

Impacts of offsite and industrialized on professional roles



1. 0 Introduction

Procurement in construction is challenging and getting the right procurement method would go a long way to deliver a project efficiently and effectively.

Procurement in construction as defined by Cartilage (2017) is obtaining the broad spectrum of goods, materials, plants and services to design, build and completion of the project that delivers the best possible for money for the client over its lifetime.

This report aimed to explore procurement and professional roles in offsite and industrialized construction project and in context analysed the impacts on professional roles and focus on how construction project management teams are formed.

Procurement strategy is a significant outline within which construction projects are carried out (McDermot 1999). There are different procurement strategies, hence the selection of the correct procurement method may vary from clients' projects either new or refurbished, private or public. Some of the procurement choices are the design-bid-build, design and build, partnering, management contract and many more (Hughes et al., 2006).

Procurement approaches have been undertaken for a long period of time and offsite construction adopt procurement route that is suitable from inception to the final account.

The housing crisis can no longer go unnoticed. Overpopulation has created a major shortage in the housing and the various government across the world are desperately trying to resolve this issue. Experts in the construction

industry are tackling this issue by developing innovation and technology that will solve this problem (Pan et. al, 2010). The government figures estimate 300000 new homes must be built each year to meet the demand for housing populations (Barlow et. al 2002).

However, in response to this, the UK government developed a more sophisticated commercial and new manufacturing innovation for the building industries to achieve its social and economic objectives. Offsite construction approach was developed for both the housing and infrastructure building.

Offsite construction is a process of planning, design, fabrication, and assembly of building components done in a controlled location other than their final installed location to support the rapid and efficient construction of a permanent structure (Goodier and Gibb 2005). Offsite construction has significant benefits of improving productivity, efficiency, quality, health and safety, customers satisfaction and increase speed in delivery (Gibb 2005). Offsite construction has constraints which include repetitive, high initial and setup costs, incompatible regulations, poor skills and knowledge, traditional industry and market culture, and incompatible supply chain and procurement (Gibb, 2000).

The building industry consists of many operations with professionals working on different phases of the construction process. The development of industrialized and offsite has contributed to modified work processes, shifts in roles and new ways of doing things (Samuelson 2003). Moving work from the construction site to the controlled environment involved the digitalisation and innovation techniques should be updated by skilled workers in the

construction firms. Gibb, (1999) stated that shifting the major construction process from the onsite to the manufacturing environment will require proper planning from initial stages to the delivery stage. This will call for construction professionals like the clients, architect, designers, quantity surveyor, engineers, contractors, safety officers, project managers.

2. 0. Literature review on offsite and professional roles

The managing of construction projects follows a professional framework guided by the RIBA Plan of Work. The framework serves as the fundamental procedures that guide project decision. Smith (2010), explained work breakdown structure as a standardized procedure to hierarchically and subdivision of construction project into a task with its scheduler.

Koutsogiannis (2018) explained that the basis of a construction project depends on the project management. Construction projects have a continuous need for alterations and in that sense project management is key to the stability of the whole procedures from planning, designing, construction, monitoring, commissioning and operation.

Within the social housing sector, Pan et al. (2007) was of the view that, the design team, construction team, manufacturing team, maintenance and implementers had a great impact on the success of modern manufacture housing schemes due to their contribution to the development process and their role in the decision -making process.

UKCES (2012) report categorised offsite roles into three; according to its preference in the industry at the primary occupation, secondary and tertiary.

Primary roles are crucial for both the design and delivery of offsite projects, <https://assignbuster.com/impacts-of-offsite-and-industrialized-on-professional-roles/>

secondary roles contribute to delivery, such as component assembly and tertiary roles are more supportive function like office administration.

Gibb (1999) stated that for offsite construction to be successful and fully implemented, the project strategy is required to move beyond the traditional focus mentality to industrialization. Leabue and Vinals (2003) defined industrialization' a concept that goes above the use of prefabricated components and installation of structures to a rather 'visionary' system of building that incorporates not only technical aspects but also the economic aspects, management and market exploitation.

The offsite and industrialization construction involves the market examination, management, design and the selling of the finished modular, distribution, installation and maintenance. However, this process requires extensive communication channels and skills throughout the different stages (Goulding et al, 2015). Venables et al., (2004), stated that advancement and change of the materials, equipment processed will entail the enhancement of skills, effective educational policies and training that will help develop and improve those skills like an architect, quantity surveyor, project managers, engineers, safety officer and many more.

However, Gibb et al., (2013) stated that even though there is variation in describing offsite building, the report categorised the process into four mainstreams as component sub-assembly, non-volumetric, preassembly, volumetric preassembly and complete building. Engineering teams which involve the logistician, maintenance engineer, suppliers and the manufacturing engineers.

On a contrary offsite construction is associated with integration barriers as lack of knowledge by sub-contractors within the traditional wet trades, which account for the bulk of the industry. This manifests most commonly as what is perceived to be resistance to change by traditional builders and a perception that offsite is much more attractive and appealing to larger employers (Construction skill, 2010). Dainty et al (2005) report argued that the shortage of professionals and managers is critical as the manual skills shortfall as offsite is moving the workforce away from 'blue-collar' labour to more 'white-collar jobs by 2010.

As suggested by BRE (2002), skills shortages of electricians, joiners and bricklayers would drive the uptake of offsite. This was the general expectation during the height of the last construction boom in the years before the financial.

Moreover, Echert and Kazi, (2007) report addressed the need for site supervisors and project managers in the offsite buildings since monitoring is a great asset for quality and accuracy of a project and clearer understanding of work roles. However, HMSO (1962) reveals the significant impact on building in the construction productivity and quality depends on project managers.

Oakley (2017) stated that health and safety roles on offsite construction have a significant impact since most of the injuries and accident-related works have been moved to the controlled location and this has a significant reduction in ill health and environmental pollution.

3. 0 Analysis and Synthesis

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3. 1 Impact of professional role on offsite construction

Offsite and industrialized construction is progressing but not fully developed. Its impact on professional roles is limited but from literature fully adoption of the innovation will have a massive impact on roles such as architect designers and others.

In offsite, most operations are undertaken at the manufacturing site. This may lead to a reduction in the number of professionals employed onsite and will require a combination of skills and flexible roles execution. Because of this, advancement in different knowledge and skills is needed to address this issue. For an example architect and designer and the planner, roles must have adequate knowledge of energy efficiency, the precise degree of tolerance on site and others. Multi-skilling within professionals to be effective requires collaboration within working teams to provide accurate and precise project (Construction skills, 2010).

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Furthermore, recruitment process on professional's roles may change, from the literature roles that are not needed much onsite will be taking on a contract basis and other roles that too on permanent basis since much is required from such role. This help reduces the cost of labour. Whiles some workforce is at risk, some roles are also a hot cake in offsite, which means that certain roles like quantity surveyors is of high demand but still need to acquire other offsite knowledge in construction (UKCES, 2012).

Project managers from the literature, are expected to be more business oriented since most projects are of technology domain for client satisfaction and accuracy. They must understand not only the construction process but also have knowledge of team-building, effective communication and supply chain management and business (Kerzner and Saladis, 2009).

The adoption of technology and innovation in construction sectors may cause the procurement and project management practices to change. In this, the traditional approaches of design-bid-build and design and build method may change since in offsite, the volumetric approaches are agreed on before the design process. Traditional procurement approaches are systematic onsite, but procurement approaches offsite are synchronised since the different component of building modules are manufactured at the same time in different locations (UKCES, 2012).

Lastly from the literature, professionals with IT and engineering knowledge are likely to be of higher demand since most activities will be technology driven (Construction skills, 2010).

How construction project management teams are a form

Kerzner (2009) explained project management as the social than quantitative since projects are undertaken by man. The key to every project success involved the clients, project manager and the team. A team as s

A team is ' any group of people who must significantly relate with each other in order to accomplish shared objectives' (Ref 2).

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