The Institute of Concrete Technology

NEWSLETTER

www.theict.org.uk No. 100 Summer 2021

We are entering a period of significant numbers – 25th edition of the Yearbook just out; 50th anniversary of the Institute's foundation next year; and with this issue, the 100th ICT Newsletter. I am thankful to Raman Mangabhai for his suggestion we make something of this, and it is with pleasure present one of our larger issues, including a two-page reflection on the origins and progress of this medium of communication within our geographically dispersed community. I hope it prompts members to consider it theirs and to contribute as and when appropriate. We also enter a new Presidency, with Prof Basheer the 12th in the role. This issue introduces him and pays tribute to outgoing President, Rob Lewis. The handover took place (remotely) at our annual Convention; the topical theme of the symposium clearly struck a chord, as attendance was up by 50%! We hope for even more for our 50th next year.

Edwin Trout, Executive Officer

Contents

Professor Basheer, ICT President 2021-2023

Prof P.A.M. Basheer commenced his term of office as President at the Institute's AGM in April. See p.3

Council Notices

Council meetings

Any member wishing to raise an issue for discussion at Council is very welcome to do so. Please contact the E.O. to forward comments in writing or to arrange attendance in person. Council is keen to encourage the participation of the non-corporate grades of membership. While voting on the Institute's affairs is a privilege of corporate membership, members of all grades are encouraged to make their voice heard.

Future Council meetings:

- 9 June 2021
- 9 September 2021
- 8 December 2021

Members of Council 2021-2022

P.A.M. Basheer	President
Colin Nessfield	Vice President
D. Courtney-Ward	Hon. Secretary
Ian Evans	Hon. Treasurer

Gerrard Attree
Kathy Calverley
Nina Cardinal
Simon Chudley
Gareth David
Mike Grantham
Steve Handscomb
Peter Hewlett
Richard Kershaw
Agnieszka Klemm
Alistair Legg
Robert Lewis
Raman Mangabhai
John Reddy

John Lay stood down at the AGM

International Reps

Khaled Awad	Lebanon
Siva Kandasami	India
Deepu Karthikeyan	Qatar
Roelof Jacobs	South Africa
Jun Ren	China
Graham Stephenson	Cyprus
Arvind Suryavanshi	ID / SG
Des Vlietstra	Australia

Annual General Meeting

The Institute's 2021 AGM took place on 29th April and, as it was held online, the format was more compact than usual. Opening the proceedings with his final presidential report, Rob Lewis reviewed the successes of the previous year and commented more widely on his two-year tenure.

He thanked the team around him and, acknowledging the impact of the pandemic on the Institute's plans last year, reviewed the ICT's many achievements. He pointed to the success of the certification scheme, the development of fruitful partnerships with ACI, MPQC, RILEM and The Concrete Society. He flagged up the registration agreement with the Society of Operations Engineers that has started to help ICT members attain chartered status and the recognition of ICT membership for CSCS Professionally Qualified Person cards. He concluded with some personal comments: "I fully believe that, despite the past two years, we have forged our way through successfully. As we emerge from lockdown and get all our training, exams and certifications rolling again, we will bounce back stronger. I can see that as I hand over to Basheer that we have some great developments in the pipeline, both in the UK and overseas. So, I will now sign off, saying thank you for the honour and privilege of serving the ICT as President."

The Honorary Secretary (Dean Courtney-Ward) spoke and the Hon. Treasurer (Ian Evans) presented the accounts a summary of which appear in the annual report circulated separately. Committee reports will be posted online, and are available from the Executive Office on request.

Dean then announced the result of the elections to Council, the incumbent candidates being returned uncontested.

The formal business was concluded with the virtual installation of Professor Basheer as President, who said a few words commending Rob's successes of the past two years, and setting out something of what he hoped to achieve in the next (*see next page*). As an online ceremony conducted remotely, there was no actual handover of the presidential medalion on the day, and in a light-hearted moment, Basheer posted the following photoshopped image to capture the transfer.

AGM

A big round of applause

Prof Basheer paid tribute to the outgoing President for the many developments over the past two years in which Rob played a leadership role, or has overseen while in office:

CFTT Scheme agreed in 2019, with open sessions launched in the UK in September;

CFTT training video devised and in production during 2020 for launch later this year;

CSCS recognition, with AQP agreed in 2020 and PQP in 2021;

SOE registration agreement concluded in late 2019 and effective from early 2020;

RILEM partnership agreed in October 2020;

CITB-NI agreement for financial support of examinations in Northern Ireland, in late 2019;

Service Level Agreement with the Concrete Society renegotiated.

Online ICT Conventions held in 2020 and 2021;

ICT webinar series 2020 – new events for an international audience;

ICT website re-launched recently with new address;

CPD audits revived in 2019;

ICT support for research projects.

Rob worked relentlessly hard, Basheer said, to bring Past Presidents, Council and office holders, committees and other ICT members together to benefit not only the Institute but also the industry and educational institutions with an interest in concrete.

Introducing the new President

As Professor Basheer assumed the Presidency on 29th April, he used his acceptance speech to say a few works about himself and give an indication of his priorities for the coming two years:

Basheer has enjoyed a forty-year career in concrete technology. He studied Civil Engineering in India, completing an MSc dissertation on *Lateral load resistance of flat flab construction* for the University of Calicut. He moved to the UK in 1987, joining the staff at Queen's University Belfast on gaining his PhD with a thesis entitled 'CLAM' permeability tests for assessing the durability of concrete. He went on to gain a professorship at Queen's. It was at QUB that, in association with the ICT and TALENT Concrete Training, he initiated the MSc course in Advanced Concrete Technology, building on the earlier ICT Diploma. His tenure at QUB concluded in 2014 with his DSc and a thesis on Durable structures with the application of innovative in-site tests, and he transferred to the University of Leeds. For much of the time since, he has been Head of School in Civil Engineering.

For 35 years Basheer has worked closely with related organisations such as The Concrete Society, the ACI, and RILEM, sitting on the council and various technical committees respectively. In this and his university research, he has gained an international profile which he hope will now enhance the ICT's global influence of the ICT. However, he believes each leadership role has its own challenges and requests the membership's support in carrying the ICT flag forward. Basheer's priorities include:

- Pursuing national and global opportunities;
- Developing existing partnership agreements with ACI and RILEM;
- Considering other global partnerships, while appreciating the limited number of volunteers who could contribute to them;
- Enhancing membership and training by enter into training and educational partnerships;
- Focusing on certification schemes, flexible learning and CPD.

In May, having received the medallion from Rob Lewis, Basheer presented outgoing President with a thank you gift for his service over the past two years.

Conference Diary

Future ICT-supported meetings/conferences

11-13 July 2022
8th International Conference on
Concrete Repair, Concrete Technology and Durability
Leeds / Online hybrid
www.concrete-solutions.info/

18-20 July 2022
International Conference on
Calcium Aluminate Cements
Cambridge
https://cacements.com/

RILEM webinars

ROC&TOK webinar series

3 June 2021
Alkali-Silica Reaction: research needs and the link to practice
By Dr Jason H. Ideker
Oregon State University, USA
1pm UTC (universal time)

1 July 2021
Digital Concrete: dream or reality?
Robert Flatt, ETHZ, Switzerland
3pm CET

RCA webinar series

8 June 2021
Towards standardisation of recycled aggregate concrete
By Dr Moray Newlands of the University of Dundee, UK

22 June 2021
Case studies of recycled concrete aggregate sin concrete in India
By Siva Kandasami, L&T, India
at 12:00

6 July 2021
Design strategy for recycled aggregate concrete
12:00 noon

www.plymouth.ac.uk/research

YRF V: Innovations in Construction Materials

The Young Researchers' Forum is a research forum on for early-career scientists and engineers working in the field of construction materials, and the latest in the series was jointly organised by the Sustainable Materials and Structures Research Group of Glasgow Caledonian University and the Institute of Concrete Technology.

The forum builds on the success of the previous four events on this topic held by The Society of Chemical Industry (London 2012), University College London (London 2014), Imperial College (London 2016) and Northumbria University (Newcastle 2018). Due to the COVID-19 pandemic, YRF V, originally scheduled to be held in Glasgow in April 2020, had to be postponed and the 'face-to-face" presentations were replaced by the online presentations on 22 April 2021.

The intention of organisers was to provide an opportunity for early-career researchers to showcase their work in the area of construction materials in an international context. Speakers from Brazil, Iraq, Iran, Switzerland and the UK all contributed to the success of the event.

With Prof Agnieszka Klemm (F469) in the chair, the forum was opened by the Associate Dean for Research, Prof Ole Pahl and Past President of the Institute of Concrete Technology, Mr Raman Mangabhai (HF346).

Innovations in Construction Materials is a broad field, involving aspects from material properties and behaviour, via structural performance to serviceability and durability. The materials covered this year included cement and concrete, aggregates, timber and steel.

Aspects of cement and concrete featured in the programme included: Chloride resistance of concrete with SCMs; Advances in microbial-based cementitious materials; Self-healing of steam-cured ECC; The application of superabsorbent polymers and the sorption characteristics of SAP in slag solutions; 3D printed geopolymer; and Optimising the embodied carbon efficiency of composite cements using thermodynamic modelling. Speakers from Brazil considered concrete bridges in the northeast of the country, chloride penetration of cementitious matrices with sugarcane bagasse ash sand and the use of polyurethane foams for additive building with cementious mortars. *See:* **YRF_V_Proceedings.pdf**

There were two prizes were awarded for Best Presentations, with the ICT's choice going Dr Emmanuel Salifu (University of Strathclyde) for "Recent Advances in Engineered Microbial Technologies for the Construction Industry".

Look out for the full report on the ICT website, under the 'Events' tab

ICT Supporting Organisations

Ecocem, Hanson, LKAB and Tarmac have all signed up as ICT Supporting Organisations for 2021.

Events

24hr Conference

The ICT will be hosting an hour long stop 'in the UK' at the unique event, *The 24 Hours of Concrete Knowledge Conference*.

Organized by the American Concrete Institute (ACI), this will be a conference for anyone interested in learning more about concrete, from anywhere in the world. It is a free event being held on 13 July 2021, with ACI International Chapters and global industry Partners co-hosting and moderating sections of the conference. It will complete a trip around the world, over 24 continuous hours, with visits to 12 Chapters and 12 Partners, to learn from their concrete experts. Each of the 24 co-hosts will moderate a one hour stop on that journey, providing two recorded presentations, with a live Q&A period after each. These will be from 'local' concrete expert on the 'Hot Concrete Topics' from their region. The ICT's slot is scheduled for 17:00-18:00 (London time), hosted by Professor Basheer and featuring presentations by Barry Gilroy (M1059) and Kevin Paine (F1099), respectively. **'Delivering more sustainable concrete through accelerated carbonation curing'** and '**Autonomic self-healing concrete: A resilient material for life'**

If you wish to learn more about concrete from around the world, no matter the 'traffic light colour' for travel, this is the way to do it!

Registration for this free virtual event opened on 3 May. Attendees will have exclusive access to recordings of all 24 presentations after the event.

To register:

https://lnkd.in/g3n4ViS

Convention 2021

Net Zero Carbon Concrete

Do we know where we are going?

While not exactly a first – we'd held one ICT Convention online already, back in September 2020 – the 49th annual Convention did introduce a number of innovations. Not least of these was the use of Hopin as the delivery platform, courtesy of 'Supporting Organisation' LKAB, which enabled greater interaction between speakers, exhibitors and delegates. This included features such as the virtual exhibition hall and a networking facility, beside the customary chat and Q&A facilities on hand during the technical symposium.

The symposium was, of course, on the theme of Net Zero Carbon Concrete, an issue that has really captured the industry's attention over the past year, and which has been brought sharply into focus by the publication of roadmap documents in several countries, including Sweden and the UK. These formed the keynote address on Day 1 and the opening paper of Day 2.

The programme consisted of ten presentations – five on each day – and ranged from policy to innovations in cement production technology to amending practice in the design and specification of concrete. More than one paper was presented jointly and so the virtual lecturn was occupied by 12 speakers. It was a gratifyingly international panel, with speakers from France, Germany, South Africa and Sweden as well as the UK.

Ian Riley, the World Cement Association's chief executive, was the guest chairman and he handled his role with a quiet assurance, displaying a clear grasp of the issues from the cement producer's perspective and an engaging ease in prompting participation by others to stimulate discussion at the end of each session. Indeed one of the consequence of the format is that many delegates appeared freer to raise questions or offer comments online than they would in a hall full of people.

And the hall would have been full of people, had the attendance been replicated in person. 145 participants registered – the highest figure for quite some years. Again, the online format allowed a wider attendance across time zones and geographical distance. Delegates logged on from Australia, Canada, France, Hong Kong, Ireland, Malaysia, South Africa.

The feedback has been very positive, with comments such as "very interesting and particularly relevant" and "very interesting and inspiring, I really enjoyed it" and others on similar lines.

Such success comes at a cost and the ICT has been very fortunate to have enjoyed the support of joint Principal Sponsors: Ferroglobe and Ha Be of Germany. We offer our thanks. Thanks too to the ongoing backing of the ICT's Supporting Organisations: Ecocem, Hanson, LKAB and Tarmac. All six companies had a presence in the virtual exhibition, offering video presentations and the option of one-to-one contact online for questions or a chat.

Finally, all registrants have been offered a recording of the presentation, PDF copies of the visuals and copies of the edited papers. If you missed the event and would like to catch up, you would be welcome to get in touch. There will be a registration fee, but access is available.

Newsletter No.1, February 1985

The 25th anniversary issue in 1997

David Teychenne, the first editor

The Hundredth Issue: a Retrospective

By Edwin Trout, Executive Officer

First steps – the ACT Newsletter

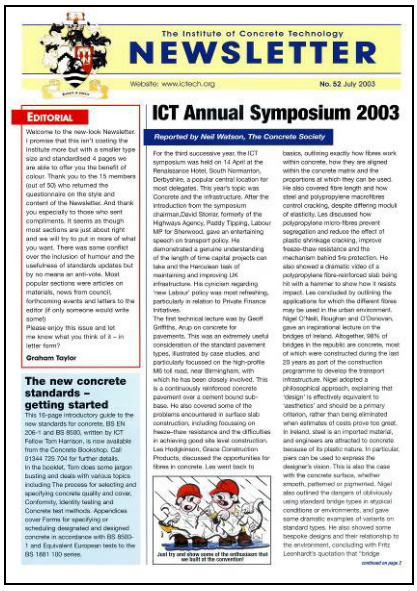
The earliest issue of the ACT Newsletter I have unearthed is Number 2, from the days when the ICT was known at the Association of Concrete Technologists. (Does anyone still have a copy of Newsletter No.1?) It is dated July 1973 and it appears from its tone that both the ACT and its newsletter were established in a period of great optimism. 1973 was, after all – for the UK at least – the year of peak production in both cement and ready-mixed concrete. The opening page starts with a letter from the then chairman, Jack Dixon, and what follows indicates the progress of the new organisation's first year. Not least was the Convention in Nottingham, at which (it was noted), 40% of the dinner bill was for alcoholic beverages! Other items included confirmation of the re-elected committee, announcement of the ACT Diploma results, and a decision on designating the grades of membership.

The newsletter dated October 1975 suggests a degree of disappointment in the Association's effectiveness in engaging the membership. "Maintaining communication between all our members is of prime importance", writes Jack Dixon, "a statement, you might reflect, that goes with saying, but unfortunately, as we have found to our cost, one that is easier said than done. An almost total absence of contributions from non-committee members has been a great disappointment and somewhat of a set-back." Jack was actually writing about the house journal, *ACTivity*, and as a consequence, announced the committee had "decided to fill the interval until our next *ACTivity* publication with occasional Newsletters of this type." These continued to be issued periodically, A4 typescripts put together firstly by the Publicity sub-committee, then in 1976, by Maurice Thompson. They included details of meetings, comments on standards, technical articles of technical interest, details of new members and a directory of commercial test houses.

The ICT Newsletter 1985-2007

Sadly, the newsletter was abandoned in 1977, shortly before the ACT formally changed its name to the Institute of Concrete Technology. No newsletter appeared during the following few years and a regular page in *Concrete* was tried instead, but a new series resumed in 1985 under the editorship of David Teychenné of the Building Research Establishment. It would be, in David's words, a "regular means of keeping members informed of the activities of the Institute, and including topics of interest in the field of concrete technology". An A5 publication, the newsletter grew rapidly from 8 to 28 pages. Ten issues were published before David stepped down in June 1988 and, after No.11 was issued in December with Roy Jolly at the helm, the format was changed to four or six A4 pages. The Newsletter ran from 1985 to 2007 and provides a running commentary on the Institute's affairs throughout this period. Perhaps most informative and distinctive, was the Institute's 25th anniversary newsletter in 1997. This continuous run of newsletters came to an end when the ICT merged with The Concrete Society in 2007. ICT news was thenceforth featured in the merged body's occasional *News & Views*.

ICT Newsletter


The Institute of Concrete Technology
NEWSLETTER
Website: www.ictech.org
No. 52 July 2003

EDITORIAL

Welcome to the new-look Newsletter. I promise that this isn't costing the Institute more but with a smaller type size and standardised 4 pages we are able to offer you the benefit of colour. Thank you to the 15 members (out of 50) who returned the questionnaire on the style and content of the Newsletter. And thank you especially to those who sent compliments. It seems as though most sections are just about right and we will try to put in more of what you want. There was some conflict over the inclusion of humour and the usefulness of standards updates but by no means an anti-vote. Most popular sections were articles on materials, news from council, forthcoming events and letters to the editor (if only someone would write some!)
Please enjoy this issue and let me know what you think of it – in letter form?

Graham Taylor

The new concrete standards – getting started

This 16-page introductory guide to the new standards for concrete, BS EN 206-1 and BS 8500, written by ICT Fellow Tom Harrison, is now available from the Concrete Bookshop. Call 01344 725 704 for further details. In the booklet, Tom does some jargon busting and deals with various topics including The process for selecting and specifying concrete quality and cover, Conformity, Identity testing and Concrete test methods. Appendices cover Forms for specifying or scheduling designated and designed concrete in accordance with BS 8500-1 and Equivalent European tests to the BS 1881 100 series.

ICT Annual Symposium 2003

Reported by Neil Watson, The Concrete Society

For the third successive year, the ICT symposium was held on 14 April at the Renaissance Hotel, South Normanton, Derbyshire, a popular central location for most delegates. This year's topic was Concrete and the infrastructure. After the introduction from the symposium chairman,David Moreton formerly of the Highways Agency, Paddy Tipping, Labour MP for Sherwood, gave an entertaining speech on transport policy. He demonstrated a genuine understanding of the length of time capital projects can take and the Herculean task of maintaining and improving UK infrastructure. His cynicism regarding 'new Labour' policy was most refreshing, particularly in relation to Private Finance Initiatives.
The first technical lecture was by Geoff Griffiths, Arup on concrete for pavements. This was an extremely useful consideration of the standard pavement types, illustrated by case studies, and particularly focussed on the high-profile M6 toll road, near Birmingham, with which he has been closely involved. This is a continuously reinforced concrete pavement over a cement bound sub-base. He also covered some of the problems encountered in surface slab construction, including focussing on freeze–thaw resistance and the difficulties in achieving good site level construction. Les Hodgkinson, Grace Construction Products, discussed the opportunities for fibres in concrete. Les went back to basics, outlining exactly how fibres work within concrete, how they are aligned within the concrete matrix and the proportions at which they can be used. He also covered fibre length and how steel and polypropylene macrofibres control cracking, despite differing moduli of elasticity. Les discussed how polypropylene micro-fibres prevent segregation and reduce the effect of plastic shrinkage cracking, improve freeze–thaw resistance and the mechanism behind fire protection. He also showed a dramatic video of a polypropylene fibre-reinforced slab being hit with a hammer to show how it resists impact. Les concluded by outlining the applications for which the different fibres may be used in the urban environment.
Nigel O'Neill, Roughan and O'Donovan, gave an inspirational lecture on the bridges of Ireland. Altogether, 98% of bridges in the republic are concrete, most of which were constructed during the last 20 years as part of the construction programme to develop the transport infrastructure. Nigel adopted a philosophical approach, explaining that 'design' is effectively equivalent to 'aesthetics' and should be a primary criterion, rather than being eliminated when estimates of costs prove too great. In Ireland, steel is an imported material, and engineers are attracted to concrete because of its plastic nature. In particular, piers can be used to express the designer's vision. This is also the case with the concrete surface, whether smooth, patterned or pigmented. Nigel also outlined the dangers of obviously using standard bridge types in atypical conditions or environments, and gave some dramatic examples of variants on standard types. He also showed some bespoke designs and their relationship to the environment, concluding with Fritz Leonhardt's quotation that "bridge

continued on page 2

Just try and stop some of the enthusiasm that we both of the committee!

The 'new look' newsletter in 2003


The Institute of Concrete Technology
NEWSLETTER
http://ict.concrete.org.uk
No.60 Summer 2011

In any organization with a widely dispersed membership regular communication is important, I believe, and this is something the ICT aims to improve. *News & Views* serves the wider Concrete Society, and is a forum for publicising ICT activities, but something specifically addressing ICT members has been missing since the former *Newsletter* was abandoned in 2007. This *Newsletter* is an attempt to revive that forum, distributed in electronic format only, in conjunction with the newly designed website. I hope it will reflect the ongoing interests of the Institute, and contributions from members for future issues will be very welcome.
Edwin A.R. Trout (Executive Officer)

Annual Convention

The annual Convention was held in April and was a great success. A golf tournament preceded the formal business, consisting of the annual members' meeting and the technical symposium. This addressed the introduction and use of the National Structural Concrete Specification and was arranged with the support of CONSTRUCT, the Concrete Structures Group. The day was rounded off with a most enjoyable gala dinner at which £500 was raised for the Marie Curie Cancer Fund. Entertainment was provided by comedian, Denny Waters. A full report of the Convention is now posted on the website, accompanied by copies of the presentations. Go to the members' area on: http://ict.concrete.org.uk

Honorary Fellows recognized

At the recent AMM, Messrs Ken Day, Ian Fergusson and Graham Taylor were awarded the status of Honorary Fellow by a ballot of the membership.

Annex to the Memorandum of Understanding with The Concrete Society

David Ball, President of The Concrete Society and Peter Hewlett, President of ICT

In recent months there has been significant change that has created an opportunity to reinstate the principles underwriting the Memorandum of Understanding between ICT and The Concrete Society in July 2007. The means of fulfilling this reinstatement have been laid out in an Annex to the MOU. This document was agreed by ICT's Council and on 13th January 2011 agreed by The Concrete Society Council. It has been signed by both Presidents. Successful implementation of the Annex should bring both organisations together as was originally envisaged by fulfilling the actions contained in the Annex. Implementation may take some time but we now have a basis on which to progress. - *Peter Hewlett*

Council 2011

Members of Council were re-elected en bloc at the AMM and so the Council consists of the following:

Peter Hewlett (President), Kevin Sutherland (Hon. Secretary), Mike Grantham (Hon. Treasurer), Tony Binns, Mike Connell, Rob Gaimster (Corresponding), Norman Greig, Nick Jowett, Bryan Magee, Raman Mangabhai, Colin Nessfield, Peter Rhodes and John Roberts.

"It is hoped that the Newsletter will allow members to share their experiences with other members by providing me with articles for publication in the Newsletter. We want you to feel that his truly is your Newsletter"

David Teychenné, 1985

Throughout the 60 issues of its 22-year span, the ICT Newsletter had only three editors: David Teychenne (10 issues from 1985-88); Roy Jolly (25 issues from 1988-1997) and Graham Taylor (26 issues from 1997-2007). Production was by Fine Print of Abingdon (and later, Oxford) a firm which, starting with issue No.12 (May 1989), set the Newsletter in an A4 page, double-column format. It was printed in dark blue on white with a matt finish, then in gloss from No.31 (Jun 96) to No.38 (Nov 98). At the end of the 1990s, from No.40 (Jun 99), printing was transferred to Premier Colour, Maidenhead, and the layout changed from two to three columns. Four-colour printing was introduced in July 2003 (No.53). The contents were varied, ranging from meeting reports, accounts of technical developments, and book reviews, to members' personal news, Council announcements, and lists of updates to Standards.

New Series (2011 to date)

In 2011, Edwin Trout of the Concrete Society was appointed to the role of Executive Officer, acting on a part-time basis. Though he contributed items on the ICT to *News & Views*, he came to the view that this limited exposure to an admittedly wider audience – despite the promotional benefit – did little to enhance communication within the membership, and so proposed a revival of the Institute's own newsletter. This was agreed and in June 2011 the ICT Newsletter was reborn as No.61, with Edwin as editor.

With no budget available, it would be an in-house production, circulated by email as a PDF document. The new design echoed the former blue and yellow colourway, and soon settled down to feature a cover photo and a series of 'departmental' tags that would recur as required. A contents listing made its appearance in December 2015, after the page count rapidly rose from three in the first issue, to 12 or 16 (even 20 on occasion).

From the start a conscious effort was made to include a wide range of contributions from members, and to reflect the international composition of the membership where possible. Not only a means of conveying announcements and reflecting the Institute's activity each quarter, it would also include members' news and longer features of general interest. There would be reports of research, adverts for job vacancies, articles on the history of concrete. The 'In Print' listing of published papers by members, and the 'Standards Alert', benefited from access to the Concrete Society's specialist library. It has been successful in attracting contributions from a fair number of members each issue – some of them repeatedly – and hopefully fulfilled the aspirations expressed in 1985.

Ten years on, the ICT Newsletter marks its hundredth issue, and an archive of newsletters from the past few years is now available on the new ICT website. If you joined the Institute recently, or didn't receive a particular issue, or are simply curious to look back over time, you can peruse the back issues at your leisure.

If you have anything you wish to contribute to the next or future issues, please get in touch via ExecutiveOfficer@theict.org.uk – we'd love to hear from you.

Membership

New members

We are delighted to welcome several new members:

- Ranjit Kekan	S1178
- John Mawer	A1179
- Ahmed Abdalqader	M1180
- Farhan Nawab	M1181
- Aaron Lucid	A1182
- George Bowman	G1183
- Madhur Kanungo	S1184
- Daniel O'Connor	A1185
- Tanvir Qureshi	M1186
- Francis Eni	A1187
- Dali Bondar	M1188

A number of other applications are currently being scrutinised, to be announced next time.

Recent Appointments

Congratulations to **Antony Hegarty** (M916) for his promotion to Lead Concrete Technologist - UK & Ireland, at GCP Applied Technologies.

Martin Lavery (M820) was appointed Technical Services Manager Concrete at Sika Ltd in March.

John Lay (M427) is now Technical Products Manager at Breedon Group plc.

Raman Mangabhai (HF346) was appointed Vice Chairman of the SCI Constriction Materials Group in May 2021.

The ICT's enamelled steel lapel badges are available for purchase at £10 (including VAT and postage)

The Benefit of Upgrading Membership

by Sarah Fry

Quarry Management, the monthly journal of the quarrying industry, recently carried an article about the value of upgrading IQ membership – membership of our sister organisation, the Institute of Quarrying. The topic it describes so perfectly fits the ICT's membership progression that the following selected excerpts from this April article simply have ICT and 'concrete technology' in place of IQ and 'quarrying'. We acknowledge the original source with thanks, but you'd never notice the swap!

Anyone associated with concrete industry, at any stage of their career, can reap the benefits of ICT membership, wither working directly for a concrete producer, or as a supplier to the industry. Some of the benefits of ICT membership include:

- Professional recognition with designatory letters
- Support and advice at all stages of your career
- Access to valuable continuing professional resources, networking events and internationally recognised qualifications
- Being part of a global community of professionals committed to sharing knowledge and best practice.

As members' work experience, knowledge, skills and career all evolve, so does their membership. The structured professional membership grades – Technician, Affiliate, Associate, Member and Fellow of ICT – reflects an individual's professionalism, level of competence and commitment to the concrete sector. With lifelong learning at the heart of ICI, members are being reminded to check if they are eligible to upgrade.

Why upgrade ICT membership?

ICT members are recognized as highly skilled professionals, which is why we encourage lifelong learning as part of membership in order for skills, knowledge and best practice to remain relevant over time. One of the great benefits of membership is that it evolves as you do. It's all about supporting you and your commitment to the industry and our graded membership reflects that progression. Ask yourself, since becoming a member of ICT have you changed jobs, received a promotion, completed a qualification, kept your CPD up to date? You could reflect these achievements.

Keeping membership grades up to date helps demonstrate professionalism and commitment to the industry.

ICT membership grades explained

The graded membership at ICT provides clear progression as an individual's career grows. [At this point we direct your attention to the ICT's guidance document, *Routes to Membership* – which you'll find on the website – and summarised overleaf]:

Membership

Membership Grades

Technician (TechICT) – for those new to the industry, having gained the entry-level qualification (Stage 1: Concrete Practice), or those specialising as an experienced lab or field technician (with ACI-ICT certification)

Affiliate (AffICT) – for those in the early stages of their career who are progressing through the Concrete Technology & Construction qualifications and achieved Stage 2: General Principles. Suitable also for those in roles with limited technical responsibilities, but who need to be familiar with the subject.

Associate (AMICT) for those who have who have attained Stage 3: Practical Applications, those with relevant academic qualifications but little experience, or those with sold industry experience but have yet to complete Advanced Concrete Technology. For some this is a transitional grade, for others the destination.

Member (MICT) – for those fully qualified in Advanced Concrete Technology (with Diploma or MSc), and/or substantial experience in a senior role as technical manager, materials engineer or researcher. The 'gold standard' of membership.

Fellow (FICT) – aimed at experienced Members on recommendation by peers for long-term achievement in the sector.

HRH The Prince Philip, Duke of Edinburgh

Former President of the City & Guilds of London Institute and the first Honorary Member of The Concrete Society

Prince Philip had a long-standing interest in industry and engineering and so it shouldn't surprise that in the 1960s he became associated with the then burgeoning concrete sector, particularly as embodied first in the Reinforced Concrete Association, and then in its successor, The Concrete Society. "Any organisation which sets out to improve the performance of any section of British industry has my unqualified support", he declared when addressing the Society in 1969.

The connection first arose when he was the guest of the Reinforced Concrete Association, one of the four constituent bodies on which the Concrete Society was founded shortly after. On 11 June 1965, in his capacity as President of the City & Guilds of London Institute, he presented two prizes for the performance in the very exams that gave rise to the ICT own scheme of qualifications, and spoke about the value of training and education in concrete.

The Concrete Society was established in October 1966 and Prince Philip was elected as the first Honorary Member at the inaugural general meeting. Formal investiture took place the following summer, on 6 June, at a brief ceremony in Buckingham Palace where he was presented with a scroll by the Society's first president Sir Frederick Snow.

The connection was acknowledged when Prince Philip visited the Society's stand, while he attended the International Building Exhibition in London in November 1967. But it was two years later, when he was Guest of Honour at the Concrete Society's annual dinner and awards ceremony in 1969, that his support was most publicly on view.

The event was held at the Royal Garden Hotel, London, on 24 June, and the Duke was asked to speak and present five awards. "Quite a lot seems to have happened in the world of concrete since I was entertained by the Reinforced Concrete Association, one of the parents of this Society, some four years ago. The Society deserves every success if only because it has established these awards for design and construction in concrete. I like to think that what I said four years ago encouraged the Society to organise this scheme and I am delighted to be asked to make the presentations this year.

He added, with his trademark candour, "Frankly I admit when I saw pictures of the entries I was amazed that such remarkable buildings were constructed out of concrete. The judges have obviously had a very difficult task. If standards of design go on improving at the present rate I have every hope that life in the concrete jungle will not be as bad as I expected."

The Duke's support, expressed so long ago, has not been forgotten. When Ian Lloyd's *The Duke: 100 Chapters in the Life of Prince Philip* was published earlier this year, it was recalled in the 100 facts excerpted by the book's publicist. Fact 92 – "Among his support for an eclectic group of organisations and patronage, he's a life member of Accrington Camera Club and an honorary member of the Concrete Society."

ICT Qualifications

The Concrete Society's new-look magazine Concrete carries a course and qualifications theme in the June issue, including a page on Aggregates in Construction (from which the item to the right is taken), and also an article on the revised range of courses available from the University of Derby's Centre for Mineral Products.

Contributors to this issue

Thanks to the following for sending their news & photos:

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Editor: Edwin A.R. Trout

Aggregates in Construction

Incorporating feedback from industry, the Institute of Concrete Technology (ICT) has recently revised the learning objectives for its Aggregates in Construction qualification, a specialised component of the four-stage Concrete Technology & Construction scheme offered by the Institute.

Like the other Stages in the CT&C suite, Aggregates in Construction was first offered under the auspices of the City & Guilds of London Institute (CGLI). The ICT developed a set of industry-endorsed learning objectives and, once a year, set the question papers and marked the examination scripts. Course delivery was, and continues to be fulfilled by third party course providers – usually in-house by the major materials producers.

Aggregates in Construction was developed in this context in the late 1990s, and the learning objectives were first published in 2000. With a focus on aggregates – their properties, production, testing – and applications in construction beyond concrete alone, they included then as now, the following topics:

1. Health and safety
2. Geology and geological properties
3. Field implementation of aggregate deposits
4. Aggregate extraction
5. Aggregate processing
6. Testing for aggregates
7. Aggregates for concrete
8. Aggregates for mortar
9. Unbound aggregates
10 Bituminous bonding materials
11 Specialist products

Examinations have been held almost every year since the qualification's launch, initially administered by CGLI. In 2009, City & Guilds relinquished its role in CT&C and the Concrete Society has since taken its place, undertaking the administration of exams on behalf of the ICT's Examinations Committee.

The results over the years have generally reflected well on the candidates and the course providers concerned. While few have attained Distinction, most have passed and a fair proportion has been awarded Credit. All those who pass are eligible to apply for Associate Membership of the Institute, with the designatory letters AMICT after their names.

Assessment is by closed-book, three-hour written examination in invigilated exam centres. The exams normally take place in May, though in 2020 were cancelled because of the COVID-19 restrictions. This year they have been rescheduled to take place on 21 October and registration is now open. The ICT would welcome enquiries from interested employers and aspiring candidates, and indeed from potential course providers to deliver future training.

Website: www.theict.org.uk/
Details: ExecutiveOfficer@theict.org.uk
Registration: Education@concrete.org.uk

Courses & Exams

CT&C Stage 1 online

On 27 May, the ICT conducted a trial of online examinations for candidates at CT&C Stage 1: Concrete Practice, in conjunction with platform provider Ulster University. 36 candidates sat the exam, with the support of CITB-NI. The results are being confirmed and the trial evaluated, but feedback has been positive: "*Why wouldn't you want to gain professional recognition. The course is a good foundation for future learning*"

ICT Examinations

The ICT's programme of examinations for 2020 were cancelled in line with government guidance and current academic practice, with the exception of the Stage 1: Concrete Practice exam, which took place in December.

This year, the Institute decided to postpone the main exam season to October, along with the Stage 1 exam in December.

The dates, along with fees and registration forms, are on the ICT website as follows:

Stage 1	
Concrete Practice	7 Dec
Stage 2:	
General Principles	19 Oct
Stage 3	
Practical Applications	20 Oct
Aggregates in Constr.	21 Oct
Stage 4	
ACT paper 1	13 Oct
ACT paper 2	14 Oct

Cement & Concrete SA

The School of Concrete Technology in South Africa is now part of a larger, new organisation, representative of a wider range of industry interests:

Cement & Concrete SA (CCSA) has announced the new consolidated industry body is open for business and is set to take the lead on all matters relating to cement and concrete in South Africa.

The single non-profit entity, CCSA, was established through an extensive and thorough process of engagement with various stakeholders to consolidate The Concrete Institute (TCI), Concrete Society of Southern Africa (CSSA) and the Association of Cementitious Material Producers (ACMP).

The body will create long-term shared value and industry growth in South Africa through driving collaboration, skills development, innovation, and the highest standards in sustainable cement and concrete materials and products.

Bryan Perrie (M385), CEO of Cement & Concrete SA, states that CCSA has been mandated to promote and support the industry, to drive growth and deliver shared value through a unified platform for cement and concrete.

"At a time where many conflicting and ambiguous messages are shared readily on various platforms, and with the proliferation of substandard products and services, the need for authoritative engagement with all stakeholders is critical." Perrie adds.

A new and inclusive membership model will make the portfolio of services offered by CCSA available to individuals or corporates, either for free or at members' discounted rates. These services include courses presented by the School of Concrete Technology, access to the Information Centre, attendance at technical events and webinars, publications, and hyperlinked listings on various electronic sources, to name a few.

CCSA, through its members, will create the opportunity to build a healthier future through a network of influencers. Working with industry role players to develop the value propositions of cement and concrete is one of the identified objectives of CCSA. Other goals include: to promote the value creation story of the cement and concrete industry in South Africa, supporting research as a means of increasing the ongoing expertise base, and the promotion of industry standards and audit compliance amongst members and industry role players.

On a more practical level, CCSA will grow industry expertise and build capacity by developing and offering courses, seminars, and training materials. The provision of information, research, advisory and on-site technical consulting services will be another service offering available to members.

CCSA's dedicated focus on committees will ensure that all relevant areas are addressed with expertise through consultation. The committee structures will empower members to guide and shape many of the services. The branch committees of the erstwhile Concrete Society of SA will be retained to ensure that CCSA will have concrete ambassadors in various regions.

"We are excited about the future of the cement and concrete industry in SA. The staff of CCSA are ready to discuss membership options and benefits. We are poised to add value and unlock opportunities for all members, and the industry at large," Perrie concludes.

Midrand, 1 March 2021

Job Vacancies

Materials Technician

Costain is looking for a lab technician (or possibly two) on Tideway East Project. Use this link to see the job description:

https://costain.csod.com/ux/ats/careersite/1/home/requisition/547?c=costain

Key responsibilities are to:

Carry out a range of soils/aggregates and concrete laboratory tests

Carry out a range of soil/aggregates/concrete in situ tests in a construction environment

Carry out materials sampling and sample management

Keep accurate and legible records of all works undertaken

Keep accurate and legible administrative records

Work to documented QA/QC systems include UKAS

Basic equipment calibration when required

Liaise with client representatives on testing requirements

MASTER® BUILDERS SOLUTIONS

Concrete Technologist

Ask ExecutiveOfficer@theict.org.uk for details of this role with Master Builders Solutions, at the company's concrete laboratory in Rochester, or contact Amy Buckingham, Human Resources on 0161 727 6300.

Please only consider applying if you already have the right to work and live in the UK.

Senior Assessor

The Quality Scheme for Ready Mixed Concrete is the leading UKAS accredited certification body specialising in concrete and other construction materials. As a result of continued growth and its unrivalled position as a specialist in product and management systems certification a vacancy exists for a Senior Assessor.

QSRMC

Location: North West England/North Wales

Duties: Working from home, you will be responsible for planning your assessment programme, assessing company management systems, production, testing and control processes and site practice, for compliance with International, European and proprietary standards, reporting and making recommendations on certification status directly to the Manager of the Scheme.

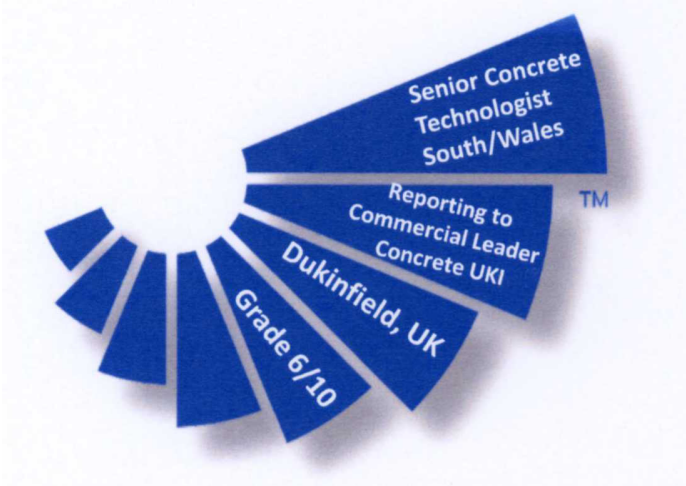
Technical Experience: You will be an experienced concrete technologist (MICT or AMICT) with a broadly-based experience covering all aspects of concrete production and its practical application. Good knowledge of other construction materials, including aggregates, cement, asphalt, and precast concrete products is desirable. Familiarity with health and safety, environmental and sustainability issues, quality management systems, together with audit/ assessment practice would be an advantage but full training will be provided.

Personal Attributes: A measured, careful, professional and mature manner sufficient to engender confidence in clients at the most senior level, including directors of national and international corporations. A team player with good organisational and interpersonal skills and the ability to write clear and concise reports.

Package: An excellent salary and substantial benefits package, including company car/car allowance and private medical insurance.

For an initial, informal discussion call Shane Edwards: 07808 843327 or send your application with CV and salary progression to Shane.Edwards@qsrmc.co.uk

Senior Concrete Technologist



For details of this role at GCP Applied Technologies, please contact ExecutiveOfficer@theict.org.uk

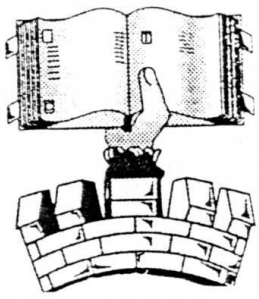
Professional

PQP Cards Issued

Congratulations to **Gareth David** (M44) who in March become the first applicant to be granted a Professionally Qualified Person's card on the basis of ICT membership, thanks to our new arrangement with CSCS.

Professional Affiliate

Every five years the ICT's status as a Professional Affiliate of the Engineering Council falls due for review. Our next review falls in June 2021.



Annual CPD Review

Please be aware that in June a randomly selected sample of the membership will be asked to provide access to their CPD records for the past year.

Introductory guide to applying for CEng status

The ICT-SOE agreement, which came into effect in 2020, covers applications to three of the professional registration options offered by the Engineering Council:

Chartered Engineer	CEng
Incorporated Engineer	IEng
Engineering Technician	EngTech

The Application Process

While the requirements will vary according to status, the process of applying is largely similar: a) assessment of professional aptitude and achievement; b) choice of route; c) completion of application form; and d) attendance at interview (Professional Review Interview or PRI).

In each instance, initial contact should be through the ICT, with the SOE acting as the intermediary with the Engineering Council. The SOE is handling ICT members' personal data on behalf of the ICT and acting as the collator of registration fees. The ICT represents the interest of its members, however, and may be invited to assist in the assessment process or interview.

Self-Assessment

For all three categories of registration, the Engineering Council's requirements are set out in a document known as UK-SPEC – see https://www.engc.org.uk/standards-guidance/standards/uk-spec/.

This identifies and describes all the competencies sought for a successful application, and will repay careful study and reflection. Accurate self-analysis against its terms is the foundation of the application process and will help determine the most appropriate route to registration. The third edition of UK-SPEC is currently being superseded by the fourth, the transition becoming fully effective by the end of 2021.

Routes to Registration

There are *standard* routes to registration based on recognised qualifications, and *non-standard* routes based on individual case assessments.

For a copy of the new guidance to these routes, the assessment process and the fees required, please contact ExecutiveOfficer@theict.org.uk

Standards Alert

The following updates were announced in April 2021

BS Implementations

BS implementations comprise the ISO text without any national deviation

BS ISO 21573-2:2020
Building construction machinery and equipment. Concrete pumps. Procedure for examination of technical parameters
No current standard is superseded

Updated British Standards

The following standards have been amended and the amendments have been incorporated into an updated standard

BS 1881-124:2015+A1:2021
Testing concrete. Methods for analysis of hardened concrete
Amendment, February 2021

BS EN 12504-1:2019
Testing concrete in structures. Cored specimens. Taking, examining and testing in compression
Corrigendum, November 2020

New Work Started

The reference number of the committee responsible is given after each entry

EN 933-1
Tests for geometrical properties of aggregates. Determination of particle size distribution. Sieving method
Will supersede None *B/502/6*

International Standards

It is BSI policy to supply the UK versions of all adopted ISO standards, which are published as British Standards, unless otherwise requested.

ISO 22873:2021
Quality control for batching and mixing steel fibre-reinforced concretes

BBA re-establishes single European market for product conformity marks

Building product manufacturers seeking certification to supply both the UK and the EU can fast-track UKCA and CE marking applications following agreements between the British Board of Agrément (BBA) and similar organisations across Europe.

The BBA has initiated discussions with a number of European Notified Bodies (NBs) proposing collaboration to counter the product certification changes introduced by the UK's withdrawal from the European Union.

For manufacturers this will mean one audit – carried out either by the BBA or by a Notified Body partner – to support both UKCA (UK Conformity Assessed) and CE marking for FPC 2+ (Factory Production Control), saving time and money by reducing audit days and administration costs.

"Following Brexit, organisations within the UK can no longer assist with conformity tasks in support of CE marking and European Notified Bodies can no longer assist with conformity tasks in support of the new UKCA marking applications," said Peter Webbon, BBA sales and marketing director. "This has created a frustrating situation for clients in both marketplaces having to use two organisations for two conformity markings even though much of the information required is the same."

Construction Index, 19 May 2021

Blast Furnace, Blast-furnace, or Blastfurnace?

"There's no F in slag", the saying goes, but how exactly do you spell the 'B' word? One of our members asked recently and as is so often the case, the answer depends context: who you ask and how it's used. CEN says 'Blast furnace'; BRE 'Blastfurnace' and the OED, 'Blast-furnace':

1891	Redgrave's *Properties of Slag Cement* 'Blast-furnace slag'
1930	International Dictionary of Cement: 'Blast furnace', or 'Blast-furnace slag'
1958	BS 146: 1958 'Portland-blastfurnace cement' and 'granulated blastfurnace slag'
1988	BCA House Style Include a hyphen when used as a noun; one word when an adjective
1999	EN 197-1: 'Blast Furnace'
2003	Concrete Society guidance on use of terms: 'Blast-furnace' (n); 'Blastfurnace' (adj)
2018	Cementitious Slag Makers' Association: 'Blast-furnace'

ICT representatives at BSI

Ioannis Sfikas
Lee Baldwin
Antonis Kanellopoulos
Gareth David

Technical

Zero trim piling shown to save thousands of hours

A new piling technique that saves time and material is being used on the HS2 project. The new zero trim pile technique uses a vacuum excavator to suck out excess concrete when still wet rather than wait for it to set and then cut it out. The technique has been developed by piling specialist Cementation Skanska, working for Skanska Costain Strabag joint venture (SCS JV) in London, and is expected to save 60,000 working hours on a single site. The suction excavator was supplied by Hercules Site Services.

Construction Index, 25 May 2021

Asbestos recycling creates safe cement substitute

A demonstration project to recycle asbestos-containing products into a safe reusable material has been declared a success. Backed up by third party tests, Thermal Recycling claims to have shown that its Calmag material is an effective cement substitute. Calmag is made from cement roof sheets containing chrysotile asbestos, and is named because it is composed of calcium, aluminium and magnesium in the form of silicates, carbonates, sulphates, and oxides. Thermal treatment changes the chemical and physical composition of the asbestos, producing an asbestos-free material that is then crushed. The end product can be used as a sustainable aggregate.

Construction Index, 25 May 2021

Decarbonisation of Concrete

CEMEX and bp team up on net-zero emissions

CEMEX and bp are to work together on accelerating the progress of the cement maker's 2050 ambition to deliver net-zero CO_2 concrete globally. The two companies have agreed to a memorandum of understanding to develop solutions to decarbonize the cement production process and transportation. These potential solutions may include low-carbon power, low-carbon transport, energy efficiency, natural carbon offsets, and carbon capture utilization and storage technologies. Additionally, the two companies intend to work together to develop urbanization solutions envisioned to decarbonize cities.

Agg-Net, 18 May 2021

Building's hard problem – making concrete green

An article by Padraig Belton, Technology of Business reporter for the BBC News, published on 14 May, discusses the decarbonisation of concrete and quotes Professor Karen Scrivener, HonFICT.

https://www.bbc.co.uk/news/business-56716859

Industry News

LafargeHolcim shareholders support name change

At LafargeHolcim Annual General Meeting, shareholders voted in favour of the proposed Group name change from LafargeHolcim Ltd to Holcim Ltd. The board of directors recommended the simplification of the Group's name for efficiency and impact as the company looks to become the global leader in innovative and sustainable building solutions. The name change applies only to the Group company name with all market brands remaining in existence. The new name will become effective upon entry in the commercial register. Shareholders also approved the move of the company's registered office from Jona-Rapperswil to Zug, Switzerland, completing the company's restructuring of its office locations.

Agg-Net, 4 May 2021

SGH in off-market takeover bid for Boral

Seven Group Holdings Ltd (SGH), an Australian diversified operating and investment group with businesses and investments in industrial services, oil and gas, and media, have announced a A$6.50 cash-per-share off-market takeover offer for all of the ordinary shares they do not own in Boral Ltd. The offer, which will be made by Network Investment Holdings Pty Ltd, a wholly owned subsidiary of SGH, is expected to open on 25 May 2021 and close on 25 June 2021 at the earliest.

Agg-Net, 18 May 2021

Research & Development

Concrete batteries could allow buildings to store energy

Researchers have come up with a new concept for rechargeable batteries made of cement which could allow concrete buildings to store energy. The idea involves a cement-based mixture with small amounts of short carbon fibres added to increase the conductivity. Also embedded within the mixture is a metal-coated carbon fibre mesh with iron for the anode, and nickel for the cathode. Researchers from Chalmers University of Technology, Sweden said the energy density is still low in comparison to commercial batteries but that that is counterbalanced by the huge volume at which the battery could be constructed when used in buildings. Researcher Emma Zhang said the technology could be revolutionary because of its energy storage possibilities:

"We have a vision that in the future this technology could allow for whole sections of multi-storey buildings made of functional concrete. Considering that any concrete surface could have a layer of this electrode embedded, we are talking about enormous volumes of functional concrete. It could also be coupled with solar cell panels for example, to provide electricity and become the energy source for monitoring systems in highways or bridges, where sensors operated by a concrete battery could detect cracking or corrosion."

The idea is still at a very early stage and technical questions remain to be solved around battery life and recycling before commercialisation of the technique can be a reality.

Construction Enquirer, 18 May 2021

Coarse aggregate boosts concrete strength

Researchers in Poland applied principal component analysis to 38 concrete mixtures and found that certain mixtures had higher strength. "[F]or instance, a high compressive strength corresponded to a high content of coarse aggregate fractions, and a low compressive strength corresponded to a high content of fine aggregate fractions," researchers wrote.

Concrete Smartbrief, 20 May, citing MDPI (Switzerland) 19 May 2021

Graphene enhanced concrete used in Amesbury gym

Nationwide Engineering has laid a floor slab in Wiltshire with graphene-enhanced 'Concretene', strengthening the concrete by 30%, and reducing the volume of material and the need for reinforcement. The directly-dosed graphene-based additive has been developed at the Graphene Engineering Innovation Centre, University of Manchester.

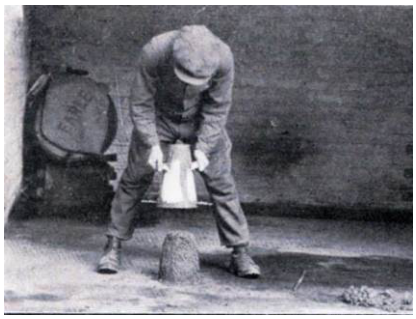
Construction Index, 27 May 2021

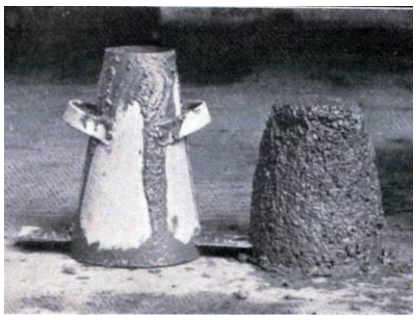
Cinven to sell Chryso to Saint-Gobain

Saint-Gobain has entered into an agreement to acquire Chryso from private equity firm Cinven, in a deal financed from the proceeds from divestments. Headquartered in France, Chryso is a leading global manufacturer of concrete admixtures and cement additives, as well as construction systems. Chryso provides value-added technology and chemistry expertise to improve the performance of construction materials. The Company has international operations, spanning Europe, the US, Asia, the Middle East and Africa, and generates revenues from more than 100 countries worldwide. Chryso has 35 industrial sites and five R&D centres globally and employs c1,300 people. The acquisition perfectly fits Saint-Gobain's strategic vision of worldwide leadership for sustainable construction. It will expand the Group's presence in the growing construction chemicals market with combined sales of more than €3 billion across 66 countries.

Press release, 20 May 2021

Changing Practice





Certification of Concrete Field Testing Technicians

Modern good practice in the slump and other test methods is the subject of the ACI-ICT certification scheme for Concrete Field Testing Technicians.

Though in abeyance during the pandemic, the programme is now being planned to resume in September – restrictions permitting.

For more details, or to register (yourself, or members of your staff), please contact:

ExecutiveOfficer@theict.org.uk

The Evil of Overwatering Concrete

In the 1920s the British cement maker G. & T. Earle Ltd of Hull issued a series of 'Guides to Good Concrete'. Allowing for the changes in style of presentation, they make an interesting comparison with modern statements of good practice, both for their reflection of scientific discoveries on one hand, and the constant nature of concrete on the other.

"The effect of the quality and proportions of the aggregate on the strength of concrete has been widely discussed in the past, but little or not account has been taken of the quantity of mixing water added.

"Recent investigations carried out by Prof. Duff A. Abrams at the Concrete Research Laboratories, Lewis Institute, Chicago, have thrown a flood of light on this subject.

"The results of some 50,000 tests have shown the supreme importance of the water content, and it was found possible to obtain practically identical strengths from 9 : 1 and 2 : 1 mixes by varying only the quantity of water added. It must not, however, be inferred from this that these lean mixes should always replace the richer ones, but such results demonstrate the far-reaching effect of the quantity of mixing water used.

"However, for any proportions, we might make a broad statement that to obtain the best concrete, the least possible amount of water should be used to give the plasticity required for the work in hand."

The Slump Test

"A very simple and inexpensive apparated is now to be obtained, making it possible to keep a careful control on water requirements, this being known as the 'Slump Test' Apparatus, which consists of a truncated cone as illustrated.

"To carry out a test the mould is placed on a non-absorbent surface and filled to a depth of four inches with the wet mix. This is then consolidated by puddling with the pointed end of the iron rod, 25 strokes being given. A second four inches is then filled and consolidated as before, the puddling only going to the depth of the surface of the first filling. The remainder of the mould is filled in a similar manner and the surface levelled off. The mould is now lift vertically and placed beside the test piece, with ill have settled or slumped. The extent to which this settlement has taken place is measured in inches, and is spoken of as so many inches 'slump'. The accompanying photographs illustrate the test in actual use. From this description it will be seen that the test is not only simple, but quite a practicable one. … By working to a definite slump, wife variations in water content, and thus in strength, will be eliminated, and the strongest concrete obtained from the given materials."

"By the means of the Slump Test it will be seen that we have now an opportunity of rigid control on concrete work. …. We feel sure it will make a special appeal to Architects and Engineers, as it makes it possible to issue definite, yet simple instructions. Contractors, by using this test, will improve the quality of their concrete and create confidence in the eyes of their Architects."

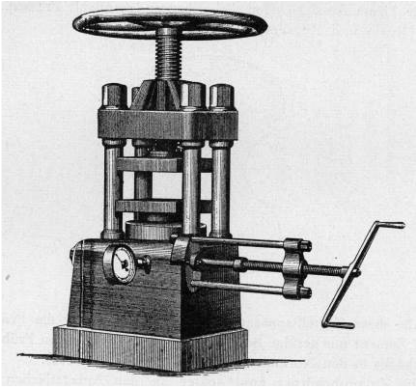
A Guide to Good Concrete. No.1: The Slump Test. G. & T. Earle, Ltd.

History of Concrete

Concrete Technology in 100 objects

39: The compression testing machine

In the mid-1870s most testing of cement or mortar samples was for tensile strength; compression testing was not practicable. A press for the compression testing of materials represented a considerable expense and consequently were limited to just three throughout Europe. But, along with his other widely adopted testing equipment, the cement chemist Wilhelm Michaelis introduced a far cheaper press in 1876, capable of exerting a force of 60 000 kg, and costing only 1500 marks. As was noted by Henry Reid only a year later: “comparatively cheap tensile and compression machines are offered by Messrs Fruhling, Michaelis and Co., of Berlin. Their cost will go far to commend their adoption”.



With equipment available, the compression test was standardised in Germany in 1887 and soon incorporated into national standards throughout Europe. The market for compression machines was thus assured and other manufacturers introduced presses of both the lever and hydraulically operated types. For years Amsler of Switzerland was the dominant European maker, while Avery perhaps a more familiar name in Britain.

Waterfall restored on Kidderminster Great Wall

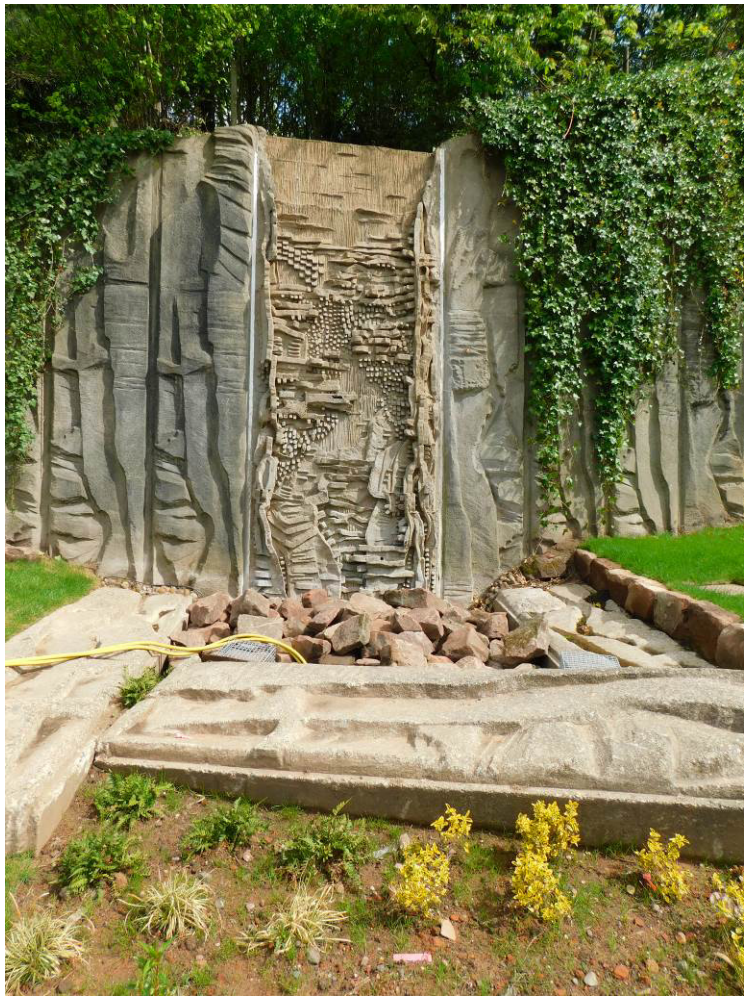
From Graham True (M118)

The waterfall on Kidderminster's Great Wall, designed by the concrete sculptor William Mitchell, has been switched on for the first time in 35 years as a tribute to those in Wyre Forest who have lost their lives to Covid-19.

The original waterfall was a feature of the 320-metre-long wall along The Ringway for over 10 years until it was decommissioned in 1986. Now, thanks to community donations and funding from local councilors, the waterfall has been restored as a permanent tribute to coronavirus victims and those working on the frontline of the Covid-19 pandemic.

Kidderminster Town Council has agreed to take over the water feature's maintenance, saying: "We tied in the reopening of the waterfall with the anniversary of the coronavirus lockdown. The waterfall was decommissioned in 1986 and became hidden by ivy, but a few people who remembered it came up with the idea of restoring it as a lasting tribute.

The water feature was switched on following a minute silence at 12pm on Tuesday, March 23 to coincide with the anniversary of the start of the national lockdown. Present at the ceremony were those behind the idea for the Covid memorial, including representatives from the town council and Kidderminster Civic Society, who successfully campaigned to secure Grade II listed status for the Great Wall last year. The group was already putting together an application for listed status when the wall's designer passed away in January 2020, aged 94.



A member of the Civic Society said: "It is really good to see the waterfall reinstated. This is what we conceived when we first talked about applying for listed status. The waterfall was really important to William Mitchell. He did a lot of work in his early days on housing estates and he was really keen that the community should have some engagement in what he built."

New lighting has also been installed and the wall will be lit up periodically to show off the restored water feature.

Precis of newspaper coverage by reporter Emily Collis; photograph by Graham True M118

In Print

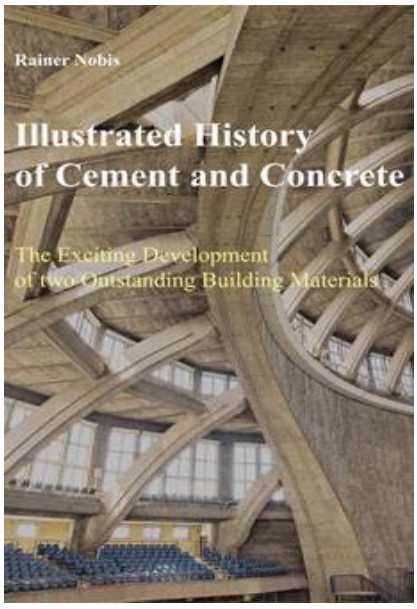
In the technical press

In the March issue of *Concrete*, **Fragkoulis Kanavaris** (M1007), **Nuno Ferreira** (A967) and **Bryan Marsh** (HF64) of Arup identify possible solutions to reduce concrete's carbon footprint. **Martin Liska** (A803) writes in the April issue on 'Negating the effects of using contaminated sands'

Siva Kandasami (F521) was Guest Editor for the May issue of the *Indian Concrete Journal*., which focused on Construction & Demolition Waste.

Agnieszka Klemm (F469) is one of several contributors to: 'Application of super absorbent polymers (SAP in concrete construction – update of RILEM state-of-the-art report' in the April issue of *Materials and Structures*.

John Provis (F1060) is among the credits for 'Alkali-activated materials - a new generation of cementless binders for concrete', in *Concrete Plant International*.



Cover of the Illustrated History of Cement and Concrete, reviewed right

Illustrated History of Cement and Concrete

Review by Edwin Trout (AF815)

This is an extensive treatment of its subject, where the emphasis is on breath rather than depth. It covers the development of cements and related binders over many centuries, and their use in concrete construction in more recent times. Aimed at a general, rather than scholarly readership, the book's tone is at times conversational and it is an engaging read.

Of the two titular materials, cement receives the greater attention. Nobis traces the centuries-old development of binders, including clays, bitumen, gypsum and lime, from the ancient and classical worlds to the achievements of imperial Rome. As much as a third of the book is devoted to pre-industrial materials. Several chapters then trace the evolution of cement manufacture by country, commencing with Britain, then Germany and the USA. The chapter on 'other countries' is interesting for its treatment of industries that receive less attention in the literature, from those in European countries such as Poland, Portugal and Ottoman Turkey, to Asia (India and Japan) and South America. An entire chapter is devoted to the history of cement in China. Such sweep is a welcome innovation.

France is conspicuously missing from this survey, but this is partially redeemed in the chapter on the study of cement chemistry, when the scientific discoveries of the Enlightenment are explored – though this seems a little out of sequence, following on from nineteenth century industry. One thing Nobis is not and that is partisan. His geographical range is mirrored in his short study of hydraulicity, which covers equally the work of John (German), Vicat (French) and Chaliev (Russian).

For the concrete technologist, with a materials bent, the section on the history of test methods may be of particular interest (though I couldn't help noticing one factual error), as would perhaps the chapters on cement production methods. There are also several chapters that discuss materials such as natural pozzolans, slag and fly ash, but these would probably be considered introductory and familiar to many ICT member.

The same might be said of the treatment of concrete history, which jumps from mass to reinforced to prestressed concrete in three chapters – interesting, wide-ranging and balanced, but a little more condensed. And in fairness, this is a book aimed at the interested general reader, not the scholar. The general interest approach continues with, for instance, the selection of ships for special attention. Nobis addresses the development of admixtures, before winding up with some 'visionary projects' and comments on the 'outlook'.

The book is handsomely presented, a larger than A4 volume in hard covers bearing an eye-catching image of the monumental Centennial Hall. The text is laid out in three columns and profusely illustrated – largely in colour and from a wide variety of sources. The effect is encyclopaedic. Extensive, yet at £35 inexpensive, this book is well worth the purchase. Even if much is familiar to many in our field, there will be much that isn't, and it summarises the subject attractively. And the wealth of illustrations is a treat!

Rainer Nobis. ***Illustrated history of cement and concrete: the exciting development of two outstanding building materials*****. Heidelberg: Privately published with the support of several cement and concrete industry organisations, 2021. 308p.**

In Print

Call for papers

The Yearbook Committee has met to commence preparations for the next edition, and is keen to repeat the inclusion of technical papers from the membership, subject to available space. Expressions of interest from members or their nominees in contributing such a paper would be welcome – especially from younger members – and should be sent to ExecutiveOfficer@theict.org.uk by the end of June. Please include an abstract of 150 words to help selection.

ICT Briefing Notes

The Technical & Education Committee has a programme for publishing Briefing Notes that introduce technical developments of topical interest. In the pipeline are two Briefing Notes in varying stages of preparation: one on calcined clays and another on superabsorbent polymers. If you'd like to contribute to the series and prepare a short state-of-the-art statement on developments in your area of expertise, Tech & Ed would be very pleased to hear from you.

Contact **Rob Lewis** via ExecutiveOfficer@theict.org.uk

Two Special Issues: AAMs and Condition Surveys

A Special Issue of *Crystals* (ISSN 2073-4352), edited by Dr **Dali Bonder** (M1188) at Ulster University, will be dedicated to Alkali-Activated Materials (AAMs). The aim is to provide a comprehensive overview of including mineral composition, chemical composition and crystal structure groups and technology affects the formation and performance of AAMs in different aggressive environments. It will also explore the current problems hindering the universal acceptance and large-scale application of AAMs, and bring together high-quality research articles on the different aspects of AAMs including its current status and remaining challenges. Deadline for submissions is 20 October https://lnkd.in/dt3_kdU

Dr **Ioannis Sfikas** (M899) has been appointed as Guest Editor to the forthcoming Special Issue: 'Progress and Innovations in Condition Surveys & Assessment' of the Elsevier journal: *Case Studies in Construction Materials*. Ioannis is looking for papers and case studies related condition surveys and assessment of construction materials and structures, with a focus on latest developments on existing techniques as well as the introduction of innovative methods. Publication of papers in this special issue is free of charge and an excellent opportunity to publish in a rising, Web of Science indexed Journal with very wide, open access, international coverage. The submission window closes on 1/9/2021 and the final acceptance deadline is on 31/12/2021. It is important for authors to select "VSI: Innov in Cond Surv" under "Article Type" to ensure that manuscripts are correctly identified for this issue.

https://www.journals.elsevier.com/case-studies-in-construction-materials/call-for-papers/progress-and-innovations-in-condition-surveys-assessment

New from RILEM

Non-destructive in situ strength assessment of concrete – Practical Application of the RILEM TC 249-ISC Recommendations; Edited by Denys Breysse, Jean-Paul Balayssac. You can purchase the hardcopy or e-book on the Springer website. RILEM members are entitled to enjoy a 20% discount when they purchase all Springer e-books, including RILEM STARs. An unedited electronic version of this STAR is also available.