autumn 06

Gridline

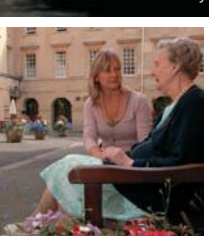
The magazine for National Grid grantors

Major league

National Grid's 20,000 grantors come in all shapes and sizes. This issue, on pages 14, 15, 16 and 17, we highlight four of the big boys — British Waterways, the Forestry Commission, the Ministry of Defence and the National Trust.

Just grand… a barge owner enjoys the tranquility of the Grand Union Canal between Lady Capel's lock and Iron Bridge lock near Watford

Picture: British Waterways photolibrary



Contacts

LEAF — LINKING ENVIRONMENT AND FARMING — Integrated Farm Management

nationalgrid

Land and development group
Is responsible for acquiring all rights and permissions from statutory authorities and landowners needed to install, operate and maintain National Grid's electricity and gas transmission networks. We act as the main interface for landowners who have our gas and electricity equipment installed on their land. Listed below are your local land and development team contacts.

electricity

North and North West:
0113 2908224/8235
South East: 01268 642028
South West: 01454 222044

Your wayleave teams and their mobile numbers
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Scott Stephenson 07836 543541
North West
Mark Thomas 07887 825073
Martin Bretherton 07786 021086
North East (South)
Mike Rockett 07836 364634
Janet Clarke 07770 645599
North West (South)
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Paul Ganley 07836 549748
Lee Durant 07776 121429
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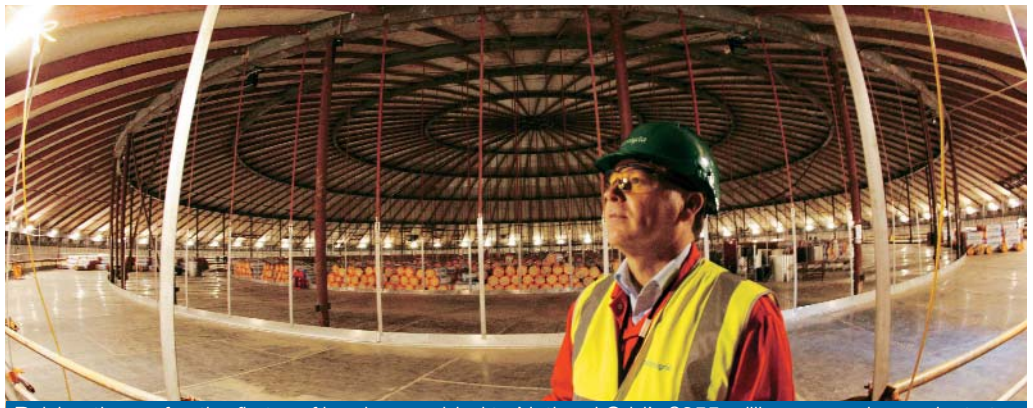
Barry Cullimore 07836 217478
Sue Dunham 07766 785684
South East (North London)
Brian Mead 07836 217520
Phil Burgess 07836 222051
South East (South London)
Paul Sage 07836 638823
Alison Williams 07788 568678
South Wales
Simon Gronow 07836 207262
Robert Miller 07836 743236
South West
Richard Biggs 07785 716961
Jane Bishop 07771 864528

Wayleave payments
• For information on wayleave payments telephone the payments helpline on 0800 389 5113.

Emergencies
• Emergency calls to report pylon damage to National Grid can be made on 0800 404090. Make a note of the tower's number — found just below the property plate — to help crews locate it.

Electric and magnetic fields
• For information on electric and magnetic fields, ring the EMF information line 08457 023270 (local call rate).
Website: www.emfs.info



Raising the roof… the first roof has been added to National Grid's £355 million expansion project at its liquefied Natural Gas terminal on the Isle of Grain, Kent

gas

Gas Distribution (UKD)
John Cunnington
Senior land and development officer
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North London and East of England
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Land and development officer
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North West
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Land and development officer
Tel 0161 7760706
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West Midlands
Barry Mercer
Land and Development Officer
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Mobile 07785 290457
Fax 01452 316092

Administration
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Gas emergency
0800 111999

To contact Gridline write to Papers Publishing, Stirling House, College Road, Cheltenham GL53 7HY or email john@paperspublishing.co.uk

Joe Boucher, who has been appointed to the new role of National Grid's land and development operations manager, has more than 30 years' experience in the electricity industry

Lines of support

NATIONAL GRID'S Land and Development Group has been reorganised to help it meet important new challenges over the next five years.

The company plans to renew much of the electricity transmission system across the country — and the Land and Development Group will have a vital role to play in this project.

Two teams have been formed. Hector Pearson, formerly the Group's land and development manager, has been appointed land and development stakeholder and policy manager. He and his team will work at national level with the National Farmers' Union and the Country Land and Business Association, as well as national and local government.

Hector Pearson

The other team — Land and Development Operations — will be headed by Joe Boucher. Joe is new to Land and Development but has wide experience of the electricity industry over the past 30 years.

The Operations team will mainly support the delivery of overhead line maintenance, the capital investment plan and future major gas pipeline and plant projects. It will comprise four multidisciplinary regional delivery teams — North West England and Scotland, the East, South West and South East — covering electricity and gas activities, each team led by a regional delivery manager.

"My new role is a big change. But I have a lot of experience in the electricity industry and I am really looking forward to the challenges ahead," said Joe.

Joe left school at 16 in 1976 and became a craft apprentice in the electrical maintenance department at Chadderton Power Station in Oldham. In 1982, he moved to Grid Control in Manchester, working first as a craftsman and later as an engineer installing new technology equipment for substation control and telephony.

Since 1992, he has worked as a substation field engineer, business services officer in the North West Area, team leader at Bishops Wood substation and maintenance services delivery manager during a major reorganisation of substations. His last role was as delivery manager in North Wales and Merseyside substations group.

Married to Nicky — the couple have a daughter and son — Joe is an enthusiastic skier who gives up a week of his annual leave each year to help disabled people to ski with adapted equipment. He works with Disability Snowsport UK and with Nicky raised £500 for it when they took part in the latest Great North Run, a sum matched by National Grid. The company also recently honoured Joe's efforts for the charity with a special award of £500.

Book winners are simply tree-mendous

Congratulations to 40 grantors who have won free copies of The Tree Council's new book *Trees in Your Ground*.

In the last issue of *Gridline*, we asked readers to tell us what IVM stood for. The answer is Integrated Vegetation Management.

We originally offered 25 copies of the book as prizes — but so many of you entered, we have decided to give away an extra 15. Turn to page 11 for our next competition.

● Copies of *Trees in Your Ground* are available by sending a cheque for £8.99 (including postage and packing) to The Tree Council, 71 Newcomen Street, London SE1 1YT.

Protection project… Paul Capp, right, and Balfour Beatty Power Networks project engineer Edward Knight on site near the Regent's Canal

Animal magic

A £600,000 CABLE protection project undertaken by National Grid in the heart of London had some important local residents to consider — animals at London Zoo.

The work was designed to reduce the potential for an oil leak and associated environmental impact on London's Regent's Canal and adjoining land.

It took place just a stone's throw from the zoo: "From the construction site, you could see boars running around," said project manager Paul Capp, National Grid occupiers duties manager. "Inevitably, the project had a noise impact, but we liaised very closely with the zoo to ensure the animals were not stressed in any way."

The project, which took eight months to complete, was to protect the 400kV City Road-St John's Wood and 275kV St John's Wood-Willesden cables which run under or close to the canal towpath.

"We needed to improve protection to the cables to provide additional system security following the development and commissioning of the new St John's Wood substation, the largest substation in the country," explained Paul.

FACTFILE

• The former Central Electricity Generating Board installed 400kV underground cables below the towpath between St John's Wood and City road in 1979 • Regent's Canal is a canal across an area just to the north of central London. It provides a link from the Paddington arm of the Grand Union Canal, just north west of Paddington Basin in the west, to the Limehouse Basin and the River Thames in east London • The canal curves round the northern edge of Regent's Park and bisects London Zoo • It was built during the early 19th century at a cost of £772,000. By the late 1940s, the canal's importance for commercial traffic was dwindling, and by the 1960s commercial vessels had almost stopped operating.

"With the increased electrical flows, these cables have become of increased strategic importance in providing London with a secure electricity supply.

"It was vital we carry out work to ensure any ground movement did not damage the cable sheath and cause an oil leak — the risk to the environment as a result of a leak would be particularly significant as one of the cable circuits is close to the canal."

The work entailed constructing about 30 metres of sheet steel wall below ground to protect the cables and prevent any ground movement close to them.

"The location of the cables made access difficult because we had to transport equipment from the main road and across part of Regent's Park," said Paul.

Every effort was taken to minimise disruption. Wayleave officer Brian Mead was involved in long-term negotiations with the Royal Parks, and his colleague Dave Brittain liaised with the Royal Parks during the construction works, and kept British Waterways, Westminster Council and members of the public informed about the work.

Some US Government offices are close to the site — the contractors frequently welcomed visits from American diplomats keen to find out how work was progressing.

"The job was very visual and on one of the most popular canal banks in London — but it was carried out without complaints thanks to teamworking and co-operation from the Royal Parks," said Brian.

Industrial fire brings down power lines

A 70-strong team of National Grid engineers and contractors had to be called in to deal with the aftermath of a serious fire that brought high voltage power lines crashing to earth.

The incident — which could have endangered lives — cut off power to the village of Castle Donington in Leicestershire, temporarily closed roads and caused major traffic congestion.

The flames from 70,000 wooden pallets ablaze at an industrial estate shot 70 feet into the air and burnt through 275kV and 400kV overhead lines, bringing down an REC 11kV line. This briefly cut power to the village and added to the dangers faced by 150 firefighters.

The fire highlighted the need for grantors to take particular care when operating near pylons and overhead lines. They should not store flammable substances near the tower or underneath the line — the pallets had been stacked next to the tower and the intensity of the fire caused the lines to break. The tower survived.

First on the scene after an alert from the National Operations Centre was overhead lines engineer Tony Holmes. Tony urged police to extend the cordon around the site after he spotted bystanders on a bridge directly beneath the power lines.

"Those people would have been in real danger if it hadn't been for Tony's quick thinking," said overhead lines manager Andrew Walters. "We advised the fire crews to steer clear of the conductors on the ground.

"Although both circuits had tripped, the conductors were not earthed so we had to treat them as live. There was also the danger of other conductors coming down. They carry 2.6 tonnes of tension — their sheer weight and recoil could kill or seriously injure."

The blaze started in wooden pallets

Tony and Andrew worked through the night planning the recovery operation and next day, overhead line project delivery manager Peter Bryant led the team of engineers and Balfour Beatty contractors.

Conductors were draped across the industrial estate and sagging power lines closed the main village roads. Sixteen kilometres of conductors had to be replaced before the lines could be put back in position. But thanks to the collaborative efforts of everyone involved, the roads were open within 12 hours, and most businesses were able to return to the industrial estate within 48 hours.

A helping hand for the needy

In medieval times, being old, poor and needy was pretty awful. People without family support and who could no longer work, faced a grim old age of destitution and despair.
Which is why monks and nuns ran hospitals — not the establishments we know today but refuges for the needy.
These almshouses still continue to play a crucial role in the care of the needy — currently, 2,600 groups of almshouse dwellings accommodate 36,000 people in Britain.
One such place is St John's Hospital in Bath. For over 800 years it has provided comfort for those in need on the same site at Chapel Court, Westgate, and in more recent years, at the award-winning Combe Park complex of almshouses, close to the Royal United Hospital.
St John's Hospital and Bath Municipal Charities own over 100 properties in and around Bath and some of its land is crossed by National Grid's 400kV overhead line between Hinkley Point in Somerset and Melksham substation in Wiltshire. Which makes the charity's trustees National Grid grantors…

THE SITE OF St John's Hospital has evolved enormously over many centuries.

What started as a simple refuge for six poor men and six poor women is now home to some 70 residents at Chapel Court where apartments are provided around a charming courtyard.

Nearly 60 residents, some disabled, have flats at Combe Park, set amid stunning gardens.

Today, the accommodation provides those in need with a high standard of affordable housing.

The charity's priority is to promote the well-being and independence of the residents who have to be over 55, not in employment and who come from Bath.

The money raised from rents, leases and accumulated reserves enables St John's Hospital to provide the almshouse flats at a subsidised rate and provide numerous grants to the needy of Bath.

Project and development officer Lesley Southern said: "It's amazing to think we are still helping the local community after all these years — but doing so much more than ever before."

Lesley has a varied role, from organising conferences, seminars and social events for the residents to working with local organisations, the media and with risk management issues.

"We are actually quite a small charity, just about 50 members of staff, but we are able to achieve a tremendous amount of good work.

"Bath Municipal Charities is part of our organisation. It's a number of smaller charities offering support to hundreds of Bath people — including young people with special educational needs and those who are sick.

"We can offer grants towards furniture, kitchen equipment, carpets etc.

"Most of our applications come from the Citizens Advice Bureau, Age Concern, social services and social workers on behalf of the individuals with whom they are working, but we also make grants to other charities and voluntary organisations."

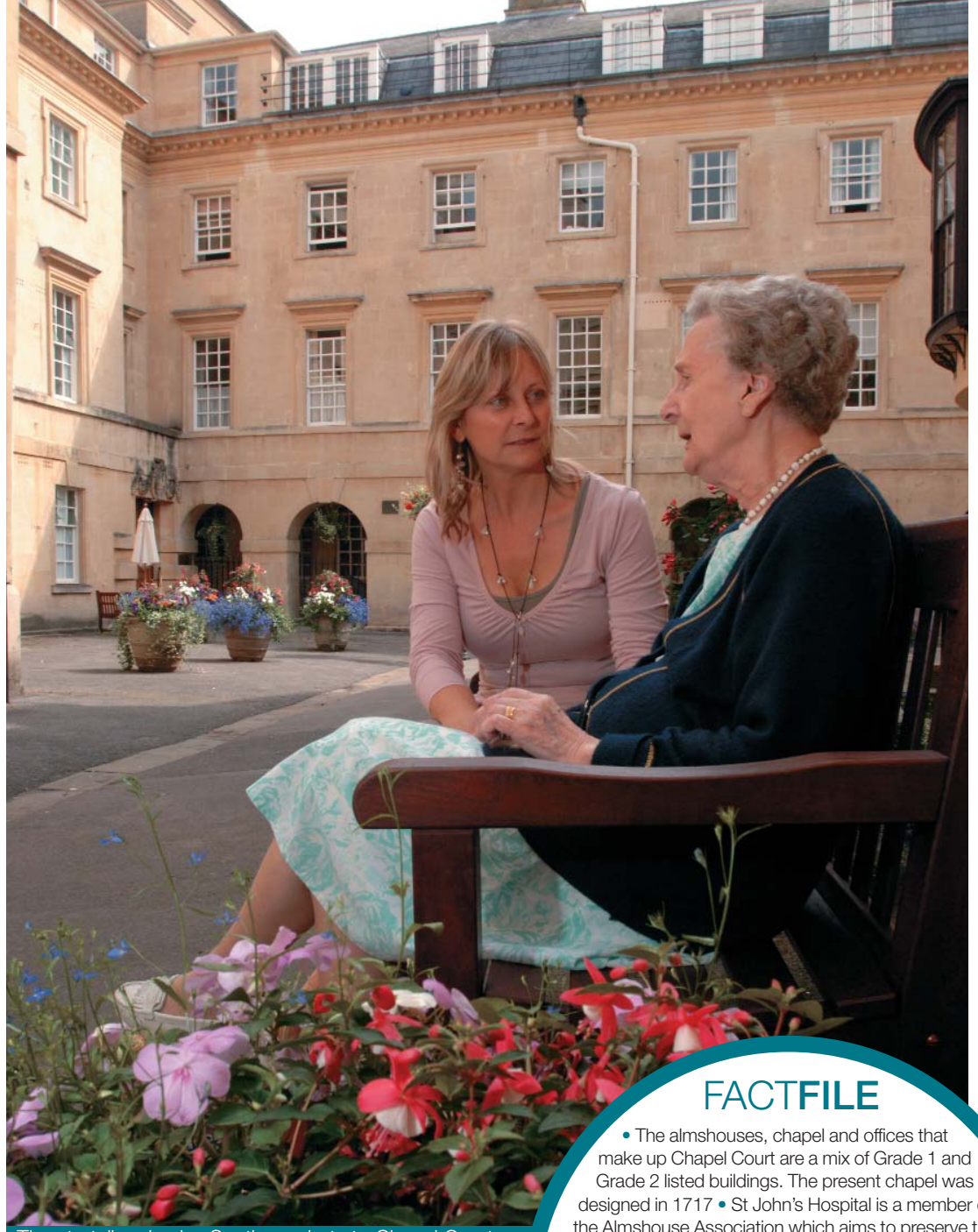
Although St John's may be a relatively small charity, it is diverse, dynamic and constantly developing, with its finger on the pulse and ready to respond and adapt to change, says Lesley.

"Our major challenge is to ensure we remain in touch with those who need our help and then respond in new and innovative ways which meet the real needs of our beneficiaries — and that the spirit of care lives on in all that we do, every day."

Illustrating 800 years of care

The 800 years of care provided by St John's Hospital is highlighted in *Spirit of Care,* a beautifully illustrated book by Jean Manco.

The book normally retails at £28 — but is offered to *Gridline* readers at the special price of just £18 to include post and packing. To order your copy, email Lesley Southern at lesley.southern@stjohnsbath.org.uk or write to her at St John's Hospital, Bath, Chapel Court, Bath BA1 1SL. Please quote the reference NG/LDS.



Time to talk… Lesley Southern chats to Chapel Court resident Freda McVeigh

FACTFILE

• The almshouses, chapel and offices that make up Chapel Court are a mix of Grade 1 and Grade 2 listed buildings. The present chapel was designed in 1717 • St John's Hospital is a member of the Almshouse Association which aims to preserve the historic tradition of almshouses that have existed for over 1,000 years in the UK. The Prince of Wales is the Association's patron • The St John's charity's £7million Combe Park Almshouse development was presented with the Association's Patron's Award for 2003 by Prince Charles in recognition of its outstanding contribution to architecture • The first recorded almshouse was founded in York in the 10th century by King Athelstan • There are almost 1,800 separate almshouse charities in the UK, with 2,600 groups of almshouses. Each almshouse charity is independent and run by voluntary trustees.

Gridline

Top team is streets ahead

NATIONAL GRID DOESN'T just dig up streets and roads whenever it feels like it — a great deal of essential preliminary planning paves the way.

The company has statutory obligations when it carries out any works involving breaking up a street, and a three-strong team at its Warwick HQ is there to ensure these obligations are met.

Julie Ulliot, co-ordinator of the New Roads and Streetworks Act (NRSWA) team, and her colleagues Martyn Blakeley and Linda Friel work alongside both the Electricity and Gas Transmission Construction departments that manage major schemes involving new or reinforced high pressure gas pipelines, and new or maintenance projects for high voltage electricity cables.

It's a major task — the team covers the whole of England, Scotland and Wales.

"Our job is to ensure all UK Transmission works that affect the highway adhere to the New Roads and Streetworks Act 1991 — as amended by the Traffic Management Act 2004 — and associated codes of practice," explained Julie.

"This means attending quarterly local highway co-ordination meetings organised by the Highway Authority if we are planning work in that area."

To assist the smooth running of programmes, and discuss any conflict with other works in the same area, the team ensures all affected parties are told about the planned work.

"This then allows us to make any changes to ensure minimum disruption," explained Julie.

On the right road… the New Roads and Streetworks Act team, left to right, Martyn Blakeley, co-ordinator Julie Ulliot and Linda Friel

"We also advise project management of any legislative restrictions and constraints that may impact on the programme being delivered.

"Regular attendance at the regional Highway Authority utilities committee ensures National Grid has an opportunity to influence future legislation."

All streetworks that require excavation of the highway must be accompanied by an opening notice to the relevant local authority. This details what type of works are to be undertaken and how long the work will last.

Linda is responsible for serving the notice and she works closely with National Grid project management and contractors to identify any changes in the planned programme to the affected highway authorities.

"Linda's devotion to duty has built up exemplary relationships with all our stakeholders and ensures our work is not impeded," said Julie.

Next year finally sees the implementation of the Traffic Management Act (TMA) 2004 which introduces tough new laws targeting utilities that dig up Britain's roads.

"If notices are not served with the correct details, the company will receive a fixed penalty of a minimum of £80 per notice," said Julie.

"A review of our notices shows we do not require any major changes to our processes, although the team does face a new challenge in 2008 with the introduction of an electronic system."

Meanwhile, National Grid staff working on the UK's gas distribution network are working hard to ensure they are ready to meet the obligations of the TMA.

An awareness campaign 'No notice, no dig' has been rolled out to field staff throughout UK Distribution and extensive employee training has been implemented.

> Linda's devotion to duty has built up exemplary relationships with all our stakeholders and ensures our work is not impeded
>
> Julie Ulliott

Communication key in London

Streetworks that have to be carried out in the London boroughs can cause an administrative nightmare.

First, the NRSWA team has to investigate how many parking bays will require suspension to allow the excavation. Local residents and the local Highway Authority have to be consulted before work can begin.

"Depending on which borough is involved, the costs can vary enormously — adding hundreds of pounds to projects — because some highway authorities can charge a daily fee for suspending bays," said Julie.

"Our communication links with the engineers on site and the Highway Authority are paramount if works become delayed as this could add to residents becoming upset and the project receiving bad publicity and additional duration fines. Our transmission record speaks for itself with minimal complaints, and although our works are occasionally extended past the completion date, our ongoing communication ensures we are not penalised with a fine."

Chris Packham opens the new visitor centre at Welney

Successful relationship celebrated

National Grid joined in the Wildfowl and Wetlands Trust's (WWT) 60th anniversary celebrations this year.

The WWT organised a programme of events at each of its nine centres across the UK and Northern Ireland, including Welney in Norfolk.

National Grid has had a long and successful relationship with Welney. In 2000, it provided £40,000 towards the cost of a £100,000 extension of the reserve's observatory which was opened by wildlife presenter, naturalist and photographer Chris Packham.

Chris returned to Welney for the 60th celebrations to open a new £3.5 million eco-friendly visitor centre which features a restaurant and shop, multi-purpose meeting area and interactive education areas.

National Grid has provided a display outlining the company's association with Welney, and an interactive display board highlighting the migration of swans to the reserve.

The two-storey building has been hailed as one of the most sustainably-built buildings in the UK. It is naturally ventilated with wall insulation made by recycled paper; heating is provided by a ground source heat pump that 'pumps' heat from the ground into under-floor pipes in the building — for every unit of energy needed to pump the hot water, four units of free and renewable energy are provided.

Fields of dreams…

Laxton in Nottinghamshire is the last village in England where the ancient open field system is still used. Land is divided into three large open fields (Mill, South and West fields) and a number of enclosed areas, with each tenant farmer having a number of long strips scattered over each field. Each field contains a different crop as part of a strict three-field rotation, and individual holdings are widely scattered, so no farmer ends up with all the good or poor land. The system was prevalent in Europe from the Middle Ages to as recently as the 20th century in places. From the 12th century onwards, it was gradually replaced by enclosure when fields were fenced off and farms divided up.
In 1635, Laxton had 1,894 acres in the open fields divided into 2,280 strips. Today, 18 open field farmers cultivate about 480 acres divided into 164 strips. They include a number of National Grid grantors, including Stuart Rose, whose Bottom Farm is crossed by the High Marnham-Chesterfield overhead line which is currently being refurbished…

THE OPEN FIELD system (OFS) in Britain created a community.

Because villagers lived closely together in the centre of the OFS, and walked to all parts of the surrounding fields, they saw and helped each other regularly.

In this aspect, nothing has changed over the centuries — OFS, says Stuart Rose, is still at the heart of Laxton and contributes greatly to the village's strong community spirit.

Stuart, 49, is clerk to the Laxton Gates and Commons. His family has lived in the village for generations and his late father Reg moved to Bottom Farm in 1953 — Stuart took over the tenancy when Reg retired 14 years ago.

Today, Stuart farms 120 acres of land, about a third of which is in the open farm system, and he supplements his income with DIY livery stables and work as a qualified agricultural engineer.

Stuart Rose and bailiff Robert Haigh check the boundaries of one of the farming strips

"Laxton hasn't changed that much since the early medieval period, apart from the fact the open fields are now smaller and the area of enclosed land much larger," he said.

"Crops are still grown on a strict three-course rotation — in any year, one field is a winter sown wheat crop, a second field is a spring sown crop such as barley or beans and the third field is left fallow. Rape and root crops are not allowed.

"What makes Laxton unique is that open field farming is still ruled by the manorial court which has operated for hundreds of years and which still enjoys a legal status which permits the imposition of fines on anyone abusing manorial law."

The annual Court Leet meets in the village's Dovecote Inn, once run by Stuart's grandfather, in late November or early December. The court still controls the cultivation of the open fields and much of its business is based on medieval precedent.

One of its duties is to appoint a 12-man jury which, with a jury foreman, is responsible for inspecting the fallow field in the next cycle of the farming year.

"Before the next court, they will tour the field that has been fallow for the past year and also check each farmer has ploughed only his fair share of the land," explained Stuart.

"Meanwhile, last year's jurors will report their findings from their tour a week earlier. They confirm fines which arise from their inspection and discuss general business matters involving the open field system."

Family affair… Laxton farmer Stuart Rose and his wife Sylvia with daughters Rebecca and Jessica at Bottom Farm

But why has such an ancient and, perhaps to some people, archaic system survived?

"There are a number of reasons, starting with the Laxton farmers unable to reach agreement on how to divide up the land when formal enclosure of the parish was considered in the 19th century," said Stuart.

"Then in 1952, the then owner of the open field farms in Laxton, the sixth Earl Manvers, sold the land to the Ministry of Agriculture so that the system could be preserved for posterity.

"In 1981, the Crown Estate Commissioners became the 'lords of the manor' and they have remained committed to preserving this piece of agricultural history. And thanks to the contribution we make to educational access, unimproved meadowland and over-winter stubble, the tenants have enjoyed Countryside Stewardship payments for the last 13 years.

"We are all determined to protect Laxton's open field system. But continuity is our biggest challenge," said Stuart.

"New tenants may not have experience of the system or appreciate it as a time-honoured family tradition. So, they have to learn and start from scratch. And with so many of the farmers having to take on extra jobs to survive, contractors are often used — and they too don't always understand the importance of obeying the system's rules.

"Let's just hope there are enough people around to ensure these areas of farming landscape, which have remained unchanged since medieval times, are preserved for the future."

FACTFILE

• Open fields appear to have developed in the medieval period and were particularly well suited to the very heavy ploughs that were used to cut through the heavy clay soil in north west Europe • In 1700, 50 per cent of British land used the open field system • Today, the species-rich grassland strips (sykes) and farm tracks adjoining Laxton West and South fields are designated as SSSIs for their botanical, zoological and historical significance.

Win National Trust family membership

A super prize is waiting for the winner of our latest grantor competition.

We are offering a year's family group membership of the National Trust — it covers two adults and their children or grandchildren under 18, and is currently worth £73.

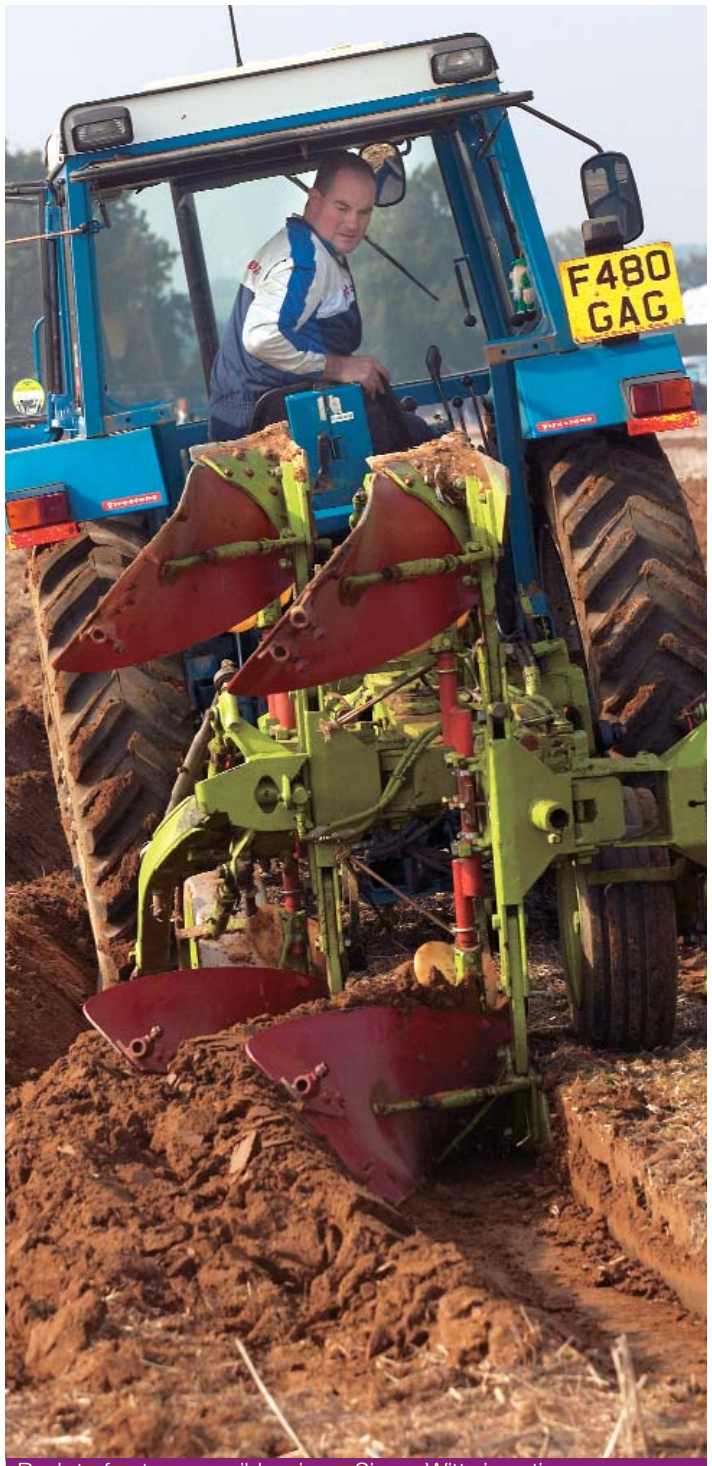
Membership gives you free entry to more than 300 historic houses and gardens and information about 700 miles of coastline and almost 250,000 hectares of stunning countryside, so visiting couldn't be easier. To enter our competition, all you have to do is answer the following question:

Which organisation has published a new leaflet highlighting the dangers — and how to avoid them — of using agricultural machinery and equipment close to power lines?

You will find the answer in this issue of *Gridline*. Send your answers to Gridline Competition, Papers Publishing, Stirling House, College Road, Cheltenham GL53 7HY or email john@paperspublishing.co.uk

Entries must be received by January 2 and please make sure you give us your full name, address and telephone number.

It's so simple for Simon...



Back to front… reversible winner Simon Witty in action

A 30-YEAR-OLD freelance agricultural mechanic from North Yorkshire has scooped yet another ploughing accolade.

He is Simon Witty, who has been named as the new British National Reversible Ploughing champion, a title he has now won for the fourth year in a row.

His victory, which earns him a trip to Lithuania next year for the 2007 World Ploughing Contest, came less than a month after he won the 2006 World Reversible Ploughing Championship. He took this title in both 2005 and 2004.

Simon, who was awarded the National Grid Cup for winning the reversible plough-off, was one of 200 of the country's top ploughmen and women at the British National Ploughing Championships at Loseley Park, near Guildford.

Once again National Grid was a main sponsor of the event along with Firestone and Goodyear. Ken Chappell, executive director of the Society of Ploughmen which organised the championships, said he was extremely grateful for the "unstinting support" of the sponsors.


And the winners are… National Grid land development officer Richard Evans, left, presents trophies to Simon Witty and Adrian Brewer, right

Another top winner of the day was past British champion Adrian Brewer from Cornwall, who won the British National Conventional Ploughing champion title.

Adrian, 51, had a dramatic fight for victory with another past British champion, John Hill from South Yorkshire. The two men both scored 269 points, but using a 'countback' system, Adrian — who runs a mixed dairy and arable farm at St Issey, near Wadebridge — came out tops by one point. His son Ian kept up the family tradition, winning the reversible title in one of the National Young Farmers' classes.

Glorious weather over the two-day championships provided perfect ploughing conditions and there was a warm welcome to Loseley Park from the owners, the More-Molyneux family.

● For more information about the Society of Ploughmen, call 01302 852469, email info@ploughmen.co.uk or visit www.ploughmen.co.uk

Debbie enjoys first nationals

An old plough and a young girl made an admirable duo at the British National Championships.

The vintage plough was circa 1955, while its operator was rather younger, 16-year-old Debbie Watson from Hallington, Newcastle upon Tyne, the youngest of just two women among the 200 contestants.

Debbie, who was competing at the nationals for the first time, came fifth out of a field of 11 in the National Young Farmers Conventional Ploughing Championships, using a plough owned by Society of Ploughmen chairman Charlie Halliday.

A part-time student studying mixed farming at Kirkley Hall College in Northumberland, Debbie works with her parents Geoff and Helen at the family's 214-acre Bingfield Farm and has been ploughing since she was 13.

"Mum is secretary of the South Tyne Traction Engine Society which holds regular rallies. Three years ago, at a rally at the chairman's farm at Edmonybyers, I spotted a trailer plough abandoned in some gorse which hadn't been used since the Second World War. I asked if I could have a go with it — and that was it. I was hooked."

She entered her first local ploughing competition just over three years ago and, for the next two years, entered one or two local ploughing matches. This year, however, she has taken it more seriously and has entered as many competitions as possible in the local area and up into the Scottish borders, picking up numerous rosettes, including six firsts, three cups and a couple of other trophies.

Debbie is looking forward to return visits to the national event. "I'm not sure I'll ever be good enough to be a winner… but it's something to aim for," she said.


Trophy time… Debbie shows off her trophies to proud parents Geoff and Helen. The collie is Flea, which Debbie has raised from a puppy
Pictures: George Swift Photography

Ploughs that for top prizes

We have two ploughing videos and a book to give away to the first grantor's name pulled out of the hat on December 1.

The book is *The Tractor Ploughing Manual*, the Society of Ploughmen's official handbook aimed at both newcomers who need the basics for farm work and the growing number of competitors at ploughing matches.

Both the videos are produced by the Society of Ploughmen. In one, the Society's executive director Ken Chappell and John Hill, a three times world reversible ploughing champion, highlight reversible and conventional match plough skills. This video is designed both for those who have taken part in competitions and want to improve and for those who would like to compete, but haven't yet done so.

The other video is about vintage match ploughing skills, and features Ken, an ex-British and ex-European vintage ploughing champion, and ex-British vintage ploughing champion Michael Watkins. Ken demonstrates the use of the mounted plough, while Michael applies his skills to the trailed plough.

All you have to do is send your name, address and contact details to Gridline Ploughing Offer, Papers Publishing, Stirling House, College Road, Cheltenham GL53 7HY or email john@paperspublishing.co.uk

Discreet… power lines in the Lake District, Cumbria Picture: Courtesy of the Forestry Commission

Urban edge… the view to Birmingham from Barr Beacon. Picture: Courtesy of the Forestry Commission

Major league grantors

In this and previous issues of *Gridline*, we have featured many of our small grantors — people with perhaps just an overhead line over their property, or one or two pylons.
Some of the largest grantors in terms of asset numbers include the water companies, Church Commissioners, Crown Estate, Railtrack and Lee Valley Regional Park.
Other major grantors across the country are the Forestry Commission (about 135 pylons), British Waterways (more than 220 crossings over canals and BW land), the National Trust (93 pylons) and Defence Estates (42 pylons).

Picture: Courtesy of the Forestry Commission

Cross country… power lines running through a pine forest at Wareham, Dorset

FORESTRY COMMISSION
With some 2.6 million acres of public estate, the Forestry Commission is Britain's biggest single land manager.

As a government department, its mission is to protect and expand Britain's forests and woodlands and increase their value to society and the environment.

The Secretary of State for the Environment, Food and Rural Affairs has responsibility for forestry in England as well as for certain activities such as international forestry matters and plant health that remain Westminster's responsibility. Scottish ministers have responsibility for forestry in Scotland, and the Welsh Assembly government has responsibility for forestry in Wales.

Woodlands and their management can have a significant impact on the overall quality of the biological and physical environments. They deliver many public benefits and the British economy gains from the value that is added to forestry goods and services.

Many of these benefits are external to the forests themselves, yet they depend upon the continued sustainable existence of forests through successive generations.

The Forestry Commission is the largest provider of outdoor recreation in Britain, working with many user groups to promote the use of its land for recreation such as walking, cycling and horse riding. With few exceptions, all of its woodlands are free for people to enjoy.

The commission is also a joint owner of Forest Holidays (www.forestholidays.co.uk) which hires out forest cabins to the public.

In 1998, a survey showed that over 330 million day visits were made to woodlands in England and Wales. This compares with about 170 million visits to the coast or about 180 million day visits to canals and rivers. Day visits to woods increased by 17 per cent between 1994 and 1998.

● For more information, visit www.forestry.gov.uk

Forestry Commission

> The Forestry Commission is the largest provider of outdoor recreation in Britain… with few exceptions, all of its woodlands are free for people to enjoy

Estate is central to MoD planning

DEFENCE ESTATES
The Ministry of Defence is one of the largest landowners in the UK and spends over £1billion a year on its estate.

In total, the estate comprises some 240,000 hectares (593,000 acres) with over 4,000 sites. That's an area equivalent to about one per cent of the UK landmass.

The sites are either "built" — such as barracks, naval bases, depots, aircraft hangars or family accommodation — or "rural". The built estate of around 80,000 hectares includes more than 45,000 buildings and some 49,000 houses.

The remaining 160,000 hectares is relatively undeveloped rural land, which includes 21 major armed forces training areas and 39 minor training areas.

As well as military facilities, the defence estate features 179 Sites of Special Scientific Interest (SSSIs), 50 special protection areas, over 600 statutorily protected buildings, almost 1,000 scheduled monuments and numerous archaeological sites.

Much MoD rural land has environmental and landscape significance — 30 per cent of its training land is in National Parks. The MoD ensures that its work and future plans take due account of social, economic and environmental sustainability considerations. It also takes advice from experts on aspects of environmental, conservation and heritage matters to ensure it has direct access to best practice.

When the then Secretary of State for Defence John Reid launched the Defence Estate Strategy 2006 earlier this year, he said: "Looking after our Armed Forces involves providing a challenging and sustainable foundation for training, which means that we must cultivate and preserve our estate.

"We recognise that putting it at the heart of estate planning and processes is essential for the capability of our Armed Forces' future."

● For more information, visit www.defence-estates.mod.uk

Heysham Head…part of a wild coastline between British Energy's nuclear power stations and the Lancashire resort of Morecambe
Picture: ©NTPL/Joe Cornish

Guardians of the nation's heritage

THE NATIONAL TRUST
The National Trust is a charity that works to preserve and protect the coastline, countryside and buildings of England, Wales and Northern Ireland.

It relies on its income from membership fees, donations, legacies and revenue raised from its commercial operations, including shops, tea-rooms and holiday cottages.

It has 3.4 million members and 43,000 volunteers.

More than 12 million people visited the trust's pay-for-entry properties in 2004, while an estimated 50 million visited its open-air properties.

The trust was founded in 1895 by three philanthropists — Miss Octavia Hill, Sir Robert Hunter and Canon Hardwicke Rawnsley — who were concerned about the impact of uncontrolled development and industrialisation.

They saw the trust as a guardian for the nation in the acquisition and protection of threatened coastline, countryside and buildings.

Over 100 years later, the trust now cares for 250,000 hectares (617,000 acres) of beautiful countryside, plus more than 700 miles of coastline.

Among the historic properties in its care are more than 300 buildings — including castles, fine houses, industrial monuments, mills, churches, chapels, pubs and inns — and gardens of outstanding interest and importance.

The trust is, it says, "more than a pretty place". As well as looking after the nation's countryside, coastline and historic environment, it invests over £160 million a year in the nation's environmental infrastructure.

It has long-term programmes to help educate people about the importance of the environment and of preserving our heritage for future generations.

It also contributes to debates on the future of the economy, the development of people's skills and sense of community, and the quality of the local environment in town and country.

● For more information, visit www.nationaltrust.org.uk

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The National Trust cares for 617,000 acres of countryside and more than 700 miles of coastline and 300 buildings and gardens

Revival for the highways of the past

BRITISH WATERWAYS
More than two centuries ago, the entrepreneurs of the industrial revolution saw the potential of inland waterways for transporting goods cheaply and efficiently throughout Britain.

They developed a waterways network linking mines and quarries with factories, mills, markets and deepwater ports; the most influential early canal was built by the Duke of Bridgewater in 1759 to carry coal from his mines at Worsely to Manchester.

Today, Britain's inland waterways are diverse, ranging from man-made canals like the Grand Union to navigable rivers like the Severn and Trent.

British Waterways (BW) owns and cares for 2,200 miles (3,540km) of canals and rivers — about half of all the inland navigations in Britain. It is a public corporation that blends commercial practice with public sector values to earn and increase its income so that it can conserve and enhance the waterways. Waterway development is often closely linked to community aspirations and social issues at local level, so British Waterways is always keen to listen to local communities.

Waterways are becoming increasing popular; between 2005 and 2006, boat licence numbers increased by more than seven per cent to a record 29,000. Over the same period, anglers made 5.8 million visits to BW's waterways.

At BW's annual meeting in October, the chairman Tony Hales said: "We respect our heritage but not a romanticised view or one that creates an unused museum.

"We seek to improve and expand what we have, and to stimulate regeneration in a commercial way to support the core infrastructure. The regeneration we are influencing and enabling today will fast become the heritage of the future."

● For more information, visit www.britishwaterways.co.uk and the leisure website www.waterscape.com

Picture: British Waterways photolibrary

Refreshment time… a barge moves in to moor alongside the Foxton Locks Inn on the Grand Union Canal's Leicester line

School visit is hot stuff

IT WAS HOT, hot, hot — but fun and learning all the way when seven-year-old Jason Brennan and his classmates visited Sherwood Forest Farm Park at Edwinstowe in Nottinghamshire.

Jason, from King Edwin Primary School, won £3,000 for his school — and the trip to the Park organised by National Grid — when he came top in a schools painting competition.

The 400kV Chesterfield to High Marnham overhead line crosses the farm park and one pylon is in the car park.

The competition was arranged to assure local people and schools that the farm park was still up and running during a major refurbishment of the overhead line.

National Grid sent electricity education material to Jason's class before their visit and on the day, one of the hottest of the year, they had a chance to learn more from National Grid's project manager Bill Fenton, project delivery engineer Mark Brennan and John Kelly from the contractors AMEC.

Sherwood Forest Farm Park is a Rare Breeds Survival Trust (RBST) Approved Centre and contains over 40 breeds falling in this category as well as some more unusual additions, including wallabies, water buffalo and exotic birds.

The visit allowed the youngsters to see breeds of domestic animals not commonly found on farms since their grandparents' or great-grandparents' days.

A highlight of the day for young Jason was seeing his winning painting enlarged to 3ft by 6ft on scaffolding boards at the base of the electricity pylon.

● For more information about the farm park, visit www.sherwoodforestfarmpark.co.uk

Prize pupil… Jason Brennan meets National Grid project manager Bill Fenton and Sherwood Forest Farm Park's Felicity Shaw Browne. Felicity and husband Simon, who are National Grid grantors, run the park

Cheers Jason… from all his King Edwin Primary classmates

Towering achievement… some of the 20 paintings in situ around a National Grid tower

Keep your fertiliser safe

A new website has been launched to provide detailed information for farmers on how to reduce the risks of fertiliser being stolen.

It has been developed by the National Counter Terrorism Security Office, in conjunction with the NFU and other industry bodies.

Ammonium nitrate (AN) fertiliser is used frequently by terrorists as an explosive and it is important the agricultural industry recognises the risks associated with AN, and is able to take practical, low or no-cost steps to reduce the likelihood of it falling into the wrong hands.

● Visit www.secureyourfertiliser.gov.uk to find out more.

Pylon advice

A hard-hitting education pack warning West Midlands children and teenagers of the dangers of playing near electricity pylons has been launched by National Grid.

The pack, including project material, posters and worksheets, is supported with presentations from engineers.

It has been sent to schools in the Great Bridge area, home to one of the most vandalised electricity pylons in the country.

Birds boost

The wild bird population in the UK is on the increase, according to the latest government statistics.

The figure for all 113 breeding bird species is nearly 10 per cent higher than it was in 1970 following a series of rises since the early 1990s.

The farmland bird populations are about 60 per cent of their 1970 level, but have remained fairly stable since the early 1990s.

Save our trees is call to arms

Water aid…regular buckets of water may be needed to keep trees healthy during droughts

TREE WARDENS AROUND the country have been urged to intensify their efforts to meet the challenge of climate change.

The "call to arms" — strongly supported by National Grid — came from Sue Roe, chairman of The Tree Council which co-ordinates the national Tree Warden Scheme for volunteers who champion their local trees.

It followed a summer of record-breaking temperatures, hosepipe bans and reports of 50 per cent losses in some of last year's tree plantings along the south coast.

"More than ever, Tree Wardens have a major role to play in protecting the nation's trees and planning for the future as the UK adapts to global changes in temperature, wind patterns and precipitation," she said.

National Grid has supported the Tree Warden Scheme for almost 10 years.

The company's group corporate responsibility director Gareth Llewellyn said: "We know that trees are increasingly important in helping to mitigate the impact of climate change.

"We have already met our Kyoto targets for reducing emissions some six years ahead of time, and we have publicly committed to reduce our emissions by 60 per cent before the Government's deadline of 2050.

"Our focus is on reducing emissions, but we know trees will play a role in offsetting those emissions we cannot reduce."

As Sue made her appeal in the run-up to this year's National Tree Week, which celebrates the start of the winter tree planting season, The Tree Council's director-general Pauline Buchanan Black challenged people across the country to "plant more trees — of the right kind and in the right places."

The UK is still one of the least wooded countries in Europe — woodland cover is less than 12 per cent. The European total is 46 per cent, and although that's quite an increase since 1980 when it was just over nine per cent, we still have a long way to go.

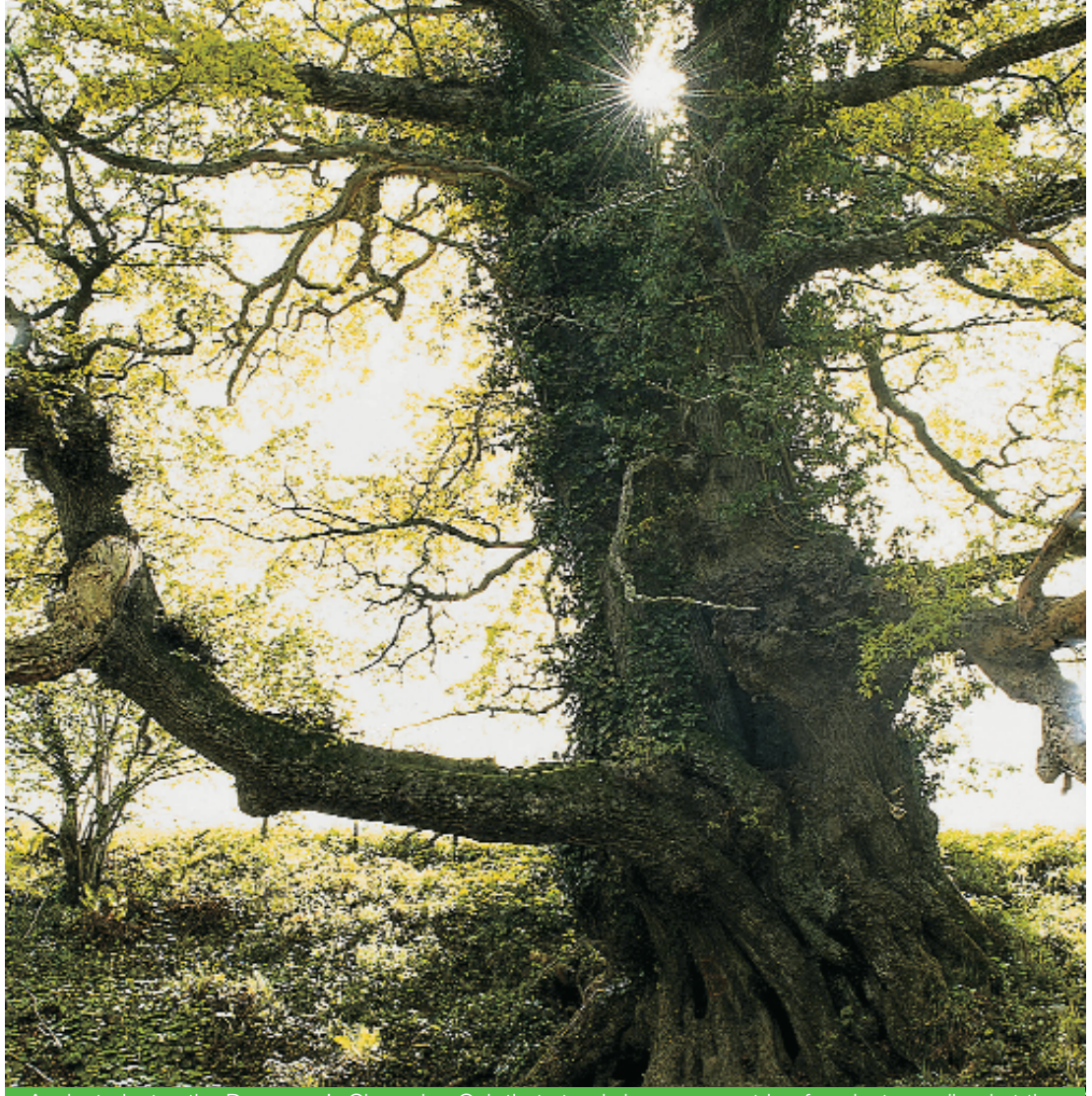
"During our National Tree Week, we are urging people to plant trees in 'their' ground, whether that's a garden, park, urban street, school workplace or somewhere in the countryside — and we hope National Grid grantors will take up the challenge," said Pauline.

"Trees are not just beautiful, they are valuable in many other ways, from improving the quality of our life to moderating the climate and providing habitats for wildlife."

FACTFILE

• Average temperatures in the UK are predicted to rise by 2-5 degrees centigrade by the end of this century • Rainfall patterns will change, with winter rainfall increasing and summer rainfall decreasing across the whole country. The changes are predicted to be most extreme in the south east, with a reduction in summer rainfall of up to 60 per cent and an increase in winter rainfall of up to 25 per cent • Snowfall is likely to become a thing of the past across much of the lowlands • It is likely that spring flushing will advance as a result of milder winters, but the risk of spring frost injury is unlikely to change. Unseasonal frosts will still have the potential to cause damage • Prediction of changes to the wind pattern are uncertain. Very severe winter gales may increase in numbers, as may summer gales, but the changes are not expected to be large. The largest increases in windspeed are predicted for the south east and in the winter months • Existing pests and pathogens are likely to become more active, expand their ranges and cause more damage to trees suffering from drought. There is an increased risk of non-native pests and exotic diseases becoming more aggressive.

Source: www.forestry.gov.uk and www.rhs.org.uk



Ancient giant… the Darnaway's Champion Oak that stands in a narrow strip of ancient woodland at the Meads of St John, on Morayshire's Darnaway Estate. Its trunk measures 9.73 metres (31 feet) in girth, making it the largest-girthed broadleaved tree in Scotland Picture: Archie Miles

Book captures Highlands highlights

The most comprehensive book ever published on Scotland's finest trees is now on the bookshelves.

Heritage Trees of Scotland, published by the Forestry Commission Scotland in association with The Tree Council, reveals not only the oldest, biggest and tallest trees in the country, but also some of the strangest — including the tree that ate a bicycle! The book supports The Tree Council's Green Monuments Campaign which is pressing for special protected status for heritage trees and to fight the corner generally for these very important 'green monuments'.

The authors are The Tree Council's director of rural programmes, Jon Stokes, tree and woodland consultant Donald Rodger and James Ogilvie of the Forestry Commission Scotland. The book features stunning photography by Archie Miles and Edward Parker.

It seeks out its most amazing landmark trees and discovers 'green monuments' of the natural world with connections of social and historical significance over thousands of years.

Gridline Reader Offer

Heritage Trees of Scotland (ISBN 0-904853-06-3), priced at £19.99, is available from bookshops. *Gridline* readers can obtain a copy directly from The Tree Council at the special price of £16.99 (including postage and packing). Orders, accompanied by cheques, payable to The Tree Council, should be sent to The Tree Council GHTS, 71 Newcomen Street, London SE1 1YT.

Bronze Age dug-out dug up

A RARE BRONZE AGE artefact — thought to be a dug-out canoe or cooking trough — has been discovered during construction work on National Grid's new natural gas pipeline between Milford Haven and Aberdulais.

Work stopped on a section of the pipeline near St Botolphs to allow the ancient relic to be recovered by archaeologists monitoring the pipeline project.

The 'canoe', carved from a single trunk of oak and measuring 4.5 metres long by 0.9 metres wide, has been carbon dated by experts in Miami to 1420 BC, making it around 3,400 years old.

The canoe was lifted from the ground and sent to Newport following extensive talks between National Grid, its contractor Nacap Land and Marine JV, the project archaeologists, The National Museum for Wales, Cadw (the Welsh Assembly's historic environment division) and Cambrian Archaeology.

It travelled in a specially-made crate for its journey to Newport where its new 'home' is a carefully-controlled environment developed for the Newport Ship, the remains of a medieval ship discovered in 2002.

Bronze Age beauty… an exciting find, says National Grid's senior project archaeologist Neil Fairburn

It is thought to be the first discovery of its kind in Wales, and only 150 exist across Europe.

National Grid's senior project archaeologist Neil Fairburn said: "Everyone was very excited by the find and it's unlikely they will ever work on anything like this again.

"We have had an amazing amount of interest in it, be it a canoe or a cooking trough. Its proximity to a Bronze Age burnt mound which would have been used as an open air cooking place or sauna and bath area, has meant we will be able to learn a lot about Bronze Age activities in the area.

"This would never have been possible if it wasn't for the pipeline and the commitment of National Grid and its project team to resourcing the extensive excavations and tests undertaken over many weeks.

"The future of the possible boat is that it will require careful examination, conservation and preservation to establish its nature and use. This will be funded by National Grid. All interested parties will be consulted about the future of the vessel."

To ensure reliable and economic gas supplies to homes and businesses across the UK, National Grid needs to expand its network of high-pressure natural gas pipelines in South Wales, starting in Milford Haven in the west, continuing in South Wales, through Herefordshire and into Gloucestershire. Work began on the first section — Milford Haven to Aberdulais — in March 2006.

FACT**FILE**

The Bronze Age — c2300-700BC

• The Bronze Age was the period when metal first began to be widely used in Britain, it also saw the introduction of cremation of the dead and burials in round barrows • The later, and best-known, phases of construction at Stonehenge date from this period • One of the most important developments was the arrival in Britain from about 2300BC of the Beaker culture. The Beaker people were skilled potters, producing some fine earthenware vessels with a characteristic 'S' shaped profile • Bronze Age society appears to have been divided into chiefdoms based around an agricultural economy.

Meanwhile, during the same gas pipeline project…

A greater horseshoe bat

Picture: SC Bisserot, Nature Photographers Ltd

National Grid pulled out all the stops to protect a local bat population in the Slebech area near Haverfordwest.

"The area is a Special Area of Conservation (SAC), partly because of resident populations of lesser and greater horseshoe bats," explained John Williams, Nacap Land and Marine JV's environmental manager.

"To lay the pipeline, sections of hedging had to be temporarily uprooted. The hedges are needed by the bats which use echolocation* to find their way back to their roosts after a night's foraging.

"So we installed low-level fencing to replace the hedging until it can be reinstated. High-level/tree canopy mitigation was also installed as some of the bats invariably fly at tree level.

"The fencing was established following consultation with the Countryside Council for Wales and through the process of gaining a licence from the Welsh Assembly to install the pipeline through this particular SAC site.

"Monitoring of the installed mitigation was undertaken throughout construction by specialist ecologists to ascertain its effectiveness. Improvements were implemented where required."

The whole subject of bat mitigation during the project was explored earlier this month in Channel 4's *Wild Thing I Love You* series.

* Echolocation is the biological sonar used by several mammals, including bats. The bats emit calls and listen to the echoes that return from various objects in the environment — like hedges. They use these echoes to locate, range and identify objects.

Tile style… National Grid's Les Jones with AMEC's Kevin Kelly and a young helper from the Devon Wildlife Trust with painted tiles to decorate the refurbished cabin

Safety boosts charities

Successful safe working by a team from National Grid and its contractors AMEC has had a welcome bonus for another two Devon charities.

During the refurbishment of the 400kV overhead line from Indian Queens in Cornwall and Exeter in Devon, AMEC has donated money to a charity fund for each accident-free day of the project and National Grid has matched it.

Local charities to benefit from the initiative include The Alzheimer's Society in Plymouth and Exeter, The Erme Valley Riding for the Disabled and Children's Hospice South West.

The latest charities to receive £2,000 donations are Headway Devon which works to provide essential services for people with brain injuries, their families and their carers, and Devon Wildlife Trust.

The money for Headway Devon will ensure that youngsters attending its children's centre will have new equipment, games and books to help with their rehabilitation. The charity has six other centres for adults in the county.

AMEC project manager Stephen Johnson said: "Safety is paramount in all aspects of our work. The team was very keen to support local youngsters with brain injuries."

Headway's Lucy Cooper said: "We are really grateful for the equipment provided as a result of AMEC and National Grid's safe working."

The £2,000 donation to Devon Wildlife Trust (DWT) has enabled a trashed community cabin to be refurbished in time for a busy season of events.

The cabin at Bovey Heathfield Local Nature Reserve has been attacked a number of times. It was broken into and vandalised again earlier this year, destroying much of the artwork created by volunteers and local children. The money from National Grid and AMEC will provide new doors and more security for the cabin.

National Grid project manager Martin Cox said the team who worked on the refurbishment project saw for themselves the beauty of Bovey Heathfield. "They read in the local media about the atrocious vandalism and were very keen to help support this excellent local amenity."

Kids' stuff… AMEC's Stephen Jannaway hands over new equipment, books and games to Headway Devon's Paul Bird and Lucy Hooper

Harry still going strong

THE WORST JOB Harry Freeman ever had was working in London's Whitehall for the Ministry of Agriculture in the 1940s.

"I had to wear a bowler hat and a suit and I walked about waving bits of paper around. Not my kind of job at all," he said.

Harry's kind of job was being a wayleave officer — he retired in 1979 after more than 30 years in wayleaves and says they were the happiest years of his working life.

Now 92-years-young, Harry is thought to be one of the oldest members of a National Grid Retired Employees Association, still attending London Central meetings when he can and regularly meeting up with other retired wayleave officers.

Harry, who has two children, five grandchildren and a great granddaughter, was brought up in Sussex, and left his tiny village school at 14: "Just about able to read and write," he says.

After his mother died, he was sent to Ontario in Canada in 1929, aged just 15, on a £10 ticket supplied by the Salvation Army. The idea was to learn all aspects of farming and agriculture.

"In 1939, I came back to the UK for a visit, but just before I was due to return to Canada, I was whisked into hospital with appendicitis. I had planned to sail back on the *SS Athenia*, the first passenger ship sunk by a German submarine — if I hadn't been in hospital, I would have been on board."

The 13,500-ton passenger liner was carrying 1,103 civilians. The death toll was 112.

As Harry seemed destined to stay in the UK, he joined the Ministry of Agriculture during the war — he was rejected by the RAF because he had suffered polio while in Canada. Part of his job involved training women in the Land Army to drive tractors.

After the war came promotion — and the hated job in Whitehall. So in 1948, following nationalisation of the electricity supply industry, he applied for the job of wayleave officer with the new British Electricity Authority.

"I asked for £500 a year, and got £499," he said. "I was one of just six wayleave officers taken on — the other five were all ex-Army officers and knew absolutely nothing about farming or agriculture.

"While they were sent to various parts of the country, I was based in the London office above Selfridges, and went around the country as a sort of trouble-shooter. I was despised by the others who saw me as some sort of spy — and all I wanted to do was to help them!"

Harry remembers his wayleave days with remarkable clarity, perhaps, he says, because he loved his job so much.

"I was my own master and had the freedom to do the job as I felt best. I travelled all over the country, meeting so many different kinds of people, from titled landowners to humble tenant farmers.

"One farmer I visited cursed and swore at me when I turned up, so I told him I would come back when he was in a better mood. I returned a week later and he called me a tenacious so and so and 'what did I know about agriculture anyway?'"

Harry told him of his long experience, was invited to stay for dinner and as the farmer was planning to move to Canada, gave him some worldly-wise advice and introductory contacts.

"He tried it for six weeks, came back to the UK and we have been firm friends ever since — I even gave speeches at both his daughters' weddings."

Harry, who formerly lectured on wayleaves and forestry issues at both Horsley Towers and Buxton training centres, is a former Surrey county bowls player and coach and has so many stories to tell of his long life that he is currently writing his memoirs for his 21-year-old granddaughter, Emma.

"I loved my working life, I had a wonderful job. But I still live life to the full — life shouldn't stop when you retire," he said. "I've read the rest home brochures, but I'm not ready for that quite yet."

> I travelled all over the country, meeting so many different kinds of people, from titled landowners to humble tenant farmers

Tapping into the sun's power

The Farm Energy Centre is the UK's leading source of information on the application of energy based techniques in farming and horticulture.
It works with farmers, utilities — including National Grid — research institutes and manufacturers, providing expertise on energy applications and energy efficiency.

farm energy centre

ALL THE ENERGY we use has been derived from the sun at some point in time. Even coal and gas came from organic life which millions of years ago used the energy from sunlight to grow.

Renewable energy sources like solar panels and wind are driven by the sun and its effect on the weather. The trouble is, the availability of solar energy and wind energy doesn't necessarily match the energy demand we have — the coldest day in the year is unlikely to be the windiest and it certainly won't be the sunniest.

"But there is a way of harnessing solar energy to give a constant source of power. It's called a ground source heat pump," says Andrew Kneeshaw of the FEC.

"These devices take advantage of the energy from the sun that warms the earth. Much of that warmth is retained deep in the ground — like a giant storage heater. However, because the earth is so massive, the temperature of the soil a few metres down does not rise much. For most of the time, ground temperature is not much more than 7°C to 10°C.

"So when it's freezing outside and we need heat, it is in fact warmer a few feet down in the earth – but not by very much. This is where the 'heat pump' becomes a useful device. A heat pump is nothing more than a refrigerator working in reverse."

A refrigerator cools our food and ejects the energy it takes from the food though a coil on the back of the device. But the temperature of the energy leaving this coil is much higher than the temperature of the food. The ground source heat pump uses this characteristic by having its cold coil buried deep in the ground and having the heat ejection coil configured to warm our water or house. So the heat energy supplied by the sun through the year to slowly warm the ground can be "harvested" at a useful temperature to heat our homes.

"All this doesn't come free," says Andrew. "This 'thermal gearbox' has to be driven by electricity and the cost in keeping it going is about one unit of energy for every five units harvested. Not free, but still a good deal.

"Farms are ideal for the installation of ground source heat pumps because they require either the drilling of a deep borehole, or the digging of shallow trenches to enable enough heat to be gathered. This is often impractical for the urban household but rarely a problem for the farmhouse."

Pipework is laid in the ground to pick up the heat for the ground source heat pump

Water heater cuts costs

WITH ENERGY PRICES being so high just now, one would have thought that this year's European Dairy event would have been stacked out with energy-saving equipment and ideas, says FEC's Andrew Kneeshaw.

"But, in fact, a quick look round revealed very little being said about this important subject.

"One item that caught our eye was the Dari-Kool Smart Heat, a water heater that recovers energy from the milk cooling refrigeration process. Although this technology has been around for a while, large increases in electricity rates — especially on night-time tariffs, when most water heating is done — mean the financial viability of this type of equipment is starting to look quite good."

Heed strip light safety rules

REMEMBER, WHEN USING strip lights to control sprouting in seed potato stores in the winter, make sure they are protected against damage.

Fluorescent strip fittings hung vertically from wires or free standing units in the gangways between the pallet stacks of seed trays have traditionally been unprotected, using bare lighting tubes.

Safety regulations mean that these must be protected using some type of shield.

A number of companies now provide fittings with polycarbonate covers. These covers can also be supplied to convert older fittings to comply with safety regulations.

Use "warm white" colour tubes for best results and paint the inside of the seed storage building white to improve light reflectance.

To fix, or not to fix?

THE MUCH PUBLICISED hike in energy prices has touched all business and households in the country with average gas prices up by 91 per cent and electricity up by 58 per cent (so far).

A study by Pricewaterhouse Coopers found that domestic energy inflation is running at 10 times the rate of overall inflation.

Yet some energy suppliers are now offering customers fixed price deals through to 2010 — so what's happening? Do they know something we don't?

"Even for the energy 'novice' it's not hard to see where things are likely to go, as it's the current wholesale market and the 'futures' price of energy that determines what sort of deal you can get now and for the next few years," says FEC's Andrew Kneeshaw. "The reason prices are high now is that the wholesale price went through the roof earlier this year. And because the generators buy ahead we pay the high price now."

Currently, with gas pipelines coming on line to prop up the UK's own dwindling production and the market easing, the wholesale price of gas and electricity is the lowest since 2003. Also, the futures market is showing a steady decline in price. So that means that generators can already buy gas cheaper for next winter (and the winter after) than they could for this winter. Not surprising then that suppliers want to 'cap' prices, because their costs are falling.

"So the question is, should you be enticed into a fixed price deal for the next three or four years or do you take a chance and follow the market down," says Andrew.

"It is by no means a simple or clear cut choice. More than most commodities, energy is particularly susceptible to the changing tides of international politics and short term 'deals' are vulnerable to these changes. Like the money market, you can either play safe with a long term deal or gamble. It's up to you."

What the FEC can do for you

THE FARM ENERGY Centre covers a wide range of activities — from energy auditing and energy brokering to energy efficiency planning and product testing and evaluation.
Its database of energy techniques and equipment is a unique resource which allows farmers to track down equipment suppliers offering specific equipment, and the FEC Trade Membership scheme helps to bring manufacturers and farmer clients together. FEC works with other organisations in the energy business such as the Energy Savings Trust and the Carbon Trust and agricultural/horticultural organisations including the National Farmers Union, the Milk Development Council, Horticultural Development Council and the Health and Safety Executive.

If you would like more information about any of the issues highlighted on these pages, contact FEC Services at NAC, Stoneleigh Park, Kenilworth, Warwickshire CV8 2LS. Tel: 024 7669 6512 or e-mail: info@fecservices.co.uk

Use the same numbers to obtain a list of FEC publications, including technical guides, and technical notes.

Energy debate

ANDREW KNEESHAW from FEC will be contributing at the BPC Grower Storage Conference in Grantham on January 16 in a workshop covering energy costs and how they are affecting the UK potato grower.

FEC's recent energy status report commissioned by the BPC will be featured.

For more detailed information about FEC, visit www.farmenergy.com

Stay safe near power lines

Farmers and agricultural contractors are urged to take particular care when they are working close to power lines

EACH YEAR A number of people die due to accidental contact with overhead power lines — and many more are injured.

The use of agricultural machinery and equipment — including combine harvesters, tipping trailers, boom sprayers, loaders, irrigation pipes and ladders — and activities such as stacking can often bring farmers and agricultural contractors close to power lines.

National Grid urges its grantors to stay safe when going about their work on the land.

"The dangers, and how to avoid them, are highlighted in a new leaflet produced by the Energy Network Association," said Nigel Lilley, National Grid's safety, health, environment and security operational support manager, electricity.

"During the past year, the public safety task force of ENA has published a series of safety advice leaflets covering the ambulance, fire and police services, as well as aviators, sailors, caravanning and camping and scaffolders. One of the leaflets is specifically for farmers and agricultural contractors — so many grantors will find it particularly useful."

● You can download the safety advice leaflets from www.energynetworks.org/spring/she/SHEpublicsafety.asp or email karen.thompson@energynetworks.org. You can also write to Energy Networks Association, 18 Stanhope Place, Marble Arch, London W2 2HH.

ABOUT THE ENERGY NETWORKS ASSOCIATION

- With a rapidly evolving energy market, ENA was launched in October 2003 to provide a strategic focus for the energy networks sector.
- It is funded by the UK gas and electricity transmission and distribution licence holders. National Grid is a member.
- Communication is at the centre of ENA, with policy and regulation being the drivers behind all of its operations.

SAFETY**FILE**

• Electricity systems carry voltages up to 400,000 volts. Even 230 volts (domestic voltage) can be lethal • Never assume that electrical equipment is dead, even if the wires have fallen or broken • Remember that the power can be switched back on at any time, without warning • Touching electricity wires or objects/persons in contact with the wires can be fatal • Even the lowest voltage overhead lines can produce 10,000 times more current than is required to kill a person • Electricity can jump gaps • Trees, string, ropes, suspension lines and water can conduct electricity • Rubber boots will not protect you • Most overhead electricity wires are not insulated • Don't assume wires on wood poles are telephone wires.

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