third party professional opinion on proper methods and materials.
5. The client wants to be further protected in the case of a construction defect, design deficiency or other issue that may arise from the work scope.

These plans and specifications are based upon the following:

1. Field experience
2. Published industry standards
3. Code requirements
4. Specific design requirements unique to the project.

After the engineer has submitted the plans and specifications to the client for review, along with a cost estimate for the proposed work, the plans are typically sent to contractors for bidding. Upon reviewing the bids, the engineer will provide a comparison of the bids to the client for selection of a contractor by the client.

In the realm of private, condominium and co-op work, the project manager is, in most cases, the engineer or an employee of the engineer. The role of the project manager is to work with the contractor, the client and the specifications to monitor that specified work is adhered to, any extras are approved and documented, and invoices are approved. The project manager is also responsible for reporting to the client on a daily or regular basis of all events and working with the client to ensure the project proceeds as intended.

The Contractor

The contractor is obviously hired to implement the specified scope of work. The contractor has the responsibility of completing the work within the terms of the contract, coordinating the delivery and installation of materials, disposal and all ancillary work.

The contractor is also responsible for obtaining permits and approval from the local and state authorities.

The Association/Manager

The association and property manager are the most familiar with the everyday functions of any given site and play a vital part in the synchronization of any project. Input and orchestration from the manager of the association are fundamental for payment processes, organization of traffic pattern changes, input with respect to other on-going site projects and operations, including project history (with respect to related problems) and sensitive issues within the building (i.e. important holidays for the residents, refuse and storage areas) that impact the client - the individual shareholder.

For many of the large projects, it is not within the property manager's work responsibility to actually manage the project; however, regular correspondence between the engineer and the property manager is very important to ensure that any and all issues are attended to.

The Project Team

On every successful project, the above three entities make up a team. The contractor, engineer and property manager all work for the same client and need to have a singular goal of completing the work as intended and on time. Unless the team works together, the project will be subject to delays, conflicts, the untimely release of payments and an unhappy client. When the project is not completed successfully, the client is left only remembering whom the team was made up of and that it was not successful. They will not remember the details as to why it happened and who was responsible.

Many issues or misunderstandings we are faced with as engineer and property manager are listed below for further discussion:

- * First and foremost is failure of the contractor and the contractor's personnel to read and fully understand the content of the specification prior to starting the project. The specifications and plans outline how all work is to be completed, under what time frame and with what materials. After the bid has been accepted, any deviation from the above must be provided to the contractor in writing.
- * All contracts should be designed to deal with extras - as with all work there will be unknowns. The role of the project manager is to document what extras are applicable and quantify them for approval. Communication between the foreman and the project manager on a daily basis eliminates misunderstandings at the end of the project. For example, it is not sufficient for a contractor to provide a receipt for materials purchased - the actual quantity installed in the field must be verified so that a complete report from the project manager can be provided to the client.
- * Plans and specifications will refer to codes and industry standards for certain issues. Not every method will be defined in the specification. When an engineer or project manager is on a project, they are authorized by the client to prescribe and/or approve how certain detailing or installations must be met. Ultimately, the engineer must sign off on all of the work. It is not enough that a municipal authority accepted the work. By law, municipal authorities do not have liability. Further, work that is typically acceptable is not always acceptable if it does not comply with the specifications.
- * Subcontractors and foremen should be made aware of and have the opportunity to review the plans and technical portion of the specifications. Often work is repeated or materials are brought to the job site that do not comply with the specifications simply because not everybody involved was aware of the scope.
- * Substitute materials must be approved in writing, by the engineer, prior to the project's commencement. Delays are sometimes initiated from the commencement of the project because the wrong materials have been brought to the job site because somebody assumed that they are "good

enough" or equal. If substitutions are made, is there a documented benefit to the client?

* In the event of delays caused by an outside source (i.e. materials supplier), it is the foreman's responsibility to notify the project manager in writing when these delays occur so there is no attempt by the interested parties to try to place approximate dates and delays at the end of the project and the contractor is not penalized for related time overruns.

In summary, a competent team of professionals that work in harmony is the key to the success of any project. A weak link at any level will leave a poor image of the project in the client's mind and can be followed by years of attempts at resolution and sometimes even costly litigation- at nobody's gain. A successful project means a satisfied client who will receive a finished product that exceeds what they expected and the personal satisfaction of each of the individuals involved in orchestrating and supplying the services.

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