

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

What is the significance of DfMA adaptive challenges?

Several UK constructors have embarked upon innovative change such as DfMA as a means of reacting to economic, safety, environmental and legislative drivers. This strategy has significant advantages but true benefit and profitability will only be maximised if executed appropriately.

Despite having the potential for the greatest impact, adaptive/people-related issues are often given less focus than technical or procedural challenges. The problem is that we do not understand the impact of the adaptive challenges associated with how we currently implement off-site manufacture. As there is little information on these social impacts, we need to understand what the implications are.

The principal question is ‘why does it matter that we do not fully understand the impact of the challenges?’ i.e. what is the impact on safety, cost, programme and quality if the challenges are not understood?’

The aim of this research has been to determine the relationship between the challenges and their impact upon key industry drivers. This will consequently improve the collective understanding of the challenges and how the consequences can be mitigated or removed through enhanced implementation.

The research methodology includes a literature review of existing knowledge, including a focus on change management, innovation practices, challenges associated with innovative change and suggested implementation considerations. To establish which issues cause most concern and to determine what else can be done, semi-structured interviews were carried out with individuals from variable functions that have experienced such strategic transformation.

The research demonstrated that adaptive challenges are more significant than many of the technical or procedural challenges that are often given greater attention. Not sufficiently addressing the people-related issues can detrimentally impact upon safety, cost, programme and quality.

Armed with the understanding gleaned from this research and demonstrated importance of the subject, constructors will have greater awareness of the key issues and will be able to direct change more effectively. This will subsequently enhance performance, efficiency and profitability when making a strategic change towards off-site manufacture.

As a result, there should be a greater focus on the adaptive challenges both by industry and academia. Further research will be required to determine the detailed quantification of the challenges upon key performance indicators. In addition, there is a need for greater understanding of client/user perception relating to off-site manufacture. The subsequent challenges that relate to perceptions such as



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integrity, durability, prestige, re-saleability, quality and design-freedom can then be assessed and managed more effectively.

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