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Introduction

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Welcome to this special issue of *Civil Engineering* on Africa. This big and dynamic continent is characterised by significant population growth, rapid infrastructure development and an ever-more extreme range of climates. Having grown up in Africa in the 1970s and 1980s, I have witnessed its great natural wonders but also the poverty and poor healthcare that millions of Africans still endure today.

The papers in this issue provide a snapshot of the many thousands of projects and initiatives that are currently underway to improve the continent's infrastructure. They also highlight what more can be done to harness Africa's natural resources and, in line with Institution of Civil Engineers' policy, each paper states which of the UN Sustainable Development Goals the reported work will help to achieve.

Our first paper explains how UK charity Engineers for Overseas Development (EFOD) is helping to improve healthcare in Uganda in collaboration with local contractors. Flower *et al.* (2022) describe how EFOD also brought in international expertise from HKS Architects and Arup to help design a major new energy-efficient neonatal unit at Mbale Hospital.

At the other end of the scale, Karubanga and Mugume (2022) report on the challenging design and construction of the largely subterranean 600 MW Karuma hydropower project in Uganda, which – despite some concrete cracking problems – has just been successfully completed. The future option of floating solar panels on the new Karuma reservoir is also discussed.

The next two papers also focus on providing affordable and clean energy. Bristol *et al.* (2022) describe the design of sustainable water and energy infrastructure for a new education institute in Rwanda, while Choti and Xydis (2022) assess the potential for future offshore wind energy along Africa's eastern coastline. Their desk-based study concludes there is a potential for 98 GW of offshore wind power.

Wells *et al.* (2022) then highlight the significant lack of spatial data for infrastructure development in Africa. The authors draw on a decade of experience in the continent and share best practice from projects in Kenya and Malawi. They conclude that investment in spatial data management now will add value at every stage of a project's development.

The next two papers provide further examples of successfully delivering major projects in Africa through collaboration between international experts and local resources. Aldous (2022) describes the engineering considerations and challenges involved in creating the world-class Côte D'Or Sporting Complex in Mauritius, while Paish and Moroney (2022) report on the complex marine works involved in the US\$1 billion expansion of Tema container port in Ghana.

In our final paper, Peters and Clarke (2022) report on projects to upgrade existing footpaths in remote areas in Liberia to motorcycle

taxi tracks. For a very little cost and using a low skill base, these simple tracks can provide a dramatic increase in social and economic connectivity for remote populations and fundamentally change lives for the better.

I would like to thank everyone involved in producing this issue, in particular the authors for sharing some fascinating case studies with us. Their papers demonstrate that talented civil engineers from all over the world are helping to meet Africa's needs for a better built environment. I hope this will inspire other civil engineers to get involved, as the combination of international expertise with local knowledge is vital to help this huge and exciting continent achieve its full potential.

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