The innovation process and its importance for the uptake of lower carbon concretes

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The last century has seen an increasing amount of novel research into alternate materials for concrete production. When studied in a laboratory these materials have often been shown to offer hardened property and/or sustainability advantages over traditional concrete. Despite this, the uptake of such materials has been hampered by industry conservatism and challenges associated with the scaling of such research into commercial operations. The focus on sustainable manufacturing is now greater than ever before, however, concrete suppliers are facing decreasing availability of key raw materials traditionally used to deliver sustainable concrete. Research into the next generation of such materials will require collaboration between researchers, suppliers, and other stakeholders with a focus on creating viable and scalable solutions to increase the sustainability of the construction industry, supported by rigorous laboratory testing. The innovation process offers a pathway to the realisation of these goals. With customers and end users included, and emotion removed from decision making, companies can have greater confidence committing valuable resources to the continuation of projects where there is a deemed greater chance of commercial success. The academic rigour imbedded in the process can inform future standards and specifications thereby ensuring that concrete remains the preeminent building material of the future. The use of this process in the context of the development of a range of high supplementary cementitious material (SCM) concretes is discussed and observations made regarding how other developments in concrete design may be brought to market.