

## Kingdom's Housing Innovation Showcase Results Published



Following an extensive period of research the results from Kingdom Housing Association's Housing Innovation Showcase (HIS) have been published recently. The HIS provided a unique opportunity to undertake post-construction evaluation testing and monitoring in order to understand and evidence the relationship between Modern Methods of Construction (MMC) and the effectiveness of new technologies, informed by resident satisfaction levels.

Kingdom's Housing Innovation Showcase has been a bold attempt to deliver and explore ways in which high levels of energy efficiency can be implemented into affordable housing. The design intent was to deliver homes that are healthy, comfortable and environmentally sustainable.

Based on the level of resident satisfaction with their new homes it is clear that this intent has been fully achieved.

Research involved post construction testing of twenty seven new build homes built using a range of MMC systems and several new technologies. The HIS comprised of twelve flats and fifteen houses.

The new homes were designed to meet a range of housing needs and varied in terms of size, form, construction technique and renewable technologies.

The report reveals whether there is a gap between design and actual performance in the studied systems in order to learn from the findings. MMC systems differed making some direct comparisons difficult. With reference to construction period and costs, while all systems were built within timescales substantially better than traditional methods, there were significant differences in construction time (superstructure) ranging from 49 days to 126 days. The build cost per square meter (£/m<sup>2</sup>) varied largely between each system too, with the average cost amounting to £907 per m<sup>2</sup>. The least expensive build cost were the flats procured via a volumetric system, at £711 per m<sup>2</sup>, closely followed by the Control House by Campion Homes at £743 per m<sup>2</sup> and houses procured via Energyflo Breathing Wall Timber Frame System by Lomond Homes at £768 per m<sup>2</sup>.

5 different variations on closed panel systems were part of the project, including the Scotframe Val-U-Therm panels, Stewart Milne's SIGMA 2 System and the IQ System developed by CCG. Future Affordable also provided 3 homes using their off site closed panel system, which incorporated bathroom pods. Other systems used included the Cube RE-Treat SIPs system, which allows future design flexibility and 2 on site systems using the BecoWallform system, by Bobin Developments and the Porotherm clay blocks, which was built by Campion Homes, who developed 3 of the 10 systems used as part of the project.

Bill Banks, Chief Executive with Kingdom said 'when considering value for money for each of the systems three indicators were analysed. These were time, cost and quality. Variations were identified; however all the systems used generally scored well, compared to traditional construction methods. The project has demonstrated how environmentally conscious designs, integrated into various modern methods of construction, can create homes for the future while delivering energy efficient homes, which are much appreciated by residents'

The study was carried out by Scottish Energy Centre (SEC) at Edinburgh Napier University and by Misia Jack Consultancy

More information on the house systems and the HIS project can be obtained via this website and copy of the report can be accessed here [Housing Innovation Showcase Building Evaluation Report](#)