

OFFSITE SYSTEM PERFORMANCE: AN ALL-ENCOMPASSING APPROACH

There is a widely publicised requirement for increasing the UK's housing stock. The general response to the targets set by the Government is that the numbers required in the timescales specified are not achievable by traditional housebuilding methods alone and that the construction industry will need to move more towards offsite and modular construction.



Historically, offsite construction technologies have been seen as a way to build faster, reduce costs or to overcome the lack of skilled workers in construction. More recently, environmental performance, improved durability, design flexibility and lower maintenance costs are being included in the 'advantages mix' with the ultimate goal of providing assurance to funders, lenders, valuers or future homeowners on building durability and quality, to enable easier access to financing methods.

Offsite manufacturers have been quick to anticipate the increased demand and many new and innovative systems are at the research or development stage. However, this development stage can be hindered by the traditional slow routes to take new systems to market. New systems often fall outside of recognised test standards or regulations, and there are currently no British or European standards available, even for the more traditional constructions like structural insulated panels (SIPs). There is a



European Technical Assessment (ETA) for SIPs but this has not been taken up by industry and contains a costly and not entirely relevant test program. It is unlikely that any standardisation will take place in the future as each system has non-standard detailing and hence requires a customised test program.

The performance gap is a recognised problem: the mere act of assessing the operations often leads to improvements and efficiencies, and the finished system would benefit from measurements and monitoring to increase the confidence of both the scheme provider and the end user. When it comes to building performance, assessments need to combine the physical and the behavioural, for example wind serviceability and occupant satisfaction. The combination is especially vital in offsite developments in which for example, assembly onsite, is key to reducing the performance gap.



Lucideon seeks to go beyond the impact of individual factors and examines the total delivered value of the offsite system. It is time for a new approach where an understanding of the whole offsite construction process is measured not only by the performance evaluation of individual components but with an all-encompassing approach, from the factory to the construction site, taking into account the implications on quality, durability, the environment, transportation and assembly.

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Images:
01-03. Offsite delivery creates huge improvements and project efficiencies for housing delivery