

Digital Twin Examined, with the Role of Construction Economics and Management in Construction/cost Effectiveness.

Olalekan Omojokun (Nigeria)

Key words: Cost management; Quantity surveying; Construction Economics; Digital Twin, Construction and Cost Effectiveness.

SUMMARY

Over time, there have been agitations, research, and some conclusive solutions to challenges in the construction world, especially in the areas of construction economics and management. Some major factors, such as the environmental factor and primarily the human factor, pushed us towards some challenges that tend to extinguish the standard of construction and the excellent output in the management of works.

In this context, it will investigate some originating cause in the area of the "digital twin," a digital representation of an intended or actual real-world physical product, system, or process that serves as the effectively indistinguishable digital counterpart of it for practical purposes such as simulation, integration, testing, monitoring, and maintenance.

The environment is under pressure everywhere from human impacts. There are few places in the world untouched by human impacts, which are found in environmental degradation and a lack of monitoring, management, and maintenance of both ongoing construction works and existing infrastructure, respectively.

Certain mitigating factors must be revealed first in order to manage efficient construction economics and management, which results in efficient construction works. It is also recorded that cost overruns can emanate from the inadequacies of construction economics and management, for example: Let's look at one of the biggest construction overrun disasters in history. Everyone in the industry knows about the absolute mess that was Boston's Big Dig. The city launched the effort in 1991 to deal with the miserable traffic situation in central Boston. The project involved replacing a six-lane highway with an underground road of eight to 10 lanes, some of it running under Boston Harbor. It was scheduled for completion in 1998 and was supposed to cost \$2.6 billion. It finished

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in 2007 and ended up costing \$14.8 billion, although the interest accrued over that period means it probably cost more like \$22 billion—10 times its budgeted cost.

In a nutshell, a better approach to construction economics and management for efficient construction will be discussed. Briefly, there are eight ways to be dissected, as in: improved planning, usage of good construction management software, using Building Information Modelling (BIM), paying attention to the workers in the management of works, relevant trainings, improved communication, establishing performance models coupled with holding a head unit responsible, and implementing prefabrication and modular construction.

Through a better approach in construction economics and management, there would be a well-fortified approach or body of information from which to draw solutions or measures that would conquer our frontiers.

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