

New Trial for Imposing Mandatory Role and Responsibility of Construction Clients on Construction Safety and Health Management System in Korea

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Abstract: This paper introduced the new trial in the files of construction safety and health management in Korea, which included construction clients into the safety and health system. In addition, this paper proposed the detail role and responsibility of construction clients in the whole process of a construction project. Korea government recently amended Occupational Safety and Health Act in order to reflect the change of work environments. Among various important changes, the outstanding trial in the construction part was to include the construction client's duty for preventing the industrial accidents (The amended Korea Occupational Safety and Health Act promulgated in January 15th, 2019). In Korea, most of the role and responsibility about workers' safety and health management have imposed on construction contractors since they employed workers. There was no specific duty to the construction client for workers' safety and health even though some accidents occurred by construction client's requirements and construction clients had the authority to change some inapposite requirements. Thus, reflecting various research results and social demands, Korea government decided to give a duty to construction clients at the stage of planning, design, and construction phase. Following the amendment of law, construction clients should make and manage the safety and health file at each stage. To make the contents of the safety and health file, the detailed role and responsibility of construction clients should be prepared firstly. To define the role and responsibility of clients, a survey was performed and the various overseas and domestic similar systems and literature were examined. By comparing a decision-making system in the construction process and influence of construction clients on safety and health system, a detailed role and responsibility of construction clients was proposed for the planning, design, construction phase.

Keywords: Construction Client, Safety and Health, Role and Responsibility, Duty

1. Introduction

According to the analysis of Korea industrial accidents announced by the Ministry of Employment and Labor in 2017, average fatality rate of all industries was on the decrease while construction industry's fatality rate was on the increase. In particular, the official fatality rate, which means fatal injuries per 10,000 workers, in the construction industry in 2017 was 1.90 and it represented 1.83 times higher than that of the manufacturing industry. To change the fundamental approach in reducing occupational accidents, Korea government recently amended Occupational Safety and Health Act by reflecting the change of work environments. Among various important changes, the outstanding trial in the construction part is to include the construction client's duty for preventing the occupational accidents. Thus, this paper introduced the new trial in the field of construction safety and health management in Korea by including client into the safety and health system. In addition, this paper proposed the details of client's role and responsibility in the whole process of the construction business.

2. Construction Clients' Duty in The Amended Occupational Safety and Health Act

In Korea, most of the role and responsibility about workers' safety and health management imposed on the contractor since they employed workers. There was no specific duty to the client for workers' safety and health even though some occupational accidents occurred by client's inapposite requirements and client have the authority to change some requirements. Thus, reflecting various research results (Helen L., 2008; Simon T. K. et al., 1995; Simon V., 2014; Won J. H.

et al, 2015) and social demands, Korea government decided to give a duty to the client at the stage of planning, design, and construction. The construction clients' duty, which prescribed by amended Occupational Safety and Health Act, are followings:

1. Planning stage: Prepare basic safety and health file that includes hazards to be intensively managed in the construction project and the risk reduction plan.
2. Design stage: Provide the basic safety and health file to the designer. And, make the designer prepare the design safety and health file including the plan to reduce the hazards and confirm it.
3. Construction stage: Provide the design safety and health file to the contractor who received construction project from the construction client for the first time. And, let contractor make the construction safety and health file which contains the plan for safe work and check implementation of safety and health plan.

3. Suggestion of Construction Clients' Role

Following the entire amendment of Act, clients should prepare and manage the safety and health file at each stage. To implement the clients' duty, the detailed role and responsibility of clients should be prepared firstly. By Comparing construction business actuality in Korea and client's influence in safety and health management and analyzing various overseas and domestic similar systems and literatures, it suggested client's role and responsibilities at planning, design, construction stage and derives details of safety and health file that presented in act for check implement of client's suggested role. The suggested role and responsibility of clients is shown in Figure.1.

Stage	Client	Designer	Contractor
Plan stage	Identify controlled hazard and risk reduction plan.		
Design bidding stage	Make design requirements for Workplace Safety and Health (WSH). Select designer with specialty in WSH.		
Design implementation stage	Prepare guideline about identifying and estimation of hazard. Make guideline about hazard reduction plan. Support and adjust for WSH problem in design Review design for safety	Carry out design considering WSH.	
Construction bidding stage	Supply results of design for safety and remaining hazards Select contractor with specialty in WSH and sign a contract including WSH requirement		
Construction implementation stage	Supply WSH guideline (manual) and identified hazards to contractors. Review and confirm WSH plan of contractor. Check implementation of WSH plan, WSH cost, WSH education, accident report. Audit construction sites. Check installation of health facilities and consult workers.	Make WSH plan Implement WSH plan, WSH cost, site inspection, and education. Report accidents to clients.	

Figure 1. Client's WSH role in planning, design, and construction stage

Table 1 suggests the contents of the safety and health file that should be prepared and checked by clients in each stage of construction projects considering the contents of the amended Occupational Safety and Health Act, which developed by the clients' role presented Figure 1. The suggested contents in Table 1 were validated by conducting a questionnaire survey on the construction work participants.

Table 1. Contents of Each Safety and Health File

Basic	Design	Construction
1. Business overview	1. Business overview	1. Business overview
2. Site information	2. Safety and health object and participatory organizations	2. Safety and health object and participatory organizations
3. Safety and health object and participatory organizations	3. Calculation sheet for workplace safety and health cost	3. History management of workplace safety and health management cost
4. Key points to consider when establishing a safety and health plan	4. Summary and reason for appropriate estimated construction period	4. History management of design change and construction period change
5. Major hazards and design condition for establishing measures to reduce risk	5. Risk assessment results of major hazard and risk reduction measures	5. Implementation of major hazard management
6. Major safety and health conditions to be reflected in bidding of the design and construction requirement	6. History of safety and health meeting	6. Check implementation of safety and health management
7. Assessment methods of competent designers and contractors in WSH field	7. Confirmation of preparation target of hazard reduction plan and implementation plan of receiving technical guidance from accident prevention institution	7. Result of technical guidance from accident prevention institution
8. Participants in the basic safety and health file creation	8. Client confirmation	8. Safety and health coordinator and specialist involved in the construction
9. Client confirmation		9. Serious accident management
		10. Client confirmation
		additional

4. Conclusion

In this study, the role and responsibility of clients in each stage of the construction projects were suggested and derived the contents of the safety and health files specified in the Occupational Safety and Health Act in Korea. The conclusions of this study are summarized as follows:

1. The construction clients should perform the tasks related workplace safety and health at all stages of the construction projects. The clients should identify hazards and clarify risk reduction plans to be managed at the stage of planning. At the start of design stage, clients should prepare design requirement considering safety and health conditions and select designer with safety expertise in the design bidding stage. At the stage of design implementation, clients should check design documents for safety meaning the consideration of work safety and health situation. At the stage of construction bidding, clients should supply results of risk reduction plan developed by designers to the contractor, select the contractor with specialty in safety and health field, and sign a contract including WSH requirements. At the construction implementation stage, clients should supply WSH

manual and identified hazards to the contractor. And, clients should check WSH plan created by the contractor and implementation of WSH plan.

2. According to the amended Occupational Safety and Health Act in Korea, construction clients should perform some duties in planning, design, and construction stage. Clients should create the basic safety and health file at the planning stage. At the design stage, clients' duty is to provide the designer with the basic safety and health file and make designer prepare the design safety and health file containing the results of design for safety. At the construction stage, the client should provide the design safety and health file to the contractor and make contractor prepare the construction safety and health file including the safety and health plan for non-allowed risks and confirmation of clients about contractors' implementation of safety and health plan.

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