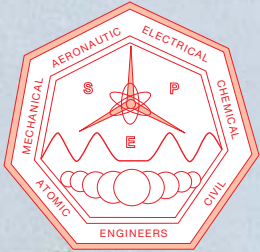


The Professional

# ENGINEER

Issue 67, Autumn 2009



View near Searby,  
Lincolnshire



The Society of  
Professional Engineers  
was founded in 1969.

## Features in this Issue

- |                                      |                                      |   |
|--------------------------------------|--------------------------------------|---|
| 3. The Editor Writes                 | 5. Tender is the Fight               | Get To Work After Qualifying            |
| 3. Membership of the Society         | 5. Building Your Network             | 8. A New Horizon in Affordable Housing  |
| 3. New Society Members 2009          | 5. ...Releasing Your Inner Inventor? | 9. A Brief History of a Remarkable Ship |
| 3. Solving Disputes in the Recession | 6. Staving off Decay by Daily Care   | 10. What goes around                    |
| 4. The Presidents' Notes             | Maintaining Places of Worship        | 10. 'The Futures' Getting Older'        |
| 4. 40th Anniversary Celebrations     | 7. Your Hired! Young Apprentices     | 12. The National Monuments Record       |



# Council and Officers

PATRON		To be appointed
VICE CHANCELLORS		The Earl of Yarborough Lord Alistair Nelson of Stafford 4th Baron The Earl of Lytton
PRESIDENT		HARDCASTLE, David John, PEng., Hon.F.S.E., F.C.M.I., B.Ing. (Germany) 45 Crossway, Sutton, Surrey SM2 5LD.
IMMEDIATE PAST PRESIDENT		DIXON, Brian R., BA, PEng., A.B.Eng, MCCES, P/PGIS., Hon. FHKIConst.E, Hon.FASI, SASPE, MSPE 1 Scotts Court, 46 Station Road, Alderholt, Fordingbridge, Hampshire SP6 3RB
PAST PRESIDENTS		HARDCASTLE, David John, PEng., Hon.F.S.E., F.C.M.I., B.Ing. (Germany)
	Ing .P. Eur.	PARRATT, David Gordon, LLB., PEng., FRICS., FCI Arb., MAE., FBEng. 18 Orchard Close, New Alresford, Hampshire SO24 9PY
VICE PRESIDENTS		GERRARD, Brian W., BSc(mech), PEng., MIET 6, Pocket Nook Road, Chew Moor, Bolton, BL6 4HN
		PARKER, James Malcolm, PEng., FB.Eng, MRICS, MCI OB 17 South Side, Hutton Rudby, Yarn, Yorkshire, TS15
HON. SECRETARY		WATT, Arthur, PEng, FB.Eng, MSPE, MW OBO 1, Farrow Drive, Corpach, Fort William, Scotland, PH33 7JW
HON. TREASURER		WATT, Arthur, PEng, FB.Eng, MSPE, MW OBO 1, Farrow Drive, Corpach, Fort William, Scotland, PH33 7JW
MEMBERS OF COUNCIL		WYNNE, Hugh, BSc, MSc, C.Eng., PEng., C.Sci, M.Inst.MC., MBCS., CITP, MIEE, FSPE 103 New City Road, Glasgow, Scotland, G4 9JX
	Ing .P. Eur.	ELDERS, Ray, PEng., F.I.Diag.E, F.E.I., F.I.A.B., M.I.I.E., A.M.I.Mar.Est., A.F.A. 28 Birks Lane, Millhouse Green, Penistone, Sheffield S36 9NB
		SEEGER-SNOWDEN, J.A., PEng(UK) 2, Wood Street, North Melbourne, Victoria, Australia.
		HARDY, Barry M.Sc, PEng., I.Eng, MIET, MBIFM, FSPE, FB. Eng, FI.Diag.Eng 3 Baird Garden, Dulwich Wood Park, London SE19 1JH.
NON DIRECTOR MEMBERS OF COUNCIL	Ing .P. Eur.	WRIGHT, Iain Allan Cooper, PEng., F.S.E., M.B.Eng. Guinea Wiggs, Nayland, Colchester, Essex CO6 4NF.
	Ing .P. Eur.	TONDEUR, Charles, ipf (France) SNIPF, 3 rue Fortia, BP6004, 13484 MARSEILLE, Cedex 20, France <i>(Société Nationale des Ingénieurs Professionnels de France)</i>
SP Eng, HONG KONG CHAPTER		Brian R. Dixon, BA, PEng., MCCES, Director  Cheung Wai Lung, MSc, PEng(UK), MCI OB, MASCE, MAIC, MIO SH, M.HKIConst.E., M HKISA, M HKIM, MCCES, MCASA, RSO, CP, FSPE, Chairman / Director  David Ho, BSc, PEng(UK), M.Eng.(Const.), MA Const.E., MBIM, MIMgt, MASCE, M HKIM, MCCES, F.HKI.Const.E., FCI OB, FPSSE, FSPE, Director  Daniel S.K. Tang, BSc(Hons), MSc, PEng(UK), MCIBSE, MIEE, FHKIConst.E., MBIFM, M SOE, MSPE, Director
OVERSEAS CORRESPONDANTS		CANADA Mark El Kadi Christopher West
		USA Ronald Schenk
		AUSTRALIA JA Seegar-Snowden
		HONG KONG The Secretariat H.K.I.Const.E.

PAST PRESIDENTS OF THE SOCIETY

1969/70	F.W. HYDE	1975/76	J.D. BURROWS	1981/83	A.J. BARTER	1991/93	M.J. PREECE	2005/08	BRIAN R. DIXON
1970/71	D.J. AYRES	1976/77	T.M. SCANLON	1983/84	D.J. HARDCASTLE	1993/96	R.J.T. ROLLINGS	2008/	D.J. HARDCASTLE
1971/72	S.N.B. GAIN	1977/78	S.N.B. GAIN	1984/86	J.A. GARDNER	1996/2000	G.K. TURNER		
1972/73	J.D. BURROWS	1978/79	W.E. HUMPHREY	1986/87	D.T. COATES	2000/02	BRIAN R. DIXON		
1973/74	J. MASON	1979/80	R.C. WYKES	1987/90	I.A.C. WRIGHT	2002/03	IAN T. FITZHERBERT		
1974/75	D.J. AYRES	1980/81	V.C. EALEY	1990/91	K.A. STATHAM	2003/05	DAVID PARRATT		



Welcome to the Autumn 2009 publication of the Bulletin, in this issue we feature articles on the "40th Anniversary Celebrations", "The Future's Getting Older", "Staving off decay by daily care", "London Improvements 1862-73", and "A New Horizon in Affordable Housing."

There is also an article on "Membership of the Society" which should be read by all members.

It is intended to publish the Winter Bulletin a little early to ensure it is available at our House of Lords Luncheon, to enable it to be given to our distinguished guests.

And finally, I continue to be in need of articles from Society members for future Bulletins, and I should be pleased to hear from any member that would like to contribute.

Brian R. Dixon, BA, P.Eng., Editor

## Membership of the Society

### An Update on Requirements for Membership

Membership of the Society of Professional Engineers is achieved through a combination of academic achievement, individual training and experience gained within an individual's area of specialism.

It is essential that all statements are fully

supported by appropriate certification and validated evidence, where an individual is relying on academic programmes, they are required to provide not only certification but also a full academic transcript and evidence of accreditation by the awarding body.

To enable the Society to support the membership, the Society welcomes formal

submission from academic institutions offering degree programmes.

These submissions will be reviewed and either accredited or recognised as contributing towards membership.

From this point onwards, and until further notice, applications for membership must be made on an individual basis.

## Solving Disputes in the Recession

Is there a way of solving disputes that preserves relationships, is quick, cheap and works about 80% of the time? Yes, its called mediation. Mediation can be a very efficient way of resolving disputes. In my view, parties involved in every dispute of any significance should at least consider this option carefully.

Mediation is really no more than a carefully structured, without prejudice meeting facilitated by a trained professional. It usually takes a day or less and starts with a brief 10-15 minute presentation by the parties. They then divide into separate rooms and the mediator circulates and, using his skill and

experience, tries to find the real positions of the parties and their 'bottom lines'. It sounds simple enough, and the amazing thing is that it so often works. A key element is that the parties have their 'day in court' which can be psychologically necessary to resolve a long-running and bitter dispute. In addition, preparing the documents for the day can, perhaps for the first time, lead to real objective scrutiny of the case by the parties involved. To ensure finality, when a resolution is reached, a written contractual agreement will be drawn up which is then binding.

Costs are typically around £1,000-£2,000

for the mediator and perhaps a day's additional preparation from your legal adviser or commercial manager. The best-known providers of mediators are CEDR ([cedr.co.uk](http://cedr.co.uk)) and ADR ([adrgroup.co.uk](http://adrgroup.co.uk))

Here are some mediation tips:

- Say you must leave at a certain time, to bring matters to a head;
- Make sure the right level of decision maker is present;
- Use a mediator who knows about the subject matter of the dispute.

Stephen Clarke is head of construction at law firm Clarke Willmott

## New Society Members 2009

Mr Piero Franco Gioia, Italy, Fellow  
 Mr Gary Billinge, UK, Fellow  
 Mr Kai Yuen Lee, Hong Kong, Fellow  
 Mr Mohanad Al-haloul, Hong Kong, Fellow  
 Mr Chan Pak Wai, Hong Kong, Fellow  
 Mr Ronald Strike, UK, Fellow  
 Mr, Hau Tung Ngai, Hong Kong, Fellow  
 Mr Nicholas Roberts, UK, Fellow  
 Dr Willam Kam Hung Choi, Hong Kong, Fellow  
 Mr Lap Wo Mui, Hong Kong, Fellow  
 Mr Sai Wah Cheung, Hong Kong, Fellow  
 Mr Wai Lung Au, Macau, Fellow  
 Mr Gary Winn, UK, Fellow  
 Mr Joerg Fluck, Germany, Fellow  
 Mr Kwok Wai Ng, Hong Kong, Fellow  
 Mr Wai Wa Chiu, Hong Kong, Fellow  
 Mr John William Cunnington, South Africa, Fellow  
 Mr Shabir Hussain, UK, Fellow  
 Mr Wai Ming Cheung, Hong Kong, Fellow  
 Mr Antony Wedge, UK, Fellow  
 Mr Tat Pong Yip, UK, Member

Mr King Wu Wan, Hong Kong, Member  
 Mr Carl Leslie Jones, UK, Member  
 Mr Wink Lok Lok, Hong Kong, Member  
 Mr Wing Chun Man, Hong Kong, Member  
 Mr Shivakumar Rachappa, India, Member  
 Mr Chin Wing Tsang, Hong Kong, Member  
 Mr Andrew Shaw, UK, Member  
 Mr Chung Ho Leung, Hong Kong, Member  
 Mr Stephen Floyd, UK, Member  
 Mr Cham Kiu Lee, Hong Kong, Member  
 Mr Wai Cheuk Wong, Hong Kong, Member  
 Mr Kai Man Yuen, Hong Kong, Member  
 Mr Chi Chung Wong, Hong Kong, Member  
 Mr Mohammad Falei Husin, Malaysia, Member  
 Mr Chung Hong Tse, Hong Kong, Member  
 Mr Yat Fung Cheng, Hong Kong, Member  
 Mr David Collins, Gibraltar, Member  
 Mr Kwok Man Lee, Hong Kong, Member  
 Mr Indunil Ranasinghe, Sri-Lanka, Member  
 Mr Scott Handley, UK, Member  
 Mr Gary Sharpe, UK, Member

Mr Sik Hung, David Tse, Hong Kong, Member  
 Mr Ka Keung Pun, Hong Kong, Member  
 Mr David Grieve, UK, Member  
 Mr Cheuk Hung Ho, Hong Kong, Member  
 Mr Ming Ip, Hong Kong, Member  
 Mr Au Chi Keung, Hong Kong, Member  
 Mr Mohamed Rachidi, Morocco, Member  
 Mr Tom James Kinver, UK, Member  
 Mr Robert Boardman, Australia, Member  
 Mr Kingsley Okafor, Nigeria, Member  
 Mr Piyal Karunaratna, Sultanate of Oman, Member  
 Mr Morteza Roshankar, South Africa, Member  
 Mr Piran Helmore, Gibraltar, Member  
 Mr Brian John Pitman, UK, Member  
 Mr William James Ritson, UK, Member  
 Mr Anbarasan Muthian, India, Member  
 Mr Shing Cheung, Hong Kong, Member  
 Mr Tim Ming Chan, Hong Kong, Member  
 Mr Wai Kei Lok, Hong Kong, Member  
 Mr Ho Kin Wai, Hong Kong, Member  
 Mr Wing Fai Ho, Hong Kong, Member

## ANNUAL GENERAL MEETING

of the Society will be held on Monday 26th October 2009

At Lutyens House, Billing Brook Road, Weston Favell, Northampton, NN3 8NW.

Commencing 12.00noon prompt.

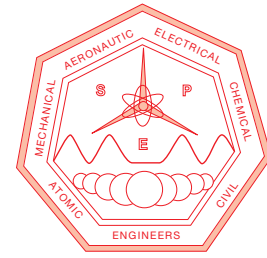
All members of the Society are most welcome to attend

## The Presidents' Notes



I do hope you enjoy reading this publication of the Bulletin, our 40th Anniversary Luncheon at the House of Lords is quickly approaching and I am looking forward to meeting our members and guests on this very special occasion. In particular those that are coming from overseas to be with us.

My warmest wishes to you all,  
David Hardcastle, P.Eng., President



## 40th Anniversary Celebrations



**House of Lords, London  
Monday 14th December 2009**

### Who was Frank Hyde FSE?

If you do not know, I am not surprised, but his post-nominal letters should give a clue. For the benefit of members, I can reveal that he was the first signatory of the Memorandum of Association in October 1969 when the Society was formed as an offshoot of the Society of Engineers.

Now we can report that the arrangement for the 40th Anniversary celebrations at our Luncheon at the House of Lords are progressing well. A number of influential politicians, educationalists and senior practicing engineers have accepted our invitations to attend together with some of our members. These include members who

are traveling from Australia, Hong Kong and South Africa.

Although we are still waiting for confirmation from some of our important guests, the list is now about full, although if we have a rush of applications from members, we could still arrange for an extra table.

However, sickness or last-minute changes in business plans can always cause cancellations so if any members would like to have their names put on a waiting list, please let us know as soon as possible by writing to David Parratt at 18 Orchard Close, New Alresford, Hampshire, SO20 49PY or emailing him at [mail@davidparratt.com](mailto:mail@davidparratt.com). Remember to give full details of how you would wish your name and qualifications to appear on



official documents, place cards, badges and the table seating list, together with your postal address for sending the official invitation card which will be necessary to get into the building.

## Skills Shortage Remains Despite the Recession



Results show that the industry is still suffering a skills shortage despite the recession and downturn in construction demand. 77% of respondents believe there is a skills shortage in construction and 78% of those feel that the loss of skills will hinder the industry's recovery when the economy improves.

Michael Brown said: "Construction has been notoriously bad at attracting students, and other new entrants, which has exasperated the industry's long-term skills development. There is no denying the importance of graduate and apprentice recruitment as these employees represent the future of the industry. Over three quarters (76%) of all respondents felt apprenticeships should be mandatory on public projects, which would help to encourage the employment of apprentices. However, economic problems are forcing many companies to recruit fewer graduates and to

cut the number of apprenticeships – just to survive.

"There is a danger that once the industry demand rises, and recruitment increases, there will be a mass of previously skilled workers who chose not to return to the industry having opted for other careers. The industry has never fully recovered from the recession in the 1990s, particularly at management and senior management level. We must learn from those lessons and find ways to put in place the vital skills needed for recovery and beyond."

Last year, the reason cited for the skills shortage was that the construction industry was less attractive than other industries. However, this year job cuts and lack of employment opportunities in construction are the main reasons.

### Key facts and figures Samples

- 1182 construction industry professionals

took part

- 64% of respondents described themselves as management
- 47% work for an organisation employing more than 500
- 97% of respondents are located in the UK

### Results

- 77% believe there is a skills shortage
- 78% feel that the loss of skills will hinder the industry's recovery when the economy improves
- 67% expect to see a decline in construction demand in 2009/10
- 76% felt apprenticeships should be mandatory on public projects
- 54% state that their company has had to make redundancies, and 14% expect redundancies to occur
- Only 37% are sure their companies are still employing apprentices

**Do you have non-member colleagues? Encourage them to join the Register**

A membership information pack is available on request from

The Society of Professional Engineers, Lutyens House, Billing Brook Road, Weston Favell, Northampton NN3 8NW

Tel: 01604 415729 • Fax: 01604 415729 • Email: [spe@abe.org.uk](mailto:spe@abe.org.uk)

**Case: J D Leadbitter & Co v. Devon County Council  
High Court Chancery May 1, 2009**

Devon County Council (the council) was the procurement authority for Construction Framework South West. Inclusion in the framework did not guarantee work but successful tenderers were likely to have improved business prospects.

The tendering process had to comply with EU law, and was detailed and complex. The council published a notice in the Official Journal of the European Union on 24th July, 2008 and issued the Invitation to Tender (ITT) to 25 tenderers on 26th November, 2008.

Tenders were to be submitted to a secure internet portal by noon on 16th January, 2009. Submission by email was not allowed on confidentiality grounds.

The ITT emphasised that tenders should be fully uploaded 'in good time before the submission deadline' as the uploading process took some time. The ITT also warned that the noon deadline was strict and that 'an incomplete set of documents would mean that a tender was invalid'. Tenders were to include staff costs with

overhead and profit percentages and at least four case studies.

Section B2.17 also warned that if a tender was not fully submitted before the deadline it would be rejected. Submission was a once-only option and tenderers had to ensure all documents were uploaded to the site before hitting the 'submit' button. However, section B2.25 did allow 'material and genuine errors' to be amended during the evaluation period.

There was also a distinction between the main tender information which had to be submitted this way and supplementary information which could be sent by mail.

There were problems. One tenderer, Apollo, experienced a power outage at its head office on the morning of 16th January. Justin Bennetts, a principal procurement officer at the council, agreed to postpone the deadline for all tenderers until 3pm.

Another tenderer, Midas, was not sure whether it had uploaded all of its tender correctly. As it could not check on the council's website Midas called Mr Bennetts at 10.30am on 16th January. He allowed Midas to submit a back-up disc. Midas delivered the disc before the deadline. In the

event, the disc was never needed as Midas's uploaded tender had been completed within the deadline.

When Leadbitter learned the deadline had been postponed, it took the opportunity to review its tender, which it submitted electronically at 12.05. But shortly before 14.45 it noticed the case studies were missing. When it attempted to upload the missing 63 pages, it failed.

Leadbitter contacted the council's helpline at 14.57 and Mr Bennetts at 14.59. He said the council would have to assess the tender it had received, which Leadbitter took to mean it could still submit the case studies, which it did by email at 15.26 (ie after the deadline).

The council refused to consider Leadbitter's tender, citing its obligations to fairness and transparency. Leadbitter sued, arguing that this decision was unfair and discriminating. It pointed out that ITT section B2.25 allowed errors to be corrected, and that the rejection was disproportionate.

The court ruled that Leadbitter was wrong on both counts. The council had not been unfair in rejecting Leadbitter's tender, nor had it acted disproportionately.

## Tender is the Fight

**Networking is a key part of developing your career and raising your profile, says Lynne Crowe, regional manager at Hays Construction:**

In today's fast-paced society it can be difficult to find the time to meet new people, let alone begin to establish a relationship with them. However, networking is one of the ways open to people looking for a change of job or to advance their career. The thought of entering a room filled with strangers and engaging in conversation can seem like a daunting task. The good news is that careful preparation before the event can calm nerves and leave you ready for any eventuality. So, what can you actually do to reap the benefits of networking? Be clear about what you hope to achieve from the event and keep that objective in mind when communicating with other people.

Clearly, membership of a leading professional body is an excellent springboard

for career development, facilitating the interaction with esteemed senior professionals in your field. You might also want to volunteer for projects outside your remit, as this brings you into contact with people you would not otherwise get to meet. The same applies to putting yourself forward for positions of authority or projects that carry a high visibility, as this allows you to demonstrate your current skills and master new ones giving you a higher profile within the business.

Establishing a strong network of contacts requires time and effort – you need to follow up with any contacts that you have met. Making a quick phone call or sending an email shows people that you have not only remembered them but are also interested in keeping in touch.

By registering with a specialist recruitment consultancy, jobseekers are effectively 'buying in' to an established network of employer

contacts and a myriad of nationwide and global opportunities, particularly useful during a downturn when jobs are scarce and competition for places is intense. Specialist agencies are also market experts and can guide on a range of issues, including salary and careers advice.

Networking should be enjoyed. Everyone is subconsciously doing it all the time, both within their own organisations and at external events; you are going to be doing it for the rest of your life, both in personal and professional circles. Use the information to help you, as you can be sure that others will use you as a contact to help them too. While the benefits of networking cannot be quantified, they are not to be underestimated either.

Finally, remember that you don't have to be an extrovert to be effective at networking: pay attention to others, pick your targets and use every opportunity to learn and absorb information.

## Building Your Network

## ...Releasing Your Inner Inventor?

When US architect Mark Burginger lost his job last year following the housing market collapse, he spent the last of his savings developing a construction toy for kids.

Using his CAD training, he began creating prototype models for a geometric construction toy that uses modular plastic geometric

pieces that clip together to form structures. Called Qubits, the toy is now in full production and available online.

"Toys directly influence children, so hopefully Qubits will inspire today's children to expand their horizons to think about engineering, architecture, chemistry or even nanotechnology," said



Sara Crofts, Faith in Maintenance Project Director, Society for the Protection of Ancient Buildings.

As many practitioners in the heritage sector know, a great deal of time, money and other resources are expended each year fixing problems caused by a lack of maintenance or neglect. Damage to roof timbers, masonry, plaster, wall paintings and other important features can often be traced back to faulty downpipes, loose flashings, missing slates or tiles and blocked gutters. This is particularly true of the large number of projects carried out at historic places of worship.

In order to address this problem the Society for the Protection of Ancient Buildings (SPAB) set up its Faith in Maintenance training project with support from the Heritage Lottery Fund and English Heritage in 2006. The aim of this initiative is to promote sensitive and timely maintenance and encourage the many thousands of volunteers who care for historic churches, chapels, synagogues, mosques and temples to look after their buildings more effectively. The project provides free training courses for volunteers, a telephone helpline and a website ([www.spabim.org.uk](http://www.spabim.org.uk)) and also has produced The Good Maintenance Guide

and a free DVD, which is currently being distributed to faith groups across England and Wales.

While we hope that our initiative will lead to an improvement in the care of historic places of worship our dialogue with churchwardens and others dealing with these buildings has highlighted some interesting factors which have an impact on why volunteers choose to undertake maintenance or not.

### 'We don't have a problem...do we?'

The majority of people accept that maintenance is a good idea but often do not realise what this means in practise. They may look at their large, solidly built place of worship, which has stood for centuries, and find it hard to believe how fragile it really is and how rapidly decay can take hold once the water begins to penetrate the fabric. Anecdotally, there is evidence that volunteers frequently fail to make the connection between the buddleia growing in their cast-iron hopper head and the patch of damp and blistering above the aisle window. Essentially, there is a lack of understanding of the consequences of failing to tackle maintenance tasks, exacerbated by an 'out of sight, out of mind' mentality. To counter this, our Faith in Maintenance training

courses feature a practical exercise where we lead participants around a 'typical' place of worship pointing out what can go wrong and more importantly how to remedy such problems when they do inevitably occur. This kind of practical teaching is invaluable in helping volunteers understand the need for regular preventing maintenance and swift action when problems are identified.

### 'Working at height is too risky!'

There is a real and very worrying misunderstanding of health and safety legislation and the principles of risk assessment among volunteers. We frequently encounter people who wrongly believe that ladders and stepladders are banned or, at the other end of the spectrum, those who fail to adequately assess the risks present in and around their buildings. As a result, gutters remain blocked because volunteers often lack the knowledge, skills and equipment to tackle them safely. Others are nervous of employing a contractor for the task because they fear the potential cost implications. Sensible health and safety advice is therefore a key element of the guidance produced by the Faith in Maintenance project and we work hard to explain to volunteers what they can sensibly tackle themselves and when to call in professional help. We

also wholeheartedly support initiatives such as GutterClear, run by Maintain our Heritage and Diocese of Gloucester, and the equivalent Gutter Maintenance Programme in the Diocese of London because they provide a means to allow congregations to employ a contractor to clean their gutters at a reasonable cost.

### 'Are we allowed to do this?'

There is a sense that volunteers are wary of taking on practical jobs such as gutter cleaning in case they do more harm than good or perhaps incur the disapproval of their denominational body. Conservation practitioners are also perhaps a little guilty of over-stressing the need to hand tasks over to suitably qualified professionals when in reality they could be undertaken by



Volunteers taking part in a Faith in Maintenance practical exercise at Meopham St John the Baptist in Kent

## Staving Off Decay by Daily Care: Maintaining Places of Worship

competent volunteers. Through the Faith in Maintenance project we demonstrate that maintenance is not 'rocket science' and does not necessarily have to be the preserve of the professional by providing guidance on what volunteers can and should do themselves, and when it is appropriate to call in a professional. Making practical guidance on maintenance issues readily available is fundamental to renewing volunteers' confidence in their own ability to care for their buildings effectively.

### 'We're not buildings people!'

Churchwardens and their equivalents in other denominations are often appointed to their roles for their faith in God not in Maintenance. They may be focused on outreach and mission and so the care of the fabric becomes only one of the many voluntary roles they assume.

Maintenance therefore becomes part of a set of competing priorities and often does not seem as urgent as preparations for the next service or plans for re-ordering to make the church more welcoming. Within our guidance we suggest

that congregations consider appointing a fabric officer to take on the responsibility for the day-to-day maintenance tasks.

Ideally, this might be someone who has knowledge of buildings but more importantly it should be someone who has the time and skills to do the job well. It might even be someone in the community who would not normally come to a service but might welcome the opportunity to help care for the building.

### Conclusion

Although most places of worship are generally in good condition, organisations such as English Heritage are frequently asked to meet the costs of repairs which could have been avoided, at least in part, by diligent inspections and routine preventative maintenance.

The Faith in Maintenance project is attempting to reduce the need for costly repair projects by promoting good practice and providing practical support and guidance at a national level but there remains a need for others to help tackle maintenance issues at a local level if we are to secure the future of these fantastic buildings.



*A blocked gutter in need of attention at Norwich St Julian - the kind of minor maintenance task that can save enormous amounts of time and money if dealt with on a regular basis.*

## You're Hired! Young Apprentices Get To Work After Qualifying

The Construction Skills Centre will train up to 120 apprentices a year. Once qualified, they will be employed on King's Cross Central developments and other local projects in Camden and Islington.

The 16-to-18-year-old apprentices, mostly drawn from the two boroughs, will



*Recreating conditions on site...*

undergo two years of training, combining theory and practice, to achieve NVQ level 2. Three main courses are currently on offer: carpentry and joinery, brick laying, and civil engineering. But once King's Cross Central is in full swing, new courses are likely to be set up to teach specific skills needed on site, such as curtain walling or dry lining.

The training is provided by Carillion, but all four construction partners at King's Cross - Carillion, HBG, Kier and Nuttall - will provide work placements and employment opportunities for trainees within their supply chains.

The first intake of apprentices has already made its mark on the Construction Skills Centre, having built and painted blockwork partition walls to divide the main flexible



*...and learning in the classroom*

workshop space, and even erecting their own canteen block.

'They've all been part of turning it into a real, operational centre,' says Andrew Shapland, regional operations manager at Carillion Training Services. 'The challenge is to maintain that spirit of involvement in subsequent years.'

## Keep In Touch with The Society

The Society of Professional Engineers • Lutyens House, Billing Brook Road, Weston Favell, Northampton NN3 8NW

Tel: 01604 415729 • Fax: 01604 415729 • Email: [spe@abe.org.uk](mailto:spe@abe.org.uk)

[www.professionalengineers-uk.org](http://www.professionalengineers-uk.org) • Chief Executive - David Gibson

## A New Horizon in Affordable Housing



Glasgow based construction company CCG (Scotland) Ltd, showcased its new off-site manufactured housing product with a promotional movie on the IMAX screen and entertaining speeches at a packed Glasgow Science Centre.

The event was aimed at affordable housing providers, offering a preview of a fresh approach to the procurement of housing that is being developed to address the key challenges of affordability, sustainability and quality that face the housing sector.

CCG's iQ System is a series of interrelated modularised components that combine to produce a flexible kit of parts able to create an array of house types in any built form. This innovation in domestic construction exemplifies best practice in modern engineering, energy efficient design and environmentally conscious specification.

The use of an automated manufacturing process allows true precision engineering. Responsibly sourced materials have also been used to provide robustness and durability. To deliver this new product CCG has acquired a new manufacturing facility within the Clyde Gateway regeneration zone at Cambuslang. The existing facility will be transformed into a state of the art sustainable building - incorporating a renewable energy source and a range of measures to limit the carbon footprint, both during construction and throughout operation.

As part of the event, design guru and contributor to the upcoming Future Scotland debate on housing issues Wayne Hemingway delivered a keynote speech on the state of



Image of CCG's iQ system

the nation's housing and the need for more efficient construction to meet demands for affordable dwellings up and down the country.

Wayne said: "We need a new paradigm in the delivery of housing, an approach that adopts modern methods of construction and creates homes that people want to live in. CCG's iQ System provides the basis for just that, building in quality and high energy efficiency from the outset and incorporating the type of imaginative design that can transform peoples living conditions."

Ardent environmentalist, Professor David Bellamy, gave a rousing speech on how

concern for our natural habitat has too often been ignored in decisions made about housing and area regeneration. He commended recent prioritisation of more sustainable practice within the construction industry and provided his support for CCG's new product, commenting: "It's great to see advances being made in house building. I can't help but be impressed with CCG's drive to cut out waste from the build process, produce houses with green materials and use an approach that delivers real energy savings for the occupants. The iQ System means less strain on our scarce natural resources. Our future relies on ventures like this."



Image of CCG's iQ system

## Links Forged with Russia Ahead of Winter Games



Contractors and Engineers interested in getting involved in the development planned for Russia's 2014 Sochi Olympic and Paralympic Winter Games should get in touch with UK Department of Trade and Investment (UKTI), which is organizing a trade mission to Russia.

The Russian government has allocated \$10bn to develop venues and infrastructure in the Krasnodar region for 2014, a total that is likely to rise with private investment in hotels, offices and retail centres.

British company JCB has already sealed a multi-million pound deal to provide plant to Russian civil engineering contractor MOST, which is delivering transport infrastructure at the Olympic site, but UKTI believes there are further opportunities.

The trade mission follows the signing of a Host2Host partnership agreement between the UK and Russia to develop the economic and sustainability legacies of the London and Sochi Games by sharing market intelligence and forging links.



Ice Flow: This Curling Arena is one of Sochi's many 2014 projects

**"The only reason for time is so that everything doesn't happen at once." - Albert Einstein**





## A Brief History of a Remarkable Ship

The SS Great Britain was a world first when she was launched in Bristol in 1843. This uniquely successful ship design brought together new technologies in a way which transformed world travel.

Isambard Kingdom Brunel, the most daring of the great Victorian engineers, conceived the groundbreaking combination of a screw propeller, an iron hull, and a massive 1000-horsepower steam engine.

She was immediately successful – on her maiden voyage across the Atlantic the SS Great Britain easily broke the previous speed record.

Although effectively a prototype, she continued sailing until 1886, and traveled 32 times around the world and nearly one million miles at sea.



The SS Great Britain

She was finally abandoned in the Falkland Islands, in 1937, after more than 40 years use as a floating warehouse. In 1970 an ambitious salvage effort



## Fibre Cement Cladding Gives Buildings A Healthy Outlook

### University Campus Suffolk

Situated on the Ipswich quayside, the Waterfront Building was the first phase of the Ipswich Education Quarter redevelopment. A collaboration between the universities of Essex and East Anglia, the 10,500m<sup>2</sup> building operates as a Centre for Applied Sustainability and has strict policies in place with regard to the recycling of waste and energy efficiency. The building achieved a BREEAM 'excellent' sustainability rating.

The designers used Marley Eternit's Natura panels in various colours as a decorative rainscreen cladding. This type of cladding panel was chosen because of its aesthetic appearance, created by using a



## UK Architect Designs China Resort

In an example of UK design and construction expertise travelling east, architect PCKO has designed the Loncin Petal Valley holiday village in Chongqing Province, China. Masterplanned over 100 hectares, the scheme includes apartments, villas and resort hotels. The first phase



**Qualified QA/QC Engineer in Industrial Efficiency, General Construction, NDE. Petrochemical. Power Stations. Documentation. Writing Procedures, Lecturing. Vendor Inspection.**

Work Areas: Norway, North Sea Oil Rigs, North Africa, Dubai, Bahrain, Saudi Arabia, Iran, South Africa, Indonesia, Ghana, Holland.  
Contract Values: from £100,000 sterling to 4 Billion Rand on the Durban Harbour Deepening and Widening, as Quality Assurance Manager.

Available World Wide as your Consultant

**Ing. P. Eur. N.J. Budd PEng(UK)**

MSPE, F.I.Diag.E, F.I.A.Q.P • QA/QC Engineer / Consultant

Tel: +27 (31) 916 7492 - R.S.A. • Cell Phone: 082 83 77853

Fax to email: +27 86 645 3615 • Email: [nevillebudd@qaqc.co.za](mailto:nevillebudd@qaqc.co.za) or [admin@qaqc.co.za](mailto:admin@qaqc.co.za) • [www.qaac.co.za](http://www.qaac.co.za)

## What goes around...



It is the month of August; a seaside resort town nestles in a quiet bay. It is raining and the little town looks totally deserted. Times are tough, everyone is in debt and everybody lives on credit.

Suddenly, a rich tourist comes to town. He enters the only hotel, lays five crisp £20 notes on the reception counter and goes to inspect the rooms upstairs in order to pick one.

The hotel proprietor takes the £100 and runs to pay his debt to the butcher. The

butcher takes the £100 and runs to pay his debt to the pig farmer. The pig farmer takes the £100 and runs to pay his debt to the supplier of his pig feed. The supplier of pig feed takes the £100 and runs to pay his debt to the garage for last month's diesel.

The garage proprietor runs to the hotel with £100 and pays off his debt, the last payment outstanding for his daughter's wedding reception. The hotel proprietor then lays five crisp £20 notes back on the counter

so that the rich tourist will not suspect anything.

At that moment, the rich tourist comes down after inspecting the rooms and takes his £100 back, after saying that he did not like any of the rooms and leaves town.

No one earned anything. However, the whole town is now without debt and looks to the future with a lot of optimism.

And that, ladies and gentlemen is how the British government is doing business today.

## Tips of the Trade – Stone Cladding



**1. Consider the relationship** between the primary structure and the stone cladding build up. Is the cladding design suited to the type of structural frame and vice versa? Try to keep the load-bearing connections simple.

**2. When designing the outer skin of the building** be sure to design the interface between the stone and glazing in a way that will allow for total waterproofing. Unusual

window design can create complications.

**3. Stone is not an off-the-shelf product so** allow enough lead-time in your programming and sequencing for stone selection and production. You should normally allow between three and four months for production and delivery of the order.

**4. Consider speeding up construction** by prefabricating parts of the cladding system. A

prefabricated back-up wall, for example, can save significant time and eliminate the need for wet trades, leading to a more efficient and cleaner site.

**5. Think about ways of avoiding double handling** which costs time and can result in stone getting damaged. Consider where the stone is going to be stored and the best way to get it to the point of fixing.

## 'The Future's Getting Older'



### Construction workforce shows sign of ageing

The research which looks at the impact of what an ageing population will have on the construction industry, revealed not only the implications for building, design and structure but also the effect on the workforce.

"There are two trends in particular that should be of concern for the industry. Firstly the total numbers of construction managers

above the age of 60 has increased and the biggest reduction in workers fell in the under 30 groups. The likely impact is as clear as it is worrying. A great deal of knowledge is about to be lost and fewer professionals are in line to replace it.

"There is also an indication that a significant proportion of the industry is not setting aside provisions for their retirement. The results have shown that a number of employees cannot afford to retire because of inadequate pension plans and no alternative financial investments to support them. Clearly more needs to be done to encourage construction professionals to invest in their futures."

The results show that 76% of all respondents (over 2,000 construction professionals took part) are aware of the challenges facing the construction industry as a result of the ageing population. Further analysis clearly shows that the older the respondent, the more aware he or she becomes of the challenges that would arise. Construction professionals were asked to add further comment and specify the challenges they feel are a particular issue for the industry. The majority of respondents cite the following three challenges:

- The ageing construction workforce
- The economic impact of this demographic change

• The state of the existing building stock  
The comments show that the ageing construction workforce is the primary concern. Several responses highlight a fear of many workers entering retirement within a short space of time and the resulting significant loss of skills in the industry.

This would also mean that the industry is losing a valuable teaching resource, as older workers often use their expertise and experience to help develop new entrants. This issue is closely related to the industry's dilemma of skills shortages and its problems in recruiting enough new employees.

While the industry's older members are crucial assets, some respondents suggest that it's hard to drive innovation through the industry without fresh minds available. These respondents believe that developing new ideas and innovative ways of working will help to strengthen the industry's future.

One way to tackle this challenge is to extend the retirement age. Overall, only 34% think this should be done, although the percentage does rise consistently with age; 44% of respondents over 60 feel that the retirement age should be extended. 59% of respondents are already aware of employees staying on past the official retirement age.

The most common explanations for this include employees enjoying their jobs, feeling they would be bored by retirement, financial reasons, or because they were asked to stay on due to a lack of a replacement.



Articles for the Bulletin - We are always looking for news of members and project articles for publication in the bulletin, do you have something of

### **Reciprocal Membership Arrangements with other Professional Bodies**

Reciprocal membership arrangements are in force with the bodies mentioned below. In every case Members wishing to apply should first contact the Society for an Application Form and/or a letter of recommendation.



#### **National Society of Professional Engineers®**

1420 King Street, Alexandria, Virginia, 22314 - 2794, USA  
Tel: (703) 684 2800 • Fax: (703) 836 4875 • www.nspe.org

#### **The China Civil Engineering Society (CCES)**

Zhang Junqing, Director, Dept. of International Contact  
PO Box: 2500, 9, San Li He Rd., Beijing 100835, China  
Tel: 00 86 10 58933071 • Fax: 00 8610 58933071 •  
www.cces.net.cn



#### **Societe Nationale des Ingenieurs Professionnels de France (ipf)**

Charles Tondeur, 3 rue Fortia, BP 60004,  
13484 MARSEILLE, Cedex 20, France  
Tel: 04 91 59 90 14 • Fax: 04 91 33 13 56

Email: snipf2@wanadoo.fr • Website: www.snipf.org



#### **Hong Kong Institution of Construction Engineers Ltd**

The Secretariat,

Unit 1801, Man Shing Industrial Building  
307-311, Castle Peak Road, Kwai Chung  
Northern Territories, Hong Kong

Tel: 00 852 2387 9477 • Fax: 00 852 2380 9494  
Website: www.constructionengineers.org.hk  
Email: membership@hkiconste.com



#### **The Institution of Diagnostic Engineers**

7 Weir Road, Kibworth, Leicester LE8 0LQ  
Tel: 0116 279 6772 • Fax: 0116 279 6884  
Email: admin@diagnosticengineers.org  
Website: www.diagnosticengineers.org



#### **The Association of Building Engineers**

The Membership Secretary Association  
of Building Engineers

Lutyens House, Billing Brook Road,  
Weston Favell, Northampton NN3 8NW  
Tel: (01604) 404121 • Fax: (01604) 784220  
Website: www.abe.org.uk



#### **The Association of British Engineers in Italy**

President: Ing.PEur. Saverio Iuzzolini, PEng.(UK),  
FSPE, MSE, MBEng, FABEL, FIEng, MIET(UK),  
MCIQB(UK), MASCE(USA)

Via Padova No. 127, 20127, Milan, Italy

Tel/Fax: +39 02 6698 8898 • Website www.abei.org



#### **Design Technology and**

#### **Management Society International (DTMSI)**

PO Box 306, Ladismith, Western Cape, 6655, South Africa  
Tel: +27 (0)28 551 2098 • Fax: +27 (0)28 551 1305  
Email: info@dtmsi.co.za • Website: www.dtmsi.org

## Self Inking Personal Stamps

As Members will be aware the Society has for many years had on offer a Stamp for use on notepaper and drawings containing the name of the Society and the name and Registration Number of the Member. The Firm that supplies the Stamps can now offer a self-inking Stamp which produces an even more finished appearance and is enclosed in an impressive case that will sit well on the office desk. These are now available from the Society at the modest price of £30.00 each which includes VAT, postage and packing.



## Lapel Badges

Lapel Badges are now available from the Society at a cost of £3.00 each inclusive of postage. All paid up members are encouraged to purchase a lapel badge to indicate their membership of the Society, and to be proud to wear it among their professional colleagues.



## Society Ties

We are pleased to advise members that we now have good quality ties in stock of polyester satin in Silver Grey, Navy and Maroon with the Society Logo picked out in gold. They are very striking and will certainly provoke discussion when worn in the office and at business meetings and training. Support the Society by ordering one now at the modest price of £11.50 (including postage and packing).



The Professional Engineer is Published by The Society of Professional Engineers

Editor: Brian R. Dixon, PEng. Deputy Editor: Arthur Watt, PEng.

All correspondence should be sent to: Lutyens House, Billing Brook Road, Weston Favell, Northampton NN3 8NW

Designed and printed by: Spingold Graphics www.spingold.co.uk

The Society of Professional Engineers, as a body, is not responsible for the statements or opinions expressed in this bulletin.





## London Improvements 1862-73

The NMR recently purchased an important series of 28 photographs of the London Improvements undertaken by the engineer Sir Joseph Bazalgette on behalf of the Metropolitan Board of Works between 1862 and 1873. These

high-quality images include the demolished Northumberland House, Holborn Viaduct, the Embankments in Chelsea and Westminster as well as the construction of the Grade I-listed Crossness Pumping Station and its huge beam engines. After the completion of this vast public health undertaking, the incidence of cholera

epidemics in London largely subsided.

MPs and other VIPs pose outside the newly opened Crossness Pumping Station, Bexley, in 1864 – one of a series of recently acquired photographs recording the hugely important engineering works of Sir Joseph Bazalgette. Reproduced by permission of EH.NMR

## CMYA Winner



Imperial College Southside Student Accommodation, Kensington, the project that won Jason Curtis MCIQB a gold medal in the Projects £30-£60m category at CMYA 2008.