Agriculture • Horticulture • Forestry • Environment • Amenity

LANDWARDS

Winter 2004

End of life vehicles

Dairy cow housing

Zigzag **Greenhouses**

Chartered **Environmentalists**

IAgrE JOURNAL Volume 59 No.6 www.iagre.org

DIARY of EVENTS

JANUARY 2005

Monday 10 January 19.30 hrs
South East Midlands Branch
Aqueel Conservation System
Speaker: Lee Hagen, Simba
Venue: Silsoe Research Institute

Thursday 13 January 19.30 hrs
Wrekin Branch
Farm Vehicles on the Road
Speaker: Mike Brathwaite, Consultant
Venue: Walford & North Shropshire College

Wednesday 19 January/Thursday 20 January 2005
LAMMA Show, Newark Showground

Wednesday 19 January 17.30 hrs
East Midlands Branch
Meeting at LAMMA Show
Presentation on the work of the Farm Energy Centre
Speaker: Andrew Kneeshaw, Farm Energy Centre
Venue: Council Chamber Rooms, Newark Showground

FEBRUARY 2005

Monday 7 February 19.30 hrs
West Midlands Branch
Visit to CFS Aeroproducts Ltd – Piston Engine Refurbishment Works
Speaker: Martin Slater
Venue: Alvis Works, Bubbenhall Road, Baginton, Coventry
For more information contact: west-mids@iagre.biz

Monday 7 February 19.30 hrs
Wrekin Branch
Castrol Oils
Speaker: Carl Sault, Castrol Oils
Venue: Harper Adams University College

Tuesday 8 February 19.30 hrs
East Midlands Branch
CNH Diagnostic Testing of the Common Rail Engine and associated transmissions and hydraulics. A practical demonstration by CNH Staff in the workshop environment of diagnostic fault finding using the latest computerised technology
Venue: G & J Peck, Home Road, Ramsay St Mary, Nr Peterborough

Tuesday 8 February 19.30 hrs
Scottish Branch
Burns Supper
For further details contact Branch Secretary

Tuesday 8 February 19.30 hrs
Yorkshire Branch
New Development at Lemken
Venue: Buckles Inn, Askham Richard
Provisional date - final details to be confirmed – Contact Branch Secretary

Tuesday 15 February 19.00 hrs
South East Midlands Branch
Post Graduate Student Seminar followed by Branch AGM
Venue: Bar Function Rm, Cranfield University Silsoe

February
Herts & Essex Branch
Drilling and Cultivation Trends
Date and final details to be confirmed – contact Branch Secretary

MARCH 2005

Monday 7 March
East Anglia Branch
Branch AGM and Technical Talk by Professor Dick Godwin
Further details to be advised

Monday 7 March 19.15 hrs
West Midlands Branch
Branch AGM and Technical Talk entitled "An Update of Spraying Development" by the President-Elect, Professor Paul Miller, SRI
Venue: Friends Meeting House, Stratford upon Avon
For more information contact: west-mids@iagre.biz

Monday 7 March 19.30 hrs
Wrekin Branch
Second User Applications for Military Vehicles
Speaker: Stuart Hockley, Head of Business Development, Leavesley International
Venue: Harper Adams University College

Tuesday 8 March 19.30 hrs
Yorkshire Branch
Bird Management CSL
Venue: Buckles Inn, Askham Richard
Provisional date - final details to be confirmed – Contact Branch Secretary

Wednesday 9 March
IAgrE Annual Conference
***"Sustainability in Engineering Design"* to be held at Harper Adams University College**
Further details available from the IAgrE Secretariat or IAgrE website www.iagre.org

Thursday 10 March
Herts & Essex Branch
Branch AGM and Technical Talk by Geoff Freedman, Forestry Civil Engineering, Forest Enterprise
Further details to be confirmed

Monday 14 March 19.30 hrs
Wrekin Branch
Branch AGM and Technical Talk by Presidential Representative
Venue: Harper Adams University College
Final details to be confirmed – Contact Branch Secretary

Friday 18 March 19.30 hrs
East Midlands Branch
Branch AGM and Dinner
Venue: The Red House Country Manor, Main Street, Kelham, Newark, Nottinghamshire
Meet 19.30 hrs for 20.00 hrs dinner.

Thursday 17 March 2005
Young Engineers Competition
For further details contact the IAgrE Secretariat

March
Scottish Branch
Branch AGM and Conference
Date and further details to be confirmed

Volume 59 No 6, **2004**

LANDWARDS

The Professional Journal for Engineers, Scientists, and Technologists *in* Agriculture, Horticulture, Forestry, Environment and Amenity

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CEnv IEng FIAgrE MemASAE

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Front cover: *Forwarder (courtesy: Timberjack (UK) Ltd)*

ISSN 1363-8300

(a) First greenhouse with extruded zigzag sheets of Lexan® Zig Zag™ in Elst, Netherlands; and (b) detail of the roof construction with the extruded zigzag sheets

NEW DEVELOPMENTS IN ENERGY-SAVING GREENHOUSES WITH HIGH LIGHT TRANSMITTANCE

Piet J Sonneveld and Gert Jan L A M Swinkels

Abstract

The scope of this investigation is the development of a new energy saving greenhouse with a high light transmittance. With GE-Plastics, a new zigzag double-web structure is developed which combines energy saving and a high light transmission. The following factors were taken into account:

- *light transmittance;*
- *insulation value;*
- *material consumed; and*
- *material strength.*

The insulation value of the sheet was calculated according to a European Standard method with a computational fluid dynamics (CFD) program.

An extra advantage of these zigzag sheets is that they can be built in without glazing bars. These double structures of ARM-glass or the Lexan® Zig Zag™ can compensate for light losses that are caused from an extra layer. Therefore this material combines high light transmittance with good thermal insulation. With the simulation program 'Kaspro', the year round energy consumption of greenhouses can be predicted using hourly climate data. Both Venlo type greenhouses and also a wide span greenhouse have been constructed.

Introduction

Energy saving is an important issue for the northern countries with colder winter climatic conditions. Extra insulation by an extra covering layer however results in a decrease of light transmittance which is an important property for crop production. When an insulating double sheet construction is made of the common covering materials such as glass, sheet or film then light transmittance is too low for horticultural applications.

Several types of double-web plastic sheets, with different thickness, already exist in practice. Applied materials are polymethylmethacrylate (PMMA) and polycarbonate (PC). These rigid flat sheets have good insulation capacities (depending on the thickness of the air layers in the sheets). However, the application of this type of double-web sheets for greenhouses was only minor in the past years due to the fact that these sheets transmit about 10% less light compared to single glass. Moreover the transmittance reduces over time caused by weathering of the material. For example, the transmittance for diffuse light of a standard PC double-web sheet with an air layer thickness of 16 mm is measured at 76%. For a standard PMMA double-web sheet this is measured at 85 - 89 % (Breuer & Sonneveld, 2000).

At the moment, energy saving is not only important for economical (Sonneveld, 2000b &

BIO NOTE

This research project was undertaken by Dr Piet J. Sonneveld and Ir Gert Jan L.A.M. Swinkels, Agrotechnology & Food Innovations B.V.(A&F), former IMAG), P.O.Box 17, 6700 AA Wageningen, The Netherlands. Tel: +31 (0)317-47 64 38 Fax: +31 (0)317-47 53 47 E-mail: piet.sonneveld@wur.nl Website: www.agrotechnologyandfood.wur.nl. The double skin roofing material was incorporated in a demonstration greenhouse which won first prize at the Elsevier Horti Fair Award 2002 and commercial development resulted in the product marketed asLexan® Zig Zag™.

2000c) but also for ecological reasons (Glami, 1980 - 2010). In the near future, the pressure towards growers to save energy will increase strongly. The Dutch growers association has promised to limit the fossil energy consumption in the year 2010 to 35% of the energy consumed in the reference year 1980 (Glami, 1980 - 2010). To achieve this objective, extensive measures are necessary. Next to the conventional measures such as application of energy screens and modifications of the heating installations etc, the growers will have to apply innovations such as well insulated greenhouses in the future. In response to these demands, A&F has developed the so-called zigzag-sheet together with a producer of PC plastic sheets, General Electric Plastics in Bergen op Zoom, the Netherlands (Stoffers, 1998; Sonneveld, 2002a). The sheet is a transparent double-web sheet made of PC with zigzag shape geometry. The basic idea was to develop a sheet, which insulates well and at the same time transmits the same quantity of light compared to single glass.

Materials and methods

Material design

The specially structured polymer material was designed by A&F with a ray tracing computer program which has resulted in the optimal zigzag geometry of the material.

When a beam of light is incident to a flat transparent sheet, part of this light will be transmitted, according to Fresnell's law, and another part will be reflected (see Fig. 1a top). At higher angles of incidence (angle with the normal) reflection increases. For a flat sheet the reflected part of the light does not enter the greenhouse and therefore is not available for plant growth. For a zigzag surface, the primary reflected part of the light hits again another part of the sheet surface and after transmission then partly enters the greenhouse after all (see Fig. 1a bottom). This is especially effective at high angles of incidence. Using this effect, the transmittance for diffused light of a zigzag shaped single sheet increases about 5%, compared to a flat single sheet of PC. A&F developed the idea and the optimal shape, thickness and grid of such a zigzag sheet. In Fig. 1b, a sample of a double zigzag structure material is seen which is manufactured with a vacuum forming technique.

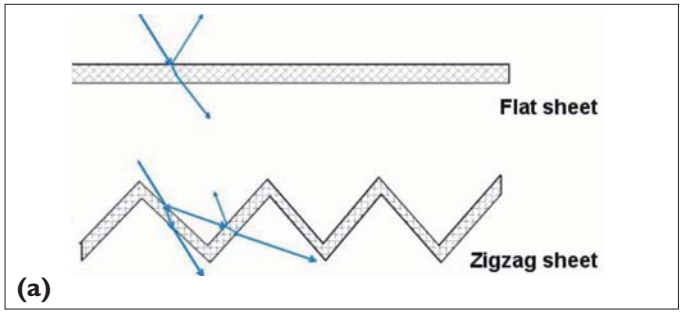


Fig. 1 (a) The principle of the transmittance and reflection of light beams hitting a flat sheet (top) and a zigzag sheet (bottom); and (b) example of the first double layer zigzag structure manufactured with vacuum forming techniques

In Fig. 2, the calculated and measured data of direct light transmission is presented for a single PC sheet and a double wall sheet. The results for diffuse light have previously been well documented (Sonneveld et al., 2002). The horizontal axis shows the inclination of the zigzag shape, the vertical axis shows the light transmittance. The diagrams show that without the colour additives (less absorption by pigments), a considerable improvement of the light transmittance is realised. The light transmittance shows a strong increase around 45° with 5% (single layer) to 10% (double layer) as can be seen in Fig. 2.

Also in Fig. 2, it can be seen that the local optimum for the inclination of the zigzag shape is 45 - 60°. The local optimum for the inclination of the zigzag shape of 45 - 60° was also found for diffuse light (Sonneveld et al., 2002). When regarding other criteria like insulation value, material consumed and material strength (see below) an inclination of 48° is ideal. The light transmittance of a double zigzag sheet with an inclination of 48° without colour pigments is 90.8% for direct light and 80% for diffuse light. The measurements were carried out on the integrating sphere of A&F with a sample size of 50 cm x 50 cm.

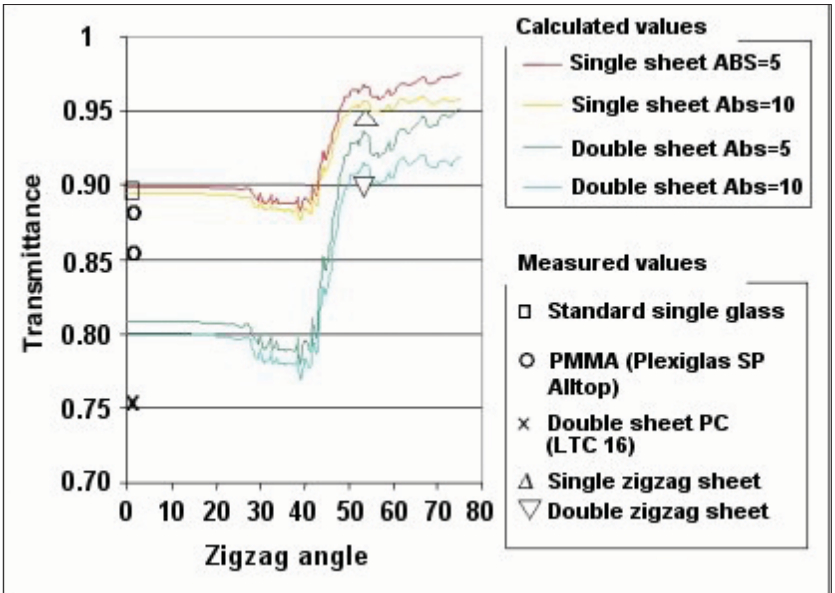
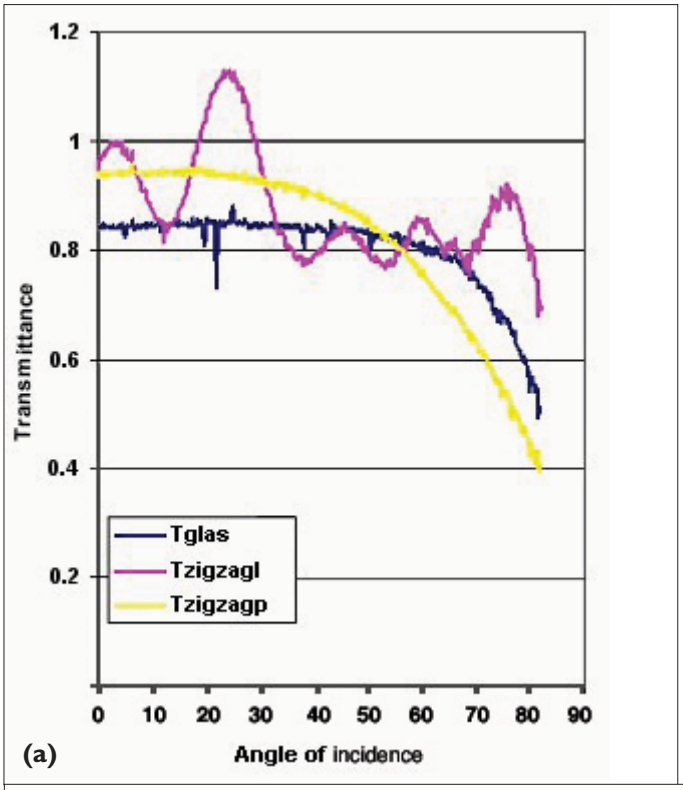


Fig. 2 Overview of the calculated and measured (direct perpendicular) light transmittance of the zigzag sheet material (a zero zigzag angle is the standard sheet material).

For comparison: standard single glass has a light transmittance of 89.5%(direct) and 82%(diffuse) (Breuer & Sonneveld, 2000). The direct light transmittance is 85 - 89% for PMMA double-web sheet and 76% for a standard PC double-web sheet (Breuer,

2000). The basic material of the double zigzag sheets is polycarbonate. This material has good impact resistance and fire extinguishing properties. The light transmittance as a function of the angle of incidence is seen in Fig. 3a. For high angles of incidence, the transmittance will be increased for angles perpendicular to the zigzag structure, while for angles parallel to the zigzag structure the transmittance will be decreased. With the right orientation, extra light enters into the greenhouse. For a Venlo type greenhouse, the daily light transmittance with the double zigzag covering can be compared to that of the standard glass (see Fig. 3b). As can be expected there is an effect of the orientation of the greenhouse: the gutter oriented north-south will increase the transmission during winter, the gutter oriented east-west will increase the transmission in summer. An overview of the global extra radiation as function of time in a Venlo type zigzag greenhouse was previously presented and documented (Sonneveld et al., 2002). Generally the zigzag covering can increase the light transmission with minimal 2% due to high transmission at low solar positions.



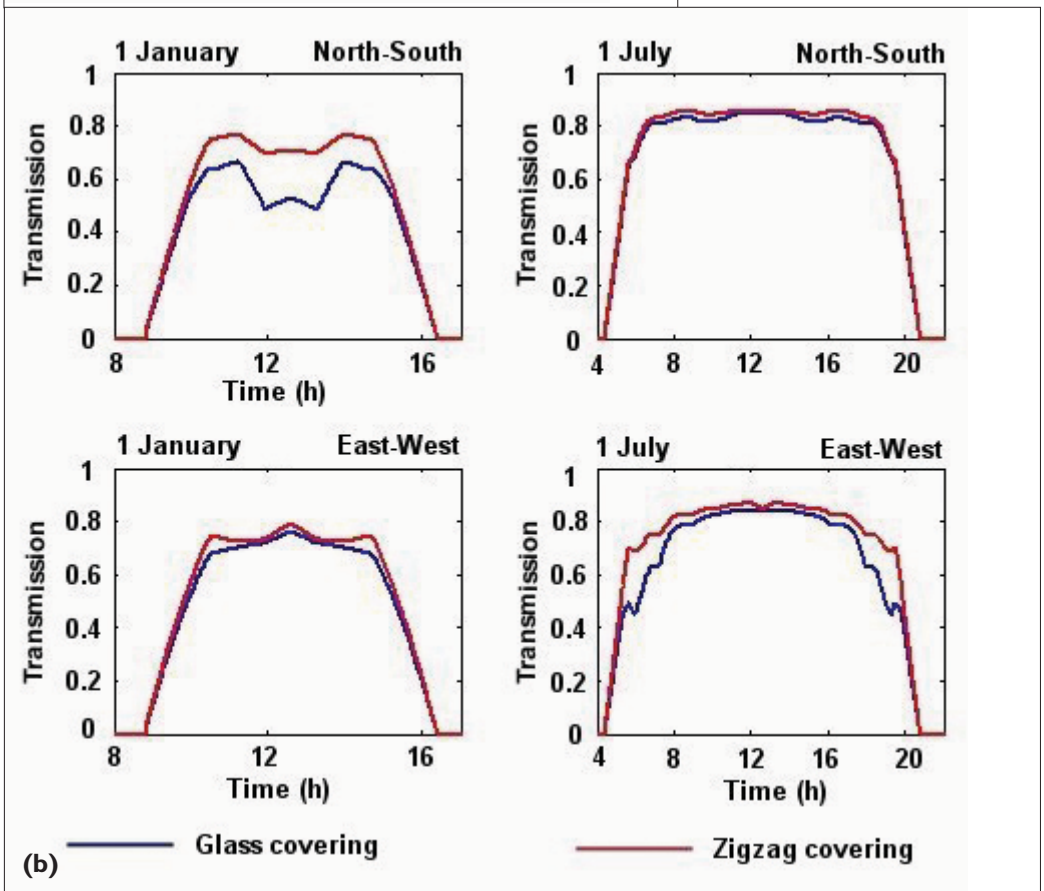


Fig. 3 (a) Transmission as function of the angle of incidence for glass (Tglas) and for incident angles perpendicular (Tzigzagl) and parallel on the zigzag structure (Tzigzagp); and (b) the transmitted global radiation for a zigzag covering compared with a standard Venlo glass covering.

Yield, energy and climate simulations

Another factor affecting optimal sheet geometry is the insulation value. To allocate this insulation value for the different sheet geometries, A&F has performed computational fluid dynamics (CFD) calculations according to the European Standard (prEN-ISO 10077-2, 1999). The optimal shape regarding the light transmittance, the insulation and the material strength is a sheet with a grid length of 50 mm and a thickness of 25 mm. The insulation value (U-value) for this sheet is 3.4 $Wm^{-2}K^{-1}$. For comparison: single glass has a U-value of about 6 $Wm^{-2}K^{-1}$.

What is the result for the expected energy saving of a greenhouse with a roof of (double) zigzag sheets? In the winter months, when the heating is maximal, the momentary energy saving is calculated at 45%. The typical year round energy consumption is calculated with the simulation program Kaspro for the cultures: sweet pepper, tomato, pot-plant and chrysanthemum using climate data for the Netherlands. In Fig. 4, the results are presented for the four different cultures. For this new covering material, we calculated a year round energy saving of 20 - 25 % (depending of the cultures) compared with single glass covering.

This is lower than the momentary energy saving based on the U-value. With the better insulating covering, dehumidification by condensation is lower so extra ventilation is required for dehumidification resulting in some energy losses. In the zigzag greenhouse the peak load is 45% lower compared to a common greenhouse covered with single glass without

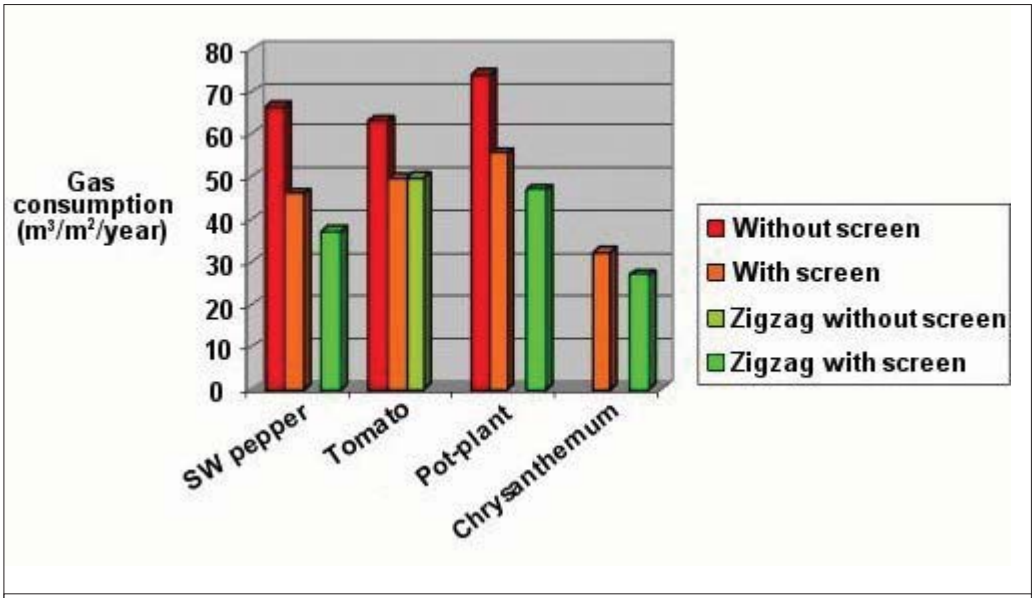


Fig. 4 Calculated results of gas consumption for a year round with the computer simulation program KASPRO. These results are determined using Dutch climate data. The cultures are Sweet pepper, tomato, pot-plant and chrysantemum

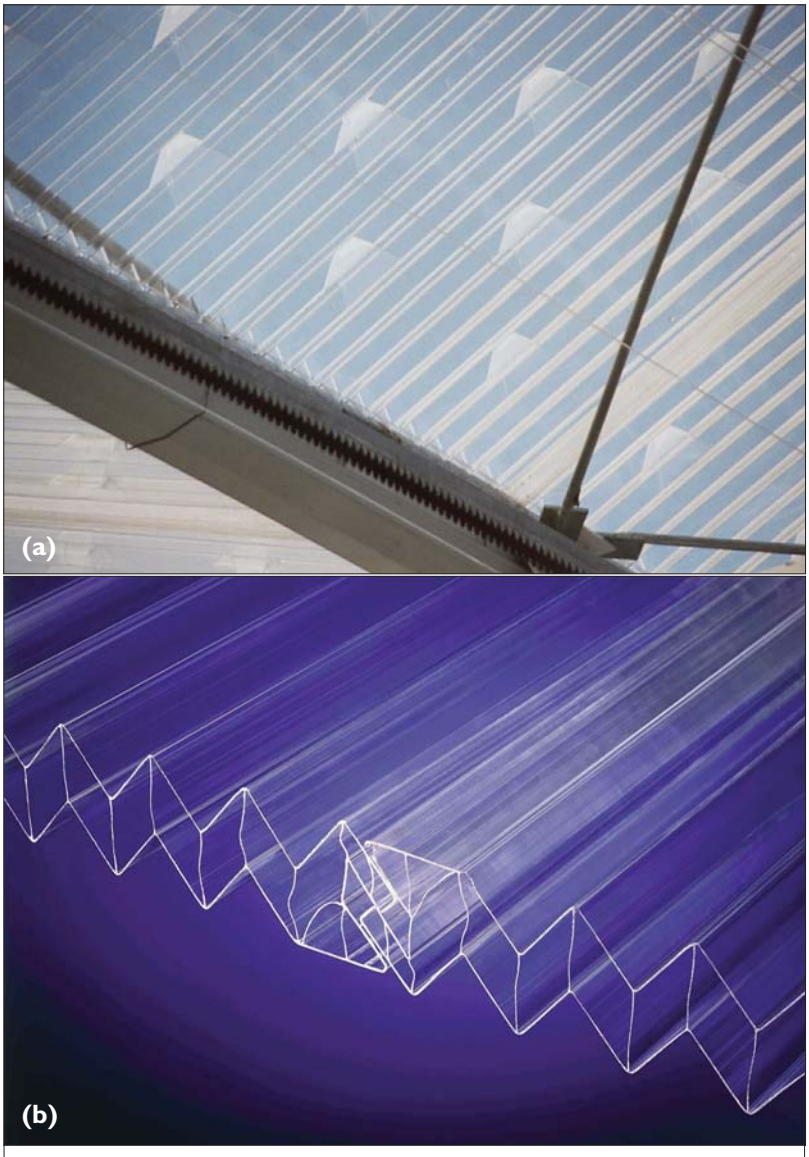


Fig. 5 (a) Vacuum formed zigzag sheets with triangular shaped spacers between the inner and outer layer; and (b) two extruded Lexan® Zig Zag™ panels clicked together

thermal screen. The yearly costs for heating will consequently decrease significantly (Sonneveld, 2000b). In the next period practical greenhouses will be monitored to measure the actual yield, climate and energy savings.

Greenhouse designs

For the Floriade exhibition in 2002, A&F in Wageningen and General Electric Plastics in Bergen op Zoom, the Netherlands developed a so-called Florida greenhouse which combines a traditional steel structure with a specially shaped zigzag covering of double-web PC sheets.

The main structure of the (prototype) greenhouse is comparable to a traditional greenhouse: beams, trellis girders, stability bracings are made of standard steel profiles. The span of the trellis girders is 9.60 m with two roofs of 4.80 m. The mutual distance of the trellis girders is 4.80 m. The zigzag sheets are mounted water tight on steel gutters. Only the structure above gutter level is new and especially suitable for the zigzag-sheets. Here beams in a triangular shape made of steel profiles are used as a structure. These beams are fixed to the trellis girders and have therefore a mutual distance of 4.80 m. Steel purlins carry the zigzag sheets which are fixed to the structure without glazing bars. The zigzag sheets are therefore self-supporting from gutter to purlin over a length of 1.76 m. The continuous roof ventilation window has sides of 0.80 m and will be prefabricated. The mechanism to open the window will be fixed to the extra beam. The ventilation windows opened by lifting them up vertically. The walls of the Florida greenhouse will be covered mainly with standard double-web PC sheets. The total area of the greenhouse is 844 m^2.

For scaling-up the zigzag material, again a vacuum forming technique was used (see Fig. 5a). A point of extra investigation was to develop a method to connect the lower and upper sheets together with a fixed distance. A solution was found by the formation of extra triangles in the under sheets (see Fig. 5a). The upper sheets are glued to the under sheets by these extra triangles. The complete greenhouse of the future, as presented at the Floriade exhibition 2002, provided a well insulated greenhouse with a light transmittance comparable to a Venlo-type greenhouse covered with single glass (Sonneveld et al., 2002; Sonneveld & Adriaanes, 2002).

For production on an industrial scale, GE Plastics

Fig. 6 (a) First wide span greenhouse with extruded zigzag in Assendelft, Netherlands; and (b) detail of the roof construction of the wide span greenhouse in Assendelft, Netherlands

developed an extrusion profile. A recent sample produced with extrusion can be seen in Fig. 5b. The trade name of the product is Lexan® Zig Zag™. The company, Alcoa Greenhouse Systems, developed aluminum extrusion profiles for constructing Venlo type greenhouses with the new extruded zigzag sheet material. With this new extruded zigzag sheet material and the Alcoa aluminum profiles a first Venlo type greenhouse is built at the Lorentz College in Elst (the Netherlands). The span of the roofs is 4.80 m with a span of the trellis girders of 9.60 m. The length is 20 m. This greenhouse is depicted in the Title Fig., and has 'one-side' ventilation windows which operate with a standard window mechanism.

The third development is the design of an aluminum system for wide span greenhouses. For this type, the company Bosman Kassenbouw developed the proper aluminum profiles. In this case, two zigzag sheets are coupled with a aluminum profiles and will result in a span of 14 m. In Figs 6a and 6b, two pictures are given of this wide span greenhouse with zigzag covering.

Conclusions

A new high transparent and insulating covering material for greenhouses was developed. It was demonstrated that the zigzag configuration led to a high light transmittance of 90.5% (direct) and 80%(diffuse). This is comparable to single glass and the highest of all known double sheet materials. The basic material of the double zigzag sheets is polycarbonate. This material has good impact resistance and fire extinguishing properties. The good thermal insulation will lead to a yearly energy saving of up to 25%. Greenhouse companies developed new profiles for the new zigzag sheets and the first Venlo type and wide span greenhouses have been built in the Netherlands. An extra advantage of these zigzag heets is that they can be built in without glazing bars.

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Elke Schepers of GE Plastics receiving her award from Professor Daniele De Wrachien, President of EurAgEng 2002-04.

Industry Innovation Award

The International Conferences on Agricultural Engineering, the AgEng series, are held biennially in different European countries and organised by membership associations within the European Society of Agricultural Engineers (EurAgEng). These conferences have always been well attended by researchers and academics and have accrued an excellent reputation for quality and diversity. Generating interest in research ideas and promoting subsequent technology transfer for commercial exploitation relies on an effective network between academia and the commercial sector.

EurAgEng established the Industry Innovation Event in 2000 to encourage greater participation by engineers from industry. The Industry Innovation Award is based on the content and delivery of papers describing innovative products in the agricultural engineering industry.

At the Industry Innovation Event held at AgEng2002 in Budapest Hungary, the winning presentation was based on the commercial exploitation of the research on the zigzag double web structure for energy-saving greenhouses. Elke Schepers of GE Plastics described the applications of Lexan ZigZag extruded sheets in a paper entitled: 'New energy saving greenhouse roof with a high light transmittance'.

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INTEGRATED LAND MANAGEMENT

Environment Agency welcomes new *Rural Strategy 2004*

The Environment Agency welcomed the launch of Rural Strategy 2004, the Government's strategy for rural communities and the countryside. The new strategy emphasises the need for sustainable development in rural areas and recognises the importance of natural resources (water, soil and air) to a high quality environment.

Barbara Young, Chief Executive of the Environment Agency said "The Environment Agency has an important role in delivering the strategy. We are especially pleased to see that the strategy emphasises the need for integrated environmental land management. We are already developing integrated catchment pilots with English Nature and the Rural Delivery Service that bring together the tools of advice, incentives and regulation needed to help farmers to meet the challenge of catchment sensitive farming.

The strategy also sets out the Government's programme for modernising rural delivery, born out of Lord Haskins' recommendations last November. The changes are important to the Environment Agency because they affect bodies and funding which have a role central to the Agency's responsibilities. The following are of particular interest.

- A new Integrated Agency – comprising English Nature, the access and landscape areas of the Countryside Agency, and the agri-environment areas of the Rural Delivery Service – is being introduced to deliver nature conservation, landscape, recreation and environmental land management. As the lead body for the protection and enhancement of natural resources, the Environment Agency already works closely with the bodies who will form this new agency. It will continue to do so; for example to integrate the protection of water, land and air on farms, and to deliver international environmental obligations such as the Water Framework Directive.
- The Environmental Land Management Funding programme, including environmental elements of the England Rural Development Programme (the new entry level and higher tier schemes) is being simplified. The Environment Agency looks forward to working with the new Integrated Agency, at national, regional and local level in targeting funds to the management of natural resources.
- A new and simplified single Rural Regeneration Funding programme is to be delivered by the RDAs from 2005. This new programme will streamline Defra's socio-economic funds and, from 2007, the economic schemes from England Rural Development Programme. The Environment Agency already works closely with RDAs and looks forward to playing its part in helping them to deliver sustainable development and to determine regional priorities as they take responsibility for delivery of rural regeneration.

Barbara Young continued: "The Environment Agency welcomes the simplification of funding and delivery in rural areas. Decisions on environmental land management funding are best dealt with at national level, because they need to address important national and international targets, with programmes then delivered at catchment and sub-catchment level. We will work closely with the Integrated Agency on priorities and implementation. We welcome Government's recognition of the need for close collaboration with our own programmes: it is important that incentives also dovetail with other policy instruments such as advice, cross compliance and regulation."

MORE INFORMATION

Web: www.environment-agency.gov.uk

POLLUTION STANDARDS

Poor European test standards understate air pollution from cars

Inadequate test standards are underestimating emissions of harmful air pollutants from new cars and evidence indicates that many diesel car owners are making things worse by modifying their engines to increase power, the European Environment Agency (EEA) has warned. These factors may be among the reasons why air pollution in Europe's cities is not falling faster, the Agency says in a new report, '*Ten key transport and environment issues for policy-makers*.'

In addition, because the test cycle for new vehicles does not cover air conditioning and some other types of energy-consuming equipment, Europe's progress towards cutting new cars' emissions of the greenhouse gas carbon dioxide (CO_2) appears greater than it really is.

"Ensuring that vehicles actually meet the emission standards in the real world should be a priority," Prof. Jacqueline McGlade, EEA Executive Director, said in a speech to a high-level Dutch government conference on sustainable mobility held in Amsterdam. Recommendations are to be made to the European Commission.

The EEA report and an accompanying briefing paper, launched at the conference, show that transport volumes are growing at roughly the same rate as the economy – despite the European Union's objective of weakening this link – and continuing to intensify pressures on the environment. These pressures include rising emissions of climate-changing greenhouse gases as the market shares of road and air transport continue to grow at the expense of less energy-intensive modes, as well as threats to biological diversity from the fragmentation or disturbance of wildlife habitats by roads, railways and airports. Efforts to counter these trends are at best only slowing the rate of increase.

"Ensuring that vehicles actually meet the emission standards in the real world should be a priority"

Improvements in vehicle technology are succeeding in reducing air pollution from road transport despite the growth in traffic volumes. Emissions of regulated pollutants (excluding those from aviation and marine shipping) fell by 24-35% between 1990 and 2001 in the 31 EEA member countries. But transport-related air pollution in urban areas still contributes to tens of thousands of premature deaths each year across Europe.

Current test cycles for new vehicles do not reflect how cars are used under real driving conditions and so underestimate their actual emissions. This may help to explain why urban air quality is not improving as fast as vehicle data suggest it should, the report says.

The shortcomings of the test standards also mean that, while Europe's motor industry is on track to meet a commitment to reduce CO_2 emissions from new cars by one quarter between 1995 and 2008, greenhouse gas emissions from air conditioning and other in-car equipment not covered could in reality cancel out around half of the improvement. Even with the car industry's commitment, overall CO_2 emissions from transport are projected to increase by 25% between 1990 and 2010, but without it the rise would be 35%.

Some 15% of the CO_2 improvement achieved so far has been due to the increasing market share of diesel cars, which are more fuel-efficient than petrol vehicles. But the practice of 'chip-tuning' diesel engines for greater power is a cause for concern because it increases fuel consumption and pollutant emissions. A recent report estimates that as many as half of new diesel cars may have been modified and that such changes can multiply their emissions, especially those of harmful particles, by up to three times.

On a brighter note, strong growth under way in the use of biofuels – transport fuels made from crops and other organic material – should help the transport sector to limit increases in its CO_2 emissions. However, it is important that the biofuels are produced in ways that minimise other potentially negative impacts on the environment.

Further key messages from the report include the following.

- Aviation is the fastest-growing transport mode and its impacts on the climate, from emissions of CO_2 and other greenhouse gases, will soon exceed those of passenger vehicles.
- Rail and bus fares are rising faster than the cost of private car use, giving cars an advantage over public transport. Progress is slow in restructuring transport charges to reflect different modes' costs in terms of damage to infrastructure and the environment.
- Transport infrastructure, especially road and high-speed rail networks, is continuing to expand and thus further fragmenting the landscape. Optimising the use of existing infrastructure through road pricing or congestion charging would allow this growth to be limited.

MORE INFORMATION

The report is available at http://reports.eea.eu.int/TERM2004 and the briefing paper at http://reports.eea.eu.int/briefing_2004_3/en

FORESTRY

British forestry and timber statistics

The Forestry Commission has published '*Forestry Facts and Figures 2004*', an annual publication presenting statistics on all aspects of British forestry and British timber.

The main findings are as follows.
The estimated woodland area in Great Britain, at 31 March 2004, is 2.7 million hectares; 1.3 million hectares in Scotland, 1.1 million hectares in England and 0.3 million hectares in Wales.

Over 13,000 hectares of new woodland were created in Great Britain in the year to 31 March 2004.
A total of 7.6 Mm^3 underbark of British timber (roundwood) was delivered to primary wood processors and others in 2003, an increase of 2% from the previous year.
The amount of wood products imported into the United Kingdom in 2003 was equivalent to around 50 Mm^3 of timber underbark.

MORE INFORMATION

Alister Henderson, Economics & Statistics, Forestry Commission, 231 Corstorphine Road, Edinburgh, EH12 7AT. Tel: +44 (0) 131 314 6337. E-mail: statistics@forestry.gsi.gov.uk Web: www.forestry.gov.uk/statistics
The publication 'Forestry Facts and Figures 2004' is available from the website. Paper copies are available on request.

AMENITY

Top-line mountain biking comes to Inverness-shire

A new era in mountain biking began in northern Scotland when the Laggan Wolftrax trails in Achduchil Forest at Laggan in Badenoch, southern Inverness-shire, opened for business. The 14 kilometres of trails cater for different levels of riders, with sections graded from moderate to difficult and severe. They are expected to provide an economic boost for the local community in the form of visiting riders using local accommodation, hospitality, food and fuel providers.

Cairngorms National Park Authority Convenor Andrew Thin fired a flare to send the first riders on their way and declare the trails officially open, and said, "Not only do mountain bike courses provide an exciting location where we can get out and stretch the sinews and get the cardiac muscles working to improve our health, they are also an important contributor to rural development. This was clearly seen in Fort William during the World Championships, when I hear that visitors had to come as far as Laggan and other surrounding areas to find a bed. I am sure this new course will also be well used by the range of outdoor centres operating in this beautiful area.

"The choice of name for these trails, Laggan WolfTrax, is an inspired one. It points to the wild self-reliance and speed of the wolf, characteristics of many mountain-bikers. It also points to that historical local villain, the Wolf of Badenoch. I understand that some of the features of the trails are linked to his notorious past, with one tricky rocky section named the 'Devil's Chessboard', recalling the Wolf of Badenoch's last evening on Earth, when he was reputed to have been seen playing chess with the Devil.

"I am delighted that this course has been developed within the Cairngorms National Park. It is one of the first major outdoor recreation facilities to be developed within the Park. This is fitting, because when the Scottish Executive set up National Parks, in addition to wanting them to look after the special qualities of the areas, it wanted them to provide opportunities for recreation and rural development with the full involvement of communities."

Achduchil Forest is part of Strathmashie Forest, an area of national forest jointly managed by a formal partnership between Forestry Commission Scotland and the Laggan Forest Trust. Welcoming the new trails, Trust chair Jo Cumming said, "We are delighted with the development of the new mountainbike trails at Laggan, and thank all the many people who helped us grasp the opportunity.

"This is the next step in developing a rounded leisure experience for the Laggan community and visitors: the challenging mountain bike trails; the quiet tracks and forest roads; trekking on the gentle Haflinger ponies; walking, visiting archaeological sites and enjoying nature, all accompanied by good food and our famed hospitality in and around the forest, providing an experience for all. We look forward to welcoming more visitors to our beautiful part of the Cairngorms National Park."

The Wolftrax trails comprise 6.4 km of black-graded trails for skilled riders, 6.2 km of red trails for intermediate riders, and 1.4 km of blue 'fun park' trails. Cafe, toilets, bike hire and repair services are provided on site at 'Laggan BaseCamp'. The trails were designed by CycleTherapy, a new cycle consultancy based in Aviemore.

The £204,000 funding to develop the trails comprised £139,000 from Forestry Commission Scotland and the Scottish Executive, £20,000 from Moray, Badenoch & Strathspey Enterprise, £25,000 from Scottish Natural Heritage, £15,000 from Cairngorms National Park Authority, and £5000 from The Highland Council.

MORE INFORMATION

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END OF LIFE LEGISLATION AND THE OFF-ROAD VEHICLE INDUSTRY

Geoffrey F D Wakeham

Is this the responsibility of the original manufacturer?

In the past when a product was sold, the ownership and responsibility for that product passed to the customer.

To keep customers returning to their original supplier, good customer support became the normal provision for most major manufacturers.

Recently suppliers of electrical goods have been required to take responsibility for the product at the end of its life. In 2007, similar legal requirements will be placed on suppliers of motor vehicles. 'End of life' vehicles have the potential to release hazardous substances into the environment if they are not treated, recycled or disposed of properly. As a result of concerns about the environmental and economic impacts of waste vehicles, the European Union adopted the End of Life Vehicles [1] (ELV) Directive (2000/53/EC), which came into force on the 21st October 2000.

Requirements of the directive

The directive, which is currently being transposed into UK law includes the following provisions:

- economic operators (this term includes producers, dismantlers and shredders among others) are to establish adequate systems for the collection of end of life vehicles (ELVs);
- last owners of vehicles must be able to return their vehicles into collection systems free of charge from January 2007;
- producers (vehicle manufacturers or importers) are to pay 'all or a significant part' of the costs of take-back and treatment from January 2007;
- re-use, recycling and recovery targets ('recycling targets') must be met by economic operators by January 2006 (85% recovery with 80% as a minimum for recycling) and from 2015 (95% recovery with a minimum of 85% recycling); and
- the use of heavy metals in new vehicles will be restricted from July 2003.

At the present time manufacturers are not sure how many of their products they will be responsible for. Do they have to take back all products still in use when they

BIO NOTE

Geoffrey Wakeham MIAgrE was formerly Principal Engineering Lecturer at Harper Adams University College and is the Convenor of the forthcoming IAgrE Annual Conference (see Back Cover) on March 9th 2005. Be there! Further details can be obtained from the IAgrE, West End Road, Silsoe, Bedford, MK45 4DU; tel: +44 (0)1525 861096 or Harper Adams University College, Newport, Shropshire TF10 8NB; tel: +44 (0)1952 820280.

reach the end of their useful life? Do they have responsibility for products made by previous owners of the Company? These liabilities to dispose of existing products could bring a company to its financial knees and could ensure the sale of designs and assets to manufacturers outside the European Union.

Companies will need to develop a strategy to deal with the potentially very expensive requirement to take back and reprocess all existing and future products.

It can not be long before manufacturers of agricultural vehicles and self-propelled machines will be effected by similar legal requirements. It has been suggested that in the near future any manufacture of powered machines will have to take responsibility for every machine they make. This could include all machines currently in the market place.

Companies need to be working out a strategy to deal with this significant change in the market place. Those companies that get it right may have a longer survival time, those who get it wrong have no future. Sustainability is not guaranteed for any one.

There is a need to decide if companies within the industry are to cooperate in some attempt to reduce the costs of setting up retrieval and processing schemes or if they will stand alone.

Whichever system or organisation is chosen will not answer the problem as to what should be done to maximise the returns or minimise the cost of disposing of obsolete or worn out products.

David Hulse, Director General of the British Material Recycling Association, is quoted in the Professional Engineer as saying that costs of processing vehicles are five times as high as the value of the material yielded by the process.

There are always a number options and the one chosen will influence future company policy with regards to product development, manufacture, marketing and of course final disposal/recycling.

The simplest option is to pay a waste disposal company to take away and bury the problem in a hole. This is likely to be simple but expensive, as the directive categorizes ELVs as hazardous waste, it will not be sustainable and is unlikely to drive improvements in material use, changes in manufacturing techniques or development of supplier/customer relations.

A greener option is to seek to use the product as a source of raw materials by recycling as much as possible and reducing the percentage of material that is lost to a minimum. In practice this is likely to be the minimum acceptable option with a requirement on vehicle suppliers to recycle 95% of the vehicle by 2015. This option will encourage designers to reduce the range of materials used in the product, specify materials that are simple to recycle or those that have a relatively high scrap value, making the product easy to drain fluids and disassemble, clearly labelling parts for their material type and providing instruction as to optimum disassembly procedures and recovery processes. Within this option there may be the possibility of recovering and refurbishing some of the more robust components or those that are inexpensive to bring back to within 'new' specification.

The option requiring the greatest input is that of refurbishing the machine in its entirety. This is not unknown to the industry but current designs of machines with sophisticated systems and complex maintenance requirements make them unsuitable for many markets that might find refurbished machines acceptable. There is the need to have a sizable market, or acceptance of loss of some markets for new machines, a refurbishing organisation possibly within the selected market areas and the necessary customer support.

Designs will need to be modified so that it is possible to remove complex systems and replace these with robust mechanical alternatives.

At present the future is far from clear with regards to the dates when legislation will be put in place however all the evidence points to the inevitability of the EU requiring manufacturers and suppliers to take responsibility for their products at the end of their useful life.

These uncertainties are one of the reasons why the IAgrE and Harper Adams University College Engineering Department are organising a conference titled 'Sustainability in Engineering Design' at Harper Adams on the 9th March 2005.

SOIL CONTAMINANTS

Oily waste gets the Cranfield treatment

A consortium led by Cranfield University's Integrated Waste Management Centre has won a £900k grant from the Government's Bioremediation LINK programme to ensure that soils contaminated with oily wastes are treated and the risks to human health and the environment minimised.

The project – involving BP; SecondSite Regeneration Ltd; Dew Remediation Ltd; TES Bretby of the Mowlem Group; technology translators PERA, and academics from Cranfield, Aberdeen and Lancaster universities – will improve market confidence in biopiling by ensuring treatment is undertaken within a risk management context.

Funding has been provided by the Department of Trade and Industry; the Biotechnology and Biological Sciences Research Council; and the Environment Agency. The FIRSTFARADAY network – a national centre of excellence for the assessment and remediation of contaminated land and associated waters – will provide an industrial chair at Cranfield for the project.

Dr Jane Crossley, Technical Manager of Dew Remediation Ltd, said: "We are delighted to have been awarded funds. This award is a substantial contribution to our R&D efforts, and Cranfield University is the perfect partner for industrially focused research."

Professor Simon Pollard, Head of Cranfield's Integrated Waste Management Centre, said: "This is a classic Cranfield project – we have an internationally leading consortium and, together, expect to make a practical contribution in applying risk assessment to the treatment of hydrocarbon wastes. This research will further our confidence in bioremediation and the regeneration of historic industrial sites by ensuring risk management is central to the process."

CONTACT

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BUSINESS SKILLS

Boost to land-based engineering in Wales backed by Education Minister

Jane Davidson AM, Education and Lifelong Learning Minister, joined employers and industry representatives from Wales' environmental and land-based industries at the Millennium Stadium, to celebrate the awarding of a new five-year Sector Skills Council licence to Lantra. It followed Lantra's UK-wide launch by Rt Hon Charles Clarke MP, Secretary of State for Education and Skills, in June. The awarding of the licence demonstrates the Welsh Assembly Government and UK government's commitment to empowering land-based engineers, and other land-based employers in Wales, to ensure that future skills meet their specific needs.

Through Lantra, the Sector Skills Council for the environmental and land-based sector, land-based engineers in Wales play a key role in influencing and shaping the skills and training their businesses need.

Jane Davidson said: "I am delighted that Lantra has received this licence. This represents another important step towards establishing the Skills for Business network of Sector Skills Councils across the UK and in particular Wales. It is through forming real partnerships and working collaboratively that we will raise our game, and be responsive to the needs of employers. This is the only way that we can hope to achieve our goals of a strong, economically and socially secure Wales."

Raising land-based engineering skills in Wales

Lantra Chief Executive, Peter Martin, said: "We offer a range of support to a number of industries including land-based engineering. Our 'Learning for the Land-based Sector' project has now supported over 400 businesses and trained in excess of 1,250 individuals across Wales." The need for such tactics is evidenced in recent research which shows major skills gaps and shortages in the environmental and land-based industries in Wales; 17% of Welsh businesses in the sector report recruitment difficulties.

Employer involvement is vital

Lantra Chairman, Dr Gordon McGlone, said: "To have Jane Davidson support the award of our five-year licence shows just how much the Welsh Assembly Government values the environmental and land-based sector, and recognises the need to improve skills. Now it is over to employers to show they value the opportunity they have been given. We urge individuals from the sector in Wales to work with Lantra."

MORE INFORMATION

Lantra, Wales. Tel: +44 (0)1982 552646. E-mail: wales@lantra.co.uk Web: www.lantra.co.uk/wales

GREEN BUILDINGS

Termites could hold the key to self-sufficient buildings

Mounds built by highly-evolved African termites could inspire new types of building that are self-sufficient, environmentally friendly and cheap to run. The mounds provide a self-regulating living environment that responds to changing internal and external conditions.

A multidisciplinary team of engineers and entomologists, is looking at whether similar principles could be used to design buildings that need few or no mechanical services (e.g. heating and ventilation) and so use less energy and other resources than conventional structures.

Loughborough University is leading this innovative project, with funding from the Engineering and Physical Sciences Research Council (EPSRC). The initiative will include research in Namibia to digitally scan the structure of the termite mounds. This research will be filmed by the BBC Natural History Unit for inclusion in a new Sir David Attenborough series due to be screened in 2006.

The mounds incorporate a complicated network of tunnels and air conduits designed to channel airflow for the control of internal air quality, temperature and moisture levels. Furthermore, the termites have evolved in such a way that they out source some biological functions, for example, digestive functions to a fungus that they farm inside the mound. They supply the fungus with chewed wood fibre which the fungus breaks down into nutritious food. The structure of the mound ensures a constant and optimum environment for the fungus to thrive.

The human equivalent of these 'smart' mounds would be buildings that meet all energy, waste management and other needs on site. By digitally scanning the mounds, the new project will allow their three dimensional architecture to be mapped in a level of detail never achieved before. This computer model will help scientists develop an understanding of exactly how the mounds work and so provide a platform for further studies.

Dr Rupert Soar of Loughborough University's School of Mechanical and Manufacturing Engineering is leading the team. Dr Soar says, "We hope that our findings will provide clues that aid the ultimate development of new kinds of self-sufficient human habitats. These habitats might be suited to use in a variety of arid, hostile environments, not only on the Earth but maybe one day on the Moon and beyond."

MORE INFORMATION

Dr Rupert Soar, School of Mechanical and Manufacturing Engineering, Loughborough University. Tel: +44 (0)1509 227637. E-mail: r.c.soar@lboro.ac.uk The Engineering and Physical Sciences Research Council (EPSRC). Web: www.epsrc.ac.uk

Bimonthly WINTER 2004

MEMBERSHIP MATTERS

THE NEWSLETTER OF THE INSTITUTION OF AGRICULTURAL ENGINEERS

AN 'ISSUE LEAD' AGENDA FOR IAgrE: A CONCEPT TO PONDER

As your professional organisation, IAgrE performs many functions. Not least of these is the need to raise the prominence of issues that impact on the interests and concerns of members directly, and on the industries they serve. In many cases our members have the expertise to inform the development of policies surrounding these issues whilst IAgrE, as the networking organisation, can act as a credible independent facilitator.

What is an issue?

What do we mean by 'issue'? These can vary in scale and context. The problem of recruitment and retention of engineering technicians that is now being tackled by BAGMA and the AEA is good example of an issue that was stimulated by IAgrE. Others might be: 'Education for agriculture – will the market deliver?', 'Sustainable production from the land – is it happening?' and 'Removing the barriers to biomass for energy'. There will be many more to come out of chats at Branch meetings or through exchanges on the discussion forum on our web site.

Why should IAgrE get involved?

There are real benefits to members from this type of activity. They get the opportunity to stimulate and influence change. Being in the vanguard of developments is stimulating and can give rise to new ideas and opportunities. IAgrE gains profile as a leader and trusted co-ordinator by connecting all the interests. This, in turn, adds credibility to its membership. There is another spin off. The outcomes from the analysis of issues could inform the agenda for all of the other IAgrE activities.

How do we deal with issues?

Many of our activities already deal with issues to some extent, especially the Branch and Technical Group meetings, but there could be scope for a more structured approach. The first stage is to identify those topics that are worth dealing with. There a number of fora for achieving this, we just need to feed the Secretariat with the ideas whatever their source.

Once the topic is defined, we have a format in mind for stimulating debate and drawing conclusions. In essence, this will be to collect together a cross-section of interests and knowledge, including our eminent members, create an informal atmosphere and to gently manage the discussion that ensues. Proceedings can start with lunch and conclude with an early supper incorporating a relevant 'walk about' along the way to provide the opportunity for informal contact. These events will aim to get a contribution from everyone present and represent all the facets; they will not be paper based conferences. Depending on the issue, IAgrE could join up with other relevant bodies drawing on our fellow organisations in SocEnv and those in the agricultural, horticultural, forestry and amenity industries.

What next?

The aim is to organise 2-3 events of this nature each year. We are currently taking soundings on the scope for dealing with the 'education' issue possibly in partnership with the IAgrM and the issue of 'Sustainable production' may form part of an event prompted by our Environment Action Group in early part of 2005. These will help us to refine the model.

What we need now are your ideas for themes that need to be tackled.

Peter L Redman
President

ACCREDITATION

CHARTERED ENVIRONMENTALISTS

Congratulations to members of the IAgrE who have pioneered the establishment of quality standards for Chartered Environmentalist and to all those who have met the criteria, entitling them to use the designatory letters CEnv after their name

Peter Lawrence **Redman**
Christopher Rees **Whetnall**
James Arthur **Harris**
Mark George **Kibblewhite**
Charles Stephen **Parkin**
William **Stephens**

Philip William **Amos**
Piers David **Austin**
Richard **Bond**
Alan John **Brewer**
Francis John **Butcher**
William Richard **Butterworth**
Andrew Percival **Casebow**
David John **Cooper**
Robert **Evans**
John Edward **Fox**
Do The **Gia**
Richard John **Godwin**
James Michael **Greatorex**
Timothy John Ross **Havard**
Andrew Ian James **Heather**
David **Howat**
David John **Killer**
Jamie **Newton**
William James Hope **Ramsay**
Vaughan Paul **Redfern**
Alan George **Robbins**
David John **Roe**
Stephen John **Shakespeare**
Katherine Iris **Stearne**
David William Glynne **Thomas**
Thangavelu **Toniappa**
Stephen John **Twomlow**
Alan Amadeus **Valentine**
Peter William **Waggitt**
Christopher William **Watts**
David Richard **White**
Brian David **Witney**
Michael Albert **Zoebisch**

Current corporate members still have an opportunity to apply for accreditation as Chartered Environmentalists through the 'grandparenting' procedure, only on offer for an initial twelve month period, after which a more rigorous procedure will be implemented for all new applicants. Don't delay, register interest today! Contact the Secretariat for further information on +44 (0)1525 86 1096.

CLOSURE FOR SILSOE RESEARCH INSTITUTE

The Biotechnology and Biological Sciences Research Council (BBSRC) and the Governing Body of Silsoe Research Institute (SRI) have not been successful in their discussions with a commercial third party to create a viable Research and Technology Centre at Silsoe. It had been hoped such a Centre would enable continuation of contract research and technical services on the site after BBSRC withdraws core research funding from SRI by March 2006.

Despite the best efforts of all concerned, it has proved impossible to develop a business plan that meets the objectives of BBSRC and the SRI Governing Body for a sustainable research and technology facility, based mainly on current R&D activities. The difficulty of achieving medium-long term sustainability of activities on the Silsoe site was highlighted in the Follett review of SRI in 2003. Negotiations have therefore been terminated. All parties are disappointed that it has not been possible to reach agreement.

As a result, BBSRC and SRI will now resume redeployment and redundancy procedures, including discussions with individual members of SRI staff to identify possible opportunities for relocation of areas of research and researchers, on a case-by-case basis. This process is likely to involve a relatively small number of posts. BBSRC regrets that up to 150 posts could be made redundant, and that closure of SRI seems inevitable.

Prior to negotiations on the Research and Technology Centre, BBSRC had already arranged transfer to Rothamsted Research of around 20 posts in areas of science that it regards of core strategic importance. Discussions are continuing on the future location of animal welfare work, and an application to house this on an academic campus is being processed under peer review procedures.

"We know from our consultation earlier this year that there is considerable support from commercial and other end-users for the expertise and services in individual components of the diverse R&D activities on the site. Sadly, there have been concerns over the adequacy of income in the medium to longer-term to sustain the infrastructure and breadth of activities for a new Research and Technology Centre," said BBSRC Chief Executive, Professor Julia Goodfellow.

Sir David Naish, Chairman of the SRI Governing Body, said: "The trustees of SRI believe that a major resource of engineering research that was delivering value for the UK is being lost, and, though the negotiations have not been successful, we will continue to encourage BBSRC to support other opportunities for SRI's successful research teams".

LETTER

LETTER TO THE EDITOR

(Open letter sent to Professor Julia Goodfellow, Chief Executive, BBSRC)

Silsoe Research Institute

The media release of 13.10.04 is but the latest in a long line of 'troublesome difficulties', which have afflicted the former National Institute of Agricultural Engineering (NIAE), which was later and mistakenly entitled, Silsoe Research Institute (SRI)

It is hardly surprising that the SRI has now to be 'downsized and rationalized'. The Biotechnology and Biological Sciences Research Council (BBSRC) may indeed regret that up to150 posts could be made redundant but this is surely as a result of the (earlier) movement away from the institute's soul [Institution of Agricultural Engineers (IAgrE) – the professionals – and the industry that is represented by Agricultural Engineers Association (AEA), as well as the farmers of Britain].

A series of science-based research projects were designed, developed and constructed without either the necessary industrial support (through AEA) or the intellectual support and practical knowledge of the Institution's members. Once government were asked to wholly fund the research, it became clear that the SRI, as the replacement for NIAE has little national support. Not at all surprising, if the earlier decision to change was made without the support of the three organisations, AEA, IAgrE and the farmers!

It may not be well known in Swindon or in rural Bedfordshire, that British industrial firms are being continuously invited to suggest to civil services and government, what is best for UK Ltd.

It should not be surprising if AEA's members informed government that SRI was not doing enough of relevance for our industry and it should not be surprising that the members of the professional Institution of Agricultural Engineers did not feel part of or properly consulted by BBSRC – until after the decision to close or sell was made.

Of course, heads should roll but they won't! So what happens now?

The Library is valuable and must not be lost to the nation. Perhaps a gift from BBSRC to the IAgrE would be a reasonable apology to the Ag. Engineer professionals?

Collectively, our Ag. Eng. Universities and Colleges have something to offer the young would-be Ag. Engineer! To create a co-ordinated Ag. Engineering industry grouping, with some of them taking over the SRI-NIAE former roles that must be retained, would certainly provide our profession with some challenges. In a worldwide sense, Britain's technological lead over others could be developed and the NIAE returned to us in different but useful form. Those colleges that have retained staff levels in Ag. Eng., such as Reaseheath and Brooksby for technicians, Harper Adams University College and Cranfield University (Silsoe College) for undergraduate and postgraduate work, could be part of a new more practical approach that could be constructed to meet UK Ltd objectives.

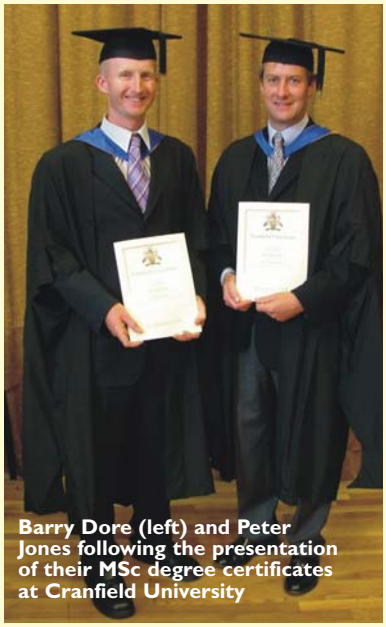
If we can think our way through the national requirements and organise ourselves at the strategic and policy levels, it should be possible to recover from the fiasco of losing NIAE so many years ago. The loss of SRI is, I'm afraid hardly significant.

Graham Edwards FIAgrE
Co-founder and Chairman
Trantor Vehicles Ltd
E-mail: pmandawo@breathe-mail.net

GRADUATION

QUALIFIED SUCCESSES FOR RANSOMES JACOBSEN SPONSORED GRADUATES

The first of the Ransomes Jacobsen sponsored Higher Education students on the British and International Golf Greenkeepers Association (BIGGA) Scholarship programme were presented with their degrees at a graduation ceremony at Cranfield University at Silso recently.



Barry Dore (left) and Peter Jones following the presentation of their MSc degree certificates at Cranfield University

Barry Dore and **Peter Jones** donned gown and mortar board to receive their MSc degrees in Sports Surface Technology from the Chancellor of the College, Lord Vincent of Coleshill. A third BIGGA Scholarship graduate, Eoghan Buckley was unable attend as he is currently undertaking an internship in the USA.

All were given substantial financial support from the scholarship scheme which was set up by BIGGA two years ago. Barry was the first to mount the stage and spoke later of the pride he felt in his achievement. "Receiving this qualification means a great deal to me. The training I have received has greatly improved my knowledge of sportsturf science. It will also allow me to consider employment options in the future that I would never have been in a position to consider before," said Barry. "I can't thank BIGGA and Ransomes Jacobsen enough for their support during the course."

Peter Jones, who runs Peter Jones Associates Ltd, was equally delighted and said, "It was a proud moment for me when I received my degree from Cranfield University. It more than justifies the many, many hours spent studying and writing assignments. I am greatly indebted to BIGGA and Ransomes Jacobsen for the wonderful support they have given me and my fellow scholarship winners and I would encourage others to take advantage of the support there is out there for people attempting to better themselves through education."

Commenting on the scheme, Ken Richardson, BIGGA's Education and Training Manager said. "The scholarship programme has enabled 48 greenkeeper members of BIGGA to enrol onto Higher Education courses including the Masters Degree course at Cranfield University. Greenkeepers now have access to a full range of qualifications enabling them to move their careers to an even higher level and compete for better salaries."

MEMBERSHIPS

Academic Members

Askham Bryan College
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Barony College
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Institute of Technology, Tralee
Clash
Tralee
Co Kerry
Ireland

Myerscough College
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Bilsborrow
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Lancashire
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Oatridge Agricultural College
Ecclesmachan
Broxburn
West Lothian
EH52 6NH

Pencoed College
Pencoed
Bridgend
CF35 5LG

Reaseheath College
Reaseheath
Nantwich
Cheshire
CW5 6DF

Royal Agricultural College
Cirencester
Gloucester
GL7 6JS

Scottish Agricultural College
SAC Ayr Campus
Auchincruive Estate
Ayr
KA6 5HW

Sparsholt College
Sparsholt
Winchester
Hampshire
SO21 2NF

Willowdene Training Ltd
Willowdene Farm
Chorley
Bridgnorth
Shropshire
WV16 6PP

Wiltshire College - Lackham
Lacock
Chippenham
Wiltshire
SN15 2NY

COMMERCIAL MEMBERS

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Pershore
Worcestershire
WR10 2PE

Bomford Turner Limited
Salford Priors
Evesham
Worcestershire
WR11 5SW

John Deere Ltd
Harby Road
Langar
Nottinghamshire
NG13 9HT

FEC Services
NAC
Stoneleigh Park
Kenilworth
Warwickshire
CV8 2LS

G C Professional Services
for land-based and related industries
Highdown Cottage
Compton Down
Winchester
Hampshire
SO21 2AP

Law-Denis Engineering Ltd
Millstream Works
Station Road
Wickwar
Wotton-under-Edge
Gloucestershire
GL12 8NB

David Ritchie (Implements) Ltd
Carseview Road
Suttieside
Forfar
Angus
DD8 3EE

Shelbourne Reynolds
Shepherds Grove Industrial Estate
Stanton
Bury St Edmunds
Suffolk
IP31 2AR

Silsoe Research Institute
Wrest Park
Silsoe
Bedford
MK45 4HS

White Horse Contractors Ltd
Lodge Hill
Abingdon
Oxfordshire
OX14 2JD

LONG SERVICE CERTIFICATES

Name	*Grade*	*Date of Anniversary*
50 years		
Robert Derek Sydney **Barber**	FIAgrE	9 Nov 2004
John Malcolm **Boydell**	IEng MIAgrE	9 Nov 2004
35 years		
Robert Graham **Thompstone**	MIAgrE	16 Oct 2004
25 years		
Peter David **Rogers**	IEng MIAgrE	27 Sep 2004
Leslie **Milne**	MIAgrE	8 Oct 2004
Alistair James **Walshaw**	AMIAgrE	8 Oct 2004
Elwyn John **James**	AIAgrE	10 Oct 2004
Kimon Peter **Christodoulides**	AIAgrE	2 Dec 2004
Ian James **Yule**	CEng MIAgrE	5 Dec 2004
Ian Matthew **Hunt**	IEng MIAgrE	6 Dec 2004
Brian Lindsay **Roger**	IEng MIAgrE	6 Dec 2004
Timothy James **Marshall**	FIAgrE	12 Dec 2004
Harold Gordon **Gilbertson**	IEng MIAgrE	12 Dec 2004
Neil **Munford**	AMIAgrE	12 Dec 2004
Peter Allan **Roberts**	IEng MIAgrE	12 Dec 2004

ENGINEERING LECTURER WINS TOP STAR AWARD

Brooksby Melton College lecturer **Richard Trevarthen** MIAgrE, who manages the John Deere Ag and Turf Tech apprentice engineering training schemes, is the winner of the first STAR Award for Outstanding Achievement, sponsored by the Learning and Skills Development Agency (LSDA).

Over 1600 nominations were received in this inaugural year of the awards, and 130 nominees were shortlisted in 13 categories, sponsored by 12 different organisations. Sixteen of the most outstanding candidates across the whole sector, including Richard Trevarthen, were specially selected to compete for the top prize, the STAR Award for Outstanding Achievement.

"It is absolutely wonderful to hear I'm a winner. I am honoured to work with an incredible team of staff and my students are all a pleasure to teach. This award is not just about my work, it's about them too," said Richard Trevarthen at the recent awards ceremony in London, attended by Charles Clarke, Secretary of State for Education and Skills, and Kim Howells, Minister for Lifelong Learning, Further and Higher Education.

Launched in November 2003 by Charles Clarke, the STAR Awards are a new way of recognising the work of teachers, trainers, managers and support staff working in the learning and skills sector. These are the individuals, more than 600,000 in a diverse range of jobs, who have made an invaluable contribution to the quality of learning that millions of people in England receive every day.

All the final category winners were nominated by their students, colleagues or managers, and come from workplaces in sixth form colleges, further and adult education, community and work-based learning, prisons, education services and UK online centres. The STAR Awards independent judging panel based their choices on those who had made a difference to the lives of their learners with their willingness to exceed expectations and enrich the learning experience.

Richard Trevarthen, who has been a machinery lecturer and Landbased Service Engineers (LBSE) course tutor at Brooksby Melton College in Leicestershire since 1969, was nominated by Peter Leech, John Deere Limited's Manager, Customer Support. Peter has worked with Richard since 1990 in developing and managing the John Deere Ag Tech programme.

Richard Trevarthen, winner of the inaugural STAR Award for Outstanding Achievement, with his trophy – he also received a cheque for £1000, and certificates for himself and his employer, Brooksby Melton College.

In addition to the John Deere Ag and Turf Tech agricultural and groundscare apprenticeship programmes, Richard has been heavily involved in developing engineering standards, curricula and qualifications, and is part of the Lantra Industry Group. He also runs a stock car racing team with his sons Mark and Ian, and pursues a strong interest in vintage tractors and machinery.

"Richard has a 'can do' attitude to teaching, as well as boundless energy and enthusiasm," commented Peter Leech in his nomination. "He has instilled these characteristics into hundreds of young engineers, apprentices and others, who have been drawn into the infectious enthusiasm Richard has for the industry and the passion with which he delivers education.

"Richard's determination to make it succeed was one of the keys to the successful development and introduction of the John Deere Ag Tech programme in 1992. Since that time Ag Tech has become the industry benchmark for such schemes, winning a National Training Award in 1997 – still the only one of its type achieved by an agricultural engineering apprenticeship scheme.

"Students from the programme have won many City & Guilds Medals of Excellence, and one, Dan Massey of John Deere dealer J E Buckle Engineers, has gone on to win the Learning & Skills Council Modern Apprentice of the Year Award – a true testament to Richard's abilities and influence."

Next year's STAR Award nominations open in January 2005. Please visit the website www.dfes.gov.uk/starawards for more information, or contact the STAR Awards helpline on 0800 652 0528.

LINCOLNSHIRE STUDENT SCOOPS AWARDS

Ross Pearson, of Freiston, Boston, has been awarded the New Holland Trophy 2004. This award is for the top student on the final year of the BEng Honours Course at Harper Adams University College, Shropshire.

A former pupil of Boston Grammar School, Ross was the only BEng Agricultural Engineering student to obtain a first class honours degree. As part of his degree he undertook a project on hydraulic track adjustment for Househams Sprayers. He provided a solution which has already been implemented on a customer's machine and which will become the standard solution for Household Sprayers Ltd. For this outstanding student work, Ross has also been awarded the Benford Shield for the year 2004, for the Best Final Year Engineering Design Project.

Ross accepted the awards at the University College's annual graduation ceremony last month, where he also collected his degree. He is now working as a design development engineer for Chafer Machinery Ltd of Gainsborough.

Ross Pearson being presented with one of his awards by Dr Dan Mitchell of Harper Adams University College

GLOBAL NETWORK

IAgrE INTERNATIONAL SPECIAL INTEREST GROUP

This is a 'call to arms' to all members of our Institution who are domiciled/working overseas or who have international responsibilities through their company or profession. Before his untimely death, Derek Sutton and I used to discuss how we could engage the IAgrE with the wider global needs of our profession, in order to provide greater support to our overseas members and develop new initiatives which would strengthen our Institution and make best use of our resources and contacts. With the renewed emphasis on the special interest groups it has been agreed by the Executive that the time is right to initiate a new international focus for the IAgrE. *BUT we cannot do it on our own, we need your help, ideas and input!*

Firstly a short introduction to myself, Malcolm Cutler, as I have been asked to take on the role of International Coordinator for the Institution. I spent much of my life in Bedford before studying Agricultural Engineering at Rycotewood College in Thame and then at Silsoe in the late 1960's and early 70's. I then worked for companies such as Goodyear Tyre Co, Standen, Irish Sugar (Armer Salmon) and Lister Diesels, mainly concerned with marketing, overseas sales and general management. In the early 1980's, I set up and managed the Post Harvest Development Unit, based at Silsoe College and then developed my own business interests through Rural Investment Overseas Ltd and my present company FSC Development Services. I have lived and worked in Asia, Africa, Europe, Middle East and Central/North America but now concentrate mainly on Africa and Asia, including China, with some work in Central Europe. Much of this is involved in business development and assisting UK companies develop partnerships and investment overseas, including identifying finance and technical assistance. I am also a panel member with the Institution of Civil Engineers and a member of the TAA (Tropical Agricultural Association).

How can we develop our Institution globally? I would like to explore with you areas where we can:

- increase our overseas membership;
- use our overseas membership network to assist UK companies and organisations working and trading overseas; whether in research or trade, this could have mutual benefits for both parties;
- develop closer associations with overseas institutions, again benefiting both parties;
- approach various donor funds to support development work.

Over the next few months, I will be contacting all overseas members individually to access their thoughts and wishes, but I would also like to hear from other members who are involved with overseas marketing, consultancy, research.

UK companies and organisations are now having to develop new strategies if they are to be competitive in the global market place. Companies can no longer simply rely on selling 'widgets' overseas, but often need to develop closer linkages and partnerships with their overseas agents, customers, etc. This may mean technology transfer, partnerships and joint ventures, often requiring joint research and development. Research institutions, universities and other organisations are also developing closer ties internationally. How does this effect our Institution? Can we benefit from it? How can we assist in this process?

'UK companies and organisations are now having to develop new strategies if they are to be competitive in the global market place'.

What are your thoughts and ideas for the future international role of the IAgrE? I want to hear them!

I can be contacted through my e-mails, mc@fscdev.com or fsc@onetel.net.uk or through the IAgrE secretariat.

I look forward to a full postbag!

DOES ANYONE KNOW THE WHEREABOUTS?

Name	*Last known address*
Barnaby Bernard Quest **Lewis**	17 East View, Writtle, Essex CM1 3NN

SocEnv ADMITS THE ROYAL METEOROLOGICAL SOCIETY TO FULL MEMBERSHIP

The Society for the Environment (SocEnv) has admitted (17th September 2004) its latest professional body as a full member: the Royal Meteorological Society (RMetS). The RMetS has been admitted to SocEnv as a full member, having spent several years as a Founding Associate Member. The RMetS will now apply for the SocEnv licence to enable the issuing of the new Chartered Environmentalist (CEnv) qualification to its members, which it anticipates being able to award from December 2004. CEnv is the pre-eminent professional qualification and recognition of excellence for environmental professionals.

The Society for the Environment was established in 2000, and aspires to be the leading and co-ordinating umbrella body in environmental matters and a pre-eminent champion of a sustainable environment. Its membership now comprises twelve leading environmental institutions and learned societies (known as 'Constituent Bodies'). Each full member may apply to be licensed to grant the new qualification of CEnv to their appropriately qualified individual members. Between them the Constituent Bodies have individual memberships comprising over 125,000 practitioners.

Will Pope, SocEnv Chairman, said: "I am very pleased to welcome the Royal Meteorological Society to full membership of SocEnv. The RMetS is a valued Constituent Body, with international membership. This move opens the way for meteorologists engaged in environmental issues to gain recognition for their skills and contribution to environment and sustainability through attainment of the CEnv qualification and will add strongly to the SocEnv practitioner base.

SocEnv will also benefit, as it develops over the next few years, from the input and expertise of the RMetS".

SocEnv continues to attract great support from key players and organisations in the environment sector and will expand our reputation as a champion of sustainable environmental management. SocEnv fosters a culture of inclusivity and ethical behaviour for the common good. The identities of its Constituent Bodies are maintained, while their primacy as centres of excellence within their fields is recognised and enhanced. New Constituent Bodies with specific technical expertise continue to apply to join SocEnv as full members, and at this stage another half a dozen professional institutions have indicated their desire be admitted and hence to qualify their members as 'CEnv'.

Tim Bines, SocEnv CEO said: "This is an important development for SocEnv, as RMetS is the leading body in the science of weather forecasting study and training for professional meteorologists. The RMetS is therefore on board at a very exciting time in the development of SocEnv, just before the Society transfers to incorporation under the Royal Charter (22nd September 2004). I look forward to the contribution of the RMetS as full members of SocEnv, and to the admission of suitably qualified members to the register of Chartered Environmentalists".

Richard Pettifer, Executive Director RMetS said: "The new qualification of CEnv is an important milestone for the environmental profession and so we are pleased to have been admitted to SocEnv, and to be able to offer to our meteorologists this opportunity by which their contribution to the environmental debate and sustainability can be formally recognised".

The criteria for CEnv are based on education, training, experience, and professional and ethical conduct. Constituent Bodies of the Society will be licensed to grant the CEnv qualification through a fast track 'grandparenting' process which lasts 12 months, but only those people who are suitably qualified members on the date their Constituent Body is awarded a licence may be fast tracked. Thereafter, applicants will go through the full process, which includes professional review interviews.

EUROPEAN BID TO STANDARDISE RECOGNITION OF ENGINEERING DEGREES

The European Commission has embarked on a project to standardise the recognition of engineering degrees across Europe. At the launch of EUR-ACE, a project on accreditation of engineering degree programmes, Ruard Wallis De Vries, European Commission, said the Commission looked forward to the delivery of a Europe wide system which defined the equivalence of nationally accredited engineering programmes.

Commenting on the project, Andrew Ramsay (Executive Director EC^{UK}) said, "Engineering education underpins professional competence and is thus a major interest for a regulatory authority, particularly as legislation governing professional mobility in the EU tends to be defined in educational terms. EC^{UK} is providing the Project Chairman, Prof Alan Pugh, and Steering Committee member, Prof Ian Freeston. This reflects EC^{UK}'s longstanding expertise in this area and our desire to have in Europe an equivalence system which operates as successfully as the Washington Accord, which EC^{UK} has developed with non-European regulatory authorities."

The European Commission has awarded 300,000 of SOCRATES-TEMPUS funds for the project. The EURACE consortium has 14 members, including Russia, all of whom are engineering education organisations and professional engineering accreditation agencies. The European professional engineers association, FEANI is the main contractor. The objectives of EUR-ACE are to:

- provide an appropriate European 'label' for accredited educational programmes and their graduates;
- improve the quality of educational programmes in engineering;
- facilitate trans-national recognition by programme validation and certification;
- facilitate recognition by competent authorities, e.g. under EU directives; and
- facilitate mutual recognition agreements.

MORE INFORMATION

Dr Jim Birch, Engineering Council (UK). Tel: +44 (0)20 7 557 6478. E-mail: jbirch@engc.org.uk

Membership Changes

Admissions

A warm welcome to the following new members

Associate Members

D R Baker (Norfolk)
R P Cunningham (Leicestershire)
P J Doyle (Wiltshire)
B Houchen (Norfolk)
J D Jewitt (Northumberland)
A Jones-Parry (Gwynedd)
A Saleem (Kent)
N Suttar (Caithness)
S J Wallace (Rutland)

Associate

R O'Brien (Cheshire)
A Twells (Carmarthen)

Student

Bath University:
J D Shanks

Greenmount College
J Allen
J Blemings
J Buchanan
A G Chambers
N Craig
A J W Cummings
C Hall
R Heaney
N Knox
R D A McAteer
C McDonald
J E M McIlwaine
T McMullan
J Millican
I W Moore
T L Moore
H R Murphy
E Nugent
C Quinn
R Sayers
S Sharpe
A D Weir
P H Wilson

Harper Adams University College:
C Bell

Reaseheath College
R Baron
N L Broomhall
P Brown
J E Campey
C D Charman
J D Coe
S C Edgar
P J Fiddler
E T Flower
J L Gleave
J Goodwin
M P Goodwin
S Groombridge
M Hallett
R Hill
R J Hilliard
M Huck
A D Hunt
J R Johnston
C M Jones
O Jones
M Kirbyshire
D Lloyd
G Lowis
C H McNiven
I J Matthews
D Melville
H R Middler
G E Moston
G A Mutch
A Newton
T G Norman
M J O'Connell
A P Owen
S M Pain
M Palmer
M R Parker
B Pritchard
A Shore
M C Simon
C Stangle
H W Thomas
N Tomlin
M Traves
M K Twidle
J Walley
M T Wanstall
J R Williams
N A Worstencroft
T P Wyatt

Wiltshire College Lackham:
C F Clark
J Cruse
J Evans
S Griffin
J A Hawes
C R Howe
S Kennett
R A Russell
J G Stevens
D J Trott
J S Wilson

Reinstatement

I O Falola (London)

Transfers

Congratulations to members achieving a further phase of their professional development

Associate Member

B J Sheehan (Shropshire)

Deaths

With great sadness, we record the deaths of the following members

K F Mather (Suffolk)
D A K Mayers (Australia)
J E Norris (Berkshire)
M Royle (Cheshire)

Engineering Council

Congratulations to the following members who have qualified as Chartered Engineers, Incorporated Engineers, or Engineering Technicians, entitling them to use the designatory letters CEng, IEng or EngTech, respectively after their name

Registrations

CEng

P J Kettlewell (Bedford)

IEng

S J Shakespeare (Gwynedd)

EngTech

N R Hardie (Scottish Borders)
C A Moulis (Lincolnshire)

Transfers

CEng

R E Robinson (Wiltshire)

Produced by: Land Technology Ltd, Edinburgh Printed by: Barr Printers, Glenrothes

A 25 year old cubicle shed which has been completely stripped inside, with new space boarding which leaves a 450 mm ventilation gap at the eaves

DAIRY COW HOUSING SYSTEM

Richard W Langley

BIO NOTE

Richard Langley MIAgrE is available for consultancy work and can be contacted on 01245 252032, e-mail: rw_langley@hotmail.com

Introduction

A poorly designed cubicle system can lead to many problems, not least of which is the added stress put on to the cow. Added to this, is the fact that dairy cows in the UK have increased in physical size over the last 30 to 40 years or so. There are of course other factors that have led farmers to think again about their housing systems. Two such factors are:

- a much diminished labour force that has found a prominent position on farms in the UK; and
- an increase in cow numbers, totally necessary to meet the falling margin per cow, and escalating overhead costs.

With all this in mind, P W Langley, near Whitchurch, Shropshire, recently completely gutted his 25 year old cubicle shed and started from scratch again. He has increased his herd numbers over recent years, to around 210 Holstein Friesians with dry cows and cows – just at calving – housed elsewhere.

The new stalls were supplied and fitted by David R. Beech, Barn Equipment, of Holmes Chapel. The builders for the contract were Rednal Concrete Construction. This article covers a description of exactly what Peter Langley decided to install in order to implement major improvements to his cow housing system.

Existing accommodation

The shed has a central feed passage, supplied with silage from a tractor plus feed wagon, automatic scrapers, with a double row of cubicles on each side. The shed was lengthened a couple of years ago by three bays in order to add some more room for an increasing herd size.

The total number of beds, with Newton Rigg divisions, was around 150, but many of these had corroded badly, and were inadequate in size and design for the modern cows.

Ventilation sheets at the apex of the shed roof were re-used but raised by 175 mm, vastly improving the ventilation

Excessive teat damage and swollen hock joints were becoming a major health issue.

With the increasing cow and herd size, ventilation was becoming inadequate with the side openings and roof gap too narrow. Air movement was poor, evidenced by the mass of hanging cobwebs inside the building, together with a lot of condensation under the sheets.

All in all, the cubicle housing was becoming outdated and was barely adequate for the needs of the farm.

Improvements

Ventilation

In 2003, alteration was made to both the inlets and outlets of the shed. First of all, the complete sidewalls were demolished, and then they were replaced with a new outward leaning wall, with new space boarding. The space boarding (Yorkshire) starts 450 mm below the eaves level, drawing in fresh air very efficiently. The main advantages of this new design are:

- extra room inside for the cows to lunge forward when getting up - the extra space is now adequate for them to do this; and
- better and more adequate inlets for the natural ventilation system.

Previously, the ridge consisted of curved crown cranked sheeting, giving only a minimal area for the openings. The actual openings were very unbelievably small and it really does show how attitudes and beliefs have changed dramatically over the years. The ventilation sheets at the apex were re-used but were raised by seven inches with extra purlins (horizontal beams that provide intermediate support for the common rafters of a roof construction). This created a chimney effect with a rapid disappearance of the cobwebs now becoming evident. This has vastly improved the ventilation in the shed with a much greater feeling of an airy atmosphere with air moving freely.

Old stalls were removed from the existing cow shed; new concrete was laid to a fall of 4% and 'Comfort' stalls installed

Beds

The old Newton Rigg divisions were dismantled, and the stalls were jackhammered up. Previously these were laid without a fall and were concrete - a 'soft bed' was attempted using sawdust. The new concrete was laid, to a fall of 4%, and the new 'Comfort' stalls were installed. The major characteristics of these divisions are given as:

- longevity because of the suspended construction;
- bolts and nuts are coated with a cobalt-zinc layer;
- all other parts are hot dip galvanised according to ISO 1461:1999;
- much greater space and comfort thanks to the design;
- cows of average height and width have no problems when getting up;
- stall is adjustable in width and height if required;
- stall floor is easy to clean; and
- meadow mattress or waterbed can be placed without any problems.

The stalls are mounted to 60 mm horizontal rails, which are clamped to 76 mm support posts. The support posts were set in concrete, with the use of a plastic sleeve. Tube clamp couplings coupled the shoulder rails and horizontal rails, with

an interval of 3 m between the couplings of the horizontal and shoulder rails to ensure stability. The dimensions of the 'Comfort' stalls would be suitable for:

- Dunlomat
- waterbed
- sawdust bedding

It was decided to install the waterbed flooring in the cubicles, with perceived advantages of increased cow comfort together with a 10 year warranty period. The material (a rubber compound) is delivered to the farm in a roll and is placed in position on the cubicles and then finally filled with water. It is interesting to note that when the beds are full they aren't hard and inflated fully but rather they have a limited amount of water pumped in. This then provides a bed with adequate 'give' and support to the cow, whilst lying down in the stall.

Conclusions

The re-vamped cubicle house is now very well equipped and able to give more than adequate support to the large dairy herd. The new cubicles are suitable for the modern Holstein Friesian cow. There have been some initial problems since the installation; namely, that it took around a fortnight for the cows to totally accept them but nothing compared with the huge advantages associated with the new cubicles.

As the farmer Peter Langley said, "the cows are spending far more time lying down and 'cudding', with teat damage and swollen hocks eliminated, meaning that production has increased as a result".

References

Spinder Dairy Housing and Production Systems Catalogue.

Langley R W (1998). Cubicle housing for dairy cows. Landwards, **53**(4), 8-13.

ENVIRONMENTAL OBJECTIVES

UK IT industry keener to be greener

A survey shows that British business managers are more environmentally conscious in the office than at home. Research by business technology manufacturer Brother UK shows that 79% of buyers recycle paper at work (compared to only 61% at home) while 53% recycle toner cartridges, against only 21% at home.

With the onset of the Waste Electrical and Electronic Equipment Directive (WEEE), which will regulate how businesses reuse, reclaim, recycle and dispose of waste Information Technology (IT) equipment, British IT buyers are increasingly conservation-conscious. An overwhelming 92% of buyers agree that more should be done to reduce the mountain of IT and electronic equipment going to landfill. Nearly two thirds (61%) claim to be already recycling IT or electronic equipment, compared to only 16% at home. In fact, only 1% claimed not to have any form of recycling policy at work.

Brother's 'Green Business' survey showed that a surprising 55% of IT buyers have been given environmental objectives at work, and 81% would sack a supplier with an environmentally-unfriendly policy. IT buyers were increasingly eager to maintain and develop environmental principles; 58% said they vet their suppliers for their green credentials and 84% claimed they tried to specify environmentally-friendly products when purchasing IT equipment.

But while 48% use low-energy light bulbs, 14% exploit water minimisation techniques and a third (34%) use recycled paper stationery, IT managers are missing out on one of the main environment and cost-saving options – only a quarter (26%) of companies print on both sides of paper. Said Mike Dinsdale, marketing director of Brother: "Green office equipment functions like print duplexing and individual colour ink cartridges save money and the environment at the same time. It's amazing to see so few companies taking advantage of such a simple step to savings."

Brother's findings also showed that IT buyers are tuning into the value of environmentally-friendly functions. While print quality and networkability remain the most important functions when purchasing IT hardware, energy saving devices are rated highly. More than nine out of 10 (96%) buyers cited consumable saving functions – such as 'toner save mode' – as important to their buying decisions, 88% valued energy-saving devices (such as 'stand-by' features) and 84% viewed low emissions levels as vital. Mike Dinsdale added: "As corporate social responsibility creeps ever further up the corporate agenda – both for private and public companies – environmental credentials are really starting to count in the office."

Brother recently launched the industry's first *TCO '99 accredited office products*', the world's toughest environmental standard involving 50 tests across ergonomics, energy consumption, emission levels and ecological soundness.

As well as offering energy efficiency and low emissions, the range of all-in-one devices and office printers has been designed with recycling in mind. Materials such as plastics and metals are kept separate and different types of raw material are kept to a minimum.

MORE INFORMATION

Brother. Tel: +44 (0)870 606 0626 (stockist information and brochure requests). Web: www.brother.co.uk

SOCIAL AND ENVIRONMENTAL STANDARDS

Rainforest Alliance and Lavazza team for sustainable coffee

The international conservation organisation that pioneered the concept of certified sustainable coffee and the Italian company that pioneered espresso have joined forces to help farmers in remote villages in Colombia, Honduras and Peru improve their quality of life so that it matches the quality of the coffee they grow.

The partnership between the Rainforest Alliance and Lavazza, announced at the Slow Food Fair in Turin, Italy, combines the forces of two standard setters. The Rainforest Alliance is a not-for-profit green group based in New York and Costa Rica that has developed environmental and social standards for farm management and a certification seal to reward farms that meet the criteria. For more than 100 years, Lavazza has set the standard for the exquisite quality Italian espresso served in inimitable style. Slowly sipping a Lavazza is part of the Italian culture, and the company now shares its savoury brews with aficionados in major markets around the world.

The Rainforest Alliance and Lavazza agree that good farming practices can produce top quality beans and lead to better prices for farmers, sustaining rural communities while conserving the rainforest ecosystem. Many coffee producers agree, and just need some guidance, training and capital. Through the partnership, which has been more than a year in development, the Rainforest Alliance and Lavazza are evaluating the farms according to the Alliance's standards and helping the farmers make improvements. The exporting company, Volcafe, that handles the complicated logistics of getting the coffee from the farms to the Lavazza docks, is also a supporter.

"Coffee farming is a tradition in these areas, but with changing market conditions producers are finding that they must update some practices if they are to stay in business," says Rainforest Alliance Executive Director Tensie Whelan. "If farmers are given the proper guidance and some assistance, coffee production can be forest-friendly and profitable and sustain vigorous rural communities."

The farmers in the programme are grouped in three associations. All grow outstanding quality beans, but can barely make ends meet and are undermining their own natural resources. The Grupo Asociativo Villa Esperanza includes 51 small farms (average size 3.4 hectares) in the Huila area of Colombia, famous for its rare quality coffees. The La Fortuna group, in Honduras, includes 60 farms near the El Cusuco National Park. The Villa Rica Association is 54 farms in the 'ceja de selva' or 'high jungle' area of the Pasco district in Peru, not far from the Yanachaga Chemillen National Park.

When the Rainforest Alliance sent teams of experts to assess the farms, evaluators found problems in all three locations, including: worker and family homes in poor condition; wastewater from houses and coffee mills running directly into streams; farmers applying pesticides with no training and no safety equipment; workers deforesting areas to plant new coffee farms; soils eroding; and garbage accumulating.

"These conditions are typical of farms in this area," says José Alfredo Torres, the agronomist who led the assessment of the farms in Honduras. "But given the incentives and tools, the growers have a tremendous willingness to make improvements. That spirit is also typical."

With support from Lavazza and guidance from the national Non Governmental Organisations (NGOs) that collaborate with the Rainforest Alliance, the farmers in all three areas are protecting wildlife habitat, planting trees, learning how to combat pests without using dangerous pesticides, rebuilding housing, replacing inefficient old coffee mills with modern machines that use far less water and control pollution, composting organic wastes, implementing worker health and safety programmes and planting protective buffer strips along streams.

Some of the improvements benefit the whole community. In Honduras, for example, the coffee farms protect the watershed that supplies drinking water for local villages. Lavazza financed a new school that serves the entire area. And, the farms protect the national park, which attracts visitors who spend money in the community.

Francesca Lavazza, part of the fourth generation, says that the company founder, Luigi Lavazza, insisted as early as the 1930s that "coffee farming should help, not hurt, the environment and lifestyles of rural communities. We are just carrying his belief forward to this globalised world where corporate responsibility is part of any successful business."

In celebration of the project, Lavazza is launching a new line of coffee called 'Tierra!'. The coffee will be a blend from the three project areas. Once the farms achieve compliance with the Rainforest Alliance sustainability standards, they will be certified, and Tierra! coffee packages can be marked with the Rainforest Alliance Certified seal of approval.

The Rainforest Alliance works to protect ecosystems and the people and wildlife that depend on them by transforming land-use practices, business practices and consumer behaviour. Companies, cooperatives and landowners that participate in our programmes meet rigorous standards that conserve biodiversity and provide sustainable livelihoods.

As the first organisation in the world to utilise market forces to conserve tropical forests, launching a sustainable forestry division in 1989 and a sustainable agriculture division in 1991, the Rainforest Alliance pioneered a worldwide certification movement. Over 13 million hectares are now managed according to the highest standards through the Rainforest Alliance's SmartWood programme. The Rainforest Alliance has recruited over 1,000 companies in this effort and improved the quality of life of some tens of thousands workers and their families. The Rainforest Alliance's sustainable agriculture certification programme has certified almost 1,000 farming operations, including plantations and cooperatives, and has benefited over 95,000 farm families in the tropics.

MORE INFORMATION

Visit www.rainforest-alliance.org/coffee or www.tierra.lavazza.com

Government policy is holding back the UK's recycling performance

Government policy is undermining the UK's efforts to improve its poor recycling record, says a new report for policy makers, local authorities and other stakeholders.

The report, *Wasted Opportunities*, is by Forum for the Future, the leading sustainable development charity, for Tetra Pak, a major producer of liquid food packaging. It examined why there are such low levels of recycling of packaging (e.g. plastic bottles, liquid cartons and aluminium cans) in the UK.

One important factor are weight-based targets, driven by the EU's Packaging Directive and implemented by the UK Government, which have resulted in a bias towards the recycling of heavy materials (e.g. glass, newspapers), even though there are inadequate UK markets for these materials. For example, there is a green glass bottle mountain in the UK, yet insufficient demand for recycled green glass with one in three recovered green glass bottles (100,000 tonnes) being exported in 2003. At the same time, the UK aluminium recycling industry required imports from continental Europe to reach capacity.

The report calls for stakeholders to develop a shared vision for sustainable packaging, clarify the role of recycling within this, and provide a much clearer framework for policy-makers.

The following recommendations are included in the report.

- **Ambitious material-based targets for Local Authorities –** They should be recycling 50 percent of municipal waste by 2010 and 70 percent by 2015. Critically, the material being recycled should not just be the heaviest, but the type which provides the greatest benefits from recycling.
- **Introduction of landfill bans –** The UK Government should follow the example of other European countries such as Denmark, the Netherlands and Sweden, and introduce landfill bans for those materials which can be recycled or composted and where an infrastructure is in place or can be developed within five years.
- **Doorstep collection –** Local Authorities are already committed to providing every household in England with a separate collection of at least two types of recyclable materials by 2010. But they need to go further, providing separate collection of dry recyclables by 2010 and introducing doorstep collection of organic waste where composting is not feasible.
- **Reform of the landfill tax –** The Government should reform the landfill tax into a waste disposal tax that reflects the waste hierarchy and makes landfill and incineration the most expensive disposal options. UK landfill tax needs to be in line with the European average by 2008.
- **Variable charging –** Local Authorities should be given the power to introduce variable charging of households, according to the amount of waste they produce (after separation for recycling). This would provide a real incentive for households to reduce, reuse and recycle waste.

> "It is madness for targets to drive recycling of material for which there is no market in the UK and not encourage recycling for materials for which there is a good market".

Jonathon Porritt, Programme Director of Forum for the Future and Chairman of UK Sustainable Development Commission, said: "The current policy framework is still sending the wrong signals to the market. Landfill and incineration remain the cheapest options."

"We welcome the new Government campaign to make recycling more appealing to the public. But there is a strong risk of this good work being undermined if policy isn't rooted in a real understanding of sustainability and driven by the need to get maximum value from packaging materials with the lowest impact on the environment. Exporting recovered bottles as far as China is not a sustainable solution."

Mike Ansell, managing director of Tetra Pak UK comments: "It is madness for targets to drive recycling of material for which there is no market in the UK and not encourage recycling for materials for which there is a good market. As long as targets are tonnage based, lightweight packaging like cartons will always be at a disadvantage.

"Our cartons are made from a renewable resource – paper from well managed forests – and are extremely efficient as a form of packaging. We want them to be as easy to recycle in the UK as they are in many parts of Europe. But the rules are making this incredibly difficult to achieve."

Tetra Pak, the Liquid Food Carton Manufacturers Association (LFCMA) and Smith Anderson, have this year opened the UK's first carton recycling facility in the UK.

LFCMA, of which Tetra Pak is a leading member, invested in Smith Anderson's paper mill in Leslie, Fife so that it is now the first in the UK to have the technology to reprocess large quantities of beverage cartons. The mill has the capacity to reprocess 20% of all the liquid food and drink cartons on the UK market.

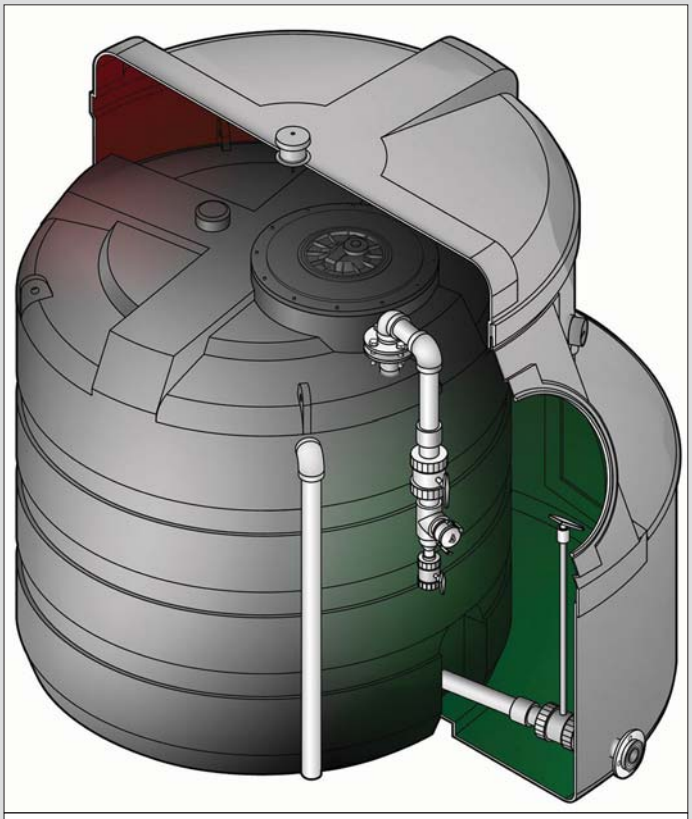
MORE INFORMATION

Stella Bland, Forum for the Future. Tel: +44 (0)7739 237148.

Tetra Pak produces aseptic packaging. This is where a thin layer of aluminium foil is sandwiched between layers of polyethylene plastic, protecting the product inside from light and atmospheric oxygen. For more information, visit www.tetrapak.com/uk

FLUID STORAGE

New chemical containment concept launched



Balmoral Chemical Tank's new Total Containment System (TCS)

UK based Balmoral Chemical Tanks has launched a range of integrated bunded 'Total Containment Systems' (TCS) designed to store chemicals and other fluids in a variety of applications.

The tanks, which are easily transported and lifted, range in size from 1500 - 5000 l and can be used to store fluids up to 1.9 specific gravity. The outer tank colour, fittings and connections are provided to suit client specification.

Rotationally moulded in high quality polyethylene, the inner tank is a one piece heavy duty vaessel contained within a seamless outer unit designed to hold 110% of inner tank capacity.

Bill Munro, Group director, told us: "A unique benefit of the TCS is the 'full' bund that is designed to contain high level leaks in the unlikely event of a malfunction - jetting pipework for example. Recent reports of security violations and vandalism at remote chemical tank installations mean this feature is becoming increasingly important.

"We also recognise that clients prefer to have their tanks as close to completion as possible before delivery. With the Balmoral TCS, all pipework and accessories are factory fitted which means the tank is easily lifted, installed and commissioned.

"All operational parts are easily reached through the hinged hatch which also allows for simple visual inspection. The hatch is lockable preventing unauthorised tampering, vandalism and theft."

CONTACT

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Website: www.balmoraltanks.com

GLOBAL POSITIONING

The ultimate mobile mapping platform

MobileMapper™ CE is the next generation handheld global positioning system (GPS) mobile mapping device from Thales Navigation.

It offers 'must have' features like sub-metre GPS positioning, integrated Bluetooth® wireless technology, removable SD card memory, touch screen, field replaceable all day run-time battery and built-in alphanumeric keypad.

Simple, rugged and affordable!

An open platform design with embedded Microsoft® Windows® CE .NET, MobileMapper CE supports PocketGIS software which combine to provide an ideal field data capture solution.

Data capture specialists Positioning Resources Ltd have been providing positioning and mapping solutions to both public and private sector organisations since 1983. The MobileMapper CE joins, laser rangefinders, handheld PCs and much more, to ensure that Positioning Resources Ltd provide a solution for every application.

CONTACT

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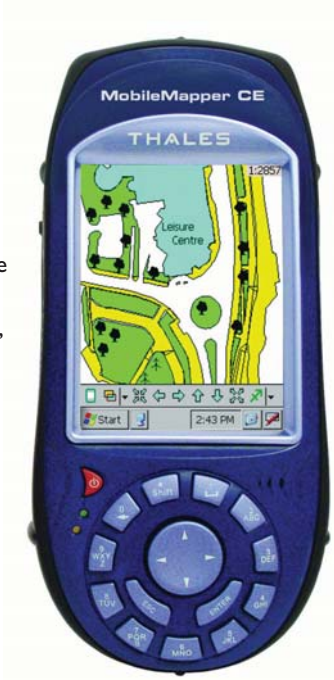

The MobileMapper CE is embedded with Microsoft® Windows® CE .NET and supports PocketGIS software providing the ideal field data capture solution

New Holland's innovative TS-A gets transmission makeover

The Electro Command™ transmissions on New Holland's TS-A Series tractors have been given a series of software-driven enhancements to further extend their position as the most advanced Semi-Powershift on the market today.

The improvements resulted from customer feedback during the latter stages of TS-A's development, when it became clear that users wanted Engine Power Management for use on the road as well as with pto operation.

Following successful intensive testing, TS110A, 125A and 135A models with Active Electro Command™ transmissions now benefit from increased power for road haulage applications. The additional power is available when the automatic 'Road Mode' is selected and the tractor is operating in gears 13 to 16.

Engine power management automatically provides an additional 7.3 kW at rated speed (if the tractor is fitted with the 50 km/h direct drive transmission, a further 3.7 kW is available giving an 11 kW power increase while in 17th gear). As a result of this, the TS110A can now be specified with a 17x16 high-speed transmission, previously only available on TS125A and 135A models.

The combination of Active Road Mode's auto shifting feature, which shifts up to nine gears without the need for driver intervention, new Engine Power Management and standard Comfort Ride™ cab suspension means that the TS-A is the new benchmark for high speed road haulage.

Software-driven enhancements to the Electro Command™ transmissions of the TS-A Series, further extend New Holland's position as the most advanced Semi-Powershift on the market

The result of this enhancement is a range of tractors with the power and performance of much larger models. The fuel efficiency of the TS-A's range of engines remains impressive, not just at rated speed, but across the whole working range.

Active Field Mode changes

Customer comments have also resulted in changes to the way the TS-A's Active Field Mode operates on Active Electro Command™ transmissions.

Previously, Active Field Mode's auto shift facility allowed the transmission to automatically move up and down a range of four gears to suit operating conditions. With the enhanced transmission, it is now possible to programme the function to shift up or down three or even two gears, for applications where fewer ratio changes are preferred.

Improved 16x16 transmission shifting

New to both Electro Command™ and Active Electro Command™ transmissions is the Intellishift™ system which ensures that clutch engagement is optimised for the smoothest imaginable take up of power, irrespective of speed or load.

The Intellishift™ system adapts to suit the TS-A's operating conditions by constantly monitoring output speed and engine speed and adjusting clutch pressures accordingly, even for changes in load during the gear shift. Under heavy loads, the clutches engage quickly at high pressure to maintain high torque through the transmission. With a lighter load, or no load, the clutches engage more slowly at lower pressure to provide a smoother shift.

While these three major improvements are all now available as standard from the production line, customers who bought new tractors prior to the introduction of the new software can also benefit. The TS-A's advanced Can Bus electronics system means that an upgrade to the tractor's software can be scheduled with any New Holland dealer the next time the tractor requires a service.

CONTACT

New Holland. Website: www.newholland.com

TOXIC SAMPLING

Eureka! New toxic sampling kit

A University of Surrey spin-out company, Cybersense Biosystems Ltd, has developed a portable toxicity screening device.

The ROTAS system can be literally wheeled on to a brown field site and carry out field based screening of contaminated soils and waters with results then read within minutes. It is especially relevant with the Government's vision to see more contaminated industrial land made safe for housing.

"The key benefit of ROTAS is its ability to dramatically reduce the cost of site remediation by providing reliable data on site quickly so that it can be used to influence the management of the project." says the inventor Dr Tim Hart, Cybersense.

Using marine bacteria that naturally emit light (bioluminesce) the Rapid On-site Toxicity Audit System (ROTAS) is an environmentally sustainable method of analysing toxicity when compared to classic tests on higher organisms. When in a state of metabolic health the bacteria glow more but in the presence of increasing toxicity they glow less.

This powerful new tool based on a well recognised technology allows more rapid, cost-effective and accurate site characterisation and monitoring work. It has been designed to complement, not to replace chemical analysis.

The information provided by ROTAS is much more powerful than can be obtained by chemical analysis alone and results from its use provide information on the biological effects of contaminants, no matter how complex and ill-defined the pollution is, or what synergistic interactions take place between toxins.

The ROTAS system has been specially designed for the analysis of soil samples and is capable of sampling soil in the field in minutes in a very simple to use, disposable piece of kit.

The ROTAS system, developed by Cybersense Biosystems Ltd, has developed a portable toxicity screening device for field based screening of sites

The test can be used to measure the toxicity of aqueous samples, such as waste effluent, groundwater or leachate, where it provides a higher throughput of samples than other systems on the market.

The results of the test are expressed as a percent luminescence relative to the unexposed control, so low values indicate high levels of toxicity.

The test can be calibrated to on-site target clean-up levels or other screening criteria to provide a pass/fail test, also relative toxicities can be compared between soil samples on a site.

This was the first investment from the University of Surrey Seed Fund, of £100,000 in September 2001.

Since then, the company has been through three private investment rounds including a further top-up from the Seed Fund and also raised some £1m public grant funding

Anthony Woolhouse, Head of Ventures at the University of Surrey said: "I am absolutely delighted that this project has moved on so positively in such a relatively short space of time. We like to back success at Surrey and we were pleased to co-invest with business angels last year. Cybersense is a really good example of an innovative idea being turned into an exciting business with real growth opportunity!" Cybersense moved from Surrey to Oxford and now occupies two sites around the University of Oxford and on the Oxford Science Park. The product has global interest and Cybersense is setting up distributors across Europe, US, Japan, South Africa and Australia.

The company has 23 shareholders, eight full time staff and a board of five directors. The inventors started with nothing and have developed, field trialled and manufactured the product in just over two and half years. The company is now making sales.

The Environment Agency supports the development of field-based screening tools, such as ROTAS and sees the potential of such technologies to improve the accuracy and cost-effectiveness of site characterisation.

The Agency is involved in the evaluation and development of the ROTAS assay and has formally documented its support and interest. The Agency has stated: "The Agency considers ROTAS as an emerging innovative tool likely to be suitable for determining the presence of chemical contamination in soils and waters". (Source: National Groundwater and Contamination Land Centre, August 2003)

CONTACT

For a CD-ROM presentation of the ROTAS system or more information: Liz Morgan-Lewis, Head of Communications and Public Affairs at University of Surrey. Tel: +44 (0)1483 683 932 E-mail: press-office@surrey.ac.uk Website: www.surrey.ac.uk

AGRICULTURAL CARRIERS

AUSA UK at Four Oaks trade show 2004

Ausa UK is building upon its reputation for producing robust, purposeful equipment with its latest introduction, the Ausa DV50 general-purpose light carrier. Appearing at this year's Four Oaks trade show, the 500 kg payload DV50 two-seater has been purpose developed for use in arduous conditions and combines simplicity and ease of operation with high levels of safety and comfort.

Powered by a 16 - 21 kW 400 cc Rotax petrol engine, the Ausa DV50 has a large 1460 mm wide by 1200 mm long cargo box and a useful 550 kg towing capacity. This will enable it to get both men and machines to less accessible areas on site both quickly and economically. The Ausa DV50 is also easy to drive, featuring a dual range CVT automatic transmission and drive to all four wheels. A differential lock system can also be specified for use in really tough terrain.

Existing utility vehicles in this category are not necessarily designed for use in tough conditions, being more at home on a golf course than a construction site. The DV50 is different, its rugged chassis and generous 210 mm under axle ground clearance enabling it to traverse really tough terrain. Despite its rugged build, however, it weights in at a modest 550 kg, making it light enough to be moved between sites on the back of a pick-up.

"Light utility and ATV vehicles have carved out pretty fixed niches for themselves in the UK," says Ausa UK managing director Martin Bell. "ATVs have tended to sell most strongly into agriculture, with the amenity sector taking on utility vehicles such as the Kawasaki Mule and John Deere Gator. With the DV50, we have a machine that combines the rugged go anywhere abilities of an ATV with the load and dual person carrying abilities of a utility vehicle. It will make this type of unit viable for use in the construction sector for the first time".

Also appearing at the show will be a range of Ausa's forklift trucks and dumper trucks. The Ausa dumper range consists of models available in hydrostatic, manual with swivel skip options and load capacities from 750 - 4000 kg. Ausa's semi industrial/rough terrain forklift range comprises lift capacities spanning 700 kg to 3200 kg and a choice of specification enabling them to compliment individual handling applications.

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E-mail: ausa.uk@ausa.com
Website: www.ausa.co.uk

CHAINSAWS

World's lightest chainsaw unleashed by Makita

Makita underlined its ambitions and commitment to the chainsaw market by unveiling a world first at the Association of Professional Foresters industry show at Ragley Hall in Warwick.

Weighing just 2.5 kg, the Makita DCS230T is the world's lightest production chainsaw designed for use by qualified above-ground tree surgeons. This well balanced top handle saw is ideal for tree pruning and orchard and garden maintenance roles. Powered by a 23 cc two-stroke engine that delivers 750 watts of power the 25 cm bar carries a 91 VG chain for smooth, accurate work. A particular feature for tree surgeons is the fully enclosed ignition plug, a valuable safety feature for starting the saw when in the tree.

The latest Makita chainsaw, the DCS5000 50 cc professional model, sets the industry benchmarks in performance and reliability. The new DCS5000 has power increased to 2.8 kW and at 13,500 rpm this machine has the flattest torque curve in its class. Weighing just 5.1 kg and with the lowest vibration rating of any 50 cc professional chainsaw on the market, the new Makita DCS5000 will become the chainsaw of choice. Available with either 45 mm or 38 mm chain bar the DCS5000 (DCS5001 with decompressor starting) runs on 50:1 unleaded fuel with a tank of 0.47 l of fuel and a blade oil sump of 0.27 l.

CONTACT

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TRAINING

Apprentices prepare for future with Case IH

A new apprenticeship scheme is preparing trainee Case IH service technicians to meet the new demands of looking after modern farm machinery.

The Basildon based brand introduced the scheme for its dealers when it recognised that the skills required to maintain today's tractors and combines were different from those traditionally employed in the agricultural service sector.

Speaking to the first intake of apprentices at a ceremony to mark the end of their first year on the scheme, Case IH's business director for the UK and Ireland, Steve Crowe, said that when he did his apprenticeship, workshop staff were known as mechanics or fitters, but now they are more accurately described as technicians.

"Dealerships are now more involved in maintaining performance rather than fixing breakdowns," he said. "The technicians out in the field have to make sure that machinery is performing properly and ensuring it does what we say it will."

Mr Crowe added that this had changed the way that technicians worked. "It's no longer a case of swapping over parts and hoping it fixes the problem," he said, "the modern approach is to plug in a laptop computer to carry out diagnostic tests or to work through flow charts to find the problem."

Acknowledging that some farmers were likely to be sceptical of service staff who appeared to be working with computers and books rather than getting their hands dirty, Mr Crowe suggested that technicians would also need to hone well developed communication skills. "It is vitally important that service staff know how to handle customers properly," he said.

Students from the Case IH Apprenticeship Scheme, run in association with Reaseheath College (top); Case IH's business director for the UK and Ireland, Steve Crowe presents Adam Cloete with the award for top student

Students on the Case IH Apprenticeship Scheme will compete against each other for the annual 'Top Student' title, and Mr Crowe presented the inaugural award to Adam Cloete, an apprentice with Ernest Doe Power at its Wymondham branch situated in Norfolk.

Adam, who is 21 years old, started work at Does in May last year, but that was not his first experience of agricultural engineering as he had spent the previous two years working for a farm machinery dealership in Zimbabwe. "The technology here in the UK is a lot more advanced than anything I worked on before," he said, "and the tractors are a lot bigger as well. The biggest I saw in Zimbabwe were about 105 kW, while 300 kW Quad-Tracs are common where I work now."

Adam has already benefited from being part of the apprenticeship scheme.

"I'm definitely finding that the work we are doing on the course is a great help when I am out on farms in Norfolk," he said. "I'm really looking forward to the next two years."

The Case IH Apprenticeship Scheme is being run in association with Reaseheath College, where the apprentices attend for three four-week block release periods each year. After two years, the apprentices will sit exams for the BTEC National Certificate in Agricultural Engineering, while the BTEC National Diploma in Agricultural Engineering is the prize after an optional third year.

The course at Reaseheath was customised by Case IH with five main aims:

- attract a higher calibre of trainee by offering a structured training programme;
- ensure high quality, relevant training for dealerships throughout the UK;
- include fundamental product knowledge training on Case IH machinery;
- help reduce staff turnover by increasing employee loyalty; and
- provide a more defined career path in dealerships to help develop the parts and service managers of the future.

Case IH dealerships have been involved at every stage of the scheme's development and were instrumental in shaping the curriculum for the course to ensure it matched their requirements.

CONTACT

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UTILITY VEHICLES

Bid for green flag status helped by electric vehicles for Newcastle parks

A fleet of electric vehicles has been introduced in Newcastle-upon-Tyne's inner city parks to help the grounds care team make them more attractive to visitors and residents.

The Council has purchased eight electric E-Z-GO MPT light utility vehicles from Hexham based turf equipment dealer, Rickerby Ltd, and they are being used specifically in local parks because of their pollution free operation and low noise.

Eight electric E-Z-GO MPT light utility vehicles have been purchased to service Newcastle-Upon-Tyne's inner city parks, specifically because of their pollution free operation and low noise output

The new vehicles, distributed throughout Europe by Ransomes Jacobsen, have been specially adapted with a totally enclosed cab for maximum operator comfort and a bespoke trailer for carrying pedestrian mowers and other equipment.

Tony McKenna, Newcastle's Parks & Countryside Manager commented,

"We hope that the introduction of these vehicles will play a successful part in our bid to achieve a coveted Green Flag award. However, they don't just benefit the environment, they are also a very practical work vehicle and will help us improve productivity by lightening the workload of our park keepers.

"We have already seen considerable improvements to our operations while at the same time allowing people to enjoy our parks in even greater tranquillity."

The MPT 1000 is a rugged utility vehicle powered by a 48 V electric motor with a carrying capacity of over 450 kg. It features a self tipping rust-proof polyethylene cargo box and can reach speeds of 22 km/h. The specially designed cab provides a totally waterproof and comfortable environment for the operator and the bespoke trailer has a drop down tailgate which acts as a ramp for loading and unloading pedestrian mowers.

CONTACT

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ELECTRONICS

Measurement Technology and CAN-Bus brochure

Sensor-Technik UK Ltd has published a new brochure outlining the range of sensors, indicators and mobile CAN-Bus controllers available, together with its services, system integration and in house engineering capabilities.

The company specialises in sensors and associated electronics for the construction and agricultural industries, and it is now expanding into the automotive, machine building, defence and food processing sectors.

The CAN-Bus modules feature sensor/actuator management, easy data exchange between all units and complete diagnostics and error handling. All the controllers are freely programmable in C or IEC-1131.

Sensor-Technik is a world leader and manufacturer of mobile CAN-Bus controllers, and also supplies a complete range of pressure sensors which use the company's own manufactured pressure capsules.

Sensor-Technik also manufactures complete standalone control and regulator equipment CAN-Bus modules, developed for implementation in agricultural and construction machinery.

CONTACT

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LIVESTOCK

Cambridge company caters for comfy cows

Cows are getting a comfier life and farmers are boosting their milk yields with the help of a Cambridge plastics company. DRC Polymers produces a unique waterproof cover that improves the comfort of milking cows during the autumn and winter months, and orders are flooding in.

Ken Bray, managing director at DRC Polymers said: "It's a scientific fact that happy cows produce more milk. We created the product four years ago and it was an instant success in Europe. UK farmers had lagged behind in take up of the product but this year it seems to have really taken off.

"Farming has had a rough ride in the UK over recent years and the memories of foot and mouth still scar much of the community so it's important that innovative products like this are successful and help keep the industry moving."

"It is a scientific fact that happy cows produce more milk" Ken Bray, Managing Director at DRC Polymers

When the winter sets in the, milk yield falls so farmers put cows in stalls contained in hi-tech barns that create a comfortable environment for the animals. The cover is made of a mixture of re-engineered polymers including recycled motor tyres.

DRC Polymers employs 36 people and processes thermoplastics for a wide range of industries and sectors and last year turned over £3m.

CONTACT

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FLAIL TOPPERS

Spaldings expand flail topper range to 2.8 m

Spaldings' flail topper range grows to a heavy-duty 2.8 m; ideal for tough woody vegetation in general landscape field boundary maintenance

Spaldings' flail topper is ideal for use as a pasture topper for grassland paddock maintenance or as a heavy-duty topper/shredder capable of dealing with tough woody vegetation found in general landscape field boundary maintenance.

Designed as heavy-duty machinery, the new topper features a double skinned chassis which not only increases rigidity but also protects the outer skin from stone damage, enhancing the machines long-term re-sale value.

The heavy-duty rotor shaft is a full 200 mm in diameter and manufactured from 10 mm thick steel for strength and reliability.

Heavy duty forged hammer flails are fitted as standard for easy shredding of tough material whilst leaving a good flat finish on grass. These are of course readily available from Spaldings at competitive prices.

For ease of cutting around obstacles the topper is fitted with a hydraulic side shift mechanism which can be easily operated from the comfort of the tractor cab.

For a neat finish the machine is fitted as standard with a roller, mounted on self-aligning bearings to prevent grass damage when side shifting the machine.

An adjustable tailgate allows the spreading pattern of the cut material to be altered, cutting height is easily changed by simple adjustment of the rear roller.

The new topper is suitable for use with tractors over 60 kW and is fitted with a built in overrun clutch for driveline protection.

CONTACT

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IOG Saltex: best new landscape product

IOG Saltex winner of 'Best new landscape product' is Ransomes' Spider remote controlled mowerz

Ransomes Jacobsen, the Ipswich based turf equipment manufacturer has won the 'Best new landscape product' award at IOG Saltex for the second year running. The award-winning product is the Ransomes Spider, a remotely operated, self-propelled rotary mower specially designed for maintaining steep slopes and embankments.

Spider was nominated for the award as it virtually eradicates all of the health and safety issues associated with mowing steep slopes. It is highly manoeuvrable with four wheel steer and four-wheel drive and can mow in any direction. It can climb steep inclines and is remotely controlled using a radio frequency transmitter with a range of 50 metres. It is also six times more productive than an operator using a string trimmer or brush cutter.

Horticulture Week sponsored the prestigious award and Jacobsen International's Managing Director Steve Chicken was delighted to accept the commemorative plaque from the magazine's editor Graham Clarke at the awards ceremony.

"The real benefit of the Spider is that it removes many of the health and safety issues normally associated with maintaining steep embankments", said Steve Chicken.

"It is no longer necessary for the operator to stand with a string trimmer or walk mower on steep slopes putting excess pressure on hip, knee and ankle joints which can lead to joint stress in later life. The potential danger of roll over associated with ride-on mowers in marginal areas is also eliminated. The operator is not subjected to any vibration, as there is no physical contact with the machine and there is no exposure to the constant noise levels inherent with a pedestrian or ride-on machine. This is the second year running that we have won a best product award at Saltex and we are naturally delighted."

CONTACT

Ransomes Jacobsen Ltd, Central Avenue, Ransomes Europark, Ipswich, Suffolk, IP3 9QG.

Sustainability in Engineering Design

Sustainable engineering design aims to meet customer's expectations, comply with legislative demands, work within a finite environment and still provide economic returns. Financial sustainability is necessary.

This conference looks to explore these topic areas and propose ways of achieving a sustainable future.

Outline Programme *

Morning Papers

- Opening address
- Sustainable Business
- Sustainable Design

Lunch and Awards Ceremony

Afternoon Papers

- End of Life Policy
- Sustainable Engines
- Sustainable Materials
- Design Processes and Systems
- Design for Local Manufacture

Parallel Specialist Papers (pm)

- Building Materials
- Waste Management
- Soil Sustainability in a Decoupled Environment
- Horticultural Buildings
- Reed Bed Technology
- Food Chain Waste Limitation
- Energy Crops

* Subject to change

IAgrE Annual Conference

March 9th 2005

Venue:

Harper Adams University College
Shropshire

Innovation, science and technology in **Ag**riculture and the **R**ural **E**nvironment

IAgrE

The professional body for engineers, scientists, technologists and managers in agricultural and allied industries including food, forestry and biological systems

IAgrE is a licensed body of the Engineering Council[UK] and a founding constituent body of the Society for the Environment

For further information, please contact the Convenor
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