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Bridge Engineering

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Design of the River Dee Bridge, Aberdeen, UK

J. Sandberg, L. Man and D. A. Smith

Design challenges resulting from construction of the River Dee Bridge, Aberdeen, UK

J. Sandberg, D. Bishop, L. Man and D. A. Smith

Using conditional mean spectra and uniform hazard spectra for seismic analysis of bridges

D. Proske, T. Walti, D. Kurmann and P. Renault

Dimensional quality assessment of cable-stayed bridge by combining terrestrial and drone laser scanner

M. Yinhuai, J. Zhigang, M. Ligang, L. Changli and C. Shaoqian

Construction monitoring of cable replacement: a case study

K. Zhang, D. Li, T. Qi, X. Xue, G. Zhang and Y. Li



Robust performance analysis of coastal wave energy converters

Y. Wang

Engineering and Computational Mechanics

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Discrete-element modelling of concrete behaviour under uniaxial compressive test

S. Marooden and H. Rahimi

Vibration analysis of buried pipelines and piles using differential transformation method

A. Khabiri and A. S. Javadi

Overview of large-eddy simulation for wind loading on slender structures

S. J. Daniels and Z. T. Xie



Forensic Engineering

'CREST 2020'

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Unprecedented liquefaction flow of gentle slopes containing non-plastic fines

T. Kokusho, H. Hazarika, T. Ishizawa, S. Ishibashi and K. Ogo

Specifications, strength and bearing capacity of jointed-timber piles in soft ground

S. Shrestha and Y. Matsumoto

Surficial mass movements on cut slopes of Prime National Highway 1 in Bhutan

K. Hirota, T. Nishimura, T. Kuwano and T. Iwasaki



Construction Materials

ICAAR 2021 and construction materials

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Monitoring the structural effects of internal swelling reactions in Aguieira bridges

L. O. Santos, M. Xu and A. S. Silva

Finite-element modelling of alkali–aggregate reaction in a concrete hydraulic structure

A. Nour and A. Cherfaoui

Long-term alkali–silica mitigation of high-alkali concrete with cement replacements

D. Hooton and B. Fournier

Scale-up effects in alkali-activated soil blocks

A. Marsh, A. Heath, B. V. V. Reddy,

P. R. Krishnamurthy, M. Evernden, P. Patureau and P. Walke



Engineering History and Heritage

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Potential structural deficiencies within the Gokteik Viaduct Railway Bridge in Upper Burma

D. C. Wohlers

The construction and the collapse of the Tiber retaining walls in Rome, Italy (1870–1900)

I. Giannetti and F. Casini

Tai Tam Tuk reservoir dam in Hong Kong: historical background and site selection

K. Y. Deng, S. W. Poon and J. Farrell



Engineering Sustainability

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Systematic key performance indicators for measuring modular integrated construction

Z. Zhang, W. Pan and M. Xie

Evaluating the sustainability of hotels using multi-criteria decision making methods

C. N. Wang and H. P. Nguyen

Time-dependent reliability of concrete bridges considering climate change and overload

W. Luo, B. Pang, C. Shi, Y. Liu and Y. Wang

An improved grey Verhulst model to forecast energy demand in the USA and Turkey

S. D. Atalay, G. Çaliş and M. Adıyaman



Geotechnical Engineering

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Role of unsaturated soil properties in the development of slope susceptibility map

A. Satyanaga and H. Rahardjo

A novel method for designing thermo-active retaining walls using two-dimensional analyses

E. Sailer, D. M. G. Taborda, L. Zdravković and D. M. Potts

Experimental and numerical analyses of buried box culverts in trenches using geofoam

G. Moradi, E. Hassankhani and A. M. Halabian

Monitoring the construction of a large-diameter caisson in sand

R. Royston, B. B. Sheil and B. W. Byrne

Value engineering using load-cell test data of barrette foundations – La Maison, Dubai

S. Manoj, D. Choudhury and M. Alzaylaie

Research on the conversion of self-anchoring test data to static loading test data

W. Ma, B. Wang, X. Wang, S. Zhou and B. Wang



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Ocean/wave energy

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Wave-energy plant site and converter type selection using multi-criteria decision making

E. U. Ergul and T. Ozbek

Remote river energy system: an open-source low-maintenance turbine design for remote areas

I. Masters, J. Bird, B. Birch, M. Reader, W. Turner, T. Holland, T. Lake and A. J. Williams



Ground Improvement

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Critical state of compacted lateritic soil and palm kernel shell ash for earth embankments

U. N. Okonkwo

Stabilisation of Urmia Lake peat using natural and artificial pozzolans

H. Bahadori, A. Hasheminezhad and S. Mohamadi asl

Stabilisation of a clay soil by ion injection using an electrical field

A. R. Estabragh, M. Moghadas, A. A. Javadi and J. Abdollahi



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Relative relevance of factors affecting the electrokinetic dewatering of soft clayey soils

S. Gargano, S. Lirer and A. Flora

Investigation of drying–wetting durability of cement-stabilised clayey soil

W. Liu, W. Li and X. Sun

Strength and stiffness of laboratory-mixed specimens of stabilised Norwegian clays

P. Paniagua, B. K. Bache, K. Karlsrud and A. K. Lund

Management, Procurement and Law

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A framework of indicators to measure project circularity in construction circular economy

M. Abadi, D. R. Moore and M. A. Sammuneh

Preliminary benefits of big data in the construction industry: a case study

B. T. Atuahene, S. Kanjanabootra and T. Gajendran

The effects of skills shortages on construction costs in the UK

A. George, E. Aboagye-Nimo and S. Mamphey



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Analysis of a suspended deck jetty using grillage and finite-element analysis methods

B. Bullock

Dynamic recovery actions in multi-objective liner shipping service with buffer times

X. Wen, Y. E. Ge, Y. Yin and M. Zhong



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Prioritising barriers for successful implementation of public bicycle-sharing system

S. J. Patel and C. R. Patel

An integrated framework for municipal capital investment planning

J. Zeb

A cost-effective methodology to compare travel time and speed: a tale of 11 cities

S. Sabet, F. Namdarpour and M. Mesbah

Political and legal risks in public–private partnership mega transportation projects

H. Aladağ and Z. İşik

Analysing pedestrian–vehicle conflict behaviours at urban pedestrian crossings

S. Ghadirzadeh, B. Mirbaha and A. A. Rassafi



Smart Infrastructure and Construction

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Assessment of wind speed and spatial mapping across the Indian subcontinent

T. Ghosh and A. Sil

Internet of things application for smart construction assets

T. M. Brennan Jr, J. E. Jesson, A. S. Deese,

E. Rodriguez and A. J. Bechtel

Identifying the most suitable machine learning approach for a road digital twin

K. Chen, M. Eskandari Torbaghan, M. Chu, L. Zhang and A. Garcia-Hernández



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Durability and ultimate performance of concrete beams with epoxy-coated reinforcing bars

X. H. Wang and L. Zheng

Evaluation of traditional deformation limits for segmental tunnels in soft soils

F. Carpio, F. Peña and A. Galván

Strengthening stone beams with prefabricated polymer-reinforced stone plates

Y. Ye, W. Miao and Z. X. Guo

Fibre-reinforced polymer laminate–concrete bond check with ground penetrating radar

M. Riad, N. Yazdani, Y. Almomani and E. Gonzalez

Vibration performance assessment of a long-span steel footbridge

F. A. Rezende, W. D. Varela, E. M. L. Carvalho and A. M. B. Pereira



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Minimising vehicular traffic for optimised land use development for a sustainable future

B. Veeregowda, R. R. Liu and N. M. Ravindra

An optimised approach for saturation flow estimation of signalised intersections

S. Mondal, V. K. Arya and A. Gupta

Spatial relationship of air and rail transport to transportation carbon dioxide emissions

A. Atalay

Effects of interface strength on damage to railway slab–track joints under temperature rise

X. Liu, J. Xiao, W. Zhang, H. Qin and X. Liu



Causes of cracking of an existing pavement after highway widening in an area of soft soil

H. Yu, Y. Wang and Y. Chen

Reflective cracking from thermal loading in asphalt–concrete composite pavements

M. Rith, Y. K. Kim and S. W. Lee

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Alternative public space: experiences and lessons from Indonesian cities

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Sustainable urbanism: an evolving field of scholarship and professional practice

C. J. L. Balsas

Towards sustainable smart cities: a study on digital participatory planning in Oman

N. Sameer, C. Alalouch, M. S. Saleh, S. Al-Saadi and A. Saleem

From uniqueness to singularity through city prestige

A. Elshater and H. Abusaada



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Review of guidelines for sustainable municipal waste management: best practices in Brazil

V. E. Olivo, P. D. M. Prietto and E. P. Korf

Effect of geometry and material of municipal solid waste landfills on seismic response

A. Azhari, H. S. Isfahani and K. E. Heydari

Microbial analysis of sewage sludge shows closer monitoring needed for landfill waste

A. M. Dregulo, V. M. Shapkin and A. A. Kichko



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Numerical modelling of flow field at shaft spillways with circular piano-key inlets

S. Nasiri, A. Kabiri-Samani, K. Asghari and S. Bagheri

Experimental study on flow mechanisms in a sine-shaped meandering compound channel

G. Qu, C. Hu, S. Yao and B. Ding

Comparison of runoff from low-impact development measures in arid and humid cities

J. Hou, S. Sun, Y. Wang, J. Wang and C. Yang

Linear-scale models for discharge estimation: asymmetric compound open channel flows

P. K. Singh, X. Tang and H. Rahimi



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