



GUILDFORD ENVIRONMENTAL FORUM

newsletter

www.gefweb.org.uk

MARCH – MAY 2015

FOR SALE?



Raymond Smith
www.guilford-dragon.com



St John's Churchyard, Stoke

THE CHURCH OF ENGLAND proposes to sell the former burial ground of St John's Church, Stoke. It wishes to use the proceeds to build a new centre for the church, which has outgrown its existing facilities. It is the intention that the land being disposed of will form part of a larger development to improve care services in the community.

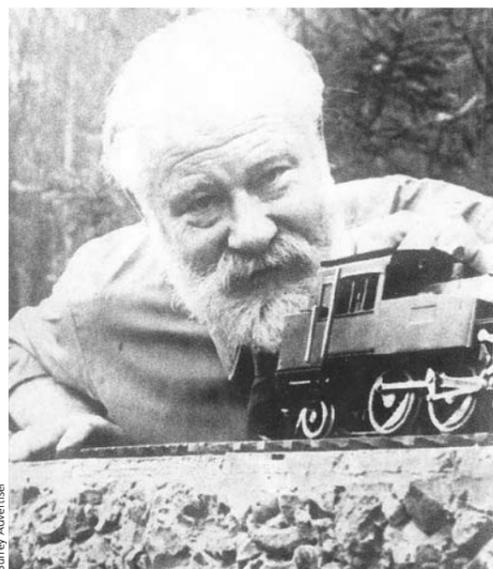
Guildford Environmental Forum has commented on this plan in a letter to the Church Commissioners, which is reproduced below:

"Guildford Environmental Forum is opposed to this proposed transfer of ownership within the Church of England. Whilst as a secular organisation we would not normally be concerned with the internal management of a church, even the established church, our concerns arise from the clear intent of the transfer, which is that the land being disposed of will form part of a larger development.

The reasons for our concern are:

- We consider this site to be a valuable and ecologically distinctive greenspace within the local community, with scope to become even more of a wildlife resource.
- The site forms a useful wildlife corridor towards the river in the centre of the town from the large green area of Stoke Park.
- The development of the site would be harmful to the historic environment in the area, specifically to the still identifiable core of the village of Stoke.

We are also surprised that so little awareness has been raised of the earlier stage of this process, especially with regard to the interests of those who have relatives buried in the churchyard and thus claim to some title on the individual plots within it."



Surrey Advertiser

Bob Symes, a former Patron

Bob Symes, who has just died at the age of 90, was known for many reasons, including as a broadcaster, railway enthusiast and historian. Besides this he also took on the role of Patron of Guildford Environmental Forum at its establishment in the early 1990s. Although this position fell into desuetude over the years, Bob continued to take an interest in the Forum into the current century.

FREE PUBLIC LECTURES

A Forum member recommends a series of lectures currently taking place at Birkbeck College on the subject of food security and how to maintain resources in the age of globalisation of trade. They have been running on Friday evenings since mid-February, but we're sure you would like to be informed of the remaining two talks.

13th March

Food, Climate Change, Health, Animal Welfare and Development

Dr Tara Garnett, Food Climate Research Network and Oxford Martin Programme on the Future of Food, University of Oxford.

20th March

Sustainable Intensification of Agriculture

Dr Zareen Bharucha, Senior Research Officer, Essex Sustainability Institute, University of Essex.

TIME: 1830

VENUE: Birkbeck University of London

PLACE: Lecture Theatre B20, Birkbeck College, Torrington Square, London

GUILDFORD ENVIRONMENTAL FORUM SUBSCRIPTIONS UNCHANGED AGAIN

SUBSCRIPTIONS

Subscriptions for 2015/6 are due on 11th April, 2015. The subscription rate is being maintained for a fifth year at the rate of £10pa (£15pa for a household at one address). For all those who have completed standing order mandates and gift aid declarations, there is nothing more that you need do to renew your membership and we thank you very much indeed for completing both returns in the past.

Most other members will receive a reminder by e-mail to pay their subscription and/or to complete a gift aid mandate. If we do not have an e-mail address for you, there will be a reminder form with your posted newsletter and we would be most grateful if these could be returned to me by 31st March, 2015.

We encourage members to pay by standing order as it reduces our administration hugely, but if this is not your preference, then please send me a cheque and complete the gift aid certificate.

Adrian Thompson, Hon Treasurer

MEMBERSHIP AND FINANCES

Membership has held steady over the last year with new members replacing those who have moved out of area. As advised last year, we no longer receive any funding from Guildford Borough Council, so we have been unable to fund as many seed-corn environmental projects as in the past. However, by cutting back further on our costs, we have reduced our deficit towards a sustainable level.

I would like to thank all those who introduced new members last year. If you know of anyone in the Guildford area who is interested in our work and would like to become a member of GEF for £10pa, then please encourage them to apply for membership (form available on our website <http://www.gefweb.org.uk>). This is the very best way in which you could help the Forum to grow in the future.

We hope you are getting very good value for your membership of GEF, and thank you for your support.

Five a day? No way

In a study last year, more than 3.5 million British people admitted to not having eaten a single vegetable during the previous week. Excuses included being too busy, childhood traumas and finding vegetables too boring.

(Source: Waitrose Weekend, 27 Nov '14)

Food storage

A woodpigeon's crop can store up to 150 acorns.

(Source: 'The Country Set' by Hannah Dale)

FACTS & FIGURES

Farmland

Britain is running out of land for food, and faces a shortfall of 2 million hectares by 2030, reports the University of Cambridge. Contributing factors are the growing population and the use of land for energy crops, and the government is criticised for its lack of a coherent vision on the choices to be made on future land use.

(Source: www.bbc.co.uk, 25 June '14)

Tough life for newts

When great crested newts' breeding ponds are lost to new development, rehoming the animals isn't working. A study into 12 great crested newt translocations found that 11 sites required urgent action to ensure the newts' survival.

(Source: BBC Wildlife, Sept '14)

Forum member Michael Tanner assesses the walking experience in our town

The pedestrian in Guildford

LET ME START with a simple, uncompromising statement: *'The pedestrian is more vulnerable to the reality of surface and to the reality of the immediate environment than anyone on wheels.'*

Those who have recently ridden a motorbike over a 4-inch deep pothole or been stuck in an hour-long traffic jam are entitled to a temporary degree of disagreement, yet the huge majority of those who drive any kind of vehicle are also experienced pedestrians. It is curious that the person behind a steering wheel can seem even to him/herself to be temporarily someone different from the person he/she is on foot. Anyone, however, who walks for the first time a mile or so along a road which he has previously travelled only by car will know the terrain and the environment of that mile infinitely better through the experience of walking. (My future "he/she's" will be represented by "he" where desirable.)

He will know the quality of the surface with the sole of his foot, instinctively recognise whether the width of the pavement is adequate, feel the gradient in his muscles. In addition he may get scratched or buffeted by overhanging bushes, splashed by wheels shooting out spray, startled out of his skin by the air percussion of some 12-wheeled juggernaut whizzing past, or struck, even, by the driving mirror of certain types of van. Equally, he may become desperate when waiting to cross a busy arterial road. Wind, rain, frost, snow are all possible companions, of course.

How does all this relate to the county town of Guildford (pop. of local authority 137,000) and the thousands of commuters who daily stream into it like diatoms engaged by the tentacles of a jellyfish, along arterial roads or railways from all points of the compass, following routes dictated long ago by what the local topography offered to road and rail constructors? Most of these commuters on wheels have to complete their journeys on foot. At this point the nature of the transport on Guildford's roads inevitably exercises a daunting influence on the nature of the provision for pedestrians, who enormously outnumber those in vehicles.

It is appropriate at least to glance at the nature and location of those places in the town which thousands are striving daily to reach on foot once they quit their homes, their parked cars, their buses or trains, and have finally to use their feet to get to schools, university, hospitals or the countless other destinations where they earn a living. Undeniably, the exercise is good

for them if they are able to survive the stress and the hazards.

The daily walk

I would estimate that the average distance covered on foot by these commuting pedestrians in Guildford is about 1½ miles, return journey included, the shortest being from the Friary bus station to venues just round the corner. Longer walks might be from the Park and Ride at Spectrum for those who then walk to the town centre instead of taking the bus; even longer walks are made by many secondary school pupils, some of whom cover at least 3 miles a day, for example from George Abbot School in Burpham to the outskirts of Bellfields. Some of these are happy to walk, others cannot afford to do otherwise.

It is a sobering fact that the eight secondary schools within the GU1 and GU2 areas (including the independent ones) draw in and emit at peak hours a total of 8,000 plus youngsters, most of whom will have to use pavements and traverse roads for a significant part of their daily commuting. These numbers do not include the particularly vulnerable primary school pupils (from at least ten schools) accompanied by an adult. When you add to these the older students and staff attending the university and Guildford College, and a large part of the huge number of staff employed



www.trafficse.org

At least 18 schools lie within the GU1 and GU2 areas.

by the three hospitals in the area, you might almost hear the thunder of their combined footsteps at the peak hours of movement.

So what may be said about the safety and convenience of the paths this host of pedestrians is obliged to follow during the working week in particular?

What are the criteria for adequate pedestrian paths,

usually paved, sometimes coated with tarmac or other compacted material? Most evident are exact location, surfacing, width, proximity to traffic, access to safe crossing, kerbing, lighting, nature of fencing.

Safe and unsafe

Judging by these criteria, the good news is that large parts of the dozen or so residential areas of GU1 and GU2 have excellent sidewalks or pavements. The bad news is that there is some remarkably inadequate and positively dangerous 'provision' in some of the most used locations. The major danger in these 'black spots' is that of the hazardous proximity of traffic, the lack of sufficient convenient and safe crossing, the ludicrous narrowness of some sidewalks (or the lack of any sidewalk at all) and the uneven or unstable nature of the surface. Of these, the careless speed of traffic passing so close to so many pedestrians is the major hazard. Excellent provision and highly inadequate provision are sometimes so close to each other that a pedestrian who is not well acquainted with the location can suddenly find himself in confusion and danger.

There is also the increasing danger posed by temporary arrangements for ushering pedestrians through or around road or pavement works. One recent classic example of this on the A31 has forced pedestrians (often school pupils) to walk in the road or attempt to cross it.

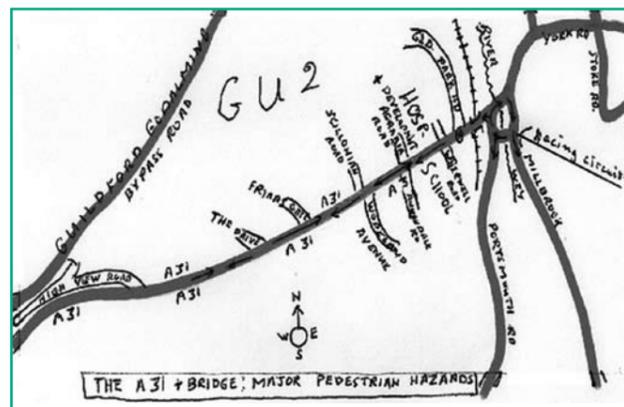
Guildford can be proud of the revised approaches to the Royal Surrey County Hospital both from a road traffic and pedestrian point of view. It can be satisfied with the spacious provision for pedestrians on such estates as Park Barn on the west or Bushy Hill on the east side, but severe inadequacies which have been unresolved for many years tend to lie closer to the town centre.

No doubt revised drafts of the Local Plan will pay attention to pedestrians' problems but conclusions will not take effect for months, if not years, and one has a strong suspicion that commuters on wheels will finally have precedence. In any event, any solution to the nightmarish problems of traffic congestion in Guildford is as linked as one Siamese twin to the other to the problem of safety and convenience of the more vulnerable pedestrian. Every month's delay will inevitably bring its toll of daily inconvenience and grave danger.

A poor example

Lack of space in an article such as this obliges me to illustrate with a single classic example what can go disastrously wrong with provision for pedestrians along a road which leads into the very centre of Guildford. Soon after dawn on a summer's day, this particular road seems no more than a humble, tranquil, even minor country road, lined in one part with lovely

chestnuts; but long ere the clock can strike noon it daily undergoes a horrible transformation. Locals call it the Farnham Road, as it does indeed lead to that other country town before continuing as a major arterial link with Winchester and much of the south-west of England: I refer, of course, to the notorious A31 and, more precisely, to the 1½ miles of it which ascend from the Guildford side of the main railway bridge (over six lines) to a point level with the high, western end of Onslow Village. It beautifully illustrates the tragi-comedy of population growth and helter-skelter technology outstripping an older, more pastoral Surrey, with alarming consequences which Thomas Hardy himself would have seen fit to write about. Along the strip I have specified there are blatant examples of failure to satisfy the criteria I listed earlier for judging the adequacy of provision for pedestrians, particularly as these apply to width of pavement, or lack of it, proximity to traffic, road crossings, control of traffic speed, maintenance of sidewalks (not all are pavements) and the volume of pedestrian traffic.



Only a few hundred yards up the A31 there is a large secondary school on one side opposite a hospital which is undergoing ambitious transformation, and that next to a residential home, next to a very recently commenced housing development. [See diagram]

The inadequacies include: widths of available sidewalk which at worst on the north side of the main road are only 4 feet (or even only 2 feet where lack of maintenance over several hundred yards has reduced the available width); nature of the traffic, often including huge freight lorries from Portsmouth; speed which is nominally 30 mph in the lower portion of the A31 and as high as 50 mph in the relevant upper portion; traffic islands which are intended to slow traffic but invite the unwary to cross; and no official crossing at all in the final mile. Probably the most serious of these perils is the speed of traffic, especially of that descending the steep gradient between hospital and school and, at the next half a mile or so above, the almost right-angled bend where drivers cannot see what is close ahead and where sometimes trees or bushes on the southern side collapse onto the road under the weight of ivy. A real hazard to pedestrians using the portions of reduced width sidewalk in the



Lorries frequently crowd the A31 through Guildford.

upper part of this stretch of 1½ miles is the possibility of being struck by the projecting side mirrors of large Transit-type vans which are rushing down to Guildford. This stretch of A31 has seen several fatalities in the last 20 years or so.

The A31 bridge crossing of the railway immediately south of the main station really requires a book to describe its inadequacies – perhaps 'Horror Novel' would be the right term. Not only are the pavements on either side only just wide enough to take two normal adults walking side by side, but it is approached at both ends by extremely busy road junctions involving sharp bends and crossing points which are dangerously undermarked or, in one case, actually exposed to the wheels of large vehicles occasionally mounting the almost non-existent kerb. Poor drainage at its south-west corner frequently results in a pond-sized puddle which drenches unwary pedestrians or forces observant drivers to swerve dangerously as they are also encountering a roundabout. At the south-east entrance the pedestrian has then to negotiate a narrow, slippery pavement on a steep gradient while accelerating cars, buses and lorries sweep past within 'touching' distance on one side, while overhanging brambles threaten to scratch out his eyes on the other. I do not exaggerate. A few support posts or poles are added for good measure to this obstacle course.

You may now understand why I have selected this stretch of a main arterial road so close to the town centre to illustrate just how neglectful authorities can be of a very large number of persons using pedestrian provision. There are, it goes without saying, many other parts of the borough where the pedestrian is not adequately provided for, and the local people will know them well enough. I have already given credit where I think credit is due. However, our town has been singled out as one of the 40 most congested towns in Europe (*vide* John Bannister's article in the previous issue) which in itself is shameful if one considers Guildford to be the plum of the stockbroker belt. It is unfortunately by no means an anomaly if one thinks of several similar towns in the overcrowded south-east.

As far as allocating blame is concerned for the specific

inadequacies mentioned, the pointing finger would have to reach a long way back and include more than the current Surrey County Council.

Certain aspects could be corrected easily, and three of these are the reduction of traffic speeds (by 10 miles an hour in many places?), a review of the position of crossings and the updating of their markings, and the proper maintenance of available sidewalk widths. An excellent litmus paper for measuring the will to make improvements would be a start on the A31 section I have centred on, and a close scrutiny of records involving accidents to pedestrians. (Incidentally, why does the little red man on the crossing by Debenhams glow green for only 8 seconds whenever I and a dozen or so others need to cross?)

It will be obvious to many that I have not even touched on the monstrous inadequacy of provision for pedestrians wishing to pass from the country of South GU2 into the neighbouring country of North GU2. The Berlin Wall had nothing on the Guildford – Godalming Bypass Road!

Respect the pedestrian

I assume (perhaps erroneously) that those responsible for pedestrian passage do work in close conjunction with those responsible for traffic on wheels, and that all those responsible have an up-to-date picture of where exactly the greatest hazards and the greatest inconveniences are. However, traditionally, and almost everywhere, the man on foot has had a humbler say in matters than the man on horseback or wheels. He has not proportionately been represented although he is certainly in the majority at any given moment. I would consider that this is a most opportune time for him to make sure his voice is heard, and for him no longer to suffer from that curious schizophrenia which has so far afflicted a society where most adult pedestrians between the ages of 25 and 75 also hold a driving licence.

Improvement will come only slowly, if at all, unless we shake up our priorities and persist in making our local inadequacies public, whether they concern a badly sited crossing, the speed of traffic, or pavements so narrow that a mother with a pram has to trail a child or two invisibly behind her. Unfortunately, I have no space here to write in any detail of desirable improvements of good pedestrian access from the periphery of Guildford to the beautiful countryside which surrounds the town: witness Trodd's Lane in Mero or again, the A31, at its junction with the slip road to the A3 and Watts Gallery. Over to you, fellow pedestrians, children or adults.

Three enormous cheers for those children (and their parents) who elect to walk to school, or indeed any other destination, even if it's a mile or more distant!

WOOD PELLETS TO THE RESCUE

says Forum member John Pletts

I AM ONE OF FIVE members of Surrey Green Party Carbon Reduction Action Group, monitoring our personal carbon footprints over the last nine years. What we find is that by following a careful green lifestyle the annual CO₂ footprint is usually between 2 and 3 tonnes. Our system does not count travel by public transport (rather difficult) but adding 10,000 miles by car would add around 2 tonnes, maybe doubling the footprint and bringing it up to the national average of around 5.4 tonnes.

Introducing roof-mounted PV panels makes a very significant difference, transforming emissions of over a tonne from electricity consumption for the household into a small minus figure. Our solar water heater produces about 1,200 kWh per year, saving emissions of 0.2 tonnes of CO₂.

Otherwise the factor that makes the most difference is the number of people living with you, as the home-based emissions are divided by the number of people. So a son or daughter leaving home will increase personal emissions while a person returning home from university will reduce them.

The biggest element of our house's footprint was the gas boiler, so a couple of years ago research turned to a possible low carbon biomass boiler. However, these seemed to be very heavy (200kg+) and to require an accumulation tank (water) which is also heavy and space-consuming. Wood is considered a low carbon fuel, provided that trees are planted to take the place of those cut down.

Eventually I contacted L C Energy of Albury, whose manager had talked to the Forum some years ago. They assessed the suitability of a small wood pellet boiler, using my figures on current gas consumption, and decided that it was a relatively easy task to install the boiler outside, next to the north wall of our single storey living room, with pipework running in the attic space. The ideal location would probably be a solidly built outhouse.

As L C Energy are primarily biomass fuel suppliers they passed me on to Ecolyf, a small specialist company near Alton. By early 2014 we had agreed a price and I had arranged for a builder to construct a concrete base for the boiler.

Ecolyf installed the boiler at the end of June 2014. It took a good week to complete. Much work had to be done in the attic over our utility room; relays to make

the changeover between gas and biomass all had to be packed into a small space. I have added wooden trellis panels to screen the boiler, as you see in the photo.

Since October the boiler has been working and I have been loading 10kg bags (about 2 per day) into the pellet hopper, and cleaning out the ashes about every 6 days.

The lessons from this experience are:

- * Retaining the gas boiler is essential as it can be more easily left to run if away for more than a day or two
- * Having a solar water heater is very advisable as the biomass boiler can be shut down during the summer- it is not suited to light, intermittent loads
- * The biomass boiler on start-up takes longer to produce heat than a gas boiler
- * The outside location keeps the dust associated with the ash outside the house.
- * The boiler is very quiet but there is noise associated with the pipework in the attic
- * No accumulation (buffer) tank was necessary

My biggest concern has been the possibility of the boiler freezing while we're away and the system is using the gas boiler. I have now commissioned Ecolyf to add glycol to the heating circuit so that it will be safe down to -10C.

Biomass boilers are not a universal solution to our domestic carbon problems – there is not enough home-grown wood for that. Also the total cost is about the same as a new car, but the Renewable Heat Initiative does make it a much more attractive proposition. A biomass boiler does need attendance to its regular needs but the feeling of removing a large part of one's carbon footprint is very pleasant. I believe I am the first owner of a domestic wood pellet boiler in Guildford.



Ecolyf's contact details: Mike Barnsley on 01420 541971 and www.ecolyf.co.uk

Ecolyf are installers of biomass boilers and solar thermal systems. Since August 2014 they have become part of the L C Energy Group.

John Pletts is a prospective parliamentary candidate for Guildford in this year's general election

Use your food caddy

The 83,000 tonnes of food thrown away in Surrey each year would generate enough electricity to power 10,000 homes for a year, and fertilise enough wheat to bake 16 million loaves of bread.

(Source: Surrey Matters, Winter 2014-15)

FACTS & FIGURES

Honeybees – 1

The honeybee's wings flap 230 times every second, giving it a metabolic rate so high it is only ever 45 minutes away from starvation.

Honeybees – 2

The Romans thought that bees were born from the carcass of a dead lion or ox; hence the logo on Tate & Lyle's syrup tins.

(Source: Friends of the Honeybee newsletter, Autumn '14)

Marine conservation

The world's ocean species are up to nine times more likely to become extinct than previously thought, according to new research by the University of Sheffield.

This news comes as the UK has announced plans to create 23 new marine conservation zones. Defra is criticised for reducing to just 50 the total number of zones planned, well below the 127 sites recommended by the government's own scientific advisors in order to halt the decline of marine life. (Source: Independent, 31 Jan '15)

BBC Radio 4 broadcast, 26 August 2014

COSTING THE EARTH – Clean Air Campaign

A summary by Forum member Peter Smart

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Why diesel emissions are killing tens of thousands of British people every year and how to stop it.

THREE MEMBERS OF PARLIAMENT (for Manchester, Hendon and Stoke), all members of the House of Commons Environmental Audit Committee, wore equipment on their lapels to suck in and analyse the same air as the MPs themselves breathed as they went about their everyday lives for three days. It was part of a new effort¹ to fight one of Britain's biggest killers, Air Pollution.

The equipment was a battery-powered Black Carbon Monitor which, in combination with a GPS watch worn by the MPs, provided a correlation of location and carbon pollution levels. The monitor measures Black Carbon which is a derivative of combustion so is a good tracer of diesel emissions and makes the pollution 'visible'.

In the 1952 'Great Smog' of London dirty air was visible as smog and visible on clothes and textiles. People were aware of it. So it was addressed in the Clean Air Act (1956) Act of Parliament. But nowadays dirty air is invisible so is not high up in people's perceptions.

There are many lifelong physical effects on humans from polluted air. Health professionals agree it causes respiratory and cardiovascular health issues and reduces life expectancy. A recent Public Health England report² estimates that 5% of mortality in the UK is attributable to air pollution, and has discovered that bad air does not just affect our lungs, it affects our hearts.

Studies³ funded by the British Heart Foundation investigated and have shown that exposure to diesel exhaust affects the cardiovascular system, and that about

40% of urban particulate pollution is due to diesel exhaust from passing traffic. Changes to heart conditions are not just long term. Changes can happen very quickly within a few hours of exposure. In a study⁴ of heart attack victims arriving at hospital, the subjects were three times more likely to have been exposed to high levels of traffic pollution immediately prior to the onset of their symptoms.

So why is air pollution so bad? After all, in recent decades industrial regulations have cut emissions and vehicles have got more efficient. Could it be that a popular technology, sold as environmentally friendly, could be emerging as 'the enemy within'?

1952



Over the last 20 to 25 years great progress has been made in reducing pollutants, some by as much as 80–90%, but improvements in vehicle emissions have slowed significantly in the last 10 to 15 years. Most improvements come in the form of cleaner vehicles but in recent times a 'cleaner' vehicle as measured at the factory is not delivering the same results in real driving conditions.

The root of the problem is diesel. Petrol vehicles predominantly pollute in line with factory expectations and have delivered great decreases in emissions

in recent years. This is not happening with diesel vehicles, and coupled with an increase of the proportion of diesel vehicles in fleets this is causing a 'stagnation' in air quality improvement and in some cases a worsening of air quality.

There are simply more diesel engines around and diesel vehicle sales have been greater than petrol in the UK since 2011. The appetite for diesel vehicles is driven by economy and diesels provide that. Business cars are sold based on their CO₂ emissions and diesel engines are excellent for their lower CO₂ emissions, so as a result diesels account for the majority of fleet sales. You get more miles per gallon with a diesel and you pay less tax because, in the battle against climate change, successive governments have encouraged us to buy cars which produce less carbon dioxide.⁵

The potential killer ingredients from diesel emissions are nitrogen oxides (NOx) and solid particles, but manufacturers claim to have reduced the level of these dramatically. However, analysis in the UK shows that actual real world emissions figures are typically 22% higher than the official emissions, and that NOx can be 3 or 4 times larger than the official figures.⁶

"We have seen government policies to encourage more fuel efficient, low CO₂ vehicles and that has actively encouraged diesel vehicles. That was a mistake. We should have taken into account both the air pollution and the CO₂ emissions when we set taxation levels for cars".⁷

Meanwhile the particulate filter used in a diesel vehicle to capture the solid particles needs emptying. That is done by burning it off. Originally they were designed to 'burn off' on the motorway, but increasingly the burn-off happens in town resulting in a dump of NOx and particulates in a puff of smoke in standing traffic.

Tree leaves capture and agglomerate the diesel particulates so can act as a pollution detector. As schools and nurseries are 'particulate hotspots', especially as vehicles converge on them

twice a day to deliver and collect the children, scientists are planting trees in front of schools to capture the particulates and reduce the impact on the children.⁸

Meanwhile the results of the MPs' experiment showed that they suffered the highest pollution levels when they travelled by car, and little when walking away from city streets and travelling in trains. The advice is to move through towns in quieter streets and away from vehicles where possible. Joggers and runners especially should find parks and avoid running along busy roads.



pictures.colourlibrary.co.uk

Joggers should try to avoid traffic, and seek out parks.

The House of Commons Environmental Audit Committee Chair wants the public to start making a fuss. This is a wake-up call for action needed by government, local authorities and the public to tackle these public health issues.

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Lecturer in Air Quality Science
Kings College London
- 2 "Estimating Local Mortality Burdens associated with Particulate Air"
Public Health England
PHE-CRCE-010
April 2014
- 3 Dr Jeremy Langrish
Clinical Lecturer in Cardiology
Edinburgh University
- 4 Annette Peters
Inst of Epidemiology
Munich
- 5 Vicky Parrott
Deputy Road Test Editor
What Car Magazine
- 6 Nick Molden
Founder and CEO
Emissions Analytics
- 7 Greg Archer
Transport and Environment
Brussels
- 8 Prof Barbara Maher
Lancaster University Environment Centre

Watch your language

Margaret Attwood and Michael Morpurgo were among a group of writers who recently criticised Oxford University Press for dropping certain words from its *Junior Dictionary*. "ACORN" and "CATKIN" have been scrapped; "BROADBAND" and "CUT-AND-PASTE" have been added. (Source: *New Statesman*, 6-12 Feb '15)

Outrage in Scotland

Last spring, Scotland suffered its worst ever bird-of-prey poisoning incident. The bodies of 16 red kites (about a quarter of the Highland population) and 6 buzzards were found on farmland near Conon Bridge. The Scottish government is proposing to allow officers of the Scottish Society for the Prevention of Cruelty to Animals to search land and apply for warrants to enter premises. (Source: *BBC Wildlife*, June '14)

FACTS & FIGURES

A smart vine

A South American climbing vine, *Boquila trifoliolata*, has been found to mimic whatever tree is supporting it, matching the size, shape and colour of its leaves. If it crosses the canopy from one tree to another, it can even impersonate multiple hosts simultaneously. The strategy may protect it from herbivorous insects. (Source: *Current Biology*)

BRAVE LEAD BY GERMANY

John Bannister

Under Germany's 15-year energy transition strategy – the Energiewende – the country aims to generate 80% of its electricity from renewable power such as solar PV and wind by 2050, up from 26% today, as part of its efforts to combat climate change. The figure of 26% is way higher than the UK's at 12% and also higher than most other developed countries that don't have large existing hydropower plants, like Norway and Austria.

I consider it brave because of the short-term pain involved, although this will fade in significance in the long term. Electricity production from renewables is entitled to above-market rates for power they put into the grid (and the same is true here in the UK through subsidies).

This 20 billion euro annual subsidy is paid for with a levy on customers' bills, resulting in Germany

having some of the highest domestic electricity bills in Europe. So a strategic move away from large centralised nuclear and fossil fuel power plants to distributed generation from millions of small producers is taking place.

Germany's large utilities are feeling the pain. Nuclear plants must close by 2022 under Energiewende. Eon, Germany's biggest utility, has made a corresponding brave strategic move to switch from nuclear and fossil fuels, including dirty brown coal, and concentrate on renewable energy such as solar PV and wind.

Falling prices of PV panels and wind turbines mean that renewable electricity is fast approaching parity in price with nuclear and fossil fuels. It all fits in with the message coming from many large investors wanting to get out of fossil fuels.

GOVERNANCE WORKSHOP

Lucy McSherry

Guildford Borough Council invited a representative from Guildford Environmental Forum to attend a Governance Workshop on Tuesday 27 January. I attended and heard from Satish Mistry, Executive Head of Governance, and Councillor Tony Rooth, Chair of the Task & Finish (T&F) Group that has been set up at Guildford to review their current governance processes.

This workshop was one of the first steps to review the way decisions are made by the Council. All parties have been clear that this process is to be non-political and they stated that "strengthening governance is at the heart of democracy". The workshop sought to identify key attributes of decision making, alongside engaging with other Local Authorities and review of policy and procedures in an initial data-gathering exercise. Once the characteristics of best practice have been determined, the T&F Group will review models of governance to achieve them.

Ed Hammond from the Centre for Public Scrutiny also presented, as he has been brought in to assist

the Group and give an independent view. Ed provided a useful presentation on the wider context and spoke about the large amount of research that the Centre for Public Scrutiny has conducted over the last few years, into the different models of decision making. He discussed the pros and cons of 'Committee' approach versus 'Strong Leader' model, but emphasised that any changes need to be determined through "reflection, debate and local requirements". The success of either model depends on individuals and the culture of change. The values of the location need to be embedded into any change that may occur. When governance fails it is mainly due to either "failure of individuals" or "failure of culture."

The values of good governance that were agreed upon were honesty, integrity, trustworthiness, accountability and transparency. There was also consensus that the involvement and engagement of the community were key priorities, to achieve decision making that delivers objectives and provides value for money.

A SIGH OF RELIEF

What happened to the plans of Former Environment Secretary Owen Paterson to allow the destruction of ancient woodland if new trees are planted elsewhere? They themselves seem to have been axed.

Mr Paterson championed "biodiversity offsetting", arguing that it would enable much-

needed developments to be built at the same time as "delivering a better environment over the longer term". Campaigners pointed out that it was impossible to make up for the loss of woodland systems built up over centuries by planting new trees on virgin sites.

As reported in the Independent, 31 January 2015

Tipping points and Arctic methane

John Bannister

Tipping points

THE GEOGRAPHICAL ASSOCIATION OF GUILDFORD runs several lectures a year for the benefit of students from local schools. Nearly all schools attending happen to be from the local independent sector, but this is not for want of trying to get our state schools to attend. The Forum is a paid-up member of the Geographical Association and several of us were there for the talk by Dr Peter Langdon from the Geography Department of the University of Southampton, on 10 February at Guildford High School.

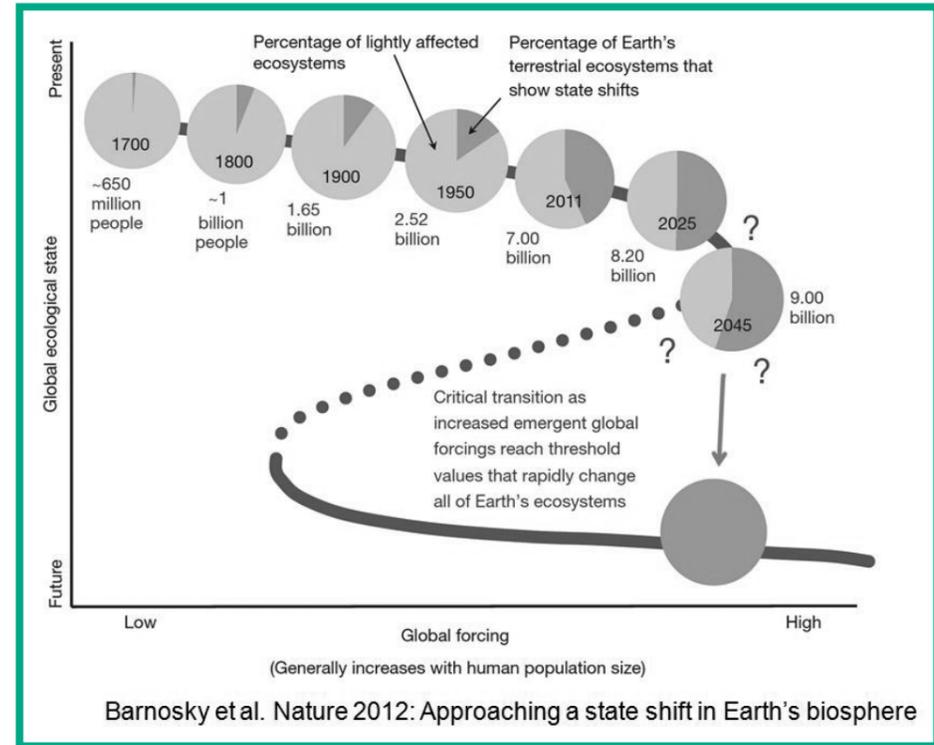
Dr Langdon describes himself as a paleolimnologist, about which more later, and his fascinating talk was entitled "Tipping Points in Natural and Human Systems – How Well Can We Predict Them?" By way of introduction he sketched a world of rapidly rising global population (1 billion in 1800, 2 billion in 1927 (time interval 127 years) and 7 billion in 2011 (time interval 84 years)), the spread of disease (such as Ebola), soil erosion and degradation, global warming, the loss of biodiversity, ocean

It is worth noting, as few people take this seriously – least of all our government – that Monty Don in his excellent Radio 4 series *Shared Planet* stated that extinctions are now running at 1,000 times the natural rate.

Paleolimnology is the study of lake sediments to reveal what has happened in the vicinity, over timescales as short as the last century and as far back as millennia. Peter focussed on a lake in Yunnan province, China, that he and his colleagues and students had studied, which had already tipped from a clean, clear lake in 1940 to a highly polluted lake today permanently infested with algal blooms. Using information on the human developments around this lake he showed on a timeline what exogenous events had occurred such as deforestation, the rise in population of people living around the lake, new chemical works (many fertilizer plants), fish farming, hydroelectricity generation, water extraction and incidence of algal blooms since 1940.

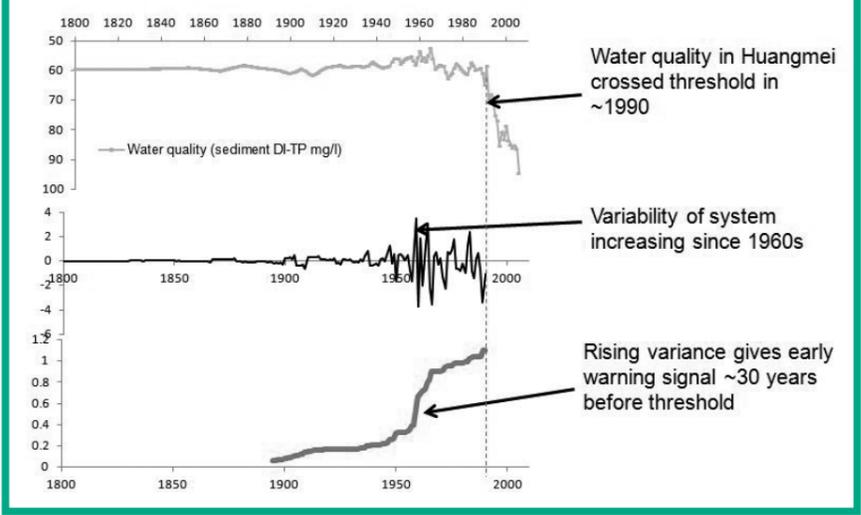
He then overlaid his sediment data from his cores mirroring the stresses introduced on the health of the lake. He was able to determine from these cores the nitrogen levels, dissolved oxygen and the density of diatoms, which having calcareous skeletons are well preserved and so easy to measure. He showed that the high density of diatoms (sign of healthy water) started to decline in the 1960s, an increasing variance was seen in the 1980s and then a sudden crash in 2002. The lake had gone from one (healthy) steady state in the 1940s to another (unhealthy) steady state after 2002. This is what tipping means in physical terms. From 2002 the lake

has been virtually dead. Using his approach we could predict when systems are heading towards a tipping point and could therefore take steps to avoid the worst outcomes. It goes without saying that we use our earth as one great experiment without understanding a tiny fraction of the consequences of what we are doing.



acidification as examples of emerging events where tipping points in one form or another have happened, are in the process of happening or are predicted to happen. He singled out biodiversity as an example where we had already exceeded safe limits and said quite explicitly that the sixth great extinction is already under way.

Beyond a safe operating space?



Dr Peter Langdon and his team are giving us ways to look ahead even while corporations and individuals driven by greed are causing ever greater change to our planet in the pursuit of unsustainable growth.

As an afterthought he gave us a really telling quote from President Obama: *"It's important to listen to what scientists have to say, even when inconvenient, especially when inconvenient"*

Arctic methane

While on the subject of tipping points I note that a major event we are relentlessly heading towards is warming of the Arctic leading to thawing of the permafrost. Permafrost is heavily concentrated in and around the Arctic but not confined to the Arctic. It is defined as soil that has been frozen for at least two years, some of which is a remnant of the last ice age. Permafrost is found at the floor of the Arctic and in the surrounding land fringes. Locked up in the permafrost is half of all the organic matter in all the world's soils – estimated at 1,700 billion tons and mostly consisting of carbon dioxide (CO₂) and methane (CH₄). Methane is a far more potent greenhouse gas than CO₂ so we express a combination of greenhouse gases as CO₂ equivalent.

The reason that the Arctic is so sensitive in regard to permafrost thawing is that global warming is causing average temperatures to rise faster there than in most other parts of the world. Warming of up to 3°C in parts of north Alaska and up to 2°C in the Russian European north has been observed,

which is roughly twice the global average rate. Also, we have been witnessing a positive feedback in the Arctic. As global temperatures rise, due to climate change the sea ice cover in the Arctic has shown a steadily declining trend. The loss of this albedo effect of the reflective white sea ice leads to more rapid warming because a larger area of the darker ocean, which adsorbs more heat, is exposed each year. As permafrost warms it is releasing the greenhouse gases it has held safely since the last ice age. One estimate suggests 110-231 billion tons of CO₂ equivalent will be emitted by

2040 and 850-1,400 billion tons by 2100. If correct this would equate to 4-8 billion tons per annum CO₂ equivalent up to 2040 and 10-16 billion tons up to 2100. For comparison, the anthropomorphic (human-caused) emissions of all greenhouse gases in 2010 was an estimated 48 billion tons of CO₂ equivalent.

Methane concentration in the atmosphere has been increasing in a steadily rising curve but has slowed since 2000. It is currently about 1,780 parts per billion. But some scientists are very concerned that the Arctic will reach a tipping point as temperatures rise and will suddenly release 50 billion tons in a short timeframe. These scientists are saying the risk is so high we should use geoengineering techniques to cool the Arctic, by, for example, inducing clouds over the Arctic. Like the sediments in the lake viewed by Dr Peter Langdon the warning signs are already there. Reports from satellite and aircraft measurements of methane escaping from the Arctic ocean indicate releases thousands of kilometres wide as the sea ice retreats.

Arctic warming is known to be interfering already with the jet stream, causing greater variation and unpredictability in the weather in the northern hemisphere, leading to more flooding, droughts and crop failures than in the past. Agriculture, infrastructure and peoples' lives are already being affected. The last thing we want is for oil companies and governments to take advantage of the receding sea ice to drill for more oil and gas in the Arctic. These deposits must be left in the ground – but that's another story.



Guildford Environmental Forum aims to improve the environment in and around Guildford for wildlife and for people and to build a sustainable future.
Join us in our work for the town and have this newsletter posted to your door four times a year. Forum membership costs only £10 per year or £15 for a couple, and new members are warmly welcomed.
Please contact Adrian Thompson on 01483 222687 or e-mail adrianthompson46@talktalk.net



CALENDAR



All the Forum's Group meetings are open to the public

Tuesday 10 March

Geographical Association of Guildford.

Professor David Petley, Pro-Vice-Chancellor, University of East Anglia, and previously Professor and Co-Director of the Institute of Hazard, Risk and Resilience, Durham University:

"Future Trends in Losses from Earthquakes and Landslides".

1730. Guildford High School, London Road, Guildford.

Saturday 14 March *(not a Forum event)*

Andrew Lilley, ex RGS pupil and vegan marathon runner, talks on climate change, peace, and human and animal rights.

"The Power of Your Plate: How a Vegan Diet Can Save the Planet and Your Health".

1415. The Guildhall, 131 High Street, Guildford.

Tuesday 31 March

GEF Biodiversity Group. Dr Nikki Gammans FRES:

"Bumblebees: Ecology, Conservation and Reintroductions".

Nikki is working full-time with the "Short-Haired Bumblebee Project", which is reintroducing an extinct bumblebee to the UK. She is supported by the Bumblebee Conservation Trust and RSPB.

1900. Committee Room 1, GBC Millmead Offices.

Monday 11 May

GEF Annual General Meeting

followed by a talk by Lizzie Croose, Mustelid Conservation Officer for The Vincent Wildlife Trust, about polecat recovery in Britain: **"The Return of the Masked Mustelid"**.

1900. Committee Room 1, GBC Millmead Offices.

Saturday 6 June

Transition Guildford with Surrey Wildlife Trust. **Scything Course for Beginners and Improvers** from 1000 to 1600 at the Rosamund Community Garden, via trackway just off Longdown Road.

Contact Louise Shorthose on 01372 379509 or John Bannister on 01483 570468.

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(Adrian Thompson pro tem: see Treasurer details above)

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Guildford Environmental Forum's newsletter is published in March, June, September and December. Please send contributions for the next issue to Clare Windsor by Monday 11 May.

The views expressed in this newsletter are strictly those of its contributors and Guildford Environmental Forum.