

Landwards ^{@IAgrE}

The professional journal for the Institution of Agricultural Engineers

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Volume 80, Number 1 - **Spring 2025**



In this issue...

- **Practice** – Innovative Commercial Member
- **People** – Delivering the Engineers of the Future
- **Profession** – Representing Early Career Engineers
- **Technical** – Agroforestry



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Dr Emma Wilcox

Chief Executive Officer of the
Society for the Environment

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This is a huge step forward to ensure high standards of professionalism and proven competence are met by those working to enhance and protect the environment across every sector.

This registration is timely and relevant for agricultural engineering and the associated technology sectors and the intention is that professionals in the industry will apply. The industry includes many different disciplines which need people to apply a professional approach and the Registered Environmental Practitioner grade is ideal for this.

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IAGrE CEO Charlie Nicklin alongside Commander Chris Chew RN signing the Armed Forces Covenant at the recent Armed Forces National Transition Event at Silverstone.

Editors Welcome



By the time you read this, the daffodils will be out (or it will be snowing!), but let's be hopeful, it's officially spring, there is more daylight than night every day. It's a time of year for renewal and looking forward.

This edition looks forward, with a thought-provoking piece looking at the needs of future engineers in People from p28.

Continuing this theme of preparing for the future, a recent Lunchtime Lecture on Agroforestry proved to be anything but a dry technical presentation on trees and farming. Dr Fabricio Camacho did a very good job of explaining the impact of climate change and how Agroforestry can help. Head to p20 for more.

Closer to home, IAgRE member Philip Pinn explains how he represents the Institutions membership with the Royal Academy of Engineering on p18. We also find out more about regenerative farmer and agricultural engineer Andrew Court in People from p34.

With an increasing recognition of the importance of Equality, Diversity and Inclusion within society and the Institution Dr Clare Butler-Ellis has kindly given an update (and a challenge to some established thinking) in Profession from page 36.

Andy Newbold

Andy Newbold Hon FIAgRE ARAgS

Editor

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Reminder: Associate Members can upgrade free to Member grade

If you are an existing Associate Member you have the option to upgrade to Member grade providing you have completed 5 or more years in a relevant career.

However, if you prefer, you can remain as an Associate member for as long as you wish.

For more information please scan this QR code or contact Alison at membership@iagre.org



Getting Behind the Armed Forces Community

The IAgRE supported the Armed Forces National Transition Event at Silverstone on 24 February 2025, where the organisation signed the armed forces covenant at an official signing ceremony.

Alongside this was the "We Are Land-based" exhibition stand provided by the Land-based Engineering Training and Education Committee (LE-TEC), where visitors could learn more about a career in the land-based industry.

As part of the LE-TEC collaboration, IAgRE were promoting recruitment, training and education for people

working within all sectors of agricultural and land-based engineering.

In its 6th year the event brought together Service Leavers, Veterans, Reservists, spouses, partners and family members to aid successful, sustainable transition and networking opportunities, recognising, demonstrating and celebrating the value of the Armed Forces.

IAgRE CEO Charlie Nicklin said, "This event provides a fantastic opportunity for service leavers to connect with employers, support



services and government agencies to explore diverse career opportunities and network with 100's from across industry and government."

Somerset engineer wins 2025 Young Engineer Award

A development engineer working for Perry of Oakley in Devon, Alex Sluijmers was recognised for his creation of Grain Sentry, an automated moisture control system for continuous flow grain driers that automates sampling and control, enabling remote operation via a PLC panel or app.

Alexander created the Grain Sentry to help address the high labour demands and human error associated with traditional grain drying. His goal was to develop an automated system that improved efficiency, accuracy, and cost savings for farmers managing large-scale grain handling.

The system is versatile, compatible with multiple crops and can be retrofitted for existing dryers. It significantly reduces labour needs and improves profitability, with

savings ranging from £21,500 to £53,500 per season, depending on drier capacity.

Launched in 2024, it is already commercially viable and uses pneumatic conveying to collect samples and employs self-teaching algorithms to regulate dryer speed, maintaining optimal moisture levels. "It's amazing to have won the Young Engineer Award," he said. "When I was first nominated, I wondered if grain handling technology would really stand out against all the big machinery here at LAMMA. But to come first is incredible.

"There has been a lot of interest and questions from visitors who have seen Grain Sentry on the stand, which has given me new ideas of where to go next."

The Young Engineer Award is



Alexander Sluijmers (R) of Somerset was crowned the winner of the 2025 LAMMA Young Engineer Award which recognises the best young engineering talent in UK agriculture.

designed to highlight innovations and contributions of young engineers working in the agricultural sector. It celebrates individuals or teams aged 16-35 who have developed a piece of agricultural machinery, equipment or technology that has significantly enhanced efficiency, profitability or sustainability in farming operations.

International Engineering Student Competition Launched

The International Commission of Agricultural and Biosystems Engineering, CIGR has just launched the first CIGR Engineering Student International Competition.

The competition offers undergraduate students in agricultural, biological, and biosystems engineering a chance to showcase their innovative ideas and compete on an international stage.

About the Competition:

The competition is open to undergraduate students currently enrolled in relevant science or engineering programs. Participants can submit information on a project they have completed during their studies through a one-page description and a three-minute video presentation. Additional documents, including proof of enrolment and a letter of recommendation, are also required.

The deadline for submissions is; **September 15, 2025, at 11:00 PM ET (New York time).**

Categories and Prizes:

The competition includes seven technical areas:

- Land and Water Management
- Structures and Environment
- Plant Production
- Energy in Agriculture
- System Management
- Bioprocesses
- Information Technology

Winners in each category will receive certificates and cash prizes:

- Gold: \$500
- Silver: \$300
- Bronze: \$200

The overall Platinum winner will receive full funding to attend the 2026 CIGR World Congress in Turin, Italy, covering travel, accommodation, and registration.

Why Participate?

This competition offers students recognition for their work, visibility within the field, and a chance to connect with the global biosystems engineering community.

More details, submission requirements, and deadlines can be found on the CIGR Engineering Student International Competition website, scan this code:



Electronics on Farm Machinery – You Cannot be Serious – a letter from Richard Danby FIAgrE

I was delighted to recently receive my 50 year IAgRE Membership Certificate from Mark Moore. Mark asked if I would like to pen a few words on any memorable experiences over the years.

My career CV extends to all of two lines:

- 1974 – joined RDS Agricultural Ltd (as it was then called).
- 2023 – retired from RDS Technology Ltd*

How did I get into this?

As a Silsoe College student, I was driving a combine in the summer holidays for a Herefordshire farmer, when the talk of the village was another local farmer had an ‘electronic magic box’ on his new Lely combine. So I went to investigate. The ‘magic box’ turned out to be a primitive form of an early RDS grain loss monitor – housed in a wooden box! The RDS contact details were on the back, so I made the call, and joined RDS founder, Jim Brown, the day after I left Silsoe. The business at that time was based in Jim’s house and in a large chicken shed.

In those days, it was an uphill battle to grow the business. “Electronics on farm machinery, you must be joking, it will never catch on” was a common riposte. But it did ‘catch on’, and some!

Reliability challenge

One of the challenges in this business is to provide reliability in a very challenging environment. “military specification at farmers’ prices” was our motto. This is even more so when machine functionality is totally dependent on the electronic control systems. Fortunately, there are now solid environmental standards in place, notably ISO/TC23/SC 19. Back in the day, we had to make it up as we went along.

Memorable experiences: too many to list; some very funny, some very stressful, many not suitable for Landwards’ readership!

I suppose the overriding memories, are having been part of the biggest technological change in agricultural engineering since the tractor replaced the horse.

I look back at what the agricultural electronics industry was like in the mid 70’s when I first became involved in it.

The first RDS product was the grain loss monitor, the company is still sometimes referred to as the grain loss monitor company, even though it’s around 30 years since we last made one. The system used two plastic tubes full of paraffin of all things. Possibly a strange solution, but a very effective one for filtering out grain impacts from straw, chaff etc. Paraffin was not readily available in many overseas markets. Apparently CocaCola and even petrol did the job!

In the very early days, every new product required a new circuit design, new PCB and new fabricated metal box for it to go in.

The real game-changer was the advent of microprocessors and microcontrollers. This enabled a common circuit board to be

applied to many different functional requirements. One of the headaches at that time was the cost and availability of memory, particularly EPROMs. In the early 80s we were having to source direct from the USA, around \$150 for a 2K EPROM, that amount of memory today would cost less than 1/10th cent.

With more commonality of hardware, we were able to have more commonality of boxes, and tool up for injection moulded enclosures. I well remember discussing the form and function of a future range with colleagues over a beer in a Novotel bar after a long day at the SIMA show. We concluded that the hotel ashtray would make a good frontal elevation, so I traced round it. That became the shape of the ‘UDM’ range, and we went on to make over a quarter of a million of them. It’s still in production today albeit in an updated format.

Reflecting on the SIMA show, there was the occasion when our entire stand got stolen. We had shipped out all the display units, instruments, graphics etc on pallets. The whole lot, still on the pallets, got nicked! It was the year of very lax security where no end of stuff went AWOL during the build-up period. In our case we managed to cobble together a partial set of gear at the factory, load up two estate cars and off we went.

From humble beginnings working from a chicken shed, the company now operates from a state of the art, custom built 25,000 sq ft offices and factory.

Happy days!
Richard Danby FIAgrE
Retired Managing Director of RDS Technology (now Topcon Positioning Group)

*By then RDS had become part of the Digistar company, and is now a lead player within the Topcon Positioning Group. RDS is retained as a brand name.



New Review of Safety Standards and Emerging Technologies

In the UK machinery safety is ensured through two key regulations: the Supply of Machinery (Safety) Regulations 2008 (SMSR) and the Provision and Use of Work Equipment Regulations 1998 (PUWER).

The Health and Safety Executive (HSE) commissioned a study to gain understanding of whether existing machinery design and safety standards and guidance addressed the needs of UK industry in the application of new and emerging technologies such as, for example, autonomous systems and artificial intelligence (AI).

The study identified and reviewed a selection of relevant machinery safety and design standards to determine the extent of coverage of new and emerging technology.

HSE then undertook workshops to elicit opinions of key stakeholders regarding their experience of standards and guidance when working with new and emerging technologies.

The study identified some perceived gaps in existing standards and guidance documents including:

- lack of end-user guidance for autonomous systems in dynamic environments.
- missing specific standards for

integrating AI into machinery safety.

- no competency checks in existing standards for personnel using new and emerging technologies.
- lack of guidance on safe human interaction with autonomous systems such as cobots.
- absence of specific guidance on applying existing CS standards to machinery.

The full report can be downloaded if you scan the QR code below:



From the CEO's desk



Well I'm glad
LAMMA is now
an indoor show

*I'm definitely getting
nesh in my old age.
The icy wind seems to
cut straight through
you now, roll on
spring!*

There seemed to be some nervousness around potential attendance because of the challenges around machinery sales last year, well I've never seen the show so busy! LAMMA is certainly the show that Smithfield (for those of us that remember it) should have become over the last couple of decades. Attendees were greeted with a fine array of machinery, with only a couple of noticeable omissions from the mainstream tractor brands.

My attendance was in a formal capacity where I was honoured to judge the Machine of the Year, the Young Engineer award and the

Overall Best Innovation in the Show. The judging is of course done before the show and the main category winners know they've won to allow them to market the fact on their stands. The IAgRE Ivel Award for the Overall Best Innovation is announced on the day, this went to Knight Farm Machinery for their Smart Inject system. This is the second year in a row Knight have taken the overall prize, its great to see innovation alive and kicking, especially with a British manufacturer. Equally the Young Engineer award was won by Alex Sluijmers of Perry's for his Grain Sentry dryer monitoring device; another UK engineered product. We had some fantastic entries this year, and of course you have to be in it to win it!

Armed Forces Covenant

You may have seen in our eNews that we have signed the Armed Forces Covenant, along with the AEA and BAGMA. We all believe it's really important to support veterans to transition into civilian life, especially as there are so many transferable skills. From an engineering perspective, military technicians and engineers are used to working on heavy duty off road vehicles and can find the transition to agricultural machinery very easy; a couple of major manufacturers are offering military hiring programmes to take advantage of this.

IAgRE, the AEA and BAGMA attended the National Transition Event with a "We are Land-based" stand on the 24th February at the Silverstone Racing circuit, where amongst other disciplines agriculture was showcased.

Licence to operate

On the operational front we have two extra notable events early this year, our 5 year license renewals for the Engineering Council and also for the Society for the Environment. These events are where we are audited in detail to ensure that we have satisfactory governance and robust procedures in place to handle the responsibility of professional registration (ie EngTech, CEng, CEnv, etc.). They also review our

ability to carry out accreditation and approval of qualifications, such as the land-based service engineer apprenticeships and engineering degrees, ensuring the courses are sufficiently high quality. We have completed the review for the Society for the Environment and I'm pleased to say it went well and that our license will be renewed in due course. I'd like to pass on my personal thanks to Malcolm

**We have been
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membership
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and people
pursuing
professional
registration**

Carr-West, Chris Watts and Alastair Taylor for their input. This means that we can carry on awarding professional environmental registration, so if its something you're interested in, then please get in touch. We're now busy preparing for the Engineering Council review planned for mid-April.

We have been busy on the membership front and it's been great to see an influx of new members and people pursuing professional registration. I'd like to personally thank you for joining and hope you find the Institutions networking and content of interest.

Finally, many thanks for those that have paid their 2025 subscriptions, we hope you continue to enjoy the numerous benefits of membership.

Charlie Nicklin CEO CEng FIAgrE
ceo@iagre.org



CEO Charlie Nicklin with the Knight Farm Machinery team receiving the IAgRE Ivel Award at LAMMA in January 2025



Knights Smart-Inject system injects neat or semi-dilute plant protection products for precision spraying

President's Musings

Mark Moore



The Best Job in the World

The Christmas and New Year celebrations seem an awfully long time ago now, but I hope you enjoyed the festive season and were able to spend time with family and friends.

I caught up with old school friends over the holidays and we discussed many things including their work and what they had accomplished within their respective industries. It seems 2024 was a tough year for other sectors as well as ours, but we were all looking forwards with optimism to 2025.

2025 represents a milestone in my agricultural engineering career because it will be my thirty fifth year with AGCO.

On reflection

This combination of meeting old school friends and a career milestone caused me to reminisce about my time as an agricultural engineer, the wonderful experiences I have had, and my contributions to farming and society. Looking back, I think there's several things that stand out to make a career in agricultural engineering very exciting, interesting and rewarding.

1. Feed the world

The first and probably the most important is the role we have in providing farmers with the means to produce food to feed a growing population. According to the Universal Declaration of Human Right (UDHR) Article 25(1), everyone has the right to food. The contribution of agricultural engineers to food security is essential if governments are going to ensure their citizens have access to an affordable and



reliable food supply. Food security is also linked to global stability and prosperity. I am certainly proud of my part in contributing to human rights by helping global food security, stability and prosperity. What more honourable cause could agricultural engineers be part of?

2. Great people

The second reason is the wonderful people involved in our sector. It's true what that say – people make a difference – and I think the IAgRE is a fabulous example where likeminded people want to come together to discuss and solve issues in a productive and inclusive environment. This team spirit culture exists everywhere in our sector. During my career I have had the pleasure to work with many people

all over the world and I have never encountered resistance to explore how to improve farming practices and food production methods.

I have always received a warm welcome, even in places that many may regard as remote such as Magnitogorsk, Russia, Chapadao do Sul, Brazil, or Demerara, Guyana. Having spent six years travelling around Africa I have encountered nothing but enthusiasm from communities once they learnt I am an agricultural engineer. I think we inspire a feeling in people that we are there to help feed them and their nations. There's nothing more rewarding than meeting people and leaving them with new knowledge and smiles on their faces.

3. Innovation

The high level of innovation and technology that exists in agriculture today. Anyone that thinks farming and agricultural engineering is basic and low-tech is stuck in the past. Over my career I have been involved in a revolution in agricultural innovation and technology. I was lucky to be at the very start of precision farming when I was given the task to manage the development of the Massey Ferguson yield mapping system, which grew into the first precision farming systems that provide farmers with the ability to automatically vary crop inputs within a field to accommodate different levels of fertility. I was also involved in the development of autosteering systems when AGCO acquired the track tractor business from Caterpillar. My involvement in agricultural innovation has continued over my entire career, which has made my job very hi-tech and interesting.

Agricultural engineers must continue to innovate because there are many technologies like robotics and artificial intelligence that need to be developed and applied to food production. Many of these technologies are referenced in government policies to enable food production to be more sustainable. Don't let anyone underestimate

the importance of innovation and technology to future food production.

4. Working with nature

We are working with a dynamic biological system called nature. This makes our work diverse and challenging, but also interesting and rewarding.

Over my career no two days have been the same as requirements are constantly evolving to accommodate the different regional impacts of pest and diseases, soil types, fertility and structure, water availability, climate change, and government policies. These factors must be managed in a balanced way, so food production remains secure and profitable for the entire food chain. How much more interesting and rewarding could a job be?

The best job in the world

I hope you understand why I can claim to have the best job in the world?

As an agricultural engineer I am contributing to a fundamental human right, i.e. food, while helping ensure global stability and prosperity. The people that I serve are very open and enthusiastic to be working with me and welcome my inputs and ideas, even in places that others may regard as remote. I have always been able to innovate and have pioneered technology such as precision farming and telemetry.

The necessity to innovate remains vital as everyone looks to us for solutions to help meet the challenges around profitable sustainable food production. And finally, the variety within my job is enormous when I consider the application of mechanisation and technology to food production and how it influences nature. I would encourage anyone to become an agricultural engineer – you won't find a more exciting, interesting and rewarding career anywhere.

Biosystems Engineering, owned by the IAgRE, and the official scientific journal of EurAgEng, is published monthly with occasional special issues.

To view the full article list of the latest edition and to find out more about depth and breadth of articles accepted for publication scan the QR code.



Biosystems Engineering

Volume 247, November 2024,
Pages 257-266

Effect of slurry separation and air-plasma treatment on NH3 and VOC emissions from field applied biogas digestate and pig slurry to grassland.

Johanna Pedersen, Rodrigo Labouriau and Anders Feilberg

Aarhus University, Department of Biological and Chemical Engineering and department of Mathematics, Aarhus, Denmark

Highlights

- Separation with decanter centrifuge reduced slurry DM by 46–54%
- Treatment with plasma treated air lowered slurry pH by 1.6–1.8 units.
- Separation of slurry decreased cumulative NH3 emissions by 55–74%.

- Separation + treatment with plasma treated air reduced NH3 emission by 70–89%.
- All slurry types investigated had low VOC fluxes after application.

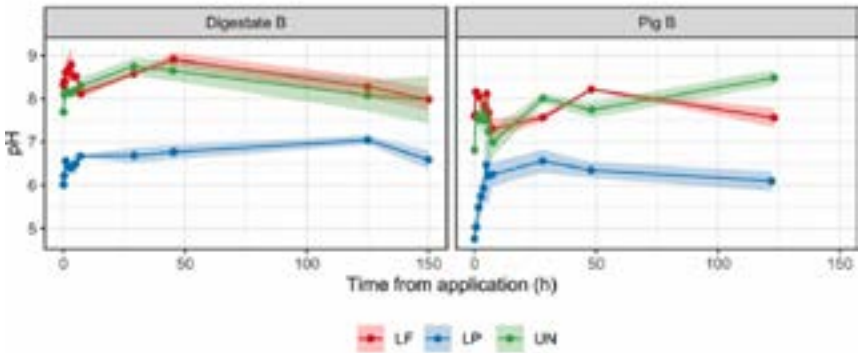
Different technologies can be utilised to mitigate environmentally harmful ammonia (NH3) emissions after field application of liquid animal manure (slurry). After a solid-liquid separation, air-plasma technology can acidify the liquid fraction of slurry/digestate and enrich its nutrient value by increasing the amount of inorganic nitrogen. Pig slurry and digestate from pig slurry were applied with and without solid separation and plasma treatment. Emissions were measured with a system of wind tunnels and a cavity ring-down spectrometer for NH3 concentration measurements. Ammonia emissions were highest from the untreated slurry (UN) and the lowest cumulative NH3

emissions were observed from the liquid fraction treated with plasma-treated air (LP). The slurry separation decreased dry matter by 46–54% and resulted in a rapid decrease in slurry exposed surface area after application, presumably due to high infiltration.

This work demonstrated how treating slurry with plasma treated air can mitigate ammonia emissions after field application. The presented findings can be used for additional technology development and verification. Future research efforts should clarify what level of solid-liquid separation is needed before treating the liquid fraction with plasma treated air, to assess whether the additional ammonia reductions are profitable. Furthermore, the findings can be used by decision makers and advisory bodies to assess the compliancy of this slurry application technology with applicable environmental regulations.

Table 4
Cumulative NH₃ emission (% of applied TAN) 160 h after application of raw (UN), separated (LF), and separated treated with plasma-treated air (LP) digestate or pig slurry. 95% confidence interval in parenthesis and results of statistical test thereafter (n = 3).

Trial	NH ₃ emission (% of TAN)		
	UN	LF	LP
Digested A	51.2 (49.2–53.3) c	18.0 (15.9–20.0) b	13.2 (11.2–15.3) a
Digested B	44.9 (43.1–46.7) c	11.8 (10.0–13.5) b	5.1 (3.3–6.9) a
Pig A	16.7 (16.0–20.6) b	7.9 (5.9–9.8) a	4.9 (2.9–6.8) a
Pig B	17.7 (14.8–20.7) b	6.0 (5.1–10.9) a	5.3 (2.4–8.3) a

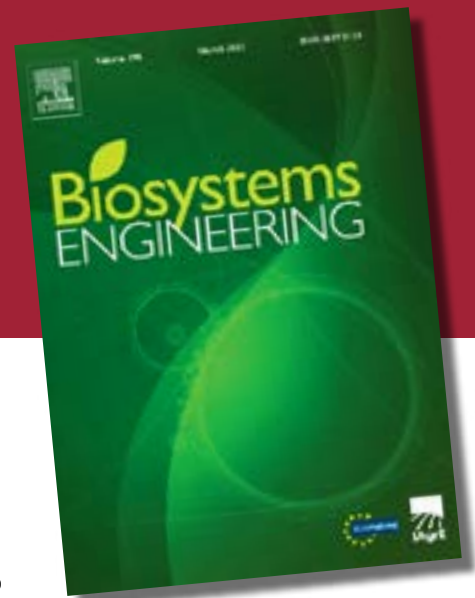


Top: Table showing the different in total NH₃ emissions from pig slurry (Pig A, B) and digestate from pig slurry (Digestate A, B) without treatment (untreated, UN), applied as the liquid fraction of the slurry (LF), or the liquid fraction of slurry treated with plasma treatment (LP). **Bottom:** Slurry surface pH after application of the same three treatments (UN, LF and LP) to Digestate B and Pig B. The table and plot show lower emissions and lower pH effect with the LP treatment.

Reduced subscriptions are available to IAgRE members. Scan the QR code for details of the preferential rates for both paper and electronic versions.



Over the past three months (November 2024 – January 2025), Biosystems Engineering published 52 articles, including 1 review articles. The following three articles, one from each volume, have been chosen to illustrate the diversity of work in the journal.



Biosystems Engineering

Volume 248, December 2024,
Pages 308-320

Evaluation of water distribution and uniformity of sprinkler irrigation based on harmonic analysis and finite element method

Xiaofang Chen, Rui Chen, Jian Wang, and Hong Li

Research Centre of Fluid Machinery Engineering and Technology, Jiangsu University, Zhenjiang, China

Key Laboratory of Fluid Machinery and Engineering, Xihua University, Chengdu, China

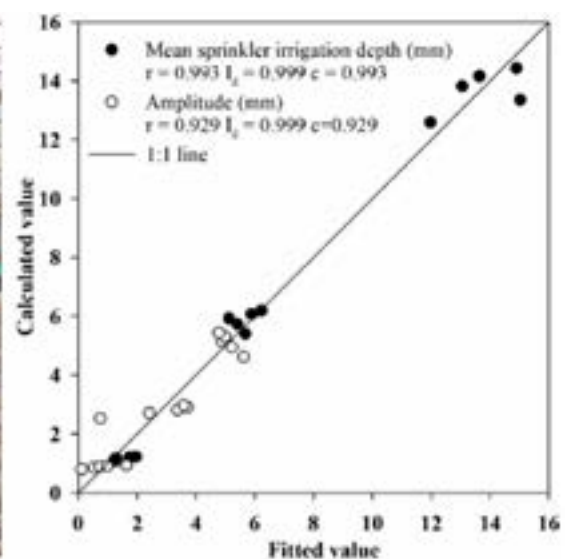
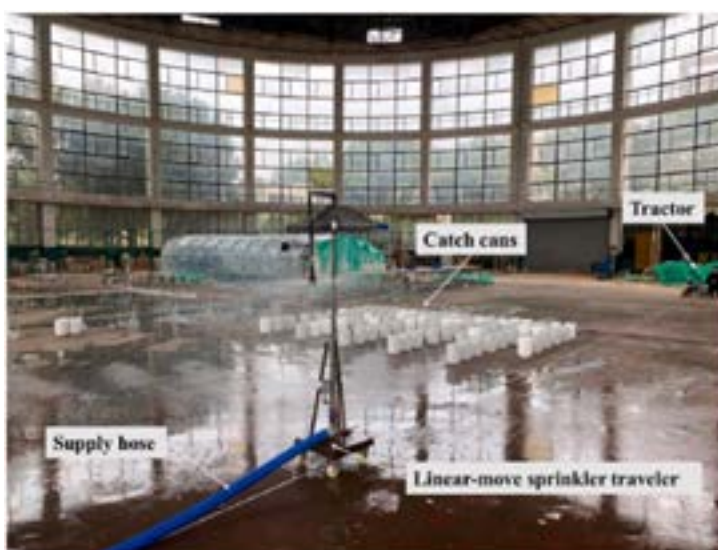
Highlights

- The harmonic analysis was used to describe sprinkler water distribution.
- Weighting coefficient can predict the uniformity of sprinkler combinations.

- Nozzle diameter exhibit highly significant effects on sprinkler field uniformity.

A model that describes the water distribution of a single fixed spray plate sprinkler (FSPS) based on the harmonic analysis was proposed. The relationship between the pressure head, nozzle diameter, mean sprinkler irrigation depth, and amplitude was established. An analytical model for evaluating the sprinkler irrigation uniformity. In conjunction with the sprinkler irrigation system's finite element hydraulic calculation model, the impact of the pipe diameter, sprinkler number, and sprinkler spacing on system energy loss, pressure head, and sprinkler irrigation system uniformity was assessed against a test platform. Under different combinations of nozzle, pressure head, and sprinkler spacings, the measured, derived, and calculated values of 54 sprinkler irrigation uniformity combinations were consistent. The uniformity of irrigation under a linear-move sprinkler system was

significantly affected by nozzle diameter, pipe diameter, sprinkler spacing, and inlet pressure head. The number of sprinklers also had a significant impact. The number of sprinklers, spacing, nozzle diameter, and inlet pressure head changed the energy loss in the pipes, which in turn changed the water distribution of each individual sprinkler and affected the field uniformity. The findings of this study could serve as a theoretical foundation for the proper design of linear-move sprinkler irrigation systems.



Left: Photograph of the experimental test plot used for validating the proposed model of linear-move water distribution.

Right: Fitted (observed) vs modelled predictions of the amplitude of water distribution and the mean irrigation depth from various combinations of working pressures and nozzle diameters.

Biosystems Engineering

Volume 249, January 2025,
Pages 28–40

Vacuum suction end-effector development for robotic harvesters of fresh market apples

W. Hua, W. Zhang, Z. Zhang, X. Liu, M. Huang, C. Igathinathane, S. Vougioukas, C. K. Saha, N.S. Mustafa, D. Saber Salama, Y. Zhang

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Fargo, ND, USA

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Bangladesh Agricultural University,
Mymensingh, Bangladesh

National Research Centre, Egypt

Highlights

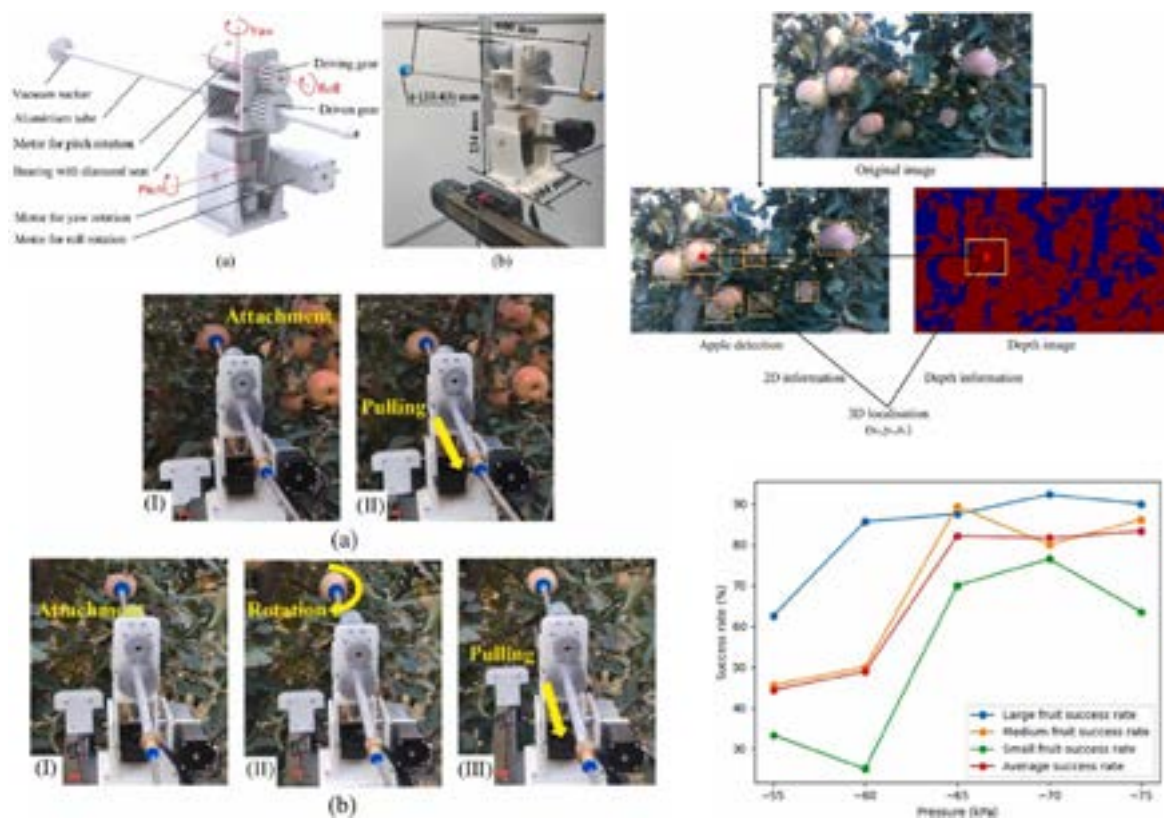
- A 3R-DoF end-effector for apple-picking robot was developed.
- Apple's equatorial region recommended for suction.
- -65 kPa pressure with a 33 mm diameter cup is recommended for use.
- Rotation followed by retraction is recommended apple detachment.

Timely harvesting of fresh apples faces challenges due to labour shortage, and the modern approach of robotic harvesting has the potential to address this issue. The prevailing process of apple harvest robotics is not meeting these demands, mainly due to the lack of a suitable manipulator. Existing manipulators are associated with low picking rates, fruit damage, and high costs. To address this, a prototype apple harvesting manipulator was developed, which includes a vacuum three-revolute-degrees-of-freedom end-effector, a three-prismatic-degrees-of-freedom Cartesian system, an RGB-D camera, and system integration. The vision positioning system and controller were designed to realise precise positioning

and detachment of the manipulator.

The major contribution of the current study is the three-revolute-degrees-of-freedom vacuum suction end-effector, whose performance evaluation was conducted in a commercial apple orchard. Experimental results showed that a 33 mm diameter suction cup achieved superior performance over a 43 mm cup. The method of harvesting by rotation followed by pull proved to be more effective than only pulling for apple detachment. The results indicated that the apple's equatorial region was the optimal area for suction. With the integrated new manipulator, the developed apple harvest robot has been demonstrated to have the potential to realise robotic apple harvesting.

Future work will focus on integrating a far-near vision system and orientation estimation with additional cameras (>1) for improved detection accuracy, as well as adding maturity level sensors for selective harvesting. Furthermore, the manipulator approach and detachment motions will be jointly optimised via hardware and software integration to increase the detachment rate of high-quality apples.



Top Left: Detailed design of the end-effector with from the 3D modelled view (a) and the actual assembled end-effector (b),

Top Right: The apple detection, localisation, and depth information process based on image analysis with YOLOv5,

Bottom Left: the end-effector in operation using either (a) a direct pulling detachment approach or (b) a rotation + pulling detachment approach, and Bottom.

Right: Relationship between pressure strength of the suction cup and the successful picking rates of apples of different sizes (using approach (b) for harvesting).

News



New Support for Women in Wheat Research

- Funding package will underwrite training, mentoring and diversity initiatives

A new initiative to improve female representation in wheat research has secured funding from the UKRI Biotechnology and Biological Sciences Research Council (BBSRC). Empowering the UK wheat community to achieve gender parity is led by the John Innes Centre (JIC), together with Rothamsted Research and The Sainsbury Laboratory (TSL).

This 12-month project builds on the success of the Rosalind Franklin Women in Wheat Champions programme, led by Professor Diane Saunders at JIC, which was established to address the severe lack of female representation in wheat research in academia.

The new funding enables this highly successful development programme to be cascaded across organisations within one of the largest coordinated wheat research programmes in the UK, the Delivering Sustainable Wheat

(DSW) Strategic Programme. Professor Saunders commented: "It is fantastic to see this new investment. Wheat is a critical staple crop worldwide and protecting wheat yields is crucial for global food security and economic stability. It is only by cultivating a diverse research community that we can truly harness the diversity in scientific thinking needed to achieve a wheat secure future."

Dr Kim Hammond-Kosack, a research discovery fellow based at Rothamsted and leader of the Delivering Resistance element of the DSW programme, said "We have tremendous talent emerging in the next cohort of female wheat early career researchers and PhD students across multiple UK institutes and universities. Now is the time to ensure we give this next generation the very best chance of career progression into senior positions and independence within wheat research. Giving voices to diversity is the only way to achieve real innovation in this sector."

Female wheat researchers across the UK will benefit from digitised access to the career development training courses previously developed by JIC/TSL and a highly successful one-to-one mentoring programme.

Diverse minds for a diverse world: the case for Neurodiversity in science

At the John Innes Centre, diversity is at their heart. Just as they celebrate and leverage biodiversity in their research to solve global challenges in plant and microbial science, they recognise that Neurodiversity – differences in how people think, process, and interact with the world – is equally vital to success.

Neurodivergent individuals bring exceptional strengths in areas like creativity, innovation, pattern recognition, and attention to detail, skills that are essential to advancing plant science. Research indicates that these strengths are not only valuable but disproportionately present in scientific workplaces.

A 2024 study by ARC (Advance Research Clusters) and the University of the West of Scotland found that 48.1% of lab workers identify as Neurodivergent, compared to 20% globally.

Notably, 25.5% of these individuals are Autistic, 25 times the UK average of 1%. These figures highlight the unique connection between Neurodiversity and scientific innovation.

Neurodiversity and science: a natural connection

Science thrives on diverse ways of thinking. Plant research, for example, demands creativity to develop groundbreaking ideas, precision to conduct experiments accurately, and an ability to see patterns where others might see chaos. Neurodivergent individuals often excel in these areas, making their contributions indispensable.



EurAgEng

LAND.TECHNIK AgEng 2025

*Hand in your abstract
by March 31, 2025!*

The 82nd International Conference on Agricultural Engineering, LAND.TECHNIK – AgEng 2025 will continue to be the opening event of the Agritechnica trade fair and will be held in Hannover, Germany on November 7th and 8th, prior to AGRITECHNICA, the world's leading fair on agricultural machinery. The conference is the meeting point for the international community of agricultural engineers. The number of participants from agricultural engineering industry and research grew up to 1000 in 2023 and visitors from 30 nations were counted.

The programme committee, the VDI Max Eyth Society for Agricultural Engineering and the European Society of Agricultural Engineers (EurAgEng) invite you to present your current technical solutions from research and product development.

Please consider the Call for Papers will close March 31st, 2025.

Save the date - 8th Agritech Day by Axema

15 October 2025
Clermont-Ferrand, France

AGRITECH DAY brings together experts from the agricultural equipment industry, academics and international researchers to share their know-how on innovations in agricultural machinery. It's the perfect opportunity to develop your professional network.

Programme:

October 14 (afternoon):

Visit to an industrial site (limited number of places).

October 15:

Day of conferences followed by a social event.

October 16 (morning):

Visit to a test platform (limited number of places).



Important dates:

April 30, 2025:

End of call for papers

June 2, 2025:

Registration opening

October 15, 2025:

AGRITECH DAY

Call for conference hosts

EurAgEng has a series of biennial AgEng international academic conferences, the next of which will be in Torino, Italy in June 2026 alongside the CIGR World Congress. The Secretariat and Executive Board would welcome applications from suitable national and international bodies to host future AgEng conferences.

In the first instance, feel free to email the Secretary General Andy Newbold

secgen@eurageng.eu

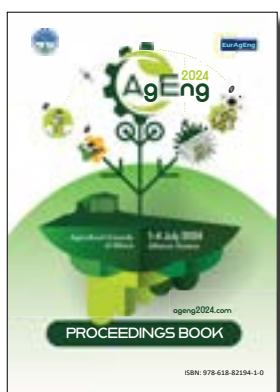
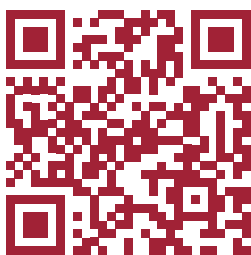
for an initial discussion.



The latest European
Agricultural Engineering News

AGEng2024 proceedings

Please note that the full 1205 page AgEng 2024 inc ISBN number is now available to read on the EurAgEng website. Scan this QR code.



Field Robot Event 2025, Milano, Italy

The Field Robot Event 2025 (FRE2025) will take place in Milano, Italy, from June 9 to June 12, 2025, at Agriturismo da Pippo. This competition is open to universities worldwide, offering a unique opportunity to push the boundaries of autonomous farming and agricultural robotics.



Competition Challenges FRE2025:

- **Task 1:** Autonomous Maize Field Navigation
- **Task 2:** Autonomous Maize Field Navigation with Cobs Detection
- **Task 3:** Fruit Mapping
- **Task 4:** Bioluminescent Fungi Discovery
- **Task 5:** Freestyle

Want to compete?

Registration opened on March 3, 2025, and closes on April 25, 2025. The registration fee per team will be announced at the opening of registration.

Seeking sponsorship?

New teams can apply for sponsorship to support their participation, with funding up to **€1500 per team** by CLAAS-Stiftung.

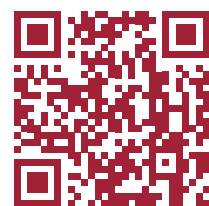


Have questions about the rules?

Join our FRE2025 Discord server now to get updates, connect with teams, and participate in the Q&A discussion:



Event Updates



Find out more about EurAgEng



Profession



Phil Pinn has a Masters of Mechanical Engineering from Harper Adams University, is a Helmut Claas Foundation Scholar and an Associate Member of the Institution of Agricultural Engineers.



Representing Early Career Engineers

Philip Pinn attended the Royal Academy of Engineering's annual Professional Engineering Committee (PEC) meeting in person at Prince Philip House on the 22nd of January. He reports back on the experience and his role representing early career members of IAgRE.

The day started with a journey to Pall Mall and a cup of coffee & bacon roll on arrival but quickly launched into an introductory address and icebreaker activities.

A framework for D & I

First on the agenda was discussing further development of a framework

for engineering institutions to self-assess diversity & inclusion, headed by the CEO of IOM3. Next was an overview of and update on the Academy's Engineers 2030 policy project – which skills and attributes will be needed by the engineers of the near future. The main report is set to be finalised and released in the next few months.

Ethics

After a short break, the committee broached the main topic of the day – engineering ethics, the social responsibility of professional engineers, and the role of professional registration as a guarantee of this responsibility.



The 2024 Ipsos Veracity Index revealed engineering as the second most trustworthy profession to the UK public

The main topic of the day – engineering ethics, the social responsibility of professional engineers, and the role of professional registration as a guarantee of this responsibility.

The 2024 Ipsos Veracity Index revealed engineering as the second most trustworthy profession to the UK public, after medical nursing. The Academy and PEC aim to consolidate this, so next up came a group sorting exercise to identify low-input, high-reward opportunities from a longlist of 28 actions to be developed over the coming years.

When in town

This made it time for a quick working lunch and a short tour of the local area from Claire Donovan, the organiser of the day. Highlights were the old Prussian embassy at the opposite end of Carlton Terrace and the construction details of the façade of the Athenaeum.

Back in the room to discuss more

on ethics, contextualised by presentations from the Chartered Association of Building Engineers on the Grenfell Tower disaster and the British Computer Society on the Post Office Horizon scandal.

Thinking caps on

Following this, various ideas were floated, including a code of conduct for engineering managers and potential periodic reviewing of a proportion of professional registrants. Both were identified as difficult in industrial sectors not led by engineering, such as agriculture.

BS 8670 was noted as an effective model for ensuring core competencies of anyone working on building safety, to potentially be used to inform a cross-industry guarantee

of competency. The Engineering Council's Registration Review is upcoming, and many of these points will be discussed as part of that process.

Early career representation

My group of early career representatives meet quarterly, mainly online, so this was my first time meeting some of them in person and joining in effective discussion for the future of our profession. A packed agenda means the PEC meetings are mainly informative, but the splinter Early Careers group is a little more hands-on with volunteering and small projects being undertaken between meetings. Watch this space for future updates on things I am involved with!



Technical

Lunchtime
Lecture

Agroforestry: A Multi-Functional, Three-Dimensional Approach

In an engaging lunchtime lecture this February, Dr Fabricio Camacho-Céspedes Ph.D. joined Institution members live from Monteverde, Costa Rica. Despite the 7am local time, Dr Camacho was eager to share his insights on agroforestry's potential to transform agricultural landscapes worldwide.

From Personal Experience to Global Advocacy

Dr Camacho grew up on an agroforestry farm in Costa Rica, raising coffee and beef cattle. In

the late 1980s, government policy encouraged farmers to remove trees, a move that led to his family's bankruptcy and forced relocation to the city. This experience inspired him to study how trees can enhance farming systems.

"Fast forward 25 years," he said, "and here I am, promoting agroforestry as a powerful tool to transform agricultural landscapes into productive agro-ecosystems."



Agroforestry is a powerful tool to transform agricultural landscapes into productive agro-ecosystems

What is Agroforestry?

Agroforestry is the science and practice of integrating trees with crops and livestock to sustainably maximise the economic and environmental performance of agricultural systems. By mimicking natural forest ecosystems, agroforestry reduces the need for external inputs through processes such as nutrient cycling. This approach enhances farm resilience, generates stable cashflows, and delivers critical ecosystem services, such as carbon storage and biodiversity conservation.

A Global Movement with Local Relevance

While many of Dr Camacho's examples stem from tropical agriculture, agroforestry is gaining momentum worldwide. In the UK, there is increasing interest in combining tree planting with arable and livestock farming. Traditional practices, such as hedgerows and silvopasture (integrating trees with grazing), already mirror agroforestry principles and demonstrate its potential for improving soil health, biodiversity, and farm productivity.

Agroforestry is not just about boosting yields—it also provides wider environmental benefits, from flood mitigation to enhancing wildlife habitats. For UK agricultural engineers, this integrated approach presents practical solutions for balancing productivity with ecological responsibility.

The Urgent Need for Change

Dr Camacho highlighted the global ecological crisis, stating, "We are, in essence, borrowing a lot of the natural resources and energy from future generations."

He illustrated this point with a striking local example. In his region of Costa Rica, forest cover fell from 70% after World War II to just 26% by the 1980s. This deforestation, combined with a 1.5°C rise in average temperature, has brought new disease vectors, displaced native species, and disrupted ecological processes.

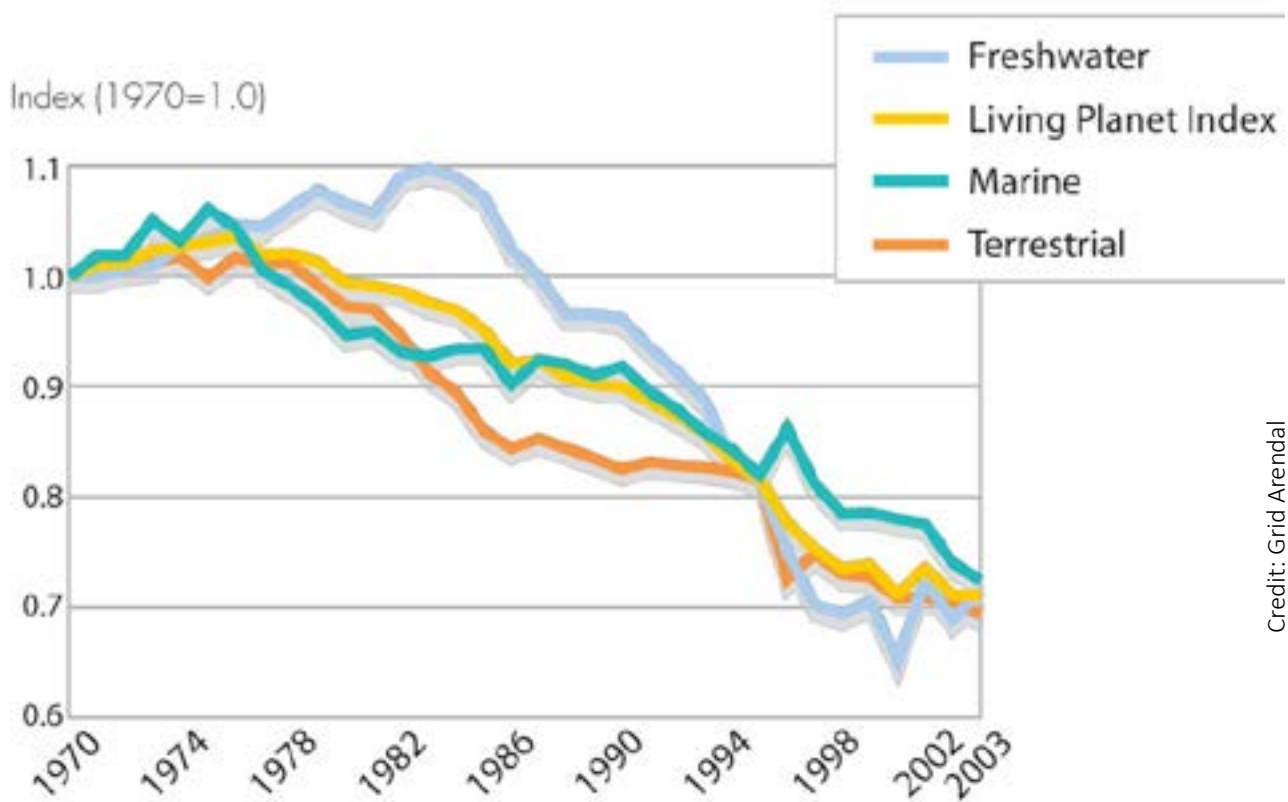
He linked these changes to broader environmental issues familiar to UK audiences, such as the dramatic decline in insect populations. “We are making the world comfortable for humans, but increasingly uninhabitable for other organisms,” he warned.

Agroforestry as a Nature-Based Solution

According to Dr Camacho, one of the most effective ways to address the environmental challenges facing the UK and beyond is by transforming how we produce food. Agroforestry represents a viable nature-based solution to mitigate climate change and restore ecosystems while maintaining agricultural output. “We need a paradigm shift centred on environmental stewardship, intelligence, and justice,” he urged, underscoring the need for immediate action.

Traditional practices, such as hedgerows and silvopasture (integrating trees with grazing), already mirror agroforestry principles.

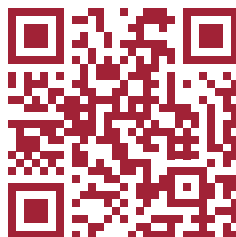
The Living Planet Index measures trends in the abundance of species for which data is available. This indicator has been adopted by the Convention on Biological Diversity to measure progress towards the 2010 target



Source: Loh and Goldfinger 2006

Watch Again

Dr Camacho's full lecture, including practical examples of agroforestry's potential to combat climate change, is available on the IAgRE YouTube channel.



About Dr Fabricio Camacho-Céspedes

Dr Camacho is a forestry engineer and professor of Agroforestry Systems at Costa Rica's National Technical University. He also serves as the Executive Director of the Tropical Agroforestry Institute, an organisation dedicated to promoting agroforestry for landscape restoration and biodiversity conservation. Holding a Ph.D. in Natural Sciences for Development, with an emphasis on Agricultural Production Systems, he facilitates educational programmes for international universities and environmental organisations.

"We are, in essence, borrowing a lot of the natural resources and energy from future generations," Dr Camacho reminds us—a call to action for agricultural engineers worldwide to embrace sustainable, forward-thinking practices like agroforestry.



Practice

Commercial
member profile

Alvan Bla
whole h

Export Specialist on the Doorstep

IAgrE corporate member, the Alvan Blanch Development Co Limited, based at Malmesbury, Wiltshire, is well known for its proven and reliable grain dryers in the UK, but there's a lot more going on. Andy Newbold finds out more.

Today the Alvan Blanch Development Co Ltd is family owned, with offices and factory operating on the same farmland in Wiltshire, since 1952.

Started by grain farmer Alvan Blanch, the production facility was established to explore his innovative approach to grain drying and processing – starting with the cascade drier.

A brief history

1946 Company founder Alvan B. Blanch, farmer, agricultural

contractor and self-taught engineer, develops his first grain drier.

1952 Alvan Blanch Development Co. Ltd is founded to focus on 'development' of innovative products to meet the new challenges in agriculture.

1964 The Royal Warrant is awarded to Alvan Blanch Development Co. Ltd as suppliers of grain driers to HM the Queen.

1965 Alvan Blanch starts travelling worldwide, noting the importance

of matching machinery to local agricultural traditions and conditions.

1970 Alvan Blanch receives OBE from HM the Queen for services to international trade.

1977 Factory expansion as the company are now exporting to 100 countries worldwide.

1991 An era ends with the passing of founder Alvan B Blanch OBE. Andrew Blanch becomes Managing Director.



Alvan Blanch specialise in handling and drying a wide range of internationally significant crops.

Full range of drying products

Most readers will know about drying cereals and oilseeds, but did you know that Alvan Blanch specialise in handling and drying a whole host of other less well known (at least in the domestic market) but internationally significant crops.

- **Biomass and waste** - Including woodchip, digestate, mechanically separated waste, and medical waste;
- **Hemp** - for use in the pharmaceutical industry. Alvan Blanch are the manufacturers of the worlds biggest hemp drier, at about 50m long, located in Europe;
- **Seaweed** - Overheating seaweed can deteriorate the nutrient levels, so a gentle drying process is needed. Britain's largest seaweed factory (and drier) is on North Uist.
- **Nuts** - Effective reduction of moisture whilst maintaining quality, nutrients and oils. Dust reduction is also a key technical requirement for nut drying.

The company's byline of 'if you can harvest it, we can dry it' has proven time and again that they are up for the challenge.

Processing

Alongside the driers, Alvan Blanch also offers rice parboiling and milling systems, animal feed and soya processing to make flaked, pelleted, extruded and mash feeds. Flour milling, fruit, cassava and herb processing systems are also available.

Cannabis

Closer to home the company has installed drying systems for medicinal cannabis in the UK. Across 5 different sites, these bespoke systems included the development, manufacture and successful commissioning of a means of converting harvested green cannabis into dried product. The challenge being the strict standards required for by the pharmaceutical industry.



Medical cannabis installation incorporating rotary driers, stainless steel drum, dust collection and heating furnace



Insert cartridge with lifting paddles being fitted to the drying drum of a cannabis drier.

The finished installations include rotary driers with stainless steel drum, dust collection cyclone and heating furnace. The drying drum is fitted with an insert cartridge with lifting paddles to move the product in the dryer and baffles to retard air movement and increase drying efficiency. The insert cartridge has been designed for removal to enable adjustment and cleaning with a special carriage.

Investment

One reason for the company's success is its ongoing commitment to investment in facilities and technology. 2020 saw the milestone of the Alvan Blanch Development

Co. Ltd investing £10 million over 10 years to introduce the latest technology in production and energy efficiency.

In 2021 the factory was expanded to create a 600 m2 finishing shop to increase production capacity.

Last year the company invested another £700,000 in a new bending cell robot, with its greater level of automation enabling pre-punched steel sheets to be fed into the machine by itself. Unattended operation is enabled and it can run 24/7 if needed.

"Automation has been transformative to this business over

recent years and despite how far we have come on this journey there is so much more yet for us to achieve," Andrew Blanch, Managing Director said.

The company employs several Institution of Agricultural Engineering members, who are key to their ongoing technical and development work.

The Alvan Blanch Development Co Limited is a well-established, nationally and internationally significant engineering concern. It's a great example of what a combination of good engineering, commercial acumen and the desire to get out of the door can achieve!

International trade success

In 2005 The company was honoured by the Queen's Award for success in International Trade. The company again received the award in 2012. Fast forward to 2019 and the company received the 3rd Queens Awards for Enterprise in the 'International Trade – Outstanding Achievement' category.

The company exports to over 120 countries worldwide and exports account for 85% of their turnover.



Key facts

- Production facility over 16,000m² – approx. 4 acres.
- The company manufactures approximately 150 dryers a year – exporting to over 6 continents worldwide
- Invested over £3 million in past 3 years – on key internal investments such as robotic CNC press brake and robot laser, paint shop, new internal software system etc.
- The company produces about 26% of its own power from solar panels on the factory roof
- Invested in improved insulation and efficient heat source pump heating system
- R&D work over 5 years has seen significant reductions in fuel use for the drying systems – and alternative biomass heat sources.



People

Training for
the future

Engineers of the future

Farm technology is changing fast, and so are the requirements of the people to support it. Jonathan Wheeler reports.



"The internal combustion engine, mechanical and hydraulic drive trains are not going to disappear." Kit Franklin



As technology advances, engineers need to develop whilst not neglecting the basics

As recently as the millennium few people predicted the huge range of measuring, sensing and automation systems that would be introduced in the next quarter century?

And we're still in the infancy of AI, which has the potential to be either the most valuable or most destructive tool humankind have ever invented.

So what sort of agricultural engineers will we need in future?

Kit Franklin, Senior Engagement Fellow in Engineering at Harper Adams University, and IAgRE President Elect, believes teaching syllabuses are about to become even busier:

"Certainly training in DC power electrics will be needed with field machines slowly but surely adopting battery and motor technology.

"However the internal combustion engine, mechanical and hydraulic drive-train are not going to disappear too soon so will still need to be covered".

New engineers will need enhanced ICT capabilities, and development engineers will need to have simulation and AI training capabilities:

“They will not necessarily need both – specialities will still be a thing. “But technicians will have to fault find and remedy problems on ever more complex data-enabled machines”.

The principles remain the same

IAgrE vice president Graham Higginson is a, Senior Lecturer in Engineering at Harper Adams University. He says that the basics of engineering will not change – but the machines and those operating them will:

“The interaction of soil and tines will never change, and neither will traction theory, Newton’s Laws of Motion and the virtual hitch point of the three-point linkage”.

Getting comfortable with electrification will be key: “The automotive industry has been grappling with electrification training for at least 15 years. We need to appreciate the intricacies of electronic control systems, which many still shy away from”. That puts the onus back on those providing the tuition and training:

“Educational institutions need to recognize the need that their lecturers and teaching staff need to keep their knowledge up to date and not just rely on the same old”.

Finding the trainers

Ken Smyth, General Service Manager for Ernest Doe & Sons Ltd, highlights a key challenge in today’s industry: finding the right people to provide effective training.

While engineers still need a solid foundation of basic mechanical skills, he says they now also require advanced diagnostic knowledge to handle increasingly complex machinery.



Graham Higginson, Senior Lecturer in Engineering at Harper Adams

“We need to be careful not to become too ‘tech heavy’. “Students still need to learn the essential hands-on skills, such as how to take a gearbox apart, identify and fix a problem and then re-assemble it.

“It’s important to teach the fundamentals, not just the latest technology”.

At the same time he sees a growing need for expertise in electronics,



Engineers now require advanced diagnostic knowledge to handle increasingly complex machinery.



New engineers will need to know the basics and be comfortable with new technology



computer diagnostics and trouble-shooting:

“Modern engineers must be able to locate and interpret the information necessary to resolve technical issues efficiently.

“This now includes working with cutting-edge technologies such as AI-powered diagnostic tools, which can analyse data from sensors, detect faults and even suggest possible solutions.

“The ability to integrate traditional skills with these advanced tools will be crucial for the next generation of engineers”.

Beyond technical skills, Ken stresses the importance of engagement in apprenticeship programmes:

“If students don’t have a positive experience at college, they’re less likely to stay motivated for the full three years.

“The training must be beneficial not just for the student, but also for the employer”.

A problem solving approach

Allan Cochran, Training Centre Manager for John Deere, says new engineers will need to know the engineering basics and be comfortable with the new technology, and understand how they interact to help customers:

“They will need the problem-solving abilities we have needed previously and ally that to the understanding of new technology concepts.

“Computer literacy, advanced electronics and a high level of mathematical capabilities will be the skills we come to expect”.

But those skills will build on the basic training in engines, transmissions and hydraulics which will still be

needed. Some out-dates aspects of training might get dropped from courses in favour of some of the new technology.

“Some aspects of courses will change and others will stay the same”.

... And some flexibility

For Mark Barnes, who leads Dealer Support for CNH in Europe, the Middle East and Africa, people with problem solving ability are key.

So too is flexibility – he points out that the company’s employees might have to deal with tractors from 50hp to 1,000hp.

The combination of that range of models and gradually reducing sales numbers means engineers are increasingly likely to work on machines with which they are not totally familiar.

Engineers will need to be able to take the information they receive about a fault and use their problem solving abilities to come to a conclusion:

“With lower volume sales we cannot expect to have the same level of experience of specific models as we did before.

“We sold hundreds of Ford 7810s , whereas now we only sell a handful of QuadTracs a year.

“There is also less likely to be an expert at the dealer’s end, so service has to be based around the human’s ability to solve problems with the technical information available to them”.

Another factor is that the increasingly reliability of machines might mean engineers are less practiced in diagnosing and solving problems:

“A larger proportion of the engineer’s time is doing pre-delivery checks and installation”.

He suggests the way forward is to develop networks among engineers so they can access information on

how to solve the problems they face.

Government engagement

IAgrE President Mark Moore, and Director, Government Affairs, AGCO, believes the Government has a crucial role to play in supporting the colleges that provide the training.

In this respect he suggests the UK now lags the EU, which has the European Board for Agriculture and Food to co-ordinate its approach.

While traditional engineering skills will still be needed, he says they need to be taught alongside new skills:

“A lot of problems are already being detected by the in-built diagnostic systems on many machines.

“But once the problems have been identified a human being still has to do the job of switching the offending part out or fixing it.

“That person is going to need a new mixture of skills, including mechanical and electronics systems, and they will need to understand how ISOBUS operates and to use the diagnostic tools to find other issues.

If the industry is to attract new employees he believes it needs to shed its image of being hard work and anti-social hours.

“We need to make the profile of the agricultural engineer more attractive and there is a role for the Government in that.

“It needs to stress how important farming is to the nation and help raise its profile”.

Sector specific skills

Requirements will be much the same in the spraying sector, suggests Joe Allan from Chafer Machinery.

“The mechanical aspects of building and maintaining our sprayers will be much the same, so we will need to recruit or train people with those skills.



“We are seeing an increasing workload and require

“However we are seeing an increasing workload and requirement for in depth knowledge of electrical and GPS systems.

“This essentially creates two different career paths in production and after sales.

“One is more focused on the traditional mechanical skills and the other specialising on new electrical, autonomic and precision farming developments.

He believes colleges will need to include skills like precision farming, driverless/autonomous vehicles and artificial intelligence in their existing or re-modelled courses.



ement for in-depth knowledge of electrical and GPS systems.” Joe Allan, Chafer Machinery

Attracting a diverse range

Most commentators agree that farming needs to attract a wider range of entrants, including people with different areas of interest and others from non-farming backgrounds.

One of the motivations behind the Hand Free Hectare project - which Kit Franklin led - was to showcase the range of new technology being deployed in farming.

That, he felt, would make the sector more attractive to people from non-farming backgrounds, and Graham Higginson’s experience suggests that is working:

“I am now seeing students with no immediate family connection with the land coming to study agricultural engineering.

“The industry needs to change and accept these people, because they see a future in agricultural engineering”.

He also suggests farming could recruit from relevantly skilled other sectors such as the automotive industry or ex-forces people, who he notes could be expected to have relevant experience of working with off-road vehicles.

“Service has to be based around the human’s ability to solve problems with the technical information available to them”.

People

Andrew Court



Outstanding in the Field

Staffordshire farmer and IAgRE Associate Member Andrew Court explained in a recent Landwards podcast how the farming benefits from his agricultural engineering approach.

Fascinated from a young age

Despite not being born into farming, although his mum was from a farming family, his father and their family all work in construction.

Andrew confesses to being fascinated with machines from childhood. His uncle bought a pedal Deutz AgroXtra for Andrew when he got the same tractor in real life. Once at school, Andrew was fortunate to have a Design and Technology teacher who encouraged his interest, this led to

him winning the first Design and Technology Scholarship.

Next at Denstone College two teachers spotted his flair for design and development projects, his A Level Design and Technology project was a quick attach quad bike lock. Outside of school a 12-year-old Andrew was thrust into farming following his grandmother's death, he took to it like a duck to water.

Choices

Helping his uncle on the farm from

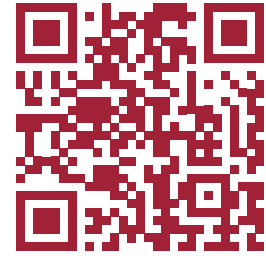
the age of twelve followed by a stint volunteering with an ATV dealership from age 15 turned Andrews interests into a desire to go further. The decision to head to Harper Adams University and study Agricultural Engineering was straightforward, it married his two passions of design and farming.

New entrant

In 2020 the family purchased the outstanding share in the farming business and Andrew started from scratch. This involved developing,



Listen Again



“The skills I have learnt have had a profound effect on how we have built our business”.

and still evolving a regenerative farming system which protects and improves the soil whilst being profitable and sustainable, both financially and environmentally.

In practice

One question Andrew was asked was how his agricultural engineering played out in the day job? He replied “The skills I have learnt throughout my engineering journey have had a profound effect on how we have built our business. Using a project structure to develop the whole business as well as individual elements for instance: animal shed retrofits, brand new grain drying and storage facility and machinery selection.”

This article is a very brief summary of a fascinating and wide ranging conversation ‘twixt the Andrew and the Andy.

A busy chap

Alongside running the Court Farming Partnership, Andrew is former Chair of the Farmers Club u35’s which he continues to support. He is a member of the IAgRE council and edits the IAgRE Lunchtime Lectures prior to them heading to YouTube. He is the Staffordshire Local Nature Recovery Farmer Stakeholder Chair. Andrew is a member of the Future Food Movement Farmer Advisory Board - bridging the gap between major food processors, farmers and policy makers.



Profession

IAgrE



Equality, Diversity and Inclusion in Land-based Engineering

The sectors served by the Institution of Agricultural Engineers are broad and diverse. IAgrE member Dr Clare Butler-Ellis explains.

Many reading this article will have an Agricultural Engineering degree, but increasingly many will not. Some might not consider themselves as 'Engineers', but come from a scientific background, applying technical knowledge to achieve better outcomes for food production, land management, environmental protection and more. That probably

makes you an engineer, and you are certainly a valued member of the Institution!

Perception

At the last executive meeting, we dabbled in the topic of how we promote ourselves to encourage new members, and the perennial

questions of whether we should re-name ourselves, and whether we can have a catchy strapline to describe us, were raised. There is no good solution to this, precisely because we serve such a wide range of people and professions. However, we recognise that the perception of the Institution tends to be more traditional – white, middle-aged



Engineers who feel included are more likely to speak up about safety concerns

and older, men, primarily interested in tractors and farm machinery, is maybe what some people envisage when they think of us.

Equality, Diversity and Inclusion is something that has been an important component of corporate strategy for larger organisations for decades and often relates to ensuring there is no discrimination against minorities (the Equality part), that all minorities are appropriately represented (Diversity) and all voices are heard (Inclusivity). The reasons for doing this are, in a nutshell, because Equality is legally required, and there is solid evidence that diverse and inclusive organisations perform better than those that aren't.

Increasing participation

For the last few years, IAgRE has been – perhaps rather tentatively – embarking on a project to address

the perceived lack of diversity and inclusion in the sectors we serve. It isn't about box-ticking or counting how many people in certain categories are members. In fact, we have deliberately shied away from doing surveys of gender, ethnic origin, disabilities and so on because they seem rather intrusive - we are a small organisation so it is difficult to anonymise any statistics when there are so few in these categories, and any analysis is likely to be statistically dubious. It is more about increasing membership and participation across all relevant disciplines and sectors, ensuring that everyone can contribute, and all opinions are included, not just those who can get to HQ for meetings or people we went to college with. We want to make sure that everyone can be as involved with the Institution as they want to be, no matter their circumstances.

Problem solving

As engineers we are problem-solvers. I enjoy being given a knotty technical problem to address and working out how to solve it. Agricultural engineering is possibly one of the most multidisciplinary of all the engineering sectors and we know we must bring people together to tackle the challenges that the world is facing in the 21st century. But too often we phone up our best mate or go back to someone we have worked with many times before, often for good reasons, such as knowing they are reliable and we already have a good working relationship.

Inclusion and Safety

Research carried out by the Royal Academy of Engineering in 2017 found that engineers who feel included are more likely to speak up about safety concerns, a fact that can only be positive for the profession. Beyond this, the report found that inclusion was important for retention, with engineers who felt more included more likely to see a future for themselves within the engineering profession. Other personal benefits of inclusion for individual engineers were identified, including increased motivation, performance, and commitment to their organisations.

A recent lunchtime lecture by Erik Tomlin of the Royal Academy of Engineering focused on 'Inclusive Cultures'. I would recommend everyone who missed it to watch the recording. His four strategies to build an inclusive culture were:

1. Inclusive communication

Using inclusive and respectful language, objecting to any unkind or unfair communication that we witness, asking open questions about other points of view and letting others speak without interruption

2. Valuing feedback

Responding with interest to views different from our own, giving specific feedback, asking for feedback and actively seeking opportunities to learn from others

3. Considering diverse perspectives

Inviting diverse groups of people to meetings, seeking out different viewpoints in decision-making, objecting if someone is prevented from contributing and listening to other people's views

4. Embracing failure

Responding positively when people take considered risks, encouraging colleagues to share work in progress, changing our own behaviour by learning from mistakes and acknowledging the things we don't know.

These are areas that we in the Institution want to address, and we hope members will carry the same strategies and behaviour to their own organisations and workplaces.

Scan the QR code for 'Inclusive Cultures'.



Find out more

There is a wealth of resources out there which isn't hard to find with a quick internet search, for those interested. But here are two that really struck a chord with me:

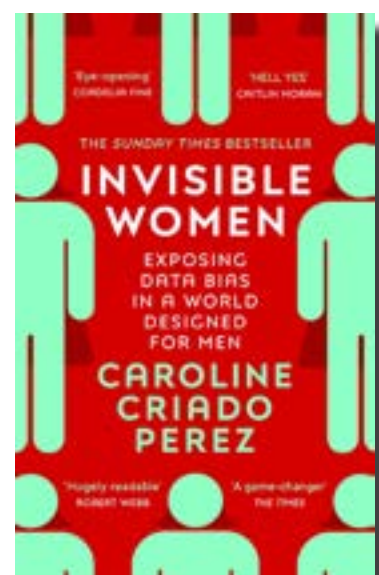
1. A podcast from Tim Harford (he who writes in the Financial Times and presents the 'More or Less' programme on BBC Radio 4). The 'Cautionary Tales' podcast he produces is excellent, and one episode is a brilliant description of why moving outside your comfort zone is definitely good for creativity and success.

Scan the QR code to listen to the 'The Cautionary Tales' podcast



Find out more

2. 'Invisible Women' by Caroline Criado Perez. This book does a fantastic job of explaining how, if you don't include diversity in your data and decision-making, things can go badly wrong. Everyone knows the example of racial bias in facial recognition, but there are many others. There is a section on agriculture, which expounds the theory how the development of the plough was the origin of gender inequality in the world (controversial but intriguing!). Many every-day items are designed for taller and stronger people than me – cars, furniture, jam-jar tops. I have noticed I now have to get my husband to open a new bottle of tonic water, and the book explains why. (Fortunately, I can still open the gin!)





The real thing

So equality, diversity and inclusion matter – not the box-ticking variety, but the real thing – involving people from outside your normal circle and who don't look like, speak like or think like you. That is a tremendous challenge because that is how we judge whether to trust someone. Little things like sharing a hobby, going to the same school or university, supporting the same football club are all things that might encourage us to feel comfortable with a new person. But following our gut reaction may lead to a bigger risk of missing something than if we engage with someone who we feel we have less in common with.

But it is no good just choosing someone who is different from us to make our diversity profile look better and then ignoring them. That's where the 'inclusion' part of it comes in. We must really mean it, make everyone welcome, embrace all ideas and opinions, even when they are different. A diverse committee might have 10 different opinions expressed on a topic. How are we going to deal with that? I don't know the answer, but we must try. And if there are 9 similar opinions and one different, we probably throw the one away, instead of welcoming something different that might have potential to improve the outcome.

I'd like 2025 to be the year of Equality, Diversity and Inclusion for IAGrE. We have already had

the 'Inclusive Cultures' lunchtime lecture, and there was another back in November by Mark McBride-Wright from 'Equal Engineers' entitled The Power of Psychological Safety and Diversity, Equity & Inclusion in STEM, also now online. Scan the QR code in the box below

At the March Council Meeting there was a presentation on unconscious bias.

We hope you will join us on this journey to a more diverse and interesting Institution in whatever way you can. And please get in touch with me (via the secretariat) if you want to get involved - we really need new D&I committee members.



**Equality,
diversity and
inclusion matter
– not the
box-ticking
variety, but the
real thing**

Listen Again

To access; 'The Power of Psychological Safety and Diversity, Equity & Inclusion in STEM' by Mark McBride-Wright from 'Equal Engineers'

**Scan the QR code
to listen to the
full presentation;**



Technology News

Journey towards net-zero barley production

- Project measured impact of sustainable farming practices and generated additional revenue for barley growers
- Average savings of 2.3 tons CO₂e per hectare, reducing greenhouse gas emissions by close to 90%
- Project delivered through BASF's Global Carbon Farming Program and independently verified by SustainCERT

BASF and Boortmalt, the world's leading malted barley provider, have successfully generated the first Verified Impact Units (VIUs) from reducing and removing on-farm greenhouse gas (GHG) emissions. "The journey we began in 2022 has now reached a pivotal milestone with the generation of the VIUs," said Marko Grozdanovic, Senior Vice President Global Marketing at BASF Agricultural Solutions. "This achievement showcases the potential of climate-smart



agriculture and our Global Carbon Farming Program, emphasizing also the importance of connecting farmers with stakeholders across the value chain to develop scalable solutions."

Bale Automation chosen from AE50 award nominees for Davidson Prize

- Granted jointly by two US engineering bodies
- Automates baling to boost productivity, quality, fuel efficiency, comfort

IntelliSense™, a new option for New Holland's High Density (HD) BigBaler that helps operators boost productivity, bale quality, fuel efficiency and comfort by automating key baler and tractor functions, has been recognized

with one of the highest accolades awarded by American agricultural engineers.

Created to celebrate breakthrough innovations in areas of agricultural, food and biological systems engineering, the Davidson Prize is judged from entries put forward for the AE50, a fifty-strong set of agricultural engineering products that are selected by the American Society of Agricultural and Biological Engineers (ASABE) for their innovation, significant engineering advancement and impact on the market served. The ASABE then works with the Association of Equipment Manufacturers (AEM) to determine the three most innovative products worthy of the Davidson Prize and this year selected New Holland IntelliSense baler automation as one of those three.



Professional DBT



University of Bristol PhD student, Emily Carr, attended and gave a poster presentation at The International Wheat Congress (IWC) in Perth, Australia

Birmingham. There were over 600 exhibitors unveiling the latest agricultural technology. The visit allowed students to expand their knowledge of current farm machinery and equipment, and potential future developments.

The students also met celebrities Kaleb Cooper (Clarkson's Farm, and farm contractor) and Tom Pemberton (beef and sheep farmer and You Tube broadcaster). Both are helping to bring farming and agriculture to the public.

One student said;

'I can't believe I will be working on such an array of machinery when we are qualified agricultural engineers I can't wait'

The students would like to thank The Douglas Bomford Trust for funding the trip. The students were accompanied by Jamie Youngs, agricultural engineering lecturer.

The Douglas Bomford Trust

The Technical Secretary David White brings an update on recent DBT supported activity.

International travel

Second year University of Bristol PhD student, Emily Carr, attended The International Wheat Congress (IWC) in Perth, Australia from 21st-27th September 2024. Emily's PhD is focusing on generating wheat CRISPR mutant lines. Over the six days of the conference, Emily gave a poster presentation of her research and networked with many other researchers.

Emily attended a range of workshops including one on enhancing wheat productivity through transformation and genome editing. This workshop covered the economic and scientific aspects of creating gene edited wheat, including a presentation by Martin Ventura on the first approved GM wheat, HB4, which was developed in Argentina to improve drought tolerance. Other presentations covered themes on

genomics, evolution, breeding, agronomy, nutrition, and abiotic and biotic stress. A particular highlight was supporting other early career researchers.

On the final day of the conference, Emily attended a field trip to Intergrain, one of the leading cereal breeders in Australia. The tour included a visit to the genomics facility and quality lab, where a bakery tests the quality of different varieties for desirable traits for bread and noodles.

Emily would like to thank the Douglas Bomford Trust for their financial support which enabled her to attend the conference.

LAMMA visit

On the 16th of Jan 2025, Rodbaston College's Agricultural Engineering students visited LAMMA,

Scholarship interviews

On the 22nd and 27th January, the Douglas Bomford Trust held Scholarship interviews at Harper Adams University (HAU) and the Royal Agricultural University (RAU), respectively. An excellent group of students at both universities.

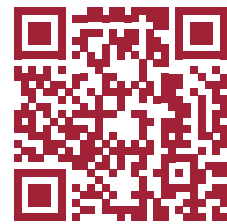
The HAU interview panel consisted of Professor Paul Miller (DBT Emeritus Trustee, and Director of Silsoe Spray Applications Unit Limited (SSAU)), John Baines (DBT Trustee, and Dairy Consultant), and myself, David R White. Thank you to Caroline Mason and Doris Taylor at Harper Adams University for organising the interviews and making the day run smoothly.

The RAU interview panel consisted of Professor Paul Miller, Nick August (DBT Chair, and farmer (August Farms)), and Julia Lucas (DBT Trustee, Director of HJL Consulting Ltd, and Business Manager Coventry Diocesan Board of Education). Thank you to Karen Rial-Lovera at the RAU for organising the interviews and making the day run smoothly.



The trust funded Rodbaston College engineering students to attend LAMMA in January

DBT Financial Administration Officer - new appointee sought



The current Financial Administration Officer (FAO) wishes to stand down at the AGM (November 2025), having worked with the Trust since 2007.

Please see for further details of the role and its responsibilities.

<https://www.dbt.org.uk/faoadvert2025>

How to apply

Please submit CV (including contact details for 2 references) and covering letter to

enquiries@dbt.org.uk by

31 March 2025.

For further information, see the Trusts website:

Or contact the Secretary David White via:

enquiries@dbt.org.uk

You can also follow: **@BomfordTrust**

on 'X' and 'LinkedIn', for news, opportunities and events



Membership Matters

Northern Ireland

Branch visit

Farmhand Ltd in Dublin

Report by Terence Chambers

NI Branch members recently travelled to Farmhand Ltd, Dublin to see and enjoy hearing the detail around the impressive facilities there from which well-known brands of agricultural machinery are supplied to the retail trade.

We were welcomed by Mr Paul Scrivener who is Farmhand's Managing Director. He explained how his grandfather, Mr Denis Scrivener, was friendly with the Krone family in Germany and how he started the business with their co-operation in 1962. The Krone family business is well known as the manufacturer of the popular Krone



range of grassland machinery and they held a share in Farmhand until it was fully bought out in 1993 by the Scrivener family.

Farmhand is the long-term exclusive wholesale agent for its current product brands. They supply the products and provide comprehensive technical support through its retail dealers. Fast Parts was set up as a separate generic spare parts division within Farmhand Ltd. in 1987.

Import franchises for the Swedish built Quickie tractor mounted loader range began in mid 1960s followed by Amazone tillage equipment from Germany in 1968. Since then APV (from Austria), Zuidberg (from the Netherlands) and Flexxaire (from Canada) have been added.

Farmhand relocated their operations to the present 5200 sq metre modern hi-tech premises, on its 3.7 ha site in Damastown Industrial Estate, in 2008. A further extension was added in 2021. The product lines are distributed throughout the whole island of Ireland, via 30 independent family-based retail dealerships, including 6 in Northern Ireland. Some have represented Farmhand brands for more than 50 years.

Paul Scrivener took over as Managing Director from his father John in 2015. Farmhand now have a team of 50 full time employees involved in wholesale sales, distribution, machine assembly, technical knowledge transfer and training, warranty support, maintaining the stock of spares and in product promotion. Specialist

demonstration team and technical information staff promote the products at public field demonstrations and agricultural shows.

Farmhand spares franchise

FAST PARTS was set up in 1987 as a separate division to supply fast wearing replacement parts for both the agriculture and construction sectors. This involves 35 brands being distributed across 350 dealer outlets. The parts ranges cover all types of tillage, harvesting, crop protection, tractors, and other equipment. One supplier example is Ireland based Dromone Engineering, a specialist manufacturer of both tractor hitch systems and quick-attach bucket systems for construction plant.

Farmhand Ltd stores more than 35,000 lines of separate parts in specialist IT controlled storage buildings. As well as several large service and repair workshop areas there are also drive-in covered storage buildings with outside yard areas for parking of machines and the loading/unloading of transport HGVs.

The visit ended with Branch Chairman Lawrence Knox thanking the directors and staff for their warm welcome to such an informative and enjoyable visit. It was a unique opportunity to hear about the origin of this impressive business and see how it is run.

Full report available by scanning the QR code.

View full report



Available here

Northern Ireland

Branch visit

CEMCOR cement production plant, Cookstown

Report by Terence Chambers

Branch members were welcomed by Managing Director David Millar and his team. Following introductions and description of the plant's origin, history and transformation we were taken on conducted tours to see, and hear, how all of the precisely managed processes are organised and run.

Origin and developments

The plant was opened on the site in 1968 by Associated Portland Cement Manufactures (APCM) and became known as Blue Circle from 1978. Lafarge owned it from 2014 until purchased in 2022 by the local private company who now trade as CEMCOR.

Mr Millar has been personally involved in the plant from 1970 and served with its various owners since then.

He and his fellow directors/joint owners (from the local Cookstown based LCC group) are now implementing their high investment programme of continuous development with high tech, efficient, environmentally friendly production services.

The plant employs 113 people and can produce more than 450,000 tonnes of cement per year. The LCC group's other business interests in fuel/energy supply, HGV transport, recycling and other sectors are complementary to the cement manufacturing plant business.

Raw materials supply

CEMCOR owns and operates its own large adjacent limestone quarry and its shale quarry which is just 8 miles away. Quality of the rock from both is continuously monitored before the materials are extracted to be taken for grinding and blending. Their mixture is prepared in nodular form and preheated in an energy efficient



Lepol moving grate system to sinter at 1050°C prior to being sprayed into the high fusion temperature (more than 1450°C) rotary kiln which operates on a 24/7 basis. The kiln is currently fired using a coal dust mixture supplied from the coal grinding plant. There is interest in other fuel options with a project commenced to add a multi-fuel burner capable of using high biomass materials.

Control

Two operators based in the specialist control room maintain 24/7 monitoring of the plant operation through furnace cameras and other remote detection sensors and cameras. They can shut off problem items and summon the appropriate technical support crews immediately. A new laboratory is used to analyse material across the processes and support on-site research for new product development.

Cooling and heat recovery

The cooling process and associated dust control now uses an improved dust bag filtration system. The collected dust is then recycled within the cement manufacturing process.

The clinker output from the completed combustion process is cooled and the waste heat recycled to the pre-heating facility.

Standards

CEMCOR actively manages its systems to ensure compliance with

the official product quality standards including BS EN 197 and ISO 9001, certified by BSI.

Environmental issues

CEMCOR runs its business within the environmental recommendations of the Northern Ireland Environmental Agency (NIEA). This includes all aspects of its acquisition of raw materials, its energy use, the control of emissions in the manufacturing processes and the logistics of transporting the finished product to the customers.

The company has a stated aim for carbon neutrality by 2050.

Local issues

Development training within CEMCOR has a high priority and local school and college student classes are also welcome for educational information and job experience purposes.

Thanks

At all stages during the tours of the production processes CEMCOR staff supervised the groups, explained the processes in detail and answered all of our many questions. Their obvious knowledge, pride and enthusiasm around their involvement in the whole operation was impressive and we feel privileged to have been there to see it all in action.

The evening concluded with formal thanks to Mr Millar and the team from Branch member Harry Barr for such a warm welcome and a very impressive visit.

Western branch

Meeting and AGM, March 2024

Irrigation; right amount, right place, right time

Report by Mike Whiting

With a UK record-breaking rainfall recorded in February 2024, the Western Branch chose the obvious subject for its AGM, irrigation. Taking us through the topic in detail was Melvyn Kay, the industry expert on all aspects of water management in agriculture. From his 25 years of lecturing at Silsoe, and author of many well-respected papers, Melvyn can convey the subject eloquently to a wide range of audiences.

To understand the scale of the challenge and set the scene for the evening, Melvyn took us on a global tour. The figures are huge, starting with irrigation accounts for 70% of freshwater withdrawals. Of this flood irrigation is practiced for 90% of the methods available for water application and is here to stay. A simple and effective method negating the requirement for technology, effectively unpressurised systems. This may seem an uncontrolled use of such a valuable resource, although the results are quantified. Worldwide, irrigation is only applied to approximately 300 million hectares, or 20% of the cultivated land area. Addressing the moisture balance produces more than 40% of the world's food



production. Major players in the use of the essential liquid nutrient include China, India and Pakistan who rely on irrigation for more than 50% of their domestic food production. We haven't mentioned the word 'climate change' yet, although the implications of erratic weather patterns are significant. United Nation's reports indicate the planet's population will reach 9.7 billion people by 2050. By then our deficit of available water to produce the food quantities required are predicted to reach 40%. Couple this with the need to reduce fertiliser input and maintain soil structure against the effects of flash floods. Throw in some deforestation to the mix and the brakes are well and truly off the roller coaster ride.

An appropriate opportunity to introduce agricultural engineers and their learned industry colleagues to the conundrum with the term 'efficiency'. As an example, 62% of the land under irrigation is termed 'degraded'. The result is soil salinity which takes a further 1.5 million hectares out of production each year. With the 'iceberg' effect, reducing the productivity of initially fertile land by a further 44 million hectares. Tackling the seismic change required to improve the situation needs more data. 80% of the cost for operating irrigation hardware is allocated to fuel. This led Melvyn onto his next headliner, which is reservoirs are 'no brainers'. Although educating local planners requires some more work, and there's nothing more like a good drought to focus attention. Politicians are eventually listening and collaboration between farmers to setup abstraction groups is encouraged. Put in the term 'integrated water management strategy' to any online search engine and all major stakeholders across the agricultural, environmental and food sectors will be mentioned.

The 'box tickers' may say, "adjust your cropping to suit the available water resources". Melvyn loaded up his 'rain-gun' with the appropriate response. In Suffolk, 90% of agricultural output is irrigated fruit and vegetables. If this was reallocated to cereals, the financial output would

reduce from £51M to £11M.

There is no 'silver bullet' and Melvyn concluded his presentation with his final slide headed 'use existing supplies wisely'. Figures indicate that on a global scale we have enough water. Although getting it to where its required and at the right time is likely to keep us all gainfully employed for some time yet.

Since the AGM Melvyn, together with Olcay Ünver, has published his book Sustainable Development and Water Security: Towards achieving a water secure world. Currently available from www.agendapub.com and other well-known online outlets.

Western branch

Meeting, October 2024

"Will I Ever Stop Learning?" Geoff Burgess

Report by Mike Whiting

Born in the very non-rural Edware area of London in 1941, Geoff started life as a city boy. However, his family moved to more rural Berkshire where his grandfather was the land agent at Cliveden – the country pile by the Thames famous for being one of the locations of the Profumo scandal.

It was whilst growing up here that Geoff became interested in farming and a later family move to the Essex/Hertfordshire border afforded him the chance to help on local farms. This involved binding, horse-drawn ploughing and bagging on a trailed combine. All this hard work led Geoff to enrol on a one-year Agricultural course at Merrist Wood college in Surrey.

An overland

The spirit of adventure was evident as he and a couple of college friends purchased a Series Two Land Rover and planned to drive it overland to Singapore. Being sensible and practical Agricultural College students, they prepared for the trip by putting the Land Rover through its paces around the nearby Army training ground at Pirbright. The trip



was eventful, and they managed to get as far as Calcutta in India before being advised that the remainder of the journey through Bangladesh and Burma would be risky. Not to be disheartened the trio decided to go even better and carry on to Australia by sea. However, there was an issue with one of their possessions which would not be accepted Down Under – namely a cobra and its basket previously purchased from a snake charmer in India - but the boys did the right thing and donated it to Calcutta Zoo.

Plantation management

After 12 months in Sydney, Geoff didn't feel the urge to return home and early in 1963 took up a position as a Plantation Assistant in Papua New Guinea. The plantation grew cocoa and coconuts for processing and export from Rabaul in the Island of New Britain. Geoff was given his own house and ex US army Dodge truck as transport. The locals and workers spoke pidgin English and called him "Lik Lik Master" – little master. One of the many tasks he oversaw was the construction of bridges over ravines to allow the produce to be transported to the plantation drying and processing plants. Being the tropics the bridges had to be built to withstand torrential rain. For example, one storm delivered 19 inches of rain in just 24 hours and a recently built bridge didn't survive. Geoff realised that he wasn't cut out for Civil Engineering!

Jack of all trades

A promotion to Manager of another Plantation on the main island of New Guinea meant that Geoff spent another two and a half years in PNG. Having that position meant you were looked up to by those in your charge and had to turn your hand to any trade and profession required. Being remote and with sparse communication and transport links, one of these tasks was to be the Doctor, having been granted his medical practitioner certificate after two weeks intensive training at the Rabaul Central Hospital – without which you were not allowed to work on outstations. The only other option was the local Witch Doctor! More Engineering related tasks did crop up such as repairing tractor fuel injectors without any of the necessary tools. Geoff had to think on his feet as despite his college training telling him this could only be done by properly equipped workshops, these were few and far between in the jungle, and the nearest town was a twenty-mile boat trip across the bay, or a sixty-five-mile trek along coastal paths.

Back to training school

In December 1965 Geoff came home to England and had to decide where his future career lay. He had two opportunities – Assam, India or Coventry, England. At the same time, he married Ann and this led him to decide his future

lay working at home at the Massey Ferguson training school, Stoneleigh. Demonstrating the then new 515 Combines all over the UK meant he could also give the MF design engineers an appreciation of the serviceability of, or lack of, their designs.

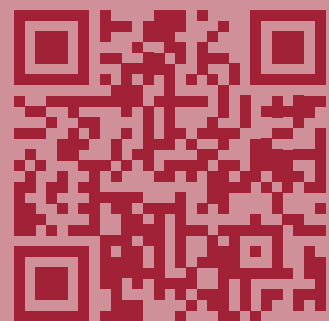
Outside of work

Like all professionals who have served many years in Industry, Geoff was involved in many organisations outside of his 9 to 5. For 21 years he was a Governor of Lackham College and as chairman, was involved in the mergers with Trowbridge, Chippenham and Salisbury colleges to form the umbrella Wiltshire College. He also has a seat on the Board of the Grounds Management Association and was involved in the moving the Saltex show from Windsor to the NEC. Other organisations included the Agricultural Engineers Association, the Royal Smithfield Club of which he is a trustee, and on the Board of the Royal Smithfield Show at Earls Court from 1985 until its last show in 2004.

An enjoyable evening was had by all in attendance and the Branch thanked Geoff and Ann for their presentation.

Full report available by scanning the QR code.

View full report



Available here

Membership Changes

01/11/24 - 31/01/25

Admissions

Member

Mr Robert Jones (Western)
Mr Peer Mohamed (Qatar)
Mr Benjamin Roach (Yorkshire)

Associate Member

Mr Frederick Davies (Wrekin)

Affiliate

Mr Carl Gallichan (Southern)
Mr Guy Shropshire
(South East Midlands)

Technician

Mr David Wilmer (Scotland)
Mr Angus Riddoch (Scotland)
Mr Liam McLean (Western)

Student

Easton College
Seb Reynolds
Lincoln Johnson
David Benton
Charlie Sheeran
Henry Canham
Issac Seaman
Robert Hewitt
Joshua Day
Keegan Harvey
Jack Smithson
Jack Watkins
Jobi Crosley
Charlie Britton
Charlie Slater
McKenzie Crowson-Schneider

William Payne
Harvey Yarham
Rowan Ives

Harper Adams University

Thomas Clarke
Montigue Dell
Sam Ingram
Joshua Weaver
James Agar
Luke Randell
Tolly Ridge
Julien Marina
William Quinnell

Cranfield University

Siddharthan Marimuthu
Victoria Santana-Santamaria
Mavis Quainoo
Yusuf Abdulkareem
Fariha Fairoze
Theresa Boateng

Munster Technological University

Harry Orphanides
Diarmuid Clifford
Barry Ryan
Cullum Young
Lydia McGrath
Niall Ireland
Niall Fagan
Emmet O'Shea
David Michno
Patrick Mahon
William Kenny
Jack Morrison
Luke Farquharson
Brannagh Walsh
Shane Fitzgerald
Jack Doyle

Tomas Murphy
Jamie Healy
Dan McManus
Karl Downey
Ben Dillon
Cian O'Connor
Cillian O'Connor
Aoibhinn Ring
Darragh Brady
James Cotter

Keele University

Imogen Wright
Keira Joseph

Coleg Cambria

Dougie Evans

University College Dublin

Manidip Mandal

Transfers

Associate Member

Miss Alice Unthank (West Midlands)

Technician

Mr Benjamin Flint (South Eastern)

ENGINEERING COUNCIL

Registrations

EngTech

Mr Alex Lowe (West Midlands)

Long service certificates

2025

60 years

Name	Grade	Date of Anniversary
Robert Burcombe	EngTech MIAgrE	04 February 2025
Roger D Dines	MIAgrE	04 February 2025
Bryan Webb	EngTech MIAgrE	04 February 2025
Barry Linton	IEng MIAgrE	04 February 2025
Christopher J Darcel	MIAgrE	11 March 2025
Richard P Marks	AIagrE	22 January 2025
Michael A Stephenson	AIagrE	14 March 2025
George P Hunt	EngTech MIAgrE	01 January 2025
Philip E Lake	AIagrE	03 January 2025
Glen T Nash	AMIAgrE	11 January 2025
Luke J Edwards	MIAgrE	29 January 2025
Peter D Hickman	AIagrE	30 January 2025
Seamus D Murphy	MIAgrE	31 January 2025
Robert S Manson	AIagrE	02 February 2025
Francis P Merrigan	AMIAgrE	01 March 2025
Stephen M James	EngTech MIAgrE	05 March 2025
Ian J Muir	CEnv MIAgrE	09 March 2025
Graham P Higginson	IEng REnvP FIAgrE	22 March 2025
C Stephen Parkin	CEng CEnv HonFIAgrE	30 March 2025
Colin S Cornish	CEng MIAgrE	30 March 2025
Robert H Kendall	FIAgrE	25 March 2024

25 years

NEWS



The Strategic Committee of CEMA, European Agricultural Machinery Association, has elected Giulia Catini (CNH) as Chair and Mark Moore (AGCO) and President of IAgRE as Vice-Chair.

Mark Moore is Director - Government Affairs for AGCO Ltd. Since joining AGCO (Massey Ferguson) in 1990, he has held various roles, defining technical requirements and driving innovation and developing the application of innovation and technology in agriculture. With a background

IAgRE President and AGCO Director Mark Moore elected Vice-Chair of CEMA

in agricultural engineering, Dr. Moore was an early pioneer of precision farming and obtained a PhD in Agricultural & Bio-systems Engineering in 1998. Today, he works with governments and stakeholders. Mark is also the President of the Institution of Agricultural Engineers (IAgRE).

Charlie Nicklin IAgRE's CEO said "Mark's appointment as Vice-Chair of the CEMA Strategic Committee is excellent news for our industry. The committee plays a key role within CEMA, and it's gratifying to have a UK engineer in this important position. Mark's participation allows us direct insights into EU policy direction, the perspectives of European governments on agricultural issues, and how manufacturers are responding."

The CEMA Strategic Committee advises the CEMA Board of Directors on policy developments, assessing policy options and anticipating challenges related to European policies affecting the agricultural machinery industry. The Committee

comprises representatives from CEMA's national associations and company delegates.

Giulia Catini serves as Head of EU Affairs at CNH. She has been an active member of CEMA's Strategic Committee (formerly the Public Policy Group) for over a decade. Based at CNH's Representative Office to the EU in Brussels since 2016, she works closely with EU institutions and trade associations. Since joining CNH in 2011, Giulia Catini has taken on roles of increasing responsibility, gaining extensive expertise in strategic EU industrial sectors, including agricultural machinery, construction equipment, and the automotive sector. An Italian national, she is passionate about European policy and sustainability. She holds a degree in Economics, specializing in Diplomatic Affairs.

The election of Giulia Catini and Mark Moore was approved by the CEMA Board of Directors on 11th February 2025. Their chairmanship term will last for two years.

Leading Scientific Journals Unite to Address Challenges in Science Publishing

Prominent peer-reviewed journals in animal science have collaborated on a groundbreaking article titled "Values Shared by Journals of Learned Societies, Associations, and Scientific Institutions in Animal Science". This joint effort emphasises the critical need to uphold scientific quality standards and integrity, ensure rigorous peer review, and embrace responsible publishing practices in an increasingly author-driven landscape.

The article will be simultaneously published by the following journals:

- animal and animal – open space

(Elsevier Limited on behalf of the animal Consortium)

- Journal of Dairy Science and JDS Communications (Elsevier Limited on behalf of the American Dairy Science Association)
- Poultry Science and Journal of Applied Poultry Research (Elsevier Limited on behalf of the Poultry Science Association)
- Journal of Animal Science and Translational Animal Science (Oxford University Press on behalf of the American Society of Animal Science)

Scientific publishing has undergone a tremendous change in recent years. The move towards open access publishing has shifted the financial model in scientific publishing. Authors now bear the cost of publication, creating an author-driven market where income precedes the product. This shift presents challenges, including pressures on publishers to accept articles quickly and on researchers to publish frequently to advance their careers. Both dynamics can strain the peer-review process, potentially compromising its depth and thoroughness.

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