SIMPLE METRICS GUIDE FOR SMART CONSTRUCTION

Smart construction is still a relatively new way of working in the industry, but we're already seeing the advantages of it thanks to a number of key projects.

We've selected several case studies, which illustrate the key features and benefits of smart construction.

By choosing a range of parameters, we've set a number of quantitative measures to show how smart construction performs against traditional methods.

There are some areas such as risk, wellbeing design and circular economy where there are currently no quantitative measures in place and as a result are looked at on a qualitative level.

And because these projects are still fairly new – these figures and results are just the beginning.

As time progresses, attitudes and behaviours change, and the industry realises the benefits of smart construction, we hope to encourage more organisations to use these measures and come forward with their own examples of innovative projects that show just how beneficial smart construction is.

Construction Leadership Council

METRIC	DESCRIPTION	2020 TARGET
Capital cost	The costs associated with the construction of the building per metre square of gross internal floor space £ / m^2	£1480
Speed	The elapsed time at which the building was built from the first day the first man hour on site was registered to HSE to the last day, captured as days / m^2	0.14
Productivity	The efficiency at which a building is being constructed by looking at the ratio of capital cost to man hours recorded on site reflected as £ / man hour	£31
Pre-manufactured value	Calculated by the gross capital cost of the project take away the prelims and site labour costs. The result of this is then divided by the capital cost and is reflected as a %	50%
Quality	This is calculated by 1 minus the cost of post-completion defects as set out by NHBC over the total build cost reflected as a %	99.5
Health and safety	The number of people injured over a year for each million hours worked by a group of employees or workers	1.79 injuries per million hours worked
Embodied carbon	This refers to the amount of embodied carbon associated with the production and transport of materials used in the construction of homes per metre square of gross internal floor space reflected as $kgCO_2e/ m^2$	700 $kgCO_2e/m^2$
In-use energy	This refers to the in use energy efficiency performance and its environmental impact, identified through EPC ratings	EPC Rating A
Waste generated	This is the ratio of volume of construction phase waste that has been generated represented for every £100K of the capital cost Volume (m^3) construction waste/£100K project value	8.2