

Construction management system

— Implementation of construction site inspections by the Board of Directors.

Kenichi Niikura

Corporate Planning Department, Maeda Corporation

Abstract

The management system that shows the actual condition of construction sites clearly to the board of members is one of the best solutions and leads beneficial solution for the whole management.

To establish better management system performing, “construction site inspections by the Board of Directors” is one of the effective tools to understand and to get the reality at job site in hand. The following terms describes how we have been managing this methodology and result concerned.

1. Introduction

Current reduction of domestic investment for public-works and projects, bidding restructuring, and international marketing lead the competition and price sensitiveness. To be more competitive in the market, it is needed to establish strategic management clearly appearing the advantages of the company.

Which business strategy will give the best advantage leading to predominance? There is found in the building of a management system which suits the characteristics of the construction industry.

One of the significant business method in the construction industry is products are made to comply with individualized orders. The product, buildings, factories, and such, constructed for clients are varying from their conditions, and the same products would never been existing. Workers, equipment, technology, etc. are brought together at a construction site, and the progress of construction is governed by the site manager.

The branding of the construction is established not from the head quarter, but it is by the site

performance, since the construction itself is produced by the general contractor’ s direction with skillful workers, facilities and technologies.

While the construction is mostly performed at the site and not at the head quarter, the company (the head quarter) may have risks of loosing the profit from serious trouble occurring from products are made to comply with individualized orders. Thus, the branding achievement and the risk reduction are the most important term for establishing effective management

In view of the above, the tight relationship is the key of successful management, and construction site shall considered as the essential point of the business. To proof the above determination, survey of “Construction Site Inspections by the Board of Directors” has been developed.

While the farsighted Board members are carrying out the on-site inspection until now, many are practiced by tacit knowledge, and the achievement of the inspection has not been identically proven. Moreover, such practices were not incorporated into a management system in the company and/or sometimes exceptional-cases

confused were reported due to the practices pretended.

Then, I summarized the outline here, in order to establish the process of construction site inspections by the Board of Directors as a management system.

1-2.The purpose and main effectuation matters of construction site inspections by the Board of Directors.

Board members are strengthens corporate governance by site inspections, and builds a fiduciary relation with an employee of a company, and maintains an internal control firmly.

Furthermore, when a major accident occurs, the CEO or board members performs acting as a leader immediately, and devises an emergency measure and recurrence preventive measures.

Moreover, to achieve higher value creation, they perform brand improvement continuously. It shall also leads discovering new technology and a new venture, and performs the priority allocation of a resources on business.

The simultaneous carrying out of these matters are what lead to long-term growth.

Moreover, it is necessary for them to gather opinion gained from site inspections regarding faults related to such issues as laws and regulations imposed upon the construction industry. It is then his duty to put forward to propose to financial world and related industrial association for the purposes of rule amelioration to the related regulations. This can also contribute to improvement social responsibility.

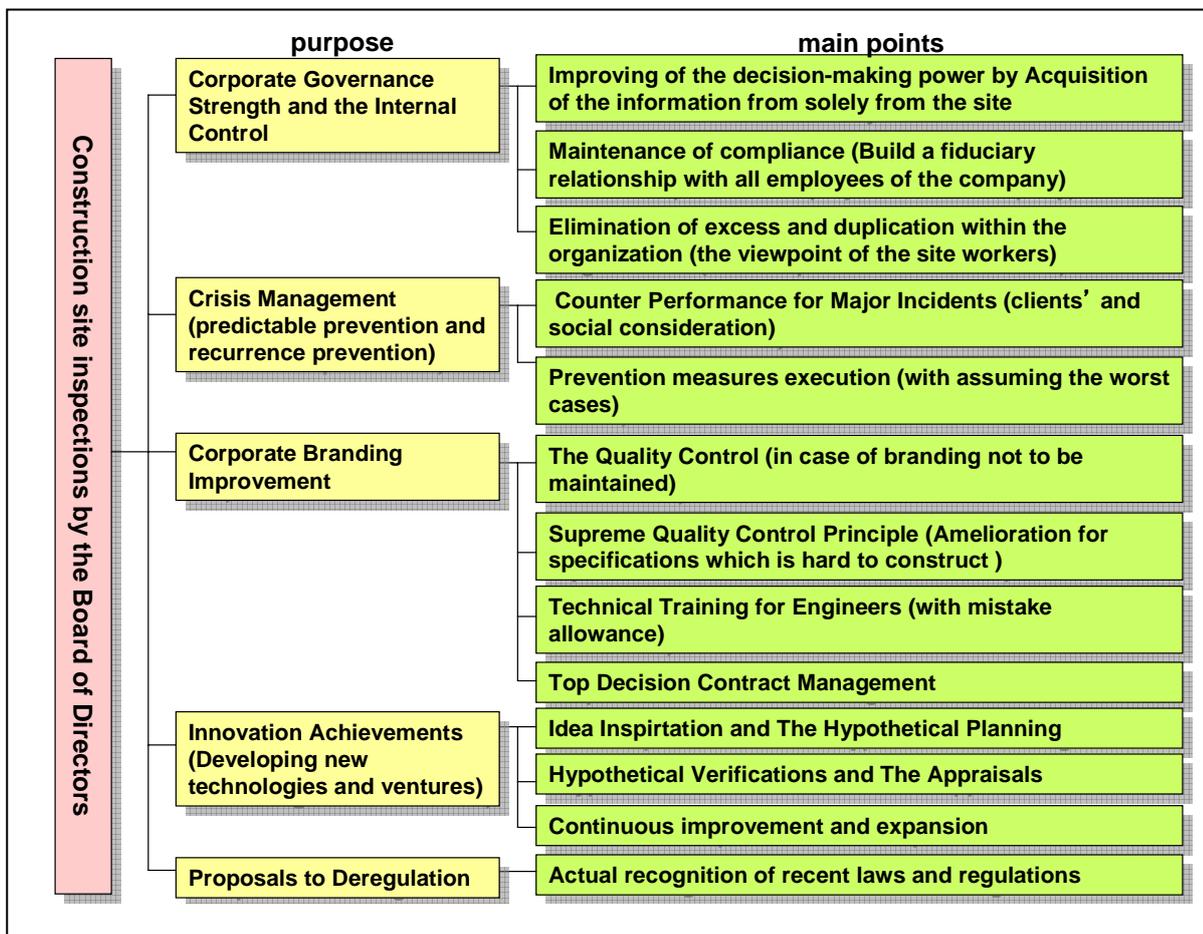


Fig. 1-1. The purpose and main points of construction site inspections by the Board of Directors.

2. The subject of this research

The targeted industry and its business scale is defined as follows.

- (1) The type of business : General contractors (civil engineering and construction business)
- (2) The definition of the site: Construction Work Sites and On-site Offices
- (3) Business scale
 - 1) Sales Amount:
200 billion to 500 billion yen
 - 2) Number of Employees per Company :
3000-4000
 - 3) The number of the sites per company:
400 to 700 (the sites are widespread and throughout Japan)

3. Corporate Governance Strength and the Internal Control

3-1. Corporate Governance Strength (Improving of the decision-making power by Acquisition of the information from solely from the site)

Generally, the companies perform their organizational reformation in order to maintain the decision-making functions, such as functional assignments, delegation of the authorities, and the

spin-out, for their business expansion.

However, their macroscopic information tends to be highly reliable for the board members due to the less mutual devices are established within the organizations.

The above mentioned macroscopic information refers to the summarized reports indicating as their statistics and data bases. They may be time consuming (and the board of members may not recognize the actual condition on time), and leads unfaithful reports are provided.

These matters may lead weakening the corporate governance from time consuming decision makings, and inappropriate business strategies from wrong information.

The board members shall recognize accurate and actual site information. In the construction industry, the information acquired only at sites mainly refers on table 3-1., and it inspects from the viewpoint of participant, such as a worker and a user.

The board members are able to practice the advantages/disadvantages of the company from actual recognition of the latest site conditions and situations. The combination of accurate and up dated information and macro factors is necessary for the board members executing the corporate decision makings.

table 3-1. Information acquired only at sites (construction industry)

Classification	Target	Contents
Human Resources and The Corporate tradition	Representatives	Characteristics of the site management and the leadership
	Offices and The Facilitation	The Office Atmosphere and The Facility Organization
Efficiency Improvement (reducing the overworks)	Technical Workers	An impossible posture, an unefficient motion, expression, workers attitude
	Adoption of construction methods and technologies	Construction nature
	Temporary equipments	The loss of operations
Clients Evaluations	Constructed Product	Performance (a trial product and projection are included), user-friendliness after completion
	The neighborhood, a place along the route, and the area	The influence on environment, scenes, the characteristics of the area
	On-Site supervisors, and Design Offices	Effective Communications for Demands

3-2. Maintenance of compliance (Build a fiduciary relationship with all employees of the company)

Generally, it is hard tasks managing and controlling the organizations with thousands employees. The organizations would be divided in several divisions and it may result in losing the company royalty by them. To keep the internal control, some prevention tasks such as internal auditing system are executed.

However, the organizational inherits such as injustices, moral disorders, and unnecessary investment, can not be prevent perfectly by their sample checking procedures and/or penalty regulations. In worth cases, the sample checking procedures and the penalty regulations may accelerate inappropriate organizational communication, and may result in fails of managing strategies.

Thus, positive evaluation system (evaluating “good results” rather than modifying “bad results”) would work better for establishing reliable relationships with employees, aiming to the mutual goals, and it is necessary for the companies maintaining. I think a best means that is unifying a vector according to trust and a fiduciary relation, and maintaining compliance.

Especially, at distanced work sites that respectful self intimate work performance and the same goal achievement mind are required; the site inspection by the board members with the positive evaluation leads better and accurate solutions for several value prevention factors on time.

Also, rewarding the revenue as bonuses to the employees resulted from the renovation and the problem solving cooperated with the site workers build reliable relationships within the organization, and encourage them for better and faithful performance.

3-3. Elimination of excess and duplication within the organization (the viewpoint of the site workers)

There are risks of sectionalism and duplication within the organization, while specialization increases the efficiency of work tasks. Such phenomenon is possibly unreported, and it is hard to define to the board members.

Reviewing sites management systems from the inspection as the stand point of site workers may correct the futilities and double standards.

4. Crisis Management (predictable prevention and recurrence prevention)

4-1. Counter Performance for Major Incidents (clients' and social consideration)

The CEO or board members shall inspect damages at the site and execute appropriate decision making for prompt solutions and alternative expenditures for prevention. Emergency measures may result in losing clients' and final consumers' expectations, in the event of site managers feel too much risk taking for the responsibility, and conduct solely with their limited budget and obligation.

In such events, CEO or the board members shall not to be compromise for restoration expenditure, and perform with the corporate responsibility for compensations.

Maintaining the brand quality and long-term reliable relationships with clients, expenditure (sometimes result in billions of yen) for restoration of large-scale quality defects and incidents shall be determined.

4-2. Prevention measures execution (with assuming the worst cases)

The earth quake-proof under constructions are prepared, however, if the site workers are devoted to the construction, crisis management tends to be neglected.

The board members shall note expected risks such as large earth quakes or terrorisms and inspect sites with questionings. These performances make the site workers aware for the risk management. Announcing ideas to all workers from the site inspections may lead alternative awareness.

By repeating this process intentionally, the crisis management system of time of peace is trained.

5. Corporate Branding Improvement

5-1. The Quality Control (in case of branding not to be maintained)

For example, as a result of concentrating on cost reduction too much, there is a case where performance is not beautiful or consideration is not made by temporary safety. Even though the requirements for construction design and standards are satisfied, such phenomenon can not to be eliminated due to different degree of recognition between sites.

In order to maintain and improve the brand (reliable quality control), this phenomenon shall be eliminated. The board members shall find serious problems and provide appropriate directions from observing the construction processes at the on-site inspections.

These aspects are hard to be standardized in documentation, however, disclosing board members' determination with before/after circumstances to the administrative departments leads standardized goal achievement within the organization.

5-2. Supreme Quality Control Principle (Amelioration for specifications which is hard to construct)

There are specifications that the designing priority leads cost inefficiency, and the quality defects were found after the completion. Also, in reverse cases, there are specifications that the structures are too excessive for requirements, lead difficulties of the construction works.

In case of cooperating with other company's construction design, nomination of design correction may not to be acceptable, while own design is easily amended.

The board members shall recognize the matters from the site inspections, and do not accept such defaults. Their concrete performance to clients and design offices is required. Although, the board directors are able to negotiate to them directly, it may also lead the site manager negotiate to the clients and the design offices as of the stand point of the board directors.

5-3. Technical Training for Engineers (with mistake allowance)

There are cases that construction methods nominated by the sites and recommended by inspection side are against each other. Their demanded quality is satisfied, the methods nominated by the sites shall be adopted, while they shall review the result of test constructions or real constructions with re-inspection. In case of the test constructions, the board members re-judge the method with their data comparison. In case of real constructions, the board members determine the data comparison and allow the decision making reflected to the next construction.

Thus, the long term engineers training with appropriate allowance and conviction improve the construction skills and allow them for self esteem.

5-4. Top Decision Contract Management

Disclosing the board members site inspection system guarantee the perfect quality control to the clients leads advanced performing and provide credibility for the top decision contracts.

It is also possible establishing mutual business relationships with high reliability from their prompt and accurate report to the clients (especially for CEOs of clients).

6. Innovation Achievements (Developing new technologies and ventures)

Concerning for the business life cycle, the new technologies and ventures innovation is absolute task for effective management strategy. However, these innovations may result in failure, or take several years to supply. There risks may appear on the short term balance sheet as minus.

The board members reduce these risks with repeated short-term hypothetical verification and inspection, and provide follow ups for the new ventures and technologies until they become profitable.

In case of practicing many constructions categorized in the same technology, it is possible to expect numerous time saving from sharing each site's results evaluations.

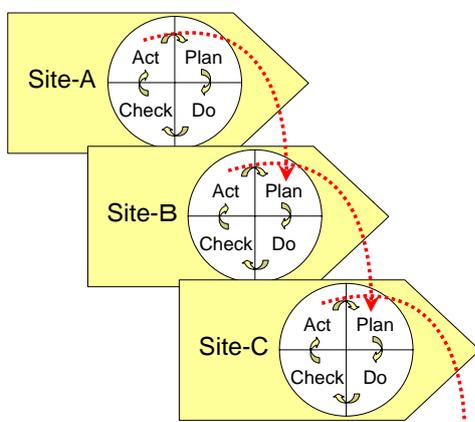


Fig. 6-1. Succession of amelioration between the sites in construction industry

6-1. Idea Inspirtation and The Hypothetical Planning

From the communications and phenomenon at the site inspections, the idea inspirations and the hypothetical planning are expected to be developed as follows.

- (1) Application of Cross Industrial Technologies
- (2) Discussion of Applicable IT Technologies in the Construction Industry(and recruitment of new ideas.)
- (3) Discussion and Recruitment of Technology Solutions(for achieving double productivity)

6-2. Hypothetical Verifications and The Appraisals

In order to judge the reliability of new ventures and technologies, the board members request the execution to appropriate work sites with budget. Also, in case of these new ventures and technologies are considered for practical uses, the board members request the sites for their approval.

The board members judge the progress/withdrawal of new ventures and technologies from the site inspection.

6-3. Continuous improvement and expansion

Repeated hypothetical verifications in short –term lead continuous improvement (of the technologies.) Also, to share the latest ventures and technologies within the organization, the cost effectiveness data will be disclosed to appropriate sites when they reached at practicum uses level. In addition, there are technologies developed by independent efforts at sites.

The board members discover and promote such technologies that may not be appeared by the site inspections,

7. Proposals to Deregulation (actual recognition of recent laws and regulations)

In accordance of the time and environmental shifts, there are some laws and regulations do not suit to actual conditions of in the industry. On the other hand, new laws and regulations may be demanded for the latest circumstances.

The Board members shall recognize the matters at site inspections and report their malfunctions. Also, the Board members observe and recognize the suitability of new laws and regulations from the site inspections.

The Board members summarize the above information and propose better solutions at the economic and the industrial associations. At the proposal, their solutions are not to be presented as representatives of profit seeking companies, but are as social stand points.

8. The effect by construction site inspections by the Board of Directors.

To be competitive and lead the business growth, the site inspections by the board members provide the following effections.

- Optimize the corporation governance and the organizational strengths.
- Contribution of the social demands with continuous innovations and quality supremacy.
- Achievement of the social mission by the prevention strategies of a latent crisis (violation of laws and ordinances, big incidents, quality defects)

The inspections by the board members provide opportunities of long-term investment with the risk takings of budgeting and short term expenditures.

Moreover, the inspections lead the board members determine the appreciation of the constructions and sincere to the engineers at the sites. These mind renovations may produce alternative corporate value in the market.

References

”TQM in the CONSTRUCTION INDUSTRY”, Matabee Maeda, Yasuji Maeda, Asian Productivity Organization, January 1997

“Shintaichi Keiei” Yuichi Haneta, JUSE Press Ltd, March 2006

“Watashi ga Tsutaetai TQM no DNA” Shoji Shiba, “Journal of the Japanese Society for Quality Control” Vol.36, No.4, 2006

“Hinshitsu Keiei System Kouchiku no Jissensyu”, Katsuya Hosotani, JUSE Press Ltd, June 2002

“Mizen Boshi no Genri to sono Shisutemu”, Kazuyuki Suzuki, JUSE Press Ltd, November 2004

“Kai yori Hajimeyo”, Matabee Maeda, Shogakukan Inc, February 2004

“Kigyō Keiei to Genba Ryoku” Isao Endo, Union of Japanese Scientists and Engineers, July 2006