

# Newsletter

IMECHE WEST CUMBRIA EDITION SPRING / SUMMER 2013

MUCH WAS ACHIEVED IN 2012,  
WHAT DOES 2013 HAVE IN STORE?



## » THE COMMITTEE

Meet the committee team that make up IMechE West Cumbria. | Page 2

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Dear Colleague,

Welcome back and could I begin by wishing you a successful and prosperous new year. We are once again commencing the second half of another packed Institution of Mechanical Engineers (West Cumbria) Events Programme and as is now customary I thought I'd drop you a line to recap on some of the highlights of the first half of our season and give a taster of what's still to come in the months ahead.

During the compilation of the Autumn Events Programme we tried, as usual, to ensure that our talks and visits were as varied as possible and I think we achieved that. Our season began back in September with a fantastic talk on the new Nissan Leaf electric car lecture at the Hundith Hill Hotel, for those of you who attended and got an opportunity to drive the demonstrator car supplied by J Edgar and Son, I trust that it was a memorable experience. In October we embarked on the long trek to Rotherham to visit Sheffield University's Advanced Manufacturing Research Centre, and in November we hosted an enlightening talk into Water Turbine Designs by Gilbert Gilkes of Kendal. With regards educational activities we have been once again very busy, having been involved in many events around the area with events such as the STEM Big Bang and the St Benedict's Engineering Awareness Day to an estimated combined audience of over 1000

students. You can read more about all these within this issue of the Newsletter.

Moving on to the second half of this season's schedule, we are planning a further 4 talks and 2 visits plus our 9<sup>th</sup> Annual Dinner. A copy of our forthcoming events programme is on the back of this newsletter with our compliments. Please feel free to pin it up at work or home to remind you and others what is going on, and remember you don't need to be a member of the Institution to take advantage of our events. Anyone of all ages can come along. Events that I should draw your attention to are our trips to Crown Bevcn (Carlisle) and Gilbert Gilkes (Kendal): as places are limited so book early with the event organisers to avoid disappointment.

Work is also well under way for this year's IMechE West Cumbria Annual Dinner, with a return to one of our favourite venues, a notable key note speaker to talk about a national topical issue with much local interest, plus fabulous food and other guests to be announced. More details are available inside.

Best wishes, I look forward to seeing you soon.

**Tom Pritt CEng FIMechE BEng (Hons)**  
Chairman – IMechE (West Cumbria)  
[tom.pritt@atkinsglobal.com](mailto:tom.pritt@atkinsglobal.com)

**ATKINS****DOOSAN** Doosan Babcock**James Walker****ENERGYSOLUTIONS**

## » THE COMMITTEE

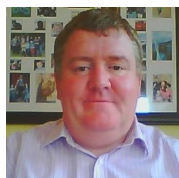
### Introducing your IMechE West Cumbria Area Committee

## THE MAIN COMMITTEE



### **TOM PRITT** CENG FIMECHE

- » **Committee Role:** Honorary Chairman
- » **Occupation:** Chief Engineer with Atkins Nuclear
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- » **Email:** tom.pritt@atkinsglobal.com



### **DAVID MCARTHUR** AMIMECHE

- » **Committee Role:** Honorary Vice Chairman
- » **Occupation:** Project Manager with Sellafeld Limited
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### **DAVID WILLIAMSON** CENG FIMECHE

- » **Committee Role:** Honorary Secretary
- » **Occupation:** Commissioning Manager, Sellafeld Ltd
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- » **Email:** djw7@sellafeldsites.com



### **JIM SKEEN** AMIMECHE

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### **MATT CLEAVER** AMIMECHE

- » **Committee Role:** Educational Initiatives Coordinator
- » **Occupation:** Work Week Manager, Sellafeld Ltd
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### **ANDY CUMBOR** CENG FIMECHE

- » **Committee Role:** Membership/Professional Registration
- » **Occupation:** Engineering Assurance Leader Sellafeld Ltd
- » **Telephone:** 01947 77431
- » **Mobile:** 07802581943
- » **Email:** andy.m.cumbor@sellafeldsites.com

## OTHER COMMITTEE MEMBERS

- John Crook
- Simon Farrell
- Jim Furness
- Chris George
- Caroline Hamilton
- Ian Lupton
- Simon Mandale
- Adrian Norendal
- Chris Rose

The Main Committee meet on the first Thursday of the month at Lakes College West Cumbria. If you want to join us then contact David Williamson to confirm details.

## THE YOUNG MEMBERS PANEL

- » **Honorary Chair & Green Power Representative:** Simon Walsh
- » **Vice Chair & Young Members Representative :** Alex Davison
- » **Honorary Secretary:** Andras Kaldos
- » **Honorary Treasurer:** Rob Marwood
- » **Education/Publicity & Web Administrator:** Matt Cleaver

### **Other Panel Members:**

- Jen Corbett
- Claire Jones
- Robert Cox
- Kieran Yates

The Young Members Panel meet at the Vagabond Pub in Whitehaven once a month. If you want to join us then contact Andras Kaldos on WCumbYMSec@imechenetwork.org

## IMPROVING THE WORLD THROUGH ENGINEERING

**IMechE West Cumbria:** [www.imechewestcumbria.org.uk](http://www.imechewestcumbria.org.uk)

**IMechE WC Young Members:** [nearyou.imeche.org/near-you/UK/North-Western/West-Cumbria-Young-Member-Panel](http://nearyou.imeche.org/near-you/UK/North-Western/West-Cumbria-Young-Member-Panel)

**IMechE UK:** [www.imeche.org](http://www.imeche.org)

Sign up to receive regular IMechE West Cumbria email updates. Forward your email to: [WCumbSec@imechenetwork.org](mailto:WCumbSec@imechenetwork.org)





## 100% ELECTRIC, ZERO EMISSIONS

On Wednesday 12 September, engineering enthusiasts gathered at Hundith Hill Hotel, Cockermouth, for a presentation on the innovative Nissan LEAF by Ian Ferrier, Production Engineering Manager at Nissan Manufacturing UK in Sunderland.

The Nissan LEAF was the winner of the World Car of the Year award in 2011. It is described as the first ever EV (Electric Vehicle) to deliver conventional car performance and functionality.



The vehicle is fitted with a three phase synchronous motor that can produce 80kW of power and 280Nm of torque. The motor draws power from a laminated lithium-ion battery pack with 48 modules each containing four cells, which has a capacity of 24kWh. All of this corresponds to a 0-60mph time of about 9 seconds, a maximum speed of approximately 90mph and a range of somewhere around 100 miles. Production of the LEAF will begin at Nissan's Sunderland plant in 2013.

Ian's presentation covered a wide range of subjects from Nissan's history with electric vehicles to features of the vehicles design and technical details of the recharging system.

The LEAF is a purpose designed EV rather than being an adaptation of an existing model retrofitted with an electric power train. The presentation identified some of the specific design aspects of the vehicle that have been developed to increase efficiency and best manage weight and size of an electrical drive train. These features included the unique looking headlamps, designed to direct the airflow around the door mirrors

reducing aerodynamic drag and the layout of the batteries under the floor pan, designed to provide suitable positions for the seating and footwells.

Ian also discussed Nissan's continuous development of the network of nationwide recharging points available for EVs and the importance of developing a standard recharging system to enable them to be used by numerous different manufactures. Additional support was provided by J Edgar and Son of Rowah who brought along their Nissan LEAF and allowed people to take it for a drive to experience the unique attributes of the vehicle.

The available torque throughout the range of the motor and the single speed gearbox results in almost linear acceleration and a feeling of far greater power than you would expect.

Attendees were also able to feed their technical curiosity and find out what was under the bonnet in place of a standard internal combustion engine.



Simon Farrell presenting Ian Ferrier with a memento of his visit to West Cumbria.

Simon Farrell, IMechE West Cumbria



**Zero Emissions, Zero Sound. You won't be-leaf your ears...**

Visit the IMechE website for a short clip of the Nissan Leaf in action

<http://www.imechewestcumbria.org.uk/downloads/nissanleafvideo/nissanleafvideo.mov>

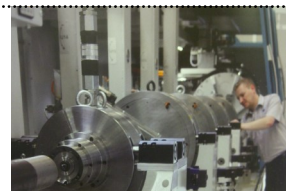
### E-Newsletters

eMech-pr is the West Cumbria Area's electronic newsletter and press release, and is circulated to local members by e-mail. These include exclusive and extended write-ups of events, that you can see in this seasons IMechE Newsletter. By signing up to our email updates, you will be notified when new and exciting event write-ups are available to read - this helps keep costs down and improves the service you receive.

**Simply forward your email to: [WCumbSec@imechenetwork.org](mailto:WCumbSec@imechenetwork.org)**

**But in the meantime, take a look at our latest E-Newsletters at: [www.imechewestcumbria.org.uk/emech](http://www.imechewestcumbria.org.uk/emech)**





## ADVANCED MANUFACTURING AT SHEFFIELD UNIVERSITY

On Thursday 11<sup>th</sup> October, twelve West Cumbrian Engineers and eight 6<sup>th</sup> form students from Keswick and Workington visited this amazing Advanced Manufacturing Research Centre (AMRC) of Sheffield University, which was established by Professor Keith Ridgway in 2001. The main aims of the Centre are to work in partnership with International Blue Chip Companies to enhance their manufacturing processes and capabilities. An excellent example of this was seen in work the AMRC have undertaken with Rolls Royce to reduce the machining time required for the slots in the hub of a Rolls Royce Trent Turbofan engine, into which the rotor blades are fitted. The original machining time was 54 minutes per slot. The AMRC reduced this time to an incredible 1 minute 30 seconds, by exploring the resonant frequencies of the material and machine tooling induced by the cutting feeds and machine tool speeds of milling process. These refinements have vastly improved the process efficiency and greatly reduced manufacturing costs.



In the Nuclear Research Department, AMRC are developing new approaches to the industry's most challenging machine problems, such as extreme deep hole drilling and working on very large assemblies without the need for expensive gantry systems. AMRC are also linked to The University of Manchester Dalton Nuclear Institute for materials testing and are



A view showing the advanced machine tools inside the Nuclear Research Department.

developing robotic systems to lay-down carbon fibre to reduce this traditionally labour intensive process - developing the use of carbon fibre in aircraft manufacture to cut down the weight.

A 3D VR (Virtual Reality) and AR (Augmented Reality) demonstration was presented to the group to show how build layouts can be achieved quickly and precisely using a 3D Rolls Royce Turbo Fan engine for training purposes, allowing users to (virtually) remove and replace component parts – truly amazing stuff (one of the 6<sup>th</sup> form students was used to demonstrate how easy it was!).

The AMRC continues to expand and is planning a new apprentice training centre scheduled to open in autumn 2013. This will take on 250 apprentices a year from partnering companies as well as its own apprentice intake!

**Ian Lupton**, IMechE West Cumbria



The IMechE West Cumbria visiting party outside Sheffield University AMRC.



Ian Lupton presents Shirley Harrison with an IMechE West Cumbria "Pit Tankie".





## 150 YEARS OF WATER POWER GENERATION

On Tuesday 6th November 2012 the Institution of Mechanical Engineers facilitated a lecture for 27 people in the SEN centre Lakes College. Nick Pike, Managing Director of Gilbert Gilkes and Gordon, gave a very interesting and honest lecture which covered the company history, product range and customer base.



Gilbert Gilkes started its business over 150 years ago, manufactures in the UK and exports equipment around the world. Today it designs and installs hydroelectric generation systems ranging in size from 50kW to 18MW and manufactures specialist Water Pumps for cooling high horsepower diesel engines which it supplies to many of the world's major diesel engine manufacturers.

Gilbert Gilkes & Gordon Ltd is an internationally established manufacturing company, based in Kendal, UK on the edge of the English Lake District. The original premises were outside the town of Kendal but in 1856 the company moved to its existing location where it has been ever since.

Other operations include Gilkes Inc, Gilkes Japan and Gilkes Energy. Gilkes Inc is a wholly owned subsidiary of Gilbert Gilkes & Gordon Ltd in the UK and was incorporated in 1978. It is based in League City, Texas USA.

Today, it is focused on the repair, remanufacture and sale of engine cooling pumps. Gilkes Japan covers their Far East hydropower market operations. Gilkes Energy Ltd was established in 2008 in order to help its clients develop and finance hydropower projects.

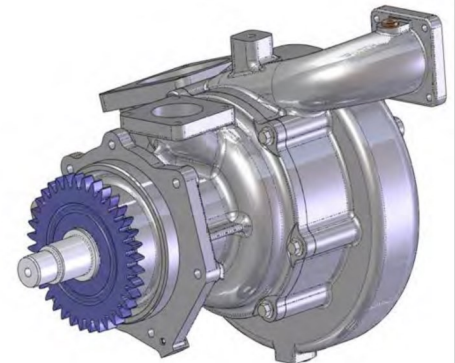
Since the first turbine installation in 1856, they have been improving and refining designs, producing over 6500 turbines for more than 80 countries. Their turnover has doubled over the last 10 years and it is, so far, weathering the economic storm. It operates out of its base in The Lake District from a site that it has occupied almost from its inception. It employs 200 people and has 7 apprentices, 6 engineers it is sponsoring through university and it supports two PhD students at Lancaster University. It appears something of an anachronism but its survival is down to the dedication, hard work and loyalty of its workforce.



**Francis Impulse Turbines being assembled**

The event was very well received by all who attended and the format of the evening ensured an excellent degree of audience participation through the question and answer session.

**Simon Mandale**, IMechE West Cumbria



**3D image of a pump under development**

### **Hydropower Products:**

Gilkes is a world leader in small hydropower systems for the generation of electricity from water. Gilkes has supplied over 6500 turbines in over 80 countries.

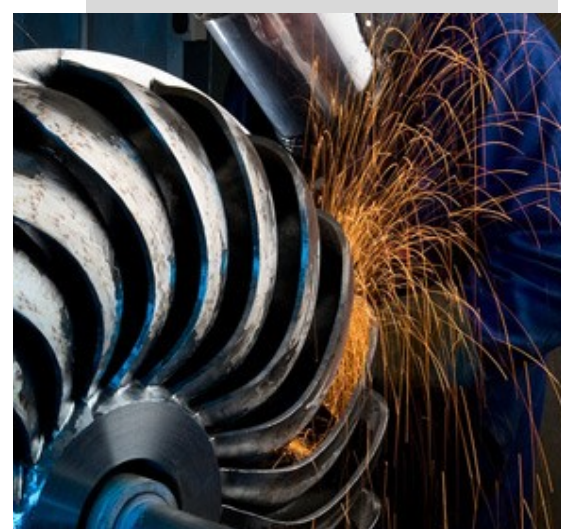
### **Pumping Systems:**

Gilkes manufacture a range of sophisticated pumps for the cooling of diesel engines and plant and supply many of the world's major diesel engine manufacturers. Gilkes also produce pumping solutions for the lubricating of oil or gas and steam turbines and supply a range of industrial pumps for virtually any application.

Gilkes are the leading hydroelectric turbine manufacturer in the UK for projects up to 20MW.

### **Activities include:**

- Design
- Manufacture
- Installation
- Commissioning
- Testing
- Routine service and plant upgrade



**Pelton Turbine and a Pelton Runner under manufacture at the Gilkes factory**

## » EDUCATION

Promoting engineering as an exciting and rewarding career



### IMECHE WEST CUMBRIA BURSARY AWARD WINNERS

IMECHE West Cumbria was delighted to be part of a late summer's evening celebration where thousands of pounds of educational awards were handed out by the REACT Foundation on Thursday, September 13<sup>th</sup> 2012. These awards which were announced earlier in the year were finally handed out after the students secured their places at either university or at sixth form, following attaining the required entry qualifications.

Kyran Clark, of Keswick School, and Helena Tranter, of Cockermouth School, scooped the two REACT Foundation bursary awards, both receiving £3000 towards their tuition fees. They were awarded the top prizes after applying for an engineering-related degree at university which they started that month. Kyran, 18, of Keswick, embarked on a four-year chemical engineering course at the University of Manchester, while Helena, also 18, of Bridgefoot, is now studying on a three-year civil engineering course at Birmingham University.

Samuel Cole, 18, of Seaton, walked away with the Institution of Mechanical Engineers (IMECHE) West Cumbria £1,000 bursary which we are delighted to say is now in its third year. Our bursary is offered in addition to the Foundation's awards to encourage West Cumbrian students into an Engineering Council accredited Mechanical Engineering Masters Degree. On receiving the reward Samuel, who is now studying a MEng in

Mechanical Engineering at Loughborough University said: "The bursary is a great incentive for young people and it's a shame there aren't more opportunities like this for young people like me starting out in higher education in science and engineering."

The REACT Foundation, which is a charity, has also seen an outstanding response for the cash prizes this year - 13 other young hopefuls were also given £200 each at the Foundation's Award Evening held at The Beacon, Whitehaven. The Year 11 teenagers had been hand-picked from hundreds of entries from secondary schools across the region after pledging to study a STEM-related subject at sixth form this term.

REACT Foundation Chairman Pete Woolaghan handed out the Foundation's bursaries to Kyran and Helena, while IMechE West Cumbria's Chairman, Tom Pritt gave his organisation's prize to Samuel.

Mr Pritt said: "It is fantastic that we're able to help young people in the early stages of their career in engineering and it is

also encouraging to see such great numbers of potential engineers and scientists apply for the bursary."

Mr Woolaghan said: "Times are tough for those who have plans and ambitions to succeed in the science and engineering industry. So we want to inspire and encourage young people from the area to follow a career in the sector and we'll do everything we can to support young people to achieve their ambitions."

This year we have had a fantastic response for both the bursaries and the year 11 awards - competition seems to be getting tougher each year."



**Winners: Samuel Cole, the winner of the IMechE West Cumbria £1000 Bursary Winner is 3<sup>rd</sup> from right next to Tom Pritt, IMechE West Cumbria Area Committee Chairman.**

## ENGINEERING YOUR FUTURE

On 23rd November, the IMechE West Cumbria ran its annual 'Engineering Your Future' event on the outskirts of Whitehaven, with sponsorship from the Samuel Lindow Foundation. The event was open to year 11 and lower sixth students from all West Cumbrian schools. The event aims to provide students with first hand information about what engineering is and what engineers really do. By working with a variety of different Institutions and companies (Sellafeld Ltd, BAE systems, James Walker & Co.) we were able to give students a more rounded idea of what engineering is all about, compared to if the IMechE had run the event alone (it also helps share the workload and recruit more volunteers!).

On the day we had 31 students from 6 different schools, because they had all been selected and (importantly) expressed an interest in wanting to attend they were all really enthusiastic - which was great for the volunteers. The day consisted of career presentations, activity sessions and a

lunchtime exhibition focussing on providing students with hands on tasks and engaging them with personal advice from engineers and scientists. Importantly, teachers also got involved, participating in a session run by Cumbria STEM Centre on the wide variety of

resources available to them, the majority of which are free of charge. This was really important as it meant the teachers could continue to spread the good word for engineering when they returned to school.

**Matt Cleaver**, IMechE West Cumbria

## BIG BANG 2012

The IMechE West Cumbria was amongst more than 50 businesses and colleges attending the Big Bang Cumbria event in Carlisle in October 2012, providing 'interactive stands' relating to STEM careers.

More than 930 students from all over Cumbria attended and got involved in the many hands-on activities. Secondary school students of various ages discussed routes into science and engineering directly with the institutions and companies that will teach, train and employ them in the future.

Both days were a great success with comments from the students such as 'Science

is Great!'. Engineering isn't just about cars and planes! STEM is COOL!



**IMECHE member Mark Holmes of Atkins presents the Cumbria Young Engineer 2012 award at the Cumbria Big Bang event.**





### THE THIRLMERE 100's

On Thursday 10th January 2013 The Institution of Mechanical Engineers facilitated a lecture for over 30 people in the SEN Centre Lakes College. John Butcher, Regional Water Supply Manager for the North West, gave a fascinating talk which covered the scheme history, construction and refurbishment of the Thirlmere Aqueduct.

The Thirlmere Aqueduct first delivered water to Manchester as long ago as October 1894. It is a surviving monument to the vision



and skill of Victorian engineers. One major feature of the scheme is that there is no pumping anywhere along the length of the aqueduct, the flow of water being transported along its 134km length is by gravity alone taking over 36 hours to reach Manchester.

The Victorian workforce drove a total of 14 miles of tunnels most of which go through the hard rock of the Lake District hills to the south of Thirlmere reservoir. A cut and cover construction technique was then employed

along the hillsides which would amount to a total of 35 miles. The 29 valleys that lie in the path of the aqueduct on its journey south were crossed using inverted multi line siphons. These consist of four huge cast iron or steel pipes. By the early 1920's the aqueduct had reached its ultimate design capacity and was conveying 50 million gallons a day (220 MI/d) of pure Lakeland water to the taps and factories of Manchester.

The aqueduct has now been providing great service for over 118 years transporting silently over 200,000 tonnes of water every day. Periodically the aqueduct has required maintenance to ensure its continued operation.

John took us through the major refurbishment projects since the 1960's which included the internal reconditioning of the concrete conduit sections, through to the 1990's where the individual siphon pipelines on 4 major bridges in South Lakeland were replaced one at a time. During these times flows were maintained by the use of overland pumping around the areas undergoing refurbishment. However this would not be a restriction for the last major refurbishment programme which has been taking place since 2006.

During the month of October each year between 2006 and 2010 the valves were closed at the reservoir and the aqueduct allowed to drain down along its entire length. This would allow a thorough and detailed engineering examination of the internal structures of the tunnels and conduits. A programme of works was then identified to the value of £23m. This would be delivered over the next 5 years during the annual October aqueduct shutdowns. This work encompassed over 2000 repairs to cracks and fillet joints. A 100m long damaged section of roof was also



repaired by shotcreting. One of the major challenges was £2m of slope stabilisation work at Nab Scar above Grasmere.

Since 2010 the last of the original 118 year old valve gear in the well structures that are sited at the head of the inverted siphons have been replaced with stainless steel penstocks and electric valve actuators, the last original valve was lifted from its position during December 2012. The recent capital investment by United Utilities has secured the operation of this important water transmission system for many years to come.

The event was well received by all who attended and the format of the evening ensured an excellent degree of audience participation.

**Simon Mandale**, IMechE West Cumbria



**Simon Mandale presents John Butcher with an IMechE West Cumbria "Pit Tankie".**

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### Institution of Mechanical Engineers West Cumbria Area Annual Dinner Thursday 6th June 2013 at Lakes College West Cumbria

We are delighted to announce that for our 2013 Annual Dinner we are looking to once again return to Lakes College West Cumbria. With this year's keynote speaker being Dr Tim Fox, Head of Energy and Environment for the Institution of Mechanical Engineers, and food/service provided by Lakes College's renowned catering students, the evening is sure to be a culinary experience, highly informative and not to be missed. Tim will discuss the potential future for energy production and storage, and how West Cumbria and the British Energy Coast will play a leading role in the UK's energy sustainability.

We are also delighted to announce better value sponsorship packages this year, including 'early bird' options and increased return for sponsorship. Individual ticket sales will still be available at a remarkably competitive price.

**For details, contact Tom Pritt on: [Tom.Pritt@atkinsglobal.com](mailto:Tom.Pritt@atkinsglobal.com)**

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# EVENTS POSTER SPRING/SUMMER 2013



## TALK: Metal Hips – A Failure of Engineering?

Professor Tom Joyce, Professor of Orthopaedic Engineering at Newcastle University will be giving a talk on the perceived engineering failures of the DePuy Articular Surface Replacement (ASR) metal hip joint, accounting for almost 100,000 hip implants worldwide before this technology was withdrawn in 2010. He will outline how surgeons and engineers in the north of England become the first to identify and explain the flaws in the ASR.

**Location:** Lakes College West Cumbria, CA14 4JN

**Organiser:** Caroline Hamilton on [chamilton@react-engineering.co.uk](mailto:chamilton@react-engineering.co.uk)

WEDNESDAY  
**20**  
FEBRUARY  
TALK: 18:30  
Registration: 18:00



BOOKING ESSENTIAL - LIMITED NUMBERS - BOOKING ESSENTIAL - LIMITED NUMBERS - BOOKING ESSENTIAL

## VISIT: Crown Bevcan Factory

A visit to Crown Holding's Carlisle manufacturing facility one of 139 plants located in 41 countries, with over 100 years of history. As the leader of metal packaging technology, its Carlisle plant produces billions of cans every year for a number of the leading drinks manufacturers. Numbers are limited, safety shoes and glasses are required.

**Location:** Borland Avenue, Carlisle, CA1 2TL

**Book Your Place:** Jim Skeen on [james.skeen@nuvia.co.uk](mailto:james.skeen@nuvia.co.uk) or 07979708115

WEDNESDAY  
**13**  
MARCH  
VISIT: 19:00

BOOKING ESSENTIAL - LIMITED NUMBERS - BOOKING ESSENTIAL - LIMITED NUMBERS - BOOKING ESSENTIAL



## MEETING: Annual General Meeting

Advance notice: The Institution of Mechanical Engineers West Cumbria area committee will be holding its Annual General Meeting in March at Lakes College. We would like to invite IMechE members to come along, meet the committee and get involved with us as we continue to promote the mechanical engineering profession within our local community. Refreshments will be available.

**Location:** Lakes College West Cumbria, Workington, CA14 4JN

**Organiser:** David Williamson on [djw7@sellafieldsites.com](mailto:djw7@sellafieldsites.com)

THURSDAY  
**28**  
MARCH  
MEETING: 19:00  
Refreshments: 18:30



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## VISIT: Gilbert Gilkes & Gordon - Kendal Plant

Gilbert Gilkes & Gordon started over 150 years ago, manufactures in the UK and exports equipment around the world. This tour is a rare opportunity to see first-hand the Kendal factory where the design and manufacture of Hydro Electric Generation Systems and specialist Water Pumps for cooling high horsepower diesel engines takes place. Over 18's only, visit includes return coach travel at £10 per person (non-refundable).

**Book Your Place:** Simon Mandale on [simon.mandale@sellafieldsites.com](mailto:simon.mandale@sellafieldsites.com) or 07793259658

TUESDAY  
**30**  
APRIL  
VISIT: Half Day

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## TALK: Risk handling in Major Programmes

Enabling successful delivery - a contractual perspective, Fiona Hammond, former Legal Director of the NDA, is to present her perspectives of using contracts to enable successful delivery of high risk complex projects. Drawing on her experiences at Heathrow Express, Terminal 5, the NDA and Derwent Forest, Fiona will illustrate how contracts need to be holistically considered, enabling high performing teams to deliver successful outcomes.

**Location:** The SEN Centre, Lakes College West Cumbria, Workington, CA14 4JN

**Organiser:** Andy Cumbor on [andy.m.cumbor@sellafieldsites.com](mailto:andy.m.cumbor@sellafieldsites.com)

TUESDAY  
**14**  
MAY  
TALK: 19:00  
Registration: 18:30



## TALK: LONDON 2012 – The Green Build

Rachel Krzeminski, Business Development Manager of Aggregate Industries, will be giving a talk on the ultimate project management challenge – how to deliver the greenest Olympics in record time. The company needed to meet entirely new, highly demanding expectations for concrete and aggregates, which included low transport emissions and high use of recycled materials. A world class benchmark in sustainable, complex projects.

**Location:** The SEN Centre, Lakes College West Cumbria, Workington, CA14 4JN

**Organiser:** Chris George on [chris.george@amec.com](mailto:chris.george@amec.com)

This is a joint IMechE event with the Institution of Civil Engineers (ICE)



TUESDAY  
**11**  
JUNE  
TALK: 19:00  
Registration: 18:30

ATKINS

DOOSAN Doosan Babcock

James Walker

ENERGYSOLUTIONS



NWP North West Projects  
Advanced Engineering Design

Lakes College  
West Cumbria

UNIVERSITY of  
Cumbria

JACOBS

