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Presidents Briefing

2015 – I am reminded of the song "the only way is up" what a year for the Society!

Engineering; the technologies, processes and practices move at great speed with the advancement of material knowledge and the development of components systems and applications to maximise the use and benefits of both the materials and the resources available.

The year has seen considerable focus on "working with others" with our participation within the Local, European and Global arenas reinforced by the enhancement of our working relationships with Fellow Professionals and Professional Bodies.

The final weeks of 2015 will see the Society participating in the Buildings and Energy Efficiency Event in Manchester and hosting representatives from the Societe Nationale des Ingenieurs Professionnels de France (SNIPF) to explore how our members can achieve further recognition within France.

Another area being explored is the "Professional ID card" which will provide a USA equivalence opportunity in conjunction with our members in the Association of British Engineers in Italy (ABEI) and the California University.

The Society's Development Committee chaired by David Gibson, Vice President International is looking to reinforce developments both within the UK and Overseas during 2016.

These activities are reported in the journal Professional Engineer which is currently issued 4 times per year in hard copy format. The programme for 2016 is to provide a balanced mix between hard copy and electronic communication and journal provision therefore ***it is essential that you provide us with a current email address.*** We are also looking for further contributions to the journal and support to the development and delivery of initiatives during the year.

The recent Annual General Meeting was most positive and you will see from this page the current Directors details and a new terminology, that of Corresponding Members, this is seen as a positive move where Members may provide a focal point within their locality and also support the Society through their review of documentation and initiatives as appropriate.

I take this opportunity to wish you and your families good health and every success for 2016.

J.Malcolm Parker P.Eng President

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PAST PRESIDENTS

1969/70	F.W. HYDE	1976/77	T.M. SCANLON	1984/86	J.A. GARDNER	2000/02	BRIAN R. DIXON
1970/71	D.J. AYRES	1977/78	S.N.B. GAIRN	1986/87	D.T. COATES	2002/03	IAN T. FITZHERBERT
1971/72	S.N.B. GAIRN	1978/79	W.E. HUMPHREY	1987/90	I.A.C. WRIGHT	2003/05	DAVID PARRATT
1972/73	J.D. BURROWS	1979/80	R.C. WYKES	1990/91	K.A. STATHAM	2005/08	BRIAN R. DIXON
1973/74	J. MASON	1980/81	V.C. EALEY	1991/93	M.J. PREECE	2008/10	D.J. HARDCASTLE
1974/75	D.J. AYRES	1981/83	A.J. BARTER	1993/96	R.J.T. ROLLINGS	2010/12	HUGH WYNNE
1975/76	J.D. BURROWS	1983/84	D.J. HARDCASTLE	1996/00	G.K. TURNER	2012/	MALCOLM PARKER

Wales – Social regeneration

The UK is currently struggling with significant issues linked to housing and in particular those within the social sector. The problem has seen a range of initiatives put forward at national level, however, it is most impressive when initiatives are put into action, a prime example being Rhyl in Wales, where work has commenced on a ground-breaking £1.4m social housing scheme aimed at rebuilding a community. This initiative is pioneered by the West Rhyl Housing cooperative – a first for Wales – brought together by North Wales Housing and West Rhyl Community Land Trust

Fiona Davies, chairman of the Trust, said: "This is an exciting opportunity for local families to benefit from brand new high quality, affordable housing. The aim of the Cooperative is to rebuild the close-knit community that once thrived in West Rhyl."

Tenants become members of the housing co-operative, which entitles them to get involved in how their properties are managed and to determine and influence future plans and projects in the area. Barry Mellor, Mayor of Rhyl, enthused stating that the development was fantastic and what we've needed here for a long, long time and it will boost this area considerably.

Award-winning builders, Anwyl will build seven new three-bedroom family homes with private gardens and parking and are refurbishing former commercial premises which will house a community shop and a bakery on the ground floor with two one-bedroom and two two-bedroom flats above

e-PlanSoft™ Announces Issuance of U.S. Patent for Management and Processing of Electronic Documents

Irvine, California, September 22, 2015: e-PlanSoft™, a leading provider of electronic compliance plan review solutions, today announced that U.S. Patent No. 9,135,602 was issued by the U.S. Patent and Trademark Office (USPTO) for its patent application entitled, "Management of Building Plan Documents Utilizing Comments and a Correction List".

This new patent relates to technology that enables users to upload their standardized comments to a Standard Comment Library provided in the software. The Standard Comment Library then allows users to apply filters to that data to narrow results by project type, discipline code, etc. as well as to perform keyword searches. A user may then insert these standard comments into their project/review document. The software also automatically controls how each review comment is grouped and sorted on the correction report that is returned to the customer - in addition to tracking the approval/decision status of each comment. Additional technology allows users to filter review comments by department, reviewer, discipline code, disposition status, submittal, plan name, etc. - whose results can then be used to generate the correction reports.

"This newly issued patent further strengthens our position as a leader in electronic plan review solutions. Our vision is to provide governmental agencies and the AEC industry software that not only integrates to their permitting, land management, and project management applications, but includes singular emphasis for comment management and ease of use," said Leon Kotovich, COO of e-PlanSoft.

www.eplansoft.com

New Zealand - affordable housing?

Can Auckland ever deliver affordable housing?

The Property Council's Residential Development Summit explored issues relating to housing unaffordability in Auckland by looking at its key causes, reviewing issues such as the shortage of land supply, the increase in demand from population growth and the "onerous central and local government regulations" and their application.

Regulations always hurt and concerns were raised about the consistency or lack of consistency in interpretation and that the solutions to many regulations were considered to be impractical placing a significant burden on the property development industry within Auckland.

It was recognised that Auckland is currently experiencing unabated housing shortages and escalating house prices in a city where infrastructure development has been neglected for decades. The need for a dynamic legislative and regulatory environment was recognised in seeking to meet these mounting challenges.

Key pressures relate to the supply of land and its price for residential development. Focus was placed on the need for greater certainty surrounding Auckland Council's Proposed Auckland Unitary Plan and land supply strategies as well as the future of the Special Housing Areas legislation.

Property Council Chief Executive Connal Townsend acknowledged that many issues are localised whilst recognising the need for integrated local and national policies that account for and will address all of the issues raised.

www.propertynz.co.nz

Health and Safety - USA

Dr. Michaels, Assistant Secretary OSHA, testified before Congress on OSHA's efforts to improve workplace safety and health in testimony to the House Subcommittee on Workforce Protections on Oct. 7, he described how, with limited resources, OSHA achieves its mission through a balanced approach of standards, compliance assistance, enforcement, outreach and whistleblower protection.

"We recognize that most employers want to keep their employees safe and make great efforts to protect them from workplace hazards," Dr. Michaels told the committee;

"Our enforcement program specifically targets the most dangerous workplaces, where workers are most likely to be hurt on the job, and the most recalcitrant employers. For those employers who need technical assistance, we provide free on-site consultations to small employers, as well as other compliance assistance, educational materials and training."

Dr. Michaels also detailed challenges in addressing the changing structure of employment relationships, such as the dramatic increase in temporary workers in virtually every type of workplace. Unless properly managed, these structural employment changes greatly increase risks of injuries and illnesses among all the workers in these workplaces.

www.osha.gov

Solar Power Plants – Performance and Certification

The BBA and Photovoltaik-Institut Berlin (PI Berlin) have unveiled a new inspection process for solar power plants.

The PQ Rating provides a rapid overview of the strengths and weaknesses of PV power plants, supporting stakeholders – including investors – on the secondary PV market to make acquisition decisions, and providing sellers with plant inspection reports to improve their sales prospects. The PQ Rating facilitates the decision-making process by evaluating projects on a scale of one to ten and by providing both a detailed report and a chart-based summary.

Experts compile the summary by analysing project documentation and performing an on-site assessment of the plant based on more than 1,300 test criteria.

The PQ Rating, which is short for Photovoltaic Plant – Performance and Quality Inspection, is particularly suitable for large-scale PV power plants with outputs of 1 megawatt (MW) or more. The expert report awards points for each of the parameters being inspected, which range from the quality of the contractual agreements, the plant layout and installation, to the module quality and overall performance. Assigned different weightings, these points are used to calculate a rating of between one and ten, which places the power plant into one of three classes. If the PV project scores less than the minimum threshold, the experts classify it as carrying too much risk. The process differs from that of other expert reports by including commercially relevant aspects also, and by rating performance beyond simple compliance.

PI Berlin was co-founded by Dr Paul Grunow, who also helped establish photovoltaics manufacturer Q-Cells. PI Berlin has already provided support for projects with a total rated output of over two gigawatts (GW) worldwide.

The Photovoltaik-Institut Berlin provides independent, expert advice on designing, constructing and operating PV power plants worldwide. With its experienced team of researchers and engineers, the institute offers a wide range of design and test services with a focus on quality assurance in complex PV projects. PI Berlin has already provided support for projects with a total rated output of over two gigawatts (GW) worldwide.

PI Berlin Engineer inspecting a PV power plant.

The institute also has an IEC-accredited test laboratory at its Berlin site for checking the performance, reliability and resistance of solar modules. Another test laboratory is located in Suzhou, China.

www.pi-berlin.com/en www.bbacerts.co.uk

Hinkley Point C to power six million UK homes

EDF and its Chinese partner China General Nuclear Corporation (CGN) have committed to Hinkley Point C during the recent landmark China State Visit, confirming the first new nuclear power station in the UK for a generation.

The companies have signed a Strategic Investment Agreement which marks a critical moment for the site in Somerset. EDF has confirmed it will take a 66.5 per cent stake in Hinkley with CGN taking 33.5 per cent, demonstrating a clear commitment from both parties.

The Government and EDF have finalised the detail of the Contract for Difference which offers increased price certainty for the electricity produced from Hinkley Point C. The Funded Decommissioning Programme has been approved and will make sure that the tax payer doesn't pick up the cost of decommissioning the plant in the future.

Hinkley Point C will provide low carbon electricity to six million homes, twice as many as the whole of London, for around 60 years – and consumers won't pay a penny until the plant is up and running. It will provide a vital boost for the national and local economy - creating 25,000 jobs, up to 1,000 apprentices and landing UK businesses billions of pounds worth of supply chain contracts.

Prime Minister David Cameron said:

"I'm pleased to announce that today we are signing an historic deal to build the Hinkley nuclear power station, providing reliable, affordable energy for nearly six million homes and creating more than 25,000 jobs, all while working together to build a low-carbon future."

Energy Secretary Amber Rudd said:

"We are tackling a legacy of under-investment and building energy infrastructure fit for the 21st century as part of our plan to provide the clean, affordable and secure energy that hardworking families and businesses across the country can rely on now and in the future.

"The UK is open for business and this is a good deal for everyone – Hinkley Point C will continue to meet our robust safety regulations and will power nearly six million households with low-carbon energy, creating over 25,000 jobs and more financial security for working people and their families."

The Government will support new nuclear power stations as we move to a low-carbon future. Hinkley Point C will kick start this and is expected to be followed by more nuclear power stations, including Sizewell in Suffolk and Bradwell in Essex. This will provide essential financial and energy security for generations to come.

EDF Energy CEO Vincent de Rivaz said:

"Hinkley Point C and successive nuclear projects will guarantee the UK the reliable, secure low carbon electricity it needs in the future. Nuclear power will save customers money compared with other energy options and provide a huge boost to British industrial strength, jobs and skills both in Britain and abroad. Today's announcements are also good news in the fight against climate change."

The office for Nuclear Regulation (ONR) has completed Step 3 of the Generic Design Assessment of Hitachi-GE's UK Advanced Boiling Water Reactor (ABWR) nuclear power station design.

The third phase of GDA looks at the safety and security arguments presented by Hitachi-GE to underpin the safety and security claims. ONR has concluded that sufficient progress has been made by Hitachi-GE to move into the final assessment stage, which Hitachi-GE expects to complete in December 2017.

ONR will now progress to the final phase of assessment which will include assessment of detailed design, safety case and security.

FTSE 100 companies have met target for 25% of board members to be women

The Prime Minister announced that the UK's FTSE 100 has reached the target of 25 per cent of board positions being filled by women. The target was set by Lord Davies in 2011.

The Cranfield International Centre for Women Leaders has been monitoring the number of women on the boards of FTSE companies since 1999. During this time there has been a steady increase.

Professor Susan Vinnicombe who has led the research commented: "It's great to see the FTSE 100 reach the target of 25 per cent women on their boards. Many congratulations to everyone involved. Now we need to see more women moving into executive directorships, senior independent directorships and chairman positions."

Cranfield University School of Management

Brownfield sites – panacea for starter homes?

The Conservative Party has pledged to build 200,000 "affordable" starter homes by 2020. One of the ways the government intends to achieve this pledge is to release Brownfield sites for the new housing projects by changing the planning system to free under-used or unviable Brownfield land from planning costs and levies in return for a below market value sale price on the homes built on the site.

It is easy to see why this would form an integral part of the "housing reforms" the government is promising as according to a research study linked to the RICS where Nottingham was used as the case study it would appear that there is enough Brownfield land available in England to build 226,000 houses by 2019.

As part of the plans, the government has promised that up to £10 million grant funding will be open to councils to assist them in bringing forward Brownfield sites that are currently underused or vacant with a view that this will help them carry out preparation, clearance and infrastructure work to make the sites viable for the development of starter homes. The funds are a one-off payment designed to generate momentum and as such accelerate the provision of starter homes.

Singapore - PhD research project

As a result of climate change and urbanization, more frequent flooding, diffuse pollution, and combined or separate sewer overflows are impacting on infrastructures, private or public entities, and on the ecological status of urban water systems.

Which flood management strategies will be the most appropriate/effective under a given local climate scenarios? Answering such questions are crucial for future flood protection planning, and effective flood mitigation measures in dense populated areas.

Veolia Research and Innovation, through its office in Singapore, opens a position for a PhD research project in collaboration with a recognized local university.

Sought profile – you must be motivated for a 4-year scientific project, relying on hydraulic models and optimization algorithms, to define optimization problems and build what will be the core of a decision support tool.

The candidate must be Singaporean or PR.

Nicolas Marechal-Abram
Manager at Veolia City Modelling Center

UK and China sign the Clean Energy Partnership

The UK and China have signed an agreement to work together to transition to the low carbon economy.

The Clean Energy Partnership establishes co-operation in research and industry while transitioning to a low carbon global economy. This will strengthen the UK's position as the partner of choice for China in low carbon energy and will help to pave the way for effective energy relations between the two countries.

Both the UK and China are determined to find the right solutions to deliver clean, secure, and affordable energy for all. The agreement will support our efforts to tackle climate change and provide energy security for decades to come, helping to reduce energy bills for hardworking businesses and families as well as growing the low carbon economy.

The UK companies in the low carbon sector will gain more opportunities to access the largest energy market in the world; enabling them to share expertise in technology and innovation to secure new business. It is expected to encourage more investment in clean technologies, which in turn could help to reduce their costs in both countries.

Earlier this week, a number of other collaboration agreements were announced at the UK-China Fourth Annual Energy Dialogue. These include the first ever Chinese investment in the UK offshore wind market with China Three Gorges (CTG) agreeing to invest in Moray Offshore Renewables Ltd.; as well as the UK China joint civil nuclear research and development centre to be opened in the UK; industry and academic collaboration for marine energy research; and partnering of our two countries' offshore wind industry groups to establish joint Offshore Wind Industry Advisory Groups.

Also, complementing our work on clean energy, the China National Expert Committee on Climate Change and the UK's Committee on Climate Change have agreed to establish a new process of joint work on climate change risk assessment, recognising the importance of risk assessment for informing climate change policy.

Global Fireproof Solutions

Global Fireproof Solutions through its newsletter provides a technical update in respect of the latest technology advancements of High Performance Intumescent and Fire Retardant Coating Solutions for Passive Fire Protection. Their primary goals are to:

- Provide Passive Fire Protection Applications that utilize the most advanced and thoroughly tested Intumescent and Fire Retardant Coating Solutions
- Train and Certify professional Fireproofing Applicators
- Provide a network of Certified Applicators throughout the United States and Canada
- Offer Educational Training and Consulting
  - ICC Certified Provider
  - AIA Certified Provider
- Third-party Inspections of Fireproofing Applications

To subscribe to the Globalfire technical update newsletters, visit their website **www.globalfire.uk**

GLOBAL

Bjarke Ingels' Lego House - Denmark

Over 3,000 people have attended the topping-out ceremony for the Bjarke Ingels-designed Lego House, a visitor attraction made to resemble a giant stack of Lego bricks.

Local citizens and Lego employees in the Danish town of Billund were invited to tour the construction site now the keystone brick has been set in place.

According to the Lego Group, the completed experience centre will open to the public in the second half of 2017. It will be 12,000sq m (129,000sq ft) and stand 23m (75ft) tall.

Bjarke Ingels Group (BIG) have designed the building as a three-dimensional village of interlocking buildings and spaces. The structure will consist of 21 huge Lego bricks, built on top of one another. These will enclose a large indoor space above which a Keystone Gallery – shaped to resemble a classic 2X4 LEGO brick – is situated.

After unveiling their design back in early 2014, BIG said in a statement: "We propose to approach the spaces and activities for the Lego House through the lens of a core element of Lego's philosophy – inventing the future of play through systematic creativity.

"The Lego House will be both expressive and rational. Innovative and systematic - like a Guggenheim of white cubes, combining the functionality of the model space with the iconic character of a sculptural building."

MVRDV – Amsterdam

Dutch architecture firm MVRDV has completed work on a new tennis clubhouse in Amsterdam which allows spectators to view the on-court action from the structure's roof.

Named 'The Couch' due to its distinctive design, the 332sq m (3,570sq ft) clubhouse features a roof which dips down towards the south side and is raised 7m (23ft) towards the north. Rows of seating are subtly incorporated for up to 200 spectators, who are able to watch games on the club's 10 outdoor courts. Should the tennis action fail to wow the crowds, the elevated platform provides views of Amsterdam's IJburg neighbourhood and the waters that surround its three artificial islands.

In addition to its innovative roof, the clubhouse also stands out because of its distinctive red appearance. The building has been fully sealed with an EDSM polymer hotspray to match the colour and texture of the clay tennis courts.

The building was commissioned in 2013 by Tennisclub IJburg. MVRDV worked with co-architect Studio Bouwkunde and structural engineer ABT on the project, which was constructed by Ballast Nedam Bouw.

Seymour Harris Architecture - Consett Leisure Centre, County Durham, UK

Consett Leisure Centre, a new £44m (US$68 €61) complex which combines educational establishment, Consett Academy, with a new leisure centre – to be shared by students and the public – has opened in County Durham in the UK.

Financed by local government body Durham County Council, the two venues occupy a new single building – designed by Seymour Harris Architecture – and located in the heart of Consett on the town's former football ground.

"Significant expertise and effort has gone into the careful design and development of this new concept, ensuring a high quality and sustainable facility is developed to meet the needs of all those involved and local residents," said Steve Howell, head of culture and sport at Durham County Council.

Facilities at the new centre include the largest swimming complex in County Durham with a 25m, six lane pool and a 20m x 8.5m pool, both with moveable floors; an interactive slide; and splash water features. The centre also features three glass-backed squash courts, with a moveable wall for larger spaces as required, as well as an eight-court sports hall for badminton, football, gymnastics and other indoor sports. Outside facilities include a 4G pitch and a multi-use games area for netball, football, basketball and other sports.

A sprint track for jump and sprint practice is due to open early next year.

Consett was the cradle of the British steel industry and one of the leading steel producers in the world in the 17th and 18th centuries, but lost the lead to the city of Sheffield in the 19th century.

The steelworks - although still profitable - were closed in 1980 for political reasons and following the closure, unemployment in the town reached 38 per cent. The last steel ingot from the Consett ironworks was made into a cross and is kept at St Mary's RC Church, Blackhill.

Knauf Insulation in York Engineers' Triangle

European Roofing Systems needed to provide an insulation solution to meet York's new rail operating and training centre's environmental requirements, and meet the rigorous demands of an inverted roof application. The result was a specification of 3,000m² of Polyfoam ECO Roofboard Extra (XPS) insulation, a product that boasts a BBA Agrément certificate 07/4418 and a BRE Certified Green Guide Rating of A provided by Knauf Insulation.

Sustainability is at the heart of the development of Network Rail's York Engineers' Triangle which is the largest rail operating centre in the country and will control signalling and rail operations on the east coast, from London King's Cross to the Scottish borders. The development centre also provides a training facility with spaces for up to 200 delegates to be trained at any one time.

Liam Murray, Estimating Manager for European Roofing Systems commented:

"The roof areas created a challenge that was met by our experienced design and site teams. With the help from Knauf Insulation we were able to develop an inverted roof system to meet the rigorous brief of requiring a product that had impressive environmental credentials, an excellent thermal performance and most importantly could be installed above a hot melt waterproofing system.

Luan Anderson, Network Rail's project manager added:

"With brown roof spaces and green walls to help promote biodiversity on the site, combined with the installation of Knauf Insulation's Polyfoam ECO Roofboard Extra and cooling and heating systems, we believe that the sustainability will permeate further than the actual building and help us to save energy consumption and reduce our CO2 emissions."

www.knaufinsulation.co.uk.

Singapore – Health and Safety Collaboration

The Ministry of Manpower Singapore (MOM) and Great Britain's Health and Safety Executive (HSE) have signed an agreement on closer ties and shared learning

HSE's Chief Executive Officer, Dr Richard Judge, met with Ministry of Manpower (MOM) Singapore's Permanent Secretary, Loh Khum Yean, to commit to working together to drive world-class innovation, science and specialist expertise around health and safety in both countries.

A formal Memorandum of Understanding (MOU) has been agreed, marking a commitment between the two organisations in a partnership to share knowledge, experience and facilities in pursuit of excellence in work-related health and safety and to support economic growth in both countries. The agreement provides a framework for the UK and Singapore to share scientific and regulatory knowledge, experience and good practice and develop joint initiatives to promote excellence.

President Tan of Singapore visited the UK in October 2014, where he acknowledged the economic advantages for both nations in building strong relationships, particularly in cutting edge research, science and technology.

Permanent Secretary Loh Khum Yean said: "This marks the beginning of a long-term partnership in which Singapore and the UK can learn from each other and build world-class knowledge through joint research programmes."

MOM works closely with the Workplace Safety and Health Council and the Workplace Safety and Health Institute to improve WSH standards in Singapore.

Dr Richard Judge said: "Between our two countries, we have a wealth of valuable research, technology and science underpinning our regulatory systems. By working together, we can combine our world-class knowledge and learning and ensure both countries can take the lead in developing sustainable, healthy and safe working environments, as our economies evolve and new technologies develop."

Health and Safety- Consultation

CD276 – Consultation on the transposition of Directive 2013/35/EU on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents - electromagnetic fields (EMF)

This consultation relates to implementation of Directive 2013/35/EU on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields).

This is often referred to as the EMF Directive. HSE is proposing to introduce the 'Control of Electromagnetic Fields at Work Regulations 2016' to transpose the requirements of this Directive not already covered by existing legislation.

The consultation seeks views on: the proposed transposition approach and regulations; the draft EMF guidance produced to support the new regulations; and views on the initial assessment of the costs and benefits of the proposed changes.

Consultation began on 20 October 2015 and will end on 3 December 2015.

http://www.hse.gov.uk/consult/condocs/cd276.htm?ebul=condoc&cr=1/28-Oct-15

CD277 – Proposals on the review of the Dangerous Substances in Harbour Areas regulations 1987 (DSHAR), Approved Code of Practice (COP 18) and guidance HSE (R27)

This consultation invites views on HSE's proposals to replace the Dangerous Substances in Harbour Areas Regulations 1987 (DSHAR) with new shorter and more up to date regulations. The consultation also seeks views on a new shorter Approved Code of Practice (ACOP) to support the regulations. The proposals are intended to retain existing levels of health and safety protection in relation to dangerous substances in harbour areas in Great Britain. The proposed new regulations will be re-named the 'Dangerous Goods in Harbour Areas Regulations'.

Consultation began on 28 October 2015 and will end on 23 December 2015.

http://www.hse.gov.uk/consult/condocs/cd277.htm?ebul=condoc&cr=2/28-Oct-15

Governance, or Gut Feeling and The Educated Guess?

Jon Heselton. P. Eng. (UK) FSPE. FEI. FCMI. Currently reading: MSc. Project Management. University of Liverpool. Management School

In these days of global standardization and documented Continuous Professional Development (CPD) demanded in the growing professionalization of traditional project functions, spare a thought for the time honored heuristic approach to project development solutions.

What exactly are heuristics you may ask, and you may be surprised to learn you have been unconsciously utilizing them for some time already.

A concise definition for reference may be found at the following site: https://en.wikipedia.org/wiki/Heuristic.

Heuristics are generally the experience factors within seasoned practitioners that simply cannot have metrics imposed on them easily, yet are invaluable to a process. We begin with the more commonly used heuristics in project scheduling starting with Estimation (E) and the Three Point Technique of (O) Optimistic, (P) Pessimistic and (M) Most likely, leading to the formula:

E= (O+4M+P) / 6

This theory is argued by Wysocki (2012) and subject to Wide Band Delphi Technique, an experienced panel reality check, provided by seasoned practitioners and discussed, to arrive at schedule estimate durations.

This leads to further heuristics in the hierarchical approach to the detailed Project schedule applied to individual Projects consisting of vertical decomposition from high-level goals down to the component work packages as discussed by Meredith and Mantel, (2012) and leading to the Work Break Structure (WBS).

The importance of a robust WBS is supported by PMBOK® Guide (2013) and progresses to the, equally important Requirements Breakdown Structure (RBS) identified by Wysocki (2012,) and yet another heuristic function essential to the scheduling and based on the experience of the compiler leading to a series of Gantt charts as presented by Meredith and Mantel, (2012) and known to us as the Level I schedule prior to further decomposition to the required Level and associated detail, all based on practical experience.

Validation of situations requiring application of heuristic technique in place of exact scientific methodology is supplied by Martí and Reinelt (2011) who advocate the practice when:

- No current methodology is available to address the problem that exists.
- Available technology is incompatible with current hardware/software
- Heuristic methods are more flexible and allow for incorporation of unique factors difficult to model.
- The heuristic technique is a recognized model providing an optimal solution

The efficacy of the heuristics approach may be measured by comparison with alternative methods. Yang and Fu (2014) related their method to the critical chain project management (CCPM) developed by Dr. Eli Goldratt first introduced to the industry in 1997 in his Theory of Constraints book 'Critical Chain'.

Assigning limited resources between competing Projects demands compromises from individual PMs to achieve the Organizational goals of the program or portfolio therefore the efficacy of any resource allocation model is directly proportional to the cordial relationships between the various parties involved, a further heuristic trait identified by Laslo and Goldberg, (2008)

Kuprenas (2003) argues that past research on matrix structures indicates that Manager politicization related to assignment of finite resources between Projects can lead to Project delays and alterations to prioritization and is one of the least desirable heuristic factors to be considered.

Risk Management is generally the last function during the planning phase. Considering Kerzner, (2009), failing to plan will not create less risk, but will limit the ability to respond; PMBOK® Guide (2013) states six criteria for consideration the majority of which are heuristic and generally based on previous experience:

- Risk identification
- Management planning
- Quantitative risk analysis
- Qualitative risk analysis
- Risk monitoring
- Risk response planning

Conclusion

Laslo. Z (2010) advocates that heuristics in scheduling defines a policy that enables decisions at any major decision points through life cycle of the Project In reality a common Project decision is to immediately start proceedings and resource a credible sets of tasks, reliant on information available at the decision point. It may be concluded that the heuristic approach in scheduling is essential due to the unique nature, uncertainty and ambiguity of the Projects development. However, even heuristics requires some degree of governance, hence it is essential to support the seasoned practitioners making hands on decisions with a structured Organizational Learning procedure system advocated by Von Zedtwitz (2003,) further accommodating the Double Loop Learning (DLL) considerations presented by Argyris and Schon (1978) if there is to be any firm reference database and degree of credibility to the heuristic approach.

Finally, in support of heuristics remember the parable of 'The Repair Man ': The boiler was malfunctioning and despite the best efforts of the technicians refused to operate.

The PM reluctantly engaged the services of a retired Consultant, who arrived, surveyed the system and after due consideration, in front of all, produced a can of fluorescent spray and marked a large X on a specific area on the boiler and, taking a large sledge hammer delivered a forceful blow right on the mark. The boiler rumbled into life and the Consultant duly emailed his invoice to the PM.

The PM was aghast, arguing that he was not paying such a vast fee for merely striking a boiler with a hammer.

The Consultant calmly responded with the statement that striking the boiler was free. Knowing where to strike it validated his fee.

Never underestimate the value of experience, Lessons Learned and the skillset impossible to pigeonhole.

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Braille Sign Supplies

Lee Wilson, Access Consultant, Melbourne Australia

Braille Sign Supplies is a specialist company in Australia manufacturing high grade Braille and tactile signage. Braille Sign Supplies has recently joined the Accessible Exit Sign Project and are the first company in the world to release a complete range of new generation emergency and exit signs that consider the needs of all occupants. These signs can be used to identify the locations of all components of an accessible means of egress, including exit doors, exit routes, refuge areas, assisted rescue areas, evacuation chairs, and evacuation elevators. The new signs adopt universal design principals and the provision of Braille and tactile characters, as well as the consistent use of the Accessible Means of Egress Icon pictogram provides a clear indication of where accessible exits or parts of the accessible means of egress are located.

The signs form part of the Accessible Exit Sign Project which is an international awareness campaign that promotes the need for an accessible means of egress. The Project has already started some important discussions between industry stakeholders, disability groups, legislators, developers, and insurers who are looking at better building design solutions that provide safer buildings, reduce risk and meet the needs of all occupants. Appropriate exit signage used to identify accessible egress features in a building is a critical part of providing evacuation wayfinding information for all occupants. For more information on this concept or to download the White Paper please visit http://universaldesignmeetstheexitsign.com http://braillesignsupplies.com.au

The publication "Evacuation of People with Disability & Emergent Limitations: Considerations for Safer Buildings and Efficient Evacuations" is available as a PDF download from www.accessibleexitsigns.com/evacuation-guidebook

Universal Design meets the Exit Sign

'Universal Design Meets the Exit Sign' is an initiative of The Accessible Exit Sign Project and Egress Group Pty Ltd. The objectives of the Project are to start discussions between industry stakeholders, disability groups, legislators, developers, and insurers to look at better building design solutions that provide safer buildings, reduce risk and meet the needs of all occupants.

A critical part of planning for safe evacuations is clear wayfinding information with appropriate exit signage identifying accessible exits, refuge areas, evacuation lifts and other evacuation devices.

The Project has now moved to the next stage with the release of a White Paper.

The *'Universal Design Meets the Exit Sign White Paper'* presents the case for a new generation of exit signs to be used in all forms of transportation, facilities and buildings.

The White Paper discusses the complex issues that have led to the development of this initiative and argues for the support of this new era of emergency and exit signs. The paper proposes the use of a performance-based approach to accept that emergency egress and exit signage provided can adopt a best practice 'universal design' approach and argues this approach provides a safer solution for all building occupants. To facilitate this, the White Paper includes an Appendix, which is titled *'Universal Design Meets the Exit Sign White Paper Performance Assessment Template'*. The template provides support to accept the use of signage as a variation from the prescriptive provisions of the building code. The documents can be downloaded from http://universaldesignmeetstheexitsign.com

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Disney Springs – Downtown Disney Orlando

The transformation of Downtown Disney into Disney Springs is surging forward to create a unique destination that will treat guests to significantly more shopping, dining and entertainment amid beautiful open-air promenades, meandering springs and waterfront charm.

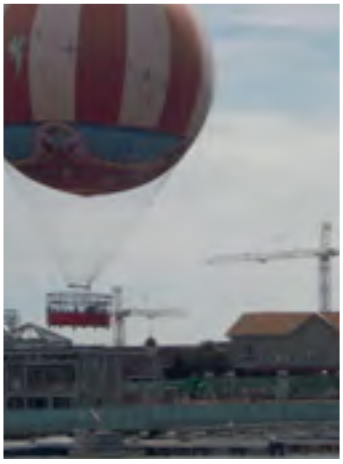
The programme set in place in 2013 was to create a focus that;
"Disney Springs will be a timeless, vibrant place where Walt Disney World guests and local residents can relax, shop, dine and be entertained in an imaginative setting where they'll instantly feel at home," said Tom Staggs, chairman of Walt Disney Parks and Resorts. "Featuring distinctive brands, world-class restaurants and unforgettable entertainment, Disney Springs will be brought to life with the same focus on storytelling and attention to detail that goes into our theme parks, resorts and cruise ships, resulting in a welcoming space that only Disney could create."

The development provides a key focus on space and land utilisation whilst recognising that visitors need ease of access linked to safe and secure parking facilities, this has been addressed through the creation of multi-storey car parking and access links to the highway.

The proposals incorporate two multi-level parking structures built, one on the Marketplace side, and one of the West Side to provide a total of around 6000 spaces – with no charge for parking.

This fundamental provision has enabled development to take place, in effect, development on virgin land previously allocated for parking, on space which has enabled further redevelopment within the current complex to be carried out. The works provide a mix of low to medium rise development with flair and character to contrast with and enhance the architectural setting of the newly named Disney Springs.

When complete in 2016, Disney Springs will double the number of dining and retail locations of Downtown Disney, and expanding the facilities to more than 1 million sq ft.



Applications of Advanced Oxidation Processes (AOPs)

using Solar Photo-Fenton Disinfection for Water and Wastewater Treatment in African States.

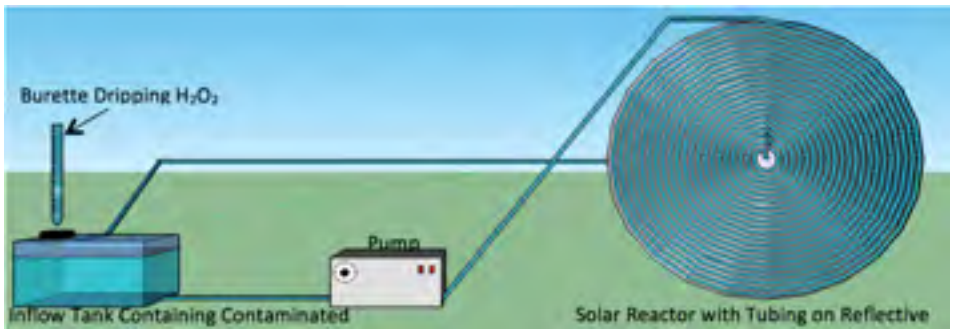
Kiran Tota-Maharaj. BSc, MSc, PhD PEng, MSPE, CEng, MSEE, MASCE, FHEA. Senior Lecturer in Water and Environmental Engineering, University of Greenwich, Faculty of Engineering and Science, Department of Engineering Science, Medway Campus, Kent, United Kingdom.

The use of solar energy in water and wastewater treatment is a relatively new concept, drafted in as a possible option to replace chlorination whereby carcinogenic concerns have been highlighted in recent years. The applications of solar energy driven processes via Photo-Fenton kinetics can be beneficial in the long-term for sustainable treatment of water and wastewater where there is an abundance of sunlight. Solar energy driven water disinfection processes are especially practical in developing African countries. Solar Photo-Fenton (SPF) disinfection combines UV rays (free and natural resources) with readily available chemical commodities such as Hydro-Peroxide (H2O2) if applied suitably can detoxify polluted waters. This project assessed the performance of a novel solar-photochemical reactor, designed, constructed and tested at the University of Greenwich, UK using surface water from the Medway River, Kent England. The main purpose for testing and applications of SPF is for potential implementation in developing African countries such as Tanzania.

A design was conceptualised and built with the aim of modelling a reactor that achieved the concept of sustainable water and wastewater treatment. The reactor components was relativity cheap to build and remained effective and durable throughout the water treatment process. These features of the project conspired as a further dimension: to create a model that was applicable to rural communities in Africa, specifically Tanzania, where the lack of clean water is an evident and dangerously invasive element of the 21st century. The Photo Fenton or Solar Photo Fenton reaction involves a reaction with the addition of Ultra-Violet rays, Iron Fe(II) and hydrogen peroxide (H2O2). The Fenton reaction was discovered by chemist Henry John Horstman Fenton in 1894. He (H. J. H Fenton) discovered that mixing Iron Fe (II) with specific oxidising agents (H2O2) created a solution with powerful oxidising capabilities which is referred the 'Fenton Reagent' today.

The photo-reactor constructed had a volumetric capacity of 15 Litres and was connected to an inflow/storage water tank. Regulated flows occurred through a peristaltic pump for varying retention times (Figure 1). The water treatment performance was evaluated weekly for the removal of chemical oxygen demand (COD), biochemical oxygen demand (BOD), turbidity and nutrients (Nitrates, Nitrites and Phosphates) within water samples at various retention times and flow rates. When there was overcast conditions, a UV lamp (200-400 nm) was used for the disinfection process to mimic conditions similar to those found in Tanzania.

Figure 1: Experimental schematic of solar reactor detoxifying river water via Photo-Fenton kinetics



The design was effective with turbidity, colour and organic loading levels generally dropping throughout the course of the experiments (April-July 2015). A reduction in these parameters proved the effectiveness of the Fe(II) as a coagulant and H2O2 as an oxidising agent. The influent water chamber also created a low turbulence environment, which encouraged suspended solids to settle at the base.

The Photo-Fenton reactions from the findings proved to be very applicable to the African continent and its needs for potable water supply. The reactor design would require continuous maintenance due to pipes, leakage and general wear and tear caused by organic and inorganic compounds in the water which can also disintegrate the pump components (Figure 2). Furthermore, the Photo-Fenton process can be quite effective in primary stages of water treatment, without the requirements of a UV-Lamp due to sufficient sunlight and warm climatic conditions.

Currently the Fenton reactions has shown to be quite effective in the primary stages of the water treatment process, with its effectiveness as a coagulant and oxidising agent as shown by previous research, in reducing organic loading to a desirable level for water consumption. The low capital cost and operational cost for such technologies can be very applicable to developing nations such as Tanzania. However in conditions where levels of pollution are extremely high, there will be requirements for additional filtration and treatment before it can become a remotely viable portable water treatment mechanism.

Figure 2: Solar photo-reactor detoxifying river water in Operation at University of Greenwich, Medway Campus, Kent, UK.

Canal Mania and the Engineer That Time Forgot - Part 2

The Grand Junction Canal as designed and created by William Jessop was, and still is, the vital link between the Home Counties and the Industrial heartland of England. The Grand Junction canal was built to a wide beam specification. The proof of the value of this wide beam decision is highlighted in the fact that this very canal was increased in the 20th century by adding an additional narrow lock alongside the original wide locks.

Wide lock on left, location of narrow lock on right

This picture shows a typical Grand Union (the modern name of the Grand Junction canal) lock showing on the left, the original wide lock and on the left, the location of the narrow lock built alongside. The second picture shows a similar set up on the Paddington Arm of the Grand Union at Camden, in North London.

Location of narrow lock on left, wide lock on right

This expansion came at a time when the canals in general were in decline, trade was still brisk on the Grand Junction Canal, carrying goods from the Black Country to London and beyond. This increase in lock capacity was invaluable during World War 2 when countless tons of goods, fuel, ammunition etc. were moved, generally by a band of willing volunteers. Many ladies chose to operate the canal boats rather than join the Land Army.

The route of the canal was largely as Barnes had surveyed it. The London end was moved to join the outfall of the River Brent and a considerable amount of straightening out was suggested by Jessop, particularly around the Leighton Buzzard area. Even with these "Jessop" modifications, this section of canal is very twisting, making towing a butty with a motorboat quite hard work. Water supply was one of Jessops main priorities and concerns. This vital question was frequently overlooked by the first generation of canal engineers. The lack of attention to this vital question by the pioneers led to many canals becoming quickly unviable, particularly in summer time when rainwater runoff from fields was almost non- existent. Jessop always made sure there was sufficient water for any canal he was involved in.

The Grand Junction follows the natural contours of the Brent Valley and then heads north to follow the river Colne, taking the contour route which would have pleased the earlier engineers. Where the likes of Brindley may well have of staggered their locks along the length of the waterway, Jessop tended to group his locks together. This made construction easier as all the materials, tools and workforce needed were in one place. When the canal was completed the close grouping of locks made a journey quicker as locks could easily be prepared slightly in advance of the boats arrival without fear of the lock being turned by a boat coming the other way. Lifting the canal at Hanwell over 50 feet was achieved in what is now known as the Hanwell flight. Six closely grouped locks making the climb in a very short distance. During the 20th century peak a small tractor was designed and used on this flight to speed up the passage of the work boats, many still working with horse and mules as their main propulsive source. A steady, unspectacular, almost boring climb brings the canal to the first of the major obstacles on the proposed route, the Chiltern Hills. Barnes original plan was to take the canal on a more easterly direction with a lock free section between Hemel Hempstead and Rickmansworth but with a tunnel at Langleybury, south of Kings Langley.

Jessop was no lover of tunnels and the Grand Junction canal was to confirm this somewhat negative view. Tunnel construction technology was borrowed from the mining industry. Sadly this technology was surrounded by myth, legend and uncertainty; not a great way to help a sceptic plan the construction of a tunnel. A mining engineer simply followed the seam of coal, wandering wherever geology took him. Perhaps they should have been called shoring engineers as this was their main purpose in life. The canal engineer had no choice but to bore a tunnel in as straight a line as possible between two fixed points. By this time the art and science of surveying was pretty well established, skills mainly "borrowed" from the military. However, the science of Geology did not exist. One of the pioneers of Geology, William Smith, discovered the principle of rock strata from his work as a canal engineer in the 1790's. With all this uncertainty Jessop changed his mind about the Langleybury Tunnel and opted for an altered route and the use of locks instead. When the canal reached the Chiltern Hills Jessop was presented with the Chiltern High Ridge. A road ran through this ridge area, a drovers' road now known as the A41. Jessops solution to the problem of the Chilterns was unique at that time. He made the decision to not use locks. The number of locks required would have been huge, probably 20 going up and thirty going down the other side. The water shortage problems created by that number of locks was massive. As a brief aside, a typical lock on the Grand Junction canal uses 96,000 gallons of water every time the lock is used. That water flows downhill, so whatever direction the boat is travelling in, the 96,000 gallons travels downhill and eventually to the sea, lost forever. In Jessops view, using locks was not an option, nor was a tunnel. Jessop was forced to create a new item in the field of canal

Canal Mania and the Engineer That Time Forgot - Part 2 (Cont'd)

engineering, the deep cutting. Jessops plan called for a deep cutting to slice through the hills. This concept was civil engineering on a new and impressive scale. In todays' terms the Tring summit cutting, as it is known, doesn't even look that exciting or impressive when compared for example with the M40 cutting that passes through the same chalk ridge. However, we need to remember that the Tring cutting was cut using manpower alone, whereas the M40 cutting was a machine powered operation.

Picks, shovels and pretty crude explosives were the tools used to move mountains in the era of Jessop and his colleagues. Moreover, when the mountain had been moved there was the question of removing the spoil. The quickest way to remove the spoil was to carry it straight up to the top of the new cutting. The steepness of the cutting sides made manual, one man and his wheelbarrow, removal an impossible task. Another piece of fascinating civil engineering was created just for this particular task. Planks were laid up the side of the cutting and the barrows were attached to a rope which ran over a pulley and was connected to a horse. As the horse walked away from the edge of the cutting the barrow was pulled up, being balanced by the navvie in his huge boots, trying his hardest to retain his balance on the greasy planks at all times. Coming down was equally interesting as the navvies ran down the slope, being chased by their barrows! Exactly this same technique was used less than 50 years later when Robert Stephenson arrived to create a similar cutting literally a few yards from Jessops, to carry the London and Birmingham railway.

Once clear of Tring the canal swoops and swings down the hill in a collection of locks, passing the reservoirs that keep the canal in water. Tring has always played a vital part in our canal heritage. Many of the unique elements that give the canals their fascination seem to come together at Tring. Firstly of course is Jessops masterpiece, the deep cutting. When that cutting is viewed today it has largely been reclaimed by nature. No cold, bare, chalk slash through the Chilterns contrasting with the green surrounding countryside. That slash is now hidden, covered by nature. When traversing the cutting today there is still no possibility of mistaking the cutting as something nature created, however manmade it is, the cutting is an amazing experience. The cutting itself is wide enough for two narrowboats to be breasted up, forming, if you will, one broad boat. This wider canal width was an essential part of the Jessop plan. With the reluctance of the more northern canal companies to increase lock width, Jessop had to make his locks, tunnels and canal structures wide enough not to just accommodate a wide beam vessel but to also be able to handle two narrowboats running abreast. This gave the narrowboat the versatility it needed. On arriving at the narrow canals the paired narrowboats would be singled up, the motor boat (or horse drawn boat) would simply tow its' partner along behind. Tow ropes remained attached even when the motor boat entered a narrow lock. The motor boat would exit the lock and stop, the lock would be turned and the motor boat would pull the butty boat into the lock. This picture shows a typical narrowboat pair of working boats, still plying their trade, breasted up and passing through Hemel Hempstead.

As the boater comes out of the cutting he is presented with the Navigation pub on the left and the Bulbourne Maintenance yard. Until recently lock gates of solid Oak were made here and transported throughout the canal system, naturally by boat. The Grand Canal is a broad canal, able to take either a Thames barge or two narrowboats at the same time.

Original Oak lock gates have been largely superseded by steel gates. However, the steel gates have proved less than perfect for their task. With lightweight balance beams the slightest breeze will easily open a closed steel gate causing all sorts of water leakage problems. Most of the yard is now in private hands however the ornamental tower clock, a feature of all canal company buildings, is still in place. The lock cottage, Managers house and simple canal bridges make this area into the epitome of visual canal lore. Interestingly, Tring is always the canal area that Members of Parliament visit when the question of British Waterways' expenditure is discussed.

The canal continues to swing past the reservoirs, their man-made appearance greatly reduced to almost nothing. The edges softened by bull rushes and reeds; something that is not allowed to happen on the canals themselves. Reeds have a habit of growing from either bank, trying their hardest to meet in the middle of the waterway.

The slow, gentle passage is interrupted by the next major problem to confront Jessop – the River Ouse. It has to be remembered that Jessop was not at the head of the navigation all the time. He was almost always away from the canal, working on the next engineering question that needed to be solved. The day to day operation was managed by Barnes, the Resident Engineer. Barnes post survey plan was to drop the canal down to the river, cross it and then climb back up to the canal level. Jessop talked to local farmers and gained an important understanding of the local conditions. The river Ouse at this location is well known locally for its capacity to flood at the slightest opportunity. Jessop recognised another water problem and that was of supplying the flights of locks with water. The whole River Ouse problem was the first time Jessop and the Canal Company crossed swords; it was not to be the last. Jessop wanted to build an embankment and an aqueduct to cross the river. At this time the investment support for the whole Grand Junction project started to falter. News of a possible war against France kept money tightly tied in financers' purses. The Company needed a quick solution to the Ouse problem so that they could get traffic moving and therefore bring in some income. To bend to the demands of the Directors of the Company Jessop formulated a plan to create two flights of locks, one down and the other up, the sides of the river. These locks were to be constructed of timber only, no bricks would be used. Jessop insisted that they would be a temporary remedy; the lock gates would be used elsewhere once the embankment and aqueduct were in operation. Jessop moved on to the next potential problem, leaving Barnes in charge to control the construction of the locks and aqueduct.

A conventional brick built aqueduct was built. On frequent visits Jessop complained of falling standards both of materials and workmanship. The Company were not prepared to listen to his concerns and in 1807 part of the embankment collapsed and Jessop reported that the aqueduct itself was far from satisfactory with shrunken brick piers, out of line arches and mortar failing. A number of acrimonious meetings took place with all parties blaming the each other. The arguments were brought to a sudden end when the

Canal Mania and the Engineer That Time Forgot - Part 2 (Cont'd)

whole structure collapsed damming the river and causing fears of widespread flooding. There was to be no more talk of repairs. Jessop pushed ahead for the construction of his iron aqueduct, a plan he had been trying to promote for some time. This aqueduct is still doing its job to this day. It is not particularly attractive. However it is perfectly functional and since a recent facelift paint job, looks and acts the part to perfection. The temporary locks were dismantled and the gates used in other locations on the canal. A climb down from the aqueduct takes the keen canal buff to the site of these locks. There is not much to see but imagination will show the exact location of the locks themselves. Nothing is overgrown, but just gently covered in grass, nature once more covering the canal builder's scars.

Meanwhile Jessop had been working on the next problem, the Blisworth Hill. Two tunnels were planned in this region, one at Blisworth itself measuring 3,055 yards and the second at Braunston measuring 2.044 yards. Both of these tunnels confirmed Jessops earlier fears of taking the canal underground. The problems were largely down to the failure of the contractors to carry out their work thoroughly and the failure of the Resident Engineer, Barnes, to keep the contactors literally, on the straight and narrow. Both of these canals have an S bend in them. Quite an interesting exercise as the first time boater ventures underground! At Braunston, quicksand was discovered. This was not found when the test bores were sunk. In spite of this hiccup and the S bend in the middle, Braunston tunnel was completed on time and was opened in the June of 1796. Blisworth however was not so easily constructed. Without Jessop being informed, the contractors started to deviate from the underground survey route. This was done to make their work easier. Brickwork was found to be sub-standard with whole sections crumbling and falling away. The whole tunnel was in line to become a total disaster.

Many harsh meetings were held. Jessops answer was to abandon the tunnel and opt for a deep cutting on the top of the hill and to run locks to and from this cutting. He proposed steam engines to pump water back up the lock flight to keep the summit level filled. In later years, when water shortages became commonplace, the idea of steam engines pumping water back uphill was adopted on many canals, including the Grand Junction. Barnes, the original surveyor and also the Resident Engineer who had not been keeping strict control over the wayward contractors, offered to contract for a new tunnel that he could complete in three years. Jessop was against the idea but true to their recent form, the directors of the Grand Junction Canal company ignored their Chief Engineer in favour of the "quickie" solution offered by Barnes. Work started on the new tunnel in 1796 but the still pertinent potential war was keeping money away from investments. The construction almost completely ground to a halt. Jessop suggested a tramway to remove the spoil, one of the largest problems the contactors were experiencing. A specialist in tramway design and construction was called in to oversee the work. Benjamin Outram also happened to be a partner with William Jessop in a Derbyshire Iron works. With the help from the tramway and the fairly regular news updates to Jessop supplied by Outram, the tunnel was finally completed and opened in 1805. One of the longest tunnels in the country, Blisworth was wide enough for a barge to pass through or two narrowboats to pass each other in opposite directions. There was no towing path in the tunnel so the horses had to be taken over the hill and down the other side, hopefully in time to meet their boat as it exited the tunnel. Horse powered craft were "legged" through the tunnel by two men lying on planks and "walking" along the tunnel wall. The shifting sands and moving loose rock that plagued the tunnel create problems even to this day. When Barnes offered his "build another tunnel" bid he stated that" tunnels, when completed require little expense in keeping them in repair". Had the Company known just how much that "little expense" was to prove, they would have almost certainly opted for Jessops cutting and lock solution. A further tunnel just above the, now famous, Hatton flight of 21 locks has a unique answer to the "movin' the hoss" problem. The hill proved to be too steep for horses to climb easily, Jessop gave them their own tunnel as can be seen in this picture. As can be seen, this tunnel was only quite short, however, there is still a very slight kink in the middle, not noticed by a narrowboat but can be felt by a breasted up pair.

The Grand Junction Canal ended at Braunston junction where a small community quickly grew. Braunston is still regarded by many as the heart of the canal network. The canal was, from its inception, something far more than a route from the Thames to Braunston.

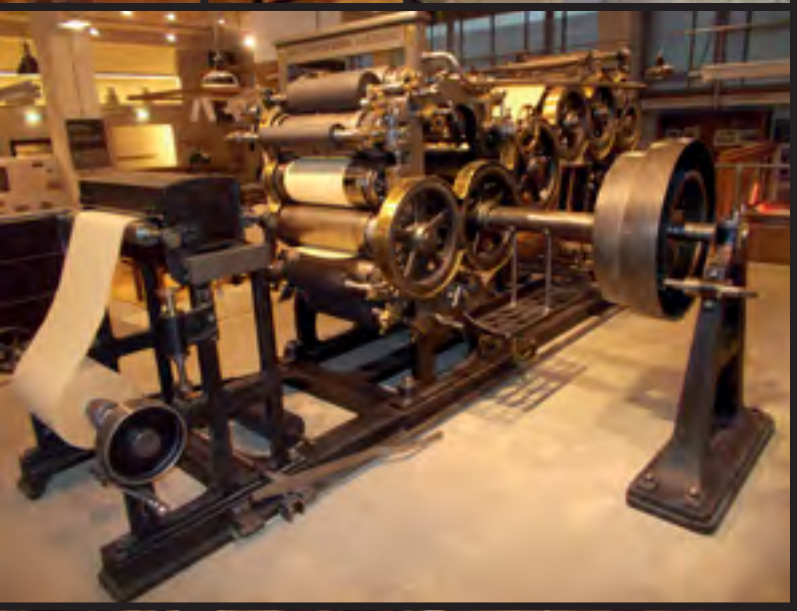
The original Act made provision for a number of branch arms to be built. As is inevitable, some of these branches never saw the light of day or heard the clump of navvies' boots, but the others were completed and joined the Grand Junction canal. Altogether the Grand Junction was enlarged by branches to Aylesbury, Buckingham, Northampton, Old Stratford, Paddington and Slough. Of these, the Paddington Arm was by far the most important. One carrying company, at least, realised the potential even before the Arm was completed.

The story of Pickfords and the canals is for another time.

The Grand Union canal is a thriving waterway today. Hundreds of people choose to live their lives on the canals, many of them on the Grand Union. This picture clearly shows the popularity of the canals! An annual Canal Festival at Rickmansworth in Hertfordshire with boats filling the canal from one side to the other and about 10 deep.

Christopher Betteridge


OK-AVD



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wishes you every success for 2016

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December

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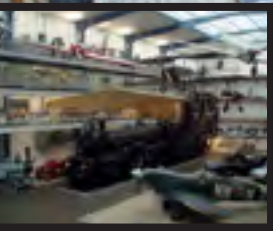
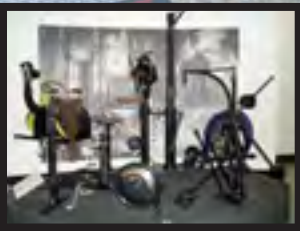
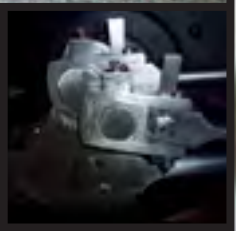
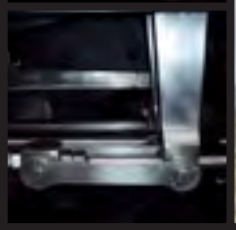









LAURIN & KLEMENT
V ML. BOLESLAVI


Smart Engineering

Barbour PRODUCT SEARCH Blog

Society moves at a pace and it is essential for engineers to be aware of information and information sources to support them in their delivery of effective services.

Information may be specific or general in the context of setting a scene or challenging trend and tested views. As an individual I find the Barbour Products Search and its supporting Blog an easy and informative source.

The following item relates to buildings in general but on reading it relates to all of the engineering technologies we use on a day to day basis

What is a Smart Building?

Let's set a scene: You're driving home from work. Your connected car pings your estimated time of arrival to your home. The thermostatically controlled heating comes on; the lights in the hall and living room pop on; the oven begins warming up the dinner you cooked the night before. No, you're not trapped in a sci-fi movie – your home has just been upgraded into a Smart Building.

The phrase "Smart Building" conjures up images of sleek new structures incorporating all the latest energy-saving, new age technology bells and whistles, but that's only part of the story as a number of "smart" elements could apply to older, existing buildings.

But what exactly are Smart Buildings? The simple answer is that there's automation involved somehow that makes managing and operating buildings more efficient. Pinning down an exact definition, though, isn't easy in a sector that's evolving so quickly.

IBM offers one explanation: "Smarter buildings are well managed, integrated physical and digital infrastructures that provide optimal occupancy services in a reliable, cost effective, and sustainable manner. Smarter buildings help their owners, operators and facility managers improve asset reliability and performance that in turn reduces energy use, optimises how space is used and minimises the environmental impact of their buildings."

At the most fundamental level, Smart Buildings deliver useful building services that make occupants productive (for example illumination, thermal comfort, air quality, security, and sanitation to name but a few) at the lowest cost and environmental impact over the building lifecycle. Smart Buildings look beyond the building equipment within their own walls. They are connected and responsive to the smart power grid, and they interact with building operators and occupants to empower them with new levels of visibility and actionable information.

Posted by Katja Driver Editorial Account Manager, follow **@KatjaBps** on Twitter

BIM for sustainability

Currently two of the hottest topics in the construction industry are Building Information Modelling (BIM) and sustainability. BIM has been credited for its ability to provide innovative, efficient buildings through closer collaboration and integration. It has also received wide acclaim for being extremely cost effective. With all the benefits that BIM offers, can it also help buildings go green?

The short answer to this question is yes. One of the core values of using BIM is that it can contribute to the design, construction and commissioning of buildings with lower environmental impacts, whether this is in the form of energy-efficiency, the cutting of carbon or for better use of fewer materials. Using BIM, designers have the option to run simulations to test daylight usage, heaters and air flow systems at any stage in the design process, staying ahead of the game and having confidence to design projects sustainably.

The key point when discussing BIM in tandem with sustainability is the fact that it gives managers, designers, architects and engineers an informed choice at the early stages of a development. It helps contractors reduce waste associated with the over-ordering of materials, whilst promoting a more efficient construction process. As well as being clever enough to understand how to put a building together, BIM will also allow industry professionals to have a better grasp of how that building should perform and later, how it might be taken apart. From the design stage to then monitoring how the building is performing, the data BIM provides will enable you to make choices that ensure there are lower environmental impacts and less waste.

BIM allows access to automatically calculated and current design data useful for environmental and heat-loss analysis, such as floor and surface areas and building volumes. This type of information is vital when designing sustainably, and allows designers the freedom to plan ahead with confidence. This is proof that BIM can provide immediate sustainability benefits, allowing designers to source materials efficiently and thus reducing waste by using the right materials and products in the right quantities for the job.

There is no doubt that greener buildings are becoming more frequent. Designing buildings with the idea of going green is now an extremely important part of the whole process. By embracing BIM and understanding the materials and tools at the design stages, you will be able to deliver a building that excels in terms of performance, efficiency, value for money and a greener environment for the inhabitants.

Posted by Paul Ricci,Editorial Account Manager Follow @Paul_BPS on Twitter

City of Berkeley enables Online Building Permit Application Process with integrated solution from Accela and e-PlanCheck®

The City of Berkeley, CA recently announced it will be adding electronic plan review services by implementing e-PlanCheck (EPC) through the review tool's dynamic integration the Accela Civic Platform. Accela currently supports the City of Berkeley with software solutions for permitting, workflow automation, auditing, reporting, and online services including mobile solutions. By 2016 the Department of Planning & Development will incorporate EPC in the Building Permit process, enabling community members to apply for building permits online, and allowing the city to perform plan reviews without printing a sheet of paper.

The City of Berkeley has vastly benefited from Accela's implemented software solutions by reducing the amount of paper used to reconcile workflows, providing online services to members not previously available, and alleviating the amount of greenhouse gas emissions for travel to the Permit Service Center. Additional functionality such as online permitting and online business license renewals will expand upon these benefits as they go live. Accela's Mobile Office will allow Public Works staff, as well as Building and Code Enforcement inspectors, to connect to the city's back office system and report inspection findings in the field rather than relying upon the paper-based process currently in use.

e-PlanSoft™, the online provider of Electronic Plan Review solutions, and Accela will work together to implement the integrated solution, enabling a powerful web-based concurrent plan review solution which provides extensive markup, comment and signature functionality for documents submitted online. Additional features within e-PlanCheck include simultaneous collaboration between reviewers during plan checks, advanced document version control and custom workflows for the review process.

Larry Zaret www.eplansoft.com

BIM - REVIZTO 3.7

The new Revizto 3.7 has been released with multi language localization!

All Revizto applications now support a total of 8 languages:

- English
- German
- Spanish
- French
- Chinese (Simplified)
- Portuguese (Portugal)
- Russian
- Japanese

info@revizto.com

Review of the Scottish Planning System

The programme for Government 2015-2016, announced their intention to review the planning system. It stated:

"We will review the operation of the planning system in Scotland, identifying the scope for further reform with a focus on delivering a quicker, more accessible and efficient planning process, in particular increasing delivery of high quality housing developments. Our aims are to:

- Ensure that planning realises its full potential, unlocking land and sites, supporting more quality housing across all tenures and delivering the infrastructure required to support development.
- Streamline, simplify and improve current systems and remove unnecessary blockages in the decision-making process.
- Ensure that communities are more engaged in the process.
- Continue to meet our statutory and international obligations in protecting and enhancing Scotland's nature and environment."

In short, the review aims to achieve, a quicker, more accessible and efficient planning process in order to build investor and community confidence in the system. The review will be undertaken by an independent panel, chaired by Crawford Beveridge, and also including Petra Biberbach and John Hamilton. The panel will provide a strategic perspective and will be open to 'gamechanging' views and ideas.

Timescale

The panel have set out the timetable for the review process and are expected to report in Spring 2016. Thereafter Scottish Ministers will respond to its recommendations with a programme for further targeted improvements to the planning system.

Key Issues

The review will focus on "6 key issues".

- Development planning;
- Housing delivery;
- Planning for infrastructure;
- Further improvements to development management;
- Leadership, resourcing and skills; and
- Community engagement.

Getting involved

The panel would now like to invite written evidence from all interested parties. The closing date for written evidence is 1st December 2015.

www.gov.scotland

Building Standards consultation – Scotland

Consultation is currently taking place under the heading Building Standards Review 2015 – Broadband. The review is considering proposals for the introduction of a new building standard and associated Technical Handbook guidance requiring new buildings to be adequately equipped to allow the future installation of broadband cabling. The consultation was scheduled to close on 11th November 2015. The proposals are available on the Scottish Government website.

European Building Safety Awards

The General Council of Technical Architecture of Spain (CGATE), in line with its ongoing commitment to the prevention of risk within the field of construction is pleased to announce the XVII edition of the European Building Safety Awards.

The aim of these awards is to distinguish commitment and action, both from individuals and those resulting from public or private initiatives, that advance the prevention of occupational hazards in construction.

(Note: the awards are available to individuals, natural or legal persons based in Spain or any other country of the European Union)

There are 3 awards:

Research – the contribution to the prevention or reduction of occupational risk within construction, through the development of research or the deepening of understanding of workplace hazards thus fostering continued progress towards the decrease in occupational risk (the award is worth €3000)

Innovation – the contribution to the prevention or reduction of occupational risks within construction for developing innovative actions whose application in construction will increase security in the building process (the award is worth €3000)

Public initiative – aimed at central, regional and local public services and other public bodies from both Spain and other member states of the European Union who have excelled in the implementation in the initiatives that contribute to raising awareness among stake holders about health and safety, improved working conditions on working sites or the specific training of workers

The applications are to be written in Spanish or English with a clear indication of the category in which they fall and further information may be obtained from the General Council of Technical Architecture of Spain (Paseo de la Castellana, 155, 28046 Madrid, Spain)

The deadline for submitting application is 12 noon on 1st February 2016 Awards for A & B will be decided by a jury made up of representatives of the;

- Ministry of Development
- Ministry of Employment and Social Security
- Inspection of Labour and Social Security
- National Institute for Safety and Health at Work
- Universities
- National Confederation of Construction
- Builders Association of Spain
- FECOMA-CCOO,
- MCA-UGT,
- AEEBC,
- DOUBLE TRADE,
- Consejo General de la Arquitectura Técnica

Award C will be chosen directly by the General Council of Technical Architecture of Spain

The ceremony for the awards will take place during the Building Convention CONTART (Technical and Technological Convention from Technical Architecture) to be held on the 20, 21 and 22 April 2016 in Granada

www.premiosdeseguridad2016.com
consejo@arquitectura-tecnica.com

BBA welcomes new Commercial Director

Phil Bloomfield joins the BBA as Commercial Director with oversight of BBA's Commercial activities aligned to our Product Approval, Certification, Testing, Inspection and Client Accounts.

Phil has had an extensive international career within Engineering in a variety of sectors, including Oil and Gas, Power Generation, Manufacturing and Service provision. Engaged in multiple high complexity contracts and projects including significant off-shore and sub-sea hydrocarbon extraction developments, extensive European nuclear power generation projects, supporting the Ministry of Defence on the Vanguard and Astute Submarine Projects and significant Government investment contracts for critical infrastructure. Representing on Industry Bodies and All Party Parliamentary Groups.

Phil received a BSc with Honours in Technology from the Open University continuing to achieve a Post Graduate Diploma in Law from Nottingham Trent University Law School, recently completing his MBA at Warwick Business School.

ONR announces new Chief Exec.

Adrièn Kelbie has been appointed Chief Executive of the UK's nuclear regulator. Adrièn will take up the appointment on 18 January 2016.

Commenting on the appointment, Nick Baldwin, ONR Chair, said:

"I am delighted to welcome Adrièn as our new Chief Executive and look forward to working with her. Her valuable skills and leadership experience will enable us to continue our work in taking forward our published strategy and building ONR as an enabling and responsive regulator"

Adrièn said: "There has never been a greater need for effective regulation, given the growing part that nuclear energy plays in the UK. This is a matter of legitimate public concern, and national security. I'm looking forward to working with the Board and staff to help ONR achieve its vision as an enabling and responsive regulator that ensures industry maintains high standards, controls its hazards effectively and has a culture of continuous improvement."

Adrièn is currently the Chief Executive of the Disclosure and Barring Service. Prior to this, Adrièn had a varied career including periods as Deputy Chief Executive in a local authority and as Director of Operations responsible for national and international funding at the Big Lottery Fund.

Adrièn will take over from Les Philpott who has been Acting Chief Executive since March 2015.

SPE COUNCIL 2016

OFFICERS

PRESIDENT
James Malcolm Parker, PEng. MSPE C.BuildE FCABE MRICS MCIOB Hon.FABEI

Malcolm Parker was born in North Yorkshire and had a private education before starting work in a surveyors office. He studied part time at local technical colleges, Leeds and Newcastle Universities obtaining an HNC in Building Construction. He completed the IAAS direct examinations as a Building Surveyor in 1971. Malcolm joined his father's practice in 1972 and became a junior partner in RA & JM Parker. The practice included building design and also served as a Consultancy with government agencies on matters relating to building maintenance and structural repairs and became senior partner in the practice following his father's death in 1979.
In the next twenty-five years the practice was developed and later expanded to include The Parker Design Consultancy.
Malcolm was elected a fellow of the IAAS in 1976, he took an increasingly active part within the IAAS, (later the CABE) becoming a member of Council and serving on numerous committees. During this period he became actively involved with the SPE, becoming a Director and member of Council. He was elected as Vice President and now serves as President.

Malcolm specialises in Building Condition Surveys and Building Control Inspections for BRCS (Building Control) Ltd in North East England.

VICE PRESIDENT
Ing. P. Eur. Iain Allan Cooper Wright, PEng MSPE F.S.E. C.BuildE MCABE

Iain is a unique product of a formal training process to become a Structural Engineer. His training with WA Fairhurst and Partners of Glasgow developed a love for in-depth structural analysis, tall buildings and problem solving.

He moved to London working for a range of consultants including Ross and Partners becoming the Resident Engineer for the major reburbishment of a listed building in the City of London.

He was recruited into the City of London District Surveyors Office where he continued his love of structural analysis and then on leaving the GLC he established his own Practice, working on a variety of projects, many linked to the developments at Manston Airport, Lubeck and the Black Forest Airport.

Iain is a Professional Engineer, and holds membership within the Institution of Engineering and Technology, Chartered Association of Building Engineers, Institution of Structural Engineers, Civil Engineers and the Welding Institute, Society of Engineers and the Royal Society of Arts

VICE PRESIDENT INTERNATIONAL
Antony Francesco Wedge BSc C.Build E FCABE PEng FSPE MIET MPMI MAPM.

Antony was born in Hampshire and is a "Chartered Building Engineer" with over 35 years of experience in the Construction and Engineering industries. He has worked throughout England on several MOD bases and with private companies on large projects such as the Cascades Shopping Mall in Portsmouth, the Nationwide Technology HQ in Swindon, an ASDA Hypermarket in Bournemouth and one of the first "Single Pathfinder" Building Schools for the Future (BSF) Projects in the UK, the Chessington Community College in SW London. He graduated in Bristol and has worked in South America on new property development and industrial refurbishment projects in Colombia and the Falkland Islands for Turner FM,

For over ten years, he has been running his own project management consultancy delivering contracts for London, local authorities overseeing their framework consultants/contractors in leisure and educational projects.

VICE PRESIDENT INTERNATIONAL
David Gibson BA MSc DMS PEng FSPE MRICS C.BuildE FCABE MWOBO Hon FWABO Hon.FABEI

David Gibson, formerly the Chief Executive with the Association of Building Engineers, is the owner and Principal Consultant at TDRG, offering Consultancy in respect of property, construction and technical matters relating to Regulations and Building Control. He provides training, research and development on a National and International basis. A Professional Engineer, Chartered Building Surveyor, Chartered Environmentalist and a Fellow of the Chartered Association of Building Engineers and has delivered a range of Research and Technical papers at National and International levels

He was appointed by the Minister of Construction to the Building Regulations Advisory Committee, a position held for the maximum 10 year term. During which he chaired committees and participated in the creation and delivery of Building Regulations in conjunction with the Department for Communities and Local Government.

COUNCIL MEMBERS

Dr Song Pang Lim PEng(UK) FSPE FCMI C.BuildE FCABE MRINA MIPENZ FIES

Dr Song joined the marine and offshore industry in 1963 with PSA Dockyard Department moving to Sembawang Shipyard as a Planning Officer in the 1970's. His career encapsulated a range of positions within various shipyards including the role as an Operation Manager. He then progressed to the position of Commercial Manager at Selco Singapore prior to setting up his own company JEMIX Engineering PTE Ltd in 1986. Currently the Managing Director the JEMIX group of companies overseeing their day to day activities and expansion for the future. Dr Song has also been a part time lecturer with the Singapore Polytechnic within the marine and mechanical engineering departments.

Ing. P. Eur. Ronald Douglas Finch PEng MSPE MIET

Doug entered the engineering industry in 1959 as an apprentice in the Structural D.O. of Ashmore, Benson, Pease and Partners of Stockton-on-Tees, (Heavy Structures) Blast Furnace and Steel plant and Ship loader/unloader cranes.

At the end of his apprenticeship, he was transferred to the Design office. He continued with his studies for a further 2 years obtaining 4

additional endorsements to his H.N.C. He was the Design Engineer to Ward Bros of Sherburn working on Steel portal framed buildings and similar construction moving to become Chief Designer for Robert Stevenson of Norwich, returning to Ward Brothers as Head of Design of Light Gauge sections and cladding in 1974.

In 1980 he formed his Consulting Civil and Structural Engineering practice in Malton, specialising in steel, reinforced concrete, timber and masonry structures as well as providing technical input to light gauge steel section systems. He was elected into Membership of the Society of Professional Engineers in 1971.

Sean Randall Morris DSc MSc BSc L.LM PEng FSPE FRICS MCIArb M.ASCE

Sean is a Dispute Resolution Lawyer specialising in international commercial arbitration and advocacy for a broad spectrum of disputes from the construction, engineering and infrastructure sector. Sean has been a Fellow of the Society for 20 years, and has a DSc in Building & Construction Science, and is also a Fellow of the Royal Institution of Chartered Surveyors. In the US, Sean is a Member of the American Society of Civil Engineers and a Member of the New York City Bar Association.

Before becoming a Lawyer, Sean was a Civil Engineering Surveyor and spent many years working in the defence sector.

Kwok Kheong Teng MSc PEng(UK) MSPE FSIB FCIOB C.BuildE FCABE CBIFM MSIFM CMILT

KK was a graduate from the National University of Singapore and the Oklahoma City University. He has more than 30 year's experience within the construction engineering industry, progressing to the position of Executive/Project Director of three listed companies.

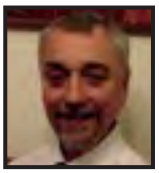
For the last 15 years he has been the Principal of Trent Global College specialising in the built environment, diploma and degree programmes.

An active member within the profession holding positions as Past President of the CIOB, Singapore Centre, Past Vice President of the Singapore Institute of Buildings, Chairman, Chartered Association of Building Engineers, Singapore Centre, Council Member, Society of Professional Engineers, UK. and a Fellow and Singapore Representative of the Heriot Watt University.

Godwin Chidiebere NWAFOR, BSc PGDip PEng (UK) FSPE MPM® CPC FAAPM ChMC ChPMC MSOE MIPlantE MIScT SFIIRSM

Godwin is the Bulk Service Coordinator of the Well Services (WS) Operations Planning Center (OPC) at Schlumberger Nigeria, responsible for bulk product delivery management, oilfield chemical warehousing and inventory control, cementing bulk plant management; including asset planning, utilization and optimization. Prior to this, he was a Senior Field Specialist in Cementing & Well Integrity Technology for Schlumberger Nigeria providing field-based well engineering solutions for various E & P Clients in swamp, onshore, offshore and deepwater drilling rigs.

He is a chemical engineer by training, and also a member of various international organizations including the National Society of Professional Engineers (NSPE) USA; Institute of Management Specialists (IMS) UK; Society of Operations Engineer (SOE) UK; Institution of Plant Engineers (IPlantE) UK; International Association of Engineers (IAENG) Hong Kong. He is also a Fellow of the American Academy of Project Management (FAAPM) USA, and Specialist Fellow of the International Institute of Risk and Safety Management (SFIIRSM) UK.



Stephen Pearse BEng PEng FSPE MIET

Stephen was born in Redhill and grew up in the Caribbean, where his father worked for Tate & Lyle as a senior mechanical design engineer. He returned to the UK in 1972.

He began his career in the mid 1980's as a draftsman, progressing into engineering where he was extensively involved in design, testing, and commissioning on HV electrical systems.

As a consultant engineer he moved into automation in the 1990's, working on projects in the oil and gas, food and nuclear industries. He is now a Project Manager in the renewable energy and airport automation industries.

He is an active member of the Institute of Engineering and Technology.

Stephano Mirasole PEng MSPE CHFM FRSPH MIHEEM HNC

CORRESPONDING MEMBERS

Hugh Wynne, BSc, MSc, C.Eng, PEng FSPE C.Sci M.Inst.MC. MBCS. CITP MIEE IMMEDIATE PAST PRESIDENT

Hugh graduated in Wales & Birmingham and following post-graduate research at University (into mathematical modelling using analogue computer techniques), he practised patent agency at London, then moving to Newcastle upon Tyne to work on telecommunications engineering procurement for the Tyne & Wear Metro. He moved to Glasgow, to develop and implement motorway and road traffic signalling, surveillance, telecommunications, and control systems engineering for Strathclyde Region, Scotland, later returning to Newcastle upon Tyne he joined Cairns & Byles (later becoming WSP) Consulting Engineers in designing and supervising motorway and other telecommunications engineering construction and improvement projects. Hugh returned to Glasgow joining Railtrack managing telecommunications engineering for railways throughout Scotland.

He has been a member of the Society of Professional Engineers since 1980, a member of its Council since 2004, President of the Society from 2010 to 2012.

David John Hardcastle, PEng MSPE Hon.F.S.E. F.C.M.I. B.Ing.(Germany)

David was born before the last world war and completed his studies at Kingston Tech, (University), achieving qualifications in Civil Engineering and Building Surveying.

David spent 30 years with a civil engineering contractor, with 10 of those years as the Contracts Director. The work consisted in the main laying new and making diversions of gas and water pipes, including the integration of pressure mains after nationalisation and the conversion of gas distribution from coal to natural gas.

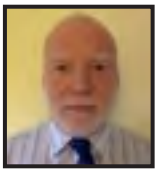
David's work area ranged from Cornwall to Southend and included the Midland Counties, Drax power station etc. Following this he worked with an iron foundry company controlling highway and motorway maintenance.

Brian R Dixon, BA, PEng. MSPE ACABE MCCES P/PGIS. Hon. FHKIConst.E Hon.FASI SASPE

Brian entered the construction industry in 1947 achieving a Diploma in Building Specification and Quantities. He has an interest in our heritage and has attended events linked to the repair and maintenance of ancient buildings and supported the Society for Protection of Ancient Buildings. In 1980 he diversified and extended his career achieving a BA Degree in Architecture (at the Pacific Western University in the USA) and a Diploma in Arbitration.

Brian was an Articled Surveyor and Company Director working with Shering Builders in Hampshire, as a Surveyor and Estimator he has special responsibilities for National Trust, Listed and Church Buildings.

Brian is a former President of the Society of Professional Engineers, Associate Member of the Chartered Association of Building Engineers, the Ecclesiastical Architects and Surveyors Association and the Ecclesiological Society. He is also a Freeman of the Worshipful Company of Arbitrators and the City of London.



Arthur Watt PEng MSPE C.BuildE FCABE CEnv MWOBO

Arthur has a breadth of building engineering expertise with over 30 year's experience in Building Control covering both Scotland and Northern Ireland. He has a keen interest in the area of energy and the creation of a sustainable built environment, this saw him move to Elmhurst Energy Systems Ltd as a Business Development Manager.

In 2010 he set up a Building Standards and Building Control Consultancy offering a range of services encompassing building control matters, project coordination and management.

Heber G. Arch MBE, Hon. DB, PEng. FIET, FCIOB, FCMI

Heber is the Chairman of Arch and Godfrey (Cayman) Ltd. one of the Cayman Islands largest and most respected construction companies. He also serves on the Board of Directors of several diverse companies.

Heber has served on numerous Government Boards and Committees including twenty one years as a member of the Central Planning Authority nine of which as Chairman. He is presently the President of the Cayman Contractors Association.

In 1998 he was awarded the MBE by Her Majesty the Queen and in 2015 was further recognised when awarded the Honorary Doctor of Business (Hon. DB) by the University College of the Cayman Islands.

PUBLICATIONS

The Energy Related Product Directive (ErP)

The Energy Related Product Directive (ErP) came into force on 26th September 2015 and will affect all heating and hot water products, with an output equal to or less than 400kW (it does not apply to biomass products). Organisations installing Heat Pumps, Micro-CHP or Solar Thermal will need to ensure that installations comply with the Directive where required.
The ErP comprises of two directives: Ecodesign and Energy Labelling.

For products currently Micro Generation Certification Scheme certified (MCS), manufacturers need to provide their certification body, such as the BBA, with a product fiche (a data sheet) detailing ErP relevant data by 26th March 2016.
From 26th March 2016 – All MCS Contractors must comply with the requirements of Management Information System (MIS) 3005 Issue 4.3 and MCS Contractors must now use SCOP/SPER data in accordance with MIS 3005 Issue 4.3. The Heat Emitter Guide (HEG) will remain as a heat emitter design tool only.
Any products issued with MCS Certification from 26th September 2015 will need to be ErP compliant.
Baxi, part of BDR Thermea, have put together a short video to help explain the Energy Related Products (ErP) Directive, including the areas in which it applies, the labelling procedure, and the impact it will have on products and installer responsibilities. **www.baxi.co.uk**

Life Safety Digest

The Magazine of Effective Compartmentation, is a quarterly publication for professionals who want to learn about Fire Resistance and Smoke Resistant 'DIIM' - Design & Code Compliance, Installation & Construction, Inspection and Maintenance. It is an excellent resource for:

- Building Code Officials
- Fire Marshals
- Specifiers, Architects/Engineers
- Firestop & Fire Resistance Contractors
- Firestop/Compartmentation Inspectors & Consultants
- Building Owners and Managers
- Healthcare & Education Building Engineers
- Fire Protection Engineers & Students
- Insurance Professionals

To subscribe visit www.fcia.org or contact:
Firestop Contractors International Association
4415 W. Harrison St., Suite 436
Hillside, IL 60162 ~ 708-202-1108 ~ 708-449-0837(FAX)

Zero Carbon Hub - The Builders Book

The builders' book is a good craftsmanship guide that highlights key construction details when building a new home, and good practice for delivering them. During multiple site inspections, these details were most commonly identified as requiring further guidance. The book aims to improve the quality of new homes built, especially with regards to comfort levels and energy bills. It helps builders improve site processes to deliver better performing homes and reduce the risk of condensation and mould growth, excessive heat loss and failure to meet building regulations. This edition of the builders' book is for traditional masonry construction of new homes and extensions. It follows the construction phase of the housebuilding process, and is aimed at helping site personnel and trades improve quality of the end product. It also highlights areas where built environment professionals can improve the design.
www.zerocarbonhub.org

Local Authorities – Tackling overheating in homes

For the last year the Zero Carbon Hub has been working with local authorities, central government departments and the housing and health sectors to understand how well prepared we are in England and Wales to tackle the issue of current and future overheating in homes. Preliminary findings from the evidence gathering stage of the project were published on 16 June 2015 in a report "Overheating in Homes – The Big Picture". See www.zerocarbonhub.org. A second phase of the project, which aims to make recommendations about future policies and frameworks on overheating, is due to begin this summer. This booklet is intended to raise awareness of the issue and summarises some of the steps the local authorities interviewed by the Zero Carbon Hub are already taking to address overheating in homes in their area. Overheating, in this context, is the term used to describe situations where the conditions in a building become uncomfortably warm or excessively hot, because the design of the building hampers the occupant's ability to keep it sufficiently cool. **www.zerocarbonhub.org**

CIHT launches Routes to Diversity & Inclusion toolkit for employers

The Chartered Institution of Highways & Transportation (CIHT) has launched a Diversity & Inclusion toolkit for Employers

Routes to Diversity & Inclusion is the first toolkit of its kind for the highways and transportation sector. It provides a route map to success through diversity and inclusion.

The toolkit offers practical guidance, case studies and links to reliable sources of expert advice for employers to help recruit, retain and develop a more diverse workforce. By doing so, employers will improve their own business performance and increase capacity within the industry.

Sue Percy, CIHT Chief Executive, said: "The business case for diversity and inclusion has been highlighted a number of times in the media recently, however implementing the changes necessary to take advantage of these business benefits does not appear to be a priority for some employers. Often, this is simply a case of not being sure where to start

This is where the CIHT Routes to Diversity and Inclusion toolkit can help

Diversity & Inclusion – some key facts and figures linked to highways and transportation

CIHT surveyed its Corporate Partners to benchmark the sector in terms of demographics and practical engagement on diversity and inclusion:

- In 71% of organisations, women make up fewer than one in ten of the board.
- Men occupy more than 90% of management roles.
- Only 48% of corporate partners are currently using flexible working to attract and retain talented employees.
- Minority ethnic people make up less than 10% of the workforce (national average is 14%).

What are the benefits of taking action?

- Greater diversity of recruits from a wider talent pool.
- Greater diversity of people progressing through the organisation.
- Benefits to corporate reputation via publicity, benchmarking and awards.
- Benefits in terms of creativity and innovation.
- An increase in employee engagement.

If you would like to receive a hardcopy of the toolkit please contact; **communications@ciht.org.uk**

ISO 9001:2015

The latest edition of ISO 9001, ISO's flagship quality management systems standard, has just been published. This concludes over three years of revision work by experts from nearly 95 participating and observing countries to bring the standard up to date with modern needs.

With over 1.1 million certificates issued worldwide, ISO 9001 helps organizations demonstrate to customers that they can offer products and services of consistently good quality. It also acts as a tool to streamline their processes and make them more efficient at what they do. Acting ISO Secretary-General Kevin McKinley explains: "ISO 9001 allows organizations to adapt to a changing world. It enhances an organization's ability to satisfy its customers and provides a coherent foundation for growth and sustained success."

The 2015 edition features important changes, which Nigel Croft, Chair of the ISO subcommittee that developed and revised the standard, refers to as an "evolutionary rather than a revolutionary" process. "We are just bringing ISO 9001 firmly into the 21st century. The earlier versions of ISO 9001 were quite prescriptive, with many requirements for documented procedures and records. In the 2000 and 2008 editions, we focused more on managing processes, and less on documentation.

"We have now gone a step further, and ISO 9001:2015 is even less prescriptive than its predecessor, focusing instead on performance. We have achieved this by combining the process approach with risk-based thinking, and employing the Plan-Do-Check-Act cycle at all levels in the organization.

"Knowing that today's organizations will have several management standards in place, we have designed the 2015 version to be easily integrated with other management systems. The new version also provides a solid base for sector-quality standards (automotive, aerospace, medical industries, etc.), and takes into account the needs of regulators."

As the much anticipated standard comes into being, Kevin McKinley concludes, "The world has changed, and this revision was needed to reflect this. Technology is driving increased expectations from customers and businesses. Barriers to trade have dropped due to lower tariffs, but also because of strategic instruments like International Standards. We are seeing a trend towards more complex global supply chains that demand integrated action. So organizations need to perform in new ways, and our quality management standards need to keep up with these expectations. I am confident that the 2015 edition of ISO 9001 can help them achieve this."

The standard was developed by ISO/TC 176/SC 2, whose secretariat is held by BSI, ISO member for the UK. "This is a very important committee for ISO," says Kevin, "one that has led the way in terms of global relevance, impact and utilization. I thank the experts for their hard effort."

ISO 9001:2015 replaces previous editions and certification bodies will have up to three years to migrate certificates to the new version.

www.iso.org

The document Navigating ISO 9001:2015 provides a detailed review as to the origins of ISO 9001, the revisions and guidance to support you in understanding the changes.

The Consumer Rights Act 2015 - United Kingdom

The Consumer Rights Act 2015 came into force on 1 October and is intended to help consumers and businesses avoid disputes. If there is a dispute, however, changes have been brought in to make them easier to settle.

Alternative Dispute Resolution (ADR) will offer a quicker and more affordable way of resolving disputes than going through the courts. ADR is a process that enables disputes to be settled by an independent mechanism outside the court system. Consumers can obtain more information and advice on their rights from Citizens Advice, including information on ADR.

Other significant changes for tradespeople will be increased clarity about when a consumer has or has not got the right to reject goods, and a new presumption that consumers should not have to accept multiple attempts at repair or replacement.

Egypt - Solar

Energy demand continues to steadily rise across the North African region due to a combination of a growing population and rapid urbanisation. 2014 saw Egypt launch an ambitious programme to procure 12,000 megawatts of renewable energy capacity by 2020 - the largest renewable energy target in the MENA region after Saudi Arabia.

This report provides information on the;

- Ongoing and future solar energy projects planned in North Africa to secure future business
- How the government is developing green energy capacity to meet rising domestic demand and secure long-term sustainability
- The successful implementation of these scheduled projects and how they will benefit developers with a significant array of socio-economic gains
- Current reforms and how they will allow companies to sell more of the energy they produce, which will enable more competitive commercial operations in the Egyptian renewables sector

Upcoming Events & Conferences

NCC 2016 National Seminar dates - presented by the ABCB and Standards Australia

The National Construction Code now moves to a 3 year amendment cycle and attending the information sessions will enable you to hear and engage with presenters informing you of the changes that will come into effect from 1 May 2016.

The National Seminars commencing in February through to March 2016 are held in each capital city. Strong attendance is expected in preparation for the introduction of the 3 year amendment cycle, and we ask that you register early to secure your place.

City	Date	Venue
Canberra	17 Feb	National Convention Centre
Hobart	19 Feb	Hotel Grand Chancellor
Brisbane	23-24 Feb	Brisbane Convention & Exhibition Centre
Darwin	26 Feb	Darwin Convention Centre
Perth	3-4 Mar	Perth Convention Centre
Adelaide	7 Mar	Adelaide Convention Centre
Sydney	9-10 Mar	Australian National Maritime Museum
Melbourne	16-17 Mar	Melbourne Convention Exhibition Centre

For information the Building Australia's Future 2015 presentations are now available on-line

The Australian Building Codes Board (ABCB) delivered its most contemporary and informative national Conference during 13-16 September 2015.

Feedback was extremely positive and the Conference provided attendees with a world class built environment learning and networking opportunity, capturing the most debated and discussed topics across the following areas: Building Reform: Realising The Potential, Unlocking the Benefits of a Performance Based Code, Taking the Lead: Tools, Trends & Technologies.

www.abcb.gov.au

Bernard Leiceaga
The Society was pleased to welcome Bernard Leiceaga, International Officer for the Societe Nationale des Ingenieurs Professionnels de France (SNIPF) into membership.

Bernard has a wealth of experience that encompasses both academic and vocational expertise. He studied at the Technical Lycée BTP (building industry, Public works) at Cantau-Anglet and joined the Military Service : 1st RPIMa–Bayonne. His vocational activity included his roles as;

- Project Manager in charge of building operations for Biarritz - Victoria Surf, and Avoriaz – Club Méditerranée and Ménuires ski resorts.
- Project Manager, planning for Pierre et Vacances, Paris.
- Building companies : manager in charge of public works with PILOTAZ Company, on the Mediterranean – Port Barcarès, La Londe des Maures, etc.
- BOUYGUES Group – Managing Director of the Toulon Division, also in charge of the renovation of the Carlton Hotel Cannes.
- He was registered as a SNIPF certified engineer certificate and recognised by COFRAC since 1995, and became the SNIPF administrator in charge of the development of international relations devising and signing partnership agreements with ABEI (I), COGITI (E), SPE (UK), with the help of IESF CA (administrator of IESF- CA- Nice). He became a EUR ING engineer in 2015, registered with FEANI Brussels.

A defined and extensive skills base enabled Bernard to operate as a Judicial expert for several French courts. He is the administrator of the National Council of the Companies of Judicial Experts (CNCEJ), UCECAAP et UCEJAM in charge of relations with administrative jurisdictions for the French experts.

Bernard will be working with the Society of professional Engineers during the coming year to reinforce the collaboration between SNIPF and SPE

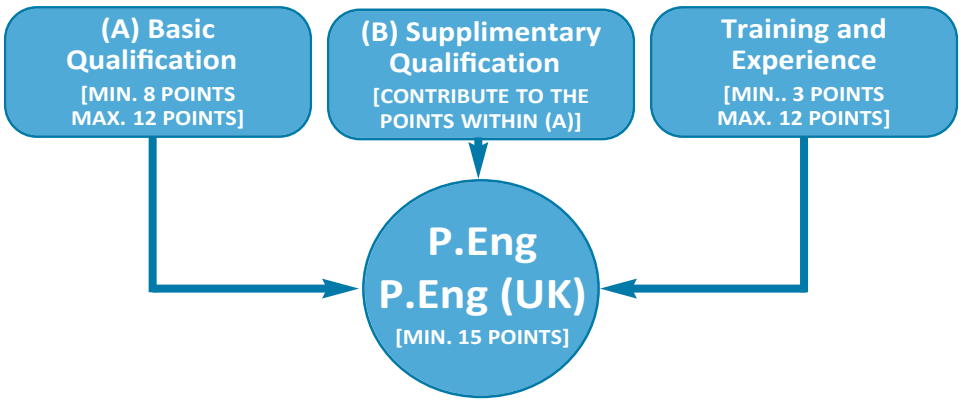
New Members

Ing Roberto Mazzocchi PEng(UK) MSPE	ITALY
Dr Kelly Wilson PEng(UK) MSPE	UNITED STATES
Mr Ronald Gomeseria PEng(UK) FSPE	QATAR
Mr Man Wai Fan PEng(UK) MSPE	HONG KONG
Mr Kong Hin Chow PEng(UK) MSPE	MALAYSIA
Mr Jean-Marc Costa PEng(UK) MSPE	FRANCE
Mr Giovanni Valastro PEng(UK) MSPE	FRANCE
Mr Jean-Pierre Mortreux PEng(UK) MSPE	FRANCE
Mr Peter Anthony Bray PEng MSPE	UK
Mr Glynne Holmes PEng MSPE	UK
Mr Guy Lacombe PEng(UK) MSPE	FRANCE
Mr Tim Black PEng(UK) MSPE	NORTHERN IRELAND
Mr Stephanus Roux PEng(UK) FSPE	SOUTH AFRICA
Mr Joseph O'Connell PEng MSPE	UK
Mr Kee Kwong Leung PEng(UK) FSPE	HONG KONG
Mr Anura Leslie Perera PEng(UK) MSPE	UNITED ARAB EMIRATES
Mr Joseph Ayre PEng MSPE	UK
Mr Sanusi Emmanuel Oluwatosin PEng(UK) MSPE	NIGERIA
Mr David Ashleley Barley PEng MSPE	UK
Mr Toi Kee Paul Yu PEng(UK) MSPE	HONG KONG
Mr Wai Lim Lui PEng(UK) MSPE	HONG KONG

Reinstated Members

Mr Tsz Tat Wong PEng(UK) MSPE	HONG KONG

Membership



The achievement of P.Eng/P.Eng(UK) reflects an individual's academic qualification and vocational experience. Full details are contained within the membership guide available on the website:
www.professionalengineer-uk.org

Get involved – sign up a colleague!!

Buildings and Energy Efficiency Event Manchester 2015

Professional Engineers play a key role within the development team and there is an expectation that they are fully aware of the "expectations and requirements" of a client and the needs to comply with the "political intent" of the Government.
A prime focus is that of energy performance geared to the resources available and the engineering developments that are taking place and the manner in which they can be applied to ensure an effective payback period and financial incentive to the client.
Manchester hosted the Buildings and Energy Efficiency Event and the Society was pleased to participate and share the experience of the membership with both the exhibitors and the delegates. The Society was represented by Ronald "Doug" Finch, newly elected to council and David Gibson, Vice President International. The event had them on their feet and the discussions that took place were most positive, with significant interest in both membership and activities of the members. The journal provided a real talking point as delegates not only recognised and associated themselves with the projects identified and the breadth of coverage. Doug, in his new role, shared his breadth of knowledge and expertise in his discussions with both students and fellow professionals alike. A common theme being the linkage between academic and vocational learning. The exhibitors really applied themselves and the range of materials, components, systems and technologies were of great interest and it was impressive to see the exhibitors not only working with the delegates but also interacting with each other. The event reflected not only an exhibition but also the opportunity for interaction through the provision of one to one discussions with individuals but also with bespoke learning areas where presentations were made and open discussion took place. The content was such that the delegates were enthused and this enthusiasm was apparent as they moved from stand to stand. It is anticipated that specific articles will be provided and appear in later issues of the Professional Engineer.












Alliance & Sustainable Building Products	www.asbp.org.uk
Amicus Horizon	www.amicushorizon.org.uk
APSE Energy	www.apse.org.uk
Aquatech Pressmain	www.aquatechpressmain.co.uk
Autron	www.autron.co.uk
Armstrong	www.armstrongfluidtechnology.com
BSRIA	www.bsria.co.uk
The Business Growth Hub	www.businessgrowthhub.com
CMS Windows	www.cmswindows.com
Codra	www.dcodra.net
Renove- Domusa	www.renove.co.uk
Dyer Enviromental Controls	www.dyerenvironmental.co.uk
Eco Infrared Technologies	www.infraredtechnologies.co.uk
Fernox	www.fernox.com
Future Cities	www.futurecities.catapult.org.uk
GB Sol	www.gb-sol.co.uk
Granada Secondary Glazing	www.www.granadaglazing.com
Grundfos	www.grundfos
Kast Energy Solutions	www.kast-energy.co.uk
Kingspan Insulation	www.kingspaninsulation.co.uk
LCG Energy	www.lcgenergy.co.uk
M J Lighting	www.mjlighting.com
NEA	www.nea.org.uk
Nest	www.nest.com/uk

NVC Lighting	www.nvcuk.com
One Electrical	www.oneelectrical.com
Open Control Systems	www.opencontrol.co.uk
Optimised Buildings	www.optimisedbuildings.com
Pegasus Group	www.pegasuspg.co.uk
Pegler Yorkshire	www.pegleryorkshire.co.uk
Pilkington	www.pilkington.com
Planetsaver LED	www.dfxtech.co.uk/planetsaver
Priva	www.priva.co.uk
Renove - CSTFire	www.renove.co.uk
Ricoman	www.ricomanled.com
Ruukki	www.ruukki.co.uk
R W Simon	www.rwsimon.co.uk
University of Salford	www.salford.ac.uk
Schneider	www.schneider-electric.com
Selectglaze	www.selectglaze.co.uk
Senior Architectural Systems	www.seniorarchitecturalystems.co.uk
Stokvis Energy Systems	www.stokvisboilers.com
Sudstech	www.sudstech.co.uk
Sustainable Energy Association	www.sustainableenergyassociation.com
SWEP	www.swep.net
Trailflex	www.sudstech.co.uk
Treco	www.treco.co.uk
Synseal	www.synseal.com
UKDEA	www.ukdea.org.uk
Viessman Group	www.viessmann.co.uk
Wilo	www.wilo.co.uk
ARC Energy Reductions Solutions	www.arc-ers.co.uk
LCG Energy	www.icgenergy.co.uk
Tomkinson Worrall Power Ltd	www.twpower.co.uk
Growth Hub	www.businessgrowthhub.com
Loftzone	www.loftzone.co.uk
Becowallform	www.becowallform.co.uk

CABE Conference and Exhibition 2015

In collaboration and support of the CABE the society of Professional Engineers exhibited and participated in their annual conference. The Society was represented by the President Malcolm Parker and the Vice President Iain Wright. The event was successful providing the opportunity to exchange information with fellow exhibitors, network with professional engineers, meeting with current members and expanding our network through the gaining of new members, collaboration and affiliation.

Collaboration and Affiliation

The Society of Professional Engineers maintains a register that embraces all suitably qualified Professional Engineers of whatever discipline. The goal of the Society is to protect and enhance the status of the Professional Engineer. This is achieved through the promotion of this title throughout the world by establishing, maintaining and strengthening close links with collaborating and affiliated bodies.

The process of collaboration and affiliation reinforcing and promoting the highest professional standards within engineering without restriction to any one particular engineering discipline.

Collaboration is seen to be the action of working together to fulfil a task and to achieve shared goals with affiliation being the reinforcement of collaboration through formal agreement and memoranda of understanding.

Affiliation and Collaboration with Professional Bodies and Organisations

Association d'experts du bâtiment et de la construction
Association of European Building Surveyors and Construction Experts
Mr Martin Russell Croucher
Dip QS CertEd MRICS
E.mail: mrussellc@gmail.com
Website: www.aeebc.org

Association of British Engineers in Italy
President: Prof. Luciano Mirarchi C.Eng MIET MSE
International Coordinator Dott. Eur Ing Saverio Iuzzolini
CEnv(UK) MSEE(UK) MIET(UK) IPF(F)
P.Eng(UK) FSPE MPM FAAPM
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Website: www.theabei.eu

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The Chartered Association of Building Engineers
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Tel: (01604) 404121
Fax: (01604) 784220
Website: www.cbuilde.com

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/Fax: 00 86 10 58933071
Website: www.cces.net.cn

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www.apabcn.cat

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Website: www.flaming21.com

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www.hamerville.co.uk

HCL International Ltd
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DL: (852) 2148 2186
T: (852) 2148 2186
F: (852) 2148 2986
Web : http://www.hcl.hk
http://www.hkioe.hk

The Institution of Diagnostic Engineers
Project Building, 581A Leeds Road,
Outwood, Wakefield
West Yorkshire WF1 2JL
Tel: 44(0)1924821000
Website: www.diagnosticengineers.org

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Fax: 001 (703) 836 4875
Website: www.nspe.org

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Spencer Bray Surveyors
Managing Director: Peter Bray FRICS CBuildE FCABE
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Email: admin@spencerbray.com
www.spencerbray.com

WOBO
World Organisation of Building Officials
Governor: Mr David Gibson
Email: david@tdrg.co.uk
Website: www.wobo-un.org

SPE welcomes fellow Professional Bodies, Academic Institutions and Organisations as collaborating bodies

The Society of Professional Engineers

In collaboration and in support of the BIM Academy, Col-legi D'Aparelladors Arquitectes Tecnics I Enginyers D'Edificacio De Barcelona and BuildingSMART

BIM EUROPEAN SUMMIT
Barcelona 2016

Barcelona, Spain

Venue: World Trade Centre

18-19th February 2016

Edif. Este, Moll de Barcelona, s/n,1ª planta, 08039 Barcelona, Spain

Programme - 18 February 2016

8.00 – 8.45 **Check in**

9.00 – 18.30 **Presentations and Activities**

19 February 2016

9.00 – 15.00 **Presentations and Activities**

15.00 **Closing**

Contact details: www.europeanbimsummit.com; www.bimacademy.es

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