

COVER STORY: NCE GRADUATE AWARDS

PRECOCIOUS TALENT

Six young graduates, rewarded for their engineering ability, enthusiasm and innovative skills, won a share of over £3,000 prize money at last week's NCE Graduate Awards.

David Hayward was there.

NCE GRADUATE AWARDS 2011



Celebration was the order of the day as industry leaders mingled with young graduate engineers at the ICE last week to applaud the brightest of the profession's new recruits during NCE's annual Graduate Awards presentation.

Around 190 guests heard chairman of judges NCE editor Antony Oliver praise the high quality of this year's six finalists – all of whom were regarded as winners.

Earlier, the finalists, who were selected from over 90 worldwide entries, faced gruelling interviews with senior director judges from the award's 16 major company sponsors. They had judged the graduates on academic and engineering skills, looking especially for enthusiasm, leadership potential and entrepreneurial qualities.

Overall winner, Claire Gott from Southampton University and now a 23 year old structural engineer with WSP Group, received a cheque for £1,250 and a trophy. Two equally placed runners-up each won £600 and three highly commended graduates took home £300.

Next year's awards will be launched in June and will be open to any graduate civil engineer who qualified this year, 2011.

More at www.nce.co.uk/graduateawards



Winner Claire Gott

The 800 inhabitants of Bambouti, a remote village in Cameroon, central Africa, are set to benefit directly from this year's NCE Graduate of the Year 23 year old Claire Gott. She plans to devote her entire £1,250 prize money to the engineering charity she founded three years ago at Southampton University.

Her award will add to the £90,000 she has already raised to help fund the design and construction supervision of much needed facilities for this isolated community.

Already complete, courtesy of Gott and her team of 17 engineering undergraduate helpers, are a 20-bed medical centre, a school for 80 children, plus flushing toilets, showers for the whole village and a farming machinery workshop.

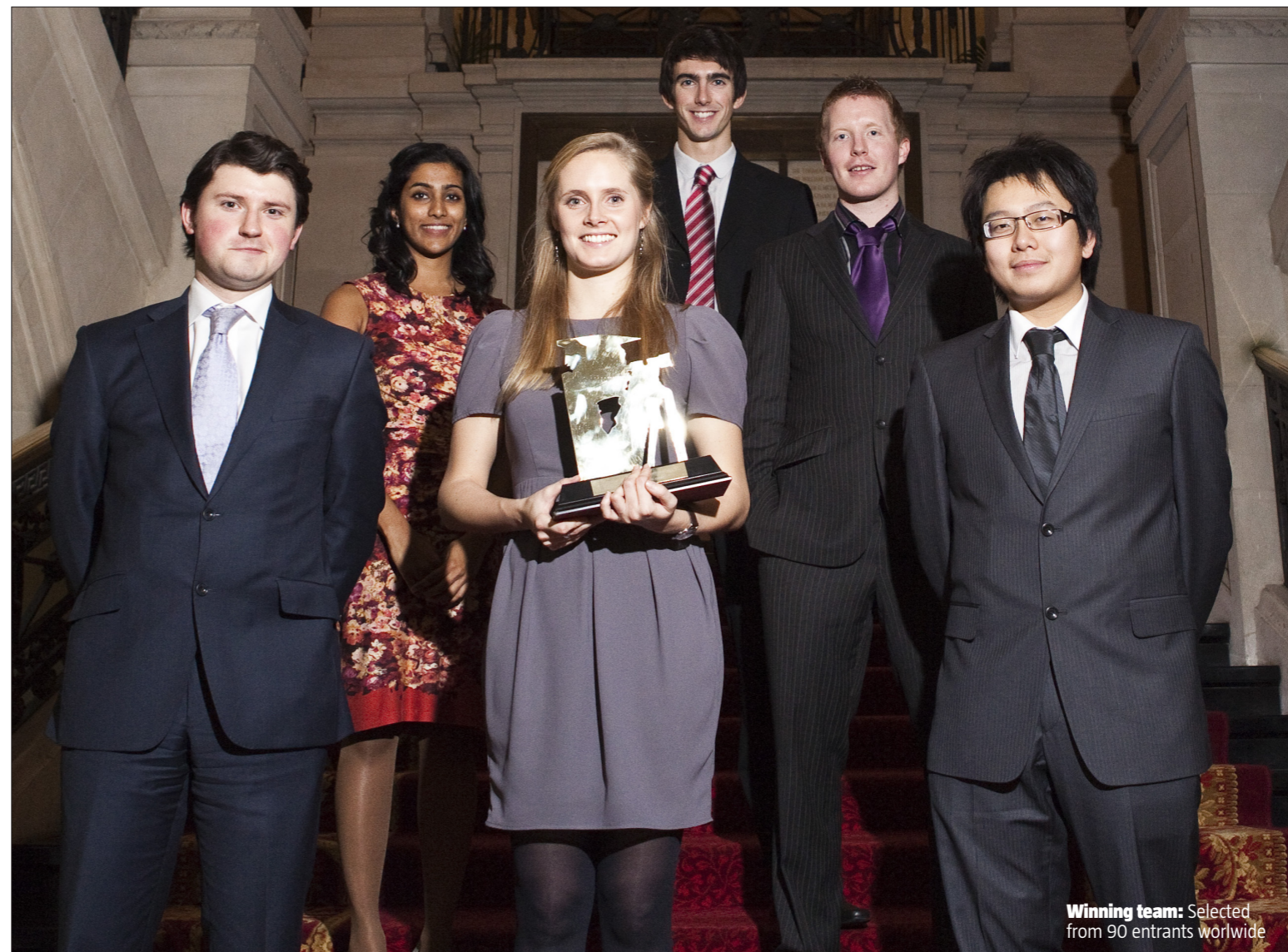
Future developments, when she has raised another £40,000, will include trebling the size of the new village school.

It all began seven years ago on a school trip to Africa when, as she helped to rebuild the dormitories of a Tanzanian orphanage, the then 16 year old sixth former realised that civil engineering was for her.

"I noted that so much we take for granted in the UK can have a life changing influence on people in developing countries," she recalls. "And civil engineering is

"So much we take for granted in the UK can have a life changing influence on people in developing countries"

Claire Gott



Winning team: Selected from 90 entrants worldwide

by far the most rewarding career that can lead that change," she says.

By the time she arrived at Southampton University, two years later, she was already fired up to help make that difference and looked around for an undergraduate volunteer organisation into which to channel her enthusiasm. She could not find one so set up her own engineering charity, the Cameroon Challenge, targeted at improving the lives of villagers in this isolated community.

And, in between gaining 2:1 MEng degree, plus representing her university at netball, rowing, lacrosse and skiing, the now graduate structural engineer with WSP has seen her dreams turn into reality.

"I wanted to see that the money we raised was genuinely all being spent on tangible improvements we could personally inspect," she says. "The greatest success

to date has been witnessing the transformation in the villagers as confidence in their own ability to effect change themselves has progressively grown."

She is also an engineering ambassador in schools, mentoring budding civil engineers.

At WSP, Gott heads up an eight strong team overseeing design coordination with the contractor of a £20M residential development in Cambridge. "I am relishing this high degree of responsibility so early in my career," she says.

She had arrived at WSP with considerable site experience having been sponsored through university by Costain. Her initiation into contracting came during her first summer holiday job. The 18 year old was driven to a nearby operational sewage treatment works which the company was extending.

She arrived as site huts were being evacuated, with engineers

knee deep in escaped sewage.

"Far from being put off I could not wait to return and be thrown in at the deep end," she jokes. "In civil engineering no two days are the same and without such challenges it would be a far less satisfying career."

"Infectiously inspiring, Claire is a passionate engineer possessing confidence without arrogance," said the judges. "She already oozes leadership and enthusiasm."

■ Graduate structural engineer, WSP Group
■ 2:1 MEng Southampton University

"Infectiously inspiring, she already oozes leadership and enthusiasm"

Judges' comments



Joint runner-up Simon Rawlins

Bridges in all shapes and sizes. These are the structures that have long convinced Simon Rawlins that civil engineering was the career for him.

As a teenager growing up in Yorkshire, he marvelled at the county's array of grand Victorian viaducts. "I was drawn to the

"An engineer who creates his own opportunities"
Judges' comments

appeal of a career that offers the potential to create such tangible and enduring structures," he says.

Little did he realise that, almost a decade later, during his first week as a graduate engineer with Amey, he would be dangling from a rope 30m down the side of one of those very structures – inspecting the vast 150 year old, 20 span Congleton Viaduct.

To do this work he had to pass a fistful of specialised rope access and bridge assessment exams.

Rawlins began his career at 16 as a site labourer with colourfully named contractor Hogg the Builder. He also spent a year studying in Sweden as part of his degree course and has canoed 100km across Scottish Highland canals – just for fun.

None of these ventures diminished his admiration for bridges. So his first role with Amey, finds him immersed in the consultant's framework agreement with Network Rail, helping to look after 45,000 bridges nationwide.

"It is already my dream job," claims the 24 year old. "I now have the experience to examine any major bridge in the UK."

Competing with his attraction to bridges, is a passion to develop his final year university project – low cost water purification equipment for developing countries. He has produced a prototype of a reflective-foil mirror to concentrate sunlight on rainwater, heating it sufficiently to turn it into clean drinking water.

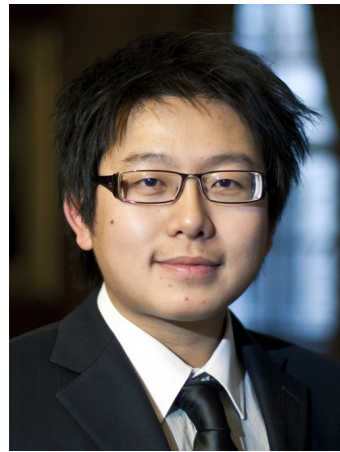
Next year he plans to return to Kenya where he trialled it while at university, to convert his ideas into a cheap, working model able to be built and operated by the local inhabitants.

"My ultimate aim is to design a machine that tracks automatically the sun's daily movement so can disinfect flowing water."

"Innovative, very committed and an engineer who creates his own opportunities," said the judges.

■ Graduate civil engineer, Amey
■ 1st class MEng Newcastle University

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Joint runner-up
Jonathan Han

The only contractor-employed finalist, Jonathan Han, is a self confessed technophile. He has never head of a site engineer's note book nor used a dumpy level.

For him it is all about ipads, tablets and cloud servers.

"I still see older engineers carrying lots of drawings around site. What a waste of time and energy," he says. "It is much easier with just an ipad which can store information and email it back to the office for instant downloading."

Not surprising then that, no sooner had he arrived at Liverpool University, Han was putting his thoughts into practice with the local ICE graduates and students committee.

He developed a dedicated website and Linked-in networking facility allowing interactive use during ICE meetings between attendees and engineers unable to be there.

Four years on he is chair, or a committee member, of four regional G&S ICE branches. He still spearheads much closer networking interaction between engineers.

As a graduate engineer with Balfour Beatty Utility Solutions, Han concentrates on overhead rail line installations and maintains his forward thinking views.

He won a place on the Royal Academy of Engineers' leadership programme and took maximum advantage of the opportunities offered by scoring top marks in 10 competitive courses.

"These gave me an excellent grounding for developing the leadership and presentation skills essential to succeed in the contracting field," he says.

Han sees his future in

WINNERS CELEBRATE

A mix of senior industry figures and graduates formed the 190 strong audience in the ICE's Great Hall to see six of the UK's brightest young engineers receive praise and prizes.

1. The awards lunch was held in the ICE's elegant Great Hall
2. ICE president Richard Coackley meets the finalists
3. Last year's winner Stuart Ross shares a joke with NCE editor Antony Oliver
4. Awards presenter BBC Breakfast's Bill Turnbull
5. Graduate of the Year Claire Gott with NCE editor Antony Oliver (left) and BBC presenter Bill Turnbull
6. Over 190 industry gathered to celebrate the awards

The 2011 NCE Graduate Awards are sponsored by:
Aecom, Amey, Arup, Atkins, BAA, Balfour Beatty, Black & Veatch, Capita Symonds, Halcrow, The Institution of Civil Engineers, Laing O'Rourke, Mott MacDonald, MWH, Parsons Brinckerhoff, Transport for London and URS Scott Wilson.



contracting – "not sitting at a desk" – and will seek overseas work as soon as practical.

He is also hungry to be chartered and aims to achieve it by 2013 – up to a year earlier than most of his contemporaries.

Not surprisingly the judges summed him up as; "an engineer with forward thinking technological ideas, and a very engaging enthusiast for his profession."

■ Graduate civil engineer
Balfour Beatty Utility Solutions
■ First class MEng Liverpool University

"An engineer with forward thinking technological ideas, and a very engaging enthusiast for his profession"

Judges' comments



Highly commended
Sivasakthy Selvakumaran

Reading her water engineer father's copies of *NCE* was a significant trigger in Sakthy Selvakumaran's decision to study civil engineering at Cambridge University. And, once there, her instant enthusiasm for one of the profession's most proactive engineering charities soon proved to her she had made an irreversible decision.

A few weeks into her course she

signed up for the well established, student-led operation, Engineers Without Borders (EWB).

A year later she was elected chair of the Cambridge division of over 200 undergraduates and, by 2009, the then 21 year old was chosen to be senior fundraising coordinator for EWB's national committee, overseeing 34 university branches with their 4500 volunteers.

"Helping to run this far-reaching charity, and charged with raising over £100,000 for its operations worldwide, was an excellent boost to developing team leading and organisational skills," she says.

Her continuing involvement with EWB helped secure her an unusually practical final year university project, designing, and then overseeing construction of, half a dozen low cost micro-hydro-electric power schemes in remote Peruvian villages.

A range of impressive university awards for her innovations funded a three month visit to her chosen communities high in the Andes mountains.

Now a 23 year old graduate with Gifford, the most exciting of her numerous work assignments has been design improvements to several of London's Dockland Light Railway bridges.

Spare time is divided between her role as an ICE ambassador, promoting engineering in schools, and spearheading development of EWB's next five year plan.

"A well travelled engineer, passionate about spreading the importance of her profession across several continents," is how the judges summed her up.

■ Graduate civil engineer
Gifford (part of Ramboll)
■ 2:1 MEng Cambridge University

"Passionate about spreading the importance of her profession"

Judges' comments



Highly commended
Paul McNulty

"I never considered any other career than engineering," says Paul McNulty recalling his formative teenage years helping at his dad's steel fabrication factory in Northern Ireland.

And justification for such single mindedness has come during the five years he has so far spent at Queen's University Belfast where he has notched up a dozen prizes, bursaries and awards for both

academic and engineering skills.

Ranging from Concrete Society and structural engineering awards, to an entrepreneurship certificate and a prize for organising the best careers fair in competition with 30 other universities, his most coveted accolades have rewarded his leadership achievements with the worldwide graduate exchange society AIESEC.

"As president of my university branch I delivered weekly presentations and attended conferences throughout Europe," he says.

Practical site training during summer holidays, plus his course's one year in industry, saw him working in Thailand, plus analysing structural loads for a swimming pool which was "suspended" half way up a posh Dubai hotel.

Having achieved a 1st class MEng last year, McNulty has chosen to stay on at Queens University to take a PhD in what, for him, is now an all-consuming research project into a flexible arch bridge system.

His self-invented technique to form skewed bridge arches, using a row of preformed flexible concrete block voussoirs linked by a plastic membrane, is a world first concept already attracting interest from several international companies.

Asked what he wants to do after gaining his PhD next year, 24 year old McNulty remains keen to go it alone and develop his invention into a marketable technique.

"I enjoy the freedom of being my own boss and it may be a few years yet before I look for a company employer," he claims.

"Entrepreneurial, ambitious and focused," summed up the judges.

■ 1st class MEng Queens University Belfast
■ Now studying for a PhD at the same university

"I enjoy the freedom of being my own boss and it may be a few years yet before I look for a company employer."

Paul McNulty



Highly commended
James Holloway

Holloway is a well respected name within civil engineering thanks to contractor Holloway Brothers, formed 130 years ago and its successor Holloway White Allom.

Now James Holloway, great great grandson of the firm's founder, is determined to make an impact on the profession, perhaps as a government-appointed engineering advisor.

At Edinburgh University he became a leading student representative for the engineering faculty on 26,000 strong undergraduate fraternity.

While on the university's engineering committee, he persuaded lecturers to provide written feedback on coursework for the entire 800 strong department. As a member of the student union council and the university senate, he spearheaded the introduction of successful undergraduate-nominated annual teaching awards for lecturers.

Holloway has been involved with the ICE for five years, and is chair of the Edinburgh and the all of Scotland graduate and student committees. One of the 24 year old Arup graduate's many committee roles is as the youngest member of Scotland's industrial advisory board – a largely engineering-led group that regularly meets peers.

"Engineers, and especially the ICE in Scotland, need better interaction at a political level to develop a closer understanding of how government works and how we can influence politicians through our considerable expertise," he asserts.

"An engineer who understands the bigger picture and is very politically aware" said the judges. "He has a passion for taking responsibility."