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Analysis of Consulting Reports on Defect Disputes in Apartment Building

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Abstract

The main processes involved in a defect dispute are consulting, reviewing, and finally judging as an arbiter. This process of defect consulting produces a defect consulting report, but business practices and standards of judgment will differ among consultants, and have many problems. This study reviews the structure of a defect consulting report and considers the structure's problem, which is that it is not standardized. To achieve this, data of sixteen defect consulting report were collected involving defect lawsuit cases before or after 2010. The structure and index of the defect consulting reports were then reviewed, and the results are as follows. As for a structure based on fourteen index, there are suitable that judge a outline, a cost estimate data and a consulting work item by a consulting standard. Furthermore, analysis by each common parts and private parts is considered as appropriate about consulting items and estimate by standard. However, consulting item in construction progress and responsibility period for security that related on a cause and a responsibility of defect need to complement. Meanwhile, the first thing of issues are connected a defect consulting is urgent a standardization for a defect type.

Keywords : consulting report, defect dispute, apartment building

1. Introduction

1.1 Research background and objective

As society and the economy have developed to the point of reaching a plateau, there has been a rise in interest in the efficient use and management of existing building structures[1]. In line with this trend, there have been continuous disputes regarding the diverse problems found in apartment buildings, to the point that this has become a social issue[2]. Mainly, the disputes arising from such defects are investigated through a defect appraisal, which is reviewed and then finally ruled on by a judge (usually at a court or mediation committee).

A defect appraisal can be considered as an appraisal report on defects (hereinafter appraisal report), but the people who make the appraisal reports have different business practices and different criteria on which the defect is assessed and judged, and this difference has been reported as a problem. In a lawsuit or meditation system through which any dispute on a defect is settled, the appraisal reports made in the field, which function as the eyes and ears for the final judge, are very important because the questions of whether a defect is confirmed, whether it is light or serious, and whose responsibility it is will be answered based on these reports. Due to the economic downturn in the construction industry, careless appraisals caused by fierce competition among construction companies and faulty appraisal resulted due to conflicts of interest surrounding of the problem have been raised as a problem[3].

Therefore, this study aims to establish a plan for

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an improved standardized appraisal system by reviewing the appraisal report system and identifying aspects of conventional defect appraisal work that are not standardized.

1.2 Research scope and methodology

The apartment buildings dealt with in this study are limited to those stipulated in the construction law, and the cases for which court appraisal is usually conducted in the event of a defect lawsuit. All the cases examined in this research were selected from among those that were closed in the 1st trial. Appraisal reports for 16 lawsuit cases were obtained, and compared in terms of their composition system.

On the other hand, the study was conducted through the following procedure. First, related previous studies of defect appraisal were reviewed to discover the factors for the system analysis of defect reports. In addition, the basic framework was determined through representative cases of lawsuits regarding defects, based on which the composition system of the 16 lawsuit cases were compared and reviewed. Lastly, an improvement plan for the problems found in the composition system was proposed.

Literature review	·Literature review about defect dispute
▼	
Set up a research structure	·Collect and review of defect consulting report ·Draw a structure of study
▼	
Case study	·Compared analysis on defect consulting report
▼	
Suggestion of improvement	·Diagnosis of detailed problem on defect consulting report`s structure ·Suggestion a improvement on defect onsulting

Figure 1. Research methodology

2. Literature review and analysis system of defect appraisal

2.1 Review on the major studies on defect appraisal

2.1.1 Issues reviewed by major study

Disputes on construction defects have been studied from different angles, but there has been little study focused on the defect appraisal report. The defect appraisal was reviewed by focusing on the following studies due to insufficient number of the related studies. Yoo[4] was critical of the fact that the actual appraisal procedure was overly "simple" and "formal" despite its significance and high level of complexity. He proposed the idea of deliberation between disputing parties by standardizing the appraisal criteria, appraisal data and appraisal objects to minimize the disputes.

In addition, Yoon[5] highlighted the following problems related to construction appraisal: the items to be appraised are too numerous, it is hard to determine who is the responsible body for each specific item of each process, and subjectivity of the appraiser is unavoidable.

Kim et al.[6] pointed out some problems in the current appraisal system, in that the evaluation criteria for the specialty of the defect appraisal are limited to the conventional national certificates (technician and construction engineer), and contended that the stipulations or criteria for participatory engineers in a defect investigation or court appraisers should be established or improved. In addition, it was found that defect investigation related with concrete cracks had no significant differences compared with the overall safety diagnosis.

Lee[7] sought an improvement plan, mentioning some of the problems with the defect diagnosing companies. He emphasized the problems of selecting appropriate companies, the terms of conditions of

contract and fierce competition among related companies, and suggested measures to address the problems.

2.1.2 Limitations of the previous studies

The limitations of the previous studies can be summarized as follows. Defect appraisal was not clearly defined, or the work of defect appraisal was not clarified. The strong opinions of interested parties or the industry were incorporated without close and thorough analysis and discussion of the defect appraisal system. In addition, there were no solid grounds and sources for the problems raised, and the problems were enumerated without any research showing concrete examples. For this reason, it is hard to determine the studies' focus, and the practicality of the measures proposed in those studies is a concern. For example, in one study the main issue was to improve the skills of the investigators, but closer scrutiny of the text showed that it discussed an appropriate salary and wage system for the service contract, which was not limited to defect appraisal but covered the entire construction industry.

Likewise, in the studies related with defect appraisal, diverse issues were covered to discuss at once, which results in a low concentration of each study. In particular, the studies were not limited to a specific and concrete objective, and tried to generalize the argument to all work types, which had little correlation. Thus, the research findings of the studies are considered to be difficult to utilize.

2.2 Analysis system of this study

There are no standardized mandatory criteria for defect appraisal reports and the defect appraisal reporting system has not been specified. For this reason, a basic framework is needed to establish the analysis system for representative cases of defect appraisal reports. All composition items of a defect appraisal report were first enumerated, and items with the same content but different names were grouped considering their level of correlation with each other. Based on the analysis framework, each of the cases was analyzed in the following chapter.

1) Outlined appraisal items (A1, A2)

This is composed of general items including the year of the building's completion, the number of buildings and households, the main structure layout(A1) and the inspection condition of appraisal process and procedure(A2)

2) Appraisal criteria(B1)

Appraisal criteria refers to decrees utilized as the criteria in defect appraisal (Enforcement Decree for the Housing Act, Civil Law, Formerly the Decree on the Management of Apartment Houses), or technical criteria (Specification for the House Building Construction, Standard Specification for a Construction Project, Standard Specification for Civil Works, Standard Specification for Gardening Works).

3) Cost calculation criteria(C1, C2)

Unit cost criteria for cost calculation including defect appraisal(C1: Standard of Estimate and itemized unit cost, etc.) refer to the quantity calculation data (C2: quantity data) based on the area repaired(dimensions such as width and length of a repair), and the repair method(materials and method used in the repair). The total repair cost(F1) was calculated based on the aforementioned data.

4) Detailed appraisal items(D1)

Appraisal items are the specific items to be investigated, including problems related to cracks, waterproof failure, broken tiles, and withering of trees. Depending on the defect lawsuit case, the items are found to be usually 10 for a simple and small case while there can be more than hundreds for a large and complex case(up to 500 items maximum).

5) Appraisal items by criteria(E1~E4)

By type of ownership, the items can be divided into shared(E1) or owned(E2); by process into construction, civil engineering and machine(E3); by defect guarantee period (1 to 10 years) into each phase during which a defect is found(E4).

6) Total repair cost(F1)

The total repair cost refers to the total cost required to repair the all of the defects found in a dispute, which is calculated based on the repair cost data collected. In other words, it is the claim requested by the plaintiff to the defendant in a lawsuit.

7) Repair cost calculation by criteria(G)

The repair cost calculation method can be divided according to different criteria: ownership(G1), process(G2) and time(G3). More specifically, by ownership type, the repair cost can be calculated differently based on whether the defect part is shared or owned. By process it can be calculated differently based on the special work done in the construction. And by time, it can be calculated differently based on the time in which period of the defect guarantee the defect(s) was found.

Table 1. Structure of defect consulting report

Index	Detail of index
A1	General information
A2	Inspecting condition
B1	Judged standard of defect
C1	Construction standard production unit system
C2	Quantity take-off, construction cost data assembly
D1	Detailed defect list
E1	Consulting item in common part
E2	Consulting item in private part
E3	Consulting item in construction progress
E4	Consulting item in responsibility period for security
F1	Total cost of repair
G1	Estimate of defect repair cost in common part and private part
G2	Estimate of defect repair cost in construction progress
G3	Estimate of defect repair cost in responsibility period for security

3. Case study of defect appraisal reports

3.1 Outline of cases

In this chapter, characteristics of and differences between the cases are discussed based on the analysis system in section 2.2. The defect appraisal reports include the detailed information, consisting of at least a couple of books and up to 10 books, and of thousands of pages, so it was not easy to collect data. In collaboration with a special appraiser, we were able to collect data from a total of 16 cases.

Looking at the different courts ruling on the cases, it can be summarized as follows: 7 cases were ruled on by Seoul Central District Court, the largest group of cases; 5 cases were ruled on by the Sungnam Branch of Suwon District Court; 1 case was ruled on by Seoul High Court of Justice; 1 case was ruled on by Busan District Court; 1 case was ruled on by the Pohang Branch of Daegu District Court; and 1 case was ruled on by Incheon District Court. In addition, by the year in which the lawsuit was filed, 2 cases were filed in 2007, 1 case in 2009, 6 cases in 2010, 5 cases in 2011, and 2 cases in 2012.

3.2 Analysis of the composition system

1) Analysis of outlined appraisal items(A1, A2)

The general items(A1) for an apartment house(complex) were found in 13 cases and the investigation conditions(A2) of appraisal process and procedure were found in all of the cases. Through the analysis, basic items are found to have been dealt with in the reports, and details and the level of the details written are different; for this reason, additional review and data collection are believed to be required.

2) Analysis of appraisal criteria(B1)

Decrees and technical criteria utilized for defect

appraisal were mentioned in all of the cases except for the 16th case. Basically, the Enforcement Decree of the Housing Act was referred to in all of the cases, but was limited to the defect type and the defect guarantee period. However, the appraisal criteria for the specific defects, and legal grounds for the defects, were not presented. Overall, only directives such as standard specification for a construction project or the design criteria for concrete structures were cited.

3) Analysis of repair cost calculation(C1, C2)

For a repair cost calculation, unit repair cost stipulated on the standard of an estimate and the quantity to be repaired should be calculated. Through the analysis, the unit cost data(C1) was presented in all of the 16 causes as an itemized unit cost. On the other hand, the quantity calculation method(C2) was presented in 13 cases.

4) Analysis of detailed appraisal items(D1)

13 cases presented the appraisal items actually inspected. In the remaining 3 cases, the detailed appraisal items were replaced with repair cost items and appraisal items for each criteria. However, the items were comprised to make a clear point to show the problem in point, which means that they are not the standardized appraisal items. With this trend, it is hard to resolve the current problem that even an identical defect can be judged as a different problem.

5) Analysis of appraisal items by criteria(E1~E4)

The most significant differential was found in the appraisal items for each criteria. Specifically, 11 cases involved a problem with a shared part(E1) while 10 cases involved a problem with an owned part(E2). 2 cases were found to have a problem with process(E3) and 1 case with time(E4). The differences were believed to have an effect on determining not only the responsible party for the defected part by ownership found on the scope but also the compensation of a lawsuit.

However, the work types need to be divided in order to determine where responsibility lies for the specific defect found due to the characteristics of a construction project. In addition, it is important that the time at which the defect arose should be determined under the defect guarantee period of the Enforcement Decree of the Housing Act to decide where the responsibility lies for the defect.

6) Analysis of the total repair cost(F1)

Total repair cost list for defect items(F1) was shown in 10 cases. For the rest, appraisal items were partially inserted, and the repair cost calculation by criteria(G) was used instead.

7) Analysis of repair cost calculation by criteria(G1~G3)

Along with the appraisal items by criteria, the repair cost calculation by criteria was also found to have the most significant differential. In detail, the repair cost was categorized by ownership into the detailed items of the total cost(G1) in 12 cases, by process(G2) in 3 cases, and by time(G3) in 3 cases.

Table 2. Comparison of details

Case \ Index	A1	A2	B1	C1	C2	D1	E1	E2	E3	E4	F1	G1	G2	G3
1	●	●	●	●	●	●	●	●			●			
2	●	●	●	●	●	●	●	●			●	●		
3	●	●	●	●	●	●						●		
4	●	●	●	●	●	●	●	●			●	●		
5	●	●	●	●	●	●	●	●			●	●		
6	●	●	●	●	●		●	●	●		●	●	●	
7	●	●	●	●		●						●		
8	●	●	●	●		●						●	●	
9	●	●	●	●		●	●	●			●	●		
10		●	●	●	●	●	●	●			●	●		●
11	●	●	●	●	●	●	●	●			●	●		
12	●	●	●	●	●	●	●				●			●
13		●	●	●	●	●				●	●		●	●
14	●	●	●	●	●							●		
15		●	●	●	●		●	●						
16	●	●		●	●	●	●	●	●			●		
Sum	13	16	15	16	13	13	11	10	2	1	10	12	3	3

4. Problems with the current appraisal reporting system and suggested improvements

4.1 Problems of the current appraisal reporting system

The problems found through the analysis in Chapter 3 are as follows:

First, appraisal items are currently presented in a defect appraisal report, but the items are significantly lacking. In particular, there are some reports that mention specification and design criteria from a technical perspective; however, the defects are not defined and the criteria for the defects have not yet been presented.

Second, there are no criteria for repair cost calculation. The data of how to calculate unit repair cost and quantity was presented, but there is no standard of estimates for defect repair.

Third, standardized defect items are not presented, and there is no clearly defined system for the items. Furthermore, the defect items were analyzed by case, which is believed to make it difficult to present its own standard.

Fourth, in terms of ownership type, most of the cases addressed appraisals related with shared or owned parts. However, the appraisals by process or by time were not sufficiently conducted to determine the causes and the party responsible for the defect.

4.2 Improvements to the defect appraisal reporting system

The following lists some alternatives that could address the aforementioned problems. First of all, the standardization of the defect items should be performed. Even though hundreds of lawsuits have been ruled on, there are still some cases of extremely different rulings on identical or similar defects. In addition, the defect appraisal has not even been effectively performed in similar cases, because there is no standardized system for defect items, so the ruling is done for the same issue from a different perspective. Therefore, the defect items stipulated in the Enforcement Decree of the Housing Act should be defined more specifically and concretely, and the potential defect items by work type should be standardized to prevent future confusion.

Second, the defect appraisal or defect repair cost calculation system should be revised in phases. There are acts and systems that have been presented in the past, but to cope with any defect found in the course of a few years or a decade in a scientific and logical manner, data should be collected in a mid-and long-term period, which should be also systematically studied based on an experiment.

Third, in terms of defect repair cost calculation, the criteria should be established that takes into account the differences between defect repair and the construction work. The repair cost is generally calculated based on the cost of construction work, but the working conditions and processes of defect repair are different from the working conditions of construction work, and thus these differences should be considered in repair cost calculation.

5. Conclusion

The aim of this study was to diagnose and the current defect appraisal work, which has not been standardized, and to suggest improvements, by reviewing the composition system of defect appraisal reports. Through an analysis of various cases, the composition of a defect appraisal report was verified, and it was reviewed based on the 14 items. The findings of this study are summarized as follows.

First, of the 16 factors of defect appraisal reports analyzed, outlined appraisal items, appraisal criteria,

grounds for repair cost calculation, and detailed appraisal items could be selected as the standard items. On the other hand, in terms of defect appraisal by criteria or repair cost calculation by criteria, analysis of shared or owed parts by ownership type is considered reasonable, but the analysis by process and time to determine the causes and the responsible party should be complemented.

Second, more than anything else in the diverse problems regarding the composition system and documentation of defect appraisal reports, defect items should be defined and standardized in the major parts where the defects are often found, as well as the defect types by work type in a construction project to reduce the confusion appraisers currently face.

Third, the defect appraisal and repair cost calculation should be complemented. To do this, the related criteria should be revised in phases, and to cope with such defects in a more scientific and logical manner, the data should be collected over the medium and long term, and a more systematic study on the data should be conducted.

On the other hand, the criteria for repair cost calculation needs to be prepared by taking into account the differences between repair work and construction work.

This study can be utilized as fundamental data to establish a standard system for defect appraisal work by specifying working processes and phases and by distinguishing the mandatory work from selective work for a more complete defect appraisal.

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