STRATEGIC CONSIDERATIONS FOR APPLYING CHOOSING BY ADVANTAGES IN DESIGN PROCESS

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1 BACKGROUND

Design process significantly impacts the value delivery chain in the construction project delivery process. Since the design process is associated with countless and expandable decision points, stimulating collaboration among participants, for value generation, requires the adoption of a collaborative decision system in design process. The Choosing By Advantages (CBA) decision system is identified as collaborative, since it stimulates an atmosphere of transparency, respect and participation among stakeholders in design process.

Though several research works have established the collaborative attributes of CBA, little attention has been paid to identifying practical considerations to operationalize CBA application across design process. This research, thus, set out to identify practical considerations for applying CBA across the design process. Consequently, three cases of CBA application on selected design decisions were studied to obtain empirical knowledge on the functioning of CBA in design process. Empirical knowledge from the cases was further enhanced by theories on design process management and lean design in identifying strategies to apply CBA in design process.

2 CURRENT SITUATION

- CBA application is still generally emergent in lean construction research and practice.
- A number of studies have established the collaborative potential of the CBA decision system.
- Operationalising CBA across the design process has, however, received less attention.
- Little is known of practical considerations for applying CBA across the design process spectrum.

3 WORKING HYPOTHESIS

- Value generation in design process requires collaborative decision-making such as CBA.
- Some strategic considerations are required to operationalise CBA across design process.
- Process-level design management theory offers a basis to operationalise CBA in design.

4 RESEARCH METHOD

The research fundamentally combined theory on design process management with empirical data from action-based case application of CBA on three selected design decisions.

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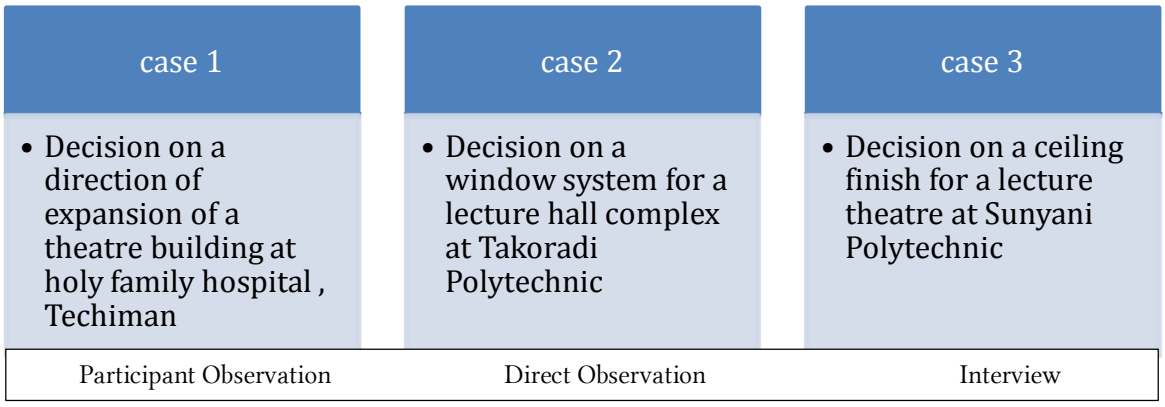

5 FINDINGS

Based on empirical knowledge from the case studies and theories on design process management, the following strategic considerations for applying CBA in design process emerged from interview and observation:

- Pre-design activities, such as value definition, form an important foundation for CBA application in design process.
- Boundary objects (i.e. animations and simulations) are required to enhance communication among participants in CBA application process.
- Stimulation of shared mental models is necessary in creating a collective vision among participants in the CBA process.
- The collaborative and value generating attributes of CBA is enhanced with the use of other lean design tools (e.g. A3, TVD, SBD).
- The design process needs to be stratified into defined decision-making frames to form the basis for CBA application.
- Time and resource constraints wouldn't allow CBA to be applied to every design decision, therefore, the need to focus on key decisions linked to project value.
- The role of a facilitator is crucial in coordinating various stakeholders and obtaining information for CBA process.

6 CONCLUSION

CBA remains an emergent decision system in lean construction research and practice. Though the collaborative attributes of CBA are established in lean construction body of knowledge, strategies for operationalizing its application in design process have received less attention. Based on empirical knowledge from the case application of CBA in the design of three projects, combined with theories of design process management, a number of strategic considerations have been identified to serve as a guide for operationalizing CBA application in design process.

Among others, the findings in this paper provides a practical guide on organizing the application of CBA across the design process spectrum by relying on the concept of decision framing in design process management. The outcome of this research can help contribute to the theory and practice of lean design management. Though the findings of this study draw on empirical data from three case studies, some of the identified strategies, for CBA application in design process, are limited by the absence of an empirical evaluation of their workability.