Editorial

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The term ‘sustainability’ has various definitions across disciplines and areas of study. When applied to concrete, it means to provide a way in which the material can continue to be used while also justifying its negative legacy in relation to energy demands and carbon dioxide emissions.

However, even taking this legacy into account, there is still no substitute for concrete that rivals its global availability, versatility and longevity. It continues to be used worldwide on an expansive and ever-growing engineering scale.

Therefore, by creating more sustainable concretes, we are seeking ways of keeping this invaluable material available to engineering, while mitigating its environmental disadvantages. Because of this, there are many material options and composite alternatives that come into play, which vary in practicality and effectiveness.

It is for this reason that *Magazine of Concrete Research* has produced this two-part themed issue on sustainable material options for concrete – perhaps the first of many.

What is patently clear is that concrete and sustainability are global concerns. In these two issues – comprising of eight papers from across six different countries spanning Europe, the Middle and Far East, as well as North America – we find an eclectic mix of sustainable material options. These early issues are but a sample of what is available.

Part I has options varying from clay brick powders replacing sand, incinerated bottom and sewage sludge ash as replacement aggregates, ground glass and demolition-waste-based geopolymers.

Part II deals with recycled demolition waste, nanoparticles, recycled aggregates for pre-casting, and circulating bed fly ash and limestone as additions.

The quest for concrete variants that are both sustainable, affordable, practical and have little or no threat to the environment will continue. There is no substitute for concrete on the global engineering scale that we have come to take for granted. As such, the quest will continue, as will the themed issues in *Magazine of Concrete Research* on this subject.