Cite this article
Bernal SA (2018)
Editorial.
Proceedings of the Institution of Civil Engineers – Construction Materials **171(4)**: 133,
https://doi.org/10.1680/jcoma.2018.171.4.133

Editorial

Construction Materials

ice publishing

Editorial

Susan A. Bernal
Department of Materials Science and Engineering, University of Sheffield, Sheffield, UK

It is a pleasure to introduce this issue of *Construction Materials*, which features articles spanning a wide range of important topics for Civil Engineering, including the use of new screening techniques to determine performance of different timber species, innovative corrosion protection approaches to concrete structures, and performance of glass fibre reinforced ultra-high strength concretes.

The first article in this issue by Williams *et al.* (2018) describes advances in the utilisation of novel fast-track screening methods to assess key characteristic of less used timber species, from South America and West Africa, for potential application in structures exposed to marine environments. It provides a compiling case featuring the challenges of utilising timber in these applications, and highlights that understanding service requirements and hazards provides a pathway for development of fast-screening methods to determine performance of less used timbers. It is also noted, the need for further research to develop strategies for predicting long-term mechanical performance evolution of less used timber, under marine service conditions.

Dodds *et al.* (2018) report unique results of surveying six bridging structures with novel hybrid anode corrosion protection systems, installed between 2006 and 2013. This study determined the effectiveness of these systems in providing sufficient protection against the initiation of corrosion in steel reinforced concretes. The authors identified that corrosion rates were generally low, over a period of up to 8 years, since the installation of the hybrid systems, validating their functionality as an alternative corrosion risk management technique in reinforced concrete structures. The authors also provide a valuable insight for the designing of new hybrid anodes improve the redundancy, functionality and robustness of the system.

Hossain *et al.* (2018) describes the bond characteristics of sand-coated, glass-fibre-reinforced polymer (GFRP) bars in ultra-high-strength concrete (UHSC). An extensive experimental campaign was followed by the authors, evaluating the influence of different types of GFRP, and the diameter and/or length of the bars used, embedded in UHSC of different strength classes. The authors identified that bond strengths are influenced by the properties of the GFRP used, although the differences are reduced at lower embedment lengths. Independently of the GFRP type and/or diameter and embedment length or cover, the bond strength increased when reinforcing concretes with higher compressive strengths. These findings provide evidence that existing codes for design and construction of structures with fibre-reinforced polymers are applicable to predict the bond strength of GFRP bars embedded in UHSC.

On behalf of the Advisory Editorial Panel, I hope that this issue of *Construction Materials* will be of interest and value to the readers.

REFERENCES

Dodds W, Christodoulou C and Goodier C (2018) Hybrid anode concrete corrosion protection – independent study. *Proceedings of the Institution of Civil Engineers – Construction Materials* **171(4)**: 149–160, https://doi.org/10.1680/jcoma.16.00024.

Hossain KMA, Ametrano D and Lachemi M (2018) The bond between glass-fibre-reinforced polymer bars and ultra-high-strength concrete. *Proceedings of the Institution of Civil Engineers – Construction Materials* **171(4)**: 161–176, https://doi.org/10.1680/jcoma.16.00032.

Williams JR, Sawyer GS, Cragg SM *et al.* (2018) Evaluating less-used timber species for marine construction. *Proceedings of the Institution of Civil Engineers – Construction Materials* **171(4)**: 134–148, https://doi.org/10.1680/jcoma.15.00065.