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ROLES AND RELATIONSHIPS BETWEEN ARCHITECTS AND CONTRACTORS BASED ON CONTRACTOR-DESIGNER ISSUE IN JAPAN

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ABSTRACT: In Japan, it has been argued between architects and contractors that which process is desirable, the traditional process or the design-build process. It is called the contractor-designer issue. In 1968, Kajima Corporation chairman Morinosuke Kajima and the Japan Architects Association had a public controversy over it. On the other hand, in practice, architects and contractors have secured quality of buildings thorough a close communication in the design and construction process of building. What are the relationships between architects and contractors? What roles do architects and contractors have in practice? This study has two aims. First one is to analyze the contractor-designer issue based on roles and relationships between architects and contractors, and then to show conflicts between them. Second one is to consider issues which architects face in the relationships with contractors.

Keywords: Architect, Contractor, Contractor-Designer Issue, Traditional Process, Design-Build Process

1. INTRODUCTION

In Japan, beginning of the design-build process by a contractor is very old. In the Meiji era, a concept of architects was imported from the West, and then the contractor-designer issue began to be debated on: whether design should be performed in a separate organization from construction or not. In 1968, a movement toward the Registered Architects Law revision gained strength, and Kajima Corporation chairman Morinosuke Kajima and the Japan Architects Association (JAA; present the Japan Institute of Architects) had a public controversy over the contractor-designer issue.

On the other hand, in practice, architects and contractors have secured quality of buildings through a close communication in the design and construction process of building: exchanging of drawings, inserting shop drawings or directing on a building site by architects. In the present design and construction process of building, a division of roles between architects and contractors is not obvious. For example, details, which must be drawn by architects, are made by contractors as shop drawings, and design is extended to the construction stage.

What roles do architects and contractors have in practice? What are the relationships between them? As the first stage, this study aims to show conflicts and issues which architects face in the relationships with contractors through the analysis of the contractor-designer issue based on roles and relationships between

architects and contractors.

2. CONTRACTOR-DESIGNER ISSUE IN JAPAN

2.1 Origin

Until the Edo era, the design-build process by a master builder of wooden construction was the main project delivery system in Japan [1]. Master builders pulled carpenters together, and built houses, temples and shrines in Japanese traditional method of construction. They did not only construct buildings but also design them. In the Meiji era, architects came to be trained in the department of architecture at Engineering University (the following Tokyo University). Josiah Conder, a British architect, took charge of early teaching, and his students modeled themselves on architects in Europe and the U.S.A [2]. However, a concept of architects in Europe and the U.S.A. was not introduced into Japan as it was: "Fierce contentions did not happen between architects and master builders" [3], because there were few architects and they designed western buildings based on modern technology. What's more, before modern times, a master builder did not regard design as an economic activity and included design charge in construction price. Therefore, he could construct even if an architect designed.

After architects' design firm emerged and design changed to an economic activity, still a master builder

undertook both design and construction. There emerged some construction companies, which also undertook both. Therefore, it was difficult for general people to understand value of design, and then architects appealed for the traditional process. It can be said that was a start of the contractor-designer issue.

2.2 Summary of Kajima Controversy

After 1925, JAA had continued a campaign for the Registered Architects Law legislation [4]. However, the Registered Architects Law legislated in 1950 was not satisfactory for architects, so they developed a campaign for the Registered Architects Law revision in order to clarify architects' profession. JAA wrote out the Design and Supervision Service Bill (Service Bill) and started to a campaign for its legislation in 1967. The same year, the Legislation Bureau House of Councilors drafted the Design and Supervision Business Bill (Business Bill), whose contents were not satisfactory for JAA. May, 1968, JAA announced "an opinion report opposed the Design and Supervision Business Bill (legislation by house members)" by the name of Gunpei Matsuda chairman. In the opinion report, JAA insisted architects' practice is not profit-pursuing business and that architects are responsible for practice. Prohibition against undertaking both design and construction/building materials supply was also insisted.

On the other hand, Kajima Corporation chairman Morinosuke Kajima had confirmed the conviction of effectiveness of the design-build process from experience of construction in foreign countries and skyscrapers [5]. When Kajima read the opinion report by JAA in 1968, he submitted an opinion report "on the contractor-designer issue" to Minister of Construction. In order to argue against Kajima, JAA announced a comment on trade papers and "an opinion report on the contractor-designer issue". Thereafter, the reply of the opinion of both continued for about four months (Table 1).

2.3 Contentions of Kajima Controversy

Contentions of the Kajima controversy are the following (Table 2).

(1) Which contributes to the public interest, the traditional process, or the design-build process?

JAA: It is able to buy a building at a reasonable price in the traditional process that an architect represents an owner and makes contractors compete each other.

Kajima: The construction industry is rationalized by the design-build process, so reduction progresses in costs of construction.

(2) Whether the Service Bill advocated by JAA during the campaign for the Registered Architects Law revision prohibits design practice by contractors legally or not?

JAA: The Service Bill intended to constrain the architects from construction practice in order to achieve the purification of architects' profession. There is no intention to prohibit contractors from design practice.

Kajima: The Service Bill makes contractors impossible to

design, and then design practice becomes a exclusive privilege of architects.

(3) What is the nature of design practice and supervision?

Table 1. Chronology of the Contractor-Designer Issue

1877	Education started in the department of architecture at Engineering University.
1886	The Architectural Institute was established.
1925	A request for the Registered Architects Law legislation
1950	The Registered Architects Law legislated
1964	The Architectural Administrative Meeting was called.
1966	Kajima, "in advocacy of the design-build process"
May, 1968	JAA, " an opinion report opposed the Design and Supervision Business Bill "
May 24	Kajima, " on the contractor-designer issue "
May 27	Ken Ichiura, a spokesman and Tetsunosuke Furusawa, an executive director of JAA gave a press conference.
June 1	JAA, " an opinion report on the contractor-designer issue "
June 19	Kajima, " on the contractor-designer issue again "
June 22	Ichiura gave a press conference. JAA, " a note of the contractor-designer issue (1) "
July 16	Kajima, " about making the drift of the contractor-designer issue clear "
July 18	Furusawa gave a press conference. JAA, " a note of the contractor-designer issue (2) "
August 10	Kajima, " on legal matters of the contractor-designer issue again "
August 12	Furusawa made a contradictive comment public.
September 1	JAA, " a note of the contractor-designer issue (3) "
September 28	Kajima, " as the end of the contractor-designer issue "

JAA: Contractors cannot perform supervision because the independence of a supervisor is required to protect an owner's interest. Design and supervision is not performed for profit.

Kajima: It is not necessary that supervision attends design, so when a contractor undertakes design and construction, regulation is out of the application. Architects perform design and supervision for charge. Not aiming for profit is a contradiction to it.

3. DISCUSSION ABOUT ROLES AND RELATIONSHIPS BETWEEN ARCHITECTS AND CONTRACTORS

3.1 Conflicts

We reexamine roles and relationships between architects and contractors from the contentions described in the preceding chapter, especially, discussion about (3): what the nature of design practice and supervision is. Then we give the conflicts between JAA and Kajima of the Kajima controversy. The object of examination is 5 opinions and memorandums JAA announced and 5 opinions and memorandums Kajima announced (We show them in Table 1 by the bold-faced type). Opinions of JAA and Kajima are summarized in Tables 3 and 4. Main conflicts about roles and relationships between architects and contractors are the following.

(1) Design

JAA: Architects undertake design practice because design practice needs neutrality and independence from a special and correct standpoint in owners and contractors' middle.

Kajima: Contractors should participate in design team in the initial stage of design.

(2) Supervision

JAA: Architects should undertake supervision in a standpoint of independence of contractors.

Kajima: When contractors undertake both design and construction, supervision is not necessary.

(3) Construction

JAA: Architects should not be related to construction.

Kajima: If contractors undertake construction only, it is not possible for them to keep on winning global competition.

(4) Feedback on design and construction

JAA: Architects and contractors cooperate together to get good results of feedback on design and construction.

Kajima: The design-build process is effective to get good results of feedback on design and construction.

3.2 Issues

Based on results of the foregoing paragraph, we are considering issues of roles and relationships between architects and contractors.

(1) Contents and range of practice of design, supervision and construction are fuzzy.

JAA insisted that supervision attends design and that architects undertake those practice independently of contractors. On the other hand, Kajima insisted that unreasonableness of design is pushed onto contractors. Moreover, whether contractors undertake design for free of charge in design-build process is right or wrong was discussed. They means practice of design, supervision and construction are not divided lucidly. It also means it is vague how to provide reward to design because

contents and range of practice of design, supervision and construction are not shown clearly.

In Japan, specification of it was tried when the No. 1206 bulletin of the Ministry of Construction was put out in July, 1979. In addition, the No. 15 bulletin of Ministry of Land, Infrastructure, Transport and Tourism was put out in January, 2009 as the No. 1206 bulletin revision. In No.15 bulletin, as a standard practice of design, they were provided not only standard practices in the design development stage and the construction document stage but also standard practices of detail design which is rational for designers to undertake in the construction stage. Moreover, about supervision, standard practices concerning *supervision* (collating construction with drawings and specifications, and confirming whether construction was executed according to drawings and specifications) and other standard practices (practices done together with supervision) were provided. However, neither contents nor range of practice of design, supervision and construction have become completely clear, because the level of information that has to be shown in drawings and specifications and shop drawings was not provided, for instance.

Further more, in these days, new various professions have come into being. For example, Construction Managers participate in construction projects in order to back designers up with management and cost engineering. Project Managers integrate participants and navigate construction projects. Accompanying this, it has become discussed what the range of the exclusive right of design practice is.

(2) The whereabouts of responsibility of building process is indefinite.

Because range of practice of design, supervision and construction is fuzzy, the whereabouts of responsibility of building process becomes indefinite, too. Kajima gave it as effectiveness of the design-build process that a contractor takes responsibility of whole building process. On the other hand, JAA insisted that checks by the third party are necessary in the construction stage. However, JAA did not describe who takes the responsibility of construction when an architect approves working drawings. Moreover, manufacturers might make detail drawings these days, but the whereabouts of the responsibility for such drawings is not clear.

According to hearing, in a current state in Japan, it is the majority that general contractors bear costs if buildings have defects, and it is not only in the design-build process. If subcontractors, who undertake construction, actually design, they might bear costs. On the other hand, professional liability insurance has not established enough and the joining rate is also low, so that architects might not have capacity for bearing responsibility. Therefore, inordinate responsibility is often forced on contractors.

(3) Mechanism of feedback on design and construction has not established.

JAA and Kajima insisted that feedback on design

and construction is necessary. However, about mechanism of feedback, the insurances of both are different and the discussion did not become profound. It means that mechanism of feedback on design and construction has not established.

In carrying out construction projects in Japan, architects and contractors exchanged communications closely. For example, some members of architects' firm resided on a building site in the construction stage, and then they had staff meetings with contractors and cope with problems which happened while constructing.

Contractors joined in making drawings from the design stage and architects inserted working drawings and gave oral instructions on a building site. However, such methods are not established widely but depend on each architect. They do not completely conform with the law, rules and regulations. Residence of members of architects' firm on a building site has decreased recently. Therefore, the clearer contents and range of practice of design and construction become, the less design might connect construction smoothly and quality of buildings might be secured.

Table 2. Issues and Insurances of the Kajima Controversy

Issues	JAA	Morinosuke Kajima
The Design-Build Process	It conceals a real cause of a expensive price for construction.	It is general contract, in which a contractor has responsibility through building construction and management of a project. It brings technical feedback, therefore, contributes to reduction in costs and better productivity.
The Traditional Process	To buy a building at a reasonable price, contractors compete and architects, who are in a standpoint of freedom and justice, are required.	It is not a modern system.
Direct Selection of Architect	It is a real motive of contractors for design. More about 30 percent of all design practice is a contractor's means to business.	It is a symbol of confidence in a good and low-priced building. It has no direct relationship to the design-build process.
The Service Bill	It intends to make the practical law independent of the Registered Architects Law. It intends to purify architects' profession.	It is contrary to an owner's freedom of contract. It is contrary to a contractor's freedom of business.
The Thirteenth Article of the Service Bill	It prohibits no registered practice. It means legal prohibition against design by a contractor.	It restricts targets to full-time designers, and contractors cannot perform design. So that design practice will be a monopolistic privilege of architects.
Design Practice by Contractors	It is based on the Construction Industry Law. Contractor's registration is welcome based on the Service Bill. It is performed by contract. It is in the Commercial Law.	The Construction Industry Law has no regulation on design practice. Registration as a design office is based on the twenty third article the first clause of the Registered Architects Law.
Design Practice	It is performed by a commission agreement and not for profit, so that the reward is costs plus fees for profession. /It is in the Civil Law.	It can be performed both by a commission agreement and contract with an owner's discretion.
The Twentieth Article of the Service Bill	Because of difference in the nature of contract and an agreement, contractors and designers uses different ways each other.	The logic is not correct that designers and supervisors are appointed in a free agreement and contractors are selected by a bid.
Supervision	Supervision as continuation of design contributes to an owner's interest. An independent standpoint as the third party is required to perform supervision.	It is not necessary that supervision attends design.
The Eighteenth Article of the Registered Architects Law	Contractor cannot supervise. A registered Architect protects an owner's interest.	It provides a registered architect that he should watch fully. A design-build contractor is not a target of it.

Table 3. Opinions of JAA

	Natures	About Architects	About Contractors
Design	Design practice needs neutrality and independence from a special and correct standpoint in owners and contractors' middle (May 8)	Architects undertake design practice (May 8)	The direct contractor selection is contractors' real motive to undertake design (June 1)
Supervision	An independent standpoint as the third party is required to perform supervision (July 18)	-	It injures owners' interests that contractors perform supervision for themselves because their standpoint is not neutral at confirmation (June 1)
Construction	Checks by the third party are necessary in the construction stage (July 1)	Contracting ban is necessarily required for purification of architects' profession (September 1)	When contractors, who are merchants are asked to design and perform it, it is natural that they pursue profit as activities (September 1)
Feedback on design and construction	Architects and contractors cooperate together to get good results of feedback on design and construction (June 1)	Techniques of design and part production have advanced based on cooperation of designers and manufacturers besides contractors (June 1).	-

Table 4. Opinions of Morinosuke Kajima

	Natures	About Architects	About Contractors
Design	Either of designers and contractors are not inferior and have design ability (June 19)	An architect never undertakes design and supervision practice for free of charge (August 14)	In many cases, contractors should participate in design team in the initial stage of design (June 19)
Supervision	It is a wrong opinion that design is attended naturally by supervision (July 16)	-	In the design-build process, for contractors, the purpose of the contract is to hand a finished building to owners. If the building has differences with drawings and specifications, owners should accuse contractors (July 16)
Construction	It is irrational not to allow contractors to construct buildings, which are designed by them (May 24)	-	Contractors should try to make costs lower in the design-build process to keep on winning global competition (May 24)
Feedback on design and construction	Owners have become demanding an organization which takes responsibility of whole building process directly (May 24)	When design and construction are performed by completely separated organizations, it is a prerequisite condition that designers understand construction perfectly. However, in fact, unreasonableness of design is pushed onto contractors (September 28)	When contractors undertake design, feedback on design and construction is performed enough as a matter of course (July 16)

8. CONCLUSIONS

In this paper, we dealt with the contractor-designer issue in Japan and studied roles and relationships between architects and contractors. Main conflicts between architects and contractors are the following.

- (1) Whether architects should undertake design practice independently of contractors or contractors should participate in design?
- (2) Whether architects should undertake supervision in a standpoint of independence of contractors or supervision is not necessary when contractors undertake both design and construction?
- (3) Whether architects should not be related to construction or contractors should not undertake construction only?
- (4) How to make feedback on design and construction?

Therefore, issues of roles and relations between architects and contractors are the following.

- (1) Contents and range of practice of design, supervision and construction are fuzzy.
- (2) The whereabouts of responsibility of building process is indefinite.
- (3) Mechanism of feedback on design and construction has not established.

In the future study, we want to consider what roles architects and contractors took and what relationships between them were in practice so as to secure quality of buildings.

APPENDIX

We also treated the contractor-designer issue in the following paper.

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