

## **IMPORTANCE OF CERTIFICATION OF THOSE INVOLVED IN BUILDING INDUSTRY**

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### **ABSTRACT**

Certification is a necessity implied by the vast background of those involved in the building process. It sets the rules for professionals. It describes limitations and responsibilities for those involved. It guarantees a strict performance under penalty of Law. The model presented by the Department of Consumer Affairs in California, where I got my certificate as a Professional Civil Engineer is worth studying. It is not a shame to follow the steps of those ahead of us. It is a shame to present imaginary models, follow them, find out about their loopholes, pits, and falls, and then try to correct the path after it is too late. This trial and error methodology proved fruitless in all aspects in our Middle Eastern life. A proven model, with properly injected changes based on Local requirements while moving ahead is, best for our case.

Building projects require the performance of many complicated and interacting activities. These activities require in turn a lot of knowledge, expertise, and experience on the part of those involved. It is not enough then; that through this ocean of manpower involved only the unfortunate engineer is required to be certified. Here is the dilemma.

It is like sending an untrained army to war with a knowledgeable captain. He may either lose the battle, be killed, or at least commit suicide. None of these choices is of relevance to those who are waiting to win.

Performance in building project is founded on teamwork. There is a need for a powerful leader. Nevertheless, performance should not rest solely on this leader. Now, if the team is ignorant of the duties required, lacks the insight of his duties, and has inherited the knowledge from another ignorant, what performance teams like this could produce?

In every aspect of the building project, analysis of the shortcomings shows they come from ignorant uncertified workforce. Even when the materials used are superb, the engineer is top echelon, and the pay is fantastic. If those involved in the building industry, seek progress in the right direction, they should seek progress that is based on long uninterrupted service and durability, sustains the public wealth, and safeguards building projects from deterioration. Then it shall be mandatory to train and certify those involved.

In our long time of practicing engineering in the Middle East, many of the labors, skilled and unskilled were performing works they never knew before. It was their first time to perform those tasks in building projects. They probably were peasants, barbers, or taxi drivers before they became rough carpenters, steel fixers, masons, or even electricians, and A\C experts. No one notice the difference. Nevertheless, the building project itself does recognize, and indeed, tells the whole story shortly after hand-over.

Certification should be based on scientific and technical training. It should be true. It should be repetitive for the individual across a reasonable period. It should form the basis for hire of services. It should be the law.

### **Introduction: A Dilemma**

Engineering Practice in any country is subject to laws and bylaws. The Legislation monitors the performance of those practicing. The objective of this operation is to protect the public against any malpractice by the engineer. The engineer has to be properly certified before he can set an office to practice. Nevertheless, it should be clear that those who are assigned to monitor must be at the same level if not better, than those monitored. It should also be clear that the laws and bylaws must be reasonable, factual, and applicable. Rules should not carry the notion of revenge. They rather have to be strict. Their objective is to give the right to whom it belongs to, stop any further malpractice, and punish the swindlers. Legislation also monitors those moonlighters who practice without obtaining the proper certification, penalize, and stop them. This protects those who are certified. This is fair. This leads to systemizing the process. Systems are the core essence of a healthy society.

However, the engineer is not the sole agent in the process of building. He is associated with a vast team of variable backgrounds and objectives. Few of those involved are trained in engineering or technology. The vast majority of those involved are educated and trained in different business, sales, administration, legal, and other fields. Some of those involved have no background, nor do they have any education at all. Hence, it is unfair to systemize such a process with merely certifying the engineer.

Certification is also a necessity implied by the vast background of those involved in the building process. It sets the rules for professionals. It describes limitations and responsibilities for those involved. It guarantees a strict performance under penalty of Law.

The model presented by the Department of Consumer Affairs in California, where I got my certificate as a Professional Civil Engineer is worth studying. Scrutinizing such a model the methods that should be followed locally in certification is construed. It is not a shame to follow the steps of those ahead of us. It is a shame to present imaginary models. Follow them. Find out about their loopholes, pits, and falls, and then try to correct the path after it is too late. This trial and error methodology proved fruitless in all aspects in our Middle Eastern life. A proven model, with properly injected changes based on Local requirements while moving ahead, is best for our case.

A Legal Body shall perform certification. It sets the rules. It follows up on those certified, whenever and wherever they practice. It receives complaints. It forces the penalties set by the Law on those in paradox with good practice. This Legal Body should be both illuminated with the lawful aspects, and ready to act at any time. Without this qualified Legal Body, certification is worthless. This legal body shall act as an arbitrator, a judge. The judge shall not be biased. He should act within the law. However, if the law is not clear, or does not exist, another dilemma is created.

Building Projects require the performance of many complicated and interacting activities. These activities require in turn a lot of knowledge, expertise, and experience on the part of those involved. It is not enough then that through this ocean of manpower involved in building projects only the unfortunate engineer is required by the law to be certified. Here is the dilemma.

It is like sending an untrained army to war with a knowledgeable captain. He may either lose the war, be killed, or at least commit suicide. None of these choices is of relevance to those who are waiting to win.

Performance in building project is founded on teamwork. There is a need for a powerful leader. Nevertheless, performance should not rest solely on this leader. Now, if the team is ignorant of the duties required, lacks the insight of his duties, and has inherited the knowledge from another ignorant, what performance could teams like this produce?

In every aspect of the building project, analysis of the shortcomings shows they come from ignorant uncertified workforce, even when the materials used are superb, the engineer is top echelon, and the pay is fantastic. If those involved in the building industry seek progress in the right direction, they should seek progress that is based on long uninterrupted service and durability, progress that sustains the public wealth, and progress that safeguards building projects from deterioration. Then it shall be mandatory to train and certify all those involved.

In our long time of practicing engineering in the Middle East, lots of the labors, skilled and unskilled, were performing works they never knew before. It was their first time to perform those tasks in building projects. They probably were peasants, barbers, or taxi drivers before they became rough carpenters, steel fixers, masons, or even electricians, and A/C experts. No one notice the difference. Nevertheless, the building project itself does recognize, and indeed, tells the whole story shortly after hand-over.

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#### **A Model Legal Body: Consumer Protection Agency Board of Directors for Engineers and Land surveyors**

Consumer Protection Agency is a Legal Body set by the State of California. As its name implies, it is set to protect the public against any malpractice. Thus, this agency has many branches that specialize in the aspects of consumer protection.

One of the branches is the Board of Engineers and Land Surveyors. This Board carries the burden of all legislation connected to the field of engineering and land surveying.

Any engineer who wishes to practice in his field in the State should obtain a license. This license is given by the Board after the engineer meets certain requirements. One requirement is that the engineer should be a graduate of an honored college by the State. Another is that the engineer should attend and pass a preset examination. This examination is based on open-book strategy. It is a daylong exam. It continues from 8 a.m. until 5 p.m. It covers all aspects of relevant engineering courses of the field chosen by the engineer. Problems and questions set for the exam is concise, direct, and evaluating. They are not meant to be of challenging nature. Nor are they to destroy the engineer confidence. The engineer could even find similar problems and solutions in books containing questions and answers of past years exams.

After the engineer passes the exam, the Board assigns him a number. This number starts with a letter that describes the field of certification. The engineer then has to issue and use a rubber stamp. The stamp should be made to follow a certain configuration, with preset wording. The engineer shall always use this stamp to identify all his future works. Thus, the work done by an engineer is rightly related to him. This is the legal instrument of identification used in the presence of Law.

The Board follows on the performance of the engineer through many channels. One of the channels is the periodic renewal of the license certificate every three years. Another is the monthly magazine (periodical) that contains all the new Laws, the directives of the Board, the relevant issues that is of concern to the engineering practice, and the news of other engineers, through legal cases and penalties. This periodical is now set on the Internet. Any interested engineer can reach the periodical at any time.

All cases and actions taken by the Board are summarized in two adjacent column formats in this periodical. The left column contains the name of the engineer penalized, and the penalty assigned to him, both in Bold letters. The right column contains the case, the legal aspect, the discussion, and the penalty set. All reasons and actions are clearly construed. None is left for the intelligence of the reader. None is left for guessing work. None is hidden from the public.

Penalties vary between disciplinary suspension of license for many years, to a financial fine. Some penalties may contain booth suspension of license and financial fine.

Violations penalized vary between a practice of the engineer with an expired or suspended license to professional deceptive advice. Every violation is studied in full detail. Ample time is taken to challenge the facts presented. Judgement is based mainly on confession by the engineer of his violation. The Board takes all the measures to secure fair judgement and disciplinary act.

The penalized engineer is watched carefully by the Board. This requires all channels be open to the Board. All works taken by the engineer through any contractual situation are reported to the Board. In a moonlighting situation, the case shall be reported when final documents are presented to the Board for certification, or when a legal standing arises between those involved. Municipalities, engineering offices, and those involved in the engineering practice are well informed of the actions taken by the Board. Hence, any violation on the part of the engineer is immediately reported. This clarifies the required size of cooperation between the different governmental agencies. It is not sufficient to certify an engineer to guarantee good practice. There should exist an immense flow of information supervised by those involved to certify the



control of the operation. This involves laws, decrees, bylaws, and open channels between different agencies.

Engineering cases are mostly of professional nature. They involve science and technology. It is not admissible to use normal judiciary practices to judge and penalize. Thus, special laws should be written to adequately state these facts as basis of the judgment issued later. Although the nature of any violation is based on violating the Law, the law itself should be clear. Criminal, civil, and martial laws do not apply directly to engineering violations. Special versions of those laws should be extracted. Penalties should be imposed. They should carry the strict action of putting an end to such violations. Nevertheless, they should be merciful. After all killing the engineer or preventing him from earning bread for his family shall not be useful for the community. Nor shall leaving the engineer at large do any good for the community.

### **Discussion: Why the Engineer?**

Absence of clear legislation is not a good reason to do away altogether with certification. However, this should be a motive to inject more and more bylaws to monitor the practice. Practice is not an imaginary field. It is a very well rooted field both scientifically and technically. Bylaws shall stem from these roots. These bylaws must organize the practice. The suggested Board assigned by the government to certify engineers shall not in any case set rules for fees or be a means of taxation. The Board shall be supported by income from selling printouts of laws and bylaws, certification fees, annual membership fees, arbitration fees, and government participation.

The laws issued by this Board must follow certain path to reach its goals. This path is circumscribed by the following outlines:

First: only those certified are allowed to practice. This limitation shall exclude all those adventurers who ride the surge of the wave. This will also keep the rights of all involved, especially the client.

Second: all contracts between clients and engineers should be stamped by the engineer's special identification stamp issued by the Board. This will give a legal power to the agreement. It is exactly as if the contract was registered with the Board. It shall guarantee the rights of both the client and the engineer in case of dispute. The Board can resolve immediately any dispute arising between the parties, by the power embedded in the use of the stamp. Finally, it shall improve the level of fees earned by the engineer, by excluding those uncertified.

Third: the Board shall never use this power of legislation to amass taxes or burden the engineer with unnecessary fees. The Board must be an independent entity, which can act freely to resolve disputes and issue judgment.

Fourth: the Board must issue laws and bylaws to regulate the engineering practice. These laws and bylaws must serve the purpose of fair practice and ethical methodology. They should not be punitive. They must not be means of destruction of the engineer's practice. They must be based on scientific, technical, and legal basis that serves the community.

Fifth: the Board must interact with all the governmental and private entities that participate in the engineering practice. Otherwise, the Board will not be of any use as a public tool. If the Board is disassociated from those involved, there shall be an immense number of Boards setting rules and penalizing the engineer.

Sources of faults committed by the engineer can be either:

- 1- Design mistakes or shortcomings.
- 2- Engineering judgment and false opinions.
- 3- Deficiency in supervising the works in the field.
- 4- Unethical behavior.

Each of these faults can be traced by the Board based on scientific and technical reasoning, except that related to unethical behavior. Ethics and similar notions are very hard to define in technical or scientific terms. They are subjective. They belong to the society's heritage. They are partial. Hence, judging a case with ethical measures shall be practiced only with absolute care.

#### **Conclusions:**

#### ***All Those Involved in Building Projects should be Certified***

The engineer is an important part of the building industry. His work level shall improve when certified and followed up by a proper Board. This Board must have clear laws and bylaws that shall form the tools to judge the engineers performance. Those assigned as executives in the Board must be themselves qualified engineers and law graduates with relevant background.

However, the engineer's certification forms only a single corner of the many-cornered field of engineering practice. Other corners are the client, the contractor, the skilled labor, and the municipality. None should be left outside the certification circle.

The client must be educated to assign work only to those certified. The client must understand the limitations set on his requests when designing or supervising a project.

Special Board must certify the contractor to elevate him to the technical level that serves his client and make him interact with the engineer.

The skilled labor must be certified to guarantee good practice and proper workmanship.

The municipalities must have clear and definite laws and bylaws defining the use of land, the required documents and contents of a project design package, and the required legal proofs of proper inspection and supervision.

These actions shall lessen the burden on the engineer. They shall improve the quality of the work in the building industry. They shall lead to fair challenge between those involved in the building industry. Finally, they shall reflect on the improvement of the community as a whole.

#### **References:**

1. Consumer Protection Agency Board of Directors for Engineers and Land surveyors, State of California.