

ice | south west

ice  
Institution of Civil Engineers



Fulcrum: 2015/16 Update

# Introduction

from Kieren Couch EngTech MICE, Chair of ICE South West (2015-16)

## **The Institution of Civil Engineers (ICE) South West has enjoyed another successful year, and I am delighted to introduce this 2015/16 Review.**

I would like to officially welcome ICE South West Regional Director Miranda Housden, who joined us in April 2015 from her role as Regional Director for ICE London and South East. Miranda has a passion for art and is known for bringing her creativity to ICE. She was the driving force behind the ICE 'Engineering Happiness' and 'Engineering Change' films, and the launch of the new 'ICE Talks' series. Now that she is settled in the South West, we look forward to seeing what exciting innovations Miranda can bring to the region in 2016.

Highlights in 2015 included our two February/March hustings events. We partnered with the Royal Institute of British Architects (RIBA), Royal Town Planning Institute (RTPI) and Royal Institution of Chartered Surveyors (RICS) to bring together election candidates from across the

region. Overall, 280 delegates attended to question them on their plans for the built environment (see page 17).

In April, we re-launched 'This is civil engineering' with a new range of banners. The South West region collaborated with three projects; two at the University of Bath, and Project Wareham near Swanage. The campaign is on-going and we welcome new partner projects (see page 19).

The Big Bang Science Fair in June was a success once again, with the bonus of an extra Plymouth fair. We saw over 500 young people at these two events, providing careers knowledge and interactive activities (see page 5). Ambassadors are always needed for such events; please get in touch if this is something that might interest you.

The highlight of the year was our awards ceremony in July. Twenty-five projects were nominated across the three main categories, an excellent example of our engagement within the

industry. We were also able to involve the public via our online Public Choice Award vote, with a prize draw giving three lucky voters free entry to a top attraction (see page 17).

Finally, we held our first live-streamed event in October. Look out for more of these, giving you access to events wherever you are in the region.

Active members make these activities possible, as the Institution relies on our input and knowledge. Throughout this document, you will find plenty of opportunities to engage with ICE going forward. Please get in touch if you would like any further information.

I wish you a prosperous 2016 and look forward to working with many of you throughout the year.



**Kieren Couch** EngTech MICE,  
Chair ICE South West



## Vision

Civil engineers - shaping the world

## Core Purpose

- **Qualification:** to be the qualifying body for a broad spectrum of activity in the built environment.
- **Professionalism & Knowledge:** to be an authoritative and independent voice within our industry and beyond, respected for our advice.
- **Education and inspiration:** to inspire the next generation of civil engineers.
- **Informing opinion:** to be the institution to which the world's organisations turn to help identify and tackle global challenges.

## Get involved

- Attend City Club events, including evening lectures, site visits and socials.
- Host events or written assignment group meetings at your employer's offices.
- Join a Committee - City Club, Regional, or Graduates & Students.
- Offer to speak at an event.
- Share your expertise on water, waste, energy, transport or housing.
- Enter a project for the ICE South West Civil Engineering Awards.
- Sponsor a conference or seminar, or a series of Fellows' breakfasts or evening lectures.
- Sign up to 'This is civil engineering'.
- Support our Twitter campaigns.
- Become a Supervising Civil Engineer, Delegated Engineer or mentor.
- Train to become a Professional Reviewer.

You can stay up-to-date with our current initiatives, events and activities by reading our monthly e-news, issued on the first Tuesday of each month. You can also visit our website at [www.ice.org.uk/southwest](http://www.ice.org.uk/southwest).

For further information, contact:  
[ice.southwest@ice.org.uk](mailto:ice.southwest@ice.org.uk).

Front cover  
Museum of Water, June 2015.  
Photo: Visual Eye

Top  
Celebrating 150 years  
of the Clifton  
Suspension Bridge,  
Bristol (Dec 2014)

Right  
Ian Cutler, Exeter  
City Club Chair  
Photo: Visual Eye



# Inspiring Future Engineers

One of ICE's key roles is to inform young people about careers in civil engineering and to encourage them to consider a role in the industry. We believe that it is vital for the profession that we inspire the young to encourage a diverse and vibrant succession of engineers.

ICE South West supports a wide variety of engineering projects and initiatives aimed at South West schools. This includes sourcing Ambassadors to attend careers fairs held at schools for children of various ages, and supporting larger regional fairs such as the Big Bang South West. We aim to provide engaging challenges for children to take part in, including our 'tallest tower' competition and our newest workshop on floating wind turbines. We rely on our STEM Ambassadors to support us in our quest to inform young people. If you would like to become a STEM Ambassador, please don't hesitate to get in touch. Training and support are available.

## Highlights in 2015

- We were delighted to support FRANK Water's Museum of Water in June, and took the opportunity to offer some STEM training and also engage local school children in various workshops. The main workshop challenged students to build a floating wind turbine, considering buoyancy in their designs and using fans to test their creations. There was also a weekend of workshops organised by the Bristol City Club, which included:

- making water filters out of sand and gravel
- filling canisters with water to illustrate quantity of water usage and proximity to water sources
- quiz sheets and colouring for younger participants.

The wind turbine workshop is now available for use across the region and we are keen to train as many Ambassadors as possible in its use.



- Richard Barbour, ICE South West Membership Development Officer (MDO), attended the West of England Local Enterprise Partnership (LEP) Rise of the Engineer event in March. This was organised by the LEP in support of National Apprenticeship Week with the aim of informing young people about how to secure an apprenticeship in the industry.
- The Federation of West Leigh Infants School and Backwell Junior School in North Somerset had a unique opportunity to build their own bridge in June, thanks to our Bridge to Schools project. Sixty students in Year Five took part in the project, which has been designed by ICE and travels around schools across the UK giving students aged 9 upwards the opportunity to experience civil engineering for themselves. The bridge is a miniature copycat design of the Second Severn Crossing made from plywood and aluminium, and students consider all aspects of the project, from why bridges are needed,

planning and materials, to construction and health & safety.

- This year's regional Big Bang included an extra event in Plymouth, as well as the main fair in Exeter in June. We were pleased to support both with our 'tallest tower' activity, which encourages students to consider the importance of foundations as they build their structures. In total, our Ambassadors saw over 500 students.

Left: ICE South West's new floating wind turbine workshop.  
Photo: Visual Eye

Right: Big Bang.  
Photo: Phil Mingo and Pinnacle



# Inspiring Future Engineers



- ICE South West supported Tomorrow's Engineers Week in November by attending a careers fair in Plymouth. We took plenty of informative literature and our 'Engineering Happiness' video, demonstrating the diverse range of people and projects in our profession.
- Our Swindon Graduates & Students put together a bridge-building workshop, which they successfully delivered to students at Ridgeway School in Swindon in the summer term of 2015.
- We attended a number of other careers fairs across the region, and supported some larger conventions such as the One Step Foundation Somerset Careers Foundation.
- ICE South West saw thousands of students in 2015, and we are keen to build on that in 2016.

## 2016 and beyond

We aim to:

- Expand our links with the Engineering Development Trust (EDT) to develop a work experience initiative.
- Hold a welcome event for STEM Ambassadors / careers advisors to share what we are looking to achieve and offer further support.
- Continue to support the excellent fairs and initiatives that are already in place including Big Bang, Women in Engineering Day, Tomorrow's Engineers Week and the large Somerset Careers fairs that take place towards the end of each year.
- Run a Bridge to Schools event with primary school students in Gloucestershire.
- Roll out our floating wind turbine workshop to more areas of the region, training Ambassadors as we go.
- Work with At-Bristol to deliver new exciting workshops for schools across the South West.

*"It was very exciting to offer our students the chance to work with real engineers in a hands-on project. They gained a real insight into how civil engineers work, and how teamwork plays a major role in design and construction."*

**Alex Bell, Executive Head teacher at Backwell School, commenting on the Bridge to Schools project.**

Left: Workshop training for Ambassadors.  
Photo: Visual Eye

Right: Museum of Water.  
Photo: Visual Eye



# Qualifications

ICE South West's membership team supports members in their quest for full membership and professional qualification.

In January 2015, we welcomed Michelle Cockburn as Membership Manager for Wales and the South West. The South West Membership team is completed by Membership Development Officers (MDOs) Richard Barbour and Suzanne Willis.

ICE supports graduate engineers in their initial professional development (IPD) and students who are working towards a career in the profession. We extend that to our Supervising Civil Engineers, their Delegated Engineers and other mentors working in the region. We currently support nearly 150 organisations employing graduate engineers and technicians.

We work with the colleges across the region to provide guidance for technician qualification to

apprentices and students, and with the universities to give students an insight into the tips and techniques they can use to progress their careers effectively. This is achieved through the calendar of company visits, workshops, forums and events that we organise and deliver throughout the year.

Last year, along with our colleagues across the UK, we launched attribute-based training, supported by the ICE online IPD tool, to streamline graduates' progress towards membership and their qualification. Many of our workshops and events have provided guidance on recording and demonstrating competence against the attributes, and this focus will continue in 2016.





### Highlights in 2015

- We ran over 20 EngTech workshops with an average attendance of 15 delegates, supporting aspiring technicians towards their professional qualifications, and culminating in local Professional Reviews in the autumn.
- We launched our popular Technical Report Route Club for experienced engineers aspiring to Incorporated or Chartered membership, which has now met four times and has an energetic group of around 30 delegates starting to prepare their reports, well supported by their mentors.
- We reinvigorated the SCE forum programme, reaching over 200 mentors by extending it to include Delegated Engineers and other mentors. This provided opportunities for some lively debate, knowledge sharing and updates from the ICE team.
- There was an 8% increase in Graduate members and a 12% increase in Technician Members, with a strong number of applications for the Professional Reviews across all grades.
- For the first time in the region, we provided Career Appraisal workshops to support graduates who need to sign off their IPD by that route, running several days' activities in Devon and Dorset.
- Our series of webinars continued to support aspiring members who are unable to attend events.
- We held three potential Fellows' workshops in Bristol and Exeter to provide an informal overview of the Fellowship process.

Top and left: Engaging with ICE. Photos: Visual Eye

# Qualifications

## 2016 and beyond

We aim to:

- Extend our successful EngTech workshops, revamped into a fast-track style targeted at specific Professional Review dates across the region.
- Continue our Technical Report Route Club, create some satellite groups and seek our first applicants and successes.
- Extend our Career Appraisal workshops, targeting them at applicants for the Autumn 2016 and Spring 2017 Professional Reviews.
- Develop mentor-supported training events and opportunities for graduates and mentors working through IPD without a training agreement.
- Continue with our potential Fellows' workshops.





Top centre: ICE Director of Membership, Sean Harris.

Bottom left: Nathan Baker, ICE Director of Knowledge, discussing knowledge delivery with ICE members.

Bottom: ICE Fellow Teresa Frost engages in membership discussion.

*“I qualified as a Chartered Civil Engineer through the Technical Report Route (TRR) in August 2014. To encourage and inspire more engineers, I gave a presentation on ‘My TRR Experience’ to an ICE South West TRR Club on 22 October 2015. Through this event, I shared my first-hand experience and knowledge to those engineers who want to become professionally qualified through TRR. This process to become a Chartered Civil Engineer has been a most worthwhile experience within my working career.”*

**Ping Song CEng MICE, Senior Civil Engineer currently working for Bovis Homes**

*“Undertaking the role of Reviewer has been a fantastic development in my career as a civil engineer. As a Supervising Civil Engineer (SCE), the experience I have gained has enabled me to further support my graduate trainees, which will assist them in their preparations for their Reviews. In addition, the opportunity to meet other senior members of the profession and gain from their experience is invaluable.”*

**Chris James CEng MICE, Technical Director, Pell Frischmann**



# Professionalism & Knowledge

ICE is committed to disseminating knowledge in the field of civil engineering, promoting education and lifelong learning.

ICE South West is supported by members of the Regional and Graduates & Students Committees, and of course by those involved with the organisation and running of the City Clubs. These groups enable us to hold our evening events and organise several regional conferences each year.

Our City Clubs are vital to the distribution of knowledge, bringing events to key hubs within the region. This helps to ensure that most of our members can access an event near them. However, we recognise that they are not necessarily accessible to all, due to the geography of the region. We are therefore looking into plans

to broadcast a number of our events live in 2016, and hope that this will make it easier for you to access our CPD events wherever you are.





## Highlights in 2015

- ICE South West was delighted to take part in the celebrations for the 150th anniversary of Bristol's Clifton Suspension Bridge at the end of 2014. We held an event in the gallery of the Bristol Architecture Centre, allowing us to be at the centre of the celebrations. Bristol City Club attracted an audience of 200 across two evening events, which was a fantastic turnout in support of the Bridge. The highlight was the celebratory parade. A large 'This is civil engineering' banner was carried across the Bridge, highlighting its importance to our profession.
- We held four conferences in 2015, including both half and full day events. The total attendance over all four events was 186, including a mixture of all grades of membership.
- The Emerging Engineers Award was a great success in March, with Eleanor Davies winning the regional round for her paper entitled 'Out-of-plane shake table testing of cane and mortar walls'.
- Truro City Club and Graduates & Students Committee have introduced memorial debates to their programme. Dedicated to the memory of the late Peter Swain, this year's debate was on the topic of flooding and was held as part of the President's Visit in March.
- Exeter City Club ran a site visit to the River Exe Flood Alleviation Scheme, with an attendance of 50 delegates. This was an excellent opportunity for our members to see the high-profile site at first hand.
- Bristol City Club started the year with a series of lectures under the heading "Almost Anyone's Guide to Civil Engineering". More specific sector-related topics were held underneath the overarching theme.
- Graduates & Students in Plymouth had the opportunity to engage with the ICE President in March at a special lecture and 'meet & greet' event with David Balmforth.
- Local Fellows were invited to a breakfast with President David Balmforth as part of his annual visit to the region. The meeting focussed on whether civil engineering is fit for the future, and included time for Q&A.
- We introduced 'ICE Talks', a new initiative to give our members a platform for debate.

Left: Keeping the Lights on in the SW conference, June 2015. Photos: Visual Eye

Top: Plymouth Graduates & Students 'Meet & Greet', March 2015. Photo: Stephanie Snooks Photography

# Professionalism & Knowledge



## 2016 and beyond

We aim to:

- Introduce partnership opportunities for all of our activities, including full sponsorship packages for our conferences and awards.
- Run three five-week courses on Health & Safety, Contracts and Finance.
- Establish a panel of sector experts to support our regional knowledge network.
- Create a knowledge product on wave energy for the national ICE Academy.
- Plan regional events in collaboration with the ICE Benevolent Fund.
- Work collaboratively with ICE Training to offer relevant promotions to regional members.
- Establish a regional celebration event for new members and Fellows, to be held after the formal London certificate presentation ceremonies.
- Introduce a welcome event for STEM Ambassadors.
- Establish focussed event programmes for Technicians, retired members, Fellows and Graduates & Students.





*"I thoroughly enjoyed the Eurocodes conference and will certainly look out for similar events in the future. The list of speakers that had been assembled was excellent, with experts from multiple design backgrounds. This enabled attendees to gain an invaluable insight into not just how to use the codes but also the principles behind them and, in some cases, how they relate back to the British Standards (a useful check). Aside from the content the organisation, venue and refreshments were all fantastic."*

**Alex Crump MEng (Hons), President's Apprentice 2015-16**

Left: Clifton Suspension Bridge 150th anniversary parade.

Centre and top: River Exe Flood Alleviation Scheme Site Visit, June 2015. Photos: Visual Eye

# Informing Opinion

ICE South West is the independent voice supporting our regional infrastructure. Our activities rely on the knowledge and expertise of our members, helping us to shape the messages that we communicate to MPs, media, industry and the public.

We are always striving to raise the profile of civil engineering through our partnerships with other organisations, companies and groups. We are continually developing our links with MPs, Local Enterprise Partnerships (LEPs), key stakeholders and policy-makers.

Celebrating civil engineering within the region remains high on our agenda. Our awards facilitate links with industry professionals whilst allowing us to reach out and show the public that civil engineering is exciting and diverse.

Nomination packs for the ICE South West Civil Engineering Awards 2016 are now available, with earlier deadlines this year to accommodate

site visits to the shortlisted projects. Please note the key dates below:

- Registration of intent: Friday 19 February 2016
- Nomination deadline: Friday 11 March 2016.

Last year also saw us engage significantly more with social media. Our Twitter followers have doubled, and we have been actively promoting ICE campaigns, events and news via our feed. Social media is also a great way to engage with 'This is civil engineering' – if you don't have a site that is suitable for a banner or signage, why not tweet an image with the hashtag **#thisiscivilengineering?**

*"Once again, in 2015 we received a fantastic number of entries, which just highlights the innovation and creativity surrounding us in the South West."*

**Richard Fish CEng FICE FStructE FCIHT,  
Chair of Judges 2015**

Right: Project of the Year Awards 2015

Far right: David Balmforth at the Awards 2015

Photos: Stephanie Snooks Photography

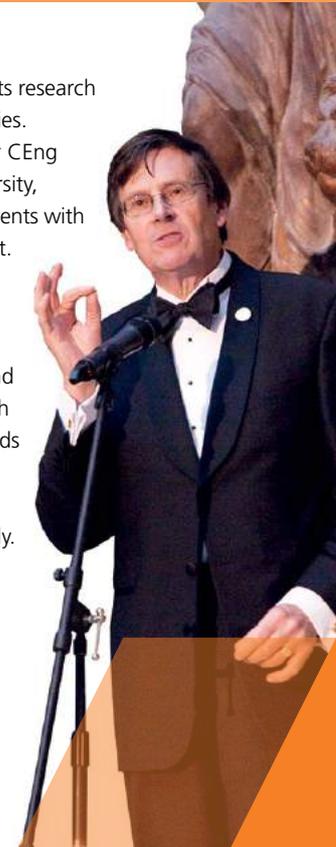


## Highlights in 2015

- Our successful ICE South West Awards resulted in 26 pieces of regional media coverage, including five radio pieces. An interview on BBC Radio Devon was broadcast live on the morning of the awards ceremony, helping to raise the profile of our profession.
- Twenty-five separate projects were nominated for the ICE South West Awards, with the winners as follows:
  - **Major award**  
*Winner:* Lyme Regis Environmental Improvements Phase IV  
*Highly commended:* Victoria Bridge, Bath
  - **Minor award**  
*Winner:* Lower Kelly, Calstock  
*Highly commended:* Saving Kingsand Clock Tower
  - **Community Award**  
*Winner:* Exe Estuary Trail  
*Highly commended:* Steart Coastal Management Project

- **People's Choice Award**  
*Winner:* Steart Coastal Management Project
- **National Showcase Award: supporting the economic value of the region**  
*Winner:* Dawlish Sea Wall Emergency Works
- The two hustings events we held with RIBA, RTPI and RICS at the start of 2015 were an excellent opportunity for the organisations involved, our members and the general public to really engage with the political candidates and their future plans for the built environment.
- ICE South West is supporting the UK Collaboratorium for Research on Infrastructure and Cities (UKCRIC), a new powerful national network of leading infrastructure research universities. The aim of this network is to provide much stronger and better-harmonised research underpinning future infrastructure provision, as well as to educate the future engineers who will deliver it. In 2015, UKCRIC launched a series of engagement events that will generate the long-term route maps that

are needed to frame its research and education activities. Professor Colin Taylor CEng FICE, of Bristol University, is championing the events with ICE in the South West. Our Fellows are learning more about UKCRIC and are helping to identify and prioritise vital research and development needs that are pertinent regionally as well as nationally and globally.



# Informing Opinion

- ICE South West held its regional State of the Nation: Devolution briefing in October 2015, giving regional members the chance to share their knowledge and opinions to feed into the national 2016 report.
- Our involvement in FRANK Water's Museum of Water in June served to highlight the role that civil engineers play in sourcing, treating and supplying clean water for our homes and communities.
- For the first time, we awarded 'This is civil engineering' plaques to our award winners to help showcase our winning projects as excellent examples of civil engineering.
- ICE's new film, 'Engineering Change', was launched towards the end of 2015. Produced and directed by Miranda Housden, ICE South West Regional Director, the film calls for our profession to be more inclusive. It asks us to ensure that our future workforce will be able

to respond to the rapidly changing globalised economy and work towards making it possible for all our members to have fulfilling family lives as well as rewarding careers. 'ICE Talks' was also launched in December in support of the 'Engineering Change' campaign. You can join the debate on Twitter, using the hashtag #engineeringchange.

- Miranda Housden attended the Channel Islands' Group of Professional Engineers' (CIGPE) annual dinner in November, giving a speech about valuing ICE and the importance of sharing our knowledge to inform policy.

*"We have talked about changing our profession to be more inclusive for long enough, now it's time to deliver."*

**Nathan Baker, ICE's Director of Engineering Knowledge, sums up the 'Engineering Change' film**





Left: Museum of Water. Photo: Visual Eye  
Centre: Project Wareham, Swanage.

*“Being involved with ‘This is civil engineering’ helped raise awareness of the scale of the project being undertaken across the Swanage Railway. It also helped to highlight that connecting a Heritage Railway to the Mainline requires a significant amount of civil engineering input from a variety of disciplines. The connection with the ICE website allows a greater audience to access unique infrastructure projects; seeing the variety of projects featured online will hopefully encourage others to become engaged with this initiative.”*

**Ian Cutler CEng MICE, Associate, GB Card & Partners**

### **2016 and beyond**

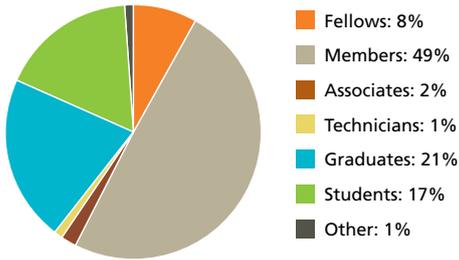
We aim to:

- Hold a Bristol Mayoral election hustings event, once again in collaboration with RIBA, RICS and RTPI.
- Develop our ‘This is civil engineering’ campaign further, focussing on an interactive map of South West projects.
- Work on the development of ICE’s 200th anniversary celebrations in the South West, to include a national arts competition in collaboration with RegenSW.
- Develop the ICE South West Civil Engineering Awards to include judges’ site visits to shortlisted projects and an awards film shown at the ceremony and on YouTube.
- Launch State of the Nation: Devolution.
- Hold a State of the Nation 2017 Thought Leadership meeting to gather information and evidence from regional members.
- Develop ICE engineering boat tours of Plymouth and Bristol.
- Support Heritage Open Day/Open Doors to encourage the public to engage with civil engineering.
- Host an end of year Thought Leadership reception for members; a chance for us to gather more regional knowledge from key civil engineers in our region.
- Introduce a film to promote civil engineering excellence.

## About ICE South West

ICE South West is the combined resource of the South West Regional Executive Board, Regional Committee, Graduates and Students (G&S) Committee, Regional Support Team, Regional Membership Team and approximately 6,000 regional members.

## Profile of ICE South West membership



Data snapshot taken on 24 November 2015

## Regional Committee

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## Graduates & Students Committee

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