The 28th Annual Conference and Exhibition - including Workshop

Bridges 2020

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- Bridge strengthening
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- Bridge jacking and bearing replacement
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Our skills are transferrable through a range of sectors including rail, marine, coastal, power, industrial and commercial.

For more information contact:
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I am delighted to welcome you to Bridges 2020, our flagship annual conference and exhibition, which this year offers an additional day filled with workshops based on the Grand Challenges faced by bridge owners.

Now in its 28th year, Bridges 2020 owes much of its success to its ongoing partnership with key organisations that include the UK Bridges Board, the Bridge Owners’ Forum, ADEPT and IHE, as well as our specialist in-house highways and transportation publications. These strong links have helped establish Bridges as the UK’s premier event dedicated solely to the bridge engineering community.

I would like to take the opportunity to introduce a new feature of the Bridges event that – with your support – will be introduced in 2021. Engineers are often shy of the limelight, which is perhaps more the reason to introduce the Bridges Awards, with the aim of honouring individuals and/or teams for outstanding achievement in bridge projects. More information will be released in the following months, but I can reveal that categories will be included in design, construction, refurbishment/reconstruction/repurposing, and inspections/maintenance. Please do get in touch with your ideas for this worthwhile attempt at recognising the hard work and passion that all-too-often goes unheeded in this industry.

I encourage you to make the most of the wide-ranging expertise on offer from the excellent speakers presenting over the next two days and from the knowledgeable exhibitors. Whether you own, design, build or manage bridges, ahead of you is an event packed with stimulating presentations and exciting networking that should provide plenty of opportunities to learn from like-minded peers as well as to be inspired and amazed by bridge projects.

The presentations and workshops directly address many of the greatest challenges faced by engineers the world over: bridge scour, deterioration, inspections, restoration, resilience and the need for better design, to name but a few. Needless to say, many of these have sadly been brought into even sharper focus by the recent storms across the UK.

Returning delegates will be aware that technology and innovation traditionally feature strongly at the annual Bridges event, and while this year is no different, there will also be occasion to find out about other areas gaining greater focus. Sustainability and carbon reduction are concepts that are sometimes considered problematic in their practical application in the bridge sector, but they are areas that can no longer be ignored. Some of the information provided over the course of the event should provide some steer on how to address these two issues.

The popular Pecha Kucha-style presentation session also returns to the conference, featuring quick-fire innovations presented by our exhibitors plus, for the first time, presentations relating to key industry updates. After all, why should the private sector have all the fun?

Finally, on behalf of Bd&e Events and all my colleagues, I wish you an enjoyable Bridges 2020!

Jose Maria Sanchez de Muniain
Editor
Bridge Design & Engineering
Highways

As the only UK publication focusing exclusively on the highways sector, Highways magazine is well positioned to deliver the news, views and features that matter. Highways—England’s regular two-page exclusive in every issue features analysis from leading specialists operating across all the main fields of its activity. Our relationship with local authorities is equally important. Heads of highways and engineers in councils across the UK read the publication and we regularly report on the work they’re doing as well as include analysis and comment directly from the frontline. In short our editorial relationships stretch across the breadth of the nation and key players like Transport for London, the Institute of Highway Engineers, ADEPT and TRL (Transport Research Laboratory) provide regular insights.

Institute of Highway Engineers

The IHE is run by, and for, engineers, technicians and allied professionals in highways and transportation. IHE provides professional leadership and support for highway engineers working to improve the transport environment. The Institute has been registering engineers and technicians with the Engineering Council since 1972 and accrediting academic courses since 1989. We set high standards of competence for CEng, IEng and EngTech and help you to achieve your ambitions.

iHE Professional Certificates recognise specialists’ achievements and are proof of your competence and can assist in progression towards Professional Registration. Member benefits include access to relevant technical information, support for your Professional Review and specialist and local networks. You’ll find an IHE branch in every region of the United Kingdom.

The Institute of Highway Engineers was established in 1965. We are proud of our long history and providing our members with 50 plus years of highways experience.

Institut of Highway Engineers

Bd&e Events was launched in 2016 to bring the events-organising expertise of the Hemming Group alongside the industry knowledge of the Bd&e publishing team. The venture builds on Bridge design & engineering’s involvement in the flagship Bridges conference and will see the creation of specialist events for the international bridge construction, management and maintenance sector.

About the Organisers and Partners

Bridge design & engineering (Bd&e) is the only magazine exclusively dedicated to the international bridge industry. A visually stunning quarterly, Bd&e includes details of the latest innovations, technical features, interviews and project reports.

Launched in 1995, Bd&e has a large global readership and is essential reading for anyone who finances, plans, designs, builds, maintains, operates or owns bridges. Subscribers receive sought after and otherwise unattainable intelligence that gives a completely unobstructed view of this constantly evolving sector.

Bd&e also delivers twice monthly e-news, a focused annual supplement, full access to https://bridgeweb.com/ and savings of up to 36% on delegate passes for Bridges 2020!

To subscribe, call +44 (0)207 973 6694, email customer@hgluk.com or subscribe at www.Bridgeweb.com/subscribe.

The vast majority of the public give little thought to bridges as they travel around our transport network until, that is, one has to be closed or restricted due to maintenance works, damage, structural instability or even complete failure. Only then do we realize the value of bridges appreciated. The nation’s bridge stock is an extremely valuable asset, the maintenance of which we must invest in if we are to avoid unplanned disruption to communities, industry and the travelling public. In these challenging economic times it is important that we get the greatest possible return on such investment and the UK Bridges Board can play its part in this through collaboration on developments and by sharing best practice.

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Lydney, Gloucestershire GL15 4EJ, United Kingdom
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8.30 Registration and exhibition hall open

9.10 Introduction from Chair
Jose Maria Sanchez de Muniain, Editor, Bridge design & engineering

9.15 Keynote 1: Sustainability and the carbon footprint: what can bridge engineers do?
- The magnitude of the structural engineer’s impact in the current climate crisis
- Is being structurally efficient enough? How ‘business as usual’ is no longer an appropriate response
- Widening the picture: a framework of questions and considerations at different stages of the design and construction process
- The bridge engineer of the future
Lee Franck, Chartered Structural Engineer and Founder, RealtyImpact
David Knight, Chartered Structural Engineer, Cake Industries

9.50 Keynote 2: Nouvelle Route du Littoral, building France’s longest offshore viaduct in the Indian Ocean
Francis Guinchard, Project Director, Vinci Construction Grands Projets

10.25 Bridge Scour Assessments – focussing on debris-induced scour at bridge piers: applications and case studies
- Debris accumulations at bridges may exacerbate scour depth
- A methodology based on experimental studies estimates size of debris and effects on scour
- Applications of the methodology show that scour risk can be significantly increased
- Low-risk sites can be identified to reduce need for post-flood inspections
Kevin Dentith, Chief Engineer (Bridges & Structures), Devon County Council, Chairman, ADEPT Bridges Group, Bridge Owners’ Forum, UK Bridges Board
Dr Diego Panici, Postdoctoral Researcher, University of Exeter

10.50 Morning Coffee Break & Exhibition Viewing

11.20 Pecha Kucha innovation in bridge management
- A series of timed presentations showcasing innovations from conference sponsors, exhibitors and local authorities
- Reviewed and curated by a panel of independent bridge experts
Keith Harwood, Head of Profession – Bridges and Structures, Hertfordshire County Council

12.10 A SAVI tool for bridge decision-making
- The Structures Asset Valuation and Investment support tool is a multi-functional, condition-based decision support tool that facilitates effective management of local authority bridge stock and provides short-term plans, long-term analysis (120 years) of funding, risk and condition
- SAVI supports strategic priorities and models whole life cost against performance
- SAVI is freely available via UKRLG and CIPFA
Keith Harwood, Head of Profession - Bridges and Structures, Hertfordshire County Council
Michael Smith, Infrastructure Advisory, Arup

12.35 Lunch and Exhibition Viewing

13.55 Managing our bridges: the Grand Challenges
- The Bridge Owners’ Forum and bridge management
- The problems facing bridge owners
- The Grand Challenges
- The need for change
- Raising awareness
Richard Fish, Technical Secretary, Bridge Owners’ Forum

Stream B (Hall 4)
Chair: Jose Sanchez de Muniain

11.20 Identification and management of high-risk post-tensioned bridges – the benefits of BD 54/15
- Unexpected deterioration of post-tensioned concrete structures is a major concern, with inadequate design detailing and construction practices contributing to the deterioration of certain post-tensioned elements
- Safety critical defects in post-tensioned concrete are typically hidden and deterioration can progress with no outward signs of distress right up to the point of structural failure
- BD 54/15 Management of post-tensioned concrete bridges details a process of risk review, risk assessment and risk management and identifies activities that may be needed for the successful risk management of those bridges
- Case studies will demonstrate the improved processes of identifying high risk post-tensioned bridges, prioritising them for any further needed works and the resulting benefits
Dr Donald Pearson-Kirk, Technical Director, WSP

11.45 ICE Proceedings Bridge Engineering: understanding maintenance
- Common themes in papers and case studies published in a special issue on bridge maintenance by ICE Proceedings Bridge Engineering are revealed
- What does the research show about current practice and the role of all parties in designing, constructing and maintaining bridges?
John Collins, Principal Engineer, Roughan O’Donovan

12.10 Design for operation and maintenance of steel bridges: best practice and worst culprits
- The bridge operation and maintenance issues that are causing owners the greatest problems have been highlighted by recent industry surveys by the SCI’s Steel Bridges Group
- Excellent guidance is already available from the SCI on the subject – and more is to come

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14.20 Building the biobridge – a journey into the unknown world of large-scale infrastructure using bio-based materials
- Engineers, manufacturers, contractors and academics have together successfully constructed a bridge that combines flax fibres and a bio-based resin
- Continuing the journey of using more bio-based materials – all are welcome to join
- Implementation of a multi-project infrastructural programme to enable Friesland Province become a leading European development region in the circular economy in 2025

Sjoerd Vrieswijk, Head of Infrastructural Department, Province of Friesland, Netherlands
Rinze Herrema, Lead Engineer and Business Unit Manager, Infrastructural Engineering, Witteveen+Bos

14.45 Ouse Bridge – the bearings that would not move!
- A 1.34km multi-girder steel-concrete viaduct carrying the M62 up to 30m above the river
- The original design made no provision for jacking or temporary support of the superstructure
- Following a series of inspections all bearings were recommended for replacement in 2001
- Further deterioration resulted in thermal movement of the deck being accommodated by flexure of the reinforced concrete piers
- Following two unsuccessful replacement attempts, the current scheme is now nearing completion
- The presentation will cover the Jacobs designed replacement scheme, installation of a permanent jacking solution and the key challenges faced

Andy Davison, Technical Director, Jacobs
Martyn Bentham, Technical Director, Jacobs

14.45 GeoSHM for structural health monitoring
- This ESA-funded project aims to deliver the GeoSHM system solution to monitor long-span bridges and other large-scale infrastructure
- Empowered by the GeoSHM Data Strategy and Data Analyst Toolbox, the GeoSHM system enables engineers to understand the displacement and vibration characteristics of the Forth Road Bridge under the effect of wind, temperature and traffic, and to define the baseline performance of the structure
- Innovations included the world’s first integrated receiver containing a GNSS antenna, a GNSS receiver of more than 500 channels, a tri-axial accelerometer and communication modules – all shielded within compact housing

Professor Xiaolin Meng, Professor of Intelligent Mobility, University of Nottingham
Advanced Corrosion Protection Materials Ltd (ACPM) provides specialist products for durability enhancement, corrosion management and life extension of metallic and reinforced concrete structures. Our founders have a combined industry experience in excess of 50 years, in corrosion control, corrosion prevention and life extension design. www.acpmaterials.com

ALPS Engineered Access systems & services provide industry with bespoke Access, Lifting, Pulling & Safety solutions continuously assisting clients when working on supported or unsupported structures. These structures range from the conventional to the unusual. The criteria incorporated in the solution is always based on Safety and Efficiency. ALPS can supply standard Suspended Access Equipment from stock, this equipment used to solve many conventional site requirements. We also design, supply and install special Access and Lifting systems to ensure the most challenging of applications is safely and effectively concluded. www.alps-uk.com

ArcelorMittal is the world’s leading steel and mining company. Our annual production capacity for crude steel is approximately 113 million tonnes with some 199,000 employees across 60 countries. With an industrial presence in 18 countries, we are the leader in all major global steel markets including automotive, construction, household appliances and packaging. Through a strong program of research and development ArcelorMittal Long Carbon Europe has developed several steel bridge solution based on its extensive rolled section ranges, weathering steel and high-strength steels including S460 and Histar. Our solutions include composite steel girder bridges (including prestressed options), filler beam decks with spans up to 50m for continuous road bridges and 35m spans for continuous rail bridge and our innovative PreCoBeam (Prefabricated Composite Beam). All supported by our technical experts and free design software. www.corporate.arcelormittal.com

APB Group Limited are Civil Engineering, Geotechnical and Construction Specialist contractors with a wealth of experience in many sectors including Rail, Waterways and Electricity Supply. The company enjoys an enviable position in the market place and has a reputation for constantly delivering high quality projects on time and within budgets. These attributes, together with the company’s suite of accreditations, provides clients with high levels of confidence in APB’s capabilities and its commitment to health, safety and environmental issues. www.apbgroup.co.uk

Balvac is a leading specialist contractor undertaking repair, strengthening, protection and refurbishment of civil and building structures throughout the UK. Balvac is focused on maintenance and rehabilitation, and delivers innovative, value engineered solutions for our customers. As a trusted expert, we sustainably extend the life of our nation’s infrastructure, providing our customers with the opportunity to return their assets to full capacity and extend their working life. We deliver highway infrastructure services to Highways England and local authorities through long term frameworks and individual contracts. Services include:

• Structural concrete repair
• Cathodic protection and corrosion management
• Bridge strengthening
• Bearing replacement
• Concrete carriageway rehabilitation
• Post tensioning (bridges & circular tanks)

We take these and other specialist services into various other sectors, including rail, marine, coastal, power, industrial and commercial.

We focus on the needs of our customers through survey, design, technology and experienced project management to deliver technically excellent and innovative repair and maintenance solutions with our own highly skilled resources and dedicated supply chain on projects typically ranging from £100k to £5M.

Balvac Ltd is a wholly owned subsidiary and agent of Balfour Beatty Group Ltd. www.balfourbeatty.com/balvac

Balvac
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BridgeStation is the complete asset management tool for bridges and structures. BridgeStation can manage your:

• Inventory – Record structure details, specify elements and detail routes/obstacles
• Performance – Schedule inspections, manage load capacity and log defects
• Reporting – Calculate BCI conditions, design reports and view GIS mapping
• Modelling – Create life cycle plans, value your assets and prioritise maintenance

The system is cloud-based and can be accessed from site or from the office - wherever you have an internet connection you can access BridgeStation. www.bridgestation.co.uk

The BBR Network is recognised as the leading group of specialised engineering contractors in the field of post-tensioning, stay cable, geotechnics, bearings and expansion joints, MRR and related construction engineering. Some of the world’s most dramatic and beautiful structures have been created using BBR technologies. From its Technical Headquarters and Business Development Centre in Switzerland, the BBR Network reaches out around the globe and has at its disposal some of the most talented engineers and technicians, as well as the very latest internationally approved technology. www.bbrnetwork.com

Asset management eXpert is a desktop and/or cloud-based Bridge Management software application with mobile option. Used by engineers/inspectors from UK Local Authorities to Global Consultants to: create detailed asset inventories; plan, schedule and carry-out inspections; implement cost-effective whole-life-based maintenance strategies; produce management reports for planning, funding and performance; improve quality while saving time/money. www.amxsolutions.co.uk
The passage of a single abnormal load vehicle has the same effect on a structure as the passage of several thousand cars. Although overloading bridges rarely causes visible damage, it does very much reduce their useful life. In order to protect structural assets, it is essential that structure owners ensure a structure can safely tolerate the movement of an abnormal load across it, but, with budgets continuously squeezed, abnormal load management is often overlooked. Cascade works on behalf of many local authorities, receiving and checking abnormal load notifications for a fraction of the cost of managing the process internally.

www.cascadesoftware.co

Cleveland Bridge is a leading bridge manufacturer based in the North East of England, with a rich heritage including some of the world's most iconic bridges. It has extensive experience of highway bridges both nationally and internationally and can deploy its well-planned and managed complex projects meticulously down to the smallest detail. Cleveland Bridge is trusted by global civil engineering organisations to deliver complex projects on-time and on-budget.

www.clevelandbridge.com

Composites Construction UK is a Specialist Contractor, using innovative repair methods as an alternative to traditional strengthening techniques. CCUK sets its standards above all others for problem solving and providing solutions. We carry out structural strengthening and repairs using carbon fibre and glass fibre reinforced polymers (FRP) to concrete, timber and masonry structures. We also complete repairs, crack injection techniques and other ‘out of the box’ services. We repair and enhance buildings, marine structures, bridges, pipelines and other industrial structures. Our in-house design capability and adaptability make CCUK the preferred repair partner of choice.

www.fibrwrap-ccuk.com

At CPT we are proud to design and manufacture cutting edge corrosion control solutions for reinforced concrete structures and masonry encased steel framed buildings. From our UK base we manufacture and distribute our unique DuoGuard and PatchGuard systems worldwide.

If you manage or own a structure suffering from corrosion related cracking and spalling we would be delighted to hear from you. Our corrosion experts are on hand to assist you with concrete testing, specification preparation and supply of corrosion control materials. Our aim is always to extend structural life and minimise maintenance costs.

www.cp-tech.co.uk

Fosroc’s range of innovative products, construction expertise and systematic approach combine to provide winning solutions for projects such as the Queensferry Crossing and M5 Oldbury Viaduct. Our renowned Renderoc repair range is widely used for both remediation of defects occurring during reinforced concrete construction as well as refurbishment of existing structures. At Bridges 2020 Fosroc will be introducing Patchroc 250 a fast-cure, thick section patch repair mortar; Renderoc DSR low rebound dry spray material and Renderoc LA60 a free-flowing micro concrete, specifically formulated with busy highway refurbishment in mind.

www.fosroc.com

We specialise in the inspection and repair of concrete highway structures with over 60 years’ experience in the industry and six regional offices covering the UK. Our services include concrete repair, cathodic protection, bridge bearing replacement, structural strengthening using carbon fibre composites and protective coatings.

Our survey business, CRL Surveys, provides independent special inspection services for highway structures and has UKAS Accreditation for a range of NDT services using the latest equipment. Our sister company, Lifespan Structures, designs and manufactures lightweight FRP composite footbridges. These are manufactured off site, durable, quick to install, cost competitive, and sustainable.

www.crl.eu.com

Freyssinet has been at the forefront of specialised civil engineering technology, consultancy and installation since 1950. A leading specialist in concrete repairs, bridge bearings, post-tensioning and expansion joints, Freyssinet in renowned for delivering innovative solutions and pushing the envelope of structural and civil engineering. Freyssinet operates as principal contractor, specialist subcontractor and supplier throughout the UK and Ireland and is able to support its full product and service range with an in-house design team.

www.freyssinet.co.uk

Our advanced, cold spray applied bridge deck waterproofing solutions have been protecting the world’s most iconic bridges for over 40 years. Stirling Lloyd and the ELIMINATOR® bridge deck waterproofing brand are synonymous with bridge deck waterproofing, from brand new megastructures to essential and time critical refurbishment projects, we’ll prolong the life of your bridges. GCP acquired Stirling Lloyd in May 2017. Together, we have a new and powerful combination of expertise, product innovation and global technical support.

www.gcpat.uk

Echem Consultants is a leader in the fields of: - Structural Diagnostics - Corrosion Mitigation - Material Science - Durability Design. Our repair philosophy is to provide long term preventative alternatives which can be integrated into traditional repairs. By utilizing our expertise in construction forensics, materials analysis and corrosion control strategies, Echem Consultants can offer creative and cost-effective repair solutions to a wide range of buildings and infrastructure.

www.e2chem.com
GLUCK is market leader in aluminium footbridges and related structures with over 750 projects in various countries. Bespoke extrusions allow free spans up to 60m. Durable anti-slip surfacing, off-shore quality coating of structural parts and anti-graffiti protection fulfill all requirements for pedestrians, cyclists, and equestrians, even utility or other vehicles, over road, water and rail. Design, manufacturing, reliable delivery and on-site assistance with own team guarantee superior quality for a maintenance-free, sustainable structure at absolutely competitive acquisition price. Footbridges in Gillingham, in Doncaster Station with cladding-glazing-roofing, in Harrow, two bridges in Lancashire and further bridges are planned in the UK.


See our New Approach to PTSI on our stand. Discover how we use GPR and Impulse Array to locate and inspect tendons. Plus reduce Stitch Drilling.

HTA ensure that all Bridge Investigation work is carried out to Industry and Government Standards plus HTA are approved by the Highways Agency and Network Rail.

Henderson Thomas Associates (HTA) are a full service Structural Investigation and Testing House.

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HRC manufactures high performance reinforcement products. Main products: T-headed bars, mechanical couplers and cast-in-connections (steel to concrete connections). HRC-products anchor and transfer the full actual ductility of the reinforcing steel (the real strength and strain), even under extreme loads. HRC-products offer fast and easy installation, resulting in a reliable and time saving construction process. HRC-products are used in large European projects like Metro Copenhagen, Paddington Station London, Oslo Airport, Hardanger Bridge Norway, Marieholmtunnel Gothenburg and world’s largest sea lock at IJmuiden, The Netherlands.

www.hrc-europe.com

Sustainability and future proofing of bridges is how we see much of our masonry arch repairs and strengthening works. Under-strength arched bridges can have their load carrying capacities increased significantly and rapidly using MARS without the need to suspend traffic or divert and relay services using the bridge. This unique method of strengthening reduces project costs and disruption significantly and provides asset managers with lower future maintenance budgets. In addition the installation of the MARS system significantly increases the arches resistance to damage from flood conditions.

www.bridgerestoration.co.uk

iLine technologies are culvert & sewer rehabilitation specialists with over 25 years experience in the renovation of ageing & dilapidated pipes & culverts of all shapes & sizes up to 7m in diameter. Using either GRP UV Cured CIPP liners or bespoke prefabricated GRP units (supplied by Channeline) to provide a Fully structural stand-alone solutions with a 120 years design life. iLine installed a WORLD RECORD 30mm thick GRP UV liner in twin 900mm x 1400mm culverts products are fitted in large European projects in October 2016 in just 4.5 days at 1/6th cost of open cut & with NO road closure.

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www.jansonbridging.co.uk

Lake Engineering Solutions - Cortec master distributor in UK and Northern Ireland for Corrosion prevention in multiple industries, including construction, power and industrial sectors.

https://lakechemicalminerals.madeinthenmidlands.com/

LimitState develops powerful yet easy-to-use software programs for a range of applications. Trusted by major consulting engineers and bridge owners, LimitState.RING is an industry-leading tool for the analysis of masonry arch bridges. Models can be generated in minutes, and results obtained in seconds, allowing the engineer to gain a clear understanding of the influence of key parameters and to view modes of response - many of which are missed by conventional tools. Our LimitState:SLAB software automates the well-known yield-line method for reinforced concrete slabs, enabling hidden reserves of strength to be identified for bridge decks and other structures.

http://limitstate.com/

For more than 35 years, LUSAS has helped its clients to analyse, design and assess all types of infrastructure projects – not just bridges. Our innovative, flexible and trusted software solutions can be applied to diverse applications across a range of industries. We help you to realise your imagination.

www.lusas.com

James Fisher Testing Services (JFTS) offers a comprehensive range of services within the fields of foundation and materials testing and structural health monitoring. Our cross-disciplinary range of expertise means we can provide for all your project needs; from pre-construction guidance, testing and geotechnical observation to whole-life structural health monitoring. Our wide range of capabilities, combined with access to the resources of the James Fisher group, mean that JFTS can act as a single source provider for a wide range of construction and infrastructure projects.

www.jftesting-services.com/contact/
Mabey Bridge is a leading international provider of high-quality modular steel bridging solutions. We specialise in rapid-build, pre-engineered modular steel bridges to enable accelerated bridge construction and improve connectivity in urban and rural areas. We also deliver bridging solutions for the transport, construction, oil and gas, and mining sectors, as well as for specialist military applications, humanitarian emergencies and disaster relief. Mabey Bridge, (an Acrow Group company) is based in Gloucestershire, UK and has supplied modular bridging solutions to over 150 countries worldwide.
For more information, please visit www.mabeybridge.com

Midland Industrial Flooring Ltd offers a nationwide service, surveying, designing, manufacturing and installing slip prevention products and systems to surface structures. We are able to offer a complete solution for both in situ resin and prefabricated systems incorporating synthetic and cementitious resins with a broad range of aggregates onto steel, aluminium, FRP, timber, engineering plywood and cementitious substrates.

Minova has been developing and delivering pioneering ground support systems for the mining, construction and energy industries since 1882. With this experience, we have become a global leader, operating in over 25 countries with manufacturing plants on five continents. Today, we continue to offer innovative products and solutions, including injection chemicals, bulk and encapsulated grouts, cementitious powders and bolting systems. Minova is owned by Orica Limited.

Mistra uniquely combine industry-leading products and technologies: 24/7 online monitoring of critical assets; mechanical integrity (MI) and non-destructive testing (NDT) services; destructive testing (DT) and proprietary world-class data warehousing and analysis software, providing competitive, comprehensive products, systems and service solutions singularly sourced. Efficient, cost-effective conventional and advanced NDT, acoustic emission monitoring, ultrasonic leak detection, vibration and structural health monitoring, pre/post-weld heat treatment and pressure testing, complemented by our rope access capability. MISTRAS offers a specialised team of technical site personnel, inspectors and engineers to perform a wide range of services associated with core customer business requirements.

Mitchell Bridges limited is the leading supplier of temporary bridges including temporary pedestrian bridges up to 40m clear span and our range of temporary vehicle bridges up to 27m clear span. For over 30 years Mitchell Bridges has supplied temporary bridges to the event, construction and rail industry. We pride ourselves on the right service, products and price, we are honoured to work on some of the largest constructions and rail projects in Europe and at many of the most prestigious events in the world, including all of the top 5 events in the UK.
www.mitchellbridges.com

MMA Architectural Systems Limited is the sole UK agent of Jakob Rope Systems, providing quality solutions for Bridge Safety, Car Park Safety, Green Walls and Animal Enclosures. Manufactured from High Grade (also called Marine Grade) 316 Stainless Steel, our products deliver an outstanding combination of quality and performance whilst also representing outstanding value across the life of any project. We are also the sole UK agent for the proven Geggus Entrance Matting System.
www.mma-architectural.co.uk

Minova

Mistras

Mitra

Mitchell Bridges

MMA Architectural Systems Limited

Midland Industrial Flooring Ltd

Mabey Bridge
The German company SOFiSTiK is one of Europe’s leading software developers for analysis, design and detailing of building projects worldwide. Over 1300 active customers prove the software’s applicability. Solutions range from basic 2D FE design packages to 3D bridge analysis suites. SOFiSTiK is Autodesk® Industry Partner and offers add-ons and apps for AutoCAD® and Revit®. Designers of modern lightweight structures and footbridges benefit from advanced formfinding and large deflection analysis features. Parametric graphical modelling and a Rhinoceros® interface allows quick design as well as comfortable structural optimization. Dedicated analysis and design modules (Eurocode, BS, AASHTO) support the bridge engineer.

www.sofistik.com

Osprey Group
How do you move and install a bridge successfully? With teamwork. We are Osprey, the specialist logistics provider whose teams always deliver unexpected value. Planning, liaising, ensuring every project is on time and on budget – our equipment includes some of the UK’s most capable heavy-lift cranes, 120+ SPMTs, hydraulic lifts, skids… we can draw on 25 years of experience to find the right approach, and the safest, most efficient way to transport and install bridges across the UK and overseas. From near-site construction and installation of an entire motorway bridge, to multi-mode solutions travelling from factory to foundation – quite simply we work better, together.

www.ospreygroup.net

Resapol is the leading national independent distributor of construction chemicals in the UK, we specialise in stocking and supplying a huge range of quality construction chemicals. Product ranges stocked are well known, specified products that have a reputable track record. All depot staff have excellent technical knowledge and practical experience of the full range of products. Technical support is offered at all levels, including specification writing and method statements if required.

www.resapol.com

Redaelli is a global manufacturer of steel cable systems, specialising in tensile structure applications, including suspension, cable stayed, cable truss, lifting, cable net and arch bridges. An innovative approach to cable system design combined with proven engineering, professional project management and specialist cable handling and tensioning expertise has positioned Redaelli to successfully deliver a variety of cable solutions to worldwide tensile structures including many iconic architectural bridges.

www.redaelli.com/en/

Omnia Integrity provides Acoustic Emission devices for the verification of asset integrity. We provide systems for 24/7 Structural Health Monitoring (SHM) of bridges and other structures as well as training and consultancy on the correct deployment of such devices.

www.omniaintegrity.co.uk

Polydeck Ltd manufactures and supplies a complete range of anti-slip flooring solutions suitable for use on existing bridges, including anti-slip panels, load bearing panels and GRIPFAST Slurry coatings. In addition, Polydeck Ltd manufactures, assembles and can install complete composite footbridges which come with glass fibre supporting structure, walkway planks, posts and rails. Our bridge solutions can be supplied in a variety of widths and lengths and meet the loading criteria of 5kN per SqM with a less than 1/200 deflection.

www.polydeck.co.uk

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www.polydeck.co.uk

Polydeck Ltd

Osprey Group

Resapol

Redaelli

Omnia Integrity

Polydeck Ltd

Bridges 2020
The Topbond Group of Companies offer a range of services, predominantly bridge based, and cover:
- Concrete surveys, inspections and testing
- PT intrusive inspection
- Reinforcement replacement
- Cathodic protection
- Sprayed concrete
- Precast concrete
- Structural testing
- Bearing replacement
- Joint replacement
- Bridge jacking and propping
- Steel repairs
- Design and fabrication of new steel bridges
- Floating plant for marine operations
www.topbond.co.uk

The USL Group of companies (USL BridgeCare, Ekspan, Nufins & PDS) are market leaders in the provision of specialist civil/mechanical and structural engineering solutions for bridges and highways.
With almost 40 years’ combined experience and expertise we have acquired a reputation in the bridge sector for delivering the most comprehensive, high quality, most reliable and efficient bridge and highway infrastructure repair schemes for our clients both in the UK and overseas. Our capabilities include supply and installation of expansion joints and bearings; temporary works including bridge jacking; bridge and kerb drainage systems; bridge deck waterproofing; concrete repair and anti-slip products.
www.usluk.com

Utracon was incorporated in Singapore in 1998 as a Specialist Contractor for providing post-tensioning design and installation services in buildings. Over the years, Utracon has expanded its array of services into various specialist works for bridges to cater to the growing construction needs for both the Singapore and the overseas’ markets. Utracon prides itself on being the one-stop specialist for bridge construction with its technical know-how of all kinds of bridge construction methods, as well as its capability to design, fabricate and operate special bridge erection equipment and machineries.
www.utracon.com/ucplwp/

Vector Corrosion Technologies is one of the world’s leading suppliers of corrosion mitigation products and services for reinforced concrete structures, post tensioned bridges, steel structures, marine structures and steel framed buildings.
Trading for over 50 years, Vectors on-going focus on research and development has brought numerous patents and industry awards.
Vector assists thousands of clients with innovative solutions to stop or control corrosion.
In 2018 Vector launched the first self-contained hybrid anode: Galvashield Fusion; delivering the benefits of both ICCP and galvanic anodes in a single unit.
The Vector name is synonymous with integrity, expertise and experience.
www.vector-Corrosion.eu

We are VolkerLaser.
Our award-winning bridge projects have been renowned with many accolades, including the Historic Bridge & Infrastructure Award, as well as an International Safety Award.
At VolkerLaser we offer a comprehensive range of services including: early contractor involvement on projects, bridge deck waterproofing, expansion joint repair, concrete repairs, carbon fibre reinforcement, cathodic protection, temporary works, design and installation, bridge jacking, bearing inspection and replacement.
From complex structural repairs to major civil engineering projects, VolkerLaser provide specialist solutions through expertise and innovation.
www.volkerlaser.co.uk

Wagner’s has established one of the world’s only high strength Composite Fibre Technology (CFT) businesses which specialises in the design, engineering and supply of ‘CFT’ infrastructure, including Bridges - Pedestrian and Road, Boardwalks, Cycleways and Walkways for use by local authorities worldwide. In addition we specialise in Maritime Composite Infrastructure including Jetties, Wharves and Marinas. We are in the process of bringing this business to the UK & Europe.
CFT technology provides stronger, lighter, environmentally sustainable (non-Leaching), cost effective technology, backed by extensive guarantees, supported by a great design team, manufactured and certified to world class standards.
www.wagnerscft.co.uk

Weber is a specialist in the manufacture of industrial mortar products, its core product range consists of external renders, decorative finishes, technical mortars, tile fixing and floor screeds.
Weber offers solutions for major infrastructure contracts, social housing refurbishment and Highways projects.
Weber has a wide portfolio of products designed to facilitate repair of concrete in most circumstances, ranging from hand placed materials for localised non-structural repairs, to flowable or spray solutions for mass structural replacement. Concrete Protection solutions include high performance, anti-carbonation coatings to increase durability of reinforced concrete and provide long term protection of existing concrete and new repairs.
www.uk.weber
Workshop Programme

8.30 Coffee and Exhibition Viewing

9.25 Introduction from Workshops Chair: the Grand Challenges
Richard Fish, Technical Secretary, Bridge Owners’ Forum

9.30 WORKSHOP 1: Scour warning and prevention
Workshop Chair: Kevin Dentith
Assessing debris-induced scour at piers: applications and case studies in Devon
- Bridges are assessed liable to debris accumulations through a process based on direct and indirect evidence
- Prioritising bridges for scour assessment using a newly defined priority factor inclusive of accumulated debris

- Applications of simplified and rigorous methods through worked examples for calculation of the debris scour factor
- Scour risk assessment including debris effects is applied to several bridges in Devon showing change in risk rating
Kevin Dentith, Chief Engineer (Bridges & Structures), Devon County Council
Dr Diego Panici, Postdoctoral Researcher, University of Exeter

9.30 WORKSHOP 1: Scour warning and prevention

10.30 Morning Coffee Break and Exhibition Viewing

11.00 WORKSHOP 2: Resilience
Welcome: Dave Cousins, James Fisher

SECTION A – Defining and Quantifying Resilience
Quantification of resilience for transport infrastructure exposed to multiple hazards
- Pinpointing the vulnerabilities and quantifying the resilience of infrastructure exposed to multiple hazards is of paramount importance
- Resilience-based assessment and management are new philosophies that are gradually being adopted in practical applications
- A resilience assessment framework is introduced for infrastructure assets exposed to natural hazard events
Dr Sotirios Argyroudis, Research Fellow, Surrey University (UK) & Aristotle University (Greece)

Modelling resilience of road and bridge networks
- Flood events are the most frequent cause of damage to infrastructure compared to any other natural hazard, and global changes are likely to increase this damage
- Transportation systems are fundamental in urban areas and a failed link can have a large impact on the community
- A network-level analysis can draw on principles of a risk-based approach to assess the effects of floods on bridges
Dr Maria Pregnolato, Lecturer, University of Bristol

SECTION B – Robustness Improvements and Reducing Vulnerability
Protecting structures in a marine environment: refurbishment and protection of the A9 Cromarty Bridge
- The optimum repair solution to meet the minimum 20-year design life of a structure in a chloride-rich environment
- Meeting requirements for the system to be durable and extendable in the future for the remaining 60 piers, as well as easily maintainable
Christopher J Spence, General Manager/Laboratory Manager, Corrosion Control Services

Resilience for Structures being repaired using UHPC Precast elements
- Current uses of UHPC, including repair and strengthening of structures

- Future uses for providing repair and resilience for structures
Graham Stanford, Business Manager, Freyssinet

Designing steel bridges that will perform better
- What the major UK bridge owners have told us
- The top-five maintenance issues with existing steel bridges
- How we prioritise life-cycle performance
Andrew Hodgkinson, Director, Hewson Consulting Engineers

Case study: Preventing structural failures/extending life in the Peak District National Park
- Asset management of structures along the main park trails including masonry, concrete and steel bridges
- Defining repair schedules based on inspection reports and prioritising works within a limited budget
- Innovative methods for heritage and difficult access areas
Tim Grimshaw, Civil Engineer, Waterman Infrastructure & Environment

SECTION C – Advances in Response and Recovery
Modularity and off-site construction: delivering improvements in cost-effectiveness, productivity and speed of delivery
- Recent trends towards modular construction
- The challenges faced when specifying a bridge
- Modern modular steel bridging vs traditional solutions
- Addressing durability, safety and resilience via modular steel
Nick Iannetta, Head of Engineering, Mabey Bridge

Monitoring applications for event response – practical applications
- Remote monitoring has provided measures and early warning for risk events at structures vulnerable to identified hazards.
- Examples include crack monitoring of half joints, flood monitoring at rail underbridges, shock detection for vehicle collision, landslip detection, driver warning for over-height vehicles, monitoring used in response to collapse
Dave Cousins, Principal Engineer, James Fisher Testing Services

1.00 Lunch
2.00 WORKSHOP 3: Bridges and overloaded vehicles
Chair: Richard Fish, Bridge Owners’ Forum
Vehicle overload – we’re on the road to nowhere
- Brief history of load models
- Recent research on the effects of overloaded vehicles on roads and bridges
- Challenges to current policy
Dr Hazel A McDonald, Chief Bridge Engineer, Transport Scotland

2.30 WORKSHOP 4: Sustainability & net zero carbon
Chair: Richard Fish, Bridge Owners’ Forum
UN sustainable development goals and bridge management: common ground?
- Three pillars of sustainability
- The 17 UN sustainable development goals

2.30 WORKSHOP 4 (continued)
Chair: Richard Fish, Bridge Owners’ Forum
Arcadis KPIs
- Definitions
- Measuring and using KPI
- Business KPIs
- Net-zero buildings – lessons learnt
- Net-zero bridges
- Cost and carbon
David Collings, Technical Director, Arcadis

3.00 Afternoon Coffee Break and Exhibition Viewing

3.30 WORKSHOP 4 (continued)
Chair: Richard Fish, Bridge Owners’ Forum
Leveraging technology to protect structural assets from abnormal load vehicles
- Abnormal load management process for structural assets – extending or limiting life?
- Using and analysing notification data effectively
- Technology for robust abnormal load management – Kent County Council
- A glimpse of the future
Richard Fish, Technical Secretary, Bridge Owners’ Forum

3.30 WORKSHOP 4 (continued)
Chair: Richard Fish, Bridge Owners’ Forum
Arcadis KPIs
- Definitions
- Measuring and using KPI
- Business KPIs
- Net-zero buildings – lessons learnt
- Net-zero bridges
- Cost and carbon
David Collings, Technical Director, Arcadis

3.30 WORKSHOP 4 (continued)
Chair: Richard Fish, Bridge Owners’ Forum
Reducing carbon embodiment in bridge design and bridge rehabilitation through alternative materials
- Why always use steel and concrete for bridge construction?
- FRP composite materials can help reduce the carbon footprint in the bridge industry and these materials are successfully used in other industries such as automotive, aeronautical and marine
- Local councils such as Kent CC, Gloucestershire CC and Cardiff CC are seeing the benefit – and Transport for London will be installing an FRP composite bridge this year
John Drewett, Concrete Repair Ltd

4.15 Conference close by the Chair
ALPS Engineered Access systems & services provide industry with bespoke Access, Lifting, Pulling & Safety solutions continuously assisting clients when working on new or existing structures. These structures range from the conventional to the unusual. The criteria incorporated in the solution is always based on Safety and Efficiency. ALPS can supply standard Suspended Access Equipment from stock, this equipment used to solve many conventional site requirements. We also design, supply and install special Access and Lifting systems to ensure the most challenging of applications is safely and effectively concluded.

www.alps-uk.com

Fosroc’s range of innovative products, construction expertise and systematic approach combine to provide winning solutions for projects such as the Queensferry Crossing and M5 Oldbury Viaduct. Our renowned Renderoc repair range is widely used for both remediation of defects occurring during reinforced concrete construction as well as refurbishment of existing structures. At Bridges 2020 Fosroc will be introducing Patchroc 250 a fast-cure, thick section patch repair mortar; Renderoc DSR low rebound dry spray material and Renderoc LA60 a free-flowing micro concrete, specifically formulated with busy highway refurbishment in mind.

www.fosroc.com

Freyssinet has been at the forefront of specialised civil engineering technology, consultancy and installation since 1950. A leading specialist in concrete repairs, bridge bearings, post-tensioning and expansion joints, Freyssinet in renowned for delivering innovative solutions and pushing the envelope of structural and civil engineering. Freyssinet operates as principal contractor, specialist subcontractor and supplier throughout the UK and Ireland and is able to support its full product and service range with an in-house design team.

www.freyssinet.co.uk

PREMIER PARTNER

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www.james-fisher.com

PREMIER PARTNER

Mabey Mabey Bridge is a leading international provider of high-quality modular steel bridging solutions. We specialise in rapid-build, pre-engineered modular steel bridges to enable accelerated bridge construction and improve connectivity in urban and rural areas. We also deliver bridging solutions for the transport, construction, oil and gas, and mining sectors, as well as for specialist military applications, humanitarian emergencies and disaster relief. Mabey Bridge, (an Acrow Group company,) is based in Gloucestershire, UK and has supplied modular bridging solutions to over 150 countries worldwide.

www.mabeybridge.com

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www.mistrasgroup.co.uk

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www.polydeck.co.uk
Dr Sotirios A Argyroudis is Marie-Curie Principal Research Fellow at the University of Surrey and senior research and teaching staff at Aristotle University, Thessaloniki. Argyroudis is a civil engineer and geologist with 18 years of research experience in vulnerability, disaster risk and resilience assessment of critical infrastructure exposed to geo-hazards. In 2017, he was awarded an H2020 Marie Skłodowska-Curie Individual Fellowship (TRANSRISK project) on transport infrastructure resilience.

Argyroudis is a member of the WG13 of the EAEE on assessment, design and resilience of industrial facilities and vice-chair of the IABSE TG on design requirements for infrastructure resilience. He has more than 100 publications to his name and also delivers CPD seminars.

Andrew Arundel
**Head of Engineering and Infrastructure**
**Humber Bridge Board**

Andrew Arundel is head of engineering and infrastructure at the Humber Bridge Board and responsible for ensuring this engineering icon is maintained in a safe and serviceable condition. He has over 29 years’ experience in the industry, with the majority of it being in bridge engineering. This has included time spent working as a client in local government, for a main contractor and in both a small and large consultancy practice.

Martyn Bentham
**Bridges Technical Director**
**Jacobs**

Martyn Bentham is a technical director in the Jacobs Leeds Office with more than 20 years’ experience specialising exclusively in bridges. He has worked on a wide variety of highway and railway schemes in both the UK and Ireland. Martyn’s project portfolio includes the design of many new steel or steel-concrete composite structures, including large-span tied-arch bridges, multi-span flyovers on major highway schemes, and several significant railway structures carrying the Manchester Metrolink tram system. He is passionate about using his current knowledge and experience to develop a first-rate solution to any new engineering challenge.

David Collings
**Technical Director**
**ARCADIS UK**

David Collings is an accomplished engineer with wide-ranging experience of major infrastructure projects in the UK and overseas. His work has included the award-winning UK-Bangladesh Friendship Bridge and the 17km Second Penang Crossing. David is a researcher at the University of Surrey and his publications include books and papers on bridge design and construction. He is a former chairman of the Post Tensioning Association and the Malaysian Group of IABSE. He is assisting with the development of Arcadis major bridge capability, and quality, elegance and constructability are key factors in his work.

John Collins
**Principal Engineer**
**Roughan O’Donovan**

John Collins is a principal engineer with Ireland’s leading bridge engineering consultancy, Roughan & O’Donovan. The company has recently opened its first UK office near Leeds in Otley, West Yorkshire, and John is building a new bridge design team to serve ROD’s growing UK client base. John has worked on a range of technically challenging bridge projects, including the Humber Bridge A-frame rocker bearing replacement and Forth Road Bridge truss end links emergency works. He was a co-author of CIRIA’s Hidden Defects in Bridges.

Dave Cousins
**Principal Engineer**
**James Fisher Testing Services**

David Cousins is principal engineer at James Fisher Testing Services. For 15 years he has worked for a number of firms as a bridge engineer in a variety of roles, including design, fabrication, installation, assessment and demolition. His research into the behaviour of reinforced concrete deck hinge joints early in his career set a pattern for his interest in finding deficiencies and resolving the causes. Positions have taken him across the world to find steel fatigue problems and faulty construction. His passion is deteriorated structures, and for the past three years he has concentrated solely on monitoring and non-destructive testing applied to bridge structures.
Andy Davison is a Chartered Engineer with the ICE and a technical director for Jacobs in Leeds. He has worked with the company for six years, having previously spent time with other large consultancies both on site and in the design office. Andy has spent his career working throughout the UK with both local and national highway authorities. He has been involved with schemes varying from individual bridges to nationally significant multi-disciplinary projects and has developed expertise in various areas of highway structures engineering, including design, assessment, inspection, maintenance, refurbishment and strengthening.

Kevin Dentith is chief engineer (Bridges & Structures) with Devon County Council and actively involved in bridges nationally as chairman of ADEPT’s Bridges Group. He is also a member of the UK Bridges Board and Bridge Owners’ Forum. Kevin has worked on numerous steering groups over the years, including CIRIAs Scour Manual, BIM Guidance for Local Authorities and, more recently, bridge scour related research with universities. Kevin manages a large bridge office with 38 engineers and technicians managing 3,215 bridges and 134km of retaining walls. The group has five bridge teams covering all aspects of bridge engineering, including asset management, bridge and retaining wall design, inspections and maintenance.

John Drewett is director of lifespan structures and a fellow of the Institution of Civil Engineers, as well as professional member of the Institute of Corrosion. He has worked in the concrete repair industry for 35 years with Concrete Repairs Ltd. John helped pioneer the use of fibre-reinforced polymer composites for structural strengthening and was a member of the Concrete Society Steering Committee, which published the industry guidance documents TR55 & TR57. Five years ago, CRL established a new business, Lifespan Structures, to provide a design and manufacturing service for new FRP composite bridges.

Richard Fish is an independent consultant specialising in bridge asset management and has worked with many private and public sector clients both in the UK and overseas. He has been the technical secretary of the Bridge Owners’ Forum since 2009 and has been closely involved with a number of BOF research initiatives, notably the improved understanding of scour, masonry arch behaviour and bridge inspector competency. Richard previously worked in the public sector, mostly with South West County Councils, almost all of which was in the design, construction and maintenance of bridges. From 1994 to 2002, he was client project manager for the award-winning project to strengthen and widen the Tamar suspension bridge.

Lee Franck is a structural engineer with over 10 years’ experience, during which she has worked on award-winning projects for Arup in London and Guy Nordenson and Associates in New York. She is now an independent consultant and project manager helping clients deliver fully integrated projects by promoting close collaboration, the effective use of technology and the understanding of context. She has been a guest lecturer at Princeton and Columbia University amongst others and built bridges with communities in Rwanda and Panama. She is the founder of the conference series the ‘Future of Design’ and the prop tech startup RealtyImpact, which helps clients connect with the designers and makers of the future.

Tim Grimshaw graduated from Salford University and joined Waterman as a graduate engineer at the Manchester office in 2014. He has worked on both highway and rail projects, and this has included inspections of bridges, tunnels and other infrastructure. His work has also involved the assessment of existing structures using a number of analytical techniques and the design and detailing of new structures.

Tim is currently working with the Peak District National Park Authority to collate and detail repair works, which will then be given to an approved contractor to be undertaken, overseen by Tim and other Waterman staff on site.
Speaker Profiles

Francis Guinchard
Vinci Construction Grands Projets

Francis Guinchard is a graduate civil engineer from the Ecole Centrale de Lyon with 27 years of experience in technical and works management on major civil engineering projects. He started his career in 1981 at Campenon Bernard SGE and worked at Bouygues Offshore for three years before joining VINCI Construction Grands Projets in 2002. He has since managed various road, rail, viaduct and hydraulic construction projects worldwide. Today, he is project director for the construction of the offshore viaduct of the New Coastal Road on Réunion Island, one of the company’s most iconic projects.

Keith Harwood
Head of Profession - Bridges and Structures
Hertfordshire County Council

Keith Harwood is head of profession - bridges for Hertfordshire County Council and a member of the UK Bridges Board, Bridge Owners’ Forum and ADEPT National Bridges Group. With over 30 years’ experience in bridge design and management both in the UK and overseas, his particular interests are in taking advantage of innovative and digital techniques to the benefit of our bridge stock.

Chris Hendy
Transportation Technical Director and Professional Head of Bridge Engineering
Atkins

Chris Hendy is professional head of bridge engineering at Atkins, where he has led some of their most complex bridge projects. In 2012, he was awarded the Royal Academy of Engineering Silver Medal and was elected a fellow of the Royal Academy in 2013. He was also awarded the Institution of Civil Engineer’s Gold Medal in 2016. Chris is chairman of the BSI bridge committee, the UK’s Steel Bridge Group and fibUK. He is a project team member for the next generation Eurocodes EN 1993-1-5, EN 1993-2 and EN 1993-1-11, which deal with plate buckling, steel bridge design and cable-supported structures, respectively.

Rinze Herrema
Lead Engineer and Business Unit Manager, Infrastructural Engineering
Witteveen+Bos

Rinze Herrema is director of the Infrastructural Engineering Business Unit at Witteveen+Bos, a company he has been working for since 2002 as an engineer in the field of structural infrastructure. He started his career at the municipality of Amsterdam following his civil engineering studies at the Technical University of Delft. Rinze has worked on a wide range of projects, including the restoration of historic bridges, redevelopment of inner-city areas, and the design of movable bridges, locks, tunnels and hybrid structures such as fibre-reinforced composite bridges. For the bio-based bridge of Ritsumay, Herrema acted as strategic procurement consultant for the province of Frysian and led the design team at Witteveen+Bos.

Andrew Hodgkinson
Director
Hewson Consulting Engineers

Andrew Hodgkinson is a chartered engineer and director of the bridge design firm Hewson Consulting. Over his 25-year career, he has worked on numerous bridge projects in Asia, the Middle East and Europe, leading engineering teams and providing advice on design and construction. He has been involved with a number of notable projects, including the Øresund Link, Taiwan High-Speed Railway, Stonecutters Cable-Stayed Bridge in Hong Kong and Izmit Bay Suspension Bridge in Turkey. He is lead author of the structural dynamics chapter in the ICE Manual of Bridge Engineering and is an active member of the SCI’s Steel Bridges Group, where he currently chairs a working group on the design of bridges for operation and maintenance.

Nick Iannetta
Head of Engineering
Mabey Bridge

Nick Iannetta holds a BSc (Hons) in civil engineering and is a Chartered Civil Engineer with over 30 years’ industry experience in bridge design and engineering, structural steelwork, and the engineering of bespoke fabrication projects. As head of engineering at Mabey Bridge, Nick is currently responsible for Mabey Bridge’s modular bridge design and engineering management. He is also responsible for the technical delivery of their new product development programmes and is passionate about continuous improvement in the design and manufacture of modular bridging.

David Knight
Chartered Structural Engineer
Cake Industries

David Knight is a chartered structural engineer with over a decade’s experience as a design consultant. He has managed and designed a variety of projects on both a large and small scale, including Greenwich Reach Swing Bridge, Taplow Footbridge and Montgomery Bridge in Canary Wharf. He was also the lead structural designer for the international competition-winning scheme to bridge across the Thames between Pimlico and Nine Elms in 2016. He delights in working closely with architects and artists to design and project manage bridges, buildings, sculpture and moving structures. David is now director of design and engineering at Cake Industries, a combined design and fabrication business.
Dr Hazel A McDonald  
Chief Bridge Engineer  
Transport Scotland

Educated at Glasgow and Strathclyde Universities, Dr Hazel A McDonald has been immersed in maintenance, renewal and asset management of highway structures for over 25 years, 14 years of this with Transport Scotland. Previous experience with Cumbria County Council and Capita Symonds in inspection, design and maintenance followed a PhD in ‘Temperature Effects in Concrete Box Girder Bridges’ and bridge inspection and assessment for Mott MacDonald. At Transport Scotland, Hazel leads a team of 12 staff managing the inspection, maintenance and improvement of Scottish trunk road structures.

Dr Diego Panici  
Postdoctoral Researcher  
University of Exeter

Dr Diego Panici is working with Devon County Council for the scour assessment of bridges, with a focus on the effects of debris accumulation and the prioritisation of bridge inspections. He is a postdoc at the University of Exeter and has a PhD from the University of Southampton, in which he developed methodologies for estimation of debris accumulation size and effects of debris on scour depth. His work with Devon County Council and Exeter University is being included in the DMRB review of BD97.

Professor Xiaolin Meng  
Professor of Intelligent Mobility  
Faculty of Engineering, The University of Nottingham

Professor Xiaolin Meng is fellow of the Royal Institute of Navigation, professor of intelligent mobility, and theme leader of positioning and navigation technologies at the University of Nottingham. He is the founding director of the Sino-UK Geospatial Engineering Centre – an international centre for satellite technology exchange. He is also a special professor at the Chinese Academy of Surveying and Mapping and Wuhan University, China. He has been leading multi-million ESA and Innovate UK projects on structural health monitoring and driverless vehicles and is the author of more 320 journal and conference publications. He is the chair of many international associations and a member of the editorial boards for leading international journals.

Richard Parfitt  
Project Team Manager  
Dorset Council

Richard Parfitt started his career working for an engineering consultancy based in the Midlands before moving to Dorset Highways in 2009. Working in the Bridges and Structures team, Richard gained seven years’ experience designing, managing and supervising the construction of a wide range of structure types. These included steel, reinforced concrete, timber and masonry structures on highways and footpaths. Richard is now a project team manager, leading a team of highway engineers delivering the objectives of the Local Transport Plan. Richard graduated from the University of Warwick and became a Chartered Member of the Institution of Civil Engineers in 2015.

Dr Donald Pearson-Kirk  
Technical Director  
WSP

Dr Donald Pearson-Kirk is technical director for the WSP Structures Investigation Group. Donald has worked as a technical advisor to numerous international agencies and governments and is the author/co-author of over 260 technical papers. He has directed the planning for, and investigations of, over 360 post-tensioned bridges in the UK, Europe, the Middle East and the USA. Those bridges have included the Charles River Bridge in Boston, Massachusetts and the A4 Hammersmith Flyover in London. The SIG team has applied the BD 54/15 processes to over 330 post-tensioned bridges in the UK since the standard was issued.
Dr Maria Pregnolato is a lecturer in civil engineering and EPSRC (Engineering and Physical Science Research Council) research fellow at the University of Bristol. Her work focuses on infrastructure resilience, in particular the impact of flooding on road networks and bridges. She holds a Living with Environmental Change (LWEC) EPSRC fellowship to investigate the impact of flooding on bridges and transport. Her research interests include urban planning, climate adaptation and green infrastructure. She collaborates with a range of institutions worldwide, and her work is a cross-disciplinary endeavour, with the ultimate aim to improve the liveability of our cities.

Michael Smith is a chartered engineer within the Infrastructure Advisory team at Arup. Michael began his career as a structural engineer in Australia working in the mining, resources and transport sectors, as a bridge designer for several years. As the resources boom in Australia slowed, Michael's growing interest in whole life asset management offered a timely opportunity to concentrate on asset investment planning, asset condition and performance monitoring, and technical assurance for asset portfolios. Now based in London, Michael works to support asset owners, operators and investors to achieve the highest value and/or level of service from their assets.

Christopher Spence has extensive experience of the installation, commissioning and monitoring of corrosion control solutions for atmospherically exposed reinforced concrete structures. He is a professional member of the Institute of Corrosion, EN ISO 15257:2017 Level IV certified in reinforced concrete and is currently chair of the Corrosion Prevention Association (CPA), chair of the board at the Structural Concrete Alliance, and chair of the Institute of Corrosion (ICorr) Cathodic Protection Governing Board. Chris has worked for CPA member CCSSL for the past 11 years. The CPA is one of three trade associations that constitute the Structural Concrete Alliance.

Graham has worked for Freyssinet for over 12 years, first as Commercial Manager and now as Business Manager. With extensive experience in projects requiring bearing replacement, post-tensioning, concrete repairs, cathodic protection, Graham works to identify conceptual design solutions and commercial benefits, while developing strong client relationships.

Sjoerd Vrieswijk heads Friesland Province's Department of Infrastructure and has worked for the regional government for 20 years, following studies in traffic engineering. His career began by studying the optimisation of regional infrastructure and assessing environmental impacts. In 2016, he was appointed manager of the infrastructural and area development programme, in which the bio-based bridge in Ritsumayl was the final piece. His department is responsible for maintaining and operating 55 movable bridges, 131 fixed bridges, six aqueducts, canals stretching 970km, 600km of highways, and 200km of cycle lanes.

Clare Waterfall joined family firm Cascade Software in 2013 after many years as strategy director for a global software company. A self-confessed abnormal load anorak, Clare leads strategic and sales activities at Cascade, working with local authorities, other structure owning authorities, police authorities and abnormal load hauliers to develop and improve all aspects of their abnormal load management process. Cascade’s ambition is 100% notification compliance to safeguard structural assets and to ensure they are properly protected now and for future generations.
We offer cost-effective solutions to all bridge deck waterproofing, joint systems and concrete repairs from planning to delivery. With over 20 years experience using the GCP Eliminator system, Sentinel Joints and Permatrack, all our projects are completed to the highest standard.

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