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GUILDFORD ENVIRONMENTAL FORUM

newsletter

DECEMBER 2017 – FEBRUARY 2018

GUILDFORD IN BLOOM

BEST WILDLIFE GARDEN 2017

Report by Mo Usher, of Guildford Environmental Forum

HOW DO YOU JUDGE a category which ranges from a tiny courtyard in the centre of Guildford to the wide canvas of the surrounding Downs? This was the challenge for the judges of this year's Wildlife category: to find a level playing field. However, there are criteria that match across the board and we were particularly looking for the care and management of the areas, the diversity and wildlife value of the plants, the use of the space, year round support for wildlife and, as appropriate, sustainability such as water butts, compost and organic management.

Support for the wildlife

The key point was the encouragement of wildlife. We found three of the gardens had visiting hedgehogs, with evidence that in one of them the hedgehogs were living in a log pile. Even in the centre of Guildford we found one contestant had a family of sparrows being fed in their nest in the eaves.

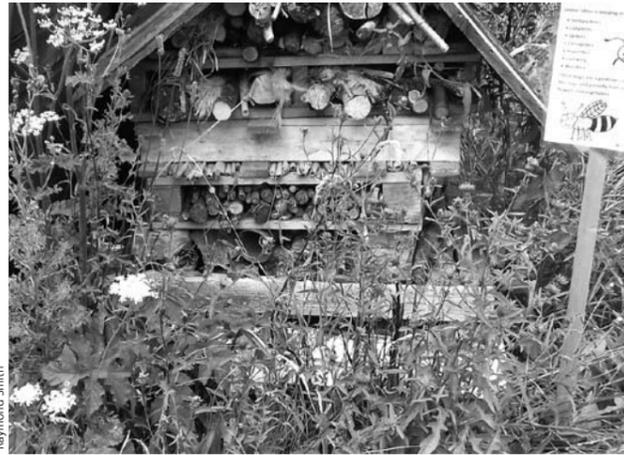
Wherever we went there was an abundance of honeybees on pollen-rich plants. Most of the gardens had lawns mixed with clover, buttercups, daisies, self-heal and more with an abundance of insects feeding on the nectar and plainly loving their surroundings. Most of the contestants avoided using weedkiller, concerned about it going into the water table. We saw a number of bug hotels which were more like mansions!

The brick courtyard was decorated with pollinating flowers not only to encourage insects but also as a pleasing entrance for clients. However, it was also a space where employees could look out of the window to see what birds had arrived on the feeders, giving a well-needed eye rest from computers and helping to create a quality environment for their staff.

An elderly couple had converted the shed in their scented garden into a lounge to watch the wildlife they were attracting.

This outstanding garden, Snaky Lane Wildlife Area in Ash Vale, won not only the Best Wildlife Garden of Guildford in Bloom 2017 but also came top of every category.





The bug 'mansion' in Normandy Therapy Garden

Inspiration for the future

It was an inspiration to see how the Therapy Garden in Normandy was helping people with mental and physical disability through working with nature.

It was also great to see how teenagers were being involved in voluntary work to care for Guildford's precious Downs. We even found a garden where parents had given their youngster a space to learn about gardening and which she had dedicated to fairies.

Top tips

There were ingenious methods for alternative pest control. In a small garden, slugs and snails, although great for the wildlife food chain, are particularly challenging. A number of gardens were using well-located shale or small stone barriers to discourage

them. We saw a garden with the most beautiful hostas, which are normally full of holes unless chemicals are used, but their secret was vaseline on the tips. Garlic spray was another method used to ensure chemical-free vegetables, fruit and flowers.

The winner

With such high standards it was a tough decision for the winner of the 2017 Wildlife category but one area did stand out above all the others. Snaky Lane Wildlife Area in Ash Vale had an abundance of wildflowers and nettles, grasshoppers, rare butterflies, a pond alive with bugs, a dragonfly laying its eggs, a stumpery to attract stag beetles and much more. Working in unpromising urban surroundings, it was obviously very well managed by its team of volunteers and was playing its part in the community to bring people, including schoolchildren, and nature together. It was an idyll for all. Indeed their achievement was so great they were also the winner of all the categories of this year's Guildford in Bloom competition.

Everywhere we went during our judging we found commitment, passion and a co-creation with nature to create peaceful and relaxing spaces. Well done to all for achieving such high standards!

GREAT NEWS! Environment Secretary Michael Gove has announced that the UK will back a permanent ban on neonicotinoids. Our bees have another reason to do their dance . . . for joy!



LC Energy is 10 years old
see story opposite

LC Energy

ON FRIDAY 8th SEPTEMBER, friends and colleagues joined LC Energy Ltd, one of the leading UK biomass supply companies, at its new wood chip depot in Albury to celebrate its official opening, and the 10-year anniversary of the business.

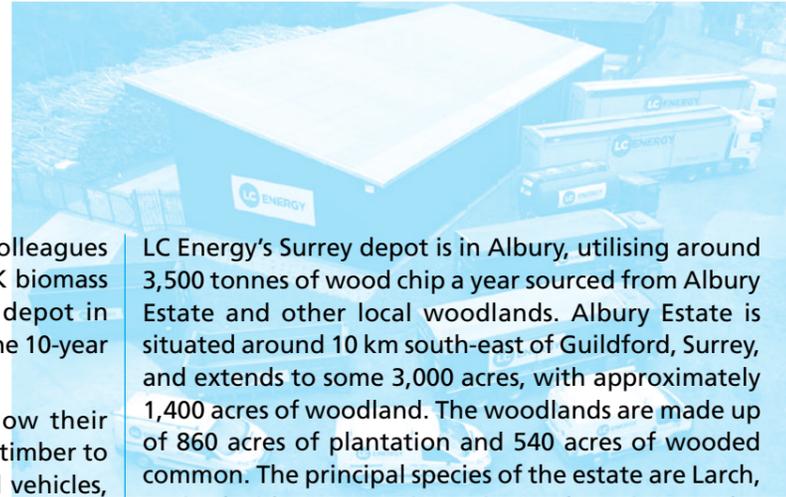
The LC Energy team were on hand to show their guests how the site operates, from stacking timber to wood chip production. Specialist wood fuel vehicles, including bulk blown pellet lorries, artic chip lorries and chip hook bins, were on display to provide an insight into their fuel distribution services across the South East.

The two guest speakers at the event – David Wright, GBC Councillor and Chairman of Surrey Hills AONB, and Kathy Slack, Director of EM3 Local Enterprise Partnership – explained how biomass was being developed locally, and how it has created jobs whilst improving the sustainability of the area. LC Energy was cited as a good example of how a business can be successful while working hard to preserve and protect the natural environment.

Mark Lebus, Managing Director of LC Energy reflected on how far LC Energy has come as a business, as well as looking at the exciting opportunities ahead. *"The opening of our new wood fuel depot in Albury is the culmination of 10 years of hard work, preservation and belief that there was a viable wood fuel demand for the ready supply of virgin timber in Surrey. To see the renewable energy market for biomass grow sufficiently over the last ten years to warrant a development project on this scale is hugely rewarding, and we particularly thank the Albury Estate for their commitment to LC Energy over our first ten years. I would also like to thank all our customers and suppliers for their continued support, and all the team at LC Energy for their dedication, professionalism and expertise."*

LC Energy specialises in biomass wood fuel solutions which include wood fuel supply from sustainable, accredited UK resources, heat contracts and commercial biomass system design. LC Energy's premium grade wood chip is sourced from virgin timber that is usually within 30 miles of the heat usage, in a bid to reduce greenhouse gas emissions from transport.

Locality is an integral part of a biomass supply chain as it helps capitalise on local wood to provide local heat, generates a greater local economy, provides more work for rural businesses, and enables a significant reduction in transport emissions. Surrey is the most wooded county in the UK with around 22% woodland cover, making it a great area for LC Energy to base its operations.



LC Energy's Surrey depot is in Albury, utilising around 3,500 tonnes of wood chip a year sourced from Albury Estate and other local woodlands. Albury Estate is situated around 10 km south-east of Guildford, Surrey, and extends to some 3,000 acres, with approximately 1,400 acres of woodland. The woodlands are made up of 860 acres of plantation and 540 acres of wooded common. The principal species of the estate are Larch, *Larix decidua*, Scots Pine, *Pinus sylvestris*, Douglas Fir, *Pseudotsuga menziesii*, and Corsican Pine, *Pinus nigra*. The estate's woodlands are all managed under a woodland management plan that includes felling and replanting conditions, ensuring the estate never depletes its extensive array of woodlands.

The timber is chipped into woodchip at the Albury depot and then distributed to the respective heat sources. LC Energy has a 30-mile radius for deliveries from the Albury depot to ensure that greenhouse gas emissions are kept to a minimum. One example is Surrey Sports Park, the University of Surrey's £36 million sports facility, that opened in 2010. Surrey Sports Park uses its biomass boiler to provide a constant heat supply to the facility. The wood chip is all locally sourced from within ten miles. When compared to fossil fuel alternatives, the biomass boiler saves around 222 tonnes of CO₂ eq. per year.

LC Energy's other depots are strategically placed around southern England, creating a network that can provide biomass fuel to a wide area, while keeping transport emissions at a minimum. For LC Energy's larger contracts, timber can be sourced from a maximum radius of 100 miles, with strict regulations to ensure it is legally and sustainably felled. All LC Energy wood fuel products are BSL accredited. In reality, the majority of the timber is procured from within a radius of 50 miles from the respective heat source.

Part of LC Energy's accreditation criteria stipulate that a minimum of 70% of the timber procured by LC Energy must have restocking conditions in the respective felling licenses. LC Energy utilises timber from mainly FSC accredited sources, which means that more than 91% of the timber sourced by LC Energy is sustainably replanted, while the remaining 9% is made up of arboriculture cut-offs and windblown timber.

Sources:

Dale, A. (2016). *A Study of the Environmental, Social and Economic Impacts along a Local Wood Chip Supply Chain*. MSc Dissertation. University of Surrey. Centre for Environmental Strategy. Faculty of Engineering and Physical Sciences.

Wu, W. (2014). *Life Cycle Assessment of local SE UK wood energy supply chains*. MSc Dissertation. Imperial College London. Faculty of Natural Sciences.



IN 2002, AFTER MANY YEARS arranging the necessary capital, designing and assessing the best technologies to cut the carbon of every aspect of normal living, a groundbreaking housing development was launched on an unused site once used for spreading sewage sludge. The site is near Hackbridge Station in Sutton. This development was BedZED. At the time a few members of GEF visited the site, curious to learn what a zero-carbon living and working space for 200 people looked like and exactly how it would work. We were reasonably well aware that pioneering developments, especially one like BedZED the first of its kind in the UK, rarely worked as planned from day one.

After 15 years we wanted to see what had worked and what hadn't, so a return visit was arranged. Over 25 people paid £15 pounds each to join us, including officers from Guildford and Woking Councils, members of the Guildford Society, the Guildford Vision Group and GEF. In the intervening 15 years awareness of how to live lighter on the planet has grown enormously and many of the ideas pioneered at BedZED have become mainstream. The vision in 2002 was to be a 'One Planet Living' community, which became the strap-line of Bioregional, one of the project partners, who teamed up with house builders the Peabody Trust, architect Bill Dunster and ARUP.

By and large the concepts visualised 15 years ago have worked well. Pooran Desai, one of the co-founders of Bioregional, hosted our visit, arranged for us to be shown round and answered our questions at the end of our tour. He and Sue Riddlestone, co-founders of Bioregional, live and work at BedZED and Bill Dunster still runs his company there.

Ventilation

The colourful natural ventilation wind cowls still look beautiful and I've never seen anything so striking. These allow cool air to enter the building and warm air to leave via heat exchange to control the temperature

of each part of the building. The buildings are constructed with high levels of air tightness, but the decision to opt for natural ventilation and particularly the innovative air cowls was a great eye opener.

Greenness

Nearly every living space has access to a green garden and it was lovely to see how wild the area looked, which is so good for pollinating insects and other wildlife. BedZED is a real urban oasis, quite unlike the 'neatness-is-everything' approach, which still blights many green spaces in our communities.

Energy efficiency

The whole development has very high levels of insulation, concrete heat-retaining thermal mass construction, double glazing on the south-facing side and triple glazing on the north-facing windows. All homes and work spaces have energy-efficient lighting and white goods selected for minimum water consumption. Barely any supplementary heating is necessary beyond what body heat and appliances create in addition to the passive solar. Nearly all the homes are south-facing, orientated for solar gain with a sun-space across the entire south-facing wall designed to capture heat which can be dispersed throughout the home through a doorway. The overall layout of BedZED is a grid pattern with curved roofs so the shade from one row does not fall on the sun-space of the adjacent row. We were kindly invited to enter one of the family-sized homes and were told that overheating was not an issue as the blinds on south-facing windows worked well.

Recycled material

The construction reused local materials where possible to save carbon. Some of the steel I-beams came from an old railway station. The building is clad in local oak on the north side, which still looks in excellent condition. There are many other examples.

John Bannister

Janet Ashton

Two disappointments

The original construction included two innovations that have not worked. A novel type of sewage treatment involving tanks with plants and algae proved too ambitious and too labour-intensive to control. The site used to collect rainwater and grey water to flush loos, to water gardens and wash cars, but was considered a health risk by the local authority and was disconnected. So toilet flushes were switched to the public sewer.

The other pioneering reversal was the failure of a wood-chip CHP (combined heat and power plant) involving creation of a CO-rich gas from burning woodchip from Sutton's gardens in a lean oxygen environment. The syngas so generated was burnt in a gas engine to make electricity and generate hot water as well. A good concept, but the technology was not then fully proven and the plant was abandoned. Recently a modern wood pellet boiler has been successfully commissioned. The hot water produced is fed via the district heating system installed in the original plan to the homes and work spaces, and the electricity fed to the development or the grid. Any top-up electricity to supplement that from the solar PV is imported from the grid using SSE's guaranteed green tariff.

The site and the community

Food is a large part of our carbon footprint. As the land used for BedZED had once been used for spreading sewage sludge, regrettably no food can be grown on-site. Raised beds with an impermeable liner could be an answer here, but the risk may still be considered too great. Some residents choose to grow food at local allotments and some use a box scheme. There is ample space on-site reserved for events and community get togethers and we saw a children's play area.

Good bus services operate past the site, and Hackbridge Station is only 10 to 15 minutes away with trains to London and elsewhere. There is a car club on-site (the first in London) with three cars, and car parking is severely restricted to encourage the residents to cycle, walk and use public transport. It was conspicuous how many homes were displaying bicycles. It is worth pointing out that a low-carbon lifestyle at BedZED and elsewhere depends very much on the

behaviour of the residents and not just on the buildings they occupy. The BedZED community is well placed to discuss, target and share how their carbon footprint can be kept as low as is considered reasonable (just like any other household).

Conclusions

Was BedZED profitable? The build costs did over-run, which was a problem for the Peabody Trust, who financed the project. But important lessons were learned and Brighton One, Bioregional's second UK project, has been profitable. So one of the great benefits of BedZED is that vitally important lessons were learned early on. Bill Dunster still runs his architectural practice, the ZED Factory, on-site and is globally recognised for his eco-buildings. Bioregional has grown into a sizeable consultancy.

Built 15 years ago, BedZED caught the attention of the government, councils, developers and the UK housing fraternity for its high sustainability standards and that continues to this day. There is now a college on-site for people with learning difficulties. BedZED pointed the way at a time when developers had barely started thinking about eco building. It was a very brave move and just what was needed to help kick-start the process.

One of the interesting statistics to emerge is how much lower the turnover is for residents in the low cost housing that is very economical to live in. The trend in London and places like Guildford is to build larger new homes at low densities, in part feeding off City of London bonuses. Small houses designed with communal living in mind, low carbon and with smaller rooms such as you find at BedZED appeal to people like me who see the advantages of communal living with shared facilities. Examples of many of the features pioneered at BedZED are now gradually becoming mainstream and legislation is steadily catching up. This is vital if the UK is to achieve its carbon reduction targets.

Let's do all we can to help Bioregional find somewhere in Guildford to build a One Planet Living project using the ten principles that came out of the project. For more details see www.bioregional.com/oneplanetliving



John Bannister

THE YEAR GONE BY:

extracts from *A Country Diary* by Forum member Michael Tanner

Saturday DECEMBER 3rd 2016

PERIMETER OF HAMPTON ESTATE FIELDS, dusk to dark

Three-days-old crescent moon hangs in the south-western sky with a bright pendant star about three fingers below. No other stars yet visible. Trees and low hills on the horizon are silhouetted against a sky tinged pink and aquamarine; a few layered clouds absorb the same tints. Dusk shifts deceptively into night; the footpath is already difficult to make out. Suspicion of mist gathers in the distance as temperature falls. Like a Bewick woodcut the



branches and twigs of hedgerow trees in the west are briefly etched on the fading sky.

Sunday DECEMBER 4th 2016

SOUTHERN EDGE OF THE DEVIL'S PUNCH BOWL, HINDHEAD, mid-afternoon

Puddles in shady places still carry a skin of ice. A small flock of redwings high amongst birches move constantly, calling to each other with characteristic, abrupt, urgent cries. To their Scandinavian eyes, perhaps, this particular terrain is familiar, with its high, undulating forest and deep valleys.

Sunday NEW YEAR'S DAY 2017

SEALE AREA, early afternoon

Cyclists, joggers and walkers are out in some numbers. Rain is in the offing but it's mild for time of year. Long catkins on some hazels; high above Thundery Lane a Mistle sings boldly.

Sunday JANUARY 22nd 2017

PERIMETER OF CROOKSBURY COMMON, late morning

Yet another white, frosty morning. Much clearance has been carried out on this northern edge of the Common. The steep hillside to my right has lost its birch scrub and rhododendrons. Tall pines, in groups of two or three, now rise dramatically against a flawless sky. Some rhododendrons have been left along the path I follow. They bear well-developed buds which will eventually open into large cream-coloured or even yellow blooms. The woods on this common are currently receiving informed and wise attention to encourage their diversity. Perhaps the

foresters will, in the foreseeable future, get round to replacing (with deciduous trees) some of the extensive stands of small, timber pine where the ground is constantly smothered with dead needles, so that other plants find too little light in which to thrive. Even so this is an ideal area for the serious walker who seeks a degree of solitude. There remains the problem of some dogs running uncontrolled in areas where wild creatures should not feel threatened.



Wednesday FEBRUARY 1st, 2017

SEALE AREA

Lovely swathes of snowdrops in Seale churchyard and budded clumps of the same on grass verge of Wood Lane. Heard several buzzards yesterday, calling as they circled high over the Hog's Back in the last hour of sunlight.

Saturday FEBRUARY 5th 2017

COMPTON AREA, late afternoon

Countryside sodden after days of drizzle, large inconvenient puddles on several footpaths. New molehills everywhere. Song thrushes strive to out-sing each other. Many birds, like the mallard on an extended pond, are in pairing mood. On the pavement that passes my house a neat circle of soft, white feathers betrays where sparrowhawk plucked the breast of collared dove soon after dawn this morning. Spring with all its implications seems to be just round the corner. On 20th February two brimstone butterflies in back garden and a comma butterfly at Seale.

Thursday MARCH 2nd 2017

NEWLANDS CORNER, late afternoon

A decidedly springlike day. Far down in the valley, on the other side, a tractor can just be heard. It pulls a wide plough turning the rich dark soil in carefully laid ridges. Gulls, like a blizzard in a glass paperweight, whirl as close to the steel blades as they can get. Each wants to be first in the suddenly revealed feast of worms, insect larvae, the odd tiny

mouse. And there is something else down there, something moving swiftly through and beyond the gulls, who seem not to notice. Then it rises and momentarily is visible against the sky – I'm surprised, having never seen a kite in such a situation before. Dusk steals across the landscape and the gulls fly off to their reservoir roosts. The horizon is already colouring. I scan the arch above and now see, even without my binoculars, five distinct specks, drifting in wide circles on the last thermal of the day. So the kite amongst the gulls was not solitary. One could just hear all five calling across the dizzy distance.

Friday MARCH 24th 2017

COMPTON, late afternoon

Breezy, sunny and dry after recent rains. Sturdy, half-weaned lambs on hillside pasture. Alongside the steep path going south through woods, there are swathes of yellow-green field garlic just breaking into flower. Just as well no milk cattle can browse here. Higher up, huge piles of sand loom alongside the path – the industry of badgers is impressive. Celandines cheer the heart and bluebells are again thrusting leaves through the woodland earth.

APRIL FOOL'S DAY 2017

WATTS WOODS, early afternoon

The date arouses expectations which, as T.S.Eliot recognised, may be disappointed. There are some showers, some sunshine, it's mild. There's the scent of nettles (if you want that), no bees at the golf course nest (which might be a relief to some golfers), a chiff-chaff and a green woodpecker calling in the woods (reassuring?), no kites, no buzzards, plenty of walkers and masses of white thorn blossom (uplifting). The larches are sprouting new needles, a beautiful green and tender enough to bite.

Easter Monday APRIL 17th 2017

THURSLEY COMMON

Glorious sunny day with a pleasantly cool breeze. Seems a miracle that sand, flint and a scraping of organic material can produce such colour and fragrance as the ubiquitous gorse abundantly supplies. At this season, the plant itself daubs bright gold and green on a palette of repellent prickliness, the sovereign of this undulating sea of vegetation and its hallmark. Long before roads skirted this territory it afforded shelter and sustenance to the scraggy cattle that roamed it in spring and summer,



Aphelandra

and fuel to their hardy keepers. Bees and a host of other insects depend on its nectar; lizards hunt the insects, together with chats and

shrikes; hobbies swoop over it chasing dragonflies from the shallow, hidden pools. Whether or not the home of this remarkable plant can survive the pressures on habitat in this crowded isle remains to be seen. Man still has a vital part in sustaining it: the heath needs browsing cattle and controlled burning of heather and cutting of scrub.

Friday MAY 28th 2017

ROAD FROM A3 TO BOWLHEAD GREEN AND BOUNDLESS

What a twisting and undulating Surrey lane! Pastures here are rich and feed both Herefords and Holsteins. The first hay has recently been cut and lifted – scores of jackdaws and rooks forage the shorn acres. Swifts high up, and house martins (I believe) circle and swoop in the bright sunlight. I've not seen more robust oaks than these along the road. There must be something special in the red sandstone or in the greensand which traverses the area. Not a soul to be seen this early evening in Bowlhead Green itself, which surely must be one of the prettiest and most hidden villages of Surrey, yet right on the doorstep of Guildford.

Friday JUNE 16th 2017

BACK GARDEN IN SUBURBAN GUILDFORD

Yet another succession of bright, hot days. In the midday heat and light, sapphire blue damselflies continue their pas de deux above and on the lily pond. They settle for a minute or two in small groups and look very like small aquatic irises with distinct bowed heads. It takes two to make such a flower, the male, I think, grasping the female who deposits her minute eggs on pond weed or other surface vegetation. Today it's only the blue ones; the agate-red ones seem to have gone. In the magic dusk of these days I sit under the apple branches and watch a score (yes) of blackbirds performing their particular ballet on the lawn – racing for short distances in different directions, trying, I suppose, to establish some kind of hierarchy. Hundreds of feet above I know there are swifts doing something similar in the air, catching insects at the same time. Soon a pair of pipistrelles will be doing their thing, with incredible navigation, the length and breadth of the garden.

Saturday JULY 8th 2017

HAMPTON ESTATE FIELDS NEAR SEALE

Very hot all day, up to 33°C. Under an intense sun, pumpkins, turnips, potatoes all look sad and drooping. Cinnabar caterpillars chew the thick leaves of ragwort. Coveys of almost desperate-looking lads, bearing enormous rucksacks, trudge mechanically along the footpath – their reward a Duke of Edinburgh certificate. Today the water cannon no longer shoots its plumes of life-restoring water far out over the crops. Even the birds remain hidden.

Sunday AUGUST 6th 2017

HAMPTON ESTATE FIELDS AGAIN

Recent rain has saved the day. Crops are surprisingly recovered, farmers much relieved. The exhausted D of E boys have been replaced by enthusiastic pickers of blackberries: mothers 'helped' by youngsters tasting this new experience, mixture of pleasure and pain with a tangible reward – marvellous pie, or sugared fruit straight out of the fridge. Oak, hazel and chestnut are already hung with the promise of unusually bountiful harvest. Perhaps not all the young pickers notice the young badger, a victim of humans (I surmise) whose body lies across the path.

Friday SEPTEMBER 8th

PEWLEY DOWN RIDGE AND VALLEY TO THE SOUTH, 7 to 8pm

I go eastward along the ridge as visibility almost tangibly decreases. Canada geese call to each other as they fly in from the west in two or threes. Their silhouettes are clearly visible as they lose height, banking to face the breeze in order to land on the stubble, where earlier arrivals are almost invisible. They handle this difficult manoeuvre with a skill that modern pilots would envy. Constantly they sustain a dramatic species of communication (emphatic, carrying calls of differing pitch and length). I guess they adopted this hillside as their landing strip many years ago. At least a hundred must be gathering there in the descending dark, finally still, silent and watchful. From some point to the north of the Down, pop music suddenly blares out. Affluent Man is not that far away. I wonder whose music will outlast whose: wild geese calling directions and encouragement to each other or the amplified jangle of humans trying not to notice the dark?

Saturday OCTOBER 14th 2017

HILLY FOREST SOUTH OF HASCOMBE, mid-afternoon

Slippery and difficult climb up sunken, narrow paths deeply entrenched by centuries of water flowing off high plateau. The soil on the hill is dark, sandy and red, changing to a pale clay at the top where broken stone frequently shows at the surface like wounds – greensand emerging again. This forest is much favoured by sweet chestnuts which have been coppiced here for centuries. At the edges of



the bold rides traversing the trees, many chestnuts have been allowed to reach their natural height. Now their fruits lie in unfolded capsules amongst a mass of fallen leaves. In a number of places the nuts have freed themselves and are easy to pick up. This remarkable autumn one can easily gather quite a weight to take home. Squirrels, deer, badgers and

smaller creatures of the forest must have been doing something similar, in their various ways, for several days. Over a wide area, many of the former trees have been removed and a big replant is evident with a variety of deciduous and coniferous saplings already outgrowing their protective, plastic jackets. Despite the chestnuts, there are few people visible today in this forest and even those few are rapidly absorbed into this huge cathedral of trees.

Saturday OCTOBER 28th 2017

LOSELEY ESTATE AREA, mid-afternoon

Sunny and pleasant. Approaching from Polsted Manor direction I have clear view of the woodlands, called on the map East Warren and West Warren. A little strange to see a white saloon-type car emerging along the rural track between the two woods; positively surrealistic to see five other white vehicles of identical appearance emerge equidistantly at a sedate pace behind the first. Curiosity made me quicken my pace in time to have the final vehicle pass me. Mystery revealed: small fleet of the latest model of Land Rover clearly inscribed on the side with wording like 'Experience for 11-17 yr olds wanting to handle this model in off-road conditions'. My head swirled with thoughts stimulated by this encounter. I dread to think of the costs involved for the three or four young, 'experiencing' passengers, both the immediate and the potential. Not so far perhaps from conserving elephants in Africa by raising money from tourists, which can then reward native farmers for their loss of crops. Funny world! After all, what are woods for?

Thursday NOVEMBER 9th 2017

SOUTH-WEST COMPTON, late afternoon

Yet another mild and sunny autumn afternoon. Quite a number of heavily fleeced ewes in a paddock alongside the lane. Each carries a number in the low hundreds sprayed in large blue digits on her flank. Some have a splodge of red (redding?) on the rear just above the tail. Can't see anyone to ask but surmise that there's a ram somewhere amongst them who must have been pretty active. If most of these ewes produce two lambs next spring, the shepherd will be very busy. Perhaps conditions will be kind to man and beast. Slowly ascending the hill beyond, and watching where I tread, I realize I'm getting a very accurate idea of the types of tree arching overhead: they reveal their identity by their multicoloured leaves lying thickly below. But their demarcation on this path is surprisingly exact – (1) zone of greyish sycamore leaves, (2) zone of bronze and coppery chestnut leaves, (3) more mixed zone of oak, ash and some bright yellow birch leaves, (4) at the very top, by a gate, nothing but the leaves of field maple, perhaps the most varied and colourful of all. Differences in altitude, light, soil and available moisture are, I suppose, the control factors.

Stock

A really warm coat

A reindeer's coat consists of an ultra-fine underfur and a shaggy outer layer, with hollow hairs for insulation. So little of the reindeer's body heat escapes that it can lie on snow without melting it.

(Source: BBC Wildlife, Dec '16)

National parks

Despite a pledge by the last Conservative government to protect funding for England's national parks up to 2020, most parks will have suffered a real-term cut of more than 40% between 2010 and 2020.

(Source: i Weekend, 29 July '17)

FACTS & FIGURES

Our new age

Human activity is being embedded permanently in the fabric of the Earth, meaning that our era can be named 'Anthropocene'. Figures show the human takeover: 10,000 years ago the Earth's population comprised 99% wild animals and 1% humans; today it comprises 1% wild animals and 99% humans and livestock.

(Source: Population Matters, Autumn '17)

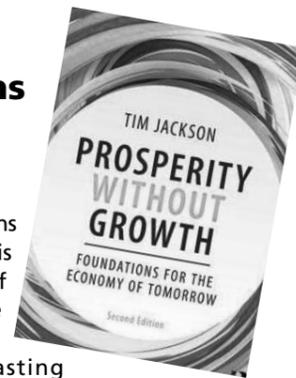
Golf courses

There are 2,000 golf courses in England, occupying 150,000 hectares, which is 1.1% of the land. Surrey has 142 golf courses.

(Source: New Statesman, 23-29 Jun '17)

Book review by Adrian Thompson

Prosperity Without Growth – Foundations for the Economy of Tomorrow by Tim Jackson



GEF MEMBERS who attended the outstanding presentation at the Trinity Centre by Tim Jackson in May 2014 on the subject of "Prosperity without growth" may be interested to know that he has recently published a revised edition of his original book. This second edition has been written for an international audience not just for the UK government. It has been updated to incorporate new research showing us how to live well on a finite planet without simply consuming more and more stuff and accumulating greater debt.

Tim Jackson is Professor of Sustainable Development at the University of Surrey and Director of the Centre for the Understanding of Sustainable Prosperity. He was awarded the Hillary Laureate for exceptional leadership in 2016.

His new book examines the worrying trends of private and public debt since 1955 (page 27) and declining productivity growth in advanced economies since 1965 (page 45). He then examines how to resolve the dilemma that growth is unsustainable in a finite planet, whilst accepting that the alternative of de-growth is unstable, economically. The excellent chart on page 90 shows clearly how annual carbon emissions continue to grow. This is despite a very slight decline in the absolute level of emissions across high income countries for the first time in decades. The growth in emissions from middle income countries is alarming.

Tim Jackson has calculated that, since 1990, worldwide population has grown annually by 1.3% and affluence has also increased annually by 1.3%. These have exceeded the reduction in carbon intensity through technology (-0.6%pa) to give a net 2%pa increase in carbon emissions. These figures may seem small but they compound to a 62% worldwide increase over some 25 years in carbon emissions (page 97).

Projecting forwards to 2050, global population is forecast to increase by 0.8%pa. So assuming a continuing decline in carbon intensity due to technology of 0.6% and increasing affluence of 1.3%pa, we seem to be looking at net increase in global carbon emissions of 1.5% pa. Tim Jackson shows that to get global emissions to fall to a tenth of their current level (as required by the Paris agreement) the emission intensity would need to decline by about 8% every year, a truly heroic requirement.

He argues that an immediate and massive uplift in investment in low carbon technologies is absolutely vital, but is unlikely to be enough. This leads him to address the structure of current market economies.

Tim Jackson confronts modern capitalist economies and examines the "iron cage of consumerism" and how we can escape from the

restless dissatisfactions of consumerism. This leads to his outline of how we can create an economy capable of delivering a lasting prosperity. He examines the following four distinct foundations for his "Economy of Tomorrow", namely:

- The nature of enterprise
- The quality of work
- The structure of investment
- The role of money

Some key elements, which are explained in much greater detail in the book under the heading of the "economy of tomorrow", include:

1. How early action is essential or the problems of our planet's material limits will be rapidly magnified.
2. That the ecological bounds of human activity must be established.
3. How investment will be needed in public amenities and spaces that create opportunities for leisure and self-development.
4. How communities need to be strengthened to enrich human life without enlarging our ecological footprint.
5. How income inequalities must be reduced so as to reduce social costs and there must be improved access to education.
6. That Sovereign control over the money supply is needed as well as a reduction in the power of banks to create money.
7. That the key is freedom from the growth imperative.

Tim Jackson wants people to flourish in less materialistic ways through a greater sense of belonging and for service to be valued more highly.

In concluding, I can do no better than quote Caroline Lucas, MP, who said of this book that "Tim Jackson has brought his ground-breaking book bang up to date and substantially deepened its arguments. This extensively revised edition sets out more clearly than ever the dimensions of a new and different economics – working for people, planet and prosperity. There isn't a better exposition out there of why and how we need to move beyond growth."

The book was published by Routledge (Taylor & Francis Group) early in 2017.

On next page – seven megatrends that could give grounds for hope

Seven Megatrends that Could Give Grounds for Hope

Adrian Thompson

An article in *The Guardian* on 8th November did offer some interesting developments that might help to achieve Tim Jackson's challenge and avoid catastrophic Global Warming. These can be summarised as follows:

1. Methane reduction

Methane is a more potent gas than carbon dioxide in the global warming mix. Cattle rearing is a major contributor that is rising fast as meat and dairy demand responds to the growing population and more affluence, especially in the East. Just in the last year, a potential new solution has burst on to the market – **Plant-based meat**. Bill Gates of Microsoft and Eric Schmidt of Google think this could be significant and now giants such as Tyson (the biggest meat producer in the US), Danone and Nestlé are investing heavily in plant-based meat and dairy produce. There could also be benefits such as animal welfare issues. Richard Branson is quoted as saying that *"I believe that in 30 years or so, we will no longer need to kill any animals and that all meat will either be lab. or plant based, will taste the same and also be much healthier for everyone."*

2. Renewable energy

This is much more advanced as the cost of producing solar panels has plunged by 90% in the last decade and both solar and wind power costs continue to fall. In 2016, two-thirds of all new power installed across the world was renewable. China is leading the surge and in the US \$30bn has been invested in green energy since Donald Trump signed his order to repeal climate legislation in March 2017.

3. King Coal

Production of coal – the most polluting fuel – peaked in 2013 because solar and wind are now cheaper. China has just mothballed 151 new coal plants. In the UK coal supplied 40% of our power 5 years ago and this has fallen to 2% now. However, the world needs to be weaned off coal as fast as possible.

4. Electric Cars

Oil still provides a third of all global energy. Diesel cars are losing popularity quite rapidly due to urban air pollution. Again, China is leading the way and now sells more electric cars than Europe and the US combined. Delhi

and Paris are announcing future bans on fossil-fuelled cars. Electric car sales are only just over 1% of all new car sales today, but forecasts suggest that 80% of new cars will probably be electric by 2030.

5. Batteries

Lithium-ion battery prices have fallen by 75% in the last six years. Forecasts suggest further big falls in the future and a massive increase in battery storage. This helps to offset the short-term variability of solar and wind power. Long-distance electricity interconnectors are being built and will be much needed.

6. Efficiency

Progress here is slower because action is needed from millions of people. More homes need better insulation and there is still massive waste in transport and industry across the globe. Improving the efficiency of gadgets and appliances through better standards is surprisingly important. A new UN Environment Programme report claims that efficiency makes the biggest impact of any single action with the exception of rolling out wind and solar power.

7. Forests

This is the biggest megatrend that is not yet pointing in the right direction. Annual tree losses across the world have doubled since 2000. Forests only receive 2% of global climate finance, but forest destruction for ranching, farming and timber account for 10% of greenhouse gas emissions. New research has shown that better land management could deliver a third of all the carbon cuts that the world needs. There has been progress in China, India and South Korea since 2000 but much more is needed and as soon as possible.

No one is saying that the battle to avert catastrophic climate change – floods, droughts, famine, mass migrations – has been won. Nicholas Stern, Climate Economist at the London School of Economics summarises the situation by stating that "These trends are the start of something that might be enough – the two key words are 'start' and 'might'." He believes that the continuing global climate negotiations are vital. "The acceleration embodied in the Paris agreement is going to be crucial."

In decline

Four of our breeding waders – lapwing, snipe, oystercatcher and curlew – have hit their lowest levels since the early 1990s.

(Source: WWT Waterlife, Oct/Dec '17)

What a hoot!

In 1996, two neighbours in Devon spent a year hooting at owls, unaware they were actually hooting at each other.

(Source: 1,342 QI Facts)

FACTS & FIGURES

Invasive species – 1

Two tourists were rescued after getting lost for hours in a forest of rhododendrons in Killarney National Park, leading to renewed calls for the Irish Army to tackle the plants. Despite spending hundreds of thousands of euros each year, the park authorities are losing the battle against *Rhododendron ponticum*.

(Source: i Weekend, 16 Sept '17)

Invasive species – 2

Himalayan balsam is a scourge of our river banks – very pretty but lethal in its spread. However, an innovative distillery in Hertfordshire is making use of plants cleared by local Wildlife Trust volunteers. It is utilising the pink flowers to create a limited edition (pink of course) of one variety of its gin.

(Source: Waitrose Weekend, 14 Sept '17)

The future isn't everything it's cracked up to be

John Bannister

We have to face it – we are seriously screwing up the planet and the carnage goes on and on. Will, as everyone thinks, our technology always come to the rescue? Take solar panels and electric vehicles (EVs), for example, both routes to a "better" future that we have applauded in this newsletter. The price of solar panels just fell by a further 50% in the last 12 months. Whoopee. Soon there will be a paint for your outside walls that will generate electricity so you can charge your electric vehicle (EV). It will all be fine. The future is rosy. But there are at least two particular problems nobody wants to talk about.

One is population and the predicted rise in global population from over 7 billion today to maybe 11 billion by the end of this century, and the sheer scale of global demand for goods and services that results. This is a further increase of over 50% on top of the increase of 230% that has already taken place since "the" war. We all want more it seems and those with virtually nothing want at least a fraction of what the affluent west has. David Attenborough and the charity Population Matters (who have an active group in Farnham) do see the problem but nobody listens because technology will answer everything. But it won't.

The other problem to highlight is the many different types of metals required for solar PV, EVs, etc that have to be dug out of the ground to feed the supply. Lithium, a key component of batteries for EVs, for example, has increased in price threefold since 2016 due to the sky-

rocketing demand. After all there are over 7bn of us as we speak. The mining industry, which operates worldwide, is poorly regulated (much less so than the US oil industry it seems) and in many places ends up seriously polluting water supplies as well as causing deforestation and global warming.

Does anyone care about what goes on deep in the Congo, an area rich in minerals, as long as EVs, hybrids and solar PV (along with mobile phones) keep rolling off the production lines. We have to start making these connections whenever we buy things. And who would suspect dear old Canada of all places, another great mining country, of acting improperly?

Mining can involve leaching the crushed ore, which produces a liquid waste stream that ends up in a tailings pond. In 2014 at the huge Mount Polley copper mine Canada's worst mining disaster happened when the tailings dam collapsed, spilling 25 million cubic metres of toxic waste water into the adjacent water catchments. Good mining practices are available but they cost more. No criminal damages were brought and no fines administered. The federal government goes on allowing such tailings dams on new projects.

Governments, companies, local authorities, and investors chasing the highest profits are all implicated. The native peoples take the biggest hit along with nature and the people exposed to poor quality drinking water that technology can't treat.

As argued in Tim Jackson's book (page 9) and echoed by John Bannister (above) human activity is putting huge strain on our environment. The Guildford Environmental Forum believes that we owe it to our children and grandchildren to minimise the damage that humanity is doing to this wonderful planet.

HOW CAN WE ALL HELP? HERE ARE A FEW THOUGHTS:

1. Encourage friends and relatives to join GEF for just £10pa. The more members we have the more influence we can have on crucial decisions that are being made here in the Guildford area. See membership details below. GEF is offering **FREE MEMBERSHIP** until April 2018 for any new member who sends in a standing order in respect of their 2018/19 membership. Over 25 new members have joined in the last 6 months and we hope to continue to increase our impact in Guildford.
2. Provide contacts to the Committee of GEF. We are developing links with schools such as RGS and Sandfield Primary School in Stoke Road and would welcome personal contacts with other schools in the area.
3. Consider supporting the Committee. We have vacancies for some of the roles on the back page. Filling a role such as Membership Secretary would not be arduous

and would free up others to spread the GEF mission (as set out on page 2 of our Sept-Nov issue).

4. Encourage friends and family to adopt a more sustainable lifestyle. We discourage overheating your home, but encourage all to share their garden with wildlife, to travel less and to eat sustainably.
5. Help a small group of GEF members to organise our 25th Anniversary event in October 2018. Speakers and the venue in Guildford are being arranged, but we need help next year with invitations and follow-up.
6. Volunteer to help with the Rosamund Community Garden Project in Guildford or join the working parties for the Small Blue Butterfly Project on the North Downs, which meet weekly (usually Fridays) through the winter.

Please contact me if you are able to help.

Adrian Thompson – 01483 222687 or email adrian@lampcottage.net



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 email adrian@lampcottage.net



CALENDAR



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

Monday 15 January

GEF Biodiversity Group.

A talk on **"Swifts"** by Edward Mayer of Swift Conservation. Swifts have suffered serious declines over the past 20 or more years. There's no doubt they're in trouble, but what are the reasons and what can we do to help them recover? Guildford is setting up a joint project with Woking (in the wake of our successful joint Peregrine Falcon project) to work on this. Many other communities are doing the same. It needs councils, residents and wildlife groups to work together. Edward Mayer tells us all we need to know.

1900. Council Chamber, GBC Millmead Offices.

Monday 22 January

Henrietta Stock is a Chartered Energy Engineer and one of many volunteer Climate Reality Leaders trained by former US Vice President and Nobel Laureate Al Gore to educate the public about climate change as part of the Climate Reality Project. Her talk will be based around the material presented in Al Gore's latest film **"An Inconvenient Sequel – Truth to Power"**, which poses the questions 'Must we change? Can we change? Will we change?' 1900. Room 1, Chantry, GBC Millmead Offices.

Tuesday 13 February

GEF Community Projects.

The film "A Life Story", featuring the late Patrick Whitefield of permaculture fame,

Satish Kumar of Resurgence, Simon Fairlie, editor of *The Land* who started the new enthusiasm for scything in the UK, Polly Higgins, ecocide lawyer, and Peter Owen Jones, clergyman and presenter. We follow Pete and Lilly on a journey as they confront the stark reality of our times and discover a hidden culture of connection and belonging. 1900. Room 6, Hurtmore, GBC Millmead Offices.

Tuesday 27 February

Geographical Association of Guildford at The County School, Farnham Road, Guildford.

Jonathan Schifferes: **"Regeneration in London"**. 1730. All GEF members are invited.

Tuesday 13 March

Geographical Association of Guildford at The County School, Farnham Road, Guildford.

Dr Stephen Taylor: **"Biomedical, global health, human development and spatial variation"**.

1730. All GEF members are invited.

GUILDFORD ENVIRONMENTAL FORUM

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Waste and Recycling – Position vacant

Treasurer – Adrian Thompson

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Membership – Position vacant

(Adrian Thompson pro tem: see Treasurer's 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 12 February.

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